

Can a Lack of Pro-Productivity Policies Explain the Secular Decline in Canada's Productivity Growth?

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Abstract

Over the past half century, Canada's labour productivity growth has slowed dramatically, falling from 3.7 per cent annually in 1947–73 to less than 1 per cent since 2000. This paper asks whether weak public policy explains that decline and whether new pro-productivity policies could reverse it. Using long-run data and the policy typology of Van Ark et al. (2023), we examine Canada's record on factor accumulation, technological and structural change, market functioning and resource allocation, and international integration. Our analysis suggests that successive Canadian governments have generally pursued relatively market-oriented, pro-productivity reforms — such as liberalizing trade, delivering a stable, predictable inflation environment, modernizing and cutting taxes, and investing in human capital — yet productivity growth continued to falter. The main drivers appear to be declining technological progress and inadequate business investment, not an absence of policy effort. We conclude that, while new policy reforms are desirable and worthwhile (such as easing interprovincial barriers and sharpening competition), they are unlikely to deliver a major revival of Canada's long-term productivity growth.

Introduction

Productivity growth in Canada has been on a long, large secular decline. According to official Statistics Canada estimates, business sector output per hour has grown 3 full percentage points per year slower in the 21st century than in the decades immediately following World War Two (i.e., 0.8 per cent in 2000-2024 versus 3.7 per cent in 1947-1973). Contrasting these periods, a country where it would take 90 years for productivity levels to double (given the pace in the most recent period) offers markedly fewer opportunities for improved living standards than one where it only takes 19 years (as in the immediate post war period).

What explains this great productivity growth slowdown and what can be done to reverse it? These are big, important questions that are beyond the scope of this paper. Rather this paper focuses more narrowly on the role of pro-productivity policies in the slowdown and the potential for such policies to reverse it. In other words, we ask whether the slowdown in productivity growth in Canada can be explained by the failure of government to adopt pro-productivity policies and if implementing pro-productivity policies might revive productivity growth?

While recognizing the importance of pro-productivity policies, the paper argues that it has not been the lack of pro-productivity policies that explains the slowdown, given that economic policies in Canada have been relatively market-oriented over recent decades. Furthermore, looking ahead, the adoption of additional pro-productivity policies, while desirable, will likely have only a modest positive effect on trend labour productivity growth. Instead, we argue that what drives long-term productivity growth is the underlying pace of technological change and circumstances such as high resources prices and emerging sectors that incentivise business investment.

The objective of this paper is to advance our understanding of the effectiveness of pro-productivity policies in Canada by applying the typology of pro-productivity policies developed by Van Ark *et al.* (2023). Their analysis proposes four categories of pro-productivity policies — namely, policies aimed at accumulating factors of production, technological and structural change, markets and resource allocation, and internationalization. In addition, they identify a range of foundational policies that provide a conducive environment for productivity, including sound macroeconomic and foundational policies.

The paper consists of four main sections. The first part reviews labour productivity in Canada from 1947 to 2024, with comparisons to the United States, the G7, and OECD countries. It briefly discusses productivity trends by province and by industry, growth accounting estimates of the sources of labour productivity growth, and the contributions from within-industry and reallocation effects to aggregate productivity growth.

The second part of the paper applies the typology of pro-productivity policies developed in Van Ark *et al.* (2023) to Canada. It discusses the state of the productivity drivers in Canada, reviews the uses of pro-productivity policies, commenting in general terms on their relationship with the secular decline in productivity growth experienced in Canada after 1973.

The third part of the paper focuses on four periods of economic change and policy reforms of particular importance. The periods selected are the mid to late 1960s, the second half of the 1980s, the early 2000s, and the most recent period 2019-2024. This section explores the role of specific pro-productivity policies in promoting or restraining the country's productivity growth in these periods.

The fourth part of the paper provides a forward-looking perspective on pro-productivity policies, indicating the main areas potentially in need of policy reform in Canada. These areas include foreign investment restrictions, marketing boards, workplace training, interprovincial trade and migration barriers, tax rates, infrastructure bottlenecks, environmental regulations, policy uncertainties negatively affecting investment, and the research and development subsidy system.

To recap, Canada's aggregate labour productivity growth has deteriorated significantly over time, averaging less than 1 per cent per year since 2000. The reasons for this anemic performance are poorly understood. A number of observers argue that public policies have failed to support business sector productivity growth. This paper advances the case that public policies have largely been pro-productivity and that weak productivity growth in Canada cannot be explained by a failure of public policy. Rather slower productivity growth reflects a decline in the pace of underlying technological progress and inadequate business investment.

Section 1. Productivity Trends in Canada

Productivity is a long-term concept so productivity analysis should adopt a long-term perspective. In the short to medium term, the business cycle affects the degree to which firms adjust employment and output in response to supply stocks and demand shifts, resulting in large fluctuations in productivity. To minimize the effect of the business cycle, we calculate productivity growth rates between peak years of economic activity. In Canada, since 1961 output peaked in 1973, 1981, 1989, 2000, 2008, and 2019. As such, we use these years to break productivity growth into cyclically neutral sub-periods.

This paper primarily focuses on productivity in Canada's business sector, where data are most consistent and comparable over time. Statistics Canada produces official productivity estimates that go back over 77 years to begin in 1947.¹ Like many other advanced economies, Canada has experienced a marked decline in trend labour productivity growth performance. Selecting the cyclical peaks of 1973 and 2000 as break points results in three periods of roughly equal length.

From 1947 to 1973 output per hour in the business sector grew at a robust 3.7 per cent per year. This growth rate fell 2.0 percentage points to 1.8 per cent in 1973-2000 (Chart 1), the first productivity slowdown, then from 2000 to 2024 output per hour advanced at only a 0.8 per cent

¹ Aside from the United States, most other countries do not measure business sector productivity in the same way as Canada. Estimates for the total economy or market economy (excluding the entire health, education and government sector from the aggregate) for other OECD countries are therefore not strictly comparable to the those for the business sector.

average annual growth rate, reflecting a further slowdown in labour productivity growth of 1.0 points. In the first period (1947-1973) business sector output per hour doubled in 19 years. By the third period (2000-2024), it would instead take 90 years to double the level. Based on this much weaker productivity growth, there have clearly been negative consequences for living standards, as defined in terms of GDP per capita.

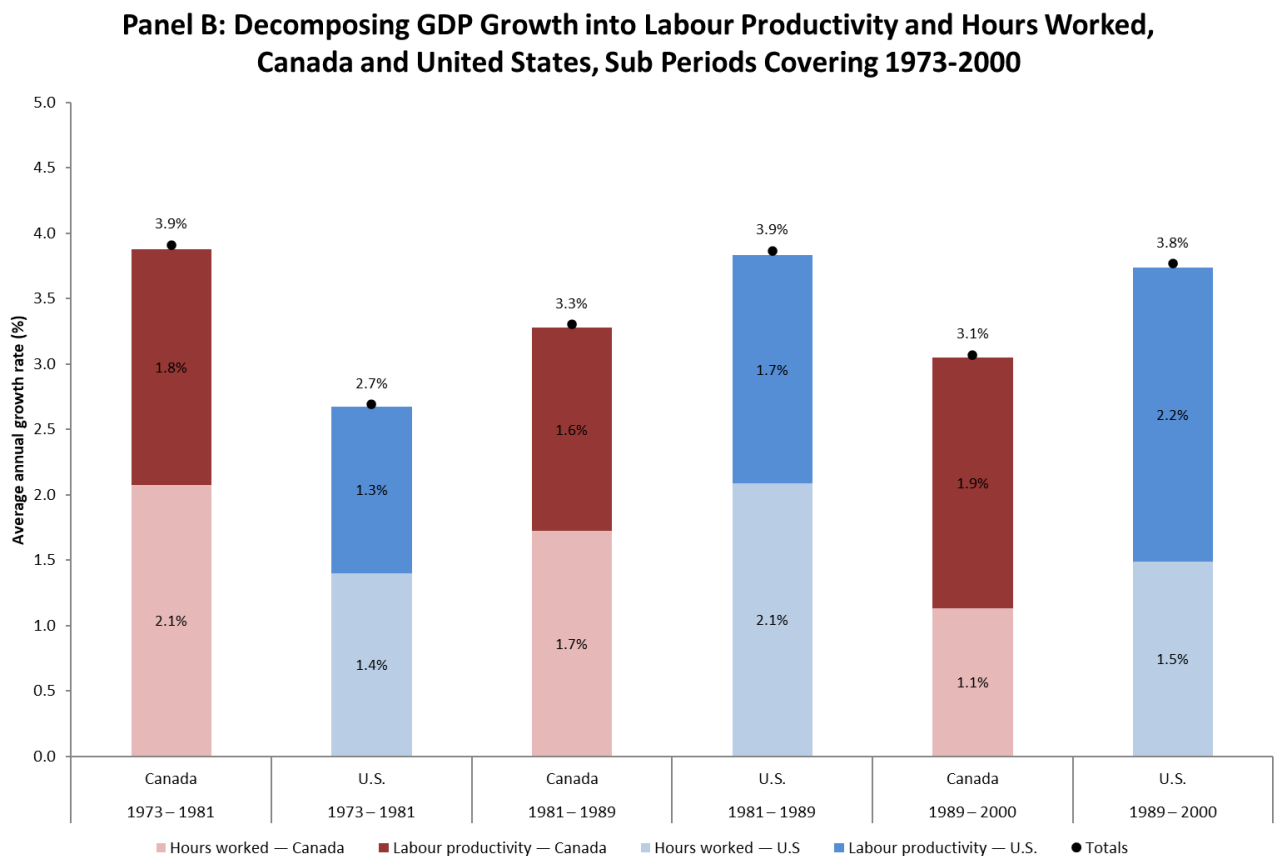
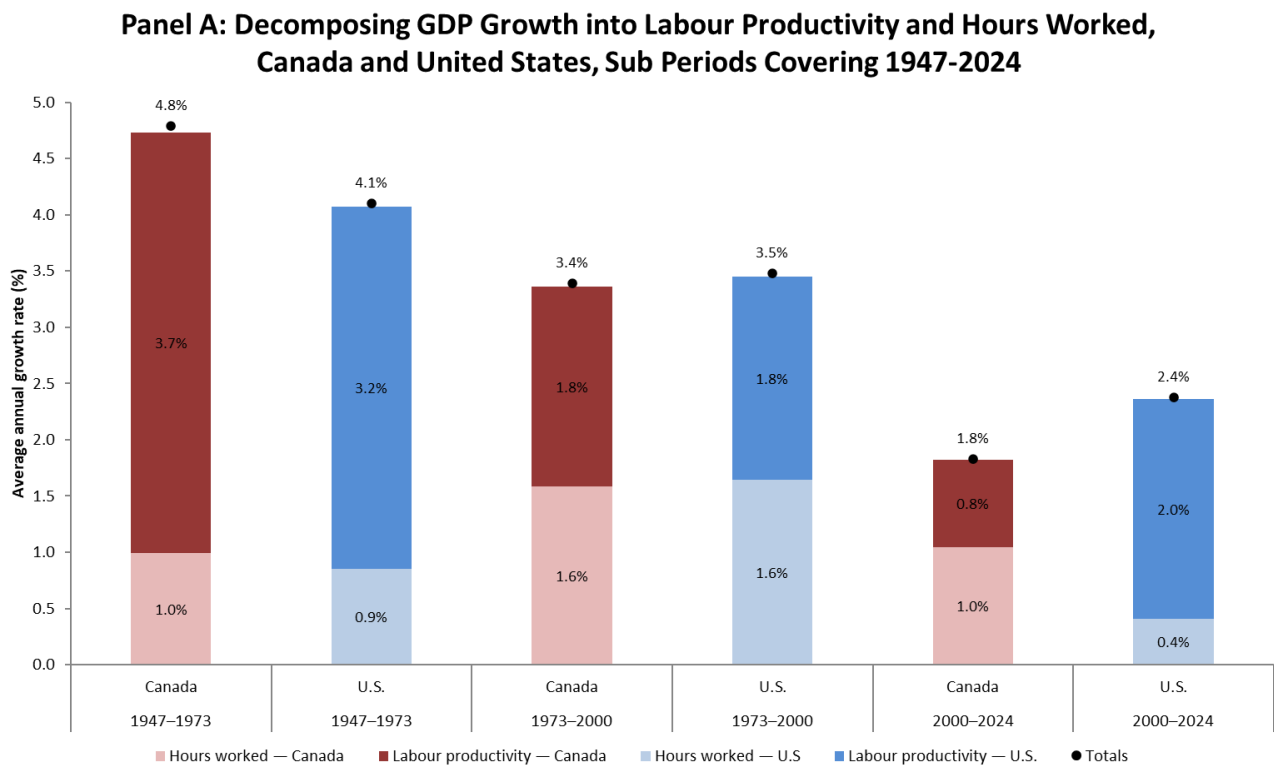
The most important benchmark for Canadian economic performance is typically the United States, given the proximity and close economic relations between the two countries. Canada outperformed the United States in terms of business sector output per hour growth in the 1947-1973 period: 3.7 per cent per year versus 3.2 per cent (Chart 1). The two countries experienced nearly identical 1.8 per cent productivity growth rates from 1973 to 2000. After 2000, Canada fell well behind the United States in terms of aggregate labour productivity growth: 0.8 per cent versus 2.0 per cent per year.

The post-2000 period can be divided into three sub-periods, based on the three business cycle peak years (2000, 2008, 2019) and 2024, the most recent year for which data are available. In all three periods (2000-2008, 2008-2019, and 2019-2024), the growth rate of US business sector output per hour exceeded that in Canada (Chart 1), with the growth gap especially large in the most recent period: 1.8 points (based on productivity growth of 2.1 per cent and 0.3 per cent respectively). This growth rate gap between productivity growth in the two countries is unprecedented in the postwar period.

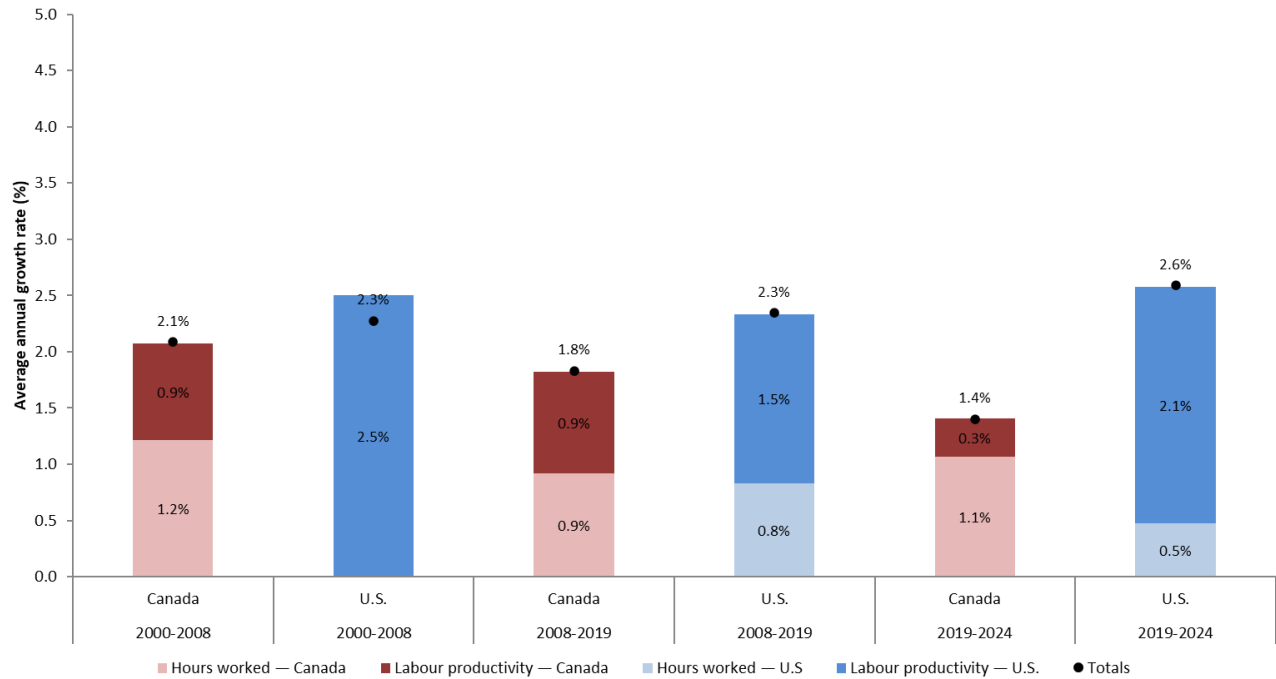
Both Canada and the United States experienced major slowdowns in productivity growth between the 1947-1973 and 1973-2000 period, 1.9 percentage points and 1.4 points respectively. After 2000, the United States, in contrast to Canada, enjoyed an acceleration in productivity growth, up 0.2 points from 1.8 per cent to 2.0 per cent.

Productivity levels are determined by productivity growth rates. Faster productivity growth in Canada than in the United States leads to a narrowing of the productivity level gap between the two countries, while slower growth widens the gap. In 1947, output per hour in the Canadian business sector was only 75 per cent of that in the United States, a gap of 25 percentage points (Chart 2). With the faster productivity growth from 1947 to 1973 the productivity differential rose to 86 per cent and the gap declined to 14 points. Canada's productivity level relative to the US peaked at 93 per cent in 1984, leaving a gap of only 7 points, reflecting faster Canadian productivity growth from 1973 to 1984. After 1984, US productivity growth exceeded that in Canada, with the Canadian level falling to 85 per cent of the U.S. in 2000, a 15 point gap, and then plummeting to 64 per cent in 2024, a 36 point gap. The postwar convergence of Canada's aggregate productivity level toward the US level from 1947 to 1984 was reversed by 2008 and Canada is now back to the original 1947 figure of 75 per cent of the US level.

Chart 1: Growth Trends in Canada and the United States

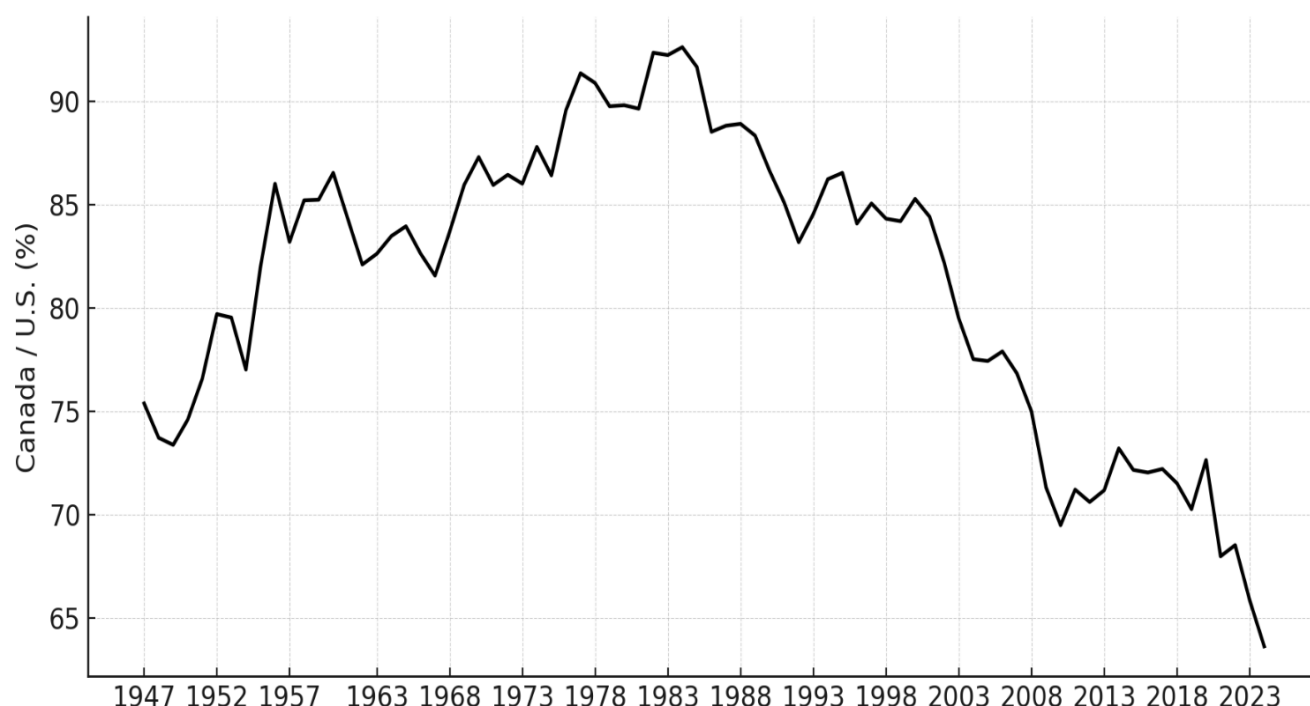


Panel C: Decomposing GDP Growth into Labour Productivity and Hours Worked, Canada and United States, Sub Periods Covering 2000-2024



Sources: Canada business sector labour productivity data from Statistics Canada: Table 36-10-0305-01 for 1947-1960, Table 36-10-0208-01 for 1961-2023, Table 36-10-040-01 for 2024. United States business sector labour productivity data from BLS Labour Productivity and Cost Measures –2 Major Sectors – Data released March 6, 2025 (XLSX sheet). Total Economy labour productivity data from OECD – Productivity and ULC – Annual, Total Economy: https://stats.oecd.org/Index.aspx?DataSetCode=PDB_GR#.

Chart 2: Relative Labour Productivity Levels (GDP per Hour in the Business Sector in Canada), 1947-2024 (Canada as a % of the United States)



Note: US-Canada purchasing power parity based on Statistics Canada benchmark of Canadian business sector output per hour at 84.2% of US business sector output per hour in 1999 (Statistics Canada, 2008).

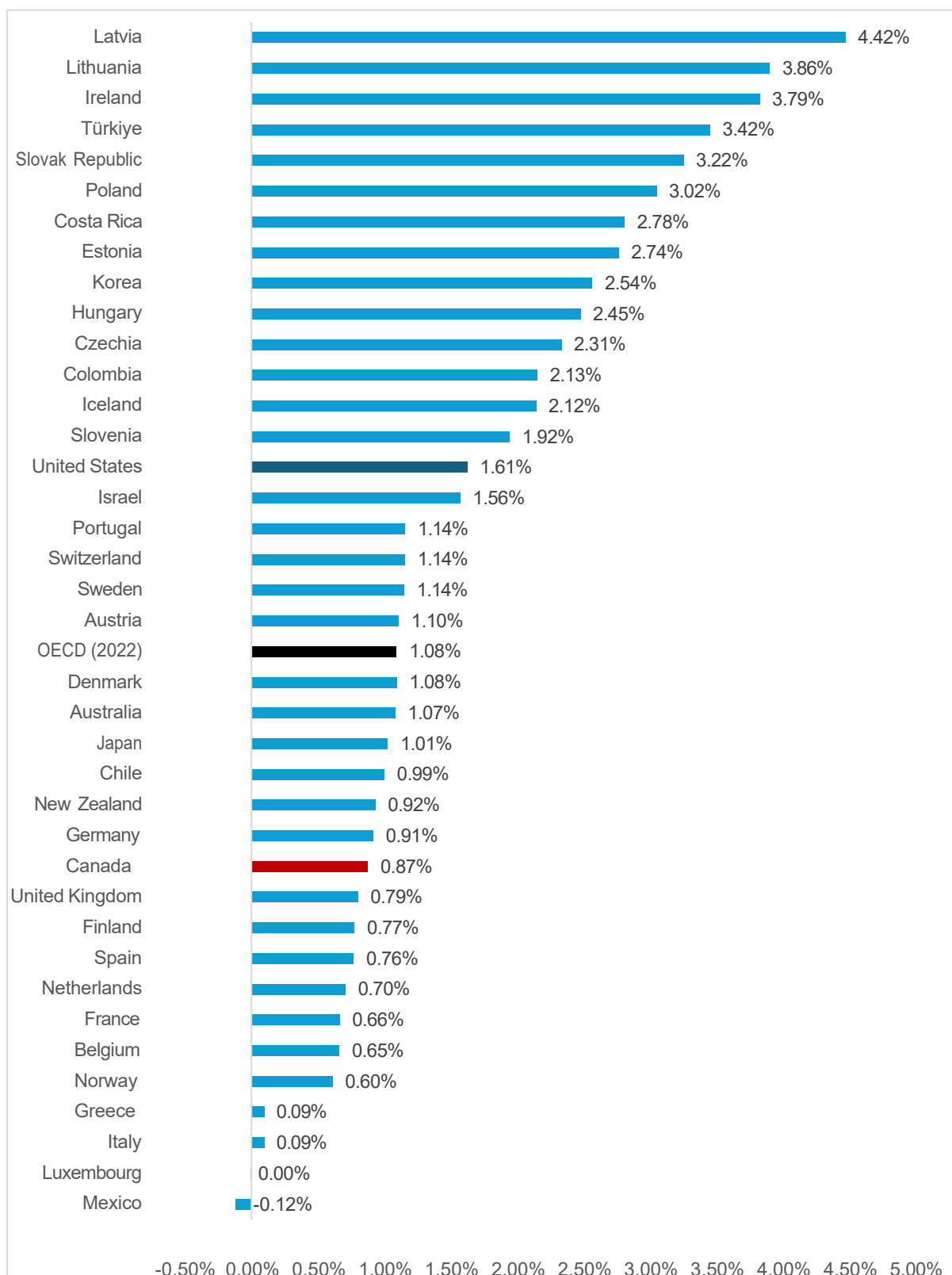
Source: Canada labour productivity data from Statistics Canada: Table 36-10-0305-01 for 1947-1960, Table 36-10-0208-01 for 1961-2023, Table 36-10-0480-01 for 2024. US labour productivity from BLS Labour Productivity and Cost Measures – Major Sectors – March 6, 2025 (XLSX sheet). 1999 benchmark of Canada's output per hour at 84.2% of US output per hour from Statistics Canada (2008) "Relative Multifactor Productivity Levels in Canada and the United States: A Sectoral Analysis" Catalogue no. 15-206-X, no. 019, July, p.32.

OECD estimates for total economy GDP per hour worked show an average annual growth rate of 0.87 per cent in Canada from 2000 to 2023, ranking 27th out of 38 countries (Chart 3).¹ This growth rate is well below that of the United States (1.61 per cent) and the newer Eastern European and Latin American members of the OECD, but not far from the OECD average (1.08 per cent). Indeed, Canada ranks in the middle of the G-7 countries, just below Japan (1.01 per cent) and Germany (0.91 per cent) and above the UK (0.79 per cent), France (0.66 per cent) and Italy (0.09 per cent). From the perspective of these peer countries, Canada's productivity growth performance since 2000 has been fairly respectable.

¹ Since 2000, total economy output per hour growth in Canada has been slightly above that of business sector output per hour because of faster growth of labour productivity in the non-business sector. This appears to be due to the methodology used to quality adjust non-business sector labour input, which affects real output growth output. This issue is beyond the scope of this paper and has no significant effect on the analysis.

Chart 3: Total Economy Output per Hour Growth in OECD Countries, 2000-2023

(average annual per cent change)



Source: OECD, https://stats.oecd.org/Index.aspx?DataSetCode=PDB_GR

Note: Some country series feature data breaks and estimated or provisional values instead of official statistics for some observations. For full detail on the countries and observations affected, please see the linked database.

The same cannot be said for Canada's labour productivity *level*. In 2023, total economy output per hour in Canada was \$58.9 (in 2020 US dollars), virtually identical to the OECD average and 19th out of 38 OECD countries, but behind all other G-7 countries except Japan. The US labour productivity level was \$83.6 per hour, followed closely by Germany (\$83.3) and France (\$82.3), the UK (\$72.4), and Italy (\$68.8). These are economically significant productivity gaps with Canada. From this level perspective, Canada has considerable scope to boost productivity growth to catch up with the productivity level of G-7 peer countries.

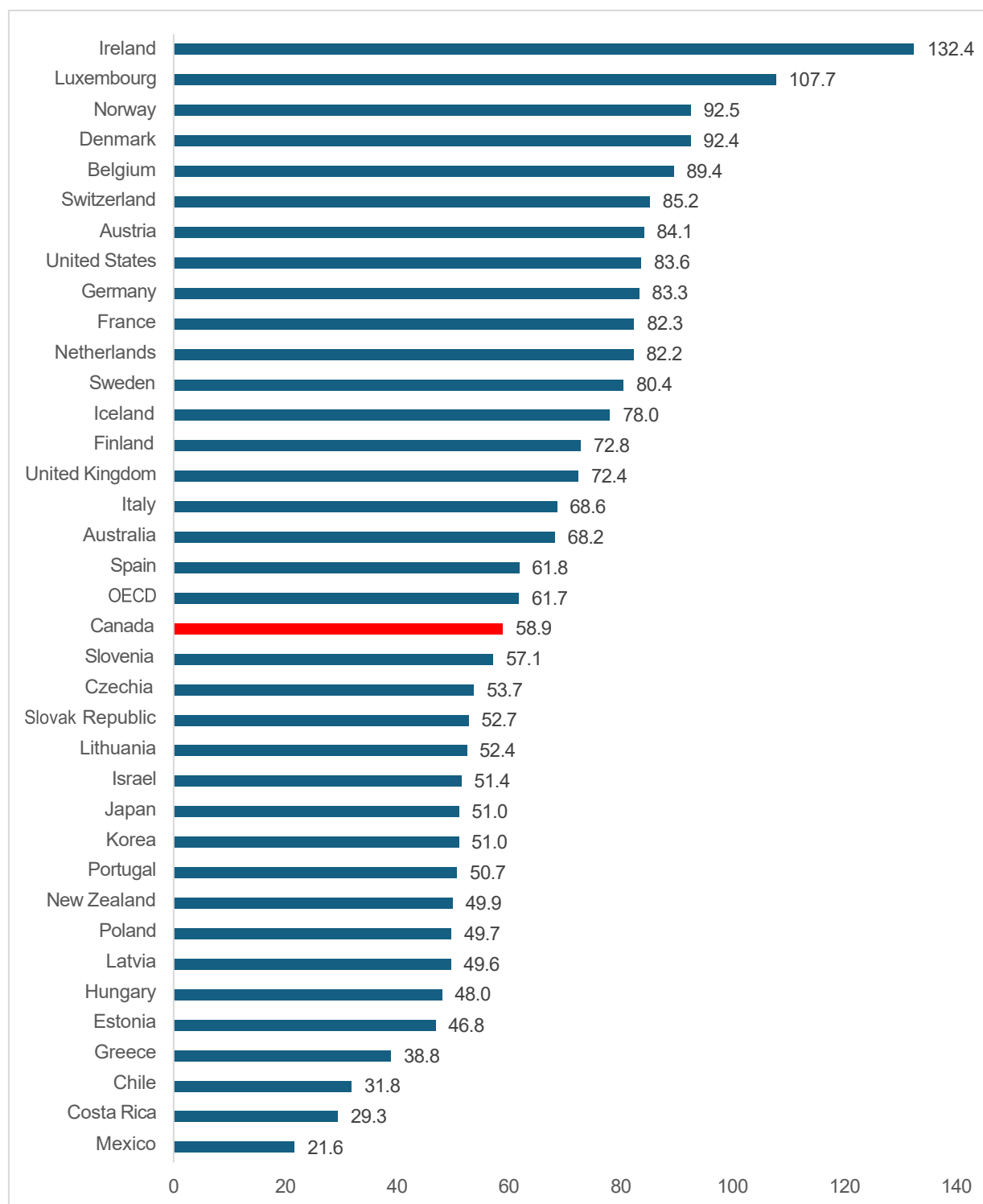
Growth accounting is the standard framework for analyzing the proximate sources of labour productivity growth, which is apportioned into contributions from labour composition, capital intensity and multifactor productivity growth. Statistics Canada produces estimates of growth accounting categories for Canada from 1961 to 2023 (Table 1). The key takeaway from this table is that multifactor productivity (MFP) has largely accounted for the secular decline in labour productivity growth in Canada. Between the 1961-1973 and 1973-2000 periods, MFP accounted for 1.15 points or 65 per cent of the 1.78 point fall in labour productivity growth. Between 1973-2000 and 2000-2023 for 0.54 points or 55 per cent of the 0.99 points productivity slowdown. Capital intensity accounts for only 14 per cent of the first slowdown and 36 per cent of the post-2000 slowdown. Labour quality was responsible for 19 per cent of the first slowdown and only 8 per cent of the second.

Some caution should be exercised in interpreting these growth accounting estimates. First, MFP is a residual and is affected by many factors in addition to disembodied technological change, including measurement error, economies of scale, and capacity utilization. It is ultimately a measure of statistical ignorance. Second, the contribution of capital intensity may underestimate the true or effective contribution of capital to labour productivity growth as most technological advances are embodied in investment goods (see Fernald et al. 2024). Without investment, there likely would be little or no productivity advance.

Based on the detailed analysis of post-2000 productivity growth in Canada found in Hahn (2023) and summarized in Hahn and Sargent (2023), the following observations can be drawn:

- Productivity growth in Canada has been largely driven by growth within industries rather than reallocation of resources across sectors.
- The industry experiencing the fastest labour productivity growth was agriculture, forestry, fishing and hunting, followed by wholesale trade, retail trade, and finance and insurance. The industry with the worst productivity performance was mining and oil and gas.
- There was much less variation in productivity growth by province than by industry. From 2000 to 2022, Manitoba had the fastest labour productivity growth (1.4 per cent per year) and Alberta the slowest (0.7 per cent). The total economy labour productivity growth rate was 0.9 per cent.

Chart 4: Total Economy Output per Hour Levels in OECD Countries, 2023
(USD, constant prices, 2020 PPPs)



Source: OECD, https://stats.oecd.org/Index.aspx?DataSetCode=PDB_GR#

Note: Some country series feature data breaks and estimated or provisional values instead of official statistics for some observations. For full detail on the countries and observations affected, please see the linked database.

Table 1: Sources of Canadian Business Sector Labour Productivity Growth, 1961-2023**Panel A: 1961-2023**

Variable	(1) 1961-1973	(2) 1973-2000	(3) 2000-2023	(4) =(2)-(1)	(5) =(3)-(2)
Absolute Contributions					
Labour productivity	3.55	1.77	0.78	-1.78	-0.99
Multifactor productivity	1.53	0.38	-0.16	-1.15	-0.54
Capital Intensity	1.29	1.04	0.68	-0.25	-0.36
Labour Quality	0.69	0.35	0.27	-0.34	-0.08
Total Contributions	3.51	1.77	0.79	-1.74	-0.98
Relative Contributions					
Labour productivity	100	100	100	100	100
Multifactor productivity	43.1	21.5	-20.5	64.6	54.5
Capital Intensity	36.3	58.8	87.2	14.0	36.4
Labour Quality	19.4	19.8	34.6	19.1	8.1
Total Contributions	98.9	100.0	101.3	97.8	99.0

Panel B: 1973-2000

Variable	(1) 1973-1981	(2) 1981-1989	(3) 1989-2000	(4) =(2)-(1)	(5) =(3)-(2)
Absolute Contributions					
Labour productivity	1.80	1.55	1.92	-0.25	0.37
Multifactor productivity	0.15	0.39	0.53	0.24	0.14
Capital Intensity	1.38	0.77	0.97	-0.61	0.2
Labour Quality	0.26	0.38	0.4	0.12	0.02
Total Contributions	1.79	1.54	1.9	-0.25	0.36
Relative Contributions					
Labour productivity	100	100	100	100	100
Multifactor productivity	8.3	25.2	27.6	-96.0	37.8
Capital Intensity	76.7	49.7	50.5	244.0	54.1
Labour Quality	14.4	24.5	20.8	-48.0	5.4
Total Contributions	99.4	99.4	99.0	100.0	97.3

Panel C: 2000-2023

Variable	(1) 2000-2008	(2) 2008-2019	(3) 2019-2023	(4) =(2)-(1)	(5) =(3)-(2)
Absolute Contributions					
Labour productivity	0.87	0.91	0.29	0.04	-0.62
Multifactor productivity	-0.54	0.16	-0.28	0.7	-0.44
Capital Intensity	1.14	0.49	0.28	-0.65	-0.21
Labour Quality	0.28	0.26	0.29	-0.02	0.03
Total Contributions	0.88	0.91	0.29	0.03	-0.62
Relative Contributions					
Labour productivity	100	100	100	100	100
Multifactor productivity	-62.1	17.6	-96.6	1750.0	71.0
Capital Intensity	131.0	53.8	96.6	-1625.0	33.9
Labour Quality	32.2	28.6	100.0	-50.0	-4.8
Total Contributions	101.1	100.0	100.0	75.0	100.0

Source: CSLS calculations based on Statistics Canada Table 36-10-0208-01

Note: Contributions from growth in multifactor productivity, capital intensity, and labour quality are official Statistics Canada estimates.

* Due to data availability, the contributions from growth in ICT and non-ICT capital intensity are for 2019-2021 in the last column of the table. These are calculated using Statistics Canada data on hours worked and ICT/non-ICT capital inputs and costs for each period. Labour and capital cost shares are calculated by taking the arithmetic average of the share of costs for labour and capital at the start and end of each period.

Section 2. Pro-Productivity Policies in Canada

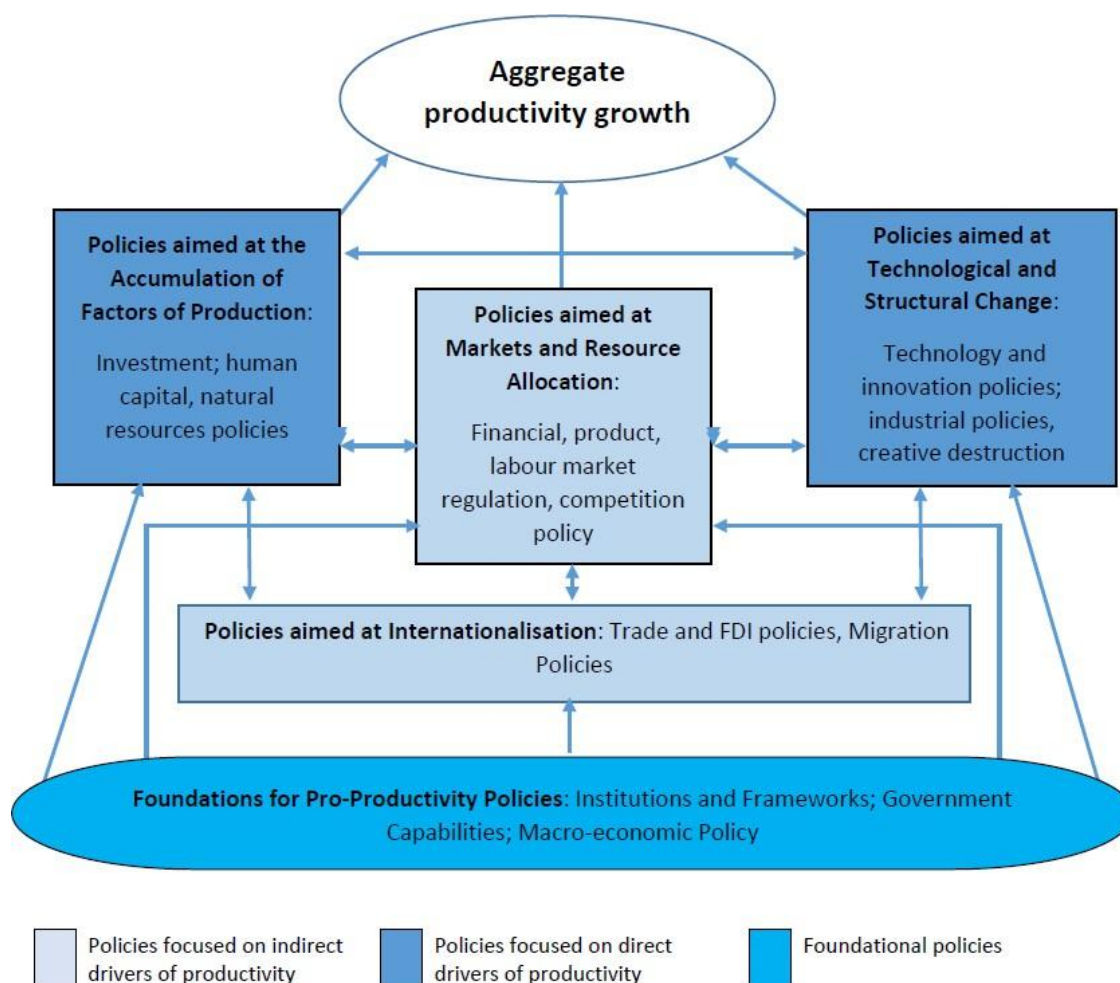
The second part of the paper applies the typology of pro-productivity policies developed in Van Ark *et al.* (2023) to Canada. It provides a brief overview of the state of productivity drivers and an overview of these policies. We discuss their application by the federal government and their impact on productivity growth, especially whether or not they can account for the secular decline.

In addition to foundational policies, Van Ark et al propose four categories of pro-productivity policies, namely those aimed at:

- accumulating factors of production;
- technological and structural change;
- markets and resource allocation; and
- internationalization.

The first two policies are primarily direct drivers of productivity while the third and fourth policies are primarily indirect productivity drivers. The third and fourth policies are built on institutions and frameworks that provide the foundation for pro-productivity policies. See Figure 1 for the framework representing these relationships.

Figure 1: Framework for Pro-productivity Policies

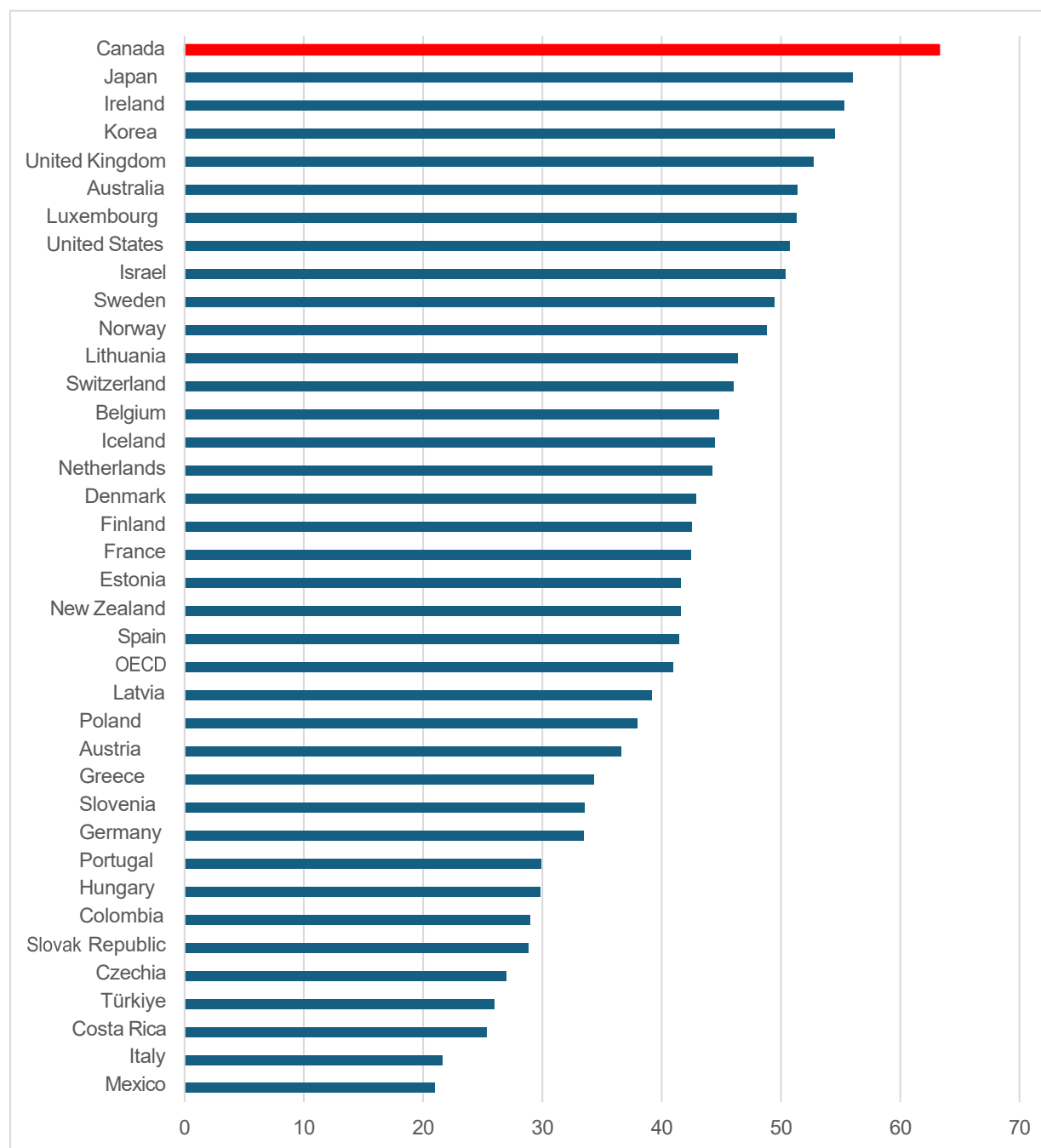


Source: Van Ark et al. (2023)

Accumulating Factors of Production

Policies related to accumulating factors of production include policies to increase both the quantity and quality of human capital and policies that increase the quantity of the productive capital stock.

Chart 5: Tertiary Education Attainment Rates, OECD Countries, 2023 (As share of 25 to 64 years old)



Source: [OECD Data- Adults' educational attainment distribution, by age group and gender](#)

Human capital and human capital policies

Canada can be considered a world leader in many areas of human capital development. The proportion of the population aged 25 to 64 with tertiary education, at 63 per cent in 2023 (Chart 5), is the highest in the OECD countries, in large part because of the expansion of community

colleges. Canada takes in proportionately more immigrants than almost all other developed countries. Because of the points system that prioritizes education, the majority of immigrants are well-qualified, based on educational attainment. Indeed, in 2019, 50.4 per cent of immigrants aged 15 and over who had arrived in the previous five years had at least a university degree, compared to only 22.2 per cent for Canadian-born (Wong, 2020).

Temporary foreign worker programs were expanded in the early 2020s in the aftermath of the pandemic at the behest of employers concerned with their inability to staff low-wage positions in service industries. This development represented a new stage in Canada's migration policy and unlike the points-based system, has had a negative effect on productivity (Sargent, 2024). After growing public concern about the economy's absorptive capacity for such large increases in population, these programs are being downsized.

Canada's high school students generally do well in international standardized tests. Indeed, the most recent results for the Program for International Student Assessment (PISA) show that Canadian 15-year-olds ranked sixth in the world in 2022, the top country in the G-7 and only behind Estonia and four Asian countries (China, Singapore, South Korea and Japan).

The overall skills level of Canadians is also high. According to the 2023 Program for the International Assessment of Adult Competences (PIAAC), Canadians aged 16 to 63 ranked seventh in the OECD in literacy, seventh for numeracy, and seventh for adoptive problem solving (OECD, 2024). Canada was third in the G-7 in all three areas.

Canadian universities also rank highly in terms of quality. According to the 2025 Times Higher Education World University Ranking, Canada had three universities in the top 50 in the world (University of Toronto (21st), University of British Columbia (41st) and McGill University (45th)). Canada ranked third in the G-7 and fourth in the world in terms of the number of universities in the top 50, behind the United States (22), the UK (8), China (4), tied with Germany (3), and ahead of Japan (1), France (1) and Italy (0).

The high level of educational attainment and overall quality of human capital in Canada suggest that pro-productivity policies in these areas have been effective.

Of course, Canada, like all countries, has human capital problems, including underutilization of the skills of highly qualified immigrants due to lack of foreign credential recognition, weaknesses in the apprenticeship system including low completion rates, limited workplace training provided by employers, low levels of government support for training, and large gaps in educational attainment between Indigenous and non-Indigenous Canadians, especially at the university level. There is certainly a role for pro-productivity policies to address human capital issues.

Investment policies

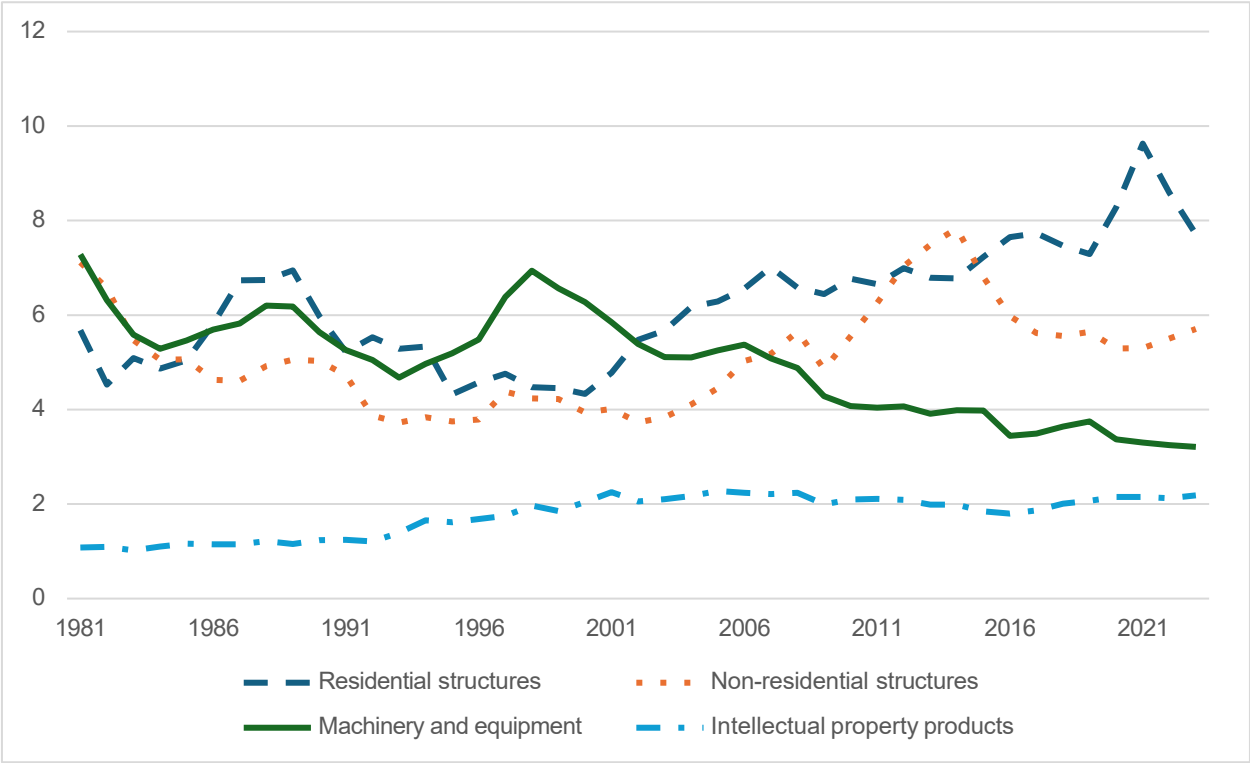
Capital investments are required to accumulate capital, so an assessment of the performance of this factor of production requires a look at investment performance and policy. Here, Canada has performed much poorer in investment in physical capital than in human capital.

Chart 6 shows the share of business sector investment components in nominal GDP from 1981 to 2023. Despite an acute housing affordability challenge in Canada, residential structures investment has done quite well, rising from less than 6 per cent of GDP in 1981 to nearly 10 per cent in 2020 before falling to the current level of around 8 per cent. Unfortunately, housing investment does not directly contribute to business sector productivity growth.

Non-residential structures do not appear to be a major problem. Averaging around 4 per cent of GDP in the 1990s, this investment category rose to around 8 per cent during the resources boom of the early 2010s, before falling to its current level of around 6 per cent.

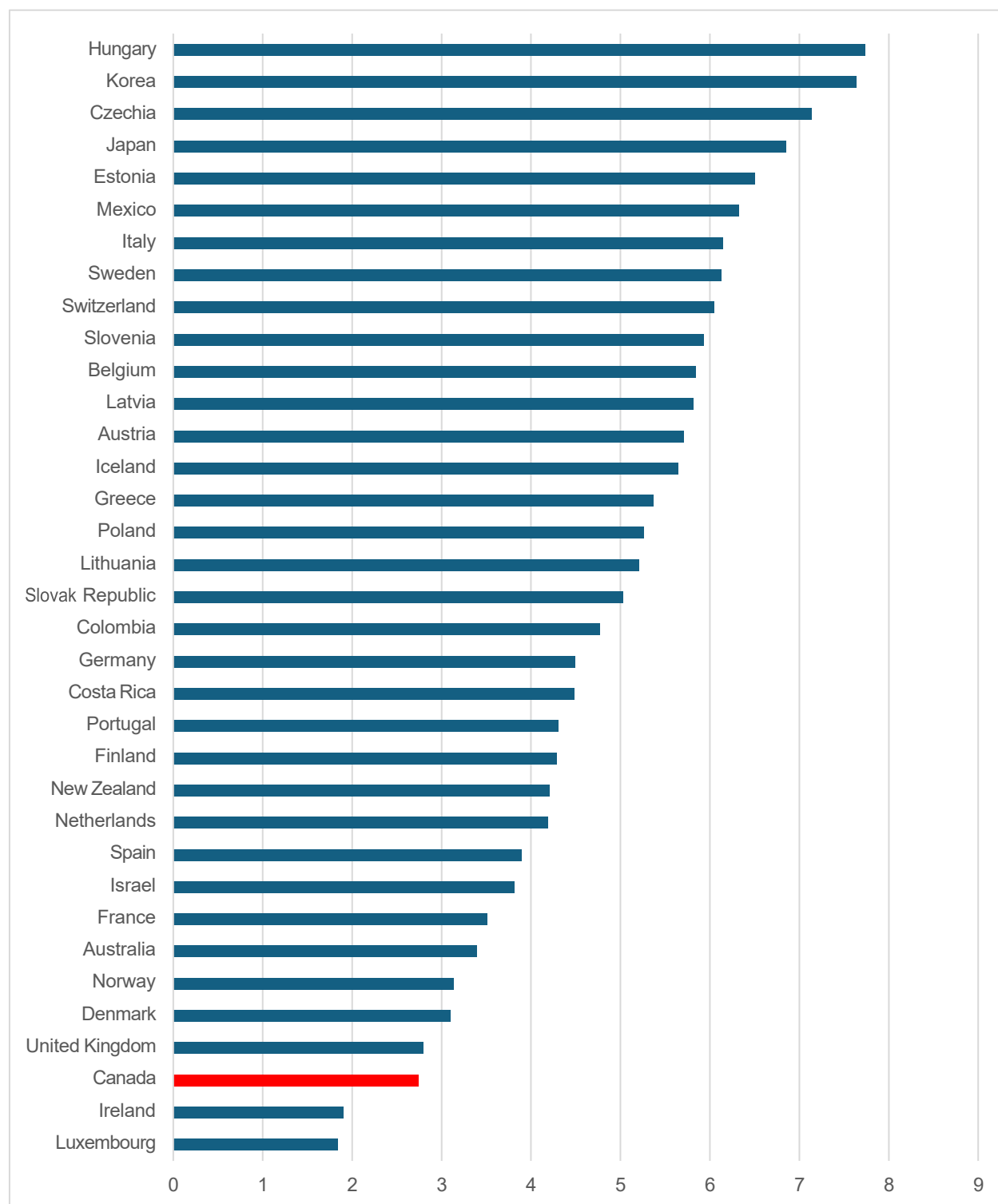
Canada’s Achilles’ heel in business investment is machinery and equipment (M&E), which has been on a secular downward trend falling from 7.7 per cent of GDP in 1981 and 7 per cent in 1997 to a low of 3.5 per cent in 2023. Chart 7 shows that in 2023 Canada had the lowest M&E investment ratio in the G-7 and third lowest among OECD countries. Indeed, Bafale and Robson (2024) report that in 2023 M&E per worker in Canada was around 40 per cent that in the United States, down from around 70 per cent in 1990.

Chart 6: Share of Business Sector Investment Components in Nominal GDP, Canada, 1981-2023 (per cent)



Source: Statistics Canada Table: 36-10-0222-01 and Table: 36-10-0104-01.

Chart 7: Share of ICTs Equipment and Other Machinery and Equipment and Weapon Systems in Nominal GDP, OECD, 2023 (per cent)



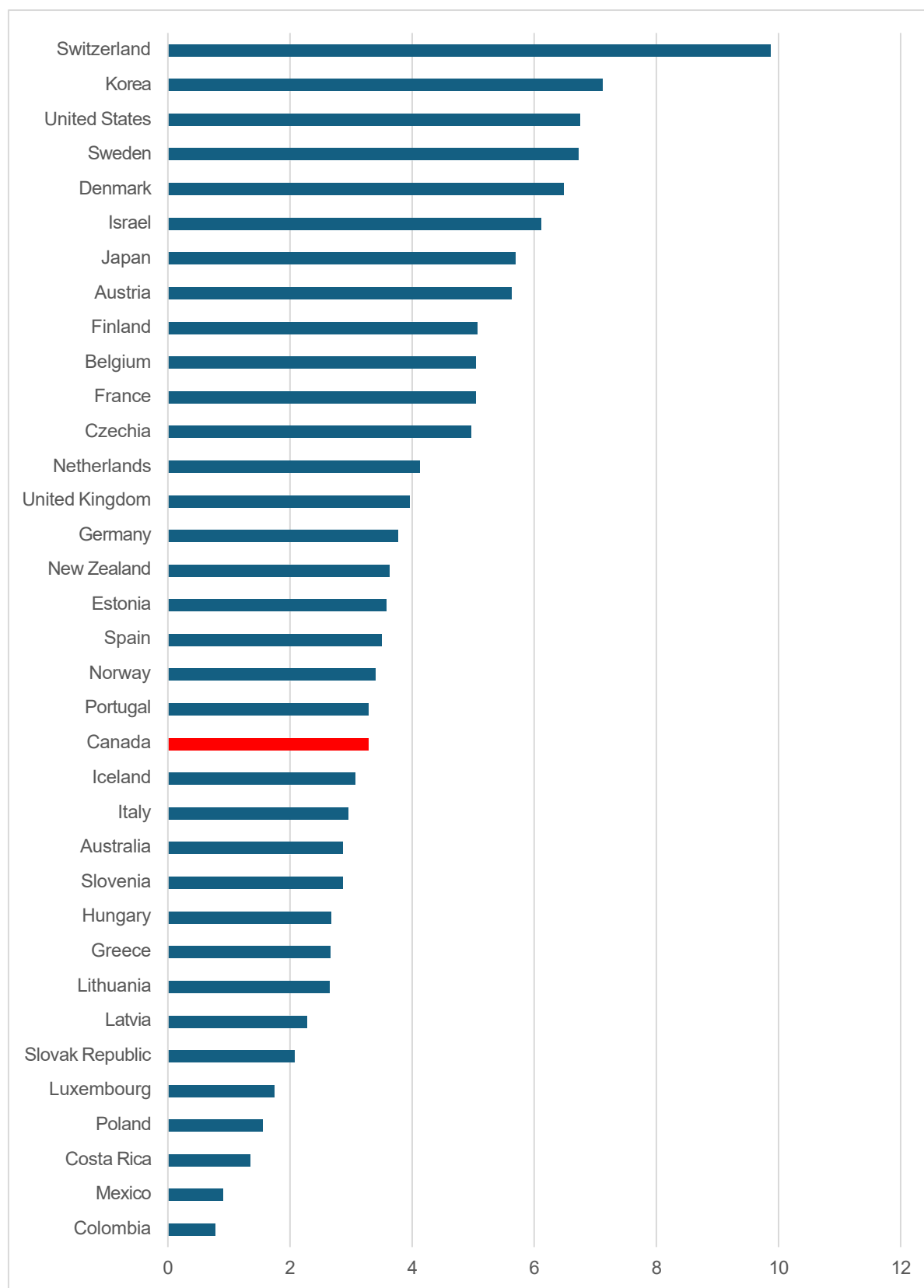
Source: OECD Data- NAAG Chapter 3B: Gross fixed capital formation by asset type

The reasons for Canada's poor performance on M&E investment are unclear. Corporate tax rates in Canada have been on a downward trend since the 1980s and, until the 2017 cut in the corporate tax rate in the United States, were below those in the United States. Policy efforts — including accelerated depreciation, corporate tax reductions, and targeted innovation incentives — appear to have had limited effect. Several structural factors may explain Canadian firm's limited appetite to invest: weakness in global commodity prices; a relatively small share of high-tech-intensive industries; outsourcing of labour-intensive production abroad; and a domestic market structure with limited competitive pressure due to restrictions on foreign direct investment in key sectors such as finance and transportation. These factors may have muted the normal policy levers intended to stimulate capital deepening, and underscore the need for systematic evaluation of past investment support programs.

The fourth component of business investment is intellectual property products (IPP), which includes software, R&D and mineral exploration. This component has increased from around 1 per cent of GDP in 1981 to 2 per cent in 2000 and has remained steady at this level thereafter. Canada's international performance on IPP is not as bad as for M&E, ranking 20th out of 36 OECD countries and sixth in the G-7 (Chart 8).

Governments in Canada have been well aware of the weakness of M&E in this country and have implemented numerous policies to address this situation, including tax incentives such as accelerated depreciation allowances. It is unclear whether the continued low level of M&E is due to inadequate or faulty policies or rather non-policy factors such as economic uncertainty, risk aversion, a perception of insufficient opportunities, or a lack of ambition, that have stymied M&E investment by business. Ultimately, business is responsible for its investment decisions and for its own productivity performance. Government policies and programs to promote business investment may not be taken up. One can lead a horse to water, but one cannot make him drink.

Chart 8: Share of Intellectual Property in Nominal GDP, OECD, 2023 (per cent)



Source: OECD Data- NAAG Chapter 3B: Gross fixed capital formation by asset type

Technological and structural change

Policies aimed at technological and structural change include innovation and technology policies, industrial policies and policies aimed at creative destruction. This section reviews the pace of technological and structural change in Canada and briefly discusses government policies in this area.

Technological change

There is no single accepted measure of the pace of technological change given the wide range of fields in which it takes place. Economists sometimes consider multifactor or total factor productivity (TFP), which is the rate of growth of output not accounted for by input growth, as a proxy for technological progress, although recognizing that many other factors influence TFP. By this metric, technological progress in Canada is regressing, falling from 1.5 per cent per year in 1961-1973 to 0.4 per cent in 1973-2000 to -0.3 per cent in 2000-2023. It is hard to square this trend with the many technological advances observed in the economy.

A distinction is often drawn between the development of new technologies and their commercialization, which is needed for discoveries and inventions to boost productivity. On this latter metric, Alexopoulos and Cohen (2018), through an analysis of numbers of publications on new technologies in libraries, show that the pace of commercialization of new technologies has fallen in Canada in recent years.

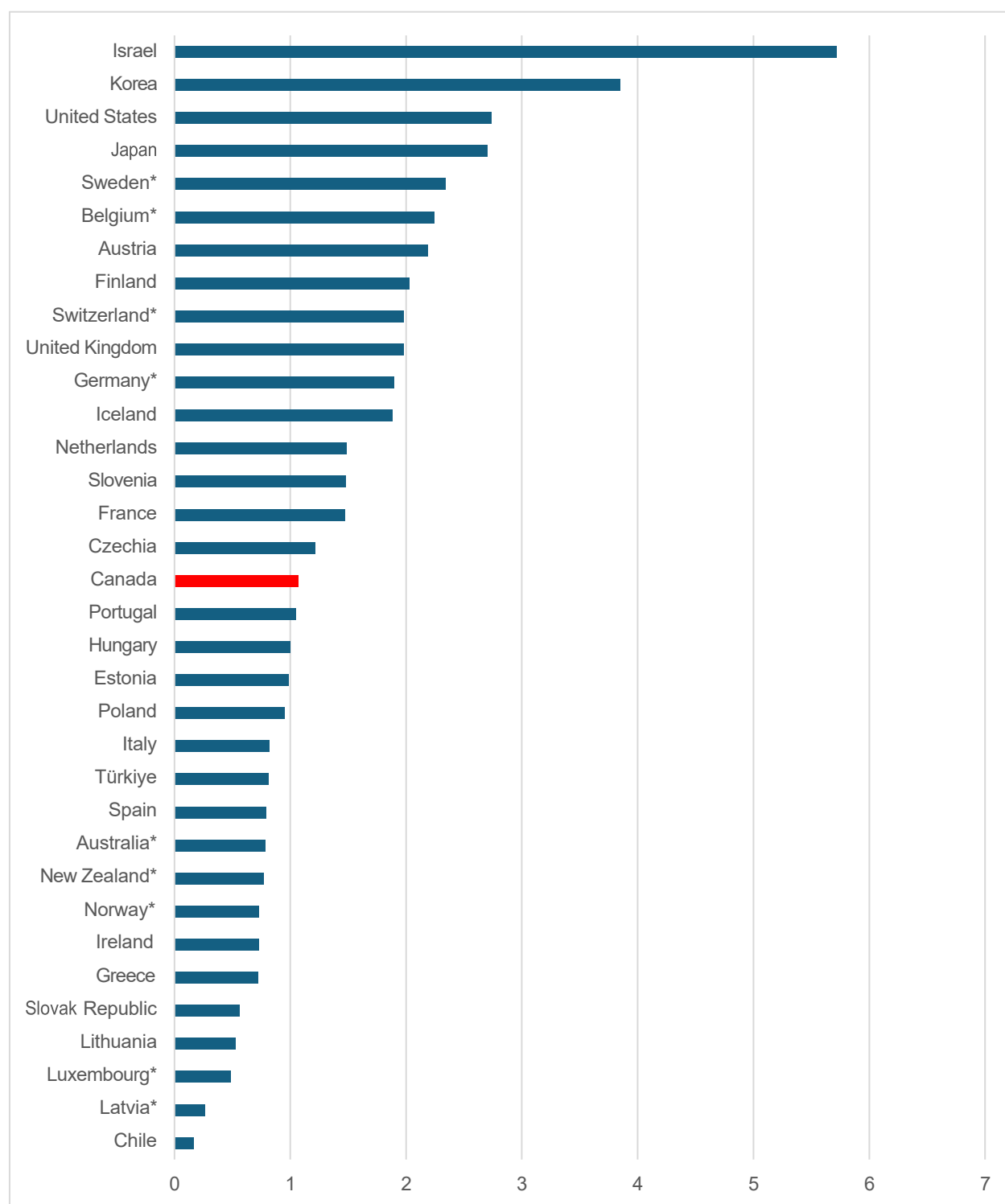
Research and development (R&D) spending is the key driver of technological change. Business expenditures on R&D (BERD) is considered more closely related to business sector productivity growth than government and higher education R&D (Council of Canadian Academies, 2018).

Canada is middling in terms of its international BERD performance. In 2022, Canada ranked 17th out of 34 OECD countries in terms of its BERD intensity (BERD/GDP) and second last in the G-7 before Italy (Chart 9).

Business expenditure in research and development (BERD) intensity more than doubled in Canada from 0.58 per cent of GDP in 1981 to a peak of 1.25 per cent in 2000 during the Nortel boom followed by BlackBerry/Research in Motion (Chart 10). It then fell to 0.9 per cent by 2012, stabilized for several years and then rose in 2017, hitting 1.2 per cent in 2021, where it again stabilized to 2024. Unfortunately, after the loss and diminished status of key anchor firms in Canada in the 2000s, the only real potential replacement in the tech sector has been Shopify, while top talent and many companies have moved south to pursue better options in Silicon Valley.

Given its limited population, Canada accounts for a very small proportion of the world's supply of new innovations. As such, the vast majority of new technologies used in Canada are imported, not developed domestically. There are in fact very few firms in Canada actually engaged in the research and development of new products and production processes. For example, Statistics Canada reports that in 2022 only 13,879 firms conducted in-house R&D in Canada. This means that labour productivity growth for the vast majority of firms is determined by their willingness and ability to adopt new technologies created by other firms either in Canada or more likely abroad.

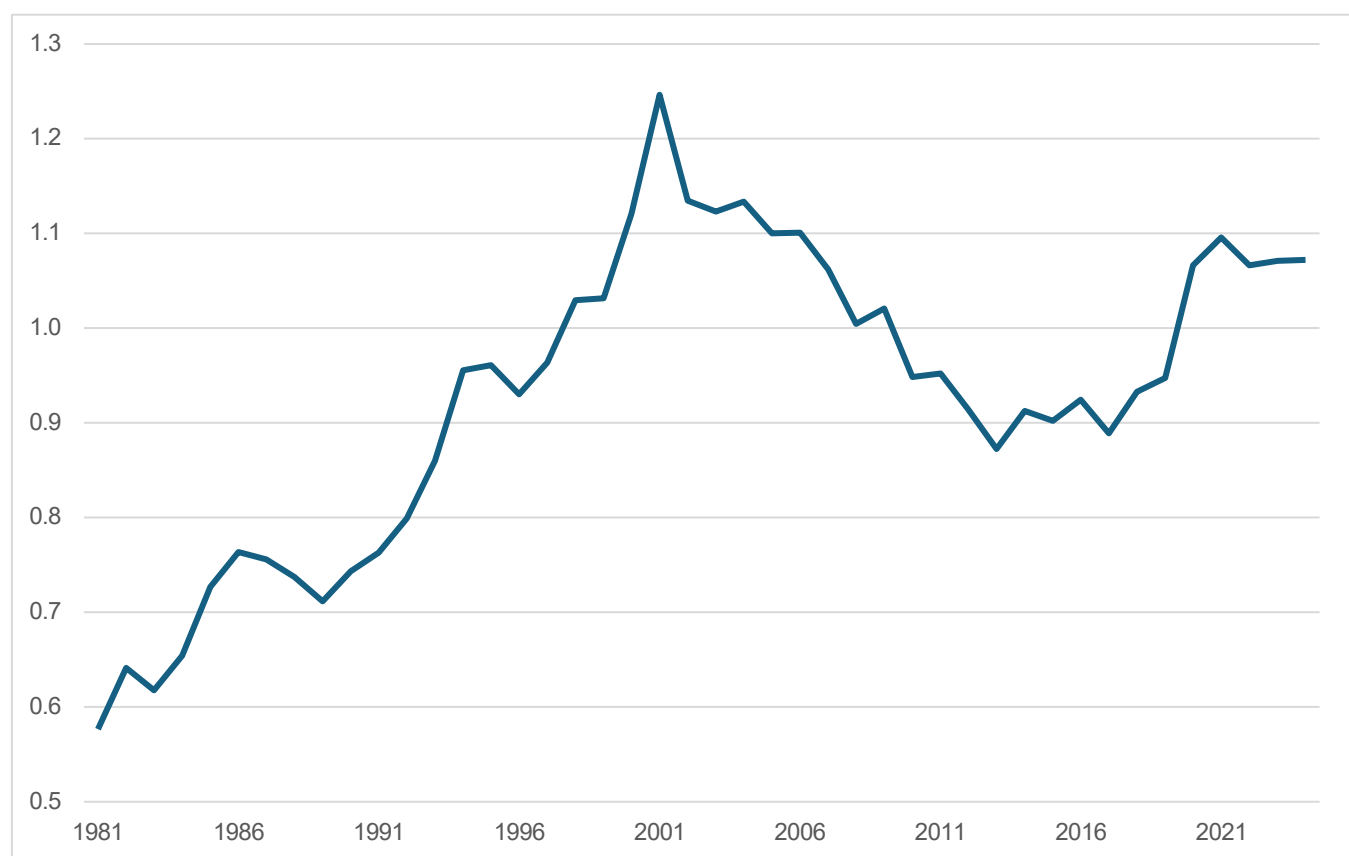
Chart 9: Share of R&D Performed by Business Sector in Nominal GDP, Select OECD Countries, 2022 (per cent)



Source: OECD data- Gross domestic expenditure on R&D by sector of performance and type of R&D

Note: For countries with *, 2021 data were used due to lack of available data for 2022.

Chart 10: Share of R&D Expenditure Performed by Business Sector in Nominal GDP, Canada, 1981-2024 (per cent)



Source: Statistics Canada Table: 27-10-0273-01, Table: 36-10-0222-01 and Table: 36-10-0104-01.

It is this pace of diffusion of best practice technologies that is the key ingredient of technological change in this country.

The Canadian government supports technological change through various programs and initiatives, summarized in Box 1, including financial assistance, research funding, and policy development. These efforts aim to boost innovation, encourage the adoption of new technologies, and foster economic growth. As is clear, Canada has pursued a panoply of programs. The effect on these pro-productivity policies growth on innovation and ultimately productivity is uncertain and requires detailed evaluations.

Box 1: Key Canadian Federal Government Policies to Support Innovation

- **Global Innovation Clusters**

These clusters are allocated funding to accelerate the commercialization and adoption of AI technologies and other innovative solutions.

- **Strategic Innovation Fund**

This fund invests in innovative businesses to help them scale up, research, develop, and commercialize cutting-edge ideas.

- **Innovative Solutions Canada**

This program partners with eligible small businesses and innovators to help with early development, testing, and validation of prototypes that solve challenges.

- **NRC IRAP**

The National Research Council's Industrial Research Assistance Program (IRAP) provides financial support to small and medium-sized enterprises (SMEs) for technology-driven innovation.

- **CanExport Innovation**

This program supports Canadian organizations with research and development (R&D) for a single technology, including funding for collaborative R&D agreements with international partners

- **Scientific Research and Experimental Development Tax Incentive Program**

This program provides tax credits for R&D activities, encouraging businesses to invest in innovation.

- **Mitacs**

This organization receives funding to support research and development in various fields.

- **Pan-Canadian AI Strategy**

This strategy aims to bridge Canada's world-class talent and research capacity with programs to enable commercialization and adoption of AI technologies.

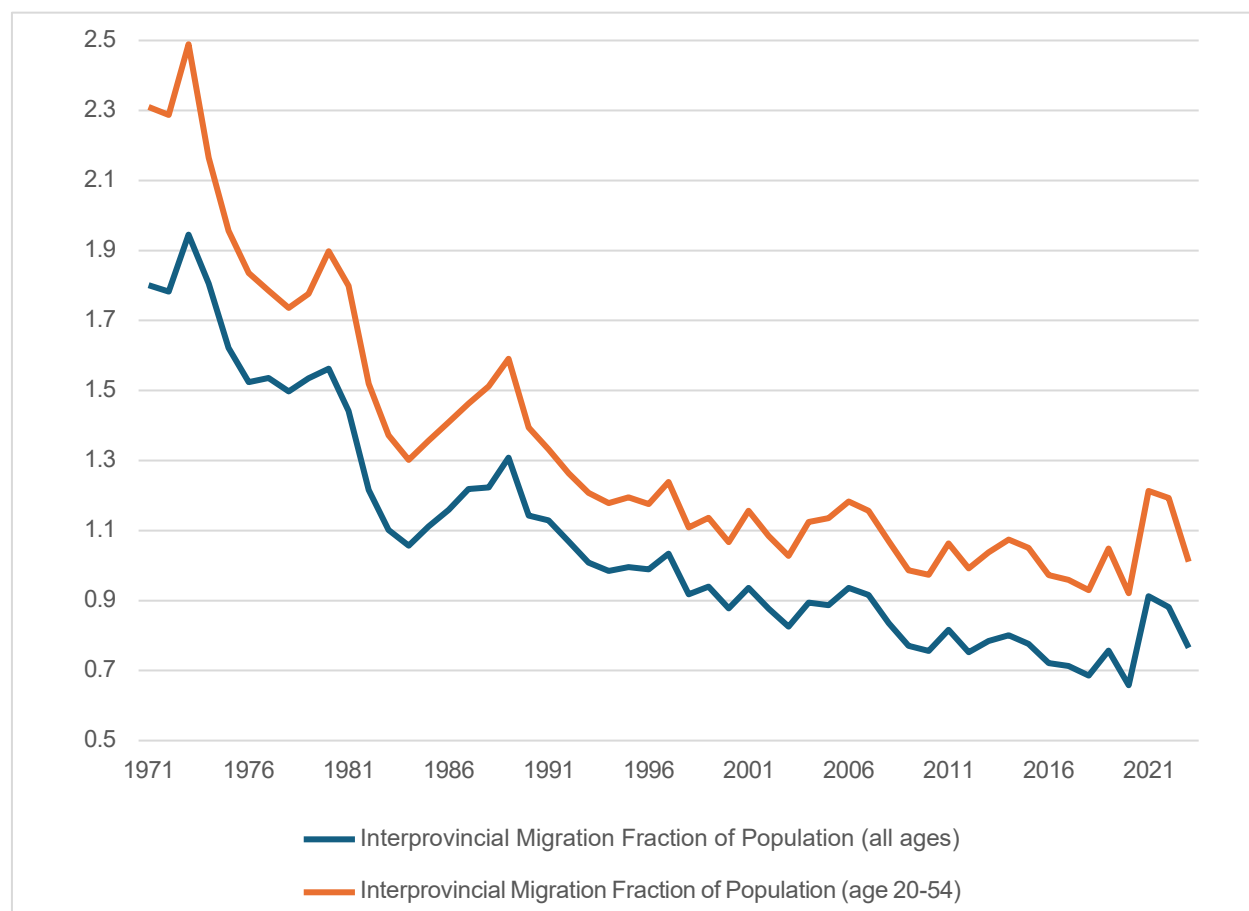
- **National Quantum Strategy:** This strategy supports research and development in quantum technologies.
- **The Government of Canada's Digital Ambition:** This initiative focuses on deploying modern and accessible workplace tools and devices, as well as digital communication and collaboration tools.

Structural Change

The Canadian economy is dynamic and has experienced extensive structural change over the decades, both in terms of the industry and provincial distribution of output and employment, the growth of large cities, and the birth and death of new firms and industries. For example, manufacturing has fallen from over 25 per cent of total employment in 1961 to 9 per cent in 2024. The population of Newfoundland and Labrador fell from 568 thousand in 1991 to 510 thousand in 2021. Market forces have been driving these changes. For example, Canada's considerable interprovincial migratory flows reflect the shifts in employment opportunities (Chart 11). Historically, high oil prices attract tens of thousands of workers to Alberta from other provinces and falls in oil prices result in thousands leaving the province.

Government policies at times have obstructed structural change. The most obvious examples are supply management marketing boards for dairy and poultry products that require the purchase of quota to enter the industry. A second example is government-run Canada Post, which has not adjusted its workforce to offset the decline in revenue resulting from the fall in regular mail due to the rise in electronic communications.

Chart 11: Interprovincial Migration Fraction of Population, Total and 25-64 years old, 1971-2023 (per cent)



Markets and resource allocation

Policies aimed at markets and resource allocation include policies and regulation in financial markets, product markets, labour markets and competition policy.

Bad public policy can be detrimental to economic development in general and productivity growth in particular. Fortunately, historically in Canada economic policies, with some exceptions, have generally been business-friendly and this situation has been improving over time. For example, the Fraser Institute's latest report *Economic Freedom of the World* (Fraser Institute, 2024) ranked Canada 8th out of 166 countries in 2022 in terms of economic freedom, second among G-7 countries, Canada most appropriate peer group, after the United States at fifth. (Japan was 11th, the UK 12th, Germany 16th, France 36th, and Italy 51st). The most recent Heritage Institute report on its Index of Economic Freedom in 2025 ranked Canada 14th out of 184 countries and first out of the 32 countries in the Americas region and first in the G-7, 9 tied with Germany, followed by the United States at 25th, the UK (28th), Japan (31st), France (52nd) and Italy (57th). Canada absolute score on the index has improved over time from 70 in 1995 to around 80 in from 2008 to 2014 and has since dropped off to 75.5 in 2025.

Financial markets are generally well regulated in Canada as seen by the low level of disruption experienced during the 2008-09 financial crisis. Financial institutions are always looking to loan capital to worthy clients and have sophisticated methods for evaluation credit worthiness. If there is a gap in the access to capital, they will in principle try to fill it. Those seeking access to capital and cannot obtain it on the other hand claim this failure reflects gaps in access to capital.

Studies provide evidence to support both perspectives, which makes it difficult to definitively conclude that no segment of Canadian businesses experience barriers in obtaining capital. To be sure, certain groups such as start-ups seeking venture capital, Indigenous peoples, racialized groups, and women, at times experience difficulty accessing capital for various reasons. But there is no strong evidence that overall Canadian businesses are poorly served by the financial system, which includes government financial agencies that provide access to capital, such as the Business Development Bank (BDC), Export Development Canada (EDC), and various venture capital programs.

A Bank of Canada study (D'Souza et al, 2020) identified a corporate investment gap of \$100 billion that accumulated in Canada from the 2007-2009 financial crisis to the late 2010s, due to an unexplained shortfall in corporate investment. The study found that the corporate sector's allocation to investment dropped from 50 cents of every dollar earned in the pre-crisis period to 25 cents in the post-crisis period. This resulted in increased cash holdings, and dividend payments, and decreased issuances of equity. The situation strongly suggests that an inability on the part of corporations to obtain funds because of a lack of access to capital is not the reason for reduced investment.

According to the most recent OECD Product Market Regulation Index (OECD, 2024a), Canada in 2023 had a rating of 1.42 out of 5 (the lower the number, the fewer the regulatory barriers), down from 1.48 in 2018 and higher in earlier years. The downward trend in this index is viewed as

positive for productivity. Canada was slightly above the OECD average of 1.34 in 2023 and ranked 5th in the G-7 with fewer barriers than Japan and the United States.

The composite OECD Product Market Regulation Index is composed of 17 specific indicators. It is interesting to note Canada's rankings out of 43 countries in these indicators: first (lowest) in administrative requirements for new firms and tariff barriers; 6th in barriers to competition in energy, transport and E-communications; 10th in lobbying; 12th in barriers to competition in professions and retail; 14th in consulting on legislation; 16th in assessment of impact competition; 20th on barriers to trade facilitation; 24th on retail price regulation; 25th on barriers to entry in energy, transport and E-communications; 26th on public ownership; 30th in barriers to entry in professions and retail; 32nd in administrative and regulatory barriers; 36th on licences and permits; 39th in public procurement and 40th in barriers to FDI and governance of state-owned enterprises (SOEs).

The Canadian labour market on many metrics is relatively flexible and in general operates efficiently. The labour force participation rate is high, including that for women, the minimum wage as a share of the average wage is not out of line with most other OECD countries, workers are willing to follow employment opportunities, as shown by the extent of interprovincial migration, although international comparisons of internal migration are difficult because of differences in the size of jurisdictions.

The OECD indicators of employment protection are synthetic indicators of the strictness of regulation on dismissals and the use of temporary contracts. According to the most recent data, Canada has the second lowest strictness of employment protection in the OECD, after the United States. While low employment security may be a negative factor for worker well-being, especially in a high-unemployment environment, the ability of firms to adjust the size of their workforce in response to market forces can be positive for productivity.

The entry of new firms or entrepreneurs into the market is often considered an indicator of the dynamism of the economy, contributing to productivity growth as new firms may be more innovative. The entry rate of new firms in Canadian business sector has plummeted from 24.5 per cent in 1983-1984 (MacDonald, 2014) to 7.3 per cent in 2021 (Gu, 2024). This development in principle could have contributed to the secular decline in productivity growth. However, firm dynamics are much more than firm entry rates and include firm turnover, changes in market share, and employment reallocation. More importantly, Statistics Canada has not provided an explanation of the massive fall in the business entry rate from one in four businesses being new in 1983/1984 to only one in 14 in 2021. These estimates are based on administrative data and definitions can change over time. The two-thirds fall in the entry rate could be overstated. The magnitude of the fall appears inconsistent with the trend in the number of self-employed in Canada from the Labour Force Survey, which has fallen much less.

Greater competitive intensity is generally associated with greater innovation and higher productivity growth. There are different perspectives on trends in competition in Canada. One comprehensive study by the Competition Bureau (2023) found that Canada's competitive intensity has fallen over the past two decades years, Specifically, the "Bureau determined that:

- Concentration rose in the most concentrated industries, and the number of highly concentrated industries increased;
- The largest firms in industries are being less challenged by their smaller competitors;
- Fewer firms have entered industries overall, suggesting many industries have become less dynamic; and
- Profits and markups have both risen overall, and these increases were generally greater for firms already earning higher profits and markups.”

These trends suggest that policy frameworks have not kept up with structural change and that reforms to promote entry, reduce barriers to scaling for young firms, and modernize competition law enforcement may improve productivity.

Internationalization

Policies aimed at internationalization include trade policies, foreign direct investment (FDI) policies, and international migration policies.

Trade policies

Until the Trump tariffs in 2025, the Canadian economy has been characterized by a high degree of openness in terms of international trade, especially within North America. According to the OECD Product Market Regulation Indicators, Canada has the lowest tariff rate in the OECD. Canada entered into a free trade agreement with the United States in 1989, with the agreement expanded to include Mexico under the North American Free Trade Agreement (NAFTA) in 1994, and the agreement was renegotiated in 2018 as the Canada-United States-Mexico Agreement (CUSMA). In 2016, Canada concluded the Canada-European Union Comprehensive Economic and Trade Agreement (CETA). Overall, Canada has entered into 15 Free Trade Agreements (FTAs) covering 51 countries and 1.5 billion consumers. Additionally, Canada was the only G7 economy with comprehensive free trade access to the entire G7 and the European Union.

Internal trade restrictions within Canada are currently a major focus of economic policy. Some studies have found that their removal would be a significant source of gains in output and productivity. An IMF study (Alvarez et al, 2019) suggested that complete liberalization of internal trade in goods can increase GDP per capita by about 4 per cent. These studies are generally based on theoretical models of economic behaviour and seldom identify and document the specific barriers to internal trade whose removal would boost economic activity significantly.

There is no doubt that interprovincial barriers to trade in goods and services, such as provincial procurement policies, lack of harmonization and mutual recognition in regulations across provinces, restrictions of production and trade related to marketing boards and rules on the consumer purchase of alcohol products from other provinces exist in Canada. Their elimination is desirable from a pro-productivity policy perspective.

Statistics Canada’s Canadian Survey of Interprovincial Trade (CSIT) found that less than 10 per cent of firms identified a specific regulatory barrier preventing them from engaging in

interprovincial trade. Transportation costs and lack of interest or knowledge were by far the most important reasons given by firms for not engaging in interprovincial trade.

The elimination of internal trade barriers in Canada is no doubt a pro-productivity policy that could contribute to a one-time level increase in productivity in Canada and is highly desirable. But the number of industries directly affected by major regulatory barriers impeding interprovincial trade appears relatively limited. Indeed, if the regulatory trade barriers could be eliminated, a big if as provincial buy-in is required and attempts to obtain this agreement have been on-going in Canada since the 1990s, the productivity gains would likely be relatively modest, as concluded in a recent University of Montreal study (Deslaurier, Gagne and Pare, 2025).

Foreign direct investment

Canada has historically been open to direct foreign investment (FDI) and has had a high degree of foreign ownership of its economy, especially US ownership. In 2024, the book value of the stock of FDI in Canada was \$1,502 billion (CAD). Concerns about the high degree of FDI in Canada were raised in the 1960s and 1970s. In response, measures were put in place, including required government approval of foreign takeovers above a certain level and rules preventing foreign ownership of firms above a certain limit in strategic sectors such as telecommunications and airlines.

These de jure restrictions result in Canada scoring poorly in international measures of the market orientation of FDI, such as the OECD Product Market Regulation indicators. Government officials point out that governments in many countries do not allow important firms to be taken over by foreigners so a comparison of Canada's de jure rules on FDI and the de facto prohibition by other governments of major enterprise takeovers by foreigners is unfair.

Canadian businesses invest massively abroad. In 2024, Statistics Canada (Table 36-10-0008-01) reports that the total book value of the stock of Canadian direct investment abroad was \$2,473 billion, up more than 30 times from \$74 billion in 1987. In contrast, the book value of FDI in Canada in 2024 was \$1,502 billion, up 15 times from \$106 billion in 1987, but only around 60 per cent of Canadian FDI abroad.

Canadian FDI in North America (separate figures do not appear available for the United States, but this country accounts for the lion's share of Canada's North American FDI) in 2024 was \$1,335 billion compared to only \$686 billion FDI from North America in Canada. Indeed, Canadian FDI in the North America (United States and Mexico) was \$34,000 for every Canadian, over 20 times the FDI in Canada for each resident of the United States and Mexico (\$1,700).

These FDI figures strongly suggest that Canadian firms are eager to pursue investment opportunities abroad, possibly to the detriment of investment in Canada.

Labour Mobility

Immigration is a source of human capital, which was discussed in the first section of the four pro-productivity policies.

In addition to internal trade barriers, interprovincial barriers to labour mobility have also been identified as a drag on productivity growth in Canada. As discussed earlier, Canada already has a

significant degree of interprovincial migration in response to changing employment opportunities. Workers in occupations subject to mandatory licensing by provincial occupational organizations, such as medical and teacher associations, can be prevented from moving to or working in (remote work or commuting) another province because their credentials are not mutually recognized. These restrictions impede mobility and the availability of workers, but the overall effect on long-term interprovincial labour mobility (as opposed to short-term delays required to obtain the needed occupational licensing) is likely small.

Again, while it is desirable to pursue the pro-productivity policy of removing interprovincial labour mobility barriers related to occupational licensing, these barriers, which in most cases have always existed, are highly unlikely to have contributed to the secular decline in productivity growth in Canada. Their suppression would likely have minimal effects on productivity, in the unlikely scenario that provincial occupational associations agreed to automatic mutual recognition of the qualifications of persons trained in other provinces.

Institutions and Frameworks

The effectiveness of pro-productivity policies depends in large part on the institutions and frameworks a country has developed. According to the TPI typology, these include the quality of the institutions, government capabilities and macroeconomic policy. Canada in general does well in these areas.

Quality of institutions

The overall quality of the institutions that underlie economic growth in Canada is strong. The financial system is well developed, trustworthy, and effective in serving the needs of those seeking access to capital reliably. Regulations agencies such as OSFI and CRTC generally have well defined mandates and are effective in implementing them.

Institutions in Canada have low levels of corruption, as seen as Canada's ranking of 15th out of 180 countries in 2024 in Transparency International's Corruption Perceptions Index, although down from 8th place in 2015.

Canada ranked 14th out of 180 countries in 2025 in the Chandler Good Government Index produced by the Singapore-based Chandler Institute of Governance (2025). Canada ranked 5th for strong institutions, 7th in leadership and foresight, 10th in attractive marketplace, 14th in robust laws and practices, 19th in global influence and reputation and in financial stewardship, and 23rd for helping people rise.

Government capability

In terms of government capability, Canada does well. The World Bank Government Effectiveness Index captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such

policies. In 2023, Canada ranked 18th out of 193 countries in terms of government effectiveness and was second in the G-7 after Japan.²

Macroeconomic policy

Canada's macroeconomic policy has largely provided a stable economic environment for business decision making since the 1990s. In terms of monetary policy, the Bank of Canada has pursued a policy of price stability with a Consumer Price Index (CPI) inflation target of 2 per cent since the early 1990s. This policy was generally viewed as highly successful until the brief revival of inflation in 2022 and 2023 following the pandemic.

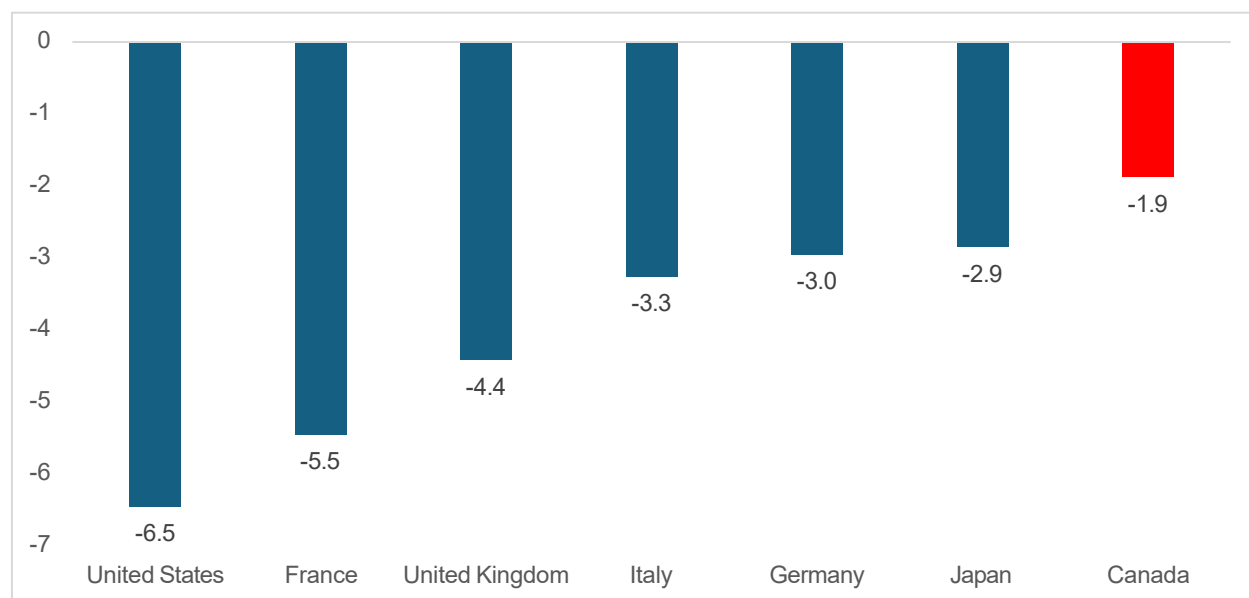
In terms of fiscal policy, the federal government took measures to reduce the deficit in the mid-1990s and since then has recorded either surpluses or relatively small deficits as a share of GDP. Indeed, the IMF projects that Canada will have the smallest general government deficit in 2025 in the G-7 (Chart 12). Canada is also projected to have in 2025 the smallest share of net general government debt as a share of GDP in the G-7 (Chart 13).

The share of total tax revenue in GDP in Canada, at 34 per cent in 2022, while high compared to the United States (28 per cent), is low compared to most European countries and second lowest in the G-7 (Chart 14). It has been quite stable over time.

There has been no overall deterioration on the strength of institutions, the capability of government, or macroeconomic stability in Canada in recent decades. This means the secular decline in productivity growth cannot be pinned entirely on government. Going forward, there is always room for improvement. But the high quality of governance in Canada means that measures to improve institutions and policy frameworks, while highly desirable, will not move the needle much on trend productivity growth.

² https://www.theglobaleconomy.com/rankings/wb_government_effectiveness/

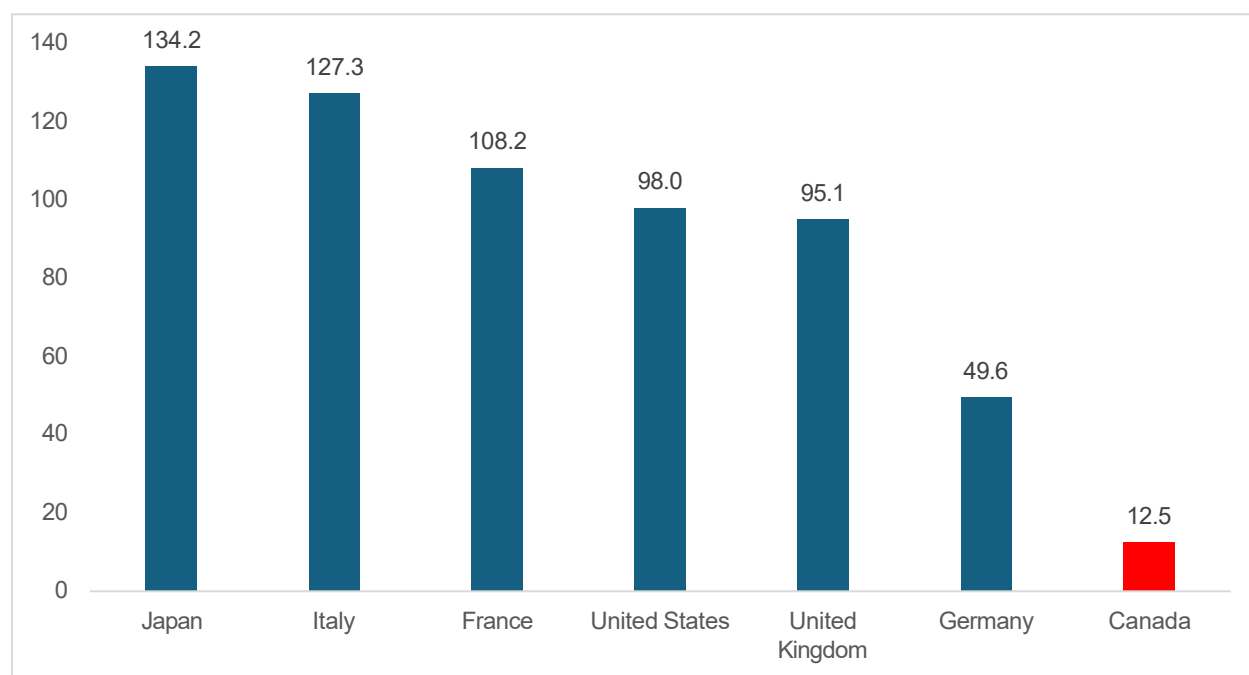
Chart 12: General Government Fiscal Balance, 2025: Overall Balance Projection, Countries (Percent of GDP)



Source: IMF Fiscal Policy Monitor Database, April 2025

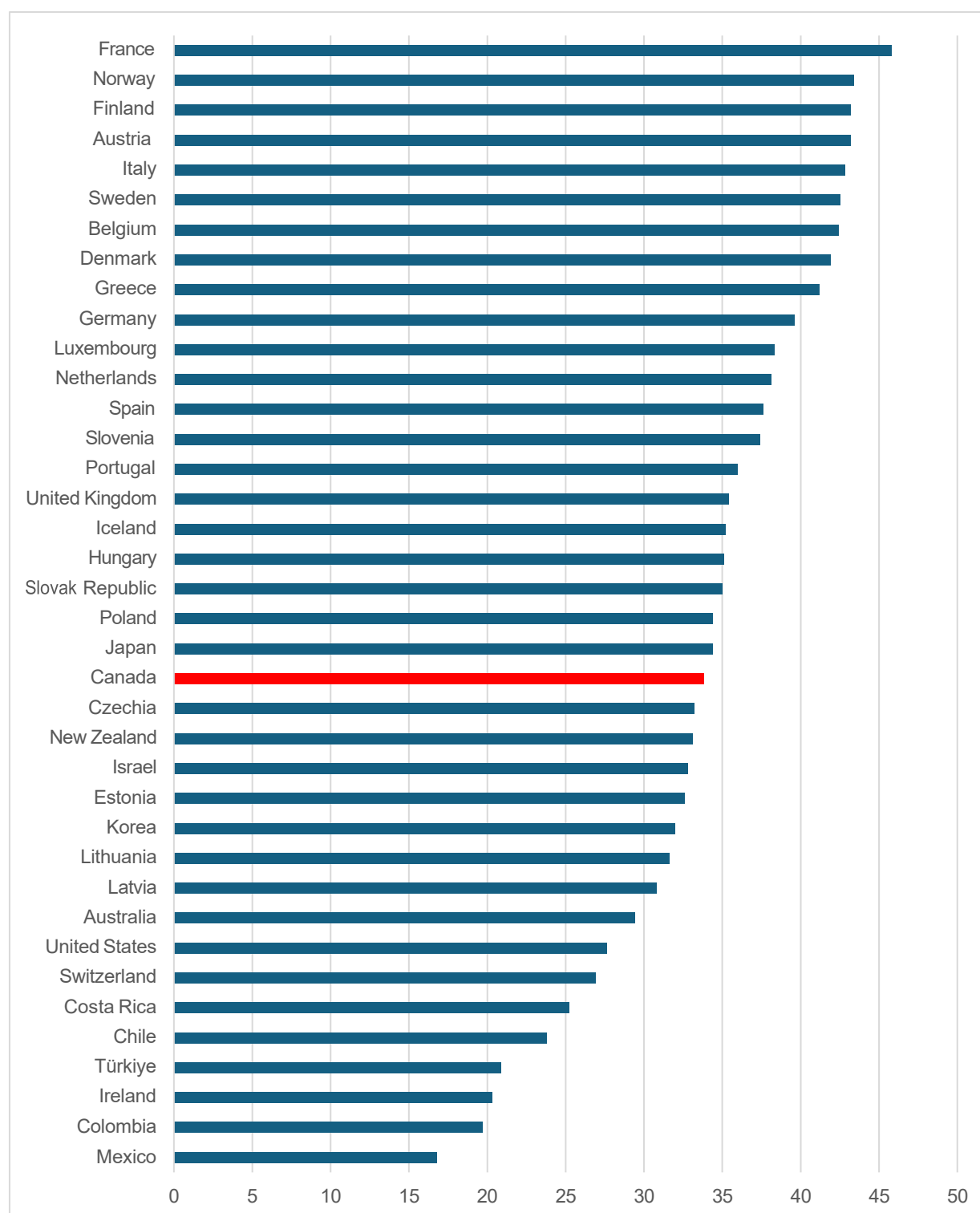
Note: All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on Data availability. Projections are based on IMF staff assessments of current policies.

Chart 13: General Government Debt, 2025 Projection, G7 Countries (Percent of GDP)



Source: IMF Fiscal Policy Monitor Database, April 2025 **Note:** All country averages are weighted by nominal GDP converted to US dollars (adjusted by purchasing power parity only for world output) at average market exchange rates in the years indicated and based on Data availability. Projections are based on IMF staff assessments of current policies.

Chart 14: Share of Total Tax Revenue in Nominal GDP, OECD Countries, 2022 (per cent)



Source: OECD Data-Comparative tables of countries in the global database

Section 3. Four Periods of Productivity Growth in Canada

The third part of the paper focuses on four specific periods of policy change and reforms that are of particular importance from the perspective of productivity. The periods are the mid to late 1960s, the second half of the 1980s, the early 2000s, and the current period 2021-2024. This section explores the role of pro-productivity policies in supporting or holding back the country's productivity growth. This section assesses specific examples of the efficacy of the pro-productivity policies outlined in the second part of the paper.

Mid to late 1960s

The 1960s was characterized by robust productivity growth, reflecting strong aggregate demand and rapid underlying technical progress. Pro-productivity policies also contributed to this favorable situation. Four specific policies can be highlighted.

The first relates to macroeconomic policy. In the immediate postwar period Canada adopted a fixed exchange rate, with the value of the Canadian dollar pegged as equal to that of the US dollar. Because of weak economic activity in the early 1960s, the authorities realized that the Canadian dollar was overvalued. A decision was made to adopt a flexible exchange rate, and the dollar immediately fell to \$0.92 US. Canada was one of the first countries to move to a flexible exchange rate regime and it has served the country well over time as a stabilizer of economic activity.

The lower exchange rate stimulated exports and restrained imports, fueling demand and economic growth. Economic growth can be decomposed into increases in hours worked and in output per hour. The long-term productivity elasticity, defined as the increase in output per hour for a given change in demand or real output, is around 0.5. This means that when real output growth increases from say 3 per cent per year to 5 per cent, there would be associated with this increased output a 1 percentage point rise in labour productivity, due to greater economies of scale, spreading of overhead costs and learning-by-doing, and less slack in the production process. This is what happened in the 1960s.

The second pro-productivity policy of the 1960s was the establishment of the Canada-US Auto Pact in 1965. Before then, the American auto companies operated branch plants in Canada to get behind tariff walls. The Auto Pact removed these tariffs and led to the complete integration on vehicle production across Canada and the United States. Instead of an auto assembly plant in Canada producing a large number of different products for the Canadian market, it produced one product for the integrated Canadian and US market, benefiting from economies of scale. The Big Three auto companies invested massively in Canada because of lower costs of production. Labour productivity in the sector improved significantly.

In the early 1960s Canada, the threat of job loss because of automation led to discussions of productivity. The federal government created a national commission on productivity, which evolved into the Economic Council of Canada (ECC). This economic research and consensus-building body, formally established in 1963, was given a mandate to develop policies and make recommendations to raise the standard of living of Canadians. Productivity was a key part of their research agenda and the ECC published many solid studies on the topic.

It is always difficult to assess the impact of advisory bodies on policies, but the ECC, with its relatively large staff of well-trained economists, was considered an influential player in economic policy formation discussions in Canada from the 1960s to the 1980s. The organization had a strong productivity lens. Unfortunately, in 1992 the federal government shut down the ECC because it released a report on Quebec separation that was not well received by the Prime Minister. Since then, no economic research-oriented body with comparable resources, mandate, and profile has existed in Canada. Many see this gap in the country's economic policy advisory ecosystem as detrimental for the development of effective pro-productivity policies.

Calls have been made for the re-establishment of a well-resourced, government-funded, independent, expert-driven, economic research organization with a strong productivity focus (e.g. Drummond, 2021). The impact of such an organization for the development of better pro-productivity policies may be small, but in a \$3 trillion economy such as Canada, even a very small increase in productivity, say 0.01 per cent, would generate an increase in output (\$300 million) and tax revenue which would more than offset the cost of such a body. Spending on research that results in greater knowledge and hence understanding of productivity drivers and policies is always a cost-effective investment.

The fourth pro-productivity policy of the mid to late 1960s was the establishment of community colleges. These post-secondary institutions represented an alternative path to universities for youth who wanted to develop technical skills needed by industry. Canada's top ranking among OECD countries (Chart 5) for the proportion of the 25-64 age group with tertiary education is a direct result of this policy. As education is a provincial jurisdiction in Canada, this policy was largely implemented by provincial governments, not the federal government.

Second half of the 1980s

The second half of the 1980s was a period of weak productivity growth (as least compared to the pre-1973 period, not the post-2000 period) that Canada entered into after 1973. The Conservative government elected in 1984 pursued three key policies to increase productivity. In the late 1980s, it negotiated a free trade agreement with the United States to boost productivity growth in the manufacturing sector. It also pursued a deregulation agenda to make markets more competitive, for example selling off a large number of Crown Corporations. Finally, it replaced the Manufacturers Sales Tax with a value-added tax, the Goods and Services Tax (GST).

Based on the success of the Auto Pact and more generally the overall positive impact of the GATT tariff cuts on economic activity in the immediate postwar period, the federal government in the mid-1980s put forward a proposal for a Free Trade Agreement with the United States. Because of concerns about American domination, the proposal was vigorously debated especially during the historical 1988 free trade federal election. The free traders prevailed and the Canada-U.S. Free Trade Agreement (FTA) was implemented in 1989.

The advocates of the FTA promised both substantial employment and productivity gains, greatly overselling the benefits of the agreement. Both economic and productivity growth were very poor in the early 1990s, largely due to the 1990-1991 recession caused by high interest rates instituted to dampen inflationary expectations and establish price stability. The FTA appears to have had

minimal effect on aggregate productivity growth, despite the claims that it would. This showed the danger for the credibility of economists in exaggerating the benefits of pro-productivity policies to convince the public of their merits.

The FTA did have positive effects on labour productivity in some manufacturing industries. The industries with the largest tariff cuts saw considerable productivity improvement (Trefler, 2004). But the overall productivity effects in manufacturing, combined with the relatively small size of the sector in the total economy, were not sufficient to boost aggregate productivity. Labour productivity growth in manufacturing was in fact no faster after FTA was implemented than before implementation. Output per hour in Canadian manufacturing advanced at a 2.5 per cent average annual rate from 1989 to 2000, slightly below the 2.6 per cent rate from 1981 to 1989 (Statistics Canada Table 36-10-0305-01).

The second pro-productivity policy implemented in the second half of the 1980s was the privatization of several Crown Corporations. The 1980s, under the international intellectual leadership of Ronald Reagan and Margaret Thatcher, saw a shift toward more-market-oriented policies. If the private sector could run a government owned and run enterprise or Crown corporation, such as a railway (Canadian National), an airline (Air Canada), an aircraft manufacturer (De Havilland and Canadair) or an oil company (Petro-Canada), then government should privatize the operation. Tools other than public ownership such as regulation would be used to achieve public policy goals, so there was no public policy rationale for retaining the enterprises in government hand. It was also believed that private sector managers were generally more efficient than public sector managers as incentives structures, including those related to pay were more conducive to productivity advance in private than in government-owned corporations. The evidence on the impact of privatization of Crown Corporation on productivity in Canada is somewhat mixed, although most studies show positive productivity effects. For example, Laurin and Bozec (2001) found a positive productivity effect from the privatization of the Canadian National Railway. Gillen and Oum (1997) also found a positive productivity impact from the privatization of Air Canada. Levac and Wooldridge (1997) revealed a more nuanced productivity picture in their analysis of the privatization of a number of Canadian Crown corporations, with the productivity impacts varying across privatizations and the time periods analyzed.

The second half of the 1980s saw detailed discussion of tax reforms. The most important change proposed was the replacement of the invisible Manufacturers Sales Tax by a new highly visible value added tax called the Goods and Services Tax (GST). This tax, while controversial and poorly understood by the public, was implemented in 1991.

The GST can have mixed impacts on productivity. While it can incentivize investment and increase capital intensity, it can also lead to inefficiencies and deadweight losses. By removing tax from productive inputs like machinery and equipment, the GST can make investment more profitable, potentially leading to a greater stock of capital and improved technology in the workplace, which can translate to higher productivity per worker and greater output. As firms invest in new equipment, they are likely to choose the latest and most technologically advanced machinery, which can further enhance productivity. The GST can have negative effects on productivity through deadweight loss and compliance cost. Sales taxes, including the GST, can

create a wedge between the price paid by consumers and the price received by sellers, leading to inefficiencies and lost output. The costs of administering and complying with tax laws can be significant, diverting resources from more productive uses. The net effect of the GSI on productivity was likely positive, but small.

In 1985, the federal government, as part of its suite of policies to improve productivity performance, established a unique institution in Canada, the bipartite Canadian Labour Market and Productivity Centre (CLMPC). This organization brought together the top leaders of business associations and labour union to work together to find common ground on productivity and labour market issues, which were deemed closely connected.

The CLMPC was to play a crucial role in understanding and addressing productivity and labour market challenges in Canada. By researching and analyzing the Canadian labour market, the CLMPC was to identify skill gaps, imbalances between skills demanded by employers and those possessed by the workforce, and the impact of these factors on firm performance and overall economic productivity. This research was to inform policy recommendations and initiatives aimed at improving workforce skills and enhancing productivity. Many saw the CLMPC as having the potential, through its labour market partners and their close relations with governments, to be a vital resource for understanding the complex dynamics of the Canadian labour market and its impact on productivity, ultimately contributing to efforts to boost economic growth and improve the well-being of Canadians.

Unfortunately, the CLMPC was unsuccessful in achieving its extremely ambitious mandate. The organization was downsized by two thirds in 1995 and closed its doors permanently in 2006 when the business representatives decided to leave. Reasons for this failure of this innovative initiative in institution building were manifold. They include inadequate resources, poor executive leadership, the decentralized nature of the Canadian federation, the decline in union density and hence union influence, strident ideological differences between key labour and business leaders who were CLMPC players, and lack of interest on the part of government in implementing consensus recommendations made by business and labour groups, as these recommendations were often considered self-serving and not in the overall national or public interest.

Early 2000s

The late 1990s were exciting times for the ICT sector in Canada. The Canadian firm Nortel was a world leader in fibre optics and had a massive stock market valuation. Productivity growth had picked up as the productivity-enhancing effects of ICT finally seemed to have arrived. The situation changed drastically in the early 2000s with the demise of Nortel and the return to much weaker productivity growth, a slowdown not observed in the United States.

The federal government was concerned by these developments and decided a focus on innovation was needed. The 2000 federal budget entitled “Making Canada’s Economy More Innovative” (Finance Canada, 2000) put forward a number of measures to support research and innovation, including major new investments in the Canada Foundation for Innovation, the Canada Research Chairs initiative, and Genome Canada. In 2002, the Ministers of Industry and Human Resources Development released Canada’s Innovation Strategy in two papers: *Achieving Excellence:*

Investing in People, Knowledge and Opportunity and Knowledge Matters: Skills and Learning for Canadians.

The innovation strategy put forward a number of knowledge performance targets (Government of Canada, 2002), to be achieved through programs such as Technology Partnerships Canada (TPC). There targets included the following:

- by 2010, Canada was to rank among the top five countries in the world in terms of R&D performance.
- by 2010, the Government of Canada was to double the amount invested in R&D.
- by 2010, Canada was to rank among world leaders in the share of private sector sales from new innovations.
- by 2010, Canada was to raise venture capital investments per capita to the level of that in the United States.

The innovation strategy was not successful in achieving the above targets. Indeed, as seen in Chart 10, BERD actually fell from 1.2 per cent in 2000 to a low of 0.8 per cent in 2012. This failure related in part to the financial crisis of the late 2000s. More importantly, it showed the difficulty for public policy to influence private sector behavior related to innovation. Despite generous R&D support programs and subsidies, Canadian businesses appear not to have become more innovative.

There was one major Canadian tech success story in the 2000s. The firm Research in Motion made the Blackberry the prime means of communication for global business. Unfortunately, the firm did not innovate enough to compete with the arrival of Apple's iPhone in the late 2000s and early 2010s after which its sales tumbled. Market forces greatly limit the ability of pro-productivity innovation policies to nurture and sustain world class high-tech firms.

The first part of the 2020s

Productivity growth in Canada since 2019 has been abysmal (Haun, 2023 and Haun and Sargent, 2023). This led the Senior Deputy Governor of the Bank of Canada (2024) to call the situation a “national emergency” stating that it was time to “break the glass” to fix the country's productivity problem.

Because of the pandemic in 2020 and 2021, the resurgence of inflation caused by international supply chain problems and labour shortages in 2022 and 2023, the hike in interest rates in 2024 and threat of recession, and the imposition of tariffs by Trump and his threat of annexation in the first half of 2025, the productivity issue has not been as central in policy discussions in Canada as one might have thought given the poor performance. In addition, the focus of attention of Prime Minister Justin Trudeau was not on economic issues, and not on productivity in particular

Productivity is also a hard issue for political leaders to articulate and around which to motivate people. The definition, importance and drivers of productivity are often poorly understood by the public. For some, productivity is associated with working more intensely and with job loss. Unlike for many policy areas, there is no clear path forward to faster productivity growth. Experts differ

on what policies would be most effective in increasing productivity.

Two policies that have recently received considerable attention for their potential to boost productivity are the reduction of barriers to interprovincial trade and labour mobility, and changes to environment assessment and regulation processes to accelerate investments in resource projects. The new Prime Minister Mark Carney has made both these issues a priority and is currently addressing them through legislation.

The labour shortages that hit the Canadian economy in 2022 led to calls from employers for the expansion of the temporary foreign workers program. The government accommodated this request. This is an example of an anti-productivity policy as the influx of cheap labour reduced the incentive for employers to substitute capital for labour. Fortunately, as labour shortages have fallen and unemployment risen, this program has been cut back.

The federal government did announce one initiative to directly address productivity. The Treasury Board in August 2024 created a group to develop metrics for public sector productivity and measures to increase productivity in the public sector. By June 2025 this group had not yet reported.

Looking across these four policy episodes, some patterns emerge. The ambitious, transformation reforms of the 1960s and 1980s—such as flexible exchange rates, free trade with the United States, privatizations, tax modernization, and expansion of community colleges—appear to have supported productivity for a time. By contrast, more recent policy initiatives have been narrower and less transformative, often aimed at stimulating business R&D or digital adoption with modest take-up. Perhaps some firms have successfully lobbied to maintain protections in key sectors and resist foreign competition; competitive intensity has eroded; and some “zombie” firms may be tying up resources that could be reallocated to more dynamic entrants. Canada has also struggled to replace lost technology champions such as Nortel and Blackberry and to keep top talent from moving to the United States. These forces may have muted the impact of otherwise well-designed policy reforms.

Section 4. A Forward-Looking Perspective on Productivity Growth and Pro-Productivity Policies in Canada

The fourth part of the paper provides a forward-looking perspective on pro-productivity policies, indicating the areas potentially in need of policy reform in Canada,

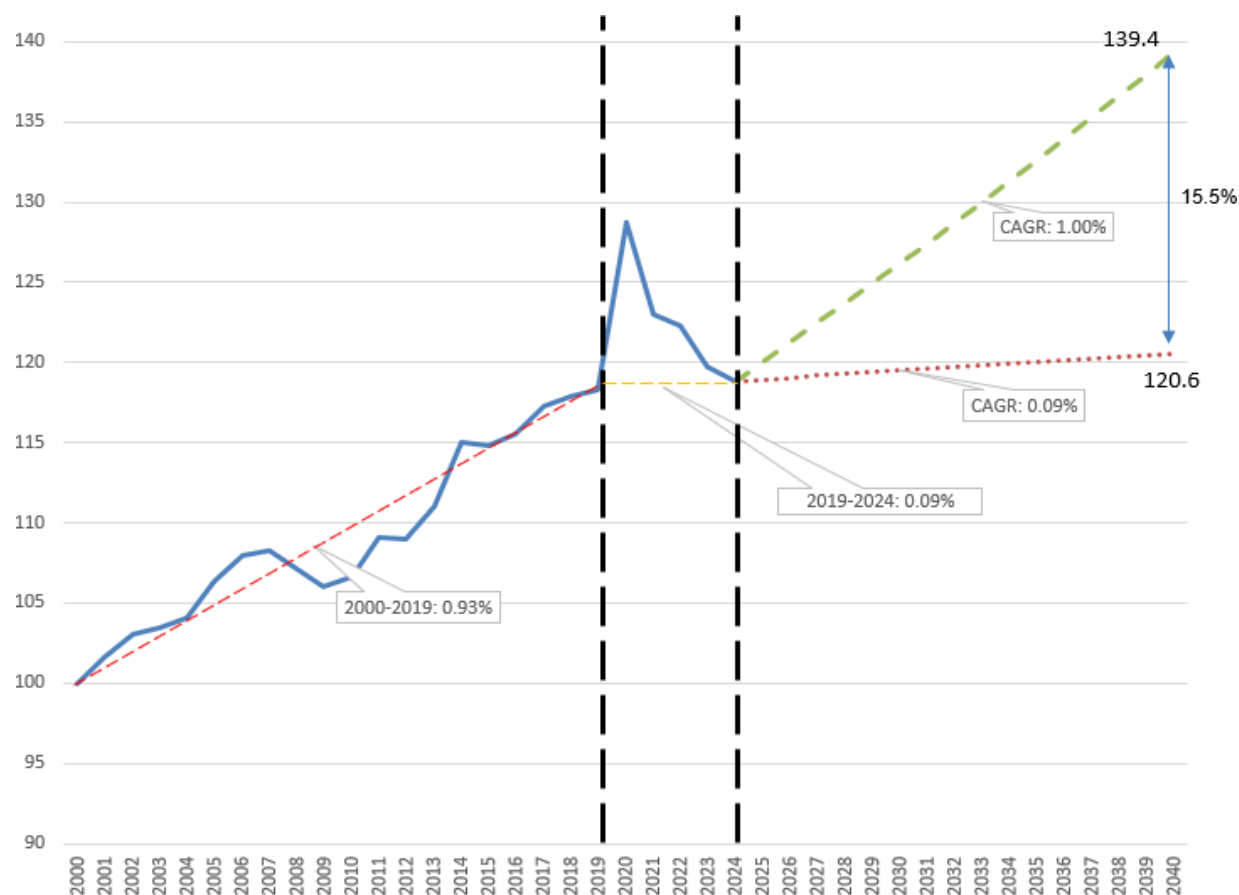
The importance of achieving 1 per cent productivity growth

It is imperative for Canadian living standards that the economy return to the trend labour productivity growth of the 2000s and 2010s, mediocre as it was by historical standards, and not continue on the productivity path of the last five years. This section illustrates why this is so.

From 2000 to 2019 output per hour in the Canadian business sector advanced at a 0.93 per cent average annual rate (Chart 15). From 2019 to 2024 the growth was only 0.09 per cent. The key issue is whether Canada after 2019 suffered a structural downward shift in trend labour productivity growth that will continue or whether the recent abysmal performance has been a short-to-medium deviation from the underlying productivity trend of around 1 per cent related to the

pandemic and its aftermath, with productivity growth now expected to return to its 2000-2019 trend. Chart 15 shows the implications for future productivity growth of these two productivity paths forward. Projecting the 2019-2024 productivity growth of 0.09 per cent per year forward to 2040 gives an output per hour index of 120.6 (2000=100), barely above that of 119 in 2024. Projecting the 2000-2019 productivity growth of roughly 1.0 per cent per year forward to 2040 gives an output per hour index of 139.4 (2000=100), 15.5 per cent greater than that of the low productivity growth scenario. Given that labour productivity is by far the most important driver of increases in living standards in the long run, these two productivity scenarios have dramatically different implications for living standards, as defined by GDP per capita (Chart 16). Assuming that average hours of work, the employment rate, and the working age population/total population ratio remain unchanged at their 2024 values and that total economy output per hour growth is the same as that of the business sector, the weak productivity scenario translates into only a 1.4 per cent increase in real GDP per capita by 2040 relative to 2024. In contrast, the 1 per cent productivity scenario results in GDP per capita in 2040 being 17.3 per cent higher than in 2024. A future productivity path of a historically tepid labour productivity growth of 1 per cent leads to GDP per capita of \$62,716 (2017 dollars) in 2040, 15.5 per cent or \$8,641 (2017 dollars) higher than a productivity path based on 2019-2024 trends (\$54,255).

Chart 15: Business Sector Labour Productivity Trends and Projections for Canada, 2000-2040 (Compound annual growth rate)

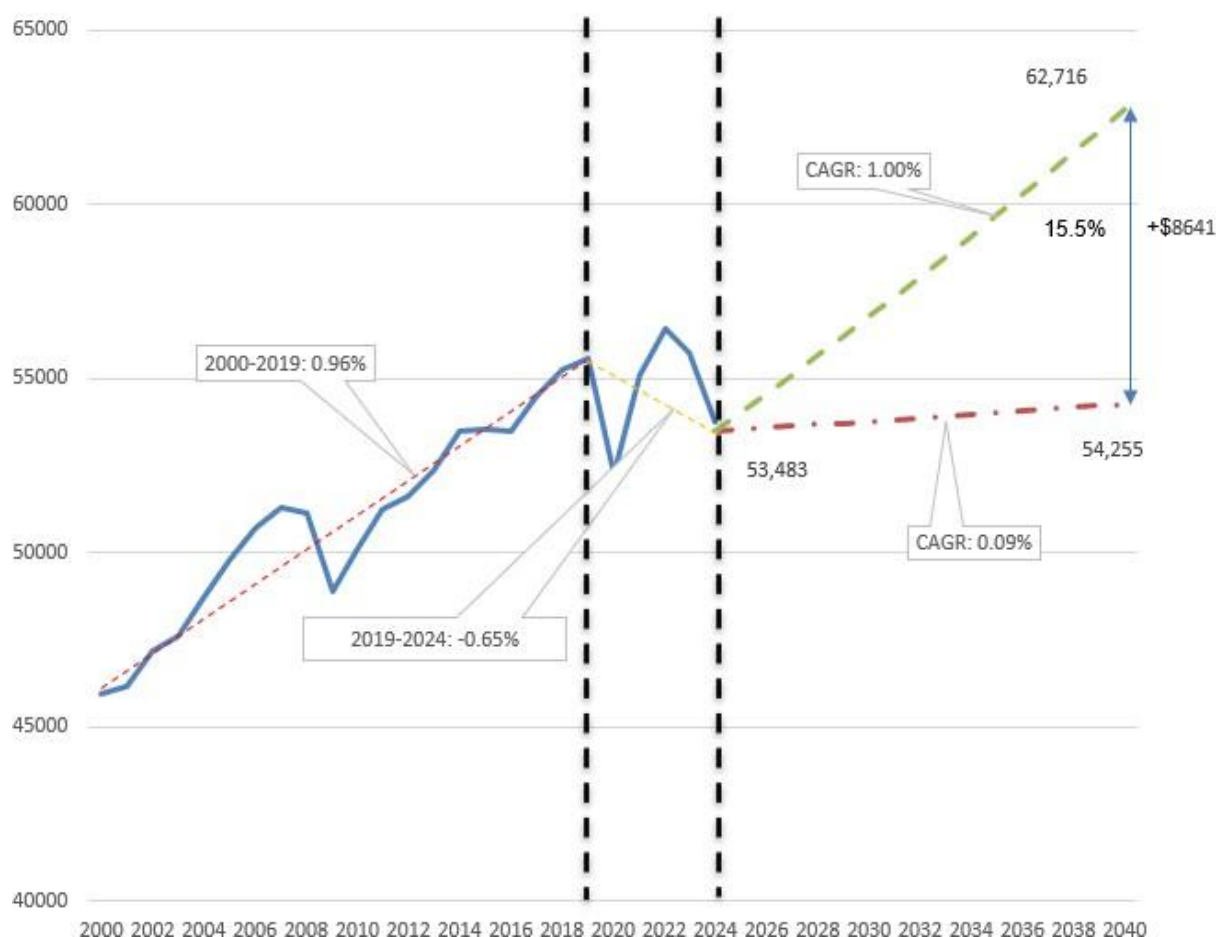


Source: Statistics Canada Table: 36-10-0480-01 and Table: 36-10-0206-01.

Pro-productivity policies going forward

As noted earlier, productivity is a long-term concept largely driven by the pace of underlying technical progress, which is always on-going in modern economies. For this reason, the 2000-2019 trend labour productivity of around 1 per cent more likely represents the future productivity path of the Canadian economy than the very low productivity growth rate experienced in 2019-2024. Nevertheless, pro-productivity policies are needed to ensure that a minimum of 1 per cent productivity growth, and hopefully more, is achieved going forward. While pro-productivity policies have not been responsible for the secular decline in productivity growth in Canada, they can still potentially contribute somewhat (likely less than 0.5 percentage points per year) to improvements in productivity growth and indeed need to be pursued. This section discusses some of these policies.

Chart 16: Real GDP per Capita Trends and Projections for Canada, 2000-2040 (2017 chained dollars)



Source: Statistics Canada Table: 36-10-0480-01, Table: 36-10-0206-01, Table: 17-10-0005-01 and Table: 14-10-0327-01.

Note: For GDP per capita for the 2024-2040 period are based on the assumption of 0.09 and 1.00 per cent per year growth for labour productivity for that period, respectively. In addition, average hours of work, employment-working age population ratio and working-age-population ratio are assumed to remain unchanged at their 2024 values.

As it is beyond the scope of this paper to put forward a comprehensive agenda of pro-productivity policies for Canada to boost productivity growth, this section will briefly highlight some pro-productivity policies that the authors think important and promising with a focus on regulation, tax policy, technology adoption, and trade diversification. These policies relate to the two key reasons for Canada's weak productivity growth, lack of investment and slow adoption of best practice technologies.

Regulation can be an effective way or tool to achieve public policy objectives, but there can often be trade-offs and unintended consequences. In recent years, the objectives of reducing greenhouse gas emissions and achieving net zero by 2050 and Indigenous reconciliation have assumed much greater importance. Regulatory regimes related to economic development have incorporated these concerns. This has resulted in delays or refusals in approval for major projects such as pipelines, mines, or dams, reducing investment and hence economic (and productivity) growth.

These regulatory barriers have been increasingly recognized. Indeed, the newly elected Liberal Government of Canada headed by former central banker Mark Carney has recently tabled the *One Canadian Economy Act*. An objective of this legislation is to introduce new measures aimed at streamlining approvals for projects of national importance. It creates a framework to select projects of national importance that would benefit from a fast-tracked approval regulatory process. Cabinet would select the projects based on five factors — economic benefits, likelihood of success, advancing the interests of Indigenous peoples, contributing to clean growth and strengthening Canada's autonomy, resilience and security — and in consultation with the provinces, territories and Indigenous rights holders.

Interprovincial trade and labour mobility barriers are also a regulatory issue. While the productivity gains from the removal of these barriers are likely quite small, elimination is highly desirable, although politically challenging. The *One Canadian Economy Act* also addresses this issue by removing duplicative federal standards on inter-provincial trade and recognizing provincial certifications for workers on federal projects. However, provincial governments have a much greater role to play for the removal of trade and labour mobility barriers than the federal government.

Tax policy can influence business investment. As there has not been a major review of Canadian tax policy for many years, now may be the time for such an exercise through the lens of changes that could incent greater business investment. Policies that might be considered include increasing the neutrality of the tax system by reducing tax rates between large and small businesses, elimination of boutique tax credits, simplification of the tax system, tax rate changes to enhance tax competitiveness, increased expensing of business investments, and assessment of the tax credit system for R&D, with potentially a greater role for grants.

The adoption of new technologies is crucial for productivity advancement. Businesses in Canada, especially small and medium sized enterprises, appear to lag other countries in the adoption of best practice technologies. Policies that assist businesses gain knowledge on and learn how to adopt new technologies can have a substantial productivity payoff. However, the development of such policies and programs can be challenging. For example, the well-funded Canada Digital Adoption Program established in 2022 was closed in 2024 due to its inability to operate effectively (Zon,

2024). The development of cost effective, well designed and run, easy to access programs to assist business adopt world class technologies should be a priority to boost productivity growth.

The imposition of the Trump tariffs in 2025 has made the diversification of Canadian trade away from the US market a top policy objective. It is required to ensure that export growth, and hence GDP growth, remains strong. Robust aggregate demand is positive for productivity growth.

Canada has signed free trade agreements such as CETA and CPTPP with many countries. But businesses do not appear to be taking advantage of this access to large markets, possibly because they are unaware of the opportunities. Policies that assist business enter these new markets opened by free trade agreements could in principle have positive effects on exports and indirectly on productivity.

There are of course many other areas where pro-productivity policies could be introduced to potentially enhance productivity growth, including foreign investment restrictions, marketing boards, workplace training, and traffic congestion due to infrastructure bottlenecks in major cities.

Conclusion

As this paper has shown, Canada has attempted to pursue a variety of pro-productivity policies in recent decades. Despite these efforts Canada's productivity performance has gotten progressively worse. Does this mean that pro-productivity policies have failed? Not necessarily. Indeed, Canada's productivity growth would likely have been even worse had these policies not been pursued. What it does suggest is that even the best- practice pro-productivity policies may not be overly effective if the business sector in Canada remains unlikely to undertake the major investments and adopt world class technologies. While a lack of pro-productivity policies can have a serious negative effect on productivity, a suite of pro-productivity policies may only have limited upsides for aggregate productivity growth — if the private sector is unwilling to invest and if the underlying pace of technical progress is weak. This is the situation that appears to have characterized Canada since 2000.

This realistic assessment of the limited potency of pro-productivity policies to boost productivity in already market-oriented economies does not mean that pro-productivity policies should not be pursued. Indeed, every tenth of a percentage point boost to productivity growth that can be garnered from the implementation of pro-productivity policies should be treasured. Rather, a message of this paper is that economists should not oversell the impact of pro-productivity policies, despite the temptation to do so. This was done in the late 1980s in Canada in the debate on the FTA and the consumption tax (GST) which proponents pitched as likely to significantly boost productivity growth. It is being done again with the internal trade barriers, whose reduction is a desirable policy, but with modest positive effects on productivity growth in practice.

What drives productivity is the underlying pace of technological change and investment in both physical and human capital. Pro-productivity policies matter, especially in situations where they have not been well implemented. But unfortunately, they are not likely to be a panacea or silver bullet for productivity growth across well governed rich countries.

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