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## CANADIAN COMPETITIVENESS FOR INFRASTRUCTURE INVESTMENT

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# FOREWORD

## THE CANADIAN NORTHERN CORRIDOR RESEARCH PROGRAM PAPER SERIES

This paper is part of a special series in *The School of Public Policy Publications*, investigating a concept that would connect the nation's southern infrastructure to a new series of corridors across middle and northern Canada. This paper is an output of the Canadian Northern Corridor Research Program.

The Canadian Northern Corridor Research Program at The School of Public Policy, University of Calgary, is the leading platform for information and analysis on the feasibility, desirability, and acceptability of a connected series of infrastructure corridors throughout Canada. Endorsed by the Senate of Canada, this work responds to the Council of the Federation's July 2019 call for informed discussion of pan-Canadian economic corridors as a key input to strengthening growth across Canada and "a strong, sustainable and environmentally responsible economy." This Research Program will benefit all Canadians, providing recommendations to advance the infrastructure planning and development process in Canada.

This paper, "Canadian Competitiveness for Infrastructure Investment", falls under theme *Funding and Financing Dimensions* of the program's eight research themes:

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# CANADIAN COMPETITIVENESS FOR INFRASTRUCTURE INVESTMENT

Mukesh Khanal, Robert Mansell and G. Kent Fellows

## EXECUTIVE SUMMARY

This paper provides a broad overview of the infrastructure investment landscape in Canada and our reputation as a competitive destination for such investment. We compare the Canadian infrastructure investment environment and recent outcomes with those of a set of peer nations (G7 countries plus Australia).

Canada has serious reputational issues relative to our peer group when it comes to attracting investment in infrastructure, and these issues correspond to declining rates of foreign direct investment inflows. Federal government spending on infrastructure is also declining, implying an overall lack of investment in infrastructure. This lack of investment is, in turn, manifesting as an increase in Canada's infrastructure deficit and an overall decline in the reputation of the quality of existing infrastructure. Estimates of Canada's infrastructure deficit range up to \$600 billion, and the investment shortfalls contributing to this deficit are particularly apparent in transportation and trade infrastructure. Canada has fallen sharply to last place relative to the G7 and Australia in terms of infrastructure and logistics quality.

The most prominent issues driving Canada's declining reputation as a destination for investment include a sharp slide in the ease of doing business, which, in turn, is caused by perceived regulatory and bureaucratic delays (including the time required for construction permits).

An inconsistency in federal infrastructure funding programs and policies (tied to federal election cycles) is similarly problematic. While most of Canada's public infrastructure investment is made by provincial and municipal governments, their smaller and more variable shares of tax revenues do not ensure stable and sufficient levels of infrastructure investment in many regions. This pattern also serves to promote regional inequality, since regions suffering from poor infrastructure may not have the resources required to overcome local infrastructure deficits.

Reliance on PPPs (public-private partnerships) to bolster infrastructure investment may well prove fruitless given the negative experiences Canada's peers have had with PPPs and the already evident frustrations with Canada's existing pursuits in this area. Falling tax rates have failed to attract foreign direct investment flows into Canada, suggesting that tax competitiveness is not a sufficient incentive to overcome the reputational issues associated with inconsistent federal investment policies and growing regulatory and bureaucratic delays.

Addressing these issues will require a stable and long-term strategy (one not subject to Canada's federal electoral cycles) and a serious look at the timeframes and delays for regulatory and bureaucratic processes.

We suggest the federal government place a higher priority on infrastructure investments in critical areas such as trade and transportation infrastructure. These types of infrastructure play an outsized role in supporting national productivity and income. Further, attracting significant levels of private investment will likely benefit from a consistent and predictable trade and transportation infrastructure strategy. Canada requires an integrated and strategic national approach to infrastructure policy and investment. This approach must be based around a long-term focus and will require coordination among federal, provincial, municipal and First Nations governments and the private sector (including coordination with Canada's large pension funds, which represent a significant untapped source of financial capital).

Provincial governments have already expressed an interest and willingness to collaborate on a national infrastructure strategy based on the corridor concept, and the Senate Standing Committee on Banking, Trade and Commerce has similarly acknowledged the potential merits of applying the corridor concept. Given these endorsements and the evidence presented above, it is incumbent on the federal and other governments to act on formulating a stable, long-term and strategic national infrastructure strategy that pairs government investment and policies to attract private sector investment in all kinds of infrastructure, but most notably in transportation, warehousing and logistics infrastructure.

As part of this, it is critical that Canada address its serious issue of regulatory and policy uncertainty, delays and burdens as these appear to be the most critical aspects of our declining reputation and the most pernicious impediments to achieving infrastructure investment goals and priorities.

## **KEY MESSAGES**

- Canada's reputation as a destination for investment in infrastructure projects has worsened relative to our peers (G7 Nations + Australia) in recent years. This declining reputation appears to be primarily driven by regulatory and bureaucratic delays.
- Canada's federal infrastructure policies and funding programs are inconsistent and unreliable. Policies change, and programs are cancelled and replaced, frequently based on short-term political cycles rather than longer term strategic priorities.
- Reliance on PPPs (public-private partnerships) to bolster infrastructure investment may well prove fruitless given the negative experiences Canada's peers have had with PPPs and the already evident frustrations with Canada's existing pursuits in this area.
- Canada has some of the world's largest pension-funds investing in infrastructure projects, but the projects are primarily non-Canadian. More must be done to encourage and entice Canadian pension funds to invest in domestic infrastructure projects.
- The federal government should place a higher priority on infrastructure investments in critical areas such as trade and transportation infrastructure. Government investments and policies must be made with a long-term focus and must be based on an integrated and strategic approach including coordination with provincial, municipal and First Nations governments and the private sector.

# 1. INTRODUCTION

Canada's economic and social well-being relies on infrastructure to facilitate mobility, transportation, trade, communication, utilities and a host of social services. However, Canadians have expressed growing dissatisfaction with the state of our national infrastructure. A 2016 survey found that one out of three Canadians polled were satisfied with Canada's national infrastructure (roads, rail, air networks, utilities, broadband and other communications networks), three out of four Canadians felt that investing in infrastructure is vital to our future economic growth, and a majority felt that as a country we are not doing enough to meet our infrastructure needs (Ipsos 2016). Canada has also developed a reputation as an unattractive destination for such investments. In 2019, the World Economic Forum ranked Canada thirty-eighth in the world for "burden of government regulation," and calculated that total cost of regulatory burden to Canadian businesses at \$38.8 billion, of which \$10.8 billion was associated with "red tape" (Lynch and Deegan 2021).

While suggestive, polling results and international indexes may not be representative of the larger trends in infrastructure investments in Canada. The objective in this paper is to provide a broad overview of the infrastructure investment landscape in Canada and our reputation as a competitive destination for such investment. To accomplish this, we undertake a survey of the large body of literature, reports and data on infrastructure investment along with comparisons between the Canadian situation and that in peer nations; that is, other G7 countries (France, Germany, Italy, Japan, the UK and the US) and Australia.<sup>1</sup> Our analysis focuses primarily on transportation and trade infrastructure.<sup>2</sup> In a small open economy<sup>3</sup> such as Canada's, investments in transportation and warehousing infrastructure are particularly important drivers of labour productivity, incomes and export competitiveness. Canadian labour productivity is below most of G7 counterparts and 25 per cent lower than in the US (Canada's most significant trading partner). While Canadian labour productivity is growing, it is doing so at a rate that is generally below the US and G7 average rates (Figure 1). More critically, over the last few years Canada saw a dramatic decline in overall labour productivity (the 2021 decline could be attributed to COVID-19), and the country's transportation and warehousing labour productivity has been falling since 2017 (Figure 2). Infrastructure investment and productivity, particularly in transportation-related infrastructure, is a significant factor determining overall productivity and national comparative advantage (Yeaple and Golub 2007).

Overall, Canada has serious reputational issues related to attracting investment in infrastructure, corresponding to declining rates of foreign direct investment inflows at a time when federal government spending on infrastructure is also declining. Addressing these issues will require a stable and long-term strategy (one not subject to Canada's federal electoral cycles) and a serious look at the timeframes and delays for regulatory and bureaucratic processes, as these delays appear to constitute the main reason for declines in Canada's reputation as a destination for infrastructure investment.

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<sup>1</sup> We include Australia in the cohort of comparators as it has many institutional and resource similarities to Canada and is similarly part of the Commonwealth of nations.

<sup>2</sup> This paper is part of the Canadian Northern Corridor research program, which explores the potential for the use of multi-modal infrastructure corridors to facilitate enhanced infrastructure investment in Canada. See <https://www.canadiancorridor.ca/>.

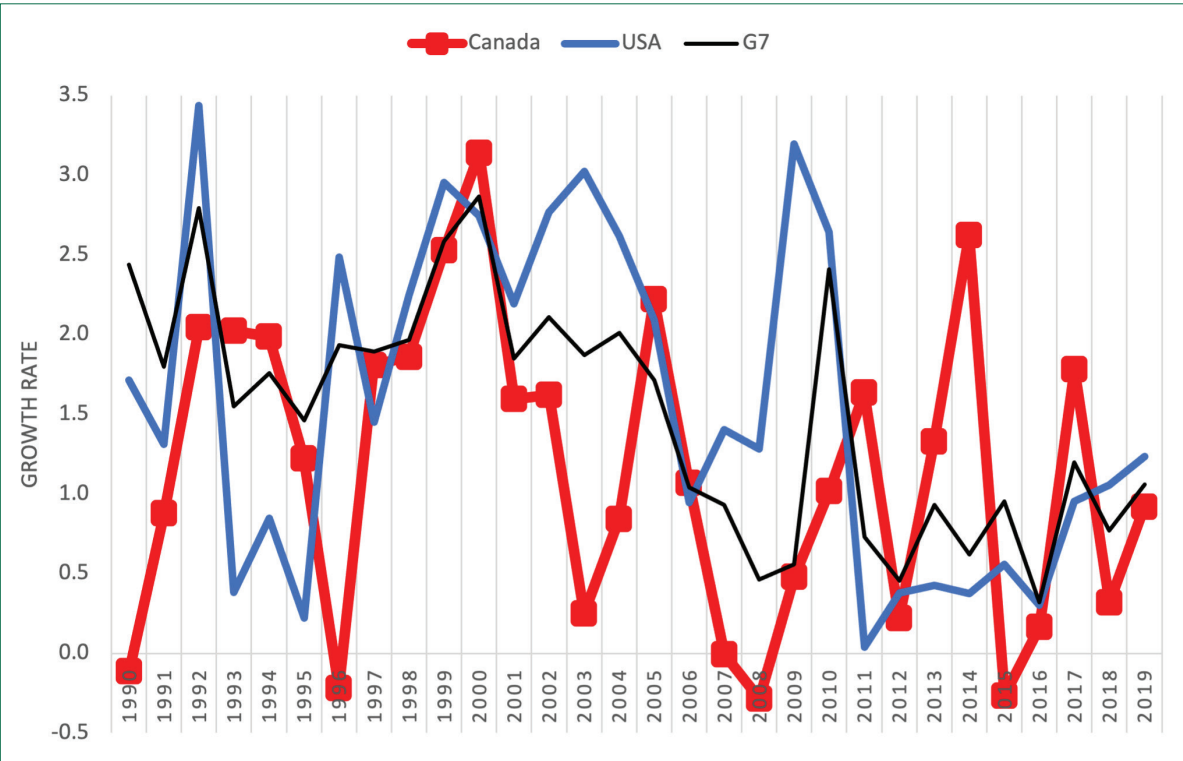
<sup>3</sup> A small open economy is one where trade represents a large component of national output, but where domestic production is too limited to affect world prices, interest rates or incomes.

## 2. TRENDS AND ISSUES IN CANADIAN INFRASTRUCTURE INVESTMENT

Before discussing Canada’s reputation as a destination for infrastructure investment, it is useful to present some background on the recent trends and issues in Canadian labour productivity and related issues of infrastructure investment. The lack of growth in productivity (relative to our peer nations) and the more recent acute drops in productivity (particularly in transportation and warehousing) represent lost opportunities for trade competitiveness and associated social and economic prosperity.

Overall government investments in public infrastructure fell from over 3 per cent of GDP in 1961 to under 1.5 per cent of GDP by 2003 (Government of Canada 2011). Various government agencies and departments, most of them at the federal level and some at provincial levels, responded by enacting programs to facilitate and promote infrastructure investments.<sup>4</sup> Despite such efforts, OECD data shows little resulting change in the government share and a general decline in the corporate share of gross fixed capital formation in Canada, with households contributing a high and slightly rising share (Figures 3, 4 and 5). The implication of this is that overall spending on public infrastructure (as a share of Canada’s total annual capital investment) is shrinking, since household contributions to gross fixed capital formation take the form of investments in private capital (most notably housing), not public infrastructure. Canada’s corporate share of overall investments in 2019 was the lowest among the G7 and Australia.

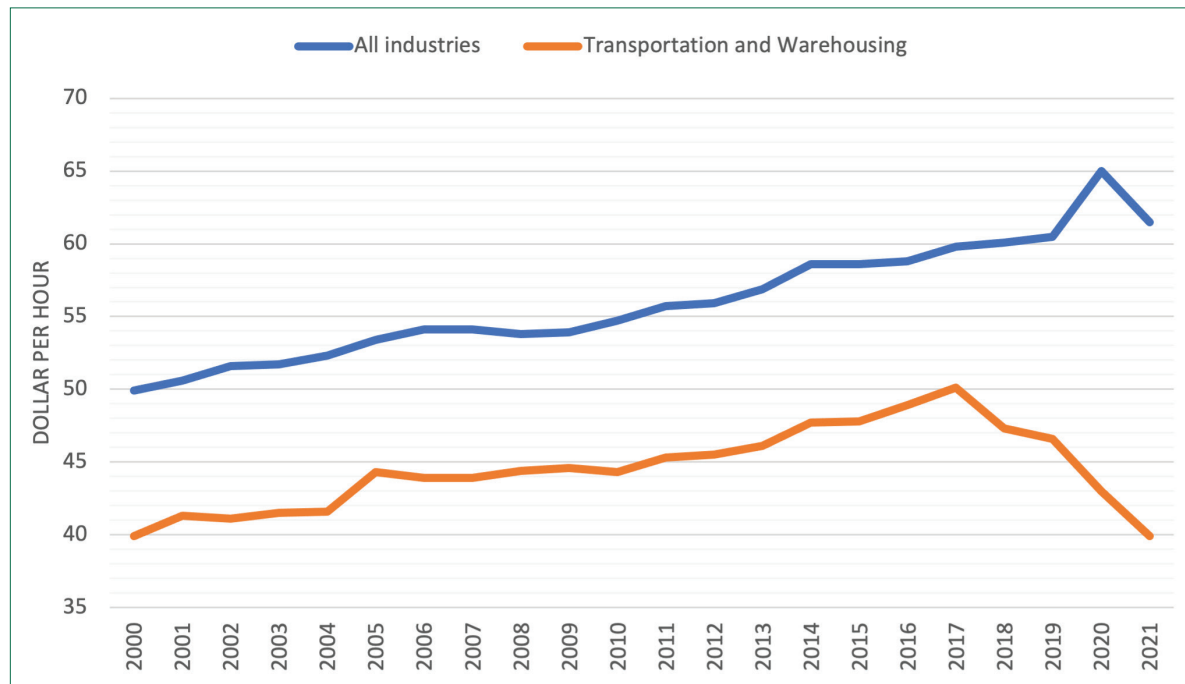
Figure 1: Labour Productivity Growth (Annual Percentage)



Source: OECD (2022e)

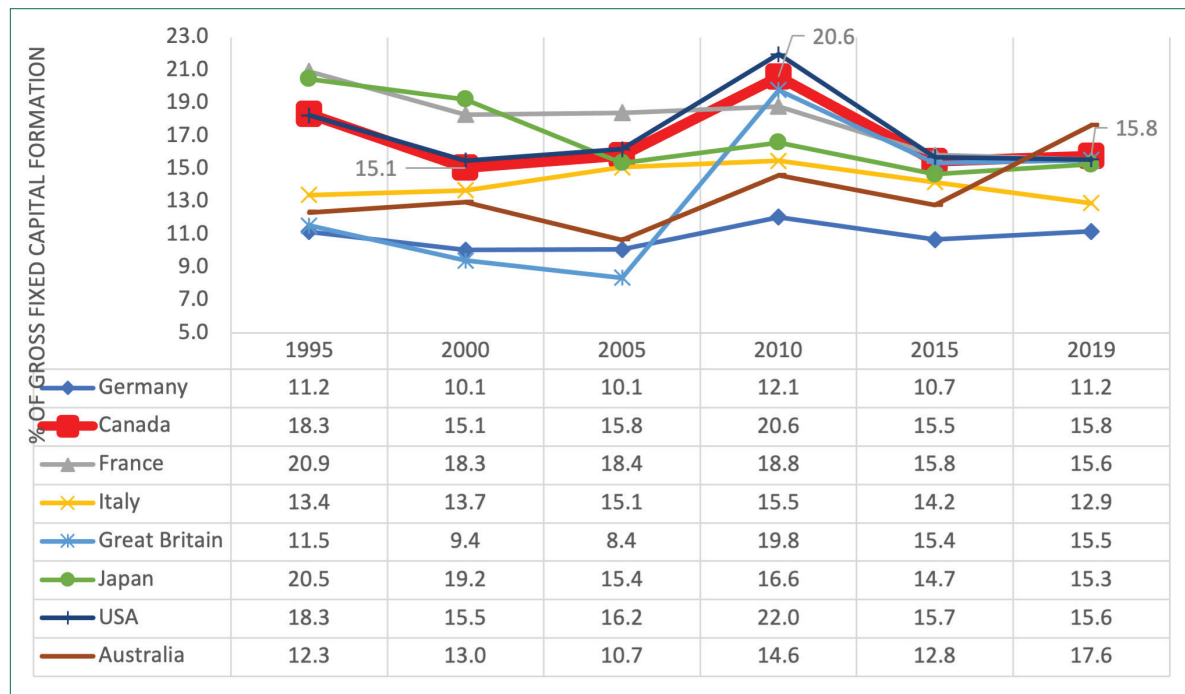
<sup>4</sup> See Appendix A for a summary of these programs.

Figure 2: Labour Productivity in Canada (in 2012 Canadian Dollars)



Source: StatsCan Table: 36-10-0480-01 (formerly CANSIM 383-0033)

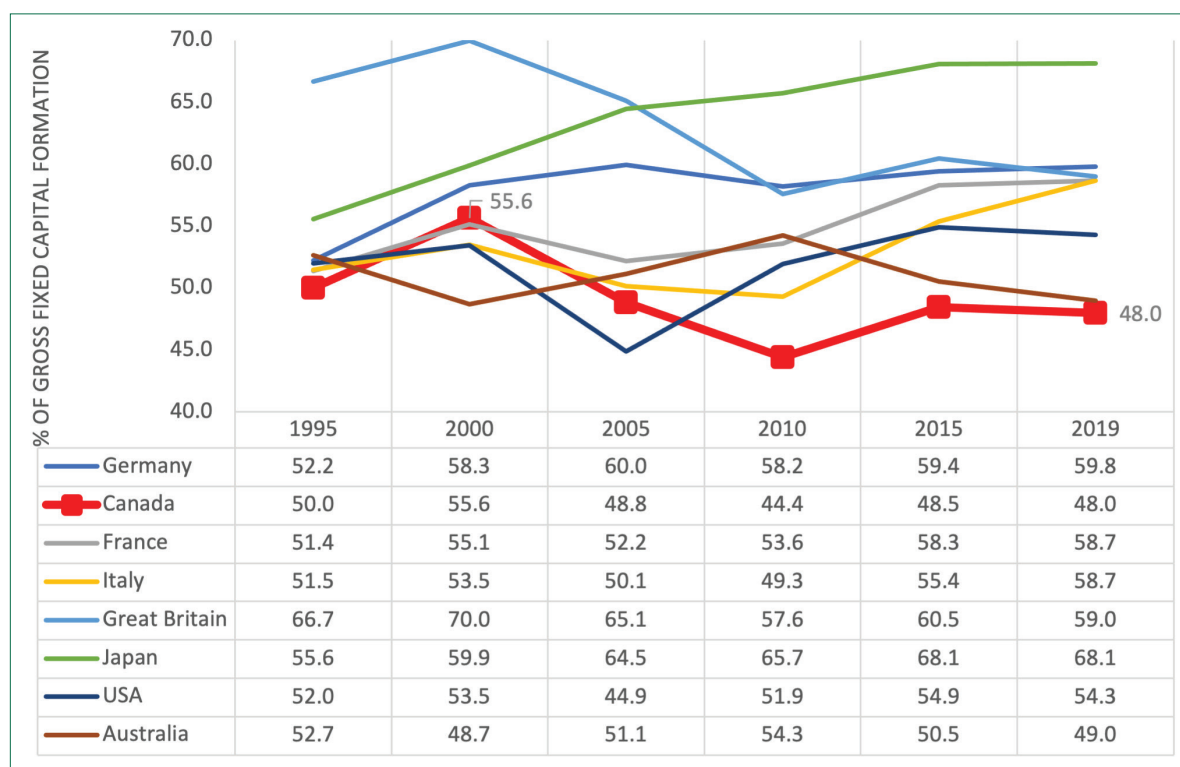
Figure 3: General Government Share of Gross Fixed Capital Formation<sup>5</sup>



Source: OECD (2022c)

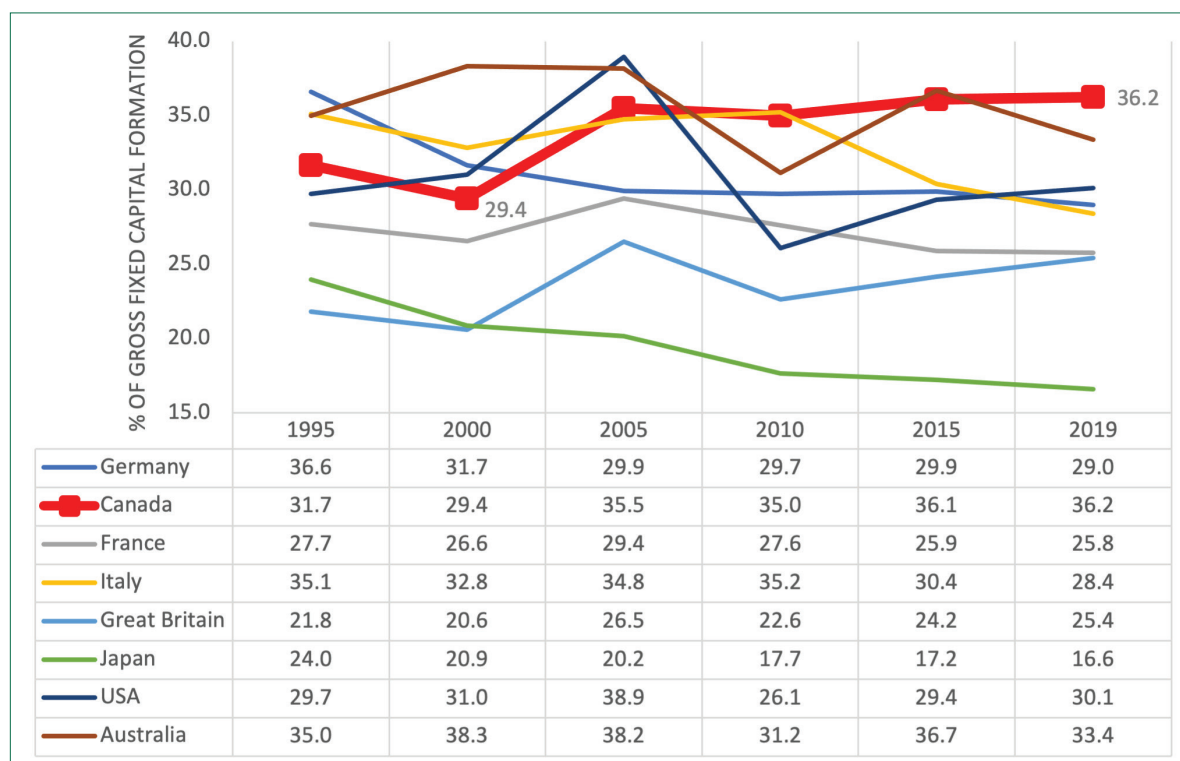
<sup>5</sup> For government, investment typically means investment in R&D, military weapons systems, transport infrastructure and public buildings such as schools and hospitals. Military expenditures on fixed assets are included if they were used for civilian purposes of production (for example: airfields, docks, roads, etc.)

**Figure 4: Corporate Share of Gross Fixed Capital Formation**



Source: OECD (2022c)

**Figure 5 Household Share of Gross Fixed Capital Formation**



Source: OECD (2022c)



**Table 1: Annual Infrastructure Investment Growth Rate (Per cent)**

	1995	2000	2005	2010	2015	2016	2017	2018	2019	2016-2019 average
Germany	0.1	2.7	1.1	4.9	1.2	3.6	3.3	3.5	1.9	3.1
<b>Canada</b>	<b>-1.4</b>	<b>5.1</b>	<b>9.1</b>	<b>11.5</b>	<b>-5.2</b>	<b>-4.7</b>	<b>3.3</b>	<b>1.8</b>	<b>0.3</b>	<b>0.2</b>
France	1.4	6.9	3.0	1.9	0.9	2.5	5.0	3.3	4.1	3.7
Italy	7.4	7.2	1.9	-0.3	1.5	4.2	3.4	2.9	0.7	2.8
Great Britain	-0.5	4.5	4.3	3.7	6.3	4.7	3.3	-0.1	0.5	2.1
Japan	3.2	0.6	3.0	-1.3	2.3	1.2	1.6	0.2	0.9	1.0
USA	5.2	6.4	6.1	2.2	3.7	2.1	3.8	4.4	3.1	3.4
<b>Australia</b>	<b>-0.1</b>	<b>2.0</b>	<b>8.2</b>	<b>4.3</b>	<b>-4.0</b>	<b>-2.3</b>	<b>3.6</b>	<b>2.3</b>	<b>-2.6</b>	<b>0.3</b>
OECD average	2.9	5.3	5.2	2.3	3.7	2.1	4.0	2.7	2.1	2.7

Source: OECD (2022d)

**Table 2: Performance on Economic Transformation Priorities, 2020 (score on a 0-100 scale)**

Priority	Germany	Canada	France	Italy	UK	Japan	USA	Australia
Upgrade infrastructure to accelerate the energy transition and broaden access to electricity and ICT	79.6	77.0	82.6	74.1	80.9	76.9	71.2	73.0
Increase incentives to direct financial resources towards long-term investments, strengthen stability and expand inclusion	79.3	75.1	83.0	79.8	72.4	84.7	47.8	81.2
Facilitate the creation of “markets of tomorrow”, especially in areas that require public-private collaboration	48.1	49.5	50.1	43.0	46.1	53.5	57.7	44.0

Source: Schwab, Zahidi, and World Economic Forum (2020)

A significant decline in the growth rate of infrastructure investment in Canada is apparent, with lower growth rates in recent years that are well below those of its peers (Table 1). While Canada led the G7 and Australia in the 2000s (reaching the high of 11.5 per cent in 2010), the growth rate dropped dramatically in 2015. The 0.2 per cent average growth rate for the 2016-2019 period was the lowest among its peers. In a decade, Canada went from having the most impressive growth rate in infrastructure investment to the worst growth rate among its peers. As discussed later in Section 3.1.1, this corresponds to the period of declining and deteriorating infrastructure in Canada.

To reverse declining growth rates in infrastructure investment, G7 members and Australia have all proposed infrastructure expansion and upgrading as higher priorities, but these plans have struggled in terms of implementation and resulting performance (Table 2). Similarly, Infrastructure Canada’s performance has been lacking, and there is evidence that other government departments have undermined Canada’s progress on infrastructure goals (Auditor General of Canada 2021, 4-5, 14). As a specific example, Infrastructure Canada’s Investing in Canada Plan has failed to make notable progress towards its stated infrastructure investment goals (Ragan 2020).

A particular problem with government investment programs is that prioritization and funding are typically tied to electoral cycles.<sup>6</sup> Following a change of government, it is common for a new government to substantially revise programs, priorities and funding. PPP Canada was formed in 2008 to promote and facilitate public-private partnerships (PPPs) in Canadian infrastructure projects, but the new government elected in 2015 cancelled it in 2016 (Government of Canada 2018) and replaced it with the Canada Infrastructure Bank,<sup>7</sup> an arm's length Crown corporation (Government of Canada 2022a). However, the bank has subsequently failed to deliver on its promises, such that the Senate Standing Committee on Transport, Infrastructure and Communities has recommended that “the Government of Canada abolish the Canada Infrastructure Bank” (Schiefke 2022, 1). While the EU, Australia and the US have an “overarching transport infrastructure strategy framework” that takes into account the capital intensive and long timeframes nature of transport projects, Canada was still in the process of developing such a framework as of 2021 (ECA 2021, 16).

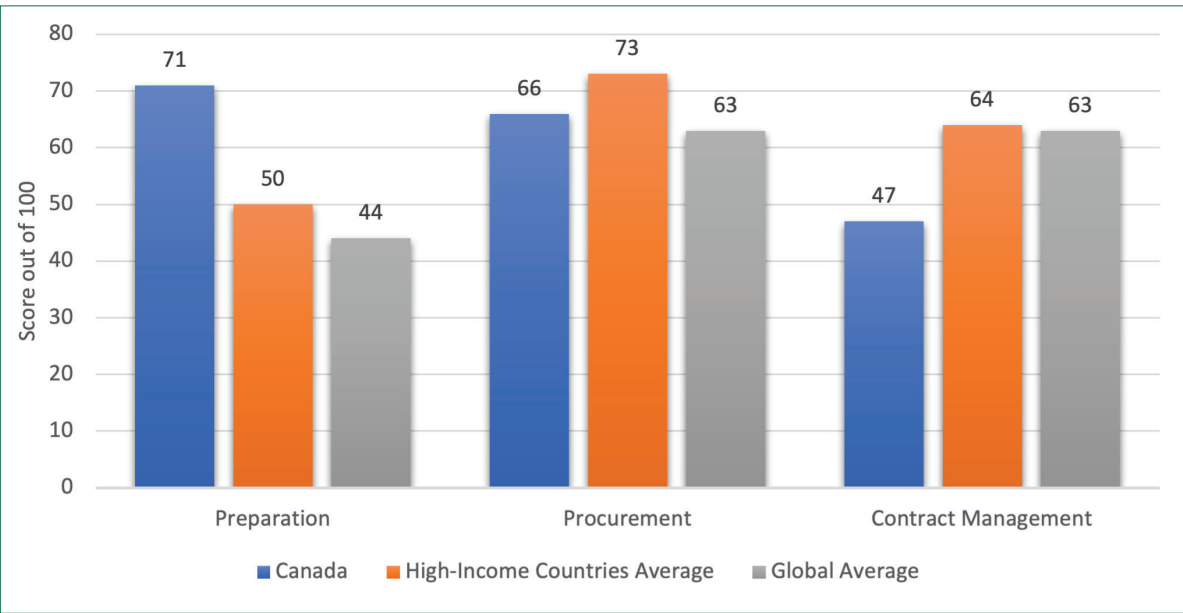
When forming the Canada Infrastructure Bank, the government had reasoned that PPP Canada was no longer necessary because provinces had similar agencies to help structure PPP deals (Curry 2017). The new 2016 Investing in Canada Plan had three objectives: create long-term economic growth for a stronger middle class; support community resilience and transition to green economy; and build social inclusion and socio-economic outcomes for all Canadians (Government of Canada 2022e). However, these priorities were essentially a reboot of the three thematic areas of national importance identified in 2006's Building Canada plan: growing economy, clean environment, and strong and prosperous communities (Government of Canada 2011). Because Canada's infrastructure needs are long term, their planning and funding should be long term as well, and less affected by the political cycle.

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<sup>6</sup> On the other hand, Infrastructure Australia carries out a strategic “infrastructure audit” every five years to identify a list of priority projects based on future needs, and prepares a rolling fifteen-year infrastructure plan (ECA 2021, 22). Citing the UK's National Infrastructure Commission's 30-year planning horizon, researchers at the Canada West Foundation argue that a long-term project pipeline approach be undertaken in Canada (Dade and Law 2021).

<sup>7</sup> In the EU, the European Investment Bank provided €150.6 billion worth of loans to transport projects in the EU for the 2007-2020 period (ECA 2021, 10). As one of the biggest lenders to transport projects, the EIB provided €11 billion in loans in 2021 to projects bringing green and innovative solutions to the mobility sector (European Investment Bank 2022, 2). The EIB's Cohesion Orientation 2021-2027 plan supports expansion and modernization of its investments in the poorer regions of the EU as well as non-EU “cohesion regions” (European Investment Bank 2021, 2022).

**Figure 6: Benchmarking Infrastructure Development 2020 Survey (Score out of 100)**



Source: World Bank (2020)

Canada’s frustrations in securing and finalizing PPP deals are also less about “prioritizing” investment and preparing agreements. In fact, Canada appears to perform well in the first phase of PPP procurement (preparation). It is in the later phases, procurement and contract management, where Canada’s approach is deficient relative to comparator nations (Figure 6).<sup>8</sup>

### 3. CANADA’S REPUTATION FOR INFRASTRUCTURE INVESTMENT

Based on anecdotal evidence, Canada has a relatively poor reputation for competitiveness of infrastructure investment. In this section, we provide a survey of qualitative and quantitative information to evaluate this assessment. The former comprises primarily studies and surveys conducted by organizations such as the World Bank and the World Economic Forum. The quantitative evaluation is based on data primarily from the OECD and various government documents.

<sup>8</sup> These results are based on the World Bank’s Benchmarking Infrastructure Development 2020 survey, which measures how well countries adopt good practices for PPPs across five thematic areas: the context of the regulatory and institutional framework governing PPPs; preparatory activities taken prior to launching the procurement of a PPP project; activities and requirements for selection of a private partner; activities and contractual provisions that impact implementation of the PPP project after the contract is awarded; and specific regulatory issues dealing with unsolicited PPP proposals (The World Bank 2020).

### 3.1 QUALITATIVE EVIDENCE

The World Economic Forum’s annual global competitiveness report ranks countries by how competitive they are in attracting global investments. Similar comparisons are available in the form of the IMD World Competitiveness ranking and the Fraser Institute’s Index of Economic Freedom. The World Bank’s Benchmarking Infrastructure Development 2020 survey measured how well different countries adopt good practices for PPPs across five thematic areas, and its Doing Business annual surveys rank countries for ease of doing business and quality of infrastructure.<sup>9</sup>

While Canada fell in the Doing Business ranking (from fourth in the world in 2006 to twenty-third in 2019), it fared relatively better in other similar indices. It was thirteenth in the IMD World Competitiveness ranking, fourteenth in World Economic Forum’s Global Competitiveness Report ranking, and eighth in Fraser Institute’s Index of Economic Freedom ranking (Sharpe 2021, 59). Several countries with poorer Doing Business rankings than Canada have better international competitiveness indices<sup>10</sup> while several countries with better Doing Business rankings than Canada have poorer international competitiveness indices.<sup>11</sup> This may be a reflection of the potentially arbitrary formation of these indexes, but it may also stand as evidence indicating that “competitiveness” and “business climate” are not perfectly correlated.

#### 3.1.1 Quality of Canadian Infrastructure

Inadequate investment has led to a deterioration in the quality of Canadian infrastructure and to an overall ‘infrastructure deficit.’ Canada’s infrastructure quality in 2017 ranked fourteenth in the world, and 10 to 20 per cent of it was rated as being in poor or very poor condition (BCG 2017). The infrastructure deficit measure is an estimate of the cost required to rehabilitate existing infrastructure that has been allowed to deteriorate. One measure of the Canadian infrastructure deficit increased from \$123 billion in 2007 to \$300 billion in 2012, with another \$300 billion estimated for required infrastructure upgrades (Hume 2022). Other measures have indicated a deficit of up to \$570 billion in 2017 (BCG 2017) and required upgrades of \$400 billion in the 2012-2022 period (Inderst and Della Croce 2013, 24).

Canada has exhibited declining investment in infrastructure relative to other G7 nations and Australia over the last decade. This closely correlates to the increases in infrastructure deficit estimates and a contemporaneous deterioration in Canada’s overall infrastructure quality ranking and its Trade and Transportation infrastructure ranking (Figures 7 and 8).

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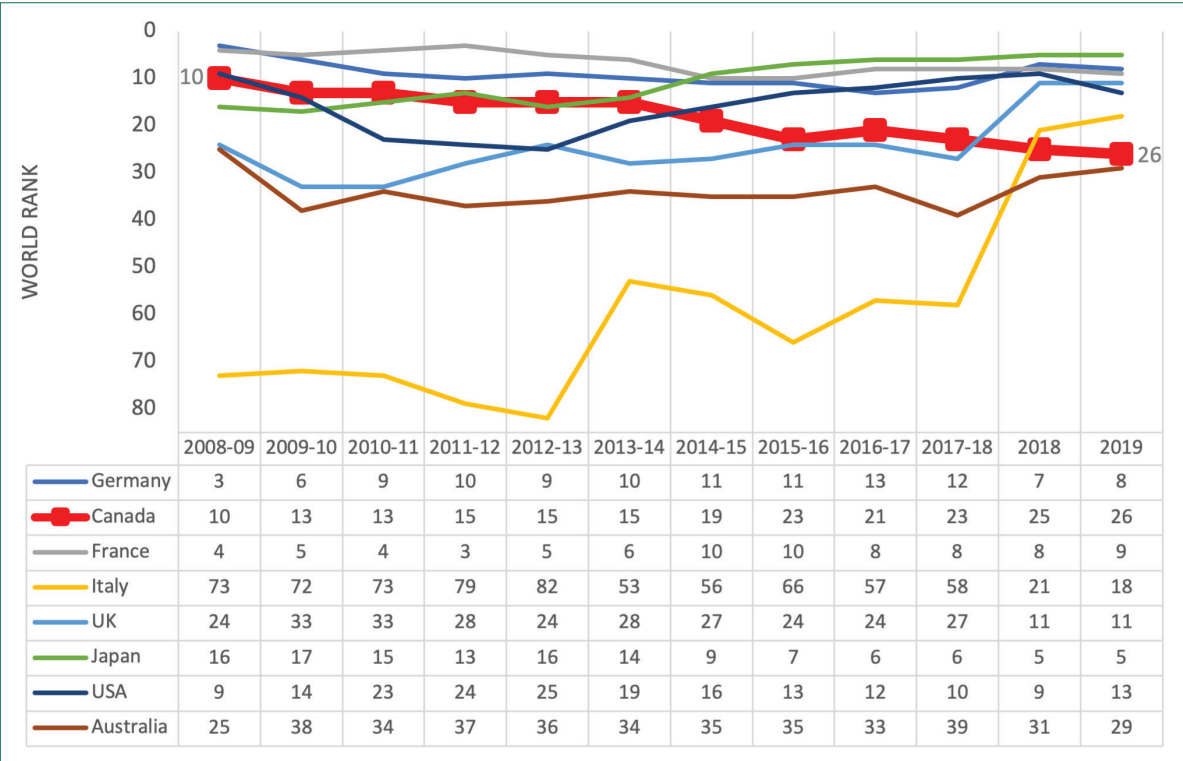
<sup>9</sup> The World Bank’s Doing Business survey came under criticism recently for data irregularities in the 2018 and 2020 surveys. An independent investigation found that bank officials were under intense pressure from China and revised China’s fallen ranking and restored it to previous year’s ranking in 2018; Saudi Arabia and UAE’s ranking in 2020 were influenced by a senior bank official who wanted to reward Saudi Arabia for its role in the bank; and Azerbaijan’s ranking in 2020 was downgraded by a bank official who refused to believe in the reforms carried out by the country and appeared to harbour a personal animus towards the country (Machen et al. 2021). Therefore, China directly intervened for its better ranking. However, Saudi Arabia, UAE and Azerbaijan played no direct role in theirs; their rankings were influenced by biased World Bank officials. After the investigation submitted its report on September 15, 2021, the World Bank announced the very next day that it would discontinue the Doing Business survey (The World Bank 2021). The independent investigation had not recommended discontinuing the survey.

<sup>10</sup> For example, Switzerland (ranked 36), the Netherlands (ranked 42), Belgium (ranked 46) and Luxembourg (ranked 72).

<sup>11</sup> For example, Georgia (ranked 7), Malaysia (ranked 12), Mauritius (ranked 13) and North Macedonia (ranked 17).

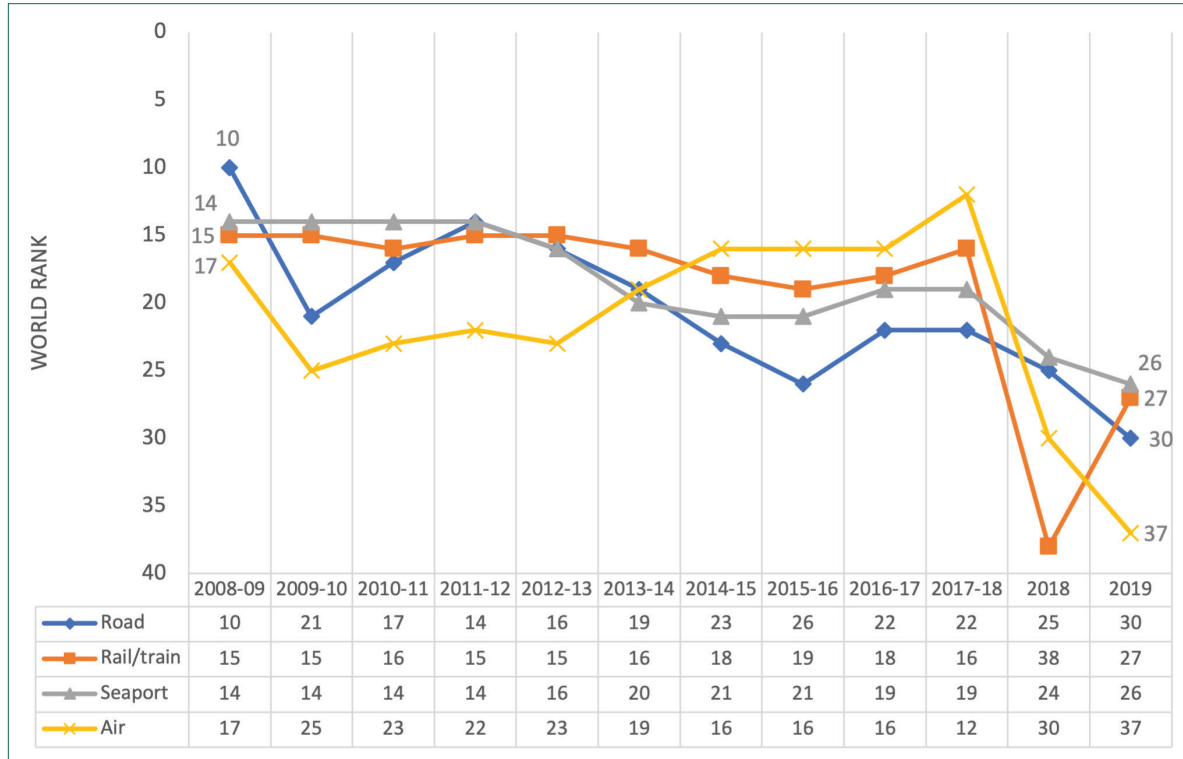
Similarly, the World Bank’s quality of trade and transport infrastructure index shows Canada fell from fourth among the G7 and Australia in 2016 to last in 2018 (Figure 9), barely outperforming the OECD average in 2018. In fact, while most G7 and OECD countries show an upwards trajectory, suggesting increasing quality of trade and transport-related infrastructure over the years, Canada, the US and the UK suffered sharp declines in trade and transport infrastructure quality after 2014. For “transport infrastructure,” the World Economic Forum in 2019 ranked Canada thirty-second in the world (the US was twelve and Mexico was fifty-one), falling behind even the developing nations of India (twenty-eight) and Azerbaijan (thirty-one) (Rooney and Dade 2022).

**Figure7: Quality of Overall Infrastructure**



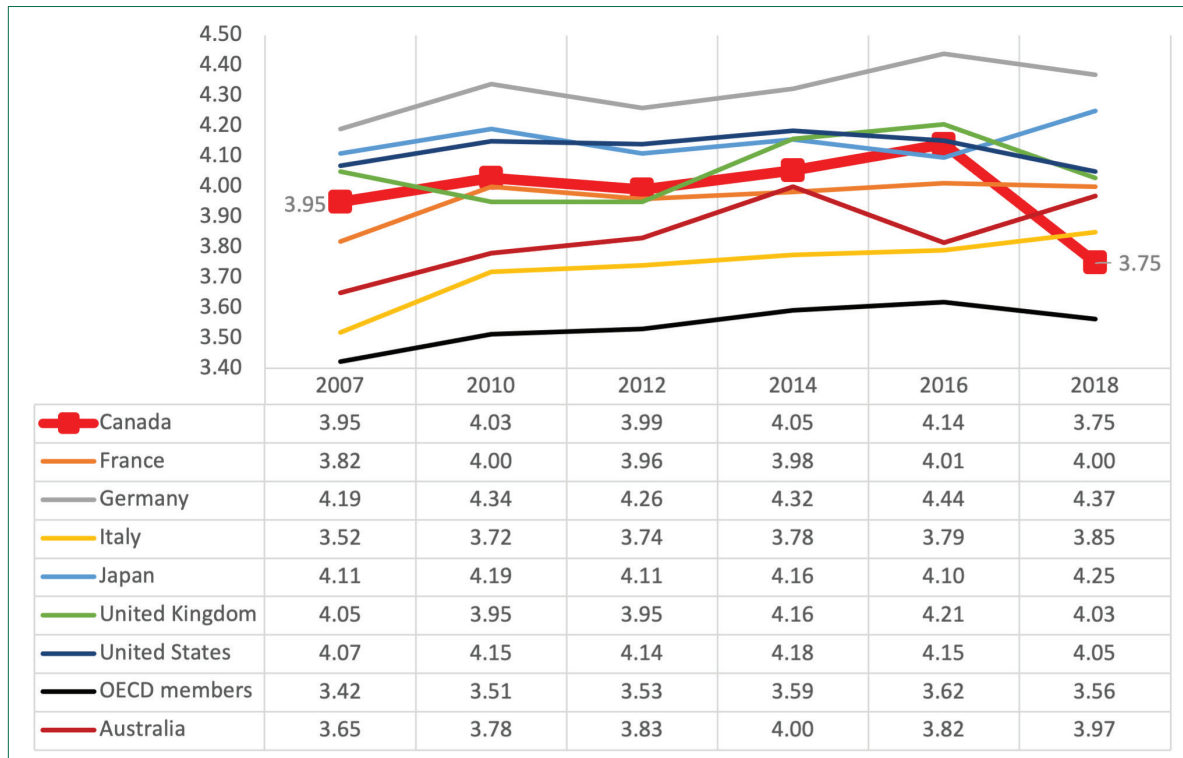
Source: World Economic Forum’s Global Competitiveness reports, various years

**Figure 8: Quality of Canada's Trade and Transportation Infrastructure**



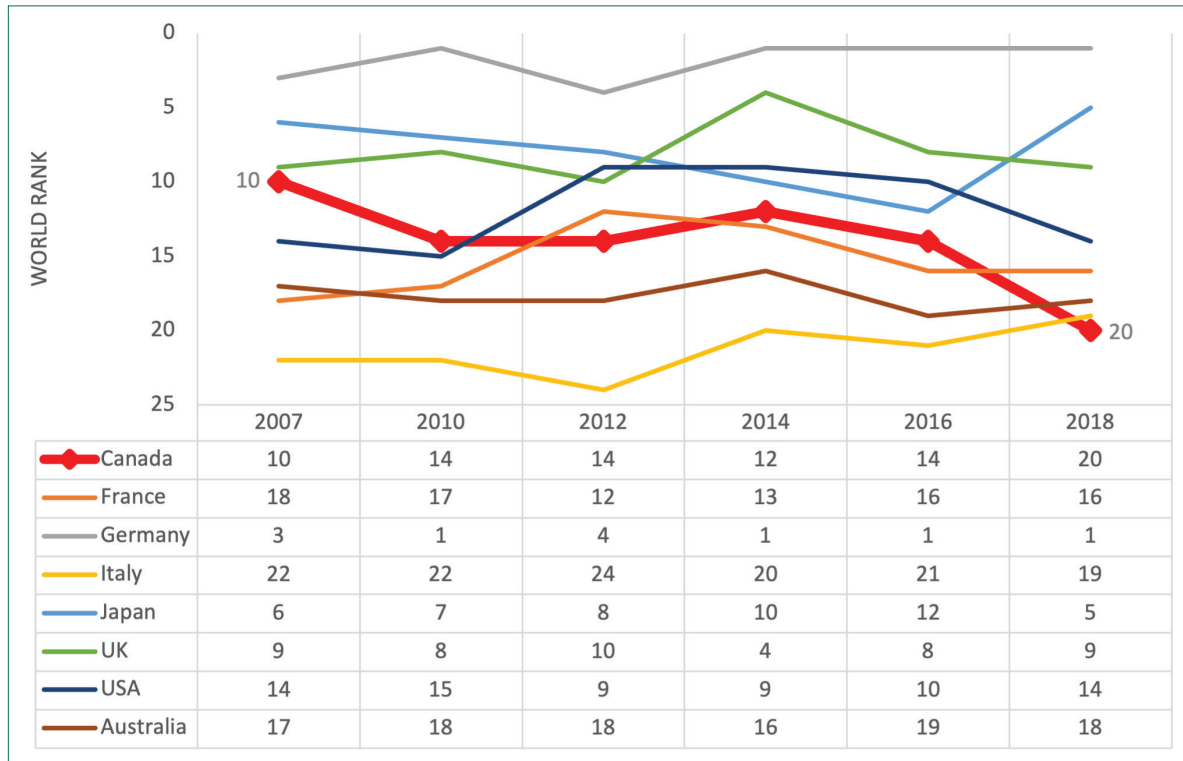
Source: World Economic Forum's Global Competitiveness reports, various years

**Figure 9: Quality of Trade and Transport Infrastructure (1 = Low, 5 = High)**



Source: World Bank (2022c)

**Figure 10: Logistics Performance Index**



Source: World Bank (2022a)

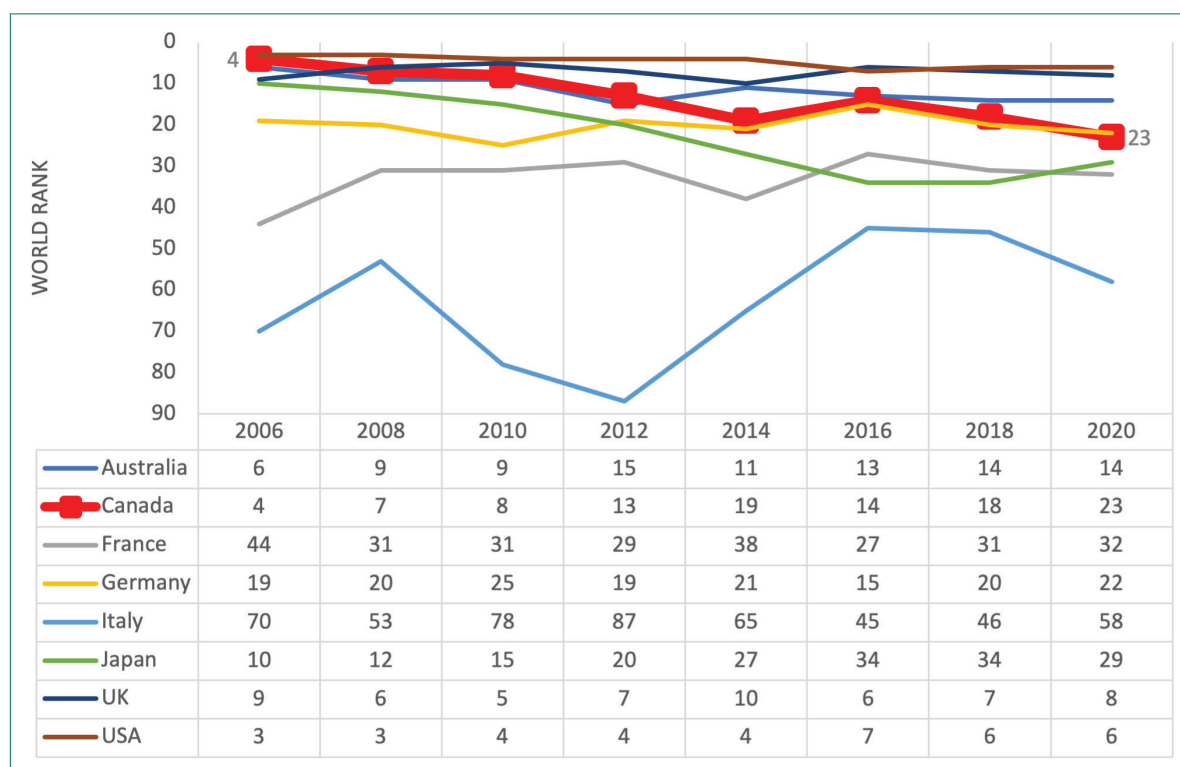
Given that Canada is a small open economy, Canadian economic prosperity relies heavily on maintaining and growing trade with the world. This means Canada requires not only good quality physical infrastructure such as roads, ports and rail, but strong logistics infrastructure as well. Yet, Canada is falling behind its peers in terms of logistics performance (Figure 10). In the World Bank’s Logistics Performance Index (LPI) ranking of world’s countries,<sup>12</sup> Canada fell from ten to twenty between 2007 and 2018. Among the G7 and Australia, it went from fourth to last.

### 3.1.2 Canada’s Business and Investment Climate

As noted earlier, the corporate/private sector share of investment in Canada has fallen over the last decade and remains lower than that of its G7 and Australian peers. Relative to its peer group, Canada exhibits a lack of projects that can provide a suitable return on investment. Most local infrastructure projects are too small and fail to attract the attention of big investment funds due in part to existing geographical or market-size limitations. Added to this is the fact that Canadian approval processes are long and unpredictable, and that international comparisons also highlight relatively significant regulatory constraints. (BCG 2017, 13).

<sup>12</sup> The World Bank’s Logistics Performance Index (LPI) surveys global freight forwarders and express carrier operators on the logistics friendliness of the countries where they operate and with which they trade.

Figure 11: Ease of Doing Business Ranking



Source: World Bank (2022c)

While the methodology used in the World Bank’s Doing Business survey is imperfect and subject to normative bias,<sup>13</sup> the results still suggest several reasons for Canada’s declining investment climate.

First, it suggests that Canada’s overall reputation as a destination for global investors has worsened in the last decade (Figure 11). Canada’s ease-of-doing-business global ranking fell from four to twenty-three in the 2006-2020 period. Among the G7 and Australia, it fell from second to fourth.

Second, infrastructure projects typically involve construction, and Canada’s faltering record for procuring construction permits may discourage global investors from investing in Canadian projects. Canada’s rank of sixty-four in 2020 for dealing with construction permits is better only than Italy’s and much worse than other G7 nations’ and Australia’s (Figure 12).

Third, Canada’s reputation for resolving contracts enforcement issues worsened in the last decade (Figure 13). It took 390 days to enforce contracts in 2014. While Canada’s peers maintained steady levels since then (Italy even managed to reduce theirs from nine hundred to 840 days), contracts enforcement in Canada worsened: today it takes 730 days today to resolve contract enforcement issues. This is onerous for global investors, and it reinforces the perception that Canada has an unfriendly investment climate.

<sup>13</sup> The Doing Business rankings for Canada have been criticized as “Toronto-centric.” Therefore, the scores and rankings are not indicative of the whole of Canada. Additionally, as with any index-based ranking system, different weights and priorities can imply inconsistencies with other measures and sudden changes in methodology over the years have resulted in sudden changes in country rankings (Sharpe 2021).

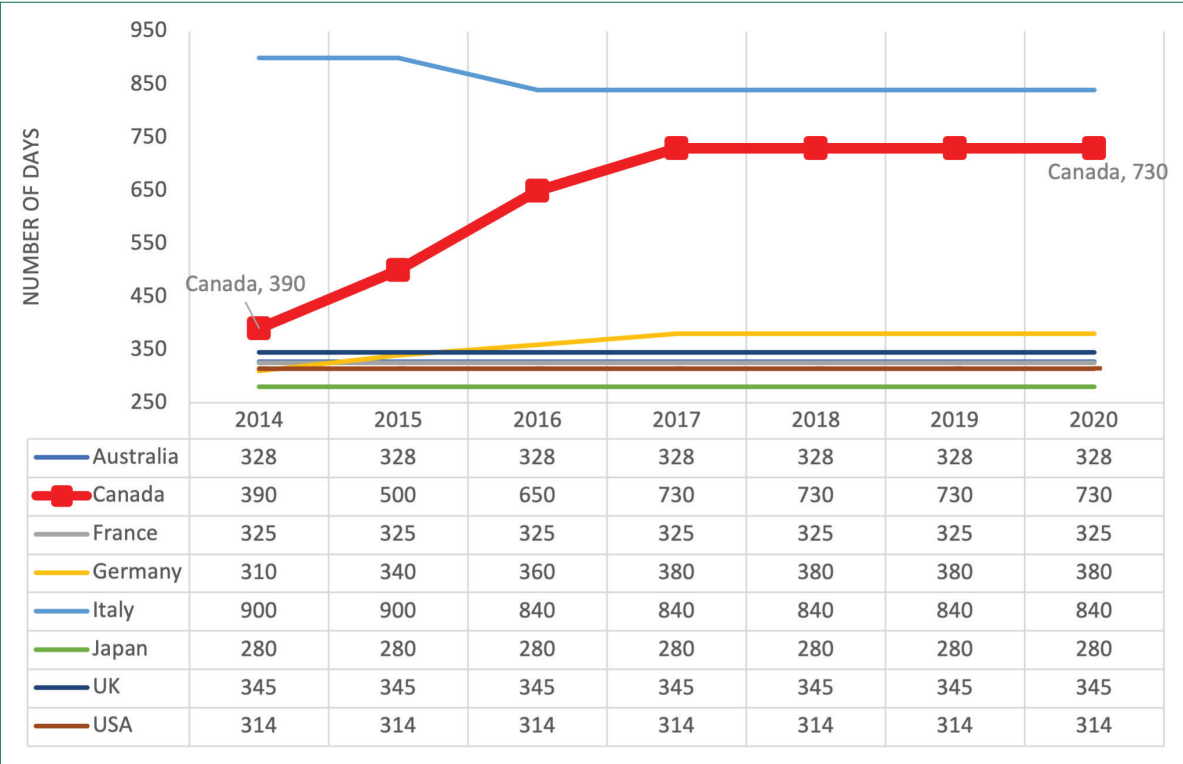


Figure 12: Dealing with Construction Permits (2020)



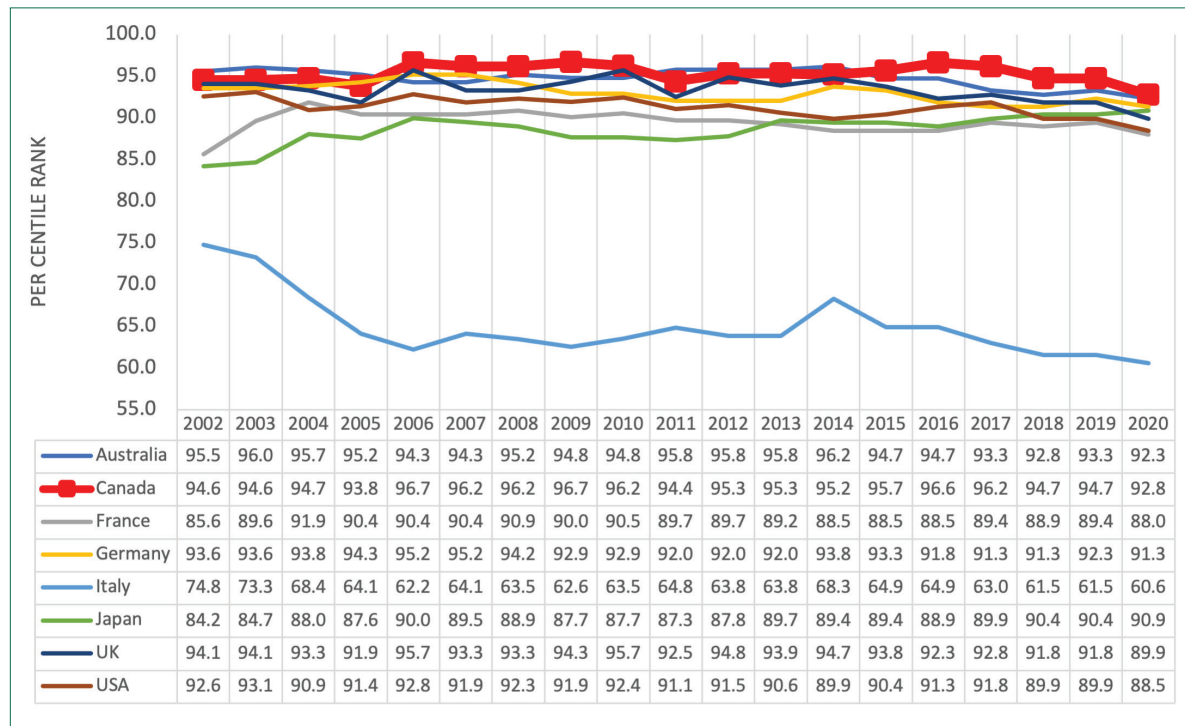
Source: World Bank (2022c)

Figure 13: Time It Takes to Enforce Contracts: Trial and Judgment



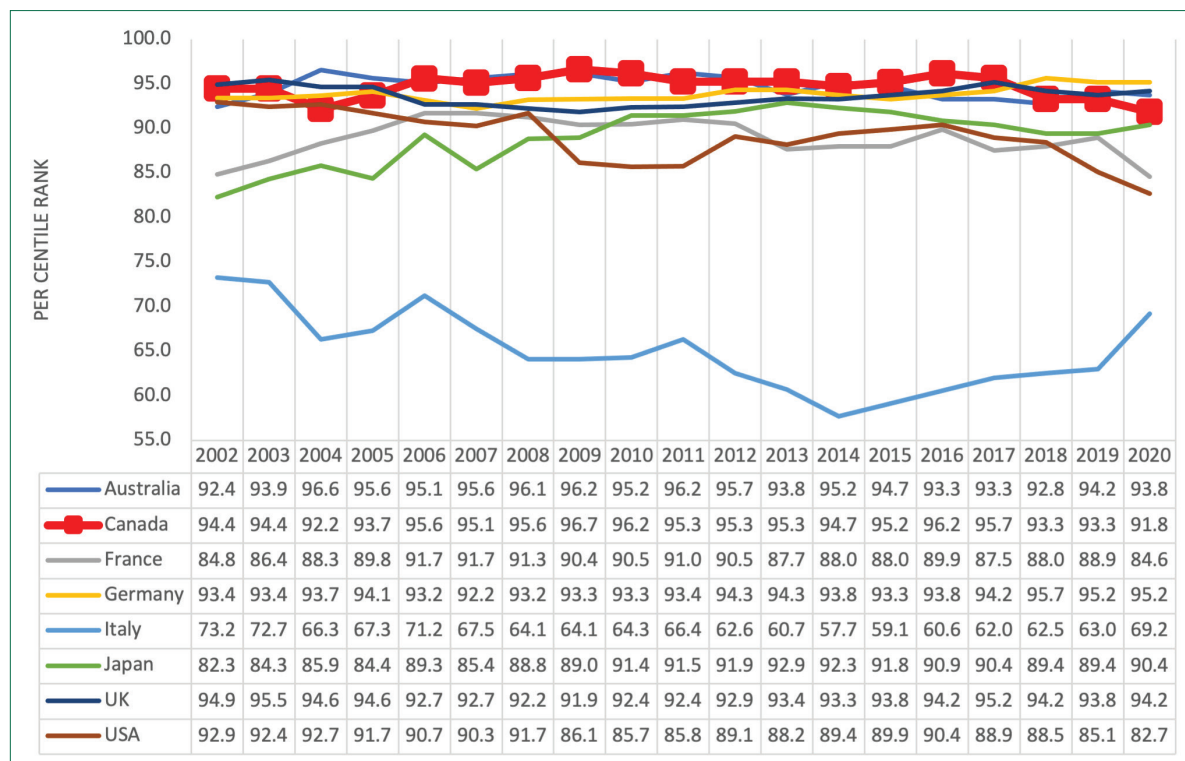
Source: World Bank (2022c)

Figure 14: Rule of Law



Source: World Bank (2022d)

Figure 15: Control of Corruption



Source: World Bank (2022d)

Finally, while there are gradual declines in perception of Canada's rule of law and corruption situation (Figures 14 and 15), Canada was still the best among the G7 and Australia for rule of law in 2020, but its ranking for control of corruption fell from first to fourth among this group. This is similar to findings from other similar surveys: Transparency International ranked Canada ninth among the OECD members in 2020 in its corruption-perception index ranking, while Canada's score for transparency in securing public contracts fell from about 80 per cent to just over 50 per cent in the 2008-2020 period according to the World Economic Forum (Schwab, Zahidi, and World Economic Forum 2020, 14-15).

In a recent Western Transportation Advisory Council (WESTAC) 2020 Compass Report that collected the thoughts, plans and expectations of Canada's transportation executives, over a third (37 per cent) rated Canadian business climate in 2019 as "negative" and only 44 per cent expected to increase their capital investments (compared to 58 per cent in 2018) (WESTAC 2020). Fifty-eight per cent of respondents cited a poor regulatory environment as the main reason for an unsatisfactory investment climate in Western Canada, and 52 per cent said it was getting worse. Seventy-two per cent of respondents believed Western Canada's supply-chain competitiveness had not improved in the past year. Finally, 81 per cent of respondents believed Canada needs a new trade corridor strategy.

### **3.1.3 Summary**

The qualitative assessments summarized in Section 3.1 indicate that among the G7 and Australia, Canada's ranking for overall infrastructure quality has fallen significantly in the last decade, going from fourth in 2008/09 to seventh by 2019. The decline in trade and transportation infrastructure quality has been more severe: fourth in 2016 to last in 2018. Its ranking for trade logistics infrastructure has also deteriorated: fourth in 2007 to last in 2018.

Similarly, Canada's rankings for ease of doing business and dealing with construction permits have worsened rapidly: it takes an average of almost two years (730 days in 2020) to resolve contract enforcement issues, while the rule of law and corruption rankings are also in gradual decline. The World Economic Forum found just over 50 per cent of public contracts in 2020 were "transparent." Finally, there is a growing Western alienation, with Western Canada businesses rating Canada's current business and regulatory climate as "negative" and expecting it to worsen in the future. Canada must address these issues to inspire global investors' confidence in Canadian infrastructure investment opportunities.

## **3.2 QUANTITATIVE EVIDENCE**

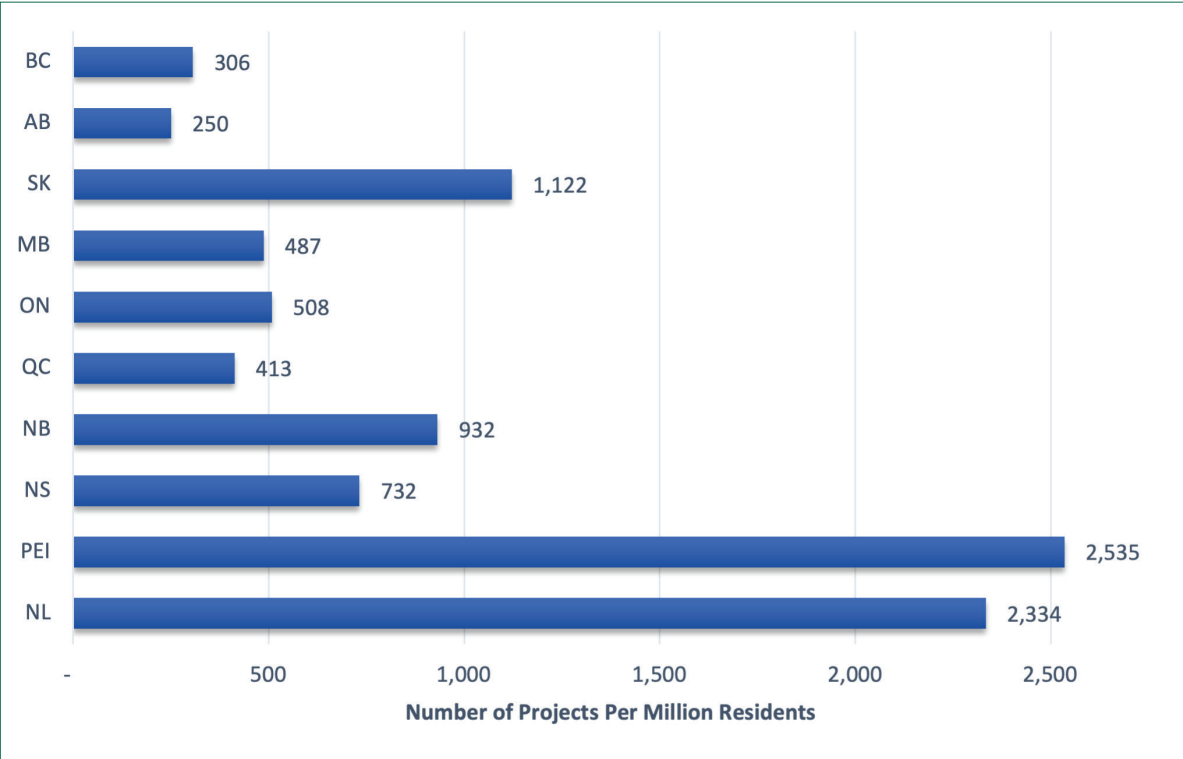
### **3.2.1 Federal Investment in Infrastructure**

Infrastructure Canada has dual responsibilities: developing policies that promote Canadian infrastructure projects as investment opportunities, and providing flexible funding to appropriate infrastructure projects across Canada. As of July 27, 2021, Infrastructure Canada had approved \$158.4 billion in flexible funding to 19,244 projects across Canada, of which 38.9 per cent were in Ontario and 18.4 per cent in Quebec (Government of Canada 2022c), on par with their share of Canada's population; Ontario and Quebec made up just over 61 per cent of Canadian population in 2020.

When standardized by per million residents (Figure 16), Prince Edward Island had the most projects and Alberta had the fewest. However, Alberta’s projects were among the most capital intensive, as evidenced by its second-largest average total cost per capita, of which the federal government covered 34 per cent (Figure 17). Average total per capita cost of infrastructure projects across the provinces was in the \$3,000 to \$5,000 range, except the rather large average total per capita cost of \$8,642 in PEI. Federal contribution to infrastructure projects’ funding varied from 33 per cent in Ontario to 44 per cent in PEI.

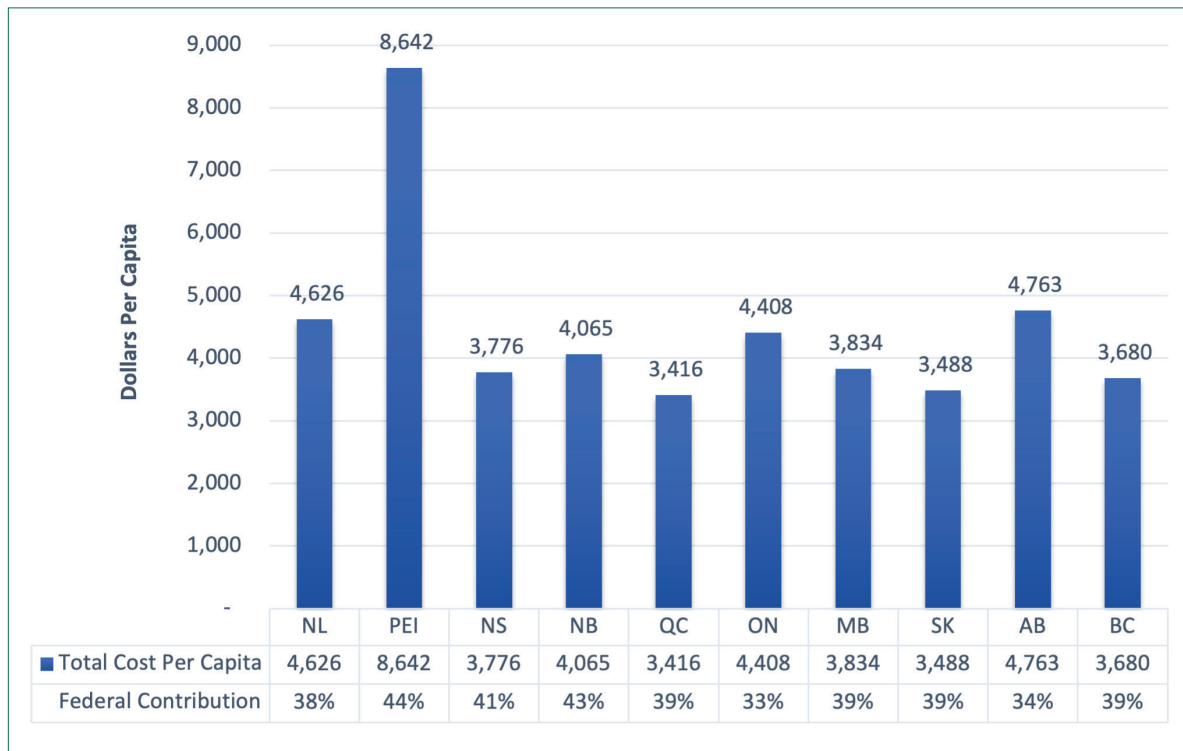
While per capita total infrastructure costs and the associated federal funding support may not vary much among the provinces, the costs of federal support to transit and transportation infrastructure projects vary considerably (Figure 18). Large provinces tend to have large projects, which means higher per capita average costs. For example, the Ontario Line of the Metrolinx alone received \$7.9 billion in funding support from Infrastructure Canada in 2021. The federal government covers a significant portion of the transit and transportation project costs: 29 per cent in Ontario to 50 per cent in Saskatchewan.

**Figure 16: Infrastructure Canada Projects Per Million Residents (As of July 27, 2021)**



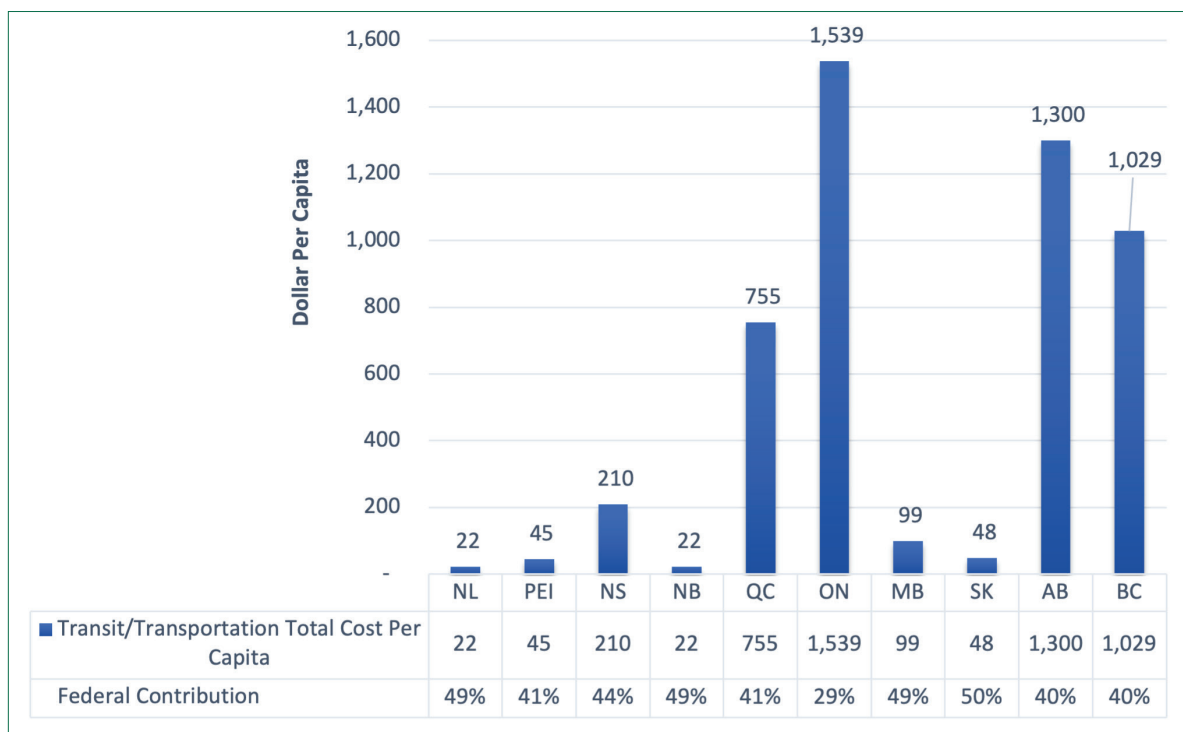
Source: Government of Canada (2022c)

**Figure 17: Federal Share of All Infrastructure Canada Project Costs (As of July 27, 2021)**



Source: Government of Canada (2022c)

**Figure 18: Federal Share of Infrastructure Canada Transit/Transportation Project Costs (As of July 27, 2021)**



Source: Government of Canada (2022c)

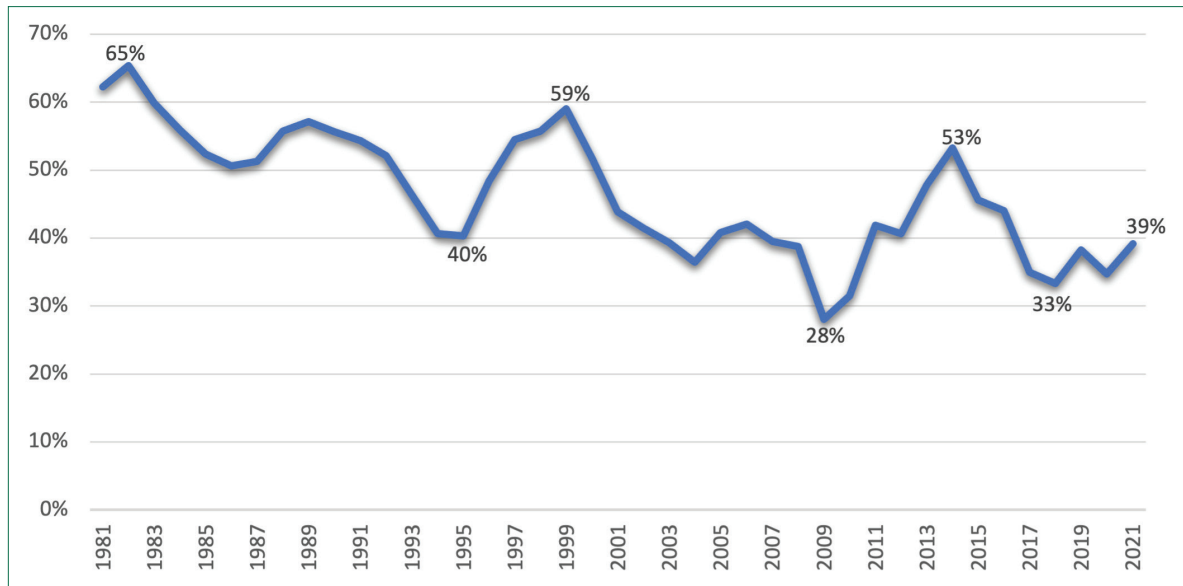
### 3.2.2 Private Investment in Infrastructure

The ratio of private to public investment in Canadian infrastructure shows a declining trend over the last four decades, with occasional temporary upswings (Figure 19). The falling ratio would not be a problem if public gross fixed capital formation were growing; however, as noted in Section 2, it is not.

The decline in private investments has happened while Canada’s federal debt burden remained relatively stable at around 31 per cent of GDP (Figure 20). It would appear that the federal government had the capacity to significantly increase its share of infrastructure investments over the last decade. Although net debt jumped to 51.2 per cent in 2021-22 due to COVID-related federal spending, researchers estimate it will gradually lower over the next several years but will still remain at a higher elevated level than in 2019-20 (RBC Economics 2021, 12). This increased debt level will likely hinder the government’s ability to raise public investment in the future.

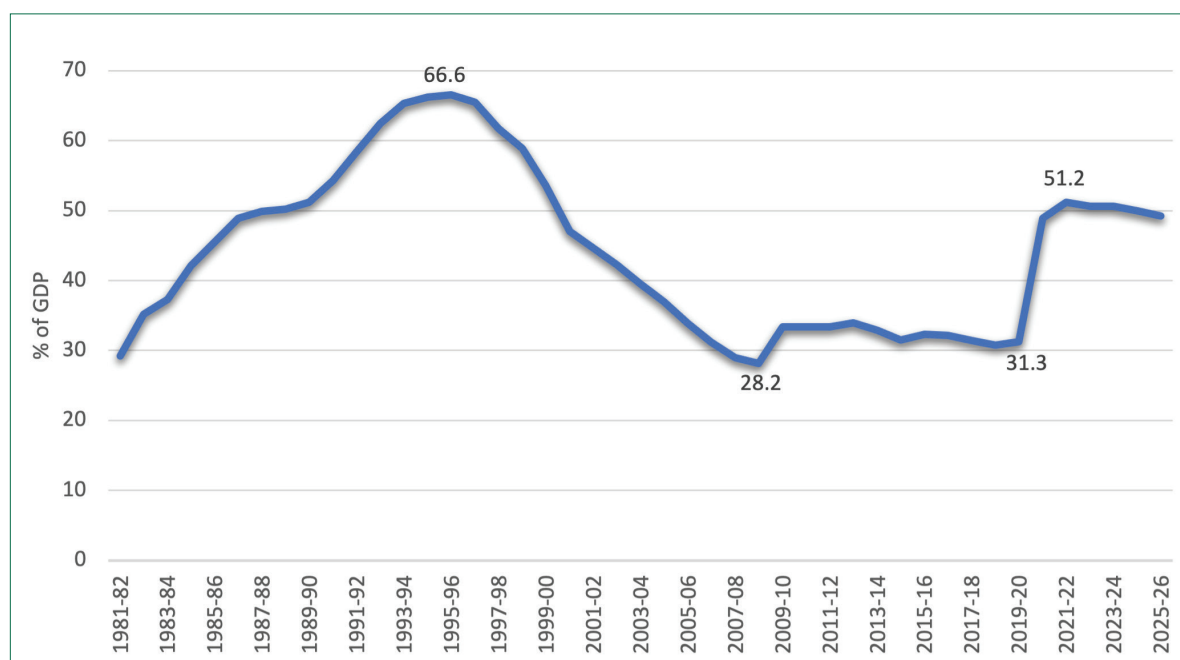
While federal net debt to GDP remained relatively stable in the last decade, there was a large increase in debt burden at the provincial level. This is not surprising given that municipalities and provinces build 90 per cent of government infrastructure in Canada but collect only 60 per cent of tax revenue (BCG 2017, 12). However, debt financing by provinces may be the only way to finance large investments in absence of a capital base, lack of sufficient federal funding, and declining large corporate investments. Constraints on debt financing at the provincial level also limit higher infrastructure spending by municipal governments, given their own restricted borrowing and taxation authority.

**Figure 19: Ratio of Private to Public Investment in Infrastructure Assets (Canada)**



Source: CANSIM Table 36-10-0608-01

**Figure 20: Federal Net Debt to GDP Ratio**



Source: Government of Canada (2020b), RBC Economics (2021, 12)

\*2020-21 to 2025-26 figures are RBC Economics estimates

Table 3 shows the patterns for the share of private investment in various asset classes. Of note is the fact that for these asset types the public represents the dominant investors. Communication networks and electric power infrastructure each attracted about a quarter of total share in the 2016-2019 period, while transportation infrastructure attracted a total of 13.1 per cent share. Some provinces, like Nova Scotia and Alberta, handle this lack of private investment situation better than others (Table 4).

**Table 3: Share of Private Investment in Infrastructure Asset Types**

Asset	1995	2000	2005	2010	2015	2016	2017	2018	2019	2016-2019 average
Commercial buildings	2.3%	1.7%	1.5%	1.5%	2.1%	1.3%	2.3%	1.4%	1.2%	1.6%
Institutional buildings	2.4%	2.0%	3.0%	2.3%	1.7%	2.0%	1.6%	3.6%	2.8%	2.5%
Marine engineering infrastructure	1.2%	1.7%	1.1%	1.5%	1.1%	1.2%	1.7%	2.6%	5.3%	2.7%
Transportation engineering infrastructure	11.9%	12.4%	6.6%	8.6%	11.2%	8.2%	8.6%	9.7%	15.1%	10.4%
Waterworks infrastructure	9.1%	6.3%	12.3%	1.4%	10.2%	7.7%	7.9%	4.5%	0.5%	5.1%
Sewage infrastructure	0.3%	0.2%	0.1%	1.1%	9.8%	10.3%	7.4%	3.9%	0.3%	5.5%
Communications networks	20.5%	29.5%	20.1%	17.6%	18.8%	23.4%	26.4%	26.9%	25.1%	25.5%
Electric power infrastructure	24.5%	15.4%	21.3%	36.2%	25.5%	27.6%	22.6%	23.2%	24.6%	24.5%
Oil and gas engineering construction (Pipelines)	8.7%	12.9%	19.0%	13.2%	10.2%	9.6%	12.8%	13.7%	14.0%	12.5%
Other engineering construction	1.5%	2.0%	1.2%	3.7%	1.9%	1.5%	3.7%	4.3%	2.0%	2.9%
Other machinery and equipment	9.6%	4.9%	4.9%	4.8%	4.3%	3.4%	2.4%	4.2%	6.6%	4.1%
Transportation machinery and equipment	8.0%	11.0%	8.8%	8.2%	3.2%	3.8%	2.5%	2.2%	2.4%	2.7%

Source: CANSIM Table 36-10-0608-01

**Table 4: Ratio of Private to Public Investment in Infrastructure Assets (Regions)**

	1985	1990	1995	2000	2005	2010	2015	2016	2017	2018	2019	2016-2019 average
NL	0.35	0.36	0.53	0.39	0.67	0.37	0.32	0.22	0.16	0.13	0.17	0.17
PEI	0.71	0.26	2.70	0.54	0.37	0.28	0.49	0.24	0.43	0.55	0.28	0.37
NS	0.62	0.84	0.53	0.72	0.38	0.71	0.46	0.69	0.79	0.53	0.48	0.62
NB	0.31	1.08	0.59	0.40	0.50	0.40	0.18	0.27	0.24	0.20	0.27	0.25
QC	0.35	0.40	0.27	0.28	0.16	0.15	0.33	0.33	0.23	0.20	0.22	0.24
ON	0.79	0.75	0.38	0.52	0.46	0.28	0.51	0.49	0.35	0.34	0.39	0.39
MB	0.32	0.41	0.30	0.23	0.27	0.24	0.27	0.62	0.15	0.19	0.20	0.29
SK	0.28	0.26	0.50	0.51	0.31	0.55	0.47	0.23	0.39	0.32	0.54	0.37
AB	0.55	0.58	0.88	1.11	1.01	0.60	0.69	0.63	0.65	0.68	0.74	0.68
BC	0.48	0.47	0.40	0.56	0.37	0.26	0.40	0.38	0.34	0.34	0.45	0.38
TERR	0.62	0.20	0.32	0.23	0.16	0.29	0.81	0.43	0.54	0.29	0.21	0.37

Source: CANSIM Table 36-10-0608-01

### 3.2.3 Investment in Trade and Transport Infrastructure

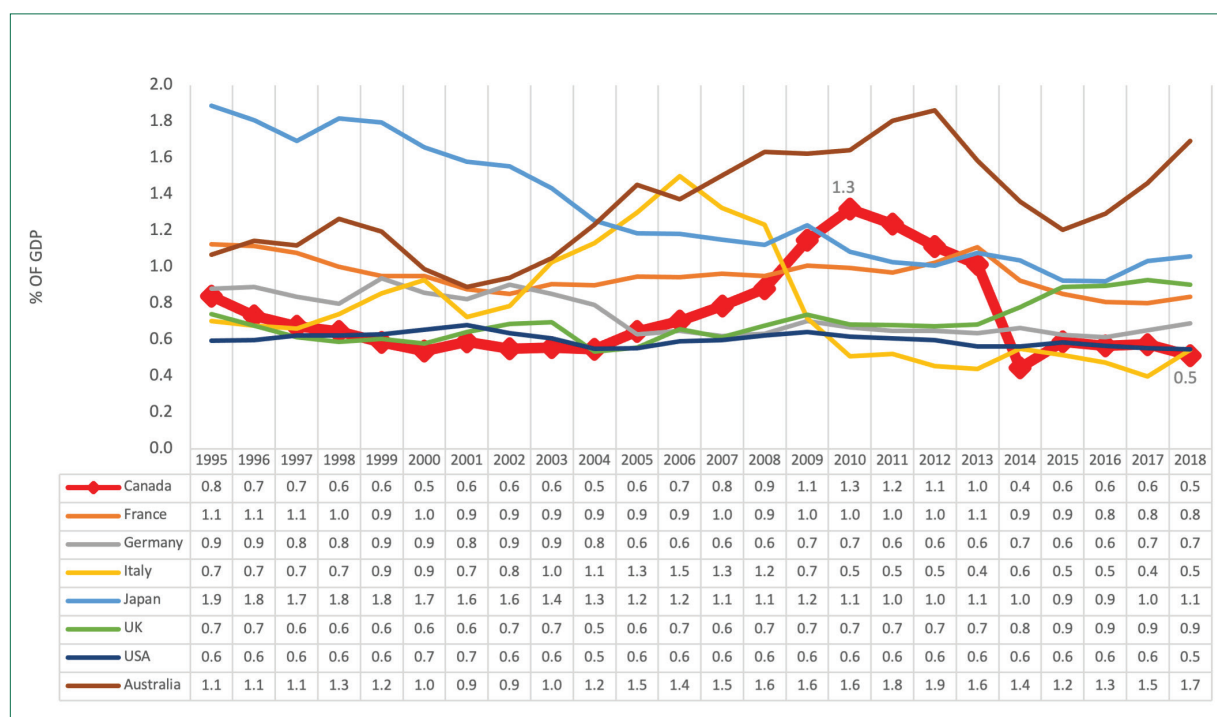
The funding capacity of the Canadian government is “average” and has resulted in “average” infrastructure investment in transportation, utilities and the energy sector compared to its peers (BCG 2017). However, average may not be good enough. For example, inadequate investment in transportation infrastructure implies degrading infrastructure, leading to more congestion and traffic delays. Canada was home to four of the fifteen most congested North American cities in 2017, resulting in a \$6 billion productivity loss from traffic in the Greater Toronto Area alone (BCG 2017, 5). Investments in maintenance and new trade and transport infrastructure are especially important, because they are critical in ensuring market accessibility, regional economic development, job creation, labour mobility, more connected communities and improved economic productivity (OECD 2022a).

OECD data shows a dramatic drop in total investments in new trade and transport infrastructure in Canada in recent years (Figure 21). In 2010, new investment in inland infrastructure<sup>14</sup> was equivalent to 1.3 per cent the Canadian GDP, the highest in the last thirty years. By 2018, it was 0.5 per cent, lowest among the G7 and Australia. Rail and road are especially important for Canada because over half of Canada’s total exports and over 65 per cent of Canada’s trade with the US moves through road and rail (Law and Dade 2022, 11). Therefore, having good quality roads and their maintenance is critical to Canada’s trade and economic prosperity. However, investments in new roads and road maintenance in Canada declined after 2010. There have been significant shifts over time in the relative shares of Canadian trade and transportation infrastructure investments (Table 5), along with shifts in the shares of private investment (Table 6).

<sup>14</sup> Inland infrastructure includes road, rail, inland waterways, maritime ports and airports.



Figure 21: New Investment in Inland Infrastructure (Percentage of GDP)



Source: OECD (2022a)

Table 5: Investment in Canadian Trade and Transport Infrastructure and Maintenance (million 2020 \$)

	2000		2005		2010		2015		2019	
	New	Maintenance	New	Maintenance	New	Maintenance	New	Maintenance	New	Maintenance
Rail	580	395	685	526	811	749	1,397	1,255	2,016	1,252
Road	3,556	5,615	6,477	6,181	17,885	10,111	9,460	7,019	11,132	6,500
Air	741	389	926	646	706	821	1,381	1,050	1,738	1,612
Sea	159	74	127	109	371	175	921	1,804	1,394	2,620

Source: OECD (2022a) and OECD (2022b)

Table 6: Transportation-related Infrastructure's Share of Total Private Investment

Transportation-related Asset	1995	2000	2005	2010	2015	2016	2017	2018	2019	2016-2019 average
Highway and road structures and networks	6.9%	6.5%	2.1%	4.0%	4.2%	1.7%	3.1%	2.4%	2.7%	2.5%
Bridges	1.9%	1.3%	0.5%	0.9%	0.7%	0.5%	0.8%	1.2%	2.9%	1.4%
Tunnels	0.1%	0.1%	0.0%	0.1%	0.2%	0.0%	0.1%	0.1%	0.3%	0.1%
Railway lines	2.8%	4.3%	3.9%	3.5%	5.6%	5.2%	4.4%	5.8%	8.8%	6.1%
Runways	0.2%	0.2%	0.2%	0.1%	0.6%	0.7%	0.2%	0.3%	0.4%	0.4%
Buses	3.1%	3.5%	7.0%	4.2%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%
Locomotives, railway rolling stock, and rapid transit equipment	4.9%	7.5%	1.8%	4.0%	2.8%	3.7%	2.4%	2.1%	2.4%	2.7%

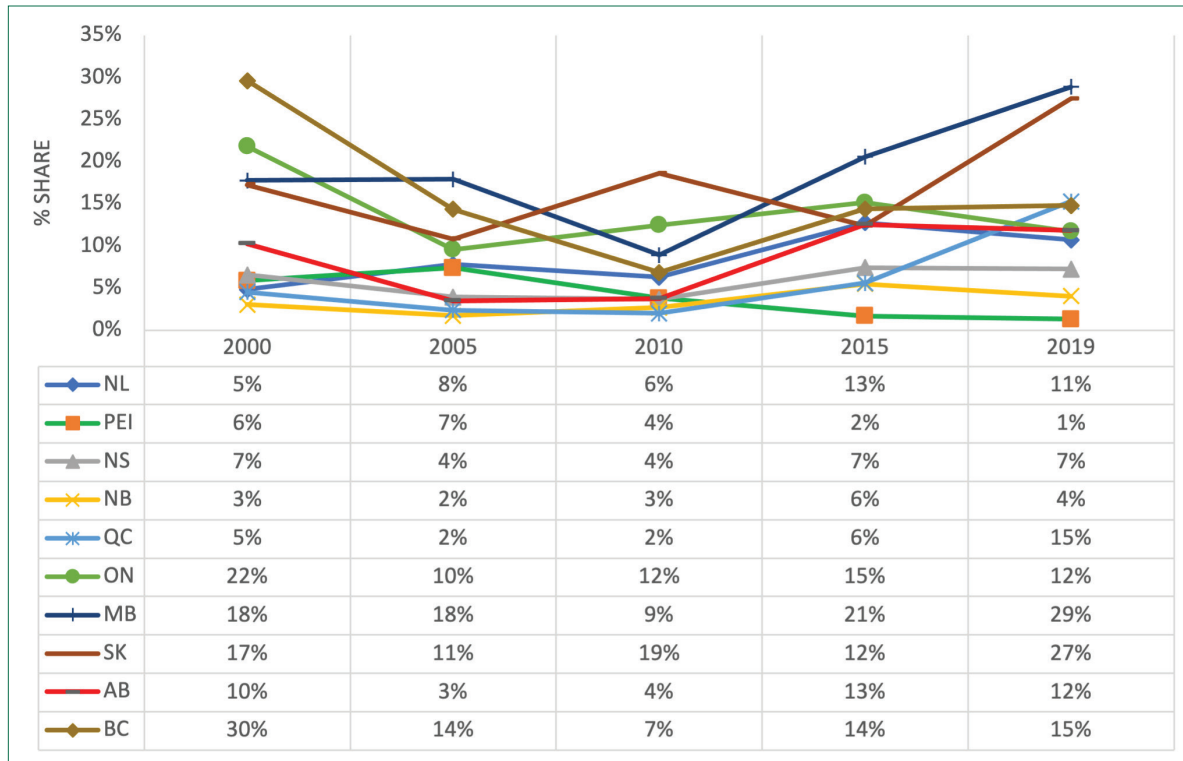
Source: CANSIM Table 36-10-0608-01

**Table 7: Ratio of Private to Public Investments in Transportation-related Infrastructure**

Asset Type	1995	2000	2005	2010	2015	2016	2017	2018	2019
Highway and road structures and networks	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Bridges	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Tunnels	0.4	0.8	0.3	0.3	1.2	0.1	0.6	0.4	0.6
Railway lines	2.5	6.5	4.7	1.7	1.2	1.0	0.6	0.6	1.0
Runways	0.4	0.9	1.3	0.3	0.4	0.6	0.1	1.3	1.5
Buses	5.0	2.7	4.2	2.2	0.2	0.1	0.0	0.0	0.0
Locomotives, railway rolling stock, and rapid transit equipment	6.4	11.1	9.2	3.6	0.8	1.0	0.3	0.3	0.4

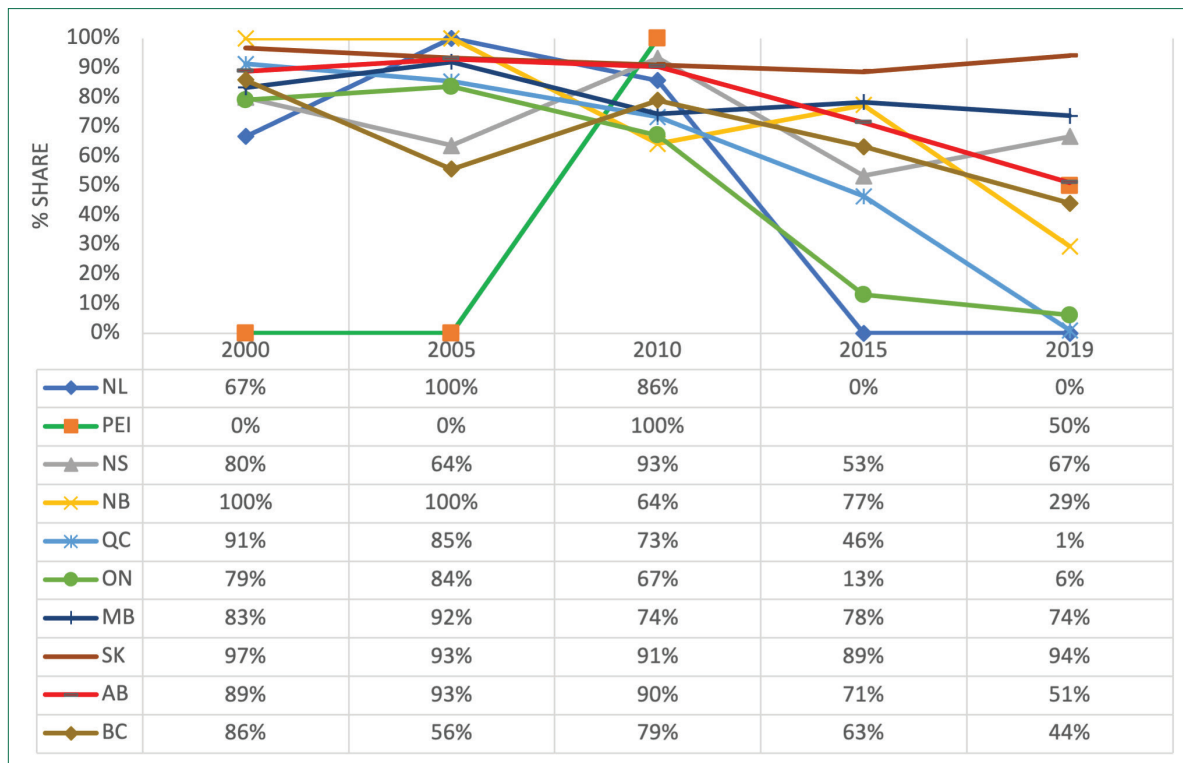
Source: CANSIM Table 36-10-0608-01

**Figure 22: Share of Private Investments in Transportation Engineering Infrastructure**



Source: CANSIM Table 36-10-0608-01

**Figure 23: Share of Private Investments in Transportation Machinery and Equipment**



Source: CANSIM Table 36-10-0608-01

Between 1995 and 2019, private investors’ preferences shifted away from highway and road structures and networks, buses and locomotives, railway rolling stock, and rapid transit equipment (Table 7). Private investment in railway lines in 1995 was 2.5 times the public investment, but in 2019 they were equal. Bridges attracted the second largest share of private investment in 2019, but the ratio with public investment remained the same as it was in 1995. Similarly, locomotives, railway rolling stock, and rapid transit equipment attracted the third largest share of private investment in 2019, but this share was effectively zero compared to the scale of public investment, indicating that the government essentially funded the entirety of this type of infrastructure in 2019.

The share of private investments in transportation engineering infrastructure in the provinces has remained between 5 and 30 per cent, with significant fluctuations through the years (Figure 22). For transportation machinery and equipment investments (Figure 23), the variation among the provinces is very large, with some provinces (PEI and NL) showing no private investments and others (SK) showing over a 90 per cent private share of investments.

### 3.2.4 Investment by Canadian Pension Funds

Pension funds hold a large share of private individuals' retirement savings<sup>15</sup> and are some of the world's largest investors in infrastructure projects. In Canada these funds have shown a growth in investment capacity of about 20 per cent annually (BCG 2017, 13). In 2019, Canada's pension funds had assets the size of 89.1 per cent of Canadian GDP, or \$1.55 trillion (Table 8). They have some of the world's leading experts in infrastructure investment, and their 5 per cent average asset allocation to infrastructure is second only to that in Australia (Inderst and Della Croce 2013, 34). In comparison, US public pension funds invest less than one per cent on average in infrastructure assets (Boardman, Moore, and Vining 2020, 24).

**Table 8: Pension Fund Assets as Percentage of GDP**

Rank	2002	% of GDP	2010	% of GDP	2016	% of GDP	2019	% of GDP
1	Switzerland	95.9	Netherlands	134.9	Netherlands	181.8	Netherlands	191.4
2	Netherlands	85.5	Iceland	123.9	Iceland	144.9	Iceland	167.6
3	Iceland	83.9	Switzerland	113.8	Switzerland	127.9	Switzerland	141.1
4	Australia	70.4	Australia	90.9	Australia	120.9	Australia	132.0
5	USA	63.2	UK	88.7	UK	95.3	UK	123.3
6	UK	58.8	Finland	82.1	<b>Canada</b>	<b>86.0</b>	<b>Canada</b>	<b>89.1</b>
7	Chile	55.1	USA	72.7	USA	81.0	USA	87.5
8	Finland	49.2	Chile	67.0	Liechtenstein	80.6	Chile	80.8
9	<b>Canada</b>	<b>48.3</b>	<b>Canada</b>	64.7	Namibia	75.5	Namibia	75.2
10	Ireland	34.4	Ireland	49.0	Chile	70.1	Israel	63.8

Source: OECD (2012, 2017, 2020)

However, while Canada's top ten public pension funds tripled in size in the 2003-2015 period, 75 per cent of their investments were in non-Canadian assets, a third of which was infrastructure and real estate assets (Whiteside 2017, 230). The possible exceptions are the CDPQ<sup>16</sup> and the CPP.<sup>17</sup> This would suggest opportunities for Canadian governments to pay more attention to infrastructure policies attracting investments from these large Canadian funds.

<sup>15</sup> Holding people's retirement savings is often given as the reason why pension funds have historically been risk-averse in investment choices, opting to make low-risk investments that provide a steady income stream (Della Croce, Kaminker, and Stewart 2011); however, they have been investing more and more in private equity and infrastructure projects in recent years (Clayton 2022). In 2016, six of the world's largest twenty pension fund infrastructure investors were Canadian, with a combined investment capacity of \$45 billion.

<sup>16</sup> The CDPQ was established to manage the Quebec Pension Plan fund, and has done well over the years. It started out by investing in bonds, equity investments and mortgage portfolios, but in later years branched out to other investments, including assets, international equity and infrastructure projects (CDPQ 2022). As of 2021, the CDPQ managed \$78 billion in assets.

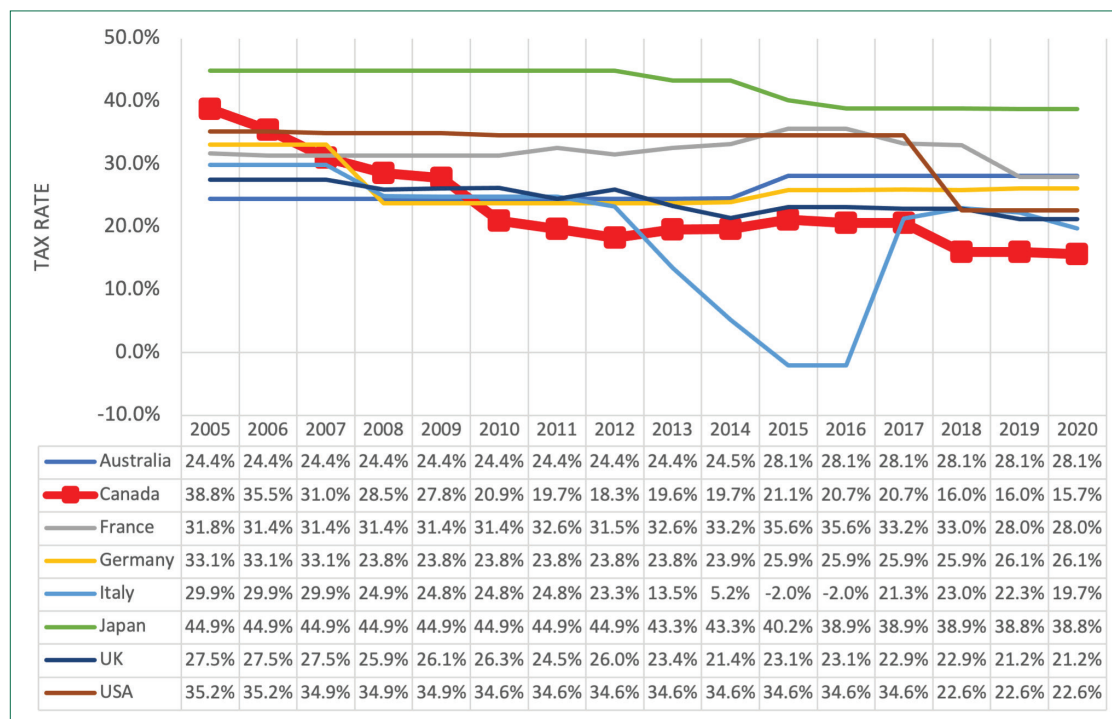
<sup>17</sup> Canada Pension Plan Fund — which managed \$550.4 billion in assets by the end of 2021 and is projected to exceed \$1 trillion by 2032 — also invests in infrastructure projects of at least \$500 million in equity and is willing to hold such investments for a very long term (CPP Investments 2022).

### 3.2.5 Canadian Investment Competitiveness

Levels of taxation and overall competitiveness in attracting foreign direct investment are additional factors that impact the level and growth rate of infrastructure investments in Canada. To assess their potential role in Canada's competitiveness relative to its G7 and Australia peers we focus on three indicators: the marginal effective tax rate (METR),<sup>18</sup> corporate income tax (CIT) rate, and the volume of foreign direct investment (FDI) flowing into Canada. Generally, there is evidence suggesting that lowering of the corporate tax rate and the effective marginal tax rate within the OECD increases FDI inflows (Abdioglu, Binis, and Arslan 2016; Anguelov 2017). However, this pattern doesn't hold perfectly for Canada.

Canada's METR fell from 38.8 per cent to 15.7 per cent in the 2005-2020 period, going from second highest to the lowest among the G7 and Australia (Figure 24). Canadian economic sectors associated with trade and transportation have higher METRs (Figure 25), that are substantially higher than those for manufacturing and forestry but lower than those for retail and wholesale trade. Similarly, Canada's CIT rate fell from 34.2 per cent to 26.1 per cent over the same period, with only the UK having a significantly lower CIT in 2020 (Figure 26). However, these reductions in tax rates have not been met with any substantial increase in Canada's share of global FDI flows (Figure 27). It must also be noted that FDI flowing into Canada primarily goes to five key sectors: management of companies and enterprises; manufacturing; mining and oil and gas extraction; finance and insurance; and wholesale trade (Statistics Canada 2022c).

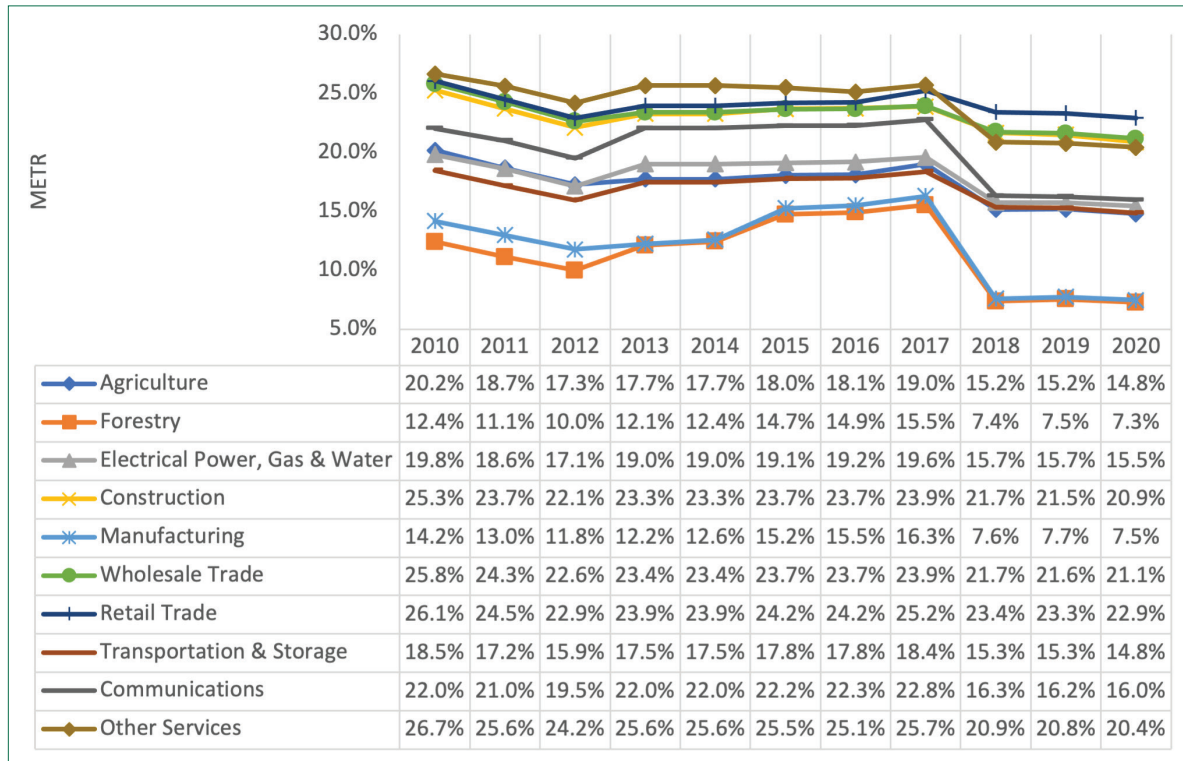
Figure 24: Marginal Effective Tax Rates



Source: Philip Bazel and Jack Mintz, School of Public Policy

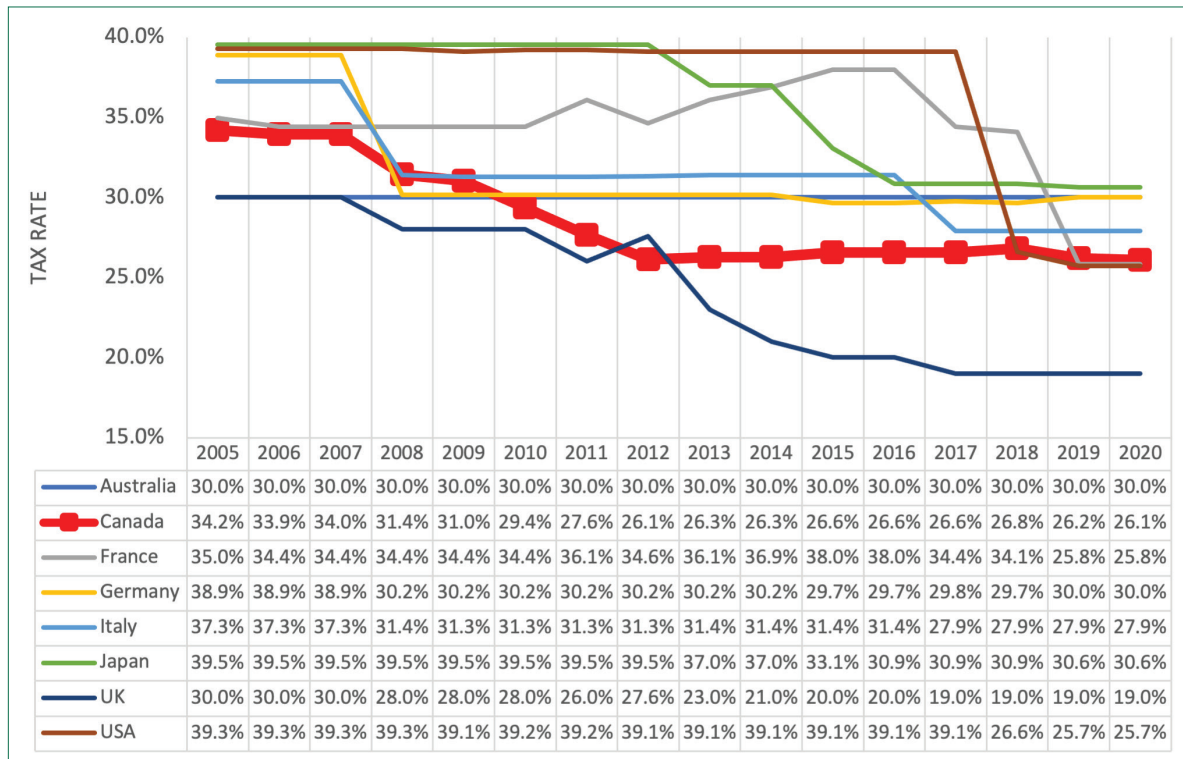
<sup>18</sup> METR is an estimate of taxation on a new business investment and takes into account various factors like other kinds of taxes paid by the business, regional corporate tax rates, capital taxes, sales taxes, etc. METRs of different regions and countries can be compared to determine overall tax competitiveness (Government of Canada 2022f).

Figure 25: METR by Economic Sectors



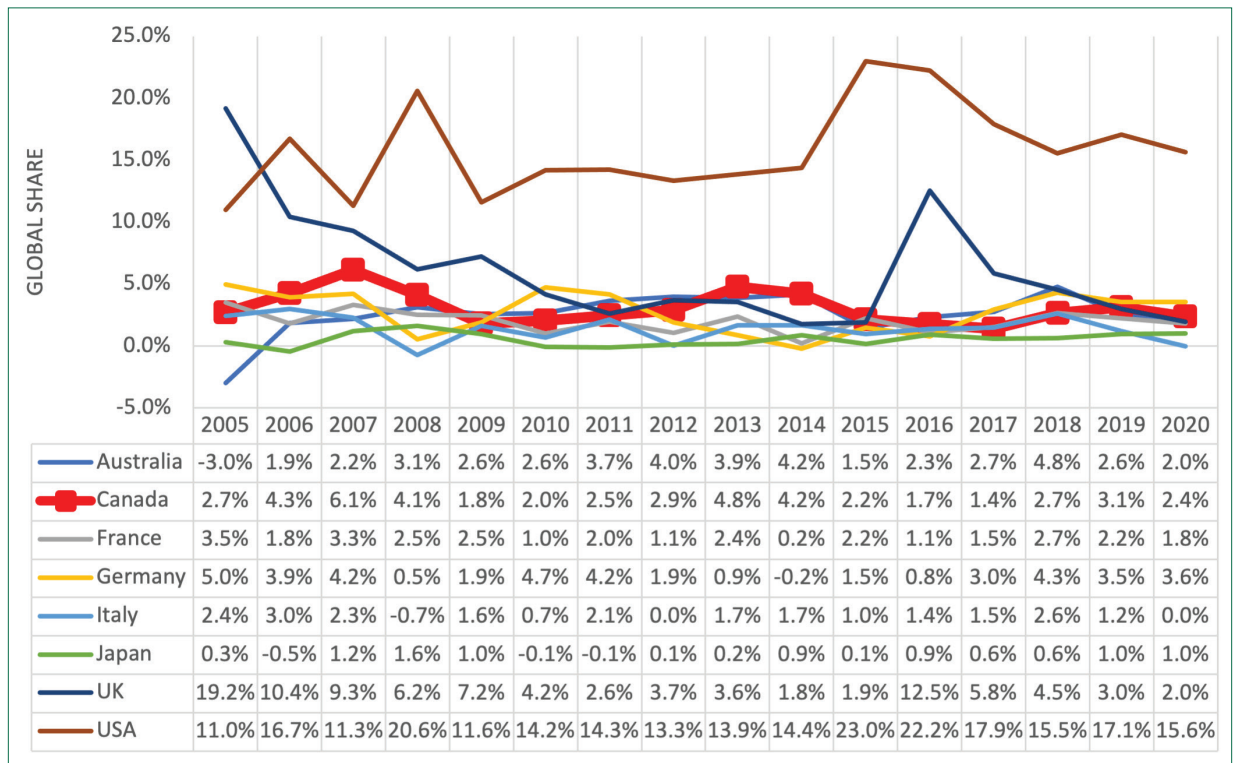
Source: Philip Bazel and Jack Mintz, School of Public Policy

Figure 26: Corporate Income Tax Rates



Source: Philip Bazel and Jack Mintz, School of Public Policy

Figure 27: Share of Global FDI Inflow



Source: United Nations Conference on Trade and Development (UNCTAD) data

### 3.2.6 Summary

Infrastructure Canada continues to provide major funding for many infrastructure projects across Canada while also working to promote and attract private investments. Yet, the combined government and corporate share of infrastructure investments has continued to fall. Canada has some of the world’s largest pension funds, which provide a large potential source of funding for infrastructure projects. At present, it appears that about three quarters of their funding for such projects is for non-Canadian infrastructure assets.

Additional debt financing by provinces may be the only way to finance large investments in absence of a capital base, lack of sufficient federal funding, and declining large corporate investments. However, there are significant constraints on debt financing at the provincial level, and this also limits higher infrastructure spending by municipal governments given their own restricted borrowing and taxation authority.

On trade and transport infrastructure, Canada invests the least as a percentage of GDP among the G7 and Australia. Of note is the decline in new road construction and maintenance investments in Canada, which peaked in 2010. On certain types of transportation infrastructure, private investments have increased while the government still primarily funds the entirety of other types of transportation infrastructure. Some regions (Nova Scotia and Alberta) have fared better at attracting private investments in such projects while others have struggled.

Finally, effective tax rates on investment in Canada have fallen over the past decade and remain competitive with those in most G7 and Australian peers. However, this alone has been insufficient to offset other factors that negatively affect inflows of foreign direct investment, including such investment supporting infrastructure funding.

## **4. CONCLUSION**

Not every metric cited above is consistent with the conclusion of Canada's declining investment reputation; specifically, the international competitiveness indices provide a more optimistic view. However, on balance, the evidence suggests Canada has a weak and declining reputation as a destination for infrastructure investment relative to peer countries (G7 and Australia), with a matching record of falling investment and FDI inflows.

'Investment Reputation' is a normative concept, and our analysis relies in part on index measures that can include arbitrary weighting of different quantitative aspects and opinion surveys. While a broad survey of the literature and various studies and reports as undertaken in this report cannot identify all the salient aspects of Canada's investment performance, in general, the survey results support a few broad conclusions.

Canada's reputation in terms of the quality of existing infrastructure and rates of investment in maintenance and expansion has slipped relative to that for most other G7 countries and Australia.

Estimates of Canada's infrastructure deficit range up to \$600 billion. The investment shortfalls contributing to this deficit are particularly apparent in transportation and trade infrastructure, with Canada falling sharply to last place relative to the G7 and Australia in terms of infrastructure and logistics quality.

The sharp slide in the ease of doing business and regulatory/bureaucratic delays (including the time required for construction permits) has proven problematic and may be a significant motivator behind the decline in investment reputation.

The growing infrastructure deficit and the contemporaneous decline in Canada's reputation as a destination for infrastructure investment (particularly trade and transportation infrastructure investment) is concerning given the implications for deteriorating trade competitiveness, access to markets, productivity and incomes, especially considering Canada's global role as a small open economy. Deterioration in these factors has resulted, and will continue to result, in lost socio-economic welfare for Canadians.

The share of private investment in infrastructure in Canada has dropped considerably over the last decade, with the ratio of private to public infrastructure investment falling from almost 60 per cent as recently as 2000 to just under 40 per cent in 2021. The share of private investments in transportation machinery and equipment has declined sharply in most provinces and inland infrastructure (roads, rail, inland waterways, ports and airports), and investment rates have fallen from 1.3 per cent of GDP in 2010 to only 0.5 per cent today.

The inconsistency in federal infrastructure policies and funding programs (which is tied to federal election cycles) is similarly problematic. While most of Canada's public infrastructure investment is being made by provincial and municipal governments, their much smaller and more variable shares of tax revenues do not ensure stable and sufficient



levels of infrastructure investment in many regions. This pattern also serves to promote additional regional inequality as regions suffering from poor infrastructure and resulting lower productivity do not have the resources to make investments to overcome local infrastructure deficits. Only the federal government is positioned to make those kinds of transfers to equalize outcomes.

Continued reliance on PPPs to bolster infrastructure investment will likely prove fruitless given the negative experiences Canada's peers have had with PPPs and the already evident frustrations with the Canada Infrastructure Bank. Falling marginal effective tax rate and corporate tax rate have failed to attract foreign direct investment flows into Canada, suggesting a substantial negative role played by other factors, most notably inconsistent federal investment policies and growing regulatory and bureaucratic delays.

#### **4.1 POLICY GAPS AND FAILURES**

There has been a historical failure in prioritizing infrastructure investments as critical to Canada's economic growth, especially in trade and transportation infrastructure. Transportation infrastructure attracted 13.1 per cent share of total private investments in the 2016-2019 period, and investments in road construction and maintenance peaked in 2010. This must change. Prioritization of roads and rails for more investment is critical to growing Canada's economy. Over half of all Canadian trade moves via road and rail.

A government audit found that federal departments and agencies undermine Infrastructure Canada's performance. Replacement of PPP Canada by Canada Infrastructure Bank, which has had an abject failure, shows that some of the institutional failure is a result of funding cycles tied to electoral cycles, making infrastructure promotion and spending projects politically motivated. Government infrastructure programs and institutions must have a long-term plan and vision.

As a result, Canada's reputation as a destination for global infrastructure investment has taken a hit in recent years. Quantitative indicators, such as METR and CIT rates as well as qualitative indices in various international competitiveness surveys, show Canada is competitive with its peers from a taxation perspective. However, significant regulatory and red tape burdens potentially dissuade global investors from investing in Canadian infrastructure projects, and hurt Canada's reputation internationally.

Additionally, Canada has many of the world's largest pension funds, and they invest significantly in infrastructure projects, just not in Canada. There is a failure in promoting and attracting Canadian pension funds' investments in Canadian infrastructure projects. Research shows such funds prefer brownfield over greenfield investment opportunities that are sufficiently large enough to bring in "steady, reliable, and significant returns on investment" (Whiteside 2017, 230).

#### **4.2 POLICY PRESCRIPTIONS**

To address these issues, we suggest the federal government, in particular, place a higher priority on infrastructure investments in critical areas such as trade and transportation infrastructure.<sup>19</sup> These types of infrastructure play an outsized role in supporting national

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<sup>19</sup> The Canada West Foundation recommends six specific trade infrastructure related actions: defining Canada's

productivity and income. While Canada lags behind, its competitors are pulling away. For example, in 2013, the EU identified a “core network” of transport infrastructure that it would finish building by 2030<sup>20</sup> to form the backbone of the EU’s “sustainable multimodal transport network,” and developed a “comprehensive network” plan to ensure that even “remote, insular and outermost regions” of the EU would be accessible and connected by 2050 (ECA 2021, 7). While the US and Australia have different selection processes for smaller and larger infrastructure projects, Canada has the same selection process for projects of different sizes (ECA 2021, 25).<sup>21</sup> Perhaps separate selection process and priority attention for megaprojects is warranted in Canada.

Further, attracting significant levels of private investment will likely benefit from a consistent and predictable trade and transportation infrastructure strategy. Government investments must be made with a long-term focus (well beyond political cycles) and be based on an integrated and strategic approach. This will require coordination among federal, provincial, municipal and First Nations governments and the private sector. The US, Canada and Mexico have all experienced significant declines in the World Economic Forum’s transport infrastructure rankings recently mainly due to “a tangle of mismatched budget cycles, bureaucratic turf battles and financial dysfunction” (Rooney and Dade 2022, 5). Formation of a trilateral North American Trade Infrastructure Bank may help boost competitiveness in North America (Rooney and Dade 2022, 5).

Provincial governments have already expressed an interest and willingness to collaborate on a national infrastructure strategy based on the corridor concept,<sup>22</sup> and the Senate Standing Committee on Banking, Trade and Commerce has similarly acknowledged the potential merits of applying the corridor concept (Senate of Canada 2017). Given these endorsements and the evidence presented above, it is incumbent on the federal government to take action on formulating a stable, long-term and strategic national infrastructure strategy that pairs federal government investment and policies to attract private sector investment in all kinds of infrastructure but most notably in transportation, warehousing and logistics infrastructure.

As part of this, it is critical that Canada address its serious issue of regulatory and policy uncertainty, delays and burdens, as these appear to be the most critical aspects of our declining reputation and the most pernicious impediments to achieving infrastructure investment goals and priorities.

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National Trade Corridor Network; developing a long-term project pipeline; including criteria of national significance; institutionalizing independent infrastructure advice; establishing regular assessments to measure progress and updating priorities; and upgrading infrastructure intelligence including forecasting and modelling (Dade and Law 2021).

<sup>20</sup> A 2020 audit by the European Court of Auditors found that delays in construction due to poor planning and inefficient implementation, as well as weak and distant oversight by the European Commission, “put at risk the effective functioning of five out of nine” transport projects (ECA 2020).

<sup>21</sup> The EU is similar to Canada in this regard; it also has no separate selection process.

<sup>22</sup> In July 2019, the Council of the Federation called for an informed discussion of pan-Canadian economic corridors as a key input to strengthening growth across Canada and “a strong, sustainable and environmentally responsible economy” (Canada’s Premiers 2019).

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## APPENDIX A: GOVERNMENT PROGRAMS FACILITATING AND PROMOTING INFRASTRUCTURE INVESTMENTS

### INFRASTRUCTURE CANADA

Established in August 2002 as a department of Transport, Infrastructure and Communities, Infrastructure Canada is the lead federal department responsible for developing infrastructure policies, building partnerships, delivering programs, fostering knowledge, making investments and generally addressing Canada’s infrastructure challenges through close work with all orders of government and private and non-profit partners (Government of Canada 2020a).

Infrastructure Canada has a dual role. First, it is responsible for developing policies that facilitate global investments into Canadian infrastructure projects through better policies and development of partnerships between public, private and non-profit partners. It coordinates the Investing in Canada Plan (discussed later) through fourteen different federal departments and agencies as well as provincial entities, and reports its results (Gosselin and Preville 2019, 1).

Second, the department itself is also a part of the Investing in Canada Plan, and receives federal funds to support infrastructure projects that it approves. Therefore, the department also provides flexible funding for infrastructure projects across Canada (Inderst and Della Croce 2013, 25). As of July 27, 2021, Infrastructure Canada had approved \$158.4 billion in flexible funding to 19,244 projects, from \$832.50 to the Municipality of Trent Hills for the rehabilitation of McCubbin Bridge to \$7.96 billion to Metrolinx for the Ontario Line (Government of Canada 2022c).

### BUILDING CANADA PLAN

The Building Canada Plan was launched in 2006, with \$33 billion in funding for the 2007-2014 period to provide strategic investments in three thematic areas of national importance: growing the economy, clean environment, and strong and prosperous communities (Government of Canada 2011). The “growing economy” component of the plan also focused on transport and trade infrastructure, specifically: gateways and border crossings, highways, short-line rail and short-sea shipping, and regional and local airports (Government of Canada 2011).

**Table A1: Building Canada Plan Program Allocations**

Program	Amount Allocated
Municipal GST Rebate	\$5.80 billion
Gas Tax Fund*	\$11.80 billion
Building Canada Fund	\$8.80 billion
Public-Private Partnerships Fund	\$1.25 billion
Gateways and Border Crossing Fund	\$2.10 billion
Asia-Pacific Gateway and Corridor Initiative	\$1.00 billion
Provincial-Territorial Base Funding	\$2.27 billion

Source: Government of Canada (2011)

\*In 2021, the Gas Tax Fund was renamed the Canada Community-Building Fund (CCBF) to reflect the program’s evolution over time.

Under the 2009 Economic Action Plan, the government committed an additional \$12 billion in short-term funding to infrastructure, including a top-up to the Building Canada Fund's community component, and established the \$1 billion Green Infrastructure Fund for projects promoting cleaner air, greenhouse gas emission reductions and clean water for the 2009-2014 period (Inderst and Della Croce 2013, 25).

## NEW BUILDING CANADA PLAN

When the eight-year Building Canada plan concluded in 2014, the government launched a new ten-year New Building Canada Plan. The new plan provided \$32 billion for the 2014-2024 period to municipalities, to support roads, public transit, recreational facilities and other community infrastructure; \$4 billion to the National Infrastructure Component to support projects of national importance; \$10 billion to Provincial-Territorial Infrastructure Component to support projects of national, regional and local significance, of which \$1 billion was dedicated to projects in communities with fewer than one hundred thousand residents; and \$1.25 billion for PPP Canada Fund (Government of Canada 2016).

## PPP CANADA

Except for a handful of successful projects in the early 1990s, Canada generally fell short of its peers when it came to attracting investors through public-private partnerships (PPPs) in infrastructure projects (Inderst and Della Croce 2013, 26). To remedy this deficiency, the government created PPP Canada in 2008 (operationalized in 2009) to build federal PPP procurement “and leverage greater value for money from federal investments in provincial, territorial, municipal and Indigenous communities infrastructure” (Government of Canada 2018).

PPPs created an estimated 517,000 full-time equivalent jobs and contributed \$32.2 billion to income, \$48.2 billion to the GDP, and \$92.1 billion to total output in Canada in the 2003-2012 period (Ciufo 2015). The majority of PPP projects were procured at provincial and municipal levels, mainly in transport (roads, bridges, etc.) and social (healthcare, schools, prisons, etc.) infrastructure with most active participations coming from the four largest provinces (Inderst and Della Croce 2013, 26).

On November 1, 2017 the minister of Infrastructure, Communities and Intergovernmental Affairs recommended that *PPP Canada* be dissolved by March 29, 2018 (Government of Canada 2018).<sup>1</sup> Therefore, PPPs today are negotiated at the federal, provincial, and

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<sup>1</sup> The UK also abolished its PPP units (the PIF in 2012 and the PF2 in 2018) because the government deemed PPPs were a fiscal risk to the government (HM Treasury 2018). In contrast, Japan's PPP unit, which was created around the same time as the UK's PIF, is still going strong and is one of the preferred ways of developing social infrastructure in the country (JAPANGOV 2022). Germany's OPP Deutschland AG, which used to advise PPP projects, was replaced by Partnership Germany in 2017 to advise all procurement options, not just PPPs (Government of Germany 2022). The FIN INFRA unit within the Ministry of the Economy assists PPPs in France (Government of France 2022). In Italy, the 2016 Stability Law authorizes the Department for Planning and Coordination of Economic Policy (DIPE) to coordinate and advise PPPs and project finances (DIPE 2020). Australia has a National PPP Policy in place to assess financing options, improve procurement, maintain and optimize effective risk allocation, and ensure effective long-term contracts monitoring (Australian Government 2015). However, in absence of a national PPP unit, the states are left to create their own dedicated PPP units, which three states (New South Wales, South Australia, and Victoria) have done. Similar to Australia, the US also has no national PPP unit, and the states are responsible for creating their dedicated PPP units, such as Washington, DC's Office of Public-Private Partnerships and Puerto Rico's Public-Private Partnerships Authority, a government-owned corporation (Mayor of Washington, DC 2022; Government of Puerto Rico 2022).

municipal levels by a host of different agencies and departments. Infrastructure Canada is still the leading federal department overseeing all kinds of infrastructure investments, including PPPs, and provincial bodies — such as Infrastructure Ontario, Infrastructure Alberta, and Infrastructure BC — do the same at the provincial level, while the non-profit Canadian Council for Public Private Partnerships (CCPPP) is a non-partisan member-based organization with members from the public and private sectors (The World Bank 2022b).

As of this writing, there were a total of 291 PPP projects in Canada, with a combined market value of \$139.5 billion (SP3CTRUM 2022).

## INVESTING IN CANADA PLAN

In 2016, the newly elected Liberal government launched the Investing in Canada Plan, committing \$187 billion (\$95 billion in new investments and \$92 billion existing commitments) to infrastructure projects across Canada over the next twelve-year period (Government of Canada 2022e). The plan aims to achieve three objectives: create long-term economic growth for a stronger middle class, support community resilience and transition to green economy, and build social inclusion and socio-economic outcomes for all Canadians (Government of Canada 2022e). These objectives appear to be a repeat of the three thematic areas of national importance stated in the *Building Canada Plan*.

To achieve the objectives, the government implemented the Investing in Canada Plan in phases.

- Phase I stimulated short-term economic growth through public transit projects; green infrastructure, water and wastewater systems; social infrastructure; improving broadband services in rural and remote communities; and post-secondary infrastructure.
- Phase II invested in five infrastructure streams: public transit, clean energy, social, trade and transportation, and rural and northern communities.
- In Budget 2017, the government announced that Infrastructure Canada would deliver \$33 billion of Phase II's total \$81 billion through bilateral agreements with the provinces and territories.
- Finally, the government also committed to additional initiatives: Smart Cities Challenge (\$300 million), Canada Infrastructure Bank (\$35 billion) and Disaster Mitigation and Adaptation Fund (\$2 billion) (Gosselin and Preville 2019, 7).

**Table A2: Investing in Canada Plan Phases (2017-2028)**

Projects	Phase I (Budget 2016)	Phase II (2016 Fall Economic statement)	Phase II bilateral agreements (Budget 2017)
Public Transit	\$3.4 billion over 3 years	\$25.3 billion over 11 years	\$20.1 billion
Green infrastructure, water, wastewater	\$5 billion over 5 years	\$21.9 billion over 11 years	\$9.2 billion
Social infrastructure	\$3.44 billion over 5 years	\$21.9 billion over 11 years	\$1.3 billion
Broadband in rural and remote communities	\$0.5 billion over 5 years		
Post-secondary infrastructure	\$2 billion over 3 years		
Trade and transportation infrastructure		\$10.1 billion over 11 years	
Rural and northern community infrastructure		\$2 billion over 11 years	\$2.4 billion

Source: Gosselin and Preville (2019, 2-5).

To allow future progress comparisons, a baseline Canada’s Core Public Infrastructure Survey (CCPI) was conducted in 2016, and subsequent surveys are conducted every two years to collect “statistical information on the inventory, condition, performance and asset management strategies of core public infrastructure assets owned or leased by various levels of the Canadian government” (Statistics Canada 2022a). The CCPI assesses nine core public infrastructure assets: bridge and tunnel; culture, recreation and sports facilities; potable water; public transit; road; public social and affordable housing; solid waste; storm water; and wastewater. Respondents are asked to rate these assets on a scale from very poor to very good. The 2020 survey included 2,260 government organization respondents (Statistics Canada 2022b). As such, the survey is quite extensive and covers a gamut of public infrastructure assets across Canada.

The Investing in Canada Plan Secretariat, housed in Infrastructure Canada, coordinates the plan, delivers investments through twenty-one different federal departments and agencies, and reports its results. Among its many duties are the responsibility for collecting information from federal partner organizations, supplying report to Infrastructure Canada’s annual plan and results report, and “displaying and maintaining mandated and proactive public reporting tools on the plan’s progress and results” (Auditor General of Canada 2021, 2-3).

As of March 15, 2022 the plan had committed to invest a total of \$188.03 billion in a total of 77,599 infrastructure projects, of which 75,946 projects had already started, and a total of \$67.69 billion in reimbursements had already been made by the plan (Government of Canada 2022b).

## INVESTING IN CANADA INFRASTRUCTURE PROGRAM

The Investing in Canada Infrastructure Program (ICIP) is a cost sharing program and a part of the Investing in Canada Plan. Under the program, Infrastructure Canada signs bilateral agreements with the provinces and territories to disburse the program’s \$33 billion in funding through four streams: public transit; green infrastructure; community, culture and recreation infrastructure; and rural and northern communities infrastructure (Government of Canada 2022d). For municipal projects, provinces must cost share a minimum of one third of eligible costs.

**Table A3: Investing in Canada Infrastructure Program Cost-share Structure**

Infrastructure	Cost-share up to
New public transit construction and expansion	40%
Public transit rehabilitation	50%
Projects under Rural and Northern Communities stream	50% (60% if the community has fewer than 5,000 residents)
Projects in the territories	75%
Projects with Indigenous partners	75%
For-profit private sector projects	25%

## CANADA INFRASTRUCTURE BANK

As part of the Investing in Canada Plan, in the Fall of 2016, the Liberal government announced a \$35 billion funding over eleven years to establish the Canada Infrastructure Bank (CIB),<sup>2</sup> an arm's length Crown corporation that works with all levels of government and private investors to identify potential infrastructure investments (Government of Canada 2022a).

PPP Canada was cancelled and replaced by the Canada Infrastructure Bank. While PPPs in the past had the private sector playing a minor role, the bank would facilitate PPPs and act as a minority partner while the private sector led the projects (Curry 2017). A 2017 IMF staff report agreed that the CIB could be “an effective instrument for mobilizing private capital to build large, revenue generating projects” and that the bank “should be designed to protect public interest while providing private investors with an adequate risk-adjusted rate of return” (IMF 2017). To this effect, the CIB would fund infrastructure projects through equity investments, loans and loan guarantees (Gosselin and Preville 2019, 8). As set out in the law, the bank must invest in infrastructure projects that are in the public interest and generate revenue, in five priority areas: public transit, green infrastructure, trade and transport, broadband, and clean power (Government of Canada 2021).

**Table A4: Canada Infrastructure Bank's Priority Sectors**

Priority Sector	Allocation
Public Transit	\$5 billion
Clean Power	\$5 billion
Green Infrastructure	\$5 billion
Broadband	\$3 billion
Trade and Transportation	\$5 billion
Indigenous Infrastructure	\$1 billion
Project Acceleration	\$500 million

Source: CIB (2022c)

As of today, \$23 billion of the total \$35 billion has been allocated across these priority sectors. An additional \$1 billion was allocated across all priority sectors for Indigenous communities, and \$500 million was allocated to accelerate project development and early works to facilitate quicker construction.

In October 2020, the government announced a three-year \$10 billion Growth Plan through the CIB for new infrastructure initiatives, with an expectation to create sixty thousand jobs across Canada (CIB 2022a). The Growth Plan fund was allocated across five major strategic initiatives: renewable power generation, storage and transmission between regions in Canada; connecting 750,000 homes and small businesses in underserved communities to broadband internet, large-scale energy efficient building retrofits, agriculture irrigation projects to strengthen Canadian food security, acceleration of zero-emission buses adoption and their charging infrastructure, and project development and early construction works support for the above provisions (Prime Minister of Canada 2020).

<sup>2</sup> Officially established on June 22, 2017 by the Canada Infrastructure Bank Act.

The bank has not lived up to its expectations. By May 2022, its “approved investments” totaled \$7.2 billion (CIB 2022b), and it had raised only \$7.6 billion in private and institutional investments, while its desired ratio of private investments to investments made by the bank is four to one (Coyne 2022). Being able to approve (let alone spend) only \$7.2 billion worth of investments over five years of operation, when it has \$35 billion it can spend, suggests a weak performance. As a result, a Standing Committee on Transport, Infrastructure and Communities recommended to the Canadian parliament in May 2022 that “the Government of Canada abolish the Canada Infrastructure Bank,” a stunning rebuke of the bank and an acknowledgment of its failure as an institution (Schiefke 2022, 1).

## PROVINCIAL ENTITIES

Infrastructure Ontario is a Crown agency tasked with four major duties, including the procuring and commercially leading major infrastructure projects in Ontario and providing affordable long-term loans to projects supporting the renewal of public sector infrastructure (Infrastructure Ontario 2022). Similarly, Infrastructure BC (called Partnerships BC before the name-change in 2020) is a self-sustaining<sup>3</sup> Crown corporation that provides project planning, procurement management, design and construction oversight, contract administration, and project communications support services to the government and project owners, in addition to helping them find the best delivery model for large and complex infrastructure projects (Infrastructure BC 2020).

The Ministry of SaskBuilds and Procurement was created in November 2020 by merging the Ministry of Central Services and SaskBuilds, a Treasury Board Crown corporation. Among its many responsibilities is to explore alternative procurement and financing mechanisms, such as PPPs, to meet Saskatchewan’s infrastructure needs (SaskBuilds 2022).

Similarly, Manitoba Transportation and Infrastructure develops transportation policy and legislation, and manages Manitoba’s infrastructure network (Government of Manitoba 2022a). The assistant deputy minister of Infrastructure, Capital Projects oversees the capital planning, projects management, tendering and contracts, and major projects-related responsibilities (Government of Manitoba 2022b).

Alberta Infrastructure is the ministry responsible for planning, building and maintaining government-owned infrastructure, as well as addressing provincial infrastructure needs (Government of Alberta 2022a). This includes finding alternative financing for infrastructure projects through PPPs and unsolicited proposals, and managing the transportation/utility corridors, which includes planning, reviewing and approving proposal developments as well as sales and acquisition of land (Government of Alberta 2022b, 2022c).

In 1965, the National Assembly of Quebec created Caisse de depot et placement du Quebec (CDPQ) to manage the funds of the newly created retirement plan, the Quebec Pension Plan (CDPQ 2022). The CDPQ started out by investing in bond portfolios, equity investments and mortgage loans before branching out into other investments in later years. While the CDPQ’s first infrastructure investment was Highway 707 in Toronto in 1999, *CDPQ Infra* was created in 2015 as CDPQ’s subsidiary to design, finance, develop and operate infrastructure projects.

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<sup>3</sup> The agency operates on a fee-for-service basis.

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