

A hand in a dark suit jacket and blue tie points towards a world map composed of white dots. Several circular icons are overlaid on the map: a yellow lightbulb, a green dollar sign, a blue forklift, a purple factory, an orange brain, and a green bar chart with an upward arrow.

# Capital Investment in Canada: An International Comparison

by **Steven Globerman and  
Trevor Press**

## SUMMARY

- Capital investment contributes to economic growth and higher standards of living through its link to increased labour productivity and technological change.
- The growth rate of overall capital expenditures in Canada slowed substantially from 2005 to 2017 compared to earlier periods. Furthermore, from 2015 to 2017, the growth rate was lower than in virtually any other period since 1970.
- As recently as 2000 to 2010, overall capital investment in Canada enjoyed a substantially higher growth rate than in other developed countries, but from 2010 to 2015, Canada's investment growth rate dropped substantially below that of the United States and several other developed countries.
- Further, corporate investment in Canada as a share of total investment was the lowest among a set of developed countries from 2005 to 2016. Canada's relatively weak corporate investment performance was particularly marked from 2010 to 2016.
- That relatively weak recent performance is mirrored in the lower shares of two key categories of business investment in Canada: machinery and equipment and intellectual property products. From 2010 to 2016, the shares of these assets in total investment in Canada declined relative to the shares of those assets in total investment for the other OECD countries studied.
- This bulletin's international comparison supports concerns raised elsewhere about the future competitiveness and productivity performance of Canada's business sector compared to other developed countries. Against this background, improvements to the environment for business investment in Canada should be a priority for the federal and provincial governments.

# Capital Investment in Canada: An International Comparison

## Introduction

Capital investment, also known as capital deepening, is an important contributor to economic growth through the growth of labour productivity. Indeed, from 1980 to 2011, capital investment accounted for almost two-thirds of the average annual growth in labour productivity in Canada.<sup>1</sup> Since capital is a complementary input to labour, capital deepening directly increases the productivity of workers. Moreover, to the extent that capital investment is a vehicle for introducing new technology into the economy, primarily in the form of new and improved machinery and equipment, capital deepening also promotes a faster growth of total factor productivity, which represents the productivity of all conventional factors of production in an economy. The importance of capital investment to the growth of productivity and, hence, to improvements in standards of living, makes the recent behaviour of capital investment in Canada of particular concern. A previous study of ours (Globerman and Press, 2018) documents a recent decline in the growth of total fixed capital expenditures in Canada. While the decline is consistent with the slower growth of the Canadian economy, the slowdown in investment growth was particularly marked for two important business asset categories: machinery and equipment and intellectual property products.

---

<sup>1</sup> The remainder of the increase in labour productivity was accounted for by an increase in the educational and skill levels of the domestic labour force. Over the same time period, capital investment accounted for over one-third of the growth in average annual labour productivity in the United States. The second most important contributor was the growth in multi-factor productivity, which is primarily technological change. See Baldwin, Gu, Macdonald, and Yan (2014).

A number of other research contributions highlight a slowdown, and in some cases a decline, in private sector capital investment in Canada in recent years. Most notably, Cross (2017) evaluated business investment behaviour in Canada post-2000. He concludes that business investment in Canada has been low compared to other developed countries.<sup>2</sup> This is particularly true for the important category of machinery and equipment. Lamman and McIntyre (2018, March 5) report a consistent decline since 2014 in Statistics Canada's survey results on the investment intentions of Canadian private and public sector organizations. This survey asks some 25,000 organizations about how much they intend to invest in non-residential capital assets such as buildings and machinery and equipment. Reported investment intentions declined consistently from 2014 through 2018. Finally, Clemens and Veldhuis (2018, April 11 and 2018, April 13) refer to a growing chorus of business leaders who have stated that Canada has an investment crisis. They also offer data supporting the concern of business leaders that capital investment in Canada is collapsing. The data show not only declining domestic business investment adjusted for inflation since 2014, but also decreasing foreign direct investment in Canada.<sup>3</sup>

---

<sup>2</sup> Canada's business investment performance improved somewhat between 2009 and 2014 because of higher energy prices, which boosted investment in the energy sector. However, business investment performance weakened substantially after 2014 when the energy sector no longer compensated for weakness in other industries (see Cross, 2017). For a short debate about the competitiveness of Canada's business sector, see the exchange between Mintz (2018, March 9) and Morneau (2018, March 9).

<sup>3</sup> Grubel (2018) also discusses the substantial recent decline in foreign direct investment in Canada.

This bulletin evaluates capital expenditures over the past three to four decades in Canada in comparison to other countries, particularly the United States. An examination of the behaviour of capital expenditures over time offers a perspective on whether recent experience differs markedly from the past. If so, it would support recent warnings to governments by business leaders in Canada that urgent attention should be paid to a deteriorating domestic capital investment environment. Comparing overall investment in Canada to other countries helps identify whether the Canadian experience reflects macroeconomic forces that broadly apply internationally or whether influences specific to the domestic economy seem more relevant. In the latter case, policy changes that specifically influence capital expenditures are more likely than broader macroeconomic policies to influence investment behaviour.

Our main finding is that the growth rate of overall gross fixed capital formation (GFCF) for Canada slowed substantially from 2005 to 2017. In particular, the growth rate from 2015 to 2017 was lower than in virtually any other period going back to 1970. The GFCF growth rate in Canada for 2010 to 2015 was also substantially below that of the United States and the OECD as a whole. While there have been other periods when this has been true, Canada actually enjoyed a substantially higher growth rate of GFCF than other OECD countries as recently as 2000 to 2010. We also identify a declining share of business investment in total GFCF in Canada which was particularly dramatic from 2014 to 2016. Conversely, the share of household investment in GFCF, reflecting a strong increase in the importance of dwellings in the mix of capital expenditures, increased, so that household investment's share of GFCF in Canada in 2015 and 2016 was higher than it had been in any period since 1981.

This bulletin proceeds as follows. The next section presents and discusses data on total gross fixed capital formation in Canada compared to the United States and other OECD countries. A section follows that compares capital formation growth in each of the main sectors of the Canadian economy to that of several other OECD countries for which data are available. The bulletin then examines capital expenditures across major asset categories for Canada and several other OECD countries. It ends with conclusions and policy implications.

## Gross fixed capital formation in Canada

This section presents data on gross fixed capital formation in Canada over time and compares Canada's experience with that of other countries. The OECD defines gross fixed capital formation (GFCF) as the acquisition (including purchases of new or second-hand assets) and creation of assets by producers for their own use, minus disposals of produced fixed assets. The relevant assets relate to products that are intended for use in the production of other goods and services for a period of more than one year.<sup>4</sup>

Table 1 provides an overview of changes in gross fixed capital formation (GFCF) in Canada, the United States and other OECD countries for five-year periods from 1970 to 2015, as well as from 2015 to 2017 in the cases of Canada and the US, and from 2015 to 2016 for the OECD.<sup>5</sup> Specifically, table 1 reports the percent-

---

<sup>4</sup> See OECD Data, *Investment (GFCF)*. All data used in this report are from this OECD website unless otherwise indicated.

<sup>5</sup> Data on GFCF were unavailable for 2017 for some OECD countries. Our sample of other OECD countries for which data were available includes Australia, Belgium, Denmark, Finland, France, Germany,



# Capital Investment in Canada: An International Comparison

age change in GFCF expenditures between the beginning and end years of each period identified, where GFCF is measured in millions of current US dollars and where non-US currencies are converted to US dollars using Purchasing Power Parity exchange rates.<sup>6</sup> Canada, the United States, and the other OECD countries as a whole saw their fastest growth in GFCF during the 1970 to 1980 period. Between 1970 and 2010, Canada sometimes enjoyed faster rates of growth of GFCF than the US and the other OECD countries, while at other times Canada exhibited slower rates of growth. Over the full range of five-year time periods reported in table 1 and covering the period 1970 to 2010, there is no basis for concluding that GFCF increased at a consistently slower rate in Canada than in other developed countries. However, from 2010 through 2017, GFCF in Canada increased at a slower rate than in the US. GFCF in Canada also increased at a slower rate than in other OECD countries from 2010 to 2015.<sup>7</sup> This finding is consistent with evidence from other studies discussed in the introduction, which identify decreases in Canada's absolute (and relative) capital investment rates in recent years.

While various factors can influence capital expenditures including interest rates, tax rates, demography (including population growth and

Iceland, Japan, Korea, Netherlands, New Zealand, Sweden, Switzerland and the United Kingdom.

<sup>6</sup> The source of the data underlying our calculations of percentage changes in GFCF is OECD Data, Investment (GFCF). GFCF data for the US for 2017 was retrieved from the Federal Reserve Bank of St. Louis, FRED, at <https://fred.stlouisfed.org/series/USAGFCFADSMEI>. The information in table 1 is presented in graphical form in figure 1.

<sup>7</sup> Canada's GFCF growth rate from 2015 to 2016 (-1.2 percent) was below the 3.6 percent growth rate for the other non-US OECD countries for that period.

**Table 1: Percentage Changes in Gross Fixed Capital Formation**

Years	Canada	US	OECD
1970-75	94.2%	52.7%	50.7%
1975-80	62.8%	93.3%	65.9%
1980-85	28.8%	52.8%	33.7%
1985-90	39.1%	23.5%	58.7%
1990-95	3.7%	25.6%	10.9%
1995-2000	40.0%	48.7%	19.9%
2000-2005	44.8%	25.8%	14.8%
2005-2010	25.1%	-9.7%	13.2%
2010-2015	19.3%	33.4%	22.4%
2015-2017	2.5%	6.4%	3.6%*

\* = 2015–2016

Canada 2015–2016 = -1.2

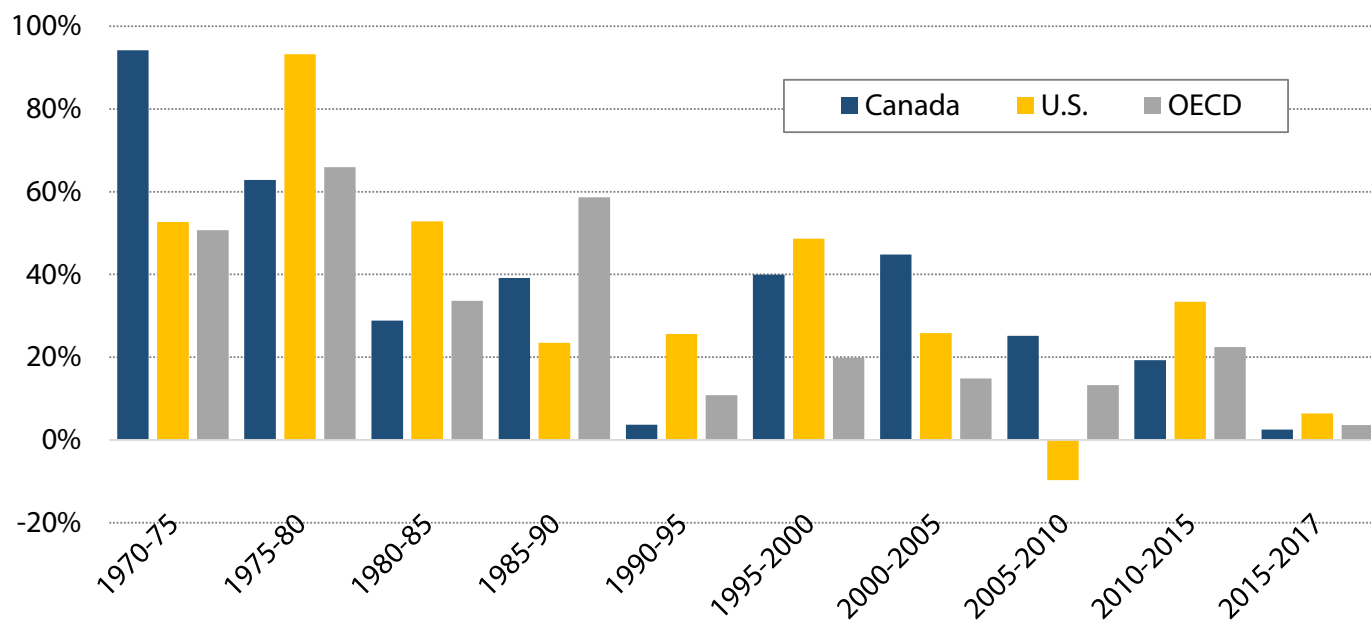
US 2015–2016 = 1.2

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

the age distribution of the population), and political and economic uncertainty, economic growth is certainly an important factor influencing investment. Specifically, faster economic growth creates an increased demand for production capacity and therefore for capital investments. In this regard, it is possible that the slower rate of growth of GFCF in Canada compared to the US and other OECD countries in recent years reflects a slower rate of growth in gross domestic product (GDP) in Canada than elsewhere. Table 2 provides some perspective on this possibility. Specifically, table 2 reports the percentage change in GDP measured in millions of US dollars at current prices, where purchasing power equivalent (PPP) ex-

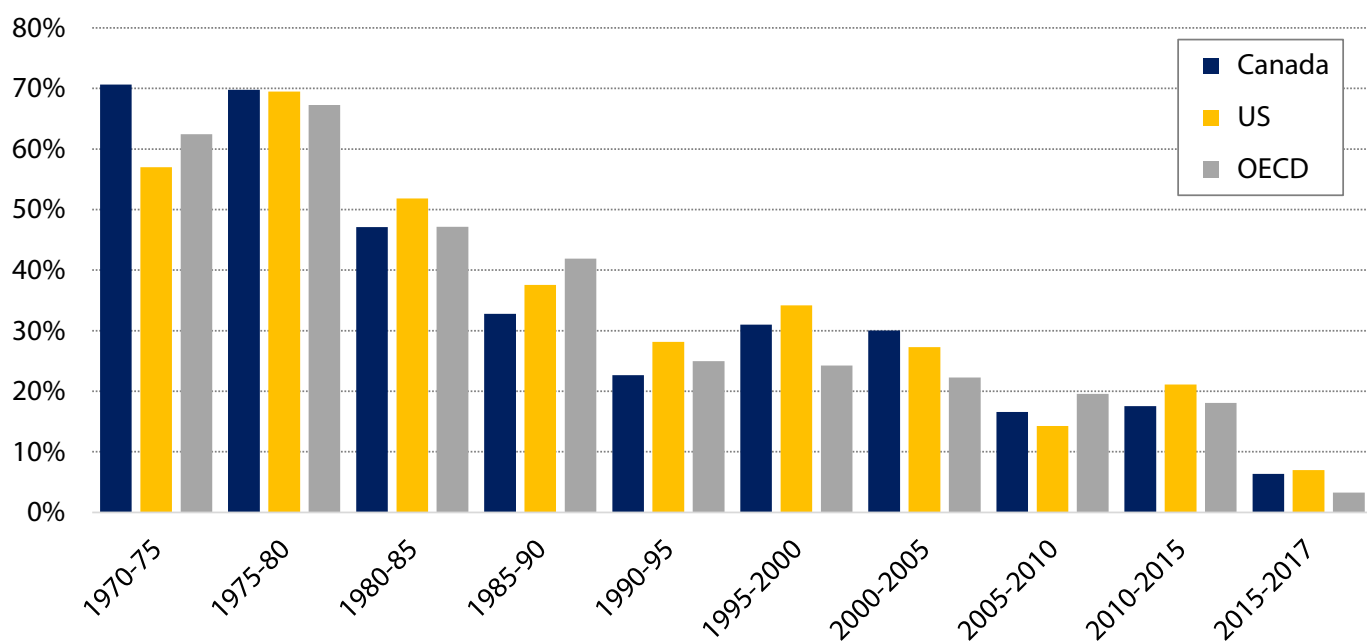
# Capital Investment in Canada: An International Comparison

Figure 1: Percentage Changes in Gross Fixed Capital Formation (GFCF)



Source: See Table 1.

Figure 2: Percentage Changes in Gross Domestic Product (GDP)



Source: See Table 2.

# Capital Investment in Canada: An International Comparison

change rates are used to convert non-US dollar values into US dollar values.<sup>8</sup>

One point regarding table 2: capital expenditures contribute to GDP, so slower rates of growth of GFCF can also contribute to (as well as be caused by) slower rates of GDP growth. A second point is that nominal GDP comparisons across countries might be misleading if inflation rates differ across the countries being compared. That is, differences in growth rates of real GDP across countries may not coincide with differences in growth rates of nominal GDP across those countries. However, to the extent that PPP exchange rates reflect differences in inflation rates across countries, the differences in GDP growth rates reported in table 2 may fairly accurately reflect differences in real GDP growth rates.

The data reported in table 2 show that GDP growth for the various five-year periods is similar for Canada, the US, and the other OECD sample countries. In particular, while Canada's GFCF grows noticeably more slowly after 2010, Canada's GDP growth deficit to the US is relatively small over this period. Furthermore, Canada's GDP growth from 2010 to 2015 about equaled that of the OECD countries and from 2015 to 2016 was only modestly below that of the OECD.<sup>9</sup> These observations suggest that Canada's slower rate of GFCF growth post-

<sup>8</sup> Again, the percentage change for each five-year period is calculated by taking the difference between the beginning and end year values, dividing by the beginning year value, and multiplying the quotient by 100. US GDP for 2017 is from the US Bureau of Economic Analysis (undated). The information in table 2 is presented in graphical form in figure 2.

<sup>9</sup> From 2015 to 2016, Canada's GDP growth was 1.6 percent whereas the OECD's GDP grew at 3.3 percent during the same period.

**Table 2: Percentage Changes in Gross Domestic Product (GDP)**

Years	Canada	US	OECD
1970-75	70.7%	57.0%	62.5%
1975-80	69.8%	69.5%	67.3%
1980-85	47.1%	51.9%	47.2%
1985-90	32.8%	37.6%	41.9%
1990-95	22.7%	28.2%	25.0%
1995-2000	31.0%	34.2%	24.2%
2000-2005	30.0%	27.3%	22.3%
2005-2010	16.6%	14.3%	19.5%
2010-2015	17.5%	21.1%	18.1%
2015-2017	6.4%	7.0%	3.3%*

\*2015–2016

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

2010, particularly compared to the US, is unlikely to be primarily the result of a slower rate of growth of economic activity in Canada compared to the US or to the other OECD countries. Furthermore, the substantially greater variation in growth rates of GFCF across locations reported in table 1 compared to the variation in growth rates of GDP across locations reported in table 2 also suggests that Canada's relatively poor investment performance post-2010 is not primarily the result of slower economic growth in Canada

## GFCF by sector

The primary concern about a recent slowdown in capital investment in Canada expressed in studies briefly summarized in the introductory section of this bulletin focuses on private sector

# Capital Investment in Canada: An International Comparison

**Table 3: Corporate Investment as a Share of Gross Fixed Capital Formation (GFCF)**

	Canada	US	Australia	France	Korea	Norway
1981-85	52.1%	50.3%	51.5%	46.6%	61.8%	59.1%
1985-90	48.6%	47.4%	50.2%	49.7%	57.6%	58.7%
1990-95	47.8%	50.2%	49.7%	51.6%	63.8%	60.1%
1995-2000	54.4%	52.9%	50.6%	53.1%	62.3%	62.5%
2000-2005	50.5%	47.6%	48.6%	53.7%	62.3%	58.2%
2005-2010	47.2%	48.9%	53.7%	53.2%	65.7%	60.0%
2010-2016	48.8%	53.4%	55.7%	56.1%	66.1%	56.6%
2014	53.2%	54.8%	55.1%	56.7%	66.4%	57.2%
2015	48.9%	53.9%	50.9%	58.0%	64.6%	55.1%
2016	46.8%	52.6%	47.4%	58.6%	n/a	51.3%

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

capital investment, specifically corporate investment. To the extent that corporate investment accounted for a smaller share of GFCF in Canada in recent years, the slower growth of GFCF in Canada post-2010 will understate the slowdown in corporate investment specifically. Furthermore, the relative performance of corporate investment growth in Canada compared to other countries will be worse than that implied by the overall GFCF series if Canada's share of corporate investment decreased relative to other countries in the past few years.

Table 3 provides some evidence on these latter possibilities. Specifically, table 3 reports average annual corporate investment as a percentage of total GFCF for Canada, the US, France, Korea, Norway, and Australia, respectively, for five-year periods from 1981 to 2016, as well as for the individual years 2014, 2015, and 2016.<sup>10</sup>

<sup>10</sup> Data for Korea were unavailable for 2016. In table 3 and later tables, the reported share data are expressed as percentages.

The data were estimated by calculating the average annual value of the share of corporate investment in GFCF for each of the periods shown. Unfortunately, data for the full set of OECD countries comprising the series reported in tables 1 and 2 are unavailable for corporate investment over any extended period. Hence, we do not report data for the OECD as a whole, or for other OECD countries included in the table 1 and 2 comparisons.<sup>11</sup> Sufficient data from 1981 onward are only available for the countries identified above. Australia and Norway are, like Canada, relatively resource-intensive open economies. Hence, Australia and Norway make particularly relevant comparisons to Canada when evaluating corporate investment behavior relative to overall GFCF.

Table 3 shows that corporate investment as a share of GFCF has been consistently higher

<sup>11</sup> In the cases of the excluded OECD countries, sectoral shares of GFCF are not reported prior to 1995.

# Capital Investment in Canada: An International Comparison

**Table 4: Household Investment as a Share of Gross Fixed Capital Formation (GFCF)**

	Canada	US	Australia	France	Korea	Norway
1981-85	30.1%	30.5%	34.8%	34.1%	18.3%	25.8%
1985-90	34.7%	31.8%	37.0%	30.2%	26.4%	23.7%
1990-95	34.0%	29.5%	36.9%	27.3%	20.7%	18.6%
1995-2000	30.6%	30.5%	37.5%	27.5%	21.1%	19.4%
2000-2005	34.0%	35.6%	40.3%	28.0%	19.9%	23.5%
2005-2010	35.4%	32.2%	33.5%	28.9%	16.7%	22.2%
2010-2016	34.3%	28.6%	31.3%	26.6%	18.1%*	24.0%
2014	32.9%	29.0%	32.8%	26.3%	18.8%	23.5%
2015	36.0%	30.2%	36.5%	25.9%	20.7%	24.5%
2016	36.3%	31.6%	38.2%	25.8%	n/a	26.8%

\* = 2010–2015

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

in Korea than in the other countries over the entire sample period. Furthermore, for all of the sub-periods, the share of corporate investment was higher in Norway than in other countries save Korea, although this is not the case for 2015 and 2016, when Norway's share was below that of France. What is noticeable from table 3 is that corporate investment in Canada as a share of GFCF is the lowest of all the sample countries from 2005 to 2016, with Canada's relatively weak performance being particularly marked from 2010 to 2016. Prior to 2005, corporate investment as a share of GFCF in Canada was higher than in the US and Australia in the majority of the sub-periods and comparable to that of France. To be sure, a weakening of energy prices after 2014 explains some of Canada's business investment performance in that period, as corporate investment as a share of GFCF also declined in Australia and Norway from 2014 to

2016.<sup>12</sup> However, Canada's relatively poor corporate investment performance over the full period from 2010 to 2016, particularly compared to Australia and Norway, is unlikely to be exclusively due to the energy sector given that energy prices were higher in the earlier part of that period compared to the latter part, and that Australia and Norway are also relatively resource-intensive economies.

The recent relative decline in the business sector's share of GFCF in Canada should be matched by relative increases in the shares of GFCF contributed by households and/or governments. Tables 4 and 5 report similar data to that reported in table 3 for households and governments, respectively. The data reported in table 4 shows that Canada had the highest

<sup>12</sup> Di Matteo (2018) discusses the recent decline in business investment in Canada's energy sector.



# Capital Investment in Canada: An International Comparison

**Table 5: Government Investment as a Share of Gross Fixed Capital Formation (GFCF)**

	Canada	U.S.	Australia	France	Korea	Norway
1981-85	17.7%	19.2%	13.7%	19.3%	19.9%	15.1%
1985-90	16.7%	20.8%	12.8%	20.0%	16.0%	17.5%
1990-95	18.3%	20.2%	13.4%	21.1%	15.5%	21.3%
1995-2000	15.0%	16.5%	11.9%	19.3%	16.7%	18.1%
2000-2005	15.5%	16.8%	11.1%	18.3%	17.8%	18.3%
2005-2010	17.4%	18.9%	12.7%	17.9%	17.6%	17.7%
2010-2016	16.7%	18.0%	13.0%	17.3%	15.8%*	19.4%
2014	13.8%	16.2%	12.1%	17.0%	14.8%	19.3%
2015	15.1%	15.9%	12.6%	16.1%	14.7%	20.5%
2016	16.9%	15.8%	14.4%	15.6%	na	21.9%

\* = 2010–2015

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

ratio of household investment to GFCF of all the sample countries from 2005 to 2016, and this difference was particularly marked for the period from 2010 to 2016. The post-2008 housing bubble burst in the United States and Australia is identifiable by the substantial decline in the household sector's share of GFCF post-2005 in those two countries. What is particularly interesting is that while the household sector's share of GFCF rose in both the US and Australia from 2014 through 2016, it also increased in Canada, even though Canada did not experience the same decline in real estate prices as did the US in the early part of the 2010 to 2016 period. Indeed, while the household share of GFCF in the US was comparable to Canada's share over most of the long period from 1981 to 2005, household investment (essentially in residential housing) was markedly higher as a share of GFCF in Canada after 2005, and particularly after

2010.<sup>13</sup> Whether household investment in Canada “crowded out” corporate investment cannot be inferred from the data in tables 3 and 4. However, it is clear that the environment for business investment in Canada in recent years has been substantially less favourable than the environment for household investment, particularly when compared to most other OECD countries.

Table 5 reports government investment as a share of GFCF for the same countries and periods as included in tables 3 and 4. For Canada, this share is higher for 2005 to 2016 than for 1995 to 2005, which is consistent with the decrease in the share of business investment when comparing those two periods. Moreover, government's share of GFCF in Canada is low-

<sup>13</sup> Residential housing is the main component of household investment.

# Capital Investment in Canada: An International Comparison

er than in other countries (other than Australia) from 2005 to 2010, and lower than in all but Australia and Korea from 2010 to 2016. Furthermore, the recent relative performance of government's share of GFCF in Canada compared to the shares for other countries is consistent with the longer run experience summarized in table 5. Hence, the declining share of corporate investment in Canada in recent years relative to other countries would seem to be more closely related to an increasing share of GFCF accounted for by the household sector than by the government sector.

## GFCF by asset category

A consideration of changes over time in capital expenditures across asset categories provides additional perspective on the behaviour of total capital expenditures in Canada. The OECD website from which most of the data for this report are drawn reports capital expenditure shares for six asset categories. The two largest are residential dwellings and other buildings and structures.<sup>14</sup> The other four are machinery and equipment, intellectual property products, transportation equipment, and cultivated assets. Machinery and equipment includes information and communications equipment, office machinery, and hardware and related products. Intellectual property encompasses intangible assets such as R&D, mineral exploration, software and databases, and original literary and artistic works. Transportation equipment includes ships, trains, airplanes, and so forth, while cultivated assets includes categories such as managed forests and livestock raised for milk production.

It is not possible from the way the data are reported on the OECD website to assign shares

---

<sup>14</sup> Other buildings and structures include roads, bridges, airfields, dams, and related infrastructure.

of capital expenditures in each of the individual asset categories to specific economic sectors. Presumably business and government primarily account for investments in building and structures, while dwellings primarily reflect investments by households in residences. Machinery and equipment is likely to reflect primarily corporate investment expenditures, as is the asset category identified as intellectual property products. Both corporations and governments are likely to be responsible for capital investments in transportation equipment and cultivated assets.

In the interest of brevity, we do not present data on the shares of GFCF accounted for by transportation equipment and cultivated assets. Transportation equipment accounts for less than 4 percent of GFCF in Canada between 2010 and 2017, while the OECD does not report the share of GFCF represented by cultivated assets for Canada. Over the entire period from 1981 to 2015, the four included asset categories account for around 83 percent of all capital expenditures in Canada. Hence, the behaviour over time of the four included asset categories will largely reflect the time series behaviour of total gross capital expenditures. For easier exposition, we report the average value of the asset categories across the five OECD countries covered in tables 3 to 5 for the various periods, as well as separate series for the United States.<sup>15</sup>

Looking first at buildings and other structures in table 6, we see that with the exception of 1981 to 85 and 2010 to 2016, buildings and other

---

<sup>15</sup> The series reported for the OECD is a simple average of the percentages calculated for each constituent country rather than a weighted (by size of GFCF) average. Given the much larger size of the US economy, a weighted average for the included OECD countries would predominantly reflect the US experience.

# Capital Investment in Canada: An International Comparison

**Table 6: Share of Specific Asset Categories in Total Gross Fixed Capital Formation**

	Other Buildings and Structures			Dwellings		
	Canada	OECD 5	US	Canada	OECD 5	US
1981-85	37.2%	32.5%	28.2%	23.8%	20.8%	18.2%
1985-90	32.0%	31.6%	24.2%	28.9%	20.0%	20.8%
1990-95	31.4%	32.1%	22.1%	27.4%	20.2%	20.0%
1995-2000	29.0%	31.4%	21.1%	23.3%	19.7%	20.7%
2000-2005	27.8%	30.5%	20.6%	27.0%	21.7%	24.7%
2005-2010	32.8%	34.0%	24.2%	29.3%	20.6%	20.4%
2010-2016	38.7%	34.9%	23.2%	29.7%	19.8%	16.1%
2014	41.3%	35.2%	23.4%	28.4%	20.0%	16.6%
2015	37.9%	33.6%	22.7%	30.8%	21.5%	18.0%
2016	36.1%	32.7%	21.7%	33.3%	23.0%	19.4%
2017	35.5%	n/a	n/a	34.0%	n/a	n/a

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

structures accounted for essentially the same or a higher share of GFCF in the five OECD countries, on average, than in Canada.<sup>16</sup> While the behaviour of this series is similar in terms of increases and decreases when comparing Canada to the five OECD countries and to the U.S separately, the increase from 2005–2010 to 2010–2016 is noticeably stronger for Canada. In the case of dwellings, the share of GFCF accounted for by this asset category is consistently higher for Canada than for the five OECD countries and for the US. However, the gap between Canada and the OECD countries widened quite sharply when comparing 2005–2016 to 1995–2005.<sup>17</sup> Table 6 therefore suggests that the slower growth of GFCF in Canada relative to other OECD countries in recent years is not

the outcome of slower growth of building and dwelling structures.

The data in table 7 show that the share of machinery and equipment in GFCF is higher in Canada than in the average of the five OECD countries for most periods between 1981 and 2010. In some periods, the Canadian share is comparable to that of the other OECD countries, although it is consistently below that of the United States. However, Canada's share is noticeably lower than the OECD average from 2010 to 2016, and the difference seems to be larger in the latter part of that period than in the earlier part, as is also the case when comparing Canada separately to the US.

The pattern for intangible assets (primarily intellectual property) is not as obvious as it is for machinery and equipment, since Canada's share is lower than the average for the OECD countries in all periods and much lower than in the US alone. Still, the differences between Canada

<sup>16</sup> In all periods, Canada's share is higher than the share in the United States.

<sup>17</sup> This is also true when comparing the time series for Canada to that of the US.

# Capital Investment in Canada: An International Comparison

**Table 7: Share of Specific Asset Categories in Total Gross Fixed Capital Formation**

	Machinery & Equipment			Intangible Assets		
	Canada	OECD 4*	US	Canada	OECD 5	US
1981-85	7.9%	8.3%	9.6%	8.4%	9.9%	16.3%
1985-90	9.1%	9.7%	11.2%	8.8%	11.4%	18.4%
1990-95	11.4%	10.8%	13.3%	11.2%	13.3%	20.8%
1995-2000	14.1%	12.8%	16.4%	13.3%	14.4%	20.9%
2000-2005	13.8%	13.2%	16.3%	15.0%	15.6%	22.1%
2005-2010	11.5%	11.5%	15.7%	13.9%	16.7%	23.9%
2010-2016	9.2%**	11.0%	16.3%	12.5%	18.8%	26.4%
2014	8.0%	11.0%	15.7%	12.1%	19.0%	25.4%
2015	8.9%	11.2%	15.5%	12.0%	18.9%	25.3%
2016	na	na	15.8%	11.9%	18.8%	26.2%

\* Excludes Japan

\*\* = 2010–2015

Source: Authors' calculations from data in OECD (<https://data.oecd.org/gdp/investment-gfcf.htm>).

and other countries from 2010 to 2016 are absolutely and relatively larger than in earlier periods. The asset categories summarized in table 7 largely reflect business investment. They also arguably reflect asset categories that are particularly important to developing and diffusing new technology into economies.<sup>18</sup> Hence, the data in tables 6 and 7 highlight the potential importance of changes in the mix of capital expenditures to Canada's absolute and relative (to other developed countries) economic performance.

## Summary and conclusions

This study examines overall capital expenditures in Canada over time and relative to other countries. It also identifies changes in the mix

of capital expenditures over time both across sectors and across asset categories. One main finding is that overall capital investment in Canada, as measured by gross fixed capital formation, grew substantially more slowly in recent years than in earlier periods, and more slowly in recent years than in other OECD countries. Indeed, while GFCF grew at a faster rate in Canada than in our sample of OECD countries from 1995 to 2010, the growth rate was lower in Canada, particularly compared to the United States, after 2010.

Recent discussion in Canada has focused on a worrisome decline in the growth of business investment. A second finding of this bulletin is that the share of business investment in total GFCF declined in Canada when comparing the 2000–2005 period to the 2010–2016 period, whereas it increased in all but one of our sample OECD countries over those two periods. Particularly concerning is the declining share of

<sup>18</sup> This latter observation suggests that Canada has not done as well as other developed countries when it comes to investment in the new “information economy.”



# Capital Investment in Canada: An International Comparison

business investment in asset categories that are arguably most closely associated with technological change, especially investments in machinery and equipment and in intangible assets related to intellectual property. Conversely, household investment as a share of GFCF was higher in Canada than in other OECD countries in 2010 to 2016, particularly in the most recent years. This pattern also holds for Australia where housing prices in major cities enjoyed large increases, as is also true for Canada. The substantial growth in dwellings as a share of GFCF in Canada from 2014 to 2017 presumably reflects the increased demand of households for dwellings.

Any decrease in capital expenditure growth rates can be a concern given the linkage between capital investment and labour productivity growth. The data discussed in this essay also underscore Philip Cross's (2017) observation that changes in the mix of capital assets across sectors and asset categories can also matter to economic performance. The mix has changed substantially in Canada in recent years, and future research needs to address what a continuation of a changing mix means for the performance of the Canadian economy. While GDP growth rates in Canada have been comparable to those in the US and the OECD after 2005, the recent weaker capital investment performance and the changing mix of capital investment in Canada raises significant concerns about Canada's absolute and relative growth performance in the future.

It is possible that the relatively favourable treatment of capital gains on owner-occupied dwellings compared to the treatment of capital gains on business-related investments is contributing to the changing distribution of investment across asset categories. Certainly, more favourable tax treatment of business income and capital gains is a priority for policymakers

to consider against the backdrop of uncertainty surrounding the future of NAFTA and of the bilateral relationship more generally. This uncertainty combined with deregulation and a reduction in the corporate tax rate in the United States implemented by the Trump Administration is likely to weaken incentives for business investment in Canada.

## References

- Baldwin, John, Wulong Gu, and Huju Liu (2014). *Investment Intensity in Canada and the United States, 1990 to 2011*. Research Paper Series 2014095e. Statistics Canada, Analytical Studies Branch. <<https://ideas.repec.org/p/stc/stcp5e/2014095e.html>>, as of July 10, 2018.
- Clemens, Jason, and Niels Veldhuis (2018, April 11). *Trans Mountain Shows That Investor Confidence is Collapsing in Canada*. *Macleans*. <<http://www.macleans.ca/opinion/trans-mountain-shows-that-investor-confidence-is-collapsing-in-canada/>>, as of July 10, 2018.
- Clemens, Jason and Niels Veldhuis (2018, April 13). *The Finance Minister Said What?* *Fraser Forum Blog*. Fraser Institute. <<https://www.fraserinstitute.org/blogs/the-finance-minister-said-what>>, as of July 10, 2018.
- Cross, Philip (2017). *Business Investment in Canada Falls Far Behind Other Industrialized Countries*. Research Bulletin. The Fraser Institute. <<https://www.fraserinstitute.org/sites/default/files/business-investment-in-canada-falls-far-behind-other-industrialized-countries.pdf>>, as of July 10, 2018.
- Di Matteo, Livio (2018, January 4). *Canada Must Increase Business Investment*. *Fraser Forum Blog*. <<https://www.fraserinstitute.org/blogs/canada-must-increase-business-investment>>, as of July 10, 2018.
- Federal Reserve Bank of St. Louis [FRED] (undated). *Gross Fixed Capital Formation in United States*. Federal Reserve Bank of St. Louis. <<https://fred.stlouisfed.org/series/USAGFCFADSMEI>>, as of July 23, 2018.

# Capital Investment in Canada: An International Comparison

Globerman, Steven and Trevor Press (2018). *Capital Investment in Canada: Recent Behaviour and Implications*. Research Bulletin. The Fraser Institute.

Grubel, Herbert (2018, June 26). Look How Much Foreign Investment has Fled Canada Since the Liberals Took Over. *Financial Post*. <<https://business.financialpost.com/opinion/look-how-much-foreign-investment-has-fled-canada-since-the-liberals-took-over>>, as of July 10, 2018.

Lammam, Charles, and Hugh MacIntyre (2018, March 5). Canada has a Business Investment Problem—Deal with It. *Fraser Forum Blog*. <<https://www.fraserinstitute.org/blogs/canada-has-a-business-investment-problem-deal-with-it>>, as of July 10, 2018.

Mintz, Jack (2018, March 9). End the Denial and Admit It: Canada has a Competitiveness Problem. *Financial Post*. <<http://business.financialpost.com/opinion/jack-mintz-end-the-denial-and-admit-it-canada-has-a-competitiveness-problem>>, as of July 10, 2018.



**Steven Globerman** is Resident Scholar and Addington Chair in Measurement at the Fraser Institute as well as Professor Emeritus at Western Washington University. He has published more than 150 articles and monographs and is the author of the book **The Impacts of 9/11 on Canada-U.S. Trade** as well as a textbook on international business management. In the early 1990s, he was responsible for coordinating Fraser Institute research on the North American Free Trade Agreement.



**Trevor Press** is a graduate student at the Evans School of Public Policy University of Washington. He has a BA in Economics and Psychology from Whitman College and recently served as a research analyst at the Border Policy Research Institute.

Morneau, Bill (2018, March 9). Ignore the Gossip and Guesswork: The Facts Prove that Canada's Competitive. *Financial Post*. <http://business.financialpost.com/opinion/bill-morneau-ignore-the-gossip-and-guesswork-the-facts-prove-that-canadas-competitive>>, as of July 10, 2018.

Organisation for Economic Cooperation and Development [OECD] Data (undated). *Investment (GFCF)*. OECD. <<https://data.oecd.org/gdp/investment-gfcf.htm>>, as of July 10, 2018.

US Bureau of Economic Analysis (undated). *National Economic Accounts: Gross Domestic Product (GDP)*. United States, Department of Commerce. <<https://bea.gov/national/index.htm#gdp>>, as of July 10, 2018.

Copyright © 2018 by the Fraser Institute. All rights reserved. Without written permission, only brief passages may be quoted in critical articles and reviews.

ISSN 2291-8620

**Media queries:** For media enquiries, please contact our communications department via e-mail: [communications@fraserinstitute.org](mailto:communications@fraserinstitute.org); telephone: 604.714.4582.

**Support** the Institute: call 1.800.665.3558, ext. 574 or e-mail: [development@fraserinstitute.org](mailto:development@fraserinstitute.org)

Visit our **website:** [www.fraserinstitute.org](http://www.fraserinstitute.org)

## Acknowledgments

The Fraser Institute would like to acknowledge the Bob and Barbara Mitchell Fund and the Lotte and John Hecht Memorial Foundation for their generous support for this project. The authors wish to thank the anonymous reviewers for their comments and suggestions. Any remaining errors are the sole responsibility of the authors. As the researchers have worked independently, the views and conclusions expressed in this paper do not necessarily reflect those of the Board of Directors of the Fraser Institute, the staff, or supporters.