# FRASER BULLETIN





#### **S**UMMARY

- In a 2017 study, we measured Alberta's net contribution to Canada's economy during the most recent economic boom in the province. We showed that when it comes to overall economic growth, job creation, or business investment, Alberta made a substantial contribution to the health of the Canadian economy from 2004 to 2014.
- Since 2014, Alberta has struggled and much has changed. However, Alberta continues to punch well above its weight in at least one critically important respect-its net contribution to federal government finances.
- Even through the recent recession and uneven recovery, Alberta has remained, by far, the largest net contributor to federal finances.
- Alberta's net contribution to Confederation peaked in 2014 at \$27.6 billion. Since then, due

- to economic weakness in the province, its net contribution shrunk somewhat, but was still \$20.5 billion in 2017. In total, from 2014 to 2017, Alberta's net contribution to Confederation exceeded \$92 billion.
- Alberta's large contribution has helped stabilize federal finances and prevent the federal government from running even larger deficits. In 2017, for example, in the absence of Alberta's net contribution and if all else had remained equal, Canada's deficit would have been over \$39 billion-more than twice the \$19 billion that was in fact the case.
- Alberta's economic health is a matter of national importance and its struggles in recent years have implications for all Canadians. In short, Canada cannot reach its full economic and fiscal potential unless Alberta is able to do the same.

#### Introduction

In its economic growth and contribution to the health of Canada's federal finances, Alberta has historically punched above its weight. Prior to the 2014 recession, Alberta had been a primary engine of economic growth in Canada for decades.

Since 2014, however, Alberta has experienced significant economic challenges. The province was hit by one of the worst recessions in its history and, given the steepness of the recession, has experienced a tepid and uneven recovery.

However, despite the economic pain in Alberta and despite the fact that the province has not been the robust economic growth engine that it was previously, the province remains a vastly disproportionate<sup>1</sup> economic contributor to the broader country relative to the size of its population in at least one critical respect–its net contribution to federal finances.

This bulletin measures the extent to which Albertans have made a net contribution to federal government finances in recent years. It shows that even through the recent recession and uneven recovery, Alberta has remained, by far, the largest net contributor to federal finances. Specifically, we measure how much more Albertans pay in taxes to the federal government than they receive in transfers and services each year, and the effect of the province's net contribution on the size of the federal government's recent deficits.

#### Comparing the federal taxes paid by Albertans to the transfers and services thev receive

In a 2017 study, we measured Alberta's net contribution to Canada's economy during the most recent economic boom in the province (Lafleur et al., 2017). We showed that when it comes to overall economic growth, job creation, or business investment, Alberta made a substantial contribution to the health of the Canadian economy from 2004 to 2014.

Indeed, we showed that while there is a popular narrative that holds that Canada survived the 2008/09 recession better, and prospered in the post-recession years to a greater extent than the United States, this is only true thanks to Alberta's strong economic performance in the years following that downturn. We showed that when Alberta's contribution is excluded from the calculations, total real per-person annual economic growth in the rest of Canada was actually lower than in the United States in the years following that recession.

Clearly, Alberta punched above its weight economically in the decade prior to the recent recession. But since 2014, many things have changed. A steep fall in commodity prices triggered one of the worst recessions in Alberta's history, and for many reasons, the recovery since then has been generally tepid and uneven.

As such, in recent years Alberta has not been the same economic growth engine for the country as it was before 2014. However, in at least one critically important respect-its net contribution to federal government financ-

<sup>&</sup>lt;sup>1</sup> Throughout this bulletin, we refer to Albertans' "disproportionate" contribution to Confederation. By that, we simply mean that Alberta's contribution to federal revenue is substantially higher than would be predicted solely on the basis of its population. We are implying no normative argument. Similarly, when we characterize Alberta's contribution as "outsized," we are simply referring to the fact that the province's contributions to federal revenue are far greater (per-capita) than the Canadian average.

Table 1: Total Equalization Payments Received by Province (\$ millions), 2014/15 to 2018/19

	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Newfoundland & Labrador	0	0	0	0	0	0
Prince Edward Island	360	361	380	390	419	1,910
Nova Scotia	1,619	1,690	1,722	1,779	1,933	8,743
New Brunswick	1,666	1,669	1,708	1,760	1,874	8,677
Quebec	9,286	9,521	10,030	11,081	11,732	51,650
Ontario	1,988	2,363	2,304	1,424	963	9,042
Manitoba	1,750	1,738	1,736	1,820	2,037	9,081
Saskatchewan	0	0	0	0	0	0
Alberta	0	0	0	0	0	0
British Columbia	0	0	0	0	0	0
Total	16,669	17,341	17,880	18,254	18,958	89,102

Source: Canada, Department of Finance, 2017.

es-Alberta continues to punch well above its weight. Primarily because per-person incomes in Alberta remain higher than the Canadian average, Albertans are still paying far more in federal tax dollars to Ottawa than they are receiving back in federal government services and transfers. In other words, the recession has not changed the fact that Alberta is still a large-in fact, the largest-net contributor to the federal government's finances. This section quantifies Alberta's contribution in recent years.<sup>2</sup>

The most discussed fiscal benefit that Albertans provide to the rest of the country is made through its contributions to the equalization program. While residents of all provinces

contribute to the program (which is funded through general federal government revenues), it is designed to return funds only to governments deemed to be lacking adequate fiscal capacity to provide their residents with comparable public services to those elsewhere in the country at similar levels of taxation.

Alberta has not qualified for payments at any point in recent history, including during the recent recession. Meanwhile, as table 1 shows, the influx of revenue to other provincial governments can be substantial, ranging from a total of \$1.9 billion to PEI between 2014/15 and 2018/19 to \$51.6 billion to Quebec during the same period. Payouts from the equalization program between 2014/15 and 2018/19 were projected to total \$89.1 billion, none of which will accrue to Alberta.

While Albertans have received no direct benefits from the equalization program, they have

<sup>&</sup>lt;sup>2</sup> Our analysis in this paper focuses on the period from 2014 onwards because we aim to measure the extent to which Alberta remains a net contributor to federal finances since the oil price shock of 2014 and subsequent recession. Of course, Alberta's status as a major net contributor to Canada long predates this period.

Table 2: Total Fiscal Transfers per Capita by Province (\$), 2014/15 to 2018/19

	2014/15	2015/16	2016/17	2017/18	2018/19	Total
Newfoundland & Labrador	1,282	1,314	1,368	1,394	1,428	3,963
Prince Edward Island	3,770	3,826	3,974	3,985	4,157	11,570
Nova Scotia	3,198	3,259	3,246	3,303	3,362	9,702
New Brunswick	3,447	3,503	3,591	3,689	3,857	10,540
Quebec	2,407	2,489	2,598	2,728	2,822	7,494
Ontario	1,409	1,492	1,538	1,494	1,490	4,439
Manitoba	2,626	2,659	2,687	2,756	2,931	7,972
Saskatchewan	1,268	1,324	1,378	1,392	1,425	3,969
Alberta	1,267	1,321	1,376	1,393	1,423	3,964
British Columbia	1,239	1,288	1,334	1,393	1,423	3,861
Total	1,835	1,905	1,965	1,994	2,035	5,705

Source: Canada, Department of Finance, 2017; Statistics Canada, 2019b; calculation by authors.

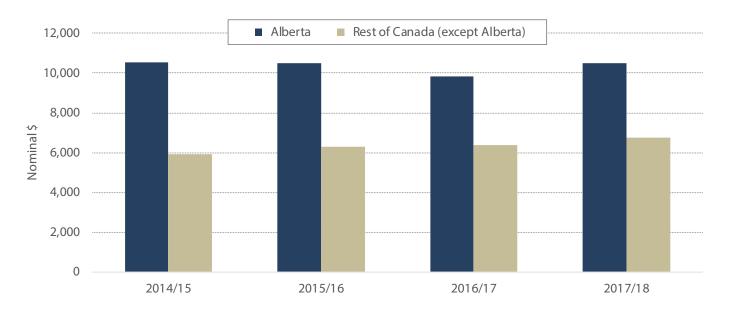
contributed disproportionately to the federal revenue that funds it by virtue of higher income levels and, therefore, higher federal per-person tax payments. For example, in 2017, 16.9 percent of all federal revenue came from Alberta, far greater share than its share of the national population of 11.6 percent. This means that Alberta will have contributed roughly \$15.1 billion out of the \$89.1 billion paid out in equalization payments from 2014/15 to 2018/19. In short, even during Alberta's severe recession and weak recovery period, the province has continued to be a substantial source of funding for this expensive program from which it derives no direct benefit.

Equalization is not the only program that transfers revenue from the federal government to provincial governments. The other most prominent transfer programs are the Canada Social Transfer and the Canada Health Transfer. Table 2 shows that federal fiscal transfers add up to \$2,035 per capita in 2018/19, with Alberta receiving considerably less than the average at \$1,423, roughly tied with Saskatchewan, British Columbia, and Newfoundland & Labrador for the lowest per capita amounts in the country, and roughly half as much as Manitoba and Quebec will have received in that period.

As noted, the primary reason that Albertans make a disproportionate contribution to federal finances is that the province (even during the recent recession) enjoys higher per-capita incomes than the rest of the country. This means that a larger share of federal tax revenue comes from the typical Albertan than the typical person elsewhere in Canada. This has remained true during and in the years following the 2014/15 recession.

Figure 1 shows this reality directly, demonstrating that in every fiscal year between 2014/15 and 2017/18, per-capita federal tax revenue from Alberta greatly exceeded the national average.

Figure 1: Federal Tax Revenue Per Capita, Alberta and Rest of Canada, 2014/15 to 2017/18



Sources: Canada, Department of Finance, 2019; Canada, Department of Finance, 2018; Statistics Canada, 2019f, 2019b; calculation by authors.

For example, even in 2016/17 when Alberta was just escaping the recession, federal tax revenue amounted to \$9,822 per Albertan, compared to \$6,364 in the rest of the country. In other words, Albertans, on average, paid about 54 percent more in federal tax dollars than did Canadians in other parts of the country (down from 78 percent more in 2014/15).

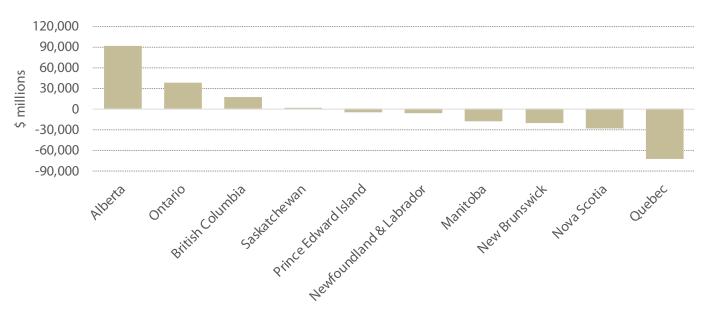
Figure 2 displays each province's net contribution to federal finances between 2014/15 and 2017/18. It shows that Alberta has been the largest net contributor to federal finances, even despite the recent recession.<sup>3</sup> In total, between

2014/15 and 2017/18, Albertans paid \$92 billion more in federal taxes than they received in transfers and federal programs. For context, that amounts to approximately \$21,681 per Albertan over four fiscal years. In 2017/18 alone, the net fiscal contribution from Albertans to

table 36-10-0450-01, which excludes CPP and QPP flows. Including CPP and QPP would increase the size of Alberta's net contribution because Alberta has fewer elderly people receiving such payments and has many employed individuals paying payroll taxes. Indeed, Albertans paid substantially more into CPP than they received from the program last year. While this bulletin focuses on general expenses and revenues, CPP/QPP payments are another area where Alberta contributes disproportionately to federal finances (Clemens et al., 2018).

<sup>&</sup>lt;sup>3</sup> The data used in the discussion of Alberta's net contribution to federal finances rely on the definition of the term "general government" as it applies to revenues and expenditures from Statistics Canada's

Figure 2: Cumulative Fiscal Balance Between Provincial and Federal Governments, 2014/15 to 2017/18



Note: Fiscal Balance is defined as the difference between federal total revenues collected by the provinces and federal spending (including debt charges).

Sources: Canada, Department of Finance, 2019; Canada, Department of Finance, 2018; Statistics Canada, 2019f; calculation by authors.

the country's finances was \$20.5 billion,4 or roughly \$4,822 per person.

The gap between Alberta's contribution to federal revenues and federal expenditures is driven only in small part by the equalization program. Other important reasons for the gap include a smaller elderly population (and therefore lower OAS inflows) and higher incomes (resulting in higher personal income and corporate income tax outflows).

The 2014/15 recession has not changed the reality that Alberta is a major net contributor to federal finances. Figure 3 demonstrates this point more specifically by showing Alberta's net contribution to federal finances in each of the past five fiscal years. For reference, we begin with 2013/14, prior to the onset of the recent recession. Figure 3 shows that Alberta has made substantial net contributions to federal finances every year, even during the depths of the recession. Alberta's net contribution to Canada's federal government peaked in 2014/15 at roughly \$27.6 billion. Since then, it has declined somewhat, reaching \$19.2 billion in 2016/17, before rebounding to slightly less than \$20.5 billion in 2017/18.

Figure 3 shows that although Alberta's net contribution to federal finances has declined somewhat in recent years, it has remained substantial every year. For context, in 2017/18, the second largest net contributor was Ontario (a province with approximately 3 times as many

<sup>&</sup>lt;sup>4</sup> Again, CPP and QPP payments are excluded from this analysis.

residents) at \$10.5 billion. While many things have changed since 2013/14, one thing that has stayed the same in Canada is that Alberta has remained by far the largest net contributor to federal government finances.

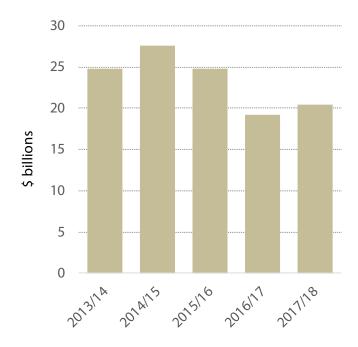
Alberta's contributions to federal finances have had a substantial impact on the federal government's fiscal health and prevented even larger budget deficits at the federal level. The following section shows what federal finances would have looked like in recent years in the absence of Alberta's contribution.

#### What would the federal deficit look like without Alberta's net contribution?

It is instructive to consider what Canada's public finances would have looked like without Alberta's large contribution to Confederation. Figure 4 shows Canada's fiscal balance every year since 2014/15 and also indicates what the country's fiscal balance would be in the absence of Alberta's net contribution. Figure 4 makes it plain that Canada's fiscal outlook would have been substantially worse in recent years without Alberta's contribution.5

In the years following the 2008/09 recession, the federal government gradually reduced the federal deficit, nearly eliminating it by 2014/15. However, as figure 4 shows, in the absence of

Figure 3: Alberta's Net Contribution to Federal Finances, 2013/14 to 2017/18



Sources: Canada, Department of Finance, 2019; Canada, Department of Finance, 2018; Statistics Canada, 2019b, 2019f; calculation by authors.

Alberta's contribution, the federal government would never have come close to eliminating the deficits that emerged during the 2008/09 recession. In fact, in 2014/15 instead of a nearly balanced budget, Canada would still have had a deficit of roughly \$28.2 billion.

As figure 4 also shows, in recent years the federal government (even with Alberta's contribution) has returned to deficit spending. In both 2016/17 and 2017/18, Canada ran deficits of roughly \$19.0 billion. However, without Alberta's contribution, these deficits would have been approximately twice as large.<sup>6</sup>

<sup>&</sup>lt;sup>5</sup> Of course, we recognize that if Alberta's net contribution to federation were removed, many things would change as all agents would behave differently. These data are not intended to serve as a plausible counterfactual analysis about how fiscal federalism in Canada would actually behave in the absence of Alberta. Instead, it is a thought experiment intended to show the extent to which, under current rules and arrangements, various provinces contribute to federal activities via their tax dollars compared to how much they receive back in transfers and services.

<sup>&</sup>lt;sup>6</sup> These figures exclude the fiscal balances of the three territories, as well as revenues and expendi-

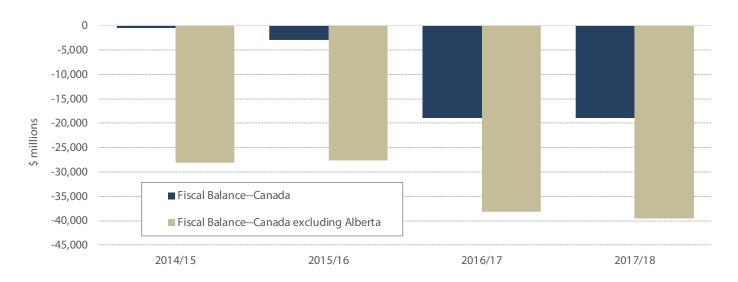


Figure 4: Federal Government's Fiscal Balance, 2014/15 to 2017/18

Note: Fiscal Balance is defined as the difference between federal total revenues collected by the provinces and federal spending (*including* debt charges).

Sources: Canada, Department of Finance, 2019; Canada, Department of Finance, 2018; Statistics Canada, 2019f; calculation by authors.

By reducing the size of the federal deficit, Alberta's net contribution to federal finances has prevented substantial federal debt accumulation—to the benefit of all Canadians. Since 2014/15, Alberta's net contribution to Confederation has prevented the accumulation of \$92 billion—excluding the additional interest payments that would have had to have been paid on that debt as it accumulated.

These data have shown that in the absence of Alberta's substantial contribution to federal finances, the federal government's fiscal performance in recent years would have been much worse than it has in fact been, and its fiscal outlook would be much bleaker. Indeed, it

tures from overseas sources, all of which are small net negatives. Including these would make the fiscal balance slightly worse in each year shown. would face difficult choices between much larger budget deficits, tax increases, steep spending reductions, or some combination of the three. In short, even during the recent recession and tepid recovery, Alberta's net contribution to federal finances has prevented much larger federal budget deficits from emerging along with the attendant substantial debt accumulation. Although Alberta has not in recent years served as the robust engine of economic growth that it has at various points in the past, it has nevertheless remained a significant—and, indeed, by far the largest—contributor to federal finances.

#### Discussion

The fact that Albertans' tax contributions are greater than what they receive in transfer services is not inherently problematic. Any federation is likely to have some imbalance in terms

of fiscal contributions among members as any federation will have regional economic differences tied to the business cycle, demography, and economic structure. Even in the absence of explicit regional transfer programs like equalization, the policy treatment of Canadians as individuals will imply inter-regional transfers simply because the composition of provincial populations with respect to income, age, and employment status varies. This is not necessarily problematic either, and the identity of major contributors and recipients can and has changed over time. For the time being, however, and for the foreseeable future, a combination of higher per-capita incomes, a progressive income tax system, and the existence of programs that disproportionately direct funds to lower-income individuals and provinces naturally means that as a group, Albertans will pay more than they get out.

However, what is problematic is that the scale of this contribution is not well understood, particularly outside of Alberta. Were they to understand the scale of Alberta's net fiscal contribution to Canada and the importance of Alberta's contribution to the stability of federal finances, Canadians elsewhere might recognize the importance of a strong Alberta to a strong Canada-a reality with important public policy implications.

Albertans are now facing barriers that are preventing the province's economy from operating at its full capacity. The province has suffered one of the worst recessions in its history in recent years, unemployment remains elevated, personal bankruptcies are up, and the province's vitally important energy sector continues to struggle. As Albertans try to cope with their difficult economic circumstances, policymakers in other parts of the country need to consider how they can best assist Alberta's economy.

The data presented in the preceding section show that Alberta's economic health is a matter of national importance and its struggles in recent years have implications for Canadians across the country.

The federal and especially other provincial governments need to ensure they aren't actively constraining Alberta's prosperity. While policy choices in Alberta itself will play a key role in shaping Alberta's future growth prospects, other jurisdictions can help by not taking actions that make Alberta's recovery process even harder than it otherwise would be. That is the very least they can do.

#### Conclusion

As this report has shown, Alberta is a substantial net contributor to the fiscal health of Canada's federal government, and continues to be so despite its current economic challenges.

While Alberta's economy is currently mired in high levels of unemployment, and has yet to recover to pre-recession output levels, the province nevertheless contributes disproportionately to federal finances. This is because despite the challenges facing the province, its residents are nevertheless younger and earn more income than Canadians in other provinces on average, which means that they pay more in federal taxes and receive less in transfers and

<sup>&</sup>lt;sup>7</sup> Examples of policies elsewhere that may be hindering Alberta's economic recovery include pipeline obstructionism, federal tax changes that have undermined Alberta's competitiveness with respect to personal income taxes, and federal transfer policies which have in some important respects not been adequately responsive to recent changes in the relative prosperity of various provinces. For a more detailed discussion of each, see: Lafleur, Eisen, and Palacios (2017).

spending from the federal government. This is a normal situation within an economic federation. However, the province's high contribution levels are predicated on its economy being able to perform at a high level, so that those resources are available to begin with.

It is crucial that other governments in Canada recognize these contributions, and help create a framework to ensure that all Canadians can continue to benefit from Alberta's outsized fiscal and economic contributions. As this report has shown, Canada's fiscal health would be much worse without the large net fiscal transfers from Alberta to the federal government. This makes Alberta's economic recovery a matter of national, not merely provincial concern.

#### References

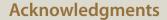
- Alberta Finance (2018a). Fiscal Plan: Budget 2018. Government of Alberta. <a href="https://open.">https://open.</a> alberta.ca/dataset/8beb5614-43ff-4c01-8d3b-f1057c24c50b/resource/68283b86c086-4b36-a159-600bcac3bc57/ download/2018-21-fiscal-plan.pdf>, as of January 31, 2019.
- Alberta Finance (2019). 2018/19 Third Quarter Fiscal Update and Economic Statement. Government of Alberta. < https:// open.alberta.ca/dataset/9c81a5a7-cdf1-49ad-a923-d1ecb42944e4/resource/ a0f104f4-75a6-4d7e-8e52-dbad812c3941/ download/2018-19-3rd-quarter-report-fis-<u>cal-update.pdf</u>>, as of March 27, 2019.
- Aliakbari, Elmira, and Ashley Stedman (2019). The Cost of Pipeline Constraints in Canada, 2019. Fraser Institute. < <a href="https://www.fraserin-">https://www.fraserin-</a> stitute.org/sites/default/files/cost-of-pipeline-constraints-in-canada-2019.pdf>, as of May 7, 2019.
- Canada, Department of Finance (2017). Federal Support to Provinces and Territories. Govern-

- ment of Canada. < <a href="https://www.fin.gc.ca/fed-">https://www.fin.gc.ca/fed-</a> prov/mtp-eng.asp>, as of March 21, 2019
- Canada, Department of Finance (2018). Fiscal Reference Tables. Government of Canada. <https://www.fin.gc.ca/frt-trf/2018/frt-trf-<u>18-eng.asp</u>>, as of March 27, 2019.
- Canada, Department of Finance (2019). 2019 Federal Budget. Government of Canada. < https:// www.budget.gc.ca/2019/docs/plan/budget-<u>2019-en.pdf</u>>, as of March 27, 2019.
- Conference Board of Canada (2019). Uneven Economic Outlook for Canadian Provinces in 2019. Conference Board of Canada. <a href="https://">https://</a> www.conferenceboard.ca/press/newsrelease/2019/02/27/uneven-economic-outlook-for-canadian-provinces-in-2019>, as of March 26, 2019.
- Lafleur, Steve, Ben Eisen, and Milagros Palacios (2017). A Friend in Need: Recognizing Alberta's Outsized Contribution to Confederation. Fraser Institute. < <a href="https://www.fraserinstitute.">https://www.fraserinstitute.</a> org/sites/default/files/a-friend-in-needrecognizing-albertas-outsized-contributionto-confederation.pdf>, as of April 25, 2019.
- Statistics Canada (2019a). Table 14-10-0027-01: Employment by Class of Worker, Annual. Government of Canada. < <a href="https://www150.statcan.">https://www150.statcan.</a> gc.ca/t1/tbl1/en/tv.action?pid=1410002701>, as of March 21, 2019.
- Statistics Canada (2019b). Table 17-10-0005-01: Estimates of Population, by Age Group and Sex for July 1, Canada, Provinces and Territories, Annual. Government of Canada. <a href="https://www150.statcan.gc.ca/t1/tbl1/en/">https://www150.statcan.gc.ca/t1/tbl1/en/</a> tv.action?pid=1710000501>, as of January 31, 2019.
- Statistics Canada (2019c). Table 17-10-0057-01: Projected Population, by Projection Scenario, Age and Sex, as of July 1. Government of Canada. <a href="https://www150.statcan.gc.ca/t1/tbl1/">https://www150.statcan.gc.ca/t1/tbl1/</a> en/tv.action?pid=1710005701>, as of January 31, 2019.

Statistics Canada (2019d). Table 18-10-0005-01: Consumer Price Index, Annual Average, Not Seasonally Adjusted. Government of Canada. <a href="https://www150.statcan.gc.ca/t1/tbl1/en/">https://www150.statcan.gc.ca/t1/tbl1/en/</a> tv.action?pid=1810025601>, as of Jan. 31, 2019.

Statistics Canada (2019e). Table 36-10-0222-01: Gross Domestic Product, Expenditure-Based, Provincial and Territorial, Annual. Government of Canada. < https://www150.statcan. gc.ca/t1/tbl1/en/tv.action?pid=3610022201>, as of January 31, 2019.

Statistics Canada (2019f). Table 36-10-0450-01: Revenue, Expenditure and Budgetary Balance -General Governments, Provincial and Territorial Economic Accounts. Government of Canada. < <a href="https://www150.statcan.gc.ca/t1/tbl1/">https://www150.statcan.gc.ca/t1/tbl1/</a> <u>en/tv.action?pid=3610045001</u>>, as of March 21, 2019.



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