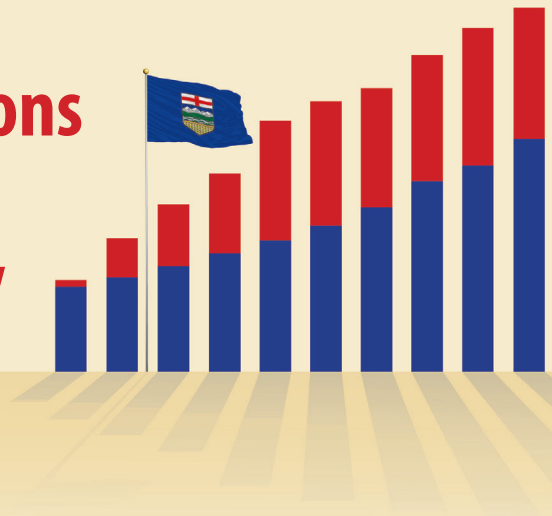


Albertans Make Disproportionate Contributions to National Programs:

The Canada Pension Plan as a Case Study



by Jason Clemens, Joel Emes, and Niels Veldhuis

SUMMARY

- Alberta disproportionately contributes to a host of national and federal programs. This bulletin examines the province's contributions to the Canada Pension Plan.
- In 2017, Alberta workers represented 16.5 percent of the total contributions to the CPP while Alberta retirees consumed 10.6 percent of CPP expenditures. This resulted in a net contribution by Albertans to the CPP in 2017 of \$2.9 billion. Over the last decade (2008–2017), Albertans made a cumulative net contribution of \$27.9 billion to the CPP.
- Alberta's disproportionate contributions to the CPP and other national programs happen largely because the province has a disproportionate share of the country's working age population (including stable net in-migration from other provinces of working age Canadians), a higher employment rate for people of working age, and higher average earnings than the rest of the country.
- We made hypothetical calculations to estimate the effect on the CPP contribution rate if Alberta withdrew from the plan. The calculations are based on CPP prior to its expansion and on the OSFI's definition of sustainability, as detailed in the bulletin.
- Based on Alberta's current disproportionate contributions to the CPP, the contribution rate would have to increase from 9.9 percent (pre-expansion) to 10.6 percent to remain sustainable if Alberta withdrew from the plan. Alternatively, Alberta's hypothetical standalone rate could be as low as 5.85 percent.
- We calculated a second estimate that assumed Alberta's contribution to the program diminished and began to converge with that of the rest of the provinces. In such a scenario, the CPP rate would still have to increase to 10.3 percent to remain sustainable while a standalone Alberta program would have a contribution rate of 7.2 percent.

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Introduction

The difficulties that Alberta's energy sector—and indeed the broader economy of the province—are currently experiencing have stimulated heightened interest in the disproportionate contributions that Albertans make to national programs. Much is made, for instance, of the degree to which the federal equalization program relies on Alberta.¹ Alberta's contributions are often overlooked on one national program in particular: the Canada Pension Plan (CPP). This bulletin examines the contributions Alberta's workers make to the CPP in order to illustrate the disproportionate reliance that national programs such as the CPP have on Alberta as a participating province. The CPP example is particularly important because the program is constructed in such a way that provinces can opt out of it and provide their own parallel provincial program as Quebec decided to do right when the CPP was first introduced in the mid-1960s.

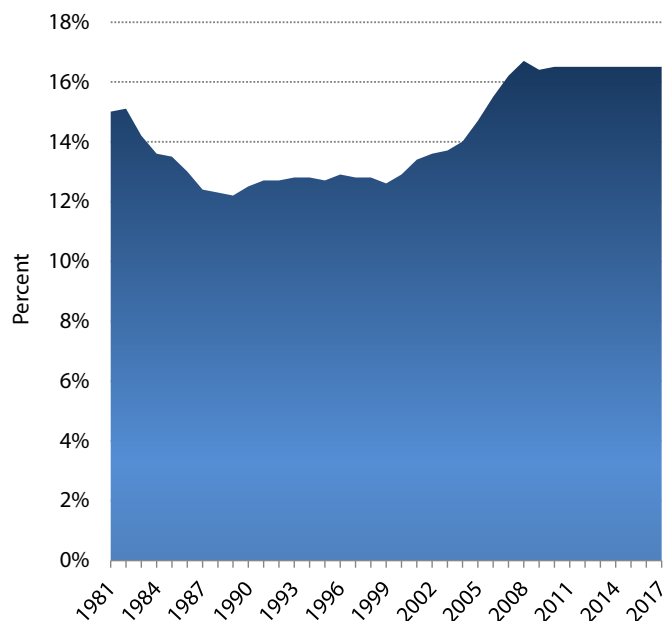
Contributions to and expenditures by the CPP

This analysis will begin by examining contributions to and expenditures by the CPP by province. Figure 1 illustrates the share of total contributions from Alberta workers to the CPP from 1981 to 2017.² (This analysis excludes Quebec since that province maintains its own separate pension plan, the QPP). As figure 1 shows, Alberta's share of total CPP contributions fell

¹ See for example, table 1 in Lafleur, Eisen and Palacios (2017).

² The authors asked Statistics Canada about the contribution data for the CPP for the 2011 to 2016 period, which shows that the level of contributions by Alberta workers was relatively stable. Statistics Canada confirmed that that was the case for that period.

Figure 1: Alberta's Share of CPP Contributions



Source: Statistics Canada, CANSIM Tables 36-10-0315-01 and 36-10-0450-01.

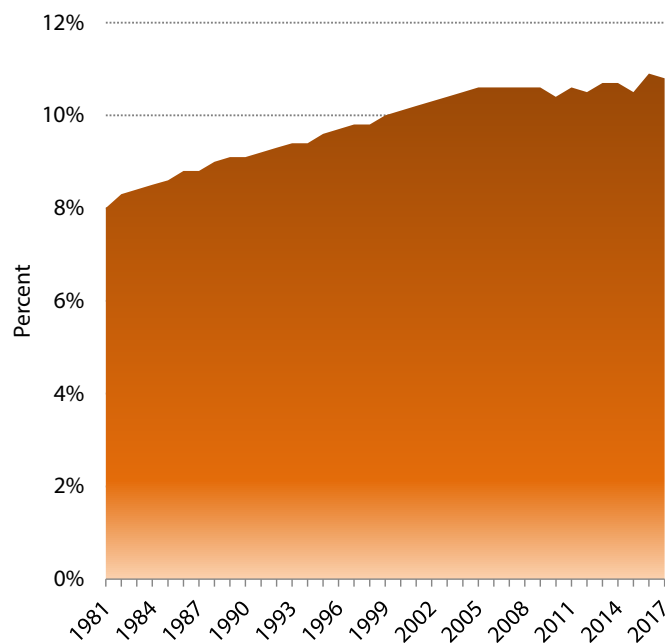
in the 1980s from roughly 15 percent of the total in 1981 down to 12.2 percent by 1989. The share of total CPP contributions by Albertans increased thereafter and stabilized at 16.5 percent. (In 2018, Alberta represented 15.6 percent of the country's population excluding Quebec.)

Figure 2 illustrates the other side of the CPP: spending. Specifically, figure 2 shows the share of total CPP expenditures for Alberta. The share of expenditures has risen from 8.0 percent in 1981 to a fairly stable rate of roughly 10.6 percent since the early 2000s. Indeed, over most of the last decade, there was a fairly stable level of contributions from Alberta (16.5 percent) and spending in Alberta (10.6 percent).

Figure 3 combines these two series. It shows the annual net balance of expenditures to and

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Figure 2: Alberta's Share of CPP Expenditures



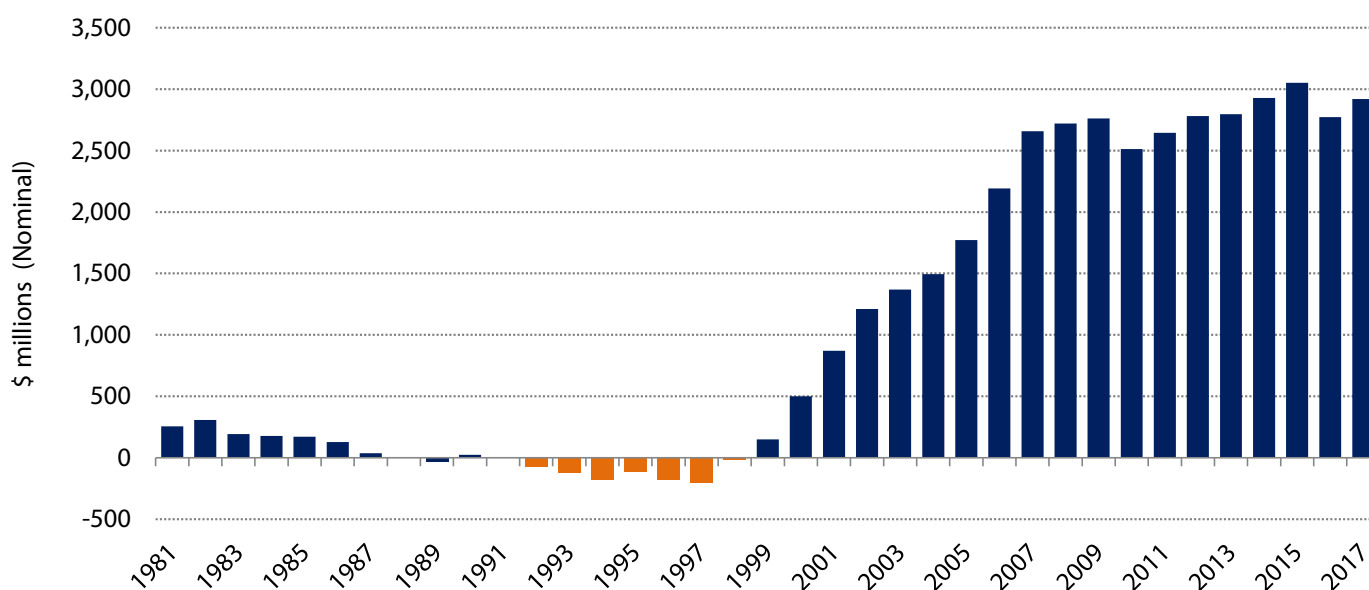
Source: Statistics Canada, CANSIM Tables 36-10-0315-01 and 36-10-0450-01.

spending for the CPP in Alberta. In other words, figure 3 shows whether there was a net contribution or a net payment to Albertans from the CPP.

Figure 3 indicates that there are three fairly distinct periods from 1981 to 2017. Specifically, from 1981 to 1991, Albertans made a small net contribution to the CPP, meaning that contributions by Alberta workers to the CPP were slightly greater than the spending by the CPP on retirees in Alberta. The annual net contribution during this period ranged from -\$33 million to +\$309 million.

The second period, from 1992 to 1998, was characterized by relatively small net payments by the CPP to Alberta retirees compared to the contributions that Alberta workers made to the CPP. The net payments during this period ranged from -\$13 million in 1998 to -\$203 million in 1997.

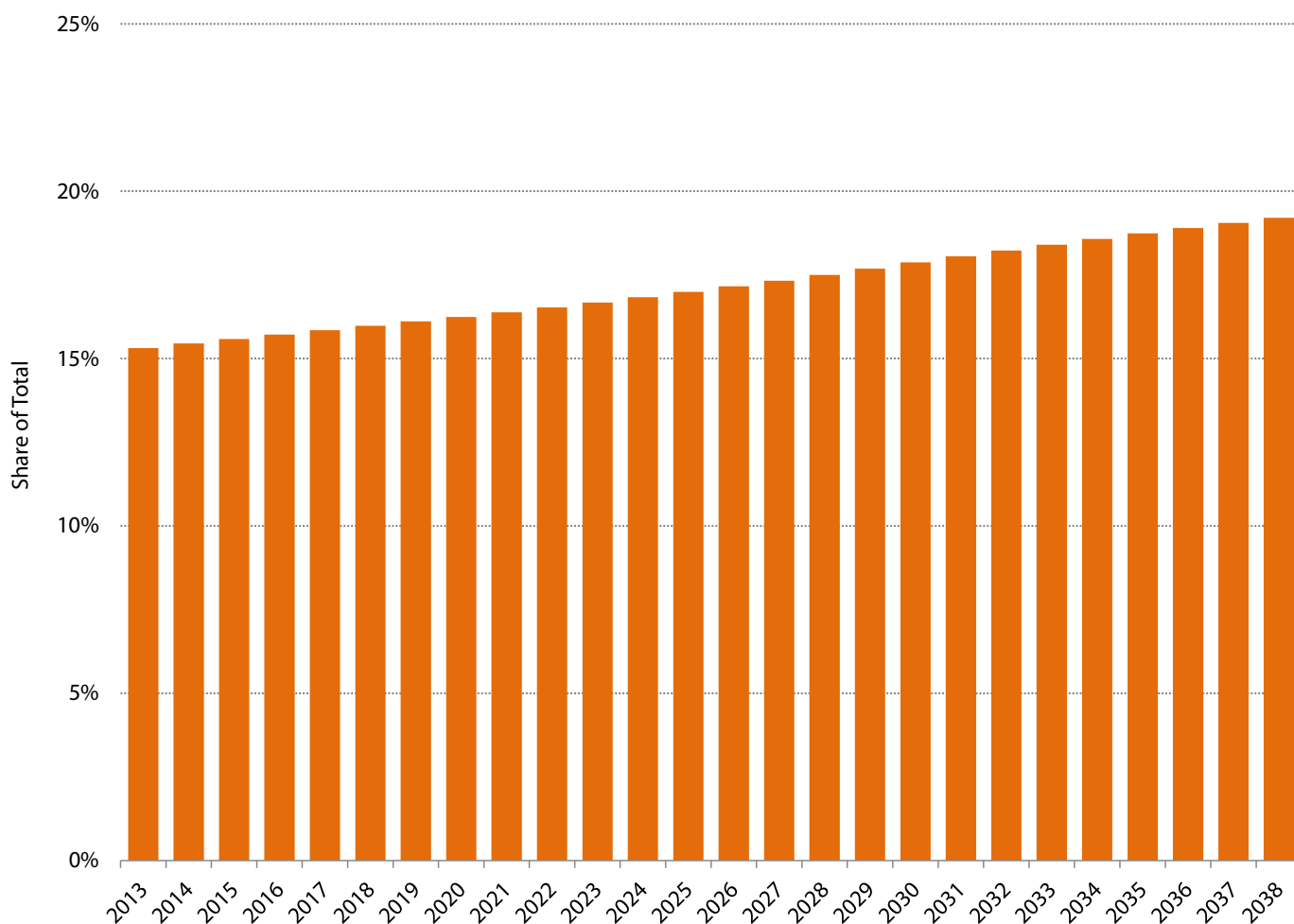
Figure 3: Annual Balance of CPP Contributions from and Expenditures in Alberta



Source: Statistics Canada, CANSIM Tables 36-10-0315-01 and 36-10-0450-01.

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Figure 4: Alberta's Share of the Working Age Population of Canada (less Quebec)



Notes:

1) The base population for these projections is derived from the official preliminary post-censal estimates of the population for Canada, provinces, and territories as of July 1, 2013. In all scenarios, the population is projected until 2038 for the provinces and territories, and until 2063 for Canada as a whole. For more detail on the assumptions and scenarios, please refer to Statistics Canada's projection report (catalogue 91-520) and its technical report (catalogue 91-620). Because of rounding, counts within tables may differ from the totals.

2) The population is projected until 2038 for the provinces and territories, and until 2063 for Canada as a whole.

3) The medium growth and 1991/1992-to-2010/2011 interprovincial migrations trends scenario is defined by the following assumptions: a Canadian total fertility rate that reaches 1.67 births per woman in 2021/2022 and remains constant thereafter; a Canadian life expectancy that reaches 87.5 years for males and 89.1 years for females in 2062/2063; interprovincial migration based on the trends observed between 1991/1992 and 2010/2011; a national immigration rate that reaches 0.75% in 2022/2023 and remains constant thereafter; an annual number of non-permanent residents (Canada) that reaches 864,600 in 2021 and remains constant thereafter; a national net emigration rate of 0.19%.

Source: Statistics Canada, CANSIM Table 17-10-0057-01.

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In the final period from 1999 to 2017, Alberta workers made fairly large net contributions to the CPP compared to the payment that Alberta retirees received from the CPP. Specifically, the net contributions during this period increased from \$149 million in 1999 to a high of \$3.1 billion in 2015. This period coincides with the accelerated increase in the CPP contribution rates agreed to by the participating provinces and the federal government in 1996,³ which saw CPP contribution rates increase from 5.6 percent in 1996 to 9.9 percent in 2003.

In 2017, the year for which the most recent data are available, the net contribution was \$2.9 billion. Indeed, the cumulative net contributions of Albertans to the CPP over the last decade (2008 to 2017) total \$27.9 billion.

It is worth pausing to understand why this imbalance exists. A number of factors influence the operations of a pension, and in particular programs like the CPP that have a substantial “pay-as-you-go” component. Pay-as-you-go refers to a feature of the CPP (and other programs) wherein a portion of the benefits paid to current retirees are financed not from accumulated savings but from the current contributions of workers. In other words, current workers are paying into the CPP to pay for current retiree benefits. For example, in 2016, the CPP collected \$46.5 billion in contributions from Canadian workers⁴ and paid out \$42.9 billion in retiree and related benefits, leaving a net cash

flow for investment (savings) of \$3.6 billion (Office of the Chief Actuary, 2018: table 9, p. 25).

The fact that Alberta has a disproportionate share of the country’s working age population (people aged 15 to 64) will obviously affect its share of contributions to the CPP, assuming it has an employment rate for the working age population that is average or better. Figure 4 illustrates Alberta’s share of the country’s working age population (minus Quebec) and Statistics Canada’s expectation for the future.

The province’s share of the country’s working age population (minus Quebec) increased from 15.3 percent in 2013 to an expected 16.0 percent in 2018 (figure 4). (Alberta had 15.6 percent of the total population of Canada (minus Quebec) in 2018). Furthermore, Statistics Canada projects that Alberta’s share of the population (minus Quebec) will continue to increase, reaching 19.2 percent in 2038, the last year of its latest population projection.⁵

Interprovincial migration is partly responsible for Alberta’s disproportionate share of the country’s working age population. Figure 5 illustrates the annual net interprovincial migration of the working age population from 1971–72 to 2016–17. Except for the periods 1982–83 to 1988–89, 1992–93 to 1993–94, 2009–10 and 2015–16 to 2016–17, Alberta experienced a net inflow of 527,017 working age people from other provinces.

Alberta also has a higher employment rate for the working age population than the rest of the

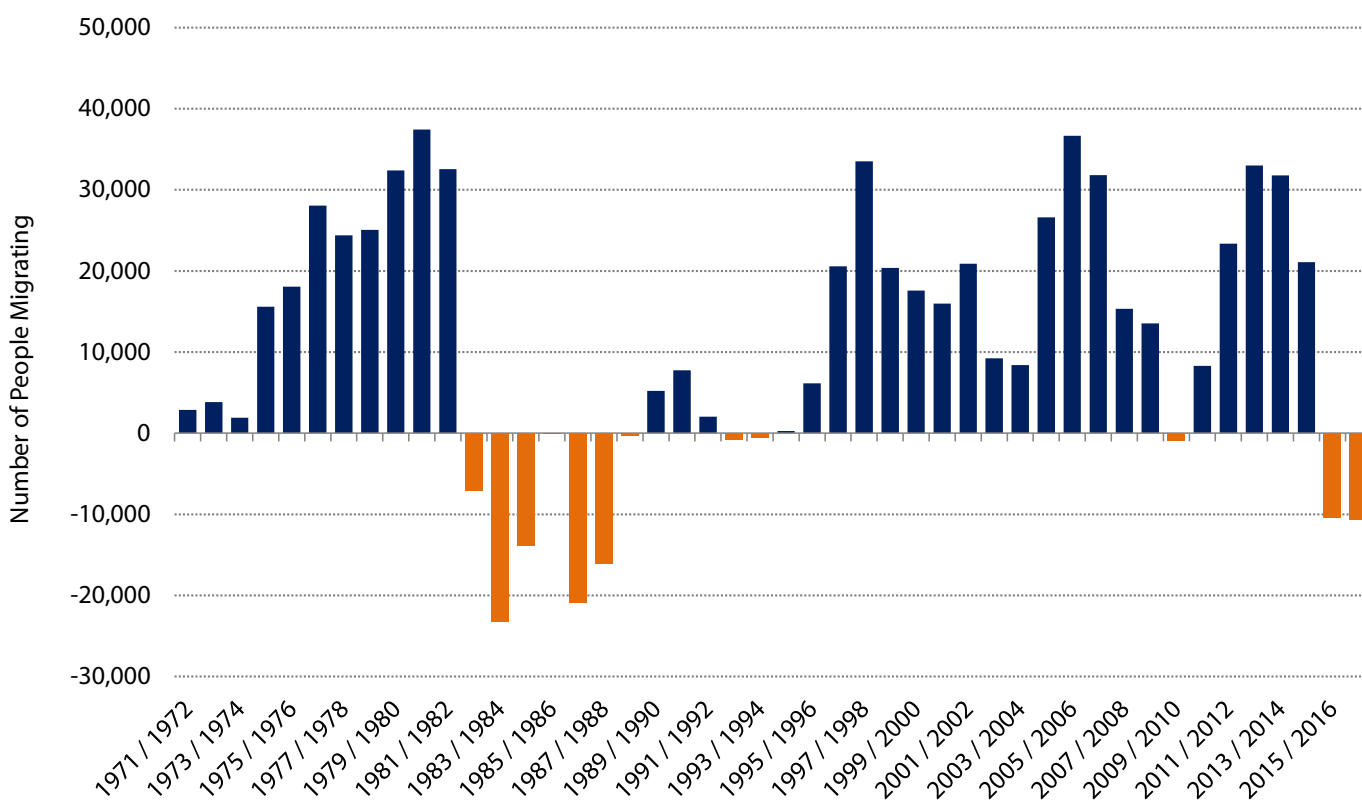
³ For a fulsome summary of the reforms agreed to in 1996 and enacted in 1997, see Office of the Chief Actuary (1997).

⁴ In addition to the \$46.5 billion collected from workers in the form of contributions, the CPP also recorded \$5.8 billion in investment income. See Office of the Chief Actuary (2018), table 9 (p. 25).

⁵ These results hold even if Quebec is included, though Alberta’s share of the working age population is obviously lower. In other words, Alberta maintains a disproportionate share of the country’s working age population whether Quebec is included or excluded.

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Figure 5: Alberta's Net Interprovincial Migration, People Aged 15 to 64 (Working Age)



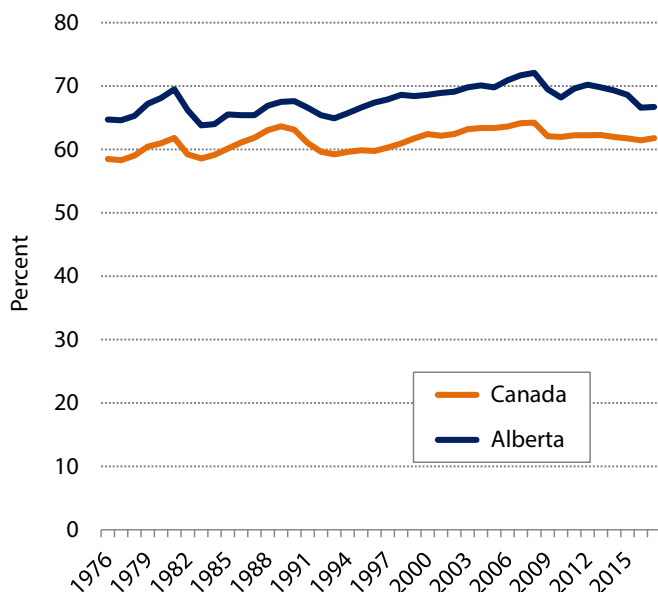
Notes:

- 1) Interprovincial migration represents movements from one province or territory to another, involving a change in usual place of residence. A person who takes up residence in another province or territory is an out-migrant with reference to the province or territory of origin, and an in-migrant with reference to the province or territory of destination. Net interprovincial migration is the difference between the number of in-migrants and the number of out-migrants.
- 2) Period from July 1 to June 30.
- 3) The number of interprovincial migrants is final up to 2015/2016 and preliminary for 2016/2017.
- 4) Data for persons aged 90 to 100 years and over will be available from 2001/2002.
- 5) From 1971/1972 to 1975/1976, estimates are based on Family Allowance data. From 1976/1977 to 2015/2016, estimates are based on Canada Revenue Agency (CRA) tax data. For 2016/2017, estimates are based on Canada Child Benefit data from CRA (formerly Canada Child Tax Benefit).
- 6) The population growth, which is used to calculate population estimates, is composed of the natural growth (Statistics Canada Table CANSIM 51-0002 and 51-0013), international migration (CANSIM 51-0011) and interprovincial migration (CANSIM 51-0012).
- 7) Age at July 1.

Source: Statistics Canada, CANSIM Table 17-10-0015-01.

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Figure 6: Annual Employment Rates, Canada (less Quebec) versus Alberta



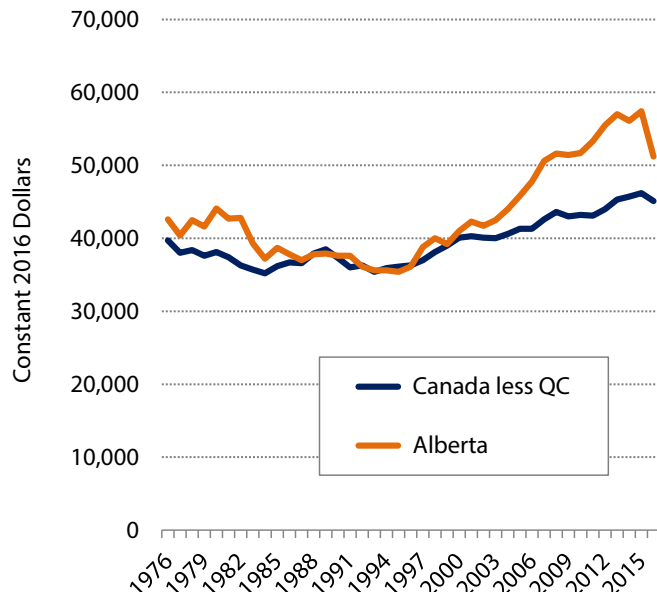
Note: The employment rate is the number of persons employed expressed as a percentage of the population 15 years of age and over. The employment rate for a particular group (age, sex, marital status, etc.) is the number employed in that group expressed as a percentage of the population for that group. Estimates are percentages, rounded to the nearest tenth.

Source: Statistics Canada, CANSIM Table 14-10-0018-01.

country. Figure 6 shows the employment rates for Alberta and for Canada minus Quebec between 1976 and 2017. As is clearly visible in figure 6, Alberta has maintained a higher employment rate than the rest of the country (minus Quebec) throughout this period, regardless of the economic cycle or state of the provincial economy.⁶ The average gap in the employment

⁶ This result holds even if Quebec is included. If Quebec is included, the average gap in the employ-

Figure Figure 7: Market Income, Canada (less Quebec) vs. Alberta, Constant 2016 \$



Note: Estimates are based on data from the following surveys: the Survey of Consumer Finances (SCF) from 1976 to 1992, a combination of the SCF and the Survey of Labour and Income Dynamics (SLID) from 1993 to 1997, the SLID from 1998 to 2011, and the Canadian Income Survey (CIS) beginning in 2012. For more information, see Statistics Canada (2015). Also, two previous revisions of income data are described in Cotton (2000) and Lathe (2005).

Source: Statistics Canada, CANSIM Table 11-10-0239-01.

rate over the entire period was 6.3 percentage points or 10.3 percent higher than the national average.⁷

ment rate over the entire period was 7.4 percentage points or 12.3 percent higher than the national average.

⁷ The gap is fairly stable over time. For instance, over the last decade (2008–2017), the gap was 6.9 percentage points or 11.0 percent higher than the national average.

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A final factor to consider is the average income of Albertans versus those in the rest of the country (minus Quebec). Figure 7 illustrates the average market income of Albertans compared with those in the rest of the country (minus Quebec) from 1976 to 2016, the latest data available. As it illustrates, in many of those years, Albertans enjoyed a much higher average market income than people in the rest of the country (with or without Quebec).⁸ And indeed, the gap between Alberta and the rest of the country has increased since the early 2000s,⁹ though there was a contraction in 2016.

Simply put, workers in Alberta contribute far more to the CPP than what the CPP spends on Alberta's retirees. This is due in large measure to three facts: Alberta has a higher share of the working age population relative to its population than the rest of the country; it maintains higher employment rates for those of working age; and Albertans enjoys higher average market incomes than people elsewhere in the country.

CPP contribution rate not sustainable without Alberta

Another way to consider Alberta's disproportionate contribution to the CPP is to hypothetically calculate the sustainability of the CPP if Alberta were to withdraw from it. In other words, what would theoretically happen to the CPP if the disproportionate contribution by Albertans no longer existed?

For simplicity, the analysis excludes the recent-ly agreed to expansion of the CPP and focus-

es on the implications of Alberta withdrawing from the original CPP, prior to its expansion. As briefly explained previously, the CPP is a hybrid system with a large "pay-as-you-go" component, meaning that contributions paid by workers today are used to fund benefits for current retirees. The other part of the base CPP is the "pre-funded" portion, which is invested by the Canada Pension Plan Investment Board (CPPIB).

Under pension systems with a pay-as-you-go component, the contribution rate at which the system is sustainable at a given level of benefits depends, among other aspects, on the demographic and income profile of workers and recipients in a jurisdiction. Specifically, all else being equal, a younger population with fewer retirees, a higher employment rate, and/or a higher average income will result in a lower contribution rate for the system to remain sustainable given a specific level of benefits.

The 29th *Canada Pension Plan Actuarial Report* by the Office of the Superintendent of Financial Institutions (OSFI) presents detailed financial projections of the CPP featuring contributions, investment income, expenditures, cash flow analyses, and the asset/expenditure ratio.¹⁰

OSFI's test of sustainability,¹¹ upon which this analysis relies, is based on the calculation of the

⁸ Again, these results hold even if Quebec is included in the analysis.

⁹ The average gap between Alberta and the rest of Canada (minus Quebec) between 2007 and 2015 was \$9,767.

¹⁰ The two key sources of data used for the estimates were Office of the Chief Actuary, 2018: table 9 (p. 25) and table 12 (p. 29). Both tables contain key financial information for the CPP. The difference is that table 9 uses the actual CPP tax rate of 9.9 percent whereas table 12 uses the minimum conceptual tax rate required to maintain sustainability. The calculations in this paper were based on data in table 9; table 12 was used as a validation check.

¹¹ This test is set out in the Regulations of the Canada Pension Plan. For details, see Office of the Chief Actuary (2014): 13.

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ratio of assets to spending. The specific current test used by OSFI to determine sustainability is whether the asset-to-expenditure ratio 50 years from the date of the last full actuarial assessment is the same as or higher than the asset-to-expenditure ratio estimated 10 years from the date of the assessment. In other words, OSFI focuses on whether the current tax rate, given the proportion of workers and retirees, income levels, and other demographic data, is sufficient to maintain the asset level relative to projected spending in 60 years compared to what is projected in 10 years. The key aspect of this calculation is whether a decline in the value of assets held would be required to fund current expected retiree benefits given current expected revenues.

For the purposes of this bulletin's analysis, 2025 was used as the base for the 10-year estimate. In 2025, OSFI projects the asset-to-expenditure ratio for the current CPP at 6.45. In other words, OSFI anticipates that the accumulated assets of the CPP in 2025 will be 6.45 times the level of expenditures for the following year (2026). The test of sustainability is, therefore, whether in 2075 the CPP, given current expectations for the proportion of workers and retirees, income levels, etc., will result in an asset-to-expenditure ratio of no less than 6.45. Currently, the expected asset-to-expenditure ratio in 2075 is 7.29 (Office of the Chief Actuary, 2018: table 9, p. 25). This means that OSFI currently projects that the CPP will accumulate assets relative to spending compared to the ratio in 2025.

The authors examined contribution and expenditure data by province, in aggregate, between 1981 and 2017. They paid particular attention to the last 10 years of data: 2008–2017. During that period, on average, Alberta workers paid 16.5 percent of all CPP contributions and represent-

ed 10.6 percent of all benefits paid.¹² These percentages were fairly stable throughout the period despite the recession in 2008–09.

The authors used these proportions to adjust the projections for the CPP between 2019 and 2090 in order to calculate the CPP should Alberta withdraw from it. In other words, these proportions were used as a proxy measure to calculate what the CPP would look like in the future without Alberta workers contributing to it or Alberta retirees receiving its benefits.

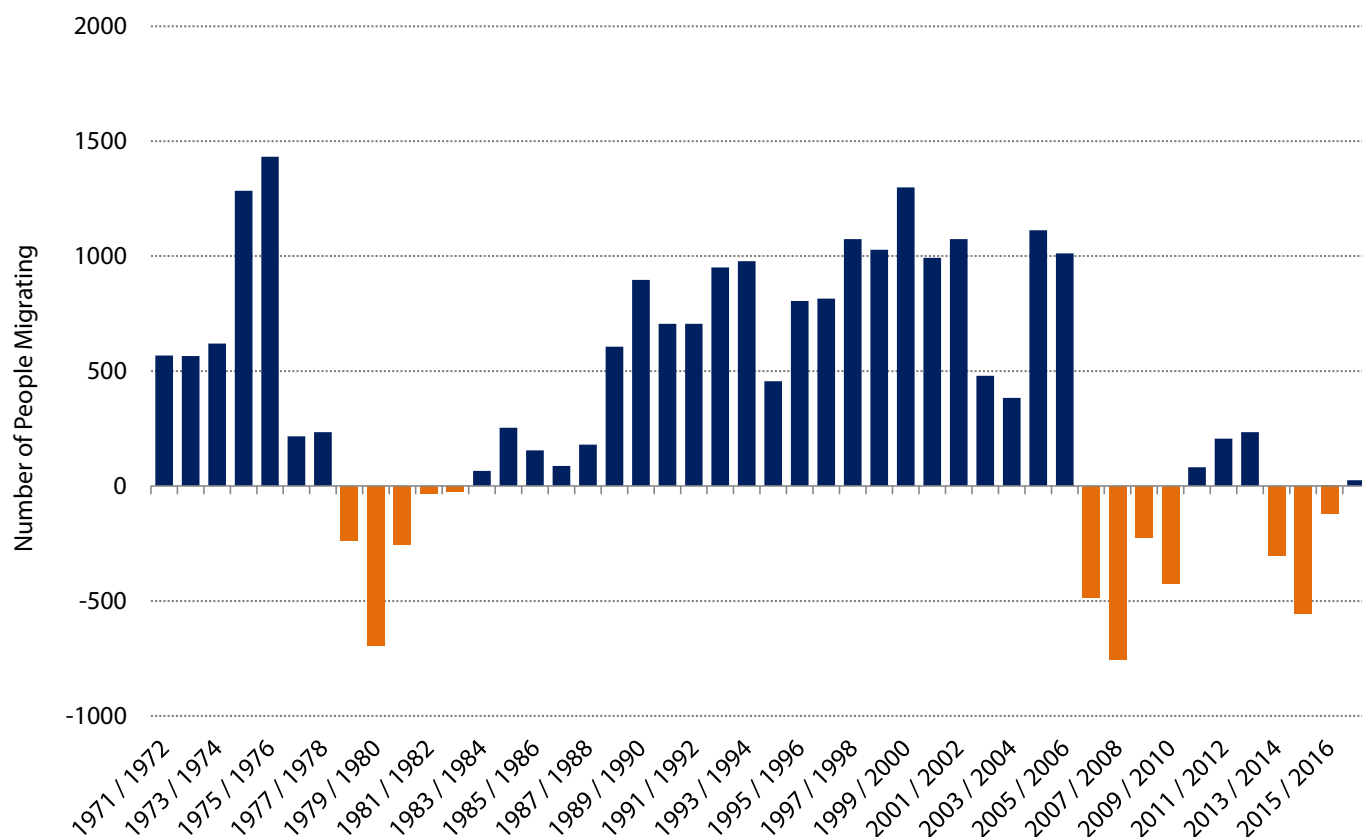
Several key assumptions underlie this analysis. First, the analysis examines the contributions collected from workers in Alberta and the payments made to retirees in Alberta. In a strict sense, this is different from what would happen if Alberta were to withdraw from the CPP. In such a case, benefits would be paid to retirees who contributed to the system regardless of where they lived in retirement. The view of the authors is that this difference is largely mitigated in the calculations presented below based on the reality that on net, Alberta tends to attract retirees. In other words, over time, more seniors tend to move to Alberta than leave the province, which means that the calculations in this bulletin, which rely on the location for determining contributions and payments, are likely conservative estimates.

Figure 8 illustrates interprovincial net migration for people over the age of 65 from 1971–72 through to 2016–17. Over those 46 years, in only 12 of them did more seniors leave the province than move into it—roughly one of every four years. In addition, over the entire period, a net total of 17,472 people over the age of 65 moved

¹² This includes all expenditures including non-retirement benefits such as disability.

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Figure 8: Alberta's Net Interprovincial Migration, People Over the Age of 65



Notes:

- 1) Interprovincial migration represents movements from one province or territory to another, involving a change in usual place of residence. A person who takes up residence in another province or territory is an out-migrant with reference to the province or territory of origin, and an in-migrant with reference to the province or territory of destination. Net interprovincial migration is the difference between the number of in-migrants and the number of out-migrants.
- 2) Period from July 1 to June 30.
- 3) The number of interprovincial migrants is final up to 2015/2016 and preliminary for 2016/2017.
- 4) Data for persons aged 90 to 100 years and over will be available from 2001/2002.
- 5) From 1971/1972 to 1975/1976, estimates are based on Family Allowance data. From 1976/1977 to 2015/2016, estimates are based on Canada Revenue Agency (CRA) tax data. For 2016/2017, estimates are based on Canada Child Benefit data from CRA (formerly Canada Child Tax Benefit).
- 6) The population growth, which is used to calculate population estimates, is composed of the natural growth (Statistics Canada Table CANSIM 51-0002 and 51-0013), international migration (CANSIM 51-0011) and interprovincial migration (CANSIM 51-0012).
- 7) Age at July 1.

Source: Statistics Canada, CANSIM Table 17-10-0015-01.

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into Alberta compared to the number moving out of Alberta.

The analysis makes another key assumption: that Alberta's proportional share of assets in the Canada Pension Plan Investment Board, based on the data from 2007 to 2017, is allocated to Alberta. Specifically, 16.5 percent of the accumulated assets of the CPPIB are assumed to be transferred to an independent Alberta-based investment fund.¹³ Similarly, all the current assumptions for the CPPIB in terms of rates of return, cost, etc., are applied to the new Alberta fund.

This bulletin further assumes that the share of contributions from Alberta and expenditures in Alberta from 2007–2017 are a reasonable and relatively accurate indicator of contributions and expenses for the foreseeable future. This is based on Statistics Canada's projections for an increasing share of the country's working age population to reside in Alberta, and on the province's long history of maintaining higher employment rates and income levels than the national average.

Sustainability, as defined by OSFI, is that the asset-to-expenditure ratio in 2075 is the same as, or higher than, the estimated asset-to-expenditure ratio as of 2025. The new asset-to-expenditure ratio calculated for 2025 based on the revised CPP without Alberta is 6.02. The contribution rate needed for the CPP to maintain that asset-to-expenditure ratio in 2075 is 10.6 percent, an increase of 0.7 percentage

points.¹⁴ Simply put, without Alberta, the CPP would have to increase the contribution rate to 10.6 percent (from 9.9 percent) in order to remain sustainable as defined by OSFI.

Alternatively, as one would expect, if Alberta were to implement a standalone provincial pension program, its asset-to-expenditure ratio in 2025 is projected to be 9.59. The contribution rate required for Alberta to maintain the same benefits that would be paid out under the CPP and achieve sustainability as defined by OSFI would be 5.85 percent, more than 4 percentage points lower than the previous rate under the CPP (9.9 percent). The asset-to-expenditure ratio in 2075 is projected to be 9.82, which means there would be a slight increase in assets relative to projected spending.

The authors also made a second calculation to assess the sensitivity of the results to a roughly 10 percent convergence, as summarized below. In addition to the basic calculation based on the assumptions above, a second estimate was calculated that assumed that Alberta's share of contributions and payments converged towards the national average by 10 percent. Specifically, Alberta's share of contributions to the CPP was assumed to decline to 14.9 percent over the 2019 to 2024 period while its share of expenditures was assumed to increase to 11.7 percent over the same period.

The new asset-to-expenditure ratio for the CPP without Alberta in 2025 is 6.0. Without Alberta, the contribution rate for the CPP required to maintain this ratio in 2075 is 10.3 percent. Alternatively, the asset-to-expenditure ratio for a standalone program in Alberta would be 9.3 and

¹³ An equally applicable assumption would be that the CPPIB maintained the assets and invested them on a status quo basis but that the earnings were directed to the new AB fund and used to finance AB recipient benefits.

¹⁴ For reference, the actual asset-to-expenditure ratio for 2075 with a contribution rate of 10.6 percent is 6.14.

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the contribution rate required to maintain that ratio in 2075 would be 7.2 percent. Not surprisingly, an approximate 10 percent convergence of Alberta's share of both contributions to and expenditures from the CPP narrows the gap between the contribution rates between the CPP without Alberta and a standalone Alberta program. However, even after the convergence, a material gap remains between the two, indicating the ongoing disproportionate contributions of Albertans to the national CPP program.

Conclusion

As is the case with other federal or national programs such as equalization, the status quo arrangement for the CPP is quite heavily dependent on Alberta's participation. Alberta continues to disproportionately contribute to a host of federal and national programs including the CPP.

References

- Cotton, Cathy (2000). *Bridging Two Surveys: An Integrated Series of Income Data from SCF and SLID 1989-1997*. Catalogue number 75F0002MIE – 00002. Statistics Canada. <<http://publications.gc.ca/collections/Collection/Statcan/75F0002MIE/75F0002MIE2000002.pdf>>, as of January 8, 2019.
- Lafleur, Steve, Ben Eisen, and Milagros Palacios (2017). *A Friend in Need: Recognizing Alberta's Outsized Contribution to Confederation*. The Fraser Institute. <<https://www.fraserinstitute.org/sites/default/files/a-friend-in-need-recognizing-albertas-outsized-contribution-to-confederation.pdf>>, as of January 7, 2019.
- Lathe, Heather (2005). *Survey of Labour and Income Dynamics: 2003 Historical Revision*. Catalogue number 75F0002MIE – No. 009. Statistics Canada. <<https://www150.statcan.gc.ca/n1/en/pub/75f0002m/75f0002m2005009-eng.pdf?st=4ou2V4NP>>, as of January 8, 2019.
- Office of the Chief Actuary (1997). *Canada Pension Plan Sixteenth Actuarial Report* (September 1997). Government of Canada, Office of the Superintendent of Financial Institutions. <http://publications.gc.ca/collections/Collection_2012/bsif-osfi/IN3-21-16-1997-eng.pdf>, as of January 7, 2019.
- Office of the Chief Actuary (2014). *Assessing the Sustainability of the Canada Pension Plan through Actuarial Balance Sheets*. Actuarial Study No. 13. Government of Canada, Office of the Superintendent of Financial Institutions. <http://publications.gc.ca/collections/Collection_2014/bsif-osfi/IN5-1-13-2014-eng.pdf>, as of January 7, 2019.
- Office of the Chief Actuary (2018). *Canada Pension Plan Actuarial Report (29th)*. Government of Canada, Office of the Superintendent of Financial Institutions. <<http://www.osfi-bsif.gc.ca/Eng/Docs/cpp29.pdf>>, as of January 7, 2019.
- Statistics Canada (2015). *Revisions to 2006 to 2011 Income Data*. Income Research Paper Series, Catalogue number 75F0002MIE – No. 003. Government of Canada. <<https://www150.statcan.gc.ca/n1/en/pub/75f0002m/75f0002m2015003-eng.pdf?st=QHlqRraC>>, as of January 8, 2019.
- Statistics Canada (2019a). *Table 36-10-0450-01: Revenue, Expenditure and Budgetary Balance—General Governments, Provincial and Territorial Economic Accounts*. (Formerly CAN-SIM Table 384-0047.) Government of Canada. <<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610045001>>, as of Jan. 7, 2019.
- Statistics Canada (2019b). *Table 36-10-0315-01: Canada and Quebec Pension Plans, Revenue and Expenditure, Provincial Economic Accounts, Annual, 1981-2009*. (Formerly CAN-SIM Table 384-0005.) Government of Canada. <<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3610031501>>, as of Jan. 7, 2019.

Albertans Make Disproportionate Contributions to the CPP

Statistics Canada (2019c). Table 17-10-0057-01: *Projected Population, by Projection Scenario, Age and Sex, as of July 1.* (Formerly CANSIM Table 052-0005.) Government of Canada. <<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710005701>>, as of Jan. 7, 2019.

Statistics Canada (2019d). Table 14-10-0018-01: *Labour Force Characteristics by Sex and Detailed Age Group, Annual.* (Formerly CANSIM Table 282-0002.) Government of Canada. <<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1410001801>>, as of Jan. 7, 2019.

Statistics Canada (2019e). Table 11-10-0239-01: *Income of Individuals by Age Group, Sex and Income Source, Canada, Provinces and Selected Census Metropolitan Areas.* (Formerly CANSIM Table 206-0052.) Government of Canada.

<<https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1110023901>>, as of Jan. 7, 2019.

Statistics Canada (2019f). Table 17-10-0015-01: *Estimates of the Components of Interprovincial Migration, by Age and Sex, Annual.* (Formerly CANSIM Table 051-0012.) Government of Canada. <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710001501>>, as of January 7, 2019.

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