UNIVERSITY OF CALGARY | THE SCHOOL OF PUBLIC POLICY

MASTER OF PUBLIC POLICY CAPSTONE PROJECT

Managing Alberta's Fiscal Future

Submitted by:

Darren Chua

Approved by Supervisor:

Dr. Kenneth J. McKenzie

Submitted in fulfillment of the requirements of PPOL 623 and completion of the requirements for the Master of Public Policy degree

Acknowledgements

To my beautiful life partner – ***Taelor Evans***. I do not know what I would have done without your contagious smile and warmth, dedication and undying love. This project is possible because of your patience. I love you.

To my capstone supervisor, ***Dr. Kenneth McKenzie***. Thank you for your constant guidance and feedback throughout this project. My understanding in public policy would not be complete without your supervision and advice. Thank you so much.

Table of Contents

LIST OF FIGURES

LIST OF TABLES

EXECUTIVE SUMMARY

The fiscal situation of the Alberta government is not sustainable in the long run. A number of factors, such as an aging population requiring increased healthcare funding and "decarbonization" of oil and gas resources worldwide places pressure on government revenue, in part contributing to the unsustainability of provincial finances. Without policy changes, government debt will increase through deficits and debt servicing costs. High debts accumulated by the provincial government will therefore result in a higher debt-to-GDP ratio. Recent spending on COVID-19 recovery programs by the Alberta government has also contributed to the increase of the provincial debt-to-GDP ratio, although this is projected to be short-term.

Public services such as healthcare, social services and education are funded by the government. In order to continue providing excellent public service to Albertans, government finances must remain sustainable. Provincial debt-to-GDP ratio is projected to sharply rise from 11.4% in 2020 to 26.6% in 2024, amounting to approximately $62 billion of new debt. Therefore, government debt will continue to increase for the foreseeable future. Unsustainable public finances may inevitably affect Albertans through austerity, resulting in a number of social and economic consequences.

Achieving fiscal sustainability is possible, although it would require the gradual implementation of a number of policy options to reduce or maintain debt-to-GDP ratio. This includes introducing a provincial sales tax, excluding natural resource royalties from government revenues, increasing personal income tax rates, reintroducing the provincial carbon tax and prudently managing public expenditures.

INTRODUCTION

The fiscal state of the government of Alberta is currently unsustainable. While the COVID-19 pandemic has contributed to the financial malaise, other non-pandemic-related factors play a role in the sustainability of public finances. Such factors include, but are not limited to, an aging Albertan population that requires increased healthcare funding and reduced labour participation which decreases payroll and income tax revenues to the government (Tombe 2018). Furthermore, the volatility of revenues received from the "decarbonization" of natural resources to varying extents worldwide contributes to the unpredictability of revenues received from natural resource extraction.

The Government of Alberta (GOA) reported their fiscal plan for 2021-2024 in the February 2021 budget. In the budget, the provincial government has committed to keeping the debt-to-GDP ratio below 30 per cent to "protect future generations from rising debt servicing costs" (Government of Alberta [GOA] 2021a). Furthermore, the government indicated its intention to balance the budget after the pandemic, which has ravaged the Albertan economy. Although the government has made these commitments to reduce budget deficits, debt servicing costs or interest expenses are projected to continue rising. The provincial government deficit for 2021-2022 is projected to be at $18.2 billion, followed by $11 billion for 2022-2023 and $8 billion for 2023-2024. The debt-to-GDP ratio is projected to sharply increase from 11.4 per cent in 2020 to 26.6 per cent in 2024 (GOA 2021a). This amounts to an addition of approximately $62 billion of new debt. In the 2021 budget, the provincial government increased healthcare expenses; however, no new expense increases are planned for the 2021-2024 fiscal year. These projections

may not be accurate, and expenses could increase rapidly with the aging Albertan population, thus widening the fiscal gap and further growing debt-to-GDP ratio.

It is imperative that government finances remain sustainable and healthy, as critical public services such as healthcare, social services and education are funded by the government. In the extreme, unsustainable fiscal policies can lead to the accumulation of government debt and an increasing debt-to-GDP ratio. If this remains unchecked, the province may be forced to implement austerity measures. Consequences of such measures may include deterioration of the quality of Alberta's public service through expenditure cuts. Additionally, a larger debt-to-GDP ratio can result in creditor reluctance to lend to the government due to their loss of confidence in the Alberta economy, putting increased pressure on the interest rate of government debt. Therefore, unsustainable government debt would damage the province's economy, as well as the livelihoods of Albertans.

The debt-to-GDP ratio is a useful measure and indicator of the sustainability of public finances. The "fiscal gap" is defined by the combination of expenditure cuts and tax increases required to maintain a stable debt-to-GDP ratio, and is measured as a percentage of the economy's GDP. The fiscal gap provides an indication of how much adjustments to current fiscal policy, such as decreasing spending and increasing revenue, are required for public finances to remain sustainable. Public finances are considered to be "sustainable" when the debt-to-GDP ratio is reduced or constant. Sustainable fiscal policies require adjustments of fiscal measures (such as tax revenue and expenditures) to maintain or reduce debt-to-GDP ratio.

It is important to note that budget deficits or high debt-to-GDP ratios do not necessarily mean unsustainable public finances. As long the rate of growth in GDP is greater than the interest rate of government debt, the government can run deficits and still remain fiscally sustainable. For example, Japan's debt-to-GDP ratio is estimated to be around 230 per cent in 2014 and approximately 231 per cent in 2017 (Miyazaki and Onji 2017). Despite carrying inherent fiscal risks, Japanese public finances are considered sustainable because of the relatively constant debt-to-GDP ratio, despite high government debt.

Without effective fiscal policy changes in Alberta, accumulating government debts will result in higher debt service costs or interest expenditures, especially with recent spending increases resulting from the COVID-19 pandemic. Fortunately, there are several options available that will enable the province to achieve sustainable public finance, such as increasing income tax rates, implementing a provincial sales tax (PST), considering reforms to federal transfer payments, and reintroducing the provincial carbon tax.

BACKGROUND

Like many governments, the Alberta government primarily receives revenue from provincial taxes and transfers from the federal government, in addition to several other sources. Using data from Finances of the Nation (FON), the different revenues that the GOA receives can be examined over time.

Figure 1 depicts the different sources of GOA's main revenue from 1966 to 2020 as a percentage of total revenue (Finances of the Nation [FON] 2021a). During much of Alberta's fiscal history, revenue received from natural resources comprised a significant share of revenues received, followed by personal income taxes. Natural resource revenues accounted for 53 per cent of total revenue in 1980 (FON 2021a). This fell to about 20 per cent from the mid-80's to late 90's, rising again to about 30 per cent in the 2000's. Since 2013, revenues from natural resources has declined significantly to less than 15 per cent, mainly due to the economic downturn of the non-renewable energy sector. The underlying volatility in energy markets make it difficult to predict future revenue from natural resources. For instance, Budget 2014 forecasted a revenue of over $10 billion from natural resources. Actual resource revenues generated were less than $3.1 billion (Tombe 2021).

Recently, revenues received from federal transfers have comprised a significant amount of total revenues. In 2020, the Alberta government received payments from the federal government which amounted to approximately 16 per cent of the province's total revenue. Alberta has not received equalization payments, as the province possesses the fiscal capability to generate higher per-capita revenues compared to the national average.

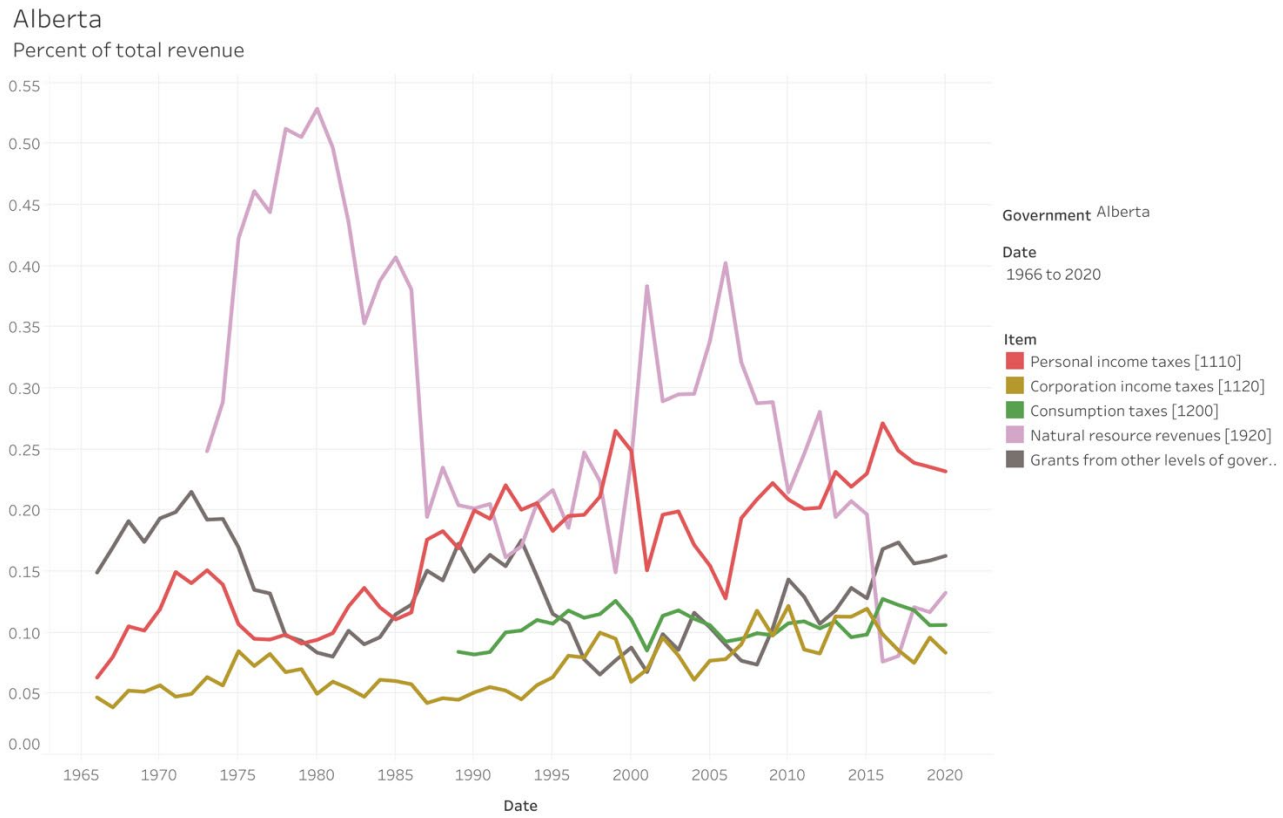

Figure 1: Main sources of Alberta government revenues from 1966 to 2020. Data obtained from Finances of the Nation (2021a).

Figure 2 depicts the breakdown of GOA expenses into program expenditures and debt service charges as a percentage of total revenue from 1966 to 2020 (FON 2021a). Total revenue is shown for reference. From 1973 to 1986, Alberta public finances were relatively healthy and sustainable, as total revenues were significantly higher than total expenditures, resulting in primary surpluses. For the period of 1995 to 2009, the provincial government was again able to generate more revenues than expenses. In part, this was a result of the former Alberta premier Ralph Klein's fiscal policies that eradicated the provincial debt and achieved balanced budgets. Since the economic downturn of the oil & gas industry in 2013, government expenditures have

exceeded total government revenue, with total expenditures approximating 130 per cent of total revenue in 2018. Although GOA has adopted various fiscal anchors in Budget 2021, such as keeping the debt-to-GDP ratio below 30 per cent and adopting a more careful approach to spending, total government expenditures remain projected above total revenue for the foreseeable future.

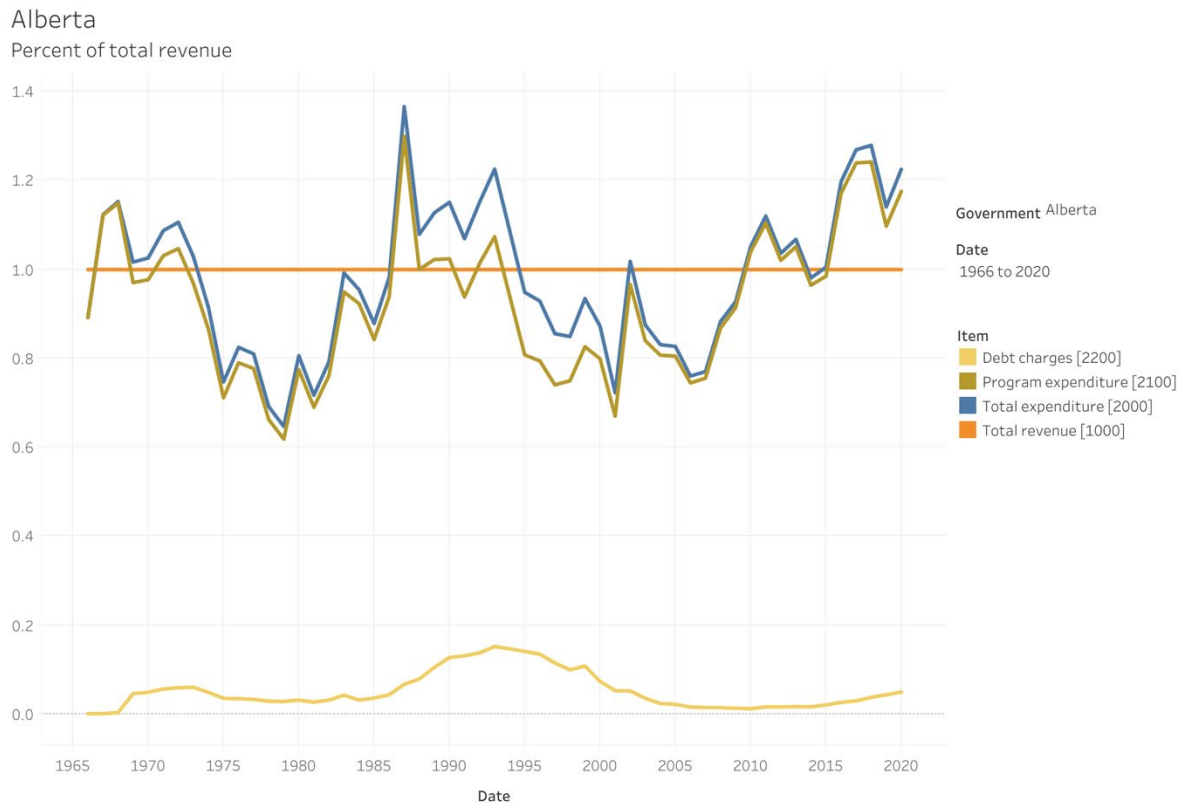

Figure 2: Alberta government expenditures as a percentage of total revenue. Provincial government spending is projected to surpass revenue in the foreseeable future. Data obtained from Finances of the Nation (2021a).

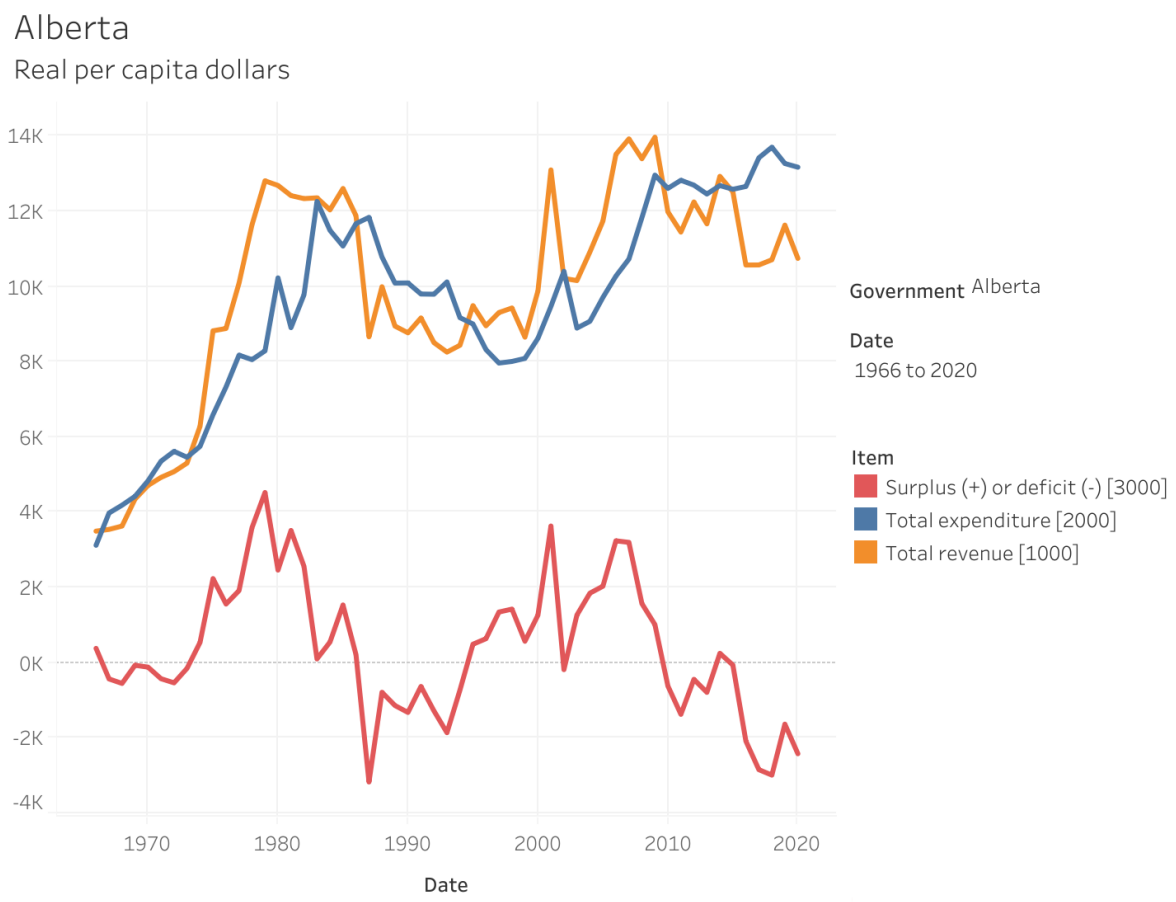

Figure 3: Alberta government budget balances, total expenditures and total revenue, in real per capita dollars. High expenditures result in deficits, observed in recent years. Data obtained from Finances of the Nation (2021a).

Figure 3 provides an overview of public finances in Alberta (FON 2021a). More recently, budget deficits have become the norm, driving government finances towards fiscal unsustainability. The heavy reliance on declining natural resource revenues, the diminishing labour force due to the aging Alberta population and global pandemic, and the increasing healthcare expenditures are likely to further increase the fiscal gap and contribute to high public debt. In turn, this will further exacerbate the province's fiscal situation.

The historical overview highlights the importance of revenue from natural resources in government revenues. While there may be future revenue surges, there is little doubt that the GOA will experience a secular decline in this revenue source going forward, as Canada and the world at large shifts to less reliance on carbon-based fuels. Addressing and managing Alberta's fiscal future is possible; however, this requires careful analysis and planning for the long-term. The provincial debt is currently estimated to be at $82.2 billion, and is projected to increase by approximately $62 billion in 2024 (GOA 2021a) to approximately $144.2 billion. This significant increase in debt will likely widen the debt-to-GDP ratio, given that the government would have to lend money to fund expenditures. Unsustainable public finances will result in unfavourable and sudden changes in fiscal policies, introducing a variety of economic and social consequences. These may include dramatic increases in tax rates, increased unemployment and poverty rates, creditors' refusal to borrow and provide goods and services, and the difficult implementation of austerity measures.

CURRENT STATE OF ALBERTA'S FISCAL FINANCES

As shown in Table 1, the provincial government receives the majority of their revenues from taxes (personal income taxes, consumption taxes and corporate income taxes). In 2021-2022, the government projects approximately $19 billion in tax revenues, $2.9 billion in natural resources revenues, $10.2 billion in federal transfer payments, $2.2 billion in investment income, and $9.4 billion from other sources such as premiums, licence issuance and renewals, etc. Revenues received from taxes, as well as federal transfer payments, comprise the majority of total revenue, amounting to approximately $29.2 billion or 67 per cent of total provincial government revenue in 2021-2022. While revenue from natural resources is projected to increase, there are

considerable uncertainties here, as exemplified by the cancellation of the Keystone XL pipeline permit by the United States and the rising global popularity of alternative energy sources. Additionally, the impact of the COVID-19 pandemic on the economy will play a role in increasing primary deficits in the next few years, further widening the provinces debt-to-GDP ratio. In Table 1, it is notable that debt servicing costs are projected to increase in the near future (GOA 2021a).

Table 2 outlines the GOA's operating expenses, organized by different ministries. In 2021-2022, program expenditures are expected to total approximately $50.9 billion. Combined with other expenses, the government projects expenditures will total to $61.9 billion. Unfortunately, total revenues are not sufficient in covering the GOA's operating expenses alone. In 2020-2021, the GOA's main operating expenditures are in healthcare (encompassing nearly half of all operating expenses at $21.4 billion), education ($13.3 billion), and social services ($5.6 billion). It should be noted that healthcare spending is a primary driver of GOA's operating expenditures because of Alberta's aging population, and also can be contributed to the strain placed on the healthcare system by the ongoing COVID-19 pandemic.

Summary Statement of Operations	2021-22	2022-23	2023-24
(millions of dollars)	Estimate	Target	Target
Revenue			
Tax revenue	19,065	20,669	22,336
Non-renewable resource revenue	2,856	4,718	5,869
Federal transfers	10,181	9,872	9,785
Investment income	2,205	2,325	2,478
Other	9,390	9,838	10,397
Total Revenue	43,697	47,422	50,865
Expense (before COVID-19 / Recovery Plan, contingency, crude-by-rail)			
Operating expense	48,280	48,391	48,420
Capital grants	2,644	1,754	2,297
Amortization / inventory consumption / loss on disposals	4,009	4,145	4,216
Debt servicing costs	2,764	3,085	3,335
Pension provisions	(369)	(283)	(292)
Expense (before COVID-19 / Recovery Plan, contingency, crude-by-rail)	57,330	57,091	57,974
COVID-19 / Recovery Plan operating expense	919	472	128
COVID-19 / Recovery Plan capital grants	160	91	-
COVID-19 / Recovery Plan inventory consumption	33	-	-
Contingency - COVID-19	1,250	-	-
Contingency - Recovery Plan	500	-	-
Contingency / disaster and emergency assistance	750	750	750
Crude-by-rail provision (CBR)	976	-	-
Total Expense	61,918	58,404	58,852
Surplus / (deficit)	(18,221)	(10,982)	(7,987)

Table 1: Statement of Operations of the Alberta government, obtained from Budget 2021. A deficit of $18.2 billion is projected for the 2020-2021 year as spending is projected to be more than revenue.

Operating Expense	2021-22	2022-23	2023-24
(millions of dollars)	Estimate	Target	Target
Advanced Education	5,044	5,085	5,118
Agriculture and Forestry	839	837	818
Children's Services	1,717	1,722	1,710
Community and Social Services	3,886	3,952	3,979
Culture, Multiculturalism and Status of Women	161	146	146
Education	8,248	8,248	8,248
Energy	483	484	485
Environment and Parks	449	451	447
Executive Council	18	18	18
Health	21,418	21,418	21,418
Indigenous Relations	180	185	190
Infrastructure	425	404	403
Jobs, Economy and Innovation	308	316	316
Justice and Solicitor General	1,346	1,356	1,368
Labour and Immigration	200	184	184
Municipal Affairs	247	235	235
Seniors and Housing	673	699	702
Service Alberta	454	434	434
Transportation	408	400	402
Treasury Board and Finance	1,649	1,661	1,645
Legislative Assembly	128	155	155
In-year savings	-	-	-
Operating expense before COVID-19 / Recovery Plan	48,280	48,391	48,420
COVID-19 / Recovery Plan:			
Advanced Education	12	12	5
Agriculture and Forestry	3	-	-
Children's Services	-	-	-
Community and Social Services	-	-	-
Culture, Multiculturalism and Status of Women	15	-	-
Education	99	-	-
Energy	480	303	1
Environment and Parks	50	27	-
Health	-	-	-
Jobs, Economy and Innovation	122	121	119
Labour and Immigration	129	7	2
Municipal Affairs	-	-	-
Other (Infra.; Snrs. & Hous.; Serv. Ab.; Trans.; Treas. Bd. and Fin.)	10	2	1
Contingency - COVID-19	1,250	-	-
Contingency - Recovery Plan	500	-	-
COVID-19 / Recovery Plan operating expense	2,669	472	128
Total Operating Expense	50,949	48,863	48,548

Table 2: Operating expenses of various Alberta government ministries. Health, education and social services are the main drivers for spending in Alberta. Healthcare spending is projected to remain the same until 2024, however this projection may be inaccurate. Source: GOA Budget 2021.

Over the last 10 years, the debt-to-GDP ratio for the province has increased. According to the Canadian Fiscal Report released by the Royal Bank of Canada (RBC) in May 2021, Alberta's net debt-to-GDP ratio was calculated to be -14.6 per cent for the 2006-2007 fiscal year, with the province situated in a net asset position. Since then, the situation has steadily deteriorated. From 2020 to 2024, $62 billion of new debt is projected to be added, and the debt-to-GDP ratio is projected to increase from 11.4 per cent in 2020 to 26.6 per cent in 2024 (GOA 2021a; RBC 2021). If left unaddressed, this could create challenges in managing public finances and lowering government debt.

SUSTAINABILITY OF ALBERTA'S LONG-TERM FISCAL FUTURE

When analyzing the sustainability of Alberta's fiscal future, a number of important factors should be considered. In terms of population, a medium growth (M1) scenario is assumed using data obtained from Statistics Canada. Further, healthcare costs are assumed to have an inflation of 1 per cent annually. Future long-term population changes are assumed to not only increase healthcare costs, but also to decrease labour participation (Figures 4 and 5). This results in lower revenues received from income taxes.

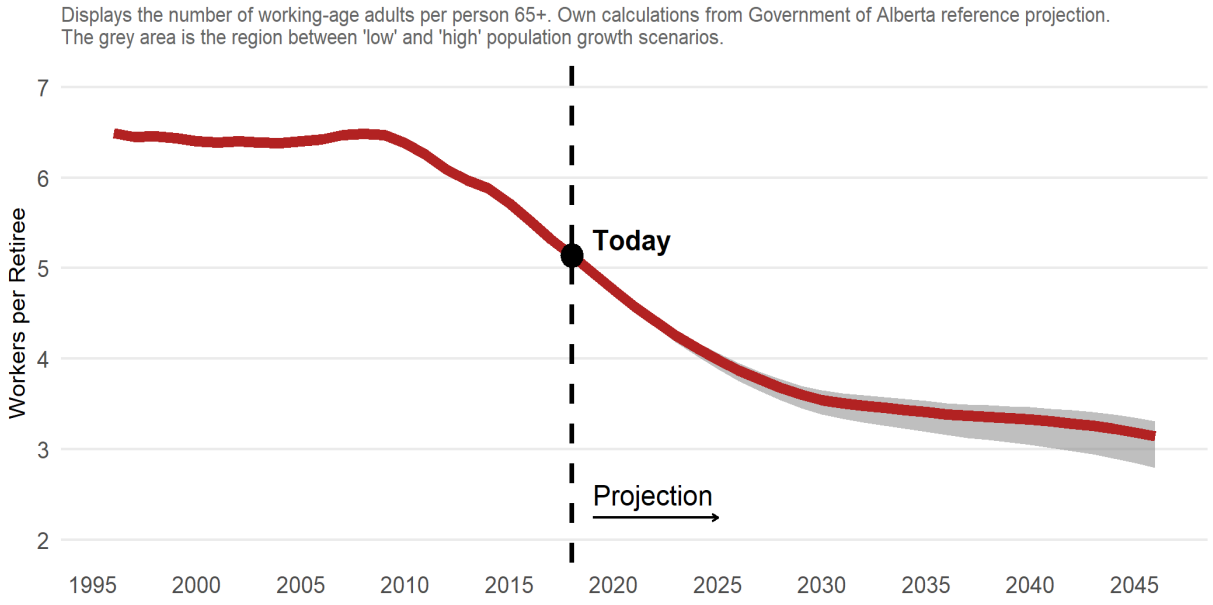

Figure 4: The number of workers per retiree in Alberta. The number of workers per retiree is projected to decrease due to more Albertans leaving than entering the workforce. Source: Tombe (2018).

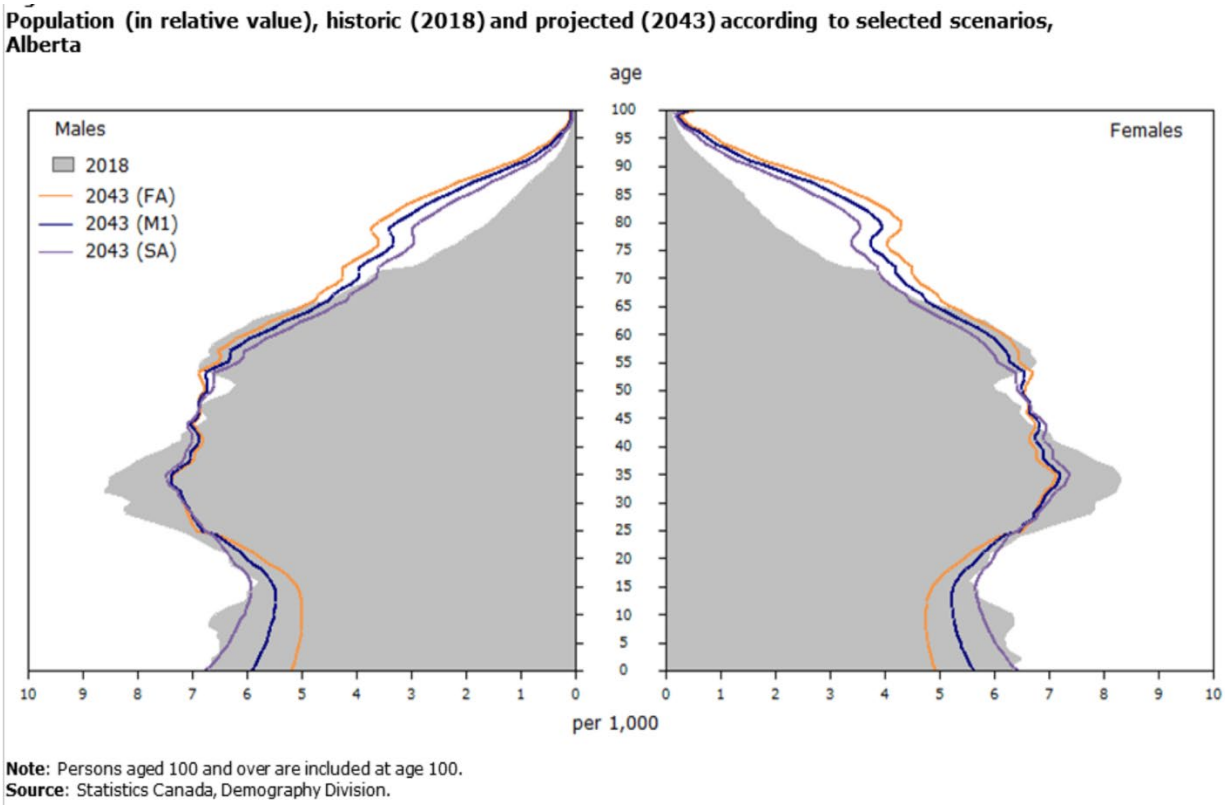

Figure 5: Population pyramid of Alberta, 2018 vs 2043 under slow-aging (SA), medium-growth (M1) and fast-aging (FA) scenarios. Note in all scenarios, there are increases in population especially over 65 and generally fewer people of working age (18-65 years). Source: Statistics Canada (2019).

Using the most recent data obtained from the Canadian Institute for Health Information's National Health Expenditure Trends report, average annual healthcare costs for Albertans aged 20 to 40 is approximately $3,000-$4,000 per person. Healthcare costs for Albertans over 65 years old costs around $15,000, while the costs for those over 80 years old are estimated to be around $27,000 (CIHI 2021). As healthcare quality and life expectancy increases, it is expected that healthcare costs will also increase as the population for Albertans aged 70 and over grows, as depicted in Figures 5 and 6. Tombe (2021) suggests that healthcare spending is projected to increase by approximately 50 per cent by 2050. In Budget 2021, healthcare expenditures comprise nearly half of total operating expenses. This share is likely to increase in the future, thereby making it a major determinant in the sustainability of the province's public finances.

Some possible solutions to constrain healthcare costs could include investing in social services and prioritizing home care instead of hospital care. Dutton et al. (2018) studied the spending in social services and healthcare to determine its effects on health outcomes in Canada. Their analysis revealed that increases in social services spending yields a healthier population. This can be explained by the idea that, as expenditures in social services address social determinants of health, health risks are decreased as a result of increased spending. Increasing social services could be instrumental in slowing rising healthcare costs, but may not be sufficient in constraining them. Therefore, rising healthcare expenses may be unavoidable.

Under M1 projections, Tombe (2021) estimates that Alberta's working population will decrease by approximately five percentage points by 2050. This means that economic growth in Alberta will decrease by 0.3 per cent annually. As a result, Alberta's GDP will be 7 per cent smaller compared to a situation wherein labour participation does not change. As the population ages, more Albertans will retire. Consequently, growth in government revenue will gradually decrease.

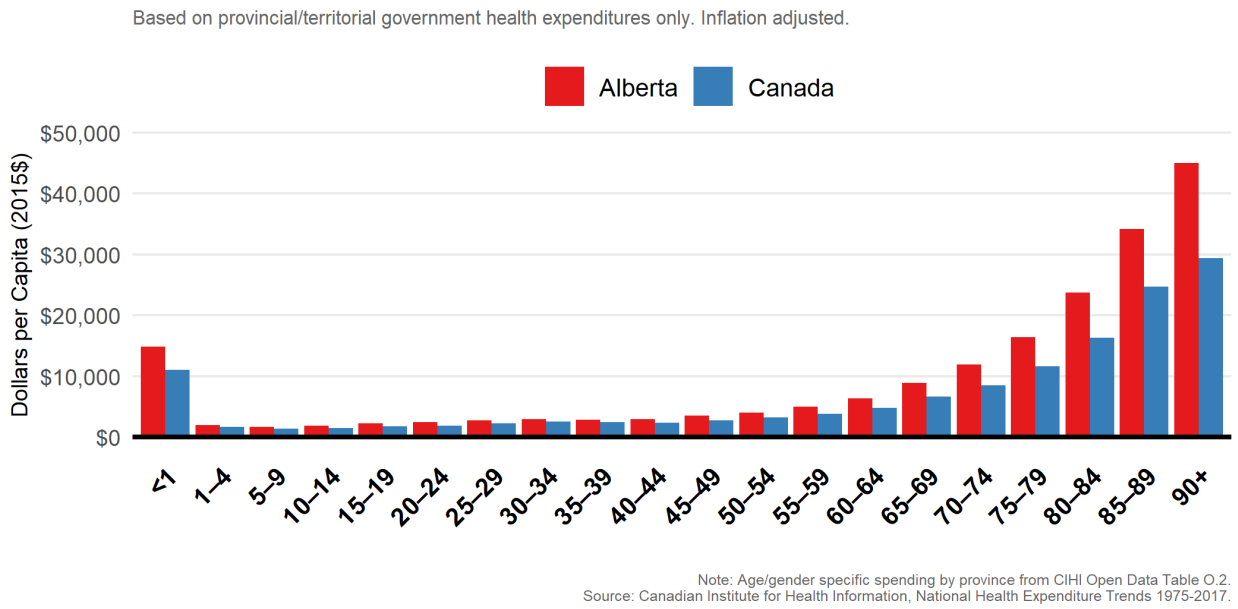

Figure 6: Healthcare costs by age group in dollars per capita. An aging Albertan population is expected to result in increases to healthcare expenditures Source: Tombe (2018).

As demonstrated in Table 1, natural resource revenues comprise a large proportion of total revenues received by the Alberta government to fund public services. Revenues from natural resources come primarily from royalty payments. There are significant challenges in projecting future revenues received from natural resources, due to the high degree of volatility and unpredictability of market prices. The volatility is caused by the decrease in demand for natural resources due to worldwide decarbonization. As a result, growth in this sector has inevitably diminished. Therefore, investments in the oil and gas sector that have previously characterized the Albertan economy are unlikely to remain the case in the future. This would significantly reduce royalty revenues that the provincial government receives. The inclusion of natural resource revenues to the GOA's program and operation expenditures contributes to the instability and unsustainability of Alberta's public finances (Shiell and Busby 2008). Instead, natural resource revenues may be better invested in a sovereign wealth fund (such as in Norway) for

future use, and replaced with a more stable source of revenue such as a provincial sales tax to improve revenue predictability.

Figure 7 depicts the fiscal gaps of various Canadian provinces in terms of debt sustainability, as calculated by the Finances of Nation website. In a 75-year timeframe under M1 growth scenario with status quo assumptions (where interest rates are 4 per cent, health inflation is 1 per cent, labour growth is 1 per cent, and no changes are made to federal transfer programs), Alberta's fiscal gap is projected to be a significant amount of 4.2 per cent of total GDP. This makes Alberta the second largest province in terms of fiscal gap, after Newfoundland and Labrador at 5.7 per cent. To maintain debt-to-GDP ratio and fiscal sustainability, Alberta must make spending and revenue adjustments equivalent to 4.2 per cent of the provincial GDP. Quebec's fiscal gap, on the other hand, is only at 0.2 per cent. Unless effective fiscal policies are implemented, Alberta's debt-to-GDP ratio will continue to increase and constitute a key feature of unsustainable public finances.

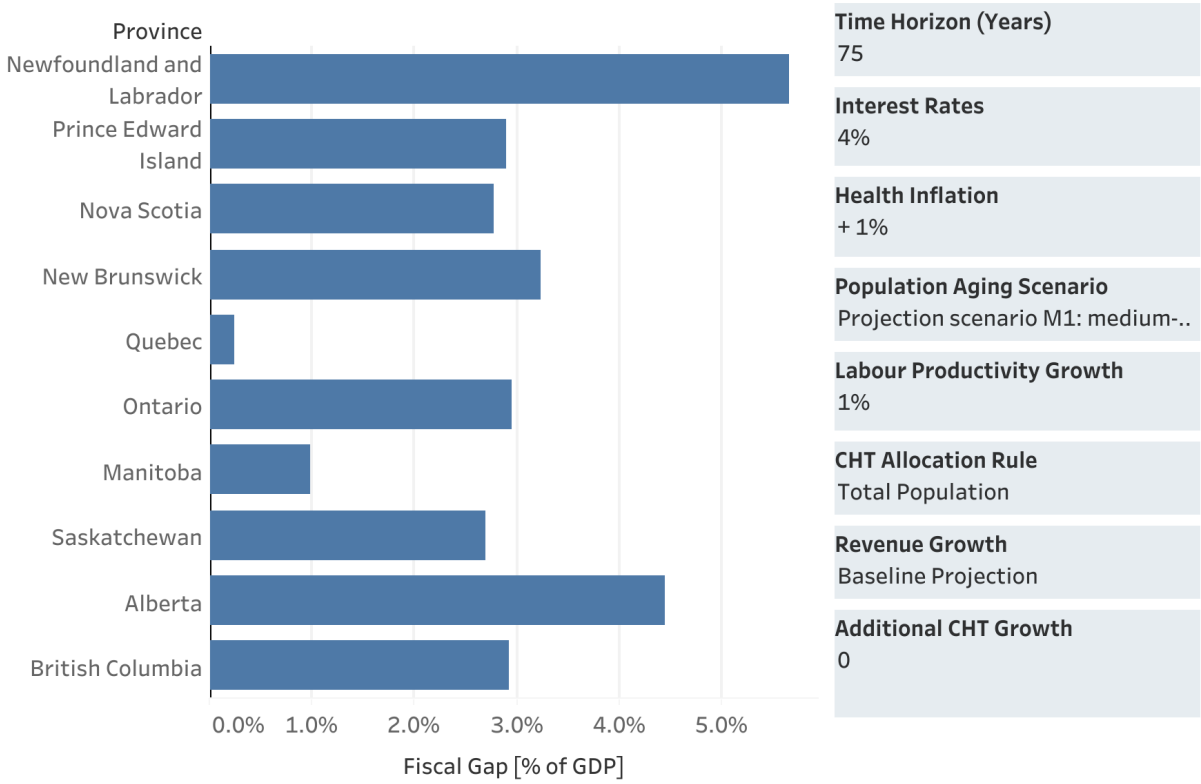

Figure 7: Fiscal gaps of various Canadian provinces. Currently, Newfoundland and Labrador (NL), and Alberta (AB) have the highest fiscal gaps in the country – with NL at 5.7 per cent and AB at 4.2 per cent. Source: Finances of the Nation (2021a).

While the COVID-19 pandemic has placed a significant short run strain on public finances, it is unlikely that this will continue in the long-run, and it has a relatively small impact on sustainability. Tombe (2020a) assumes that the extensive array of support and recovery programs currently implemented by the federal and provincial governments will save Canadian provinces from the incremental expenditures in the long-term. Figure 8 demonstrates the projected long-term debt-to-GDP ratios for the federal government and provinces. It is apparent that the federal government's finances are more affected by the pandemic, with a minimal impact to provincial finances. Therefore, the long-term effects of the pandemic on public finances are likely to be insignificant for Alberta.

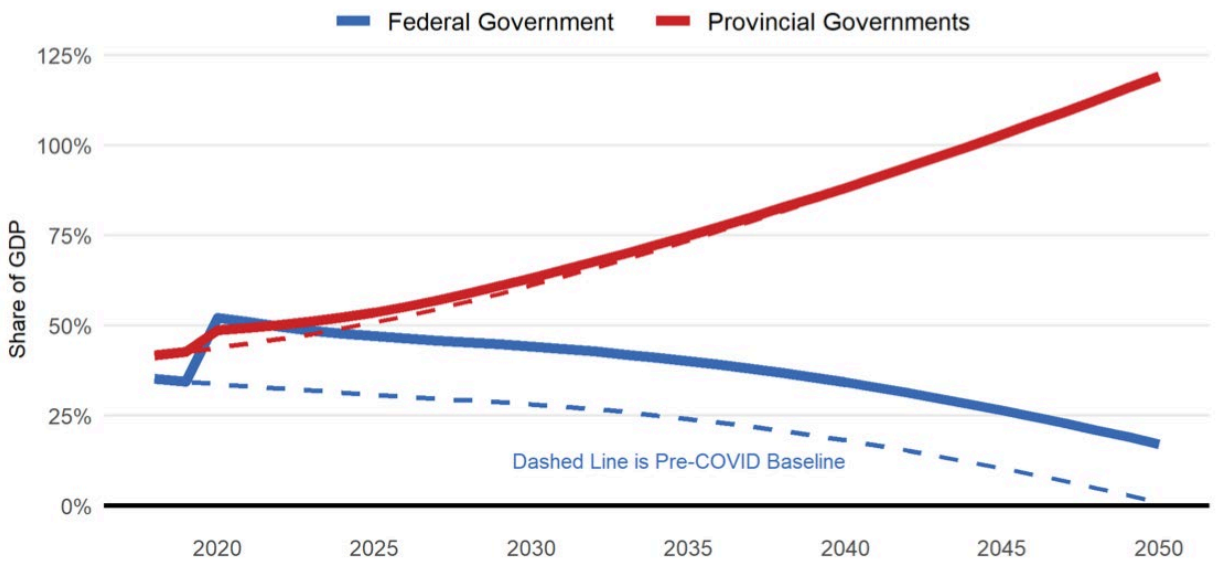

Figure 8: Debt sustainability of the federal and provincial governments after the COVID-19 pandemic. The pandemic is expected to only affect public finances in the short-term. Federal and provincial support programs in place are expected to cushion any incremental expenses for provincial governments, and debt-to-GDP ratio for provinces are expected to return to baseline projections. Source: Tombe (2020a).

Budget 2021 projects the deficit for 2021-2022 to be $18.2 billion, $11 billion for the 2022-2023 years and $8 billion for the 2023-2024 years. The debt-to-GDP ratio is projected to sharply increase from 11.4 per cent in 2020 to 26.6 per cent in 2024. Evidently, efficient policies must be implemented to achieve fiscal sustainability due to the unfavourability of the status quo.

POLICY OPTIONS TO ADDRESS ALBERTA'S FISCAL FUTURE

Without accounting for the economic effects of the COVID-19 pandemic, public finances in Alberta are unsustainable. This is partly due to heavy reliance on natural resource revenues. While historically, these revenues have contributed to primary budget surpluses, the current fluctuating market prices for natural resources have proven to be a volatile revenue source to the GOA. Furthermore, the mean age for Albertans is increasing, resulting in a rise in healthcare expenditures. This will further result in reduced revenues from income taxes as Albertans

gradually retire. Additionally, in the short-term, increased government spending on COVID-19 recovery plans will contribute greatly to budget deficits. Fiscal policy changes should be considered to ensure that Alberta's finances become more sustainable and minimize debt servicing costs. In this section, several alternative fiscal policies aimed at improved management of spending and revenue are considered to improve Alberta public finances, with the aim of guiding the province back towards the path of fiscal sustainability.

1. FEDERAL TRANSFERS

Sections 91 and 92 of the Canadian Constitution designates the division of powers and areas of responsibility for both the federal and provincial governments. The provinces have exclusive authority and responsibility over health, social services and education policies. Funding for healthcare, social assistance and education encompasses the provincial government's largest operating expenses, comprising approximately 80 per cent of total operating expenditures (Table 2). The federal government does not have direct responsibility over health, education and social assistance. However, due to the federal government's greater spending power, federal funds are used to assist provincial governments in funding these areas.

Although Alberta does not currently receive equalization payments from the federal government due to the province's relatively high fiscal capacity, it receives two major federal transfer payments which sum to a significant amount; the provincial government estimates $10.2 billion will come from federal transfers in 2021 (GOA 2021a). The two federal transfer programs are the Canada Health Transfer (CHT) and the Canada Social Transfer (CST). The CHT and CST are allocated to the provinces based on population. The transfers from CHT increase to match the

national nominal GDP, while the CST amounts increase by a minimum of 3 per cent annually regardless of GDP. Figure 7 shows the current fiscal gaps based on existing conditions. Tombe (2020a) suggests that increases in federal transfers are possible because of the federal government's larger fiscal capacity, which can help shrink Alberta's fiscal gap. For example, increasing federal transfers by 25 per cent would reduce provincial fiscal gaps by approximately 0.5 per cent (Tombe 2020a). Since healthcare expenditures are projected to increase with the province's aging population, a 1 per cent annual growth of the CHT from the federal government will diminish Alberta's fiscal gap from 4.4 to 3.7 per cent. Figure 9 illustrates that Alberta's fiscal gap would decline to 2.5 per cent if the CHT grew by an additional 2 per cent annually, assuming that other factors remain constant. However, it appears that increases in federal transfer is insufficient in closing the fiscal gap. Should this policy be implemented, the provincial government may need to rely on additional policies to achieve fiscal sustainability. Further, increases from the federal government appear to be unlikely; however, this may be possible due to their higher spending power.

The federal government introduced the fiscal stabilization program in 1967 in an attempt to provide financial support to provincial governments that have experienced significant, sudden revenue losses. The program was designed to protect provincial governments from economic shocks, such as a recession. Dahlby (2019) argues the federal fiscal stabilization program does not benefit resource-dependant provinces, as revenue decreases from natural resources are not treated the same as revenue decline from non-resources. Further, payments from this program are limited to $60 per person. This further constrains the fiscal support that the Alberta government receives from the federal government through this program. In 2015-2016, Alberta's total

revenue declined by $8.8 billion, amounting to a revenue reduction of $2,114 per capita; however, the fiscal stabilization program had only provided $248 million in compensation to the Alberta government (Dahlby 2019). Dahlby (2019) and Tombe (2020b) both suggest the elimination of payment limits from the fiscal stabilization program would provide better fiscal support to resource-dependant provinces, such as Alberta. Additionally, Dahlby (2019) suggests declines in natural resource revenues should be calculated as an average from previous years, instead of the current year. These reforms would result in greater financial support to the Alberta government in response to significantly declining provincial revenues, which stem from the decreasing popularity of natural resources.

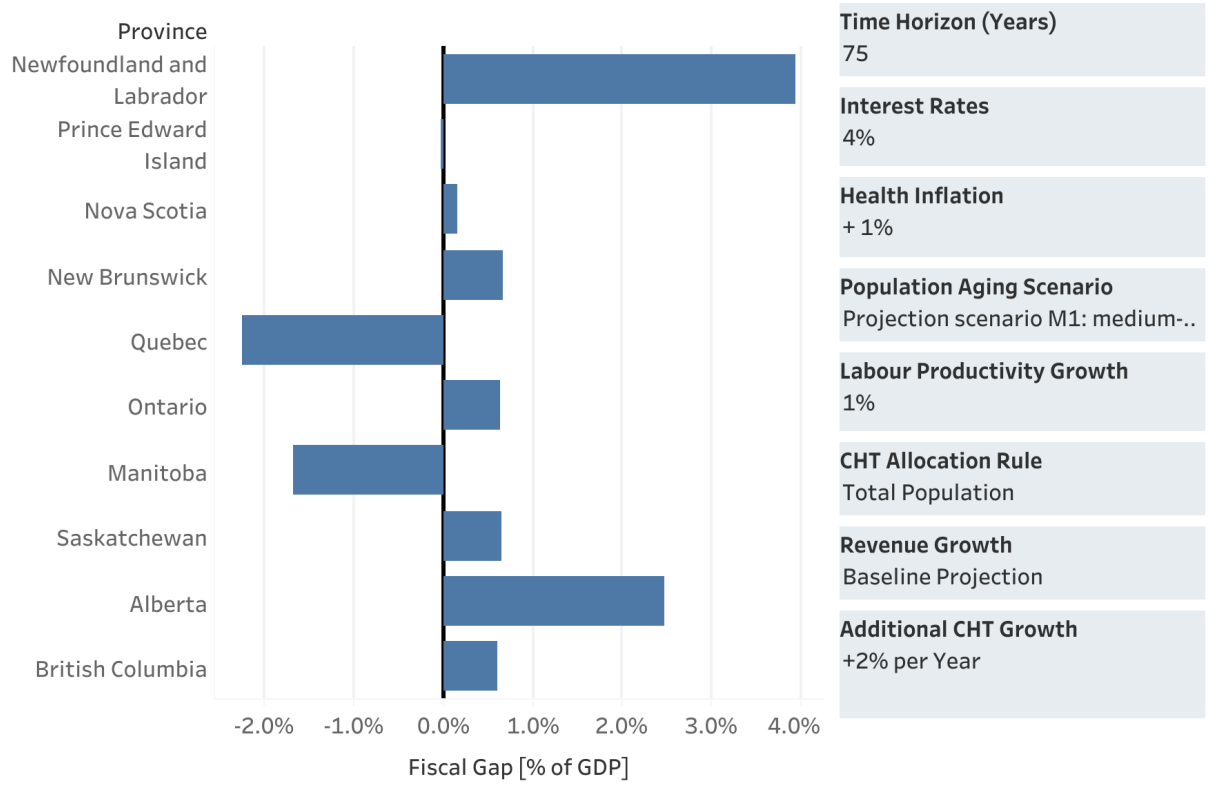

Figure 9: Provincial fiscal gaps, assuming the Canada Health Transfer payments increase by 2 per cent annually. Under this scenario, Alberta's fiscal gap reduced from 4.4 to 2.5 per cent of GDP - this contributes towards sustainable public finances. However, this would not be sufficient in lowering debt-to-GDP ratio and would still be considered unsustainable. Source: FON (2021a).

2. *CAUTIOUS MANAGEMENT OF PUBLIC EXPENDITURES*

From Budget 2021, education, healthcare and social services comprise the majority of the Alberta government's expenditure. As mentioned, healthcare spending in the province is projected to increase as more Albertans eventually retire. If effective fiscal policy changes are not introduced, Alberta's fiscal gap is projected to grow by approximately 5 per cent annually based solely on the aging population, as illustrated in Figure 11 (Tombe 2020a). The provincial fiscal gap can be reduced through gradual reduction of spending on non-essential public services and innovation to improve the efficiency of program delivery. At the same time, it is vital to ensure that improvements to the quality and equity of public programs are not sacrificed for improvements to efficiency. In addition, changes to provincial revenue policies should be considered. These changes will be further investigated in a different section.

Figure 10 shows that Alberta's real per capita expenditures has been higher compared to the rest of Canada and the federal government since 2000 (FON, 2021b). Crisan and McKenzie (2021) show that per capita spending in Alberta are nearly 14 per cent higher compared to the rest of the country. They calculate that, if Alberta were to reduce per capita expenditures to the average per capita expenditures of the rest of the country, the fiscal gap would be reduced by approximately 50 per cent – from 4.2 per cent to 2.1 per cent of GDP (Crisan and McKenzie 2021).

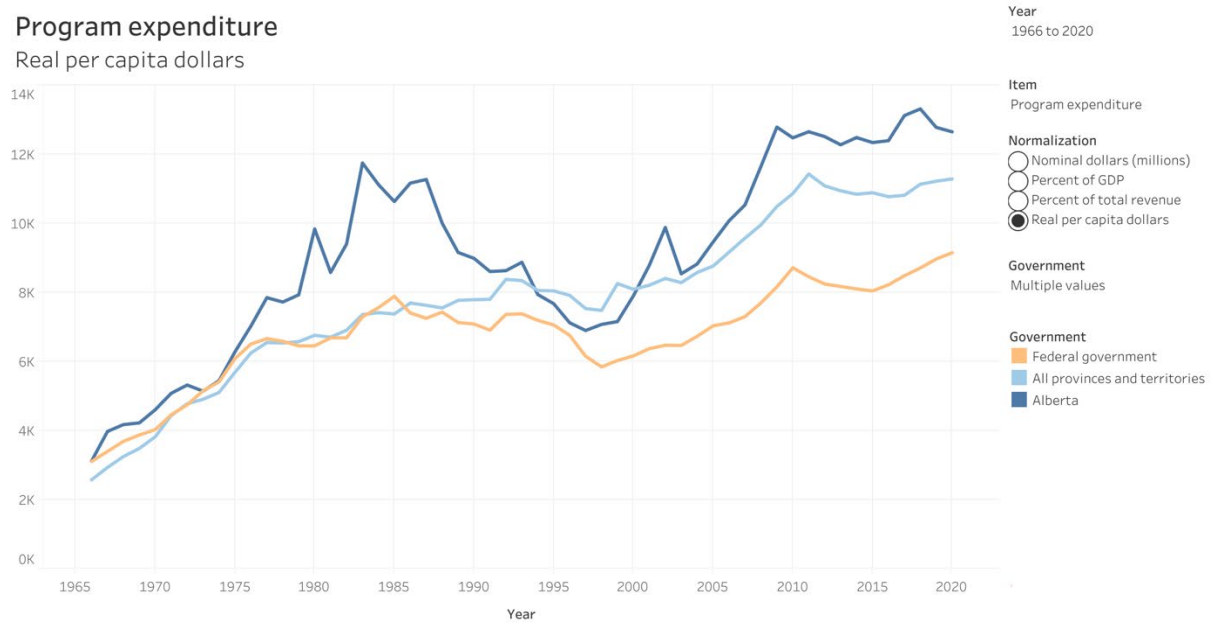

Figure 10: Real per capita expenditures for the rest of Canada (ROC), Alberta and the federal government. Alberta's spends significantly more on program expenditures compared to the ROC and the federal government. Source: FON (2021b).

There are a number of tools available for use by the provincial government to help reduce expenditures from education, healthcare and social services in order to minimize the fiscal gap. With regards to healthcare spending, Smith (2021) suggests that a more feasible option, as opposed to the universal healthcare system, is a publicly administered health insurance program, wherein deductibles are introduced based on annual income. In such a program, individuals with an annual income of less than $75,000 would not be required to pay a deductible, and deductible amounts would increase proportionally with annual income (Smith 2021). To further reduce the financial burden on Albertans, employers could also contribute to the program. As employers are already funding certain healthcare expenses indirectly through private insurance plans for employees, their additional involvement in a publicly administered health insurance program could decrease healthcare expenditures on the provincial government, and may additionally prove to be instrumental in reducing moral hazard. According to Tombe (2021), an alternative

solution that can be applied to effectively reduce healthcare expenditures on the Alberta government would be to introduce reforms to the delivery of healthcare, such as encouraging home care as opposed to hospital care. Moreover, Smith (2021) suggests that awarding contracts to private health care providers rather than directly funding public health care operations would drastically reduce provincial government healthcare expenditures. Tombe (2021) writes that if healthcare-specific inflation were to remain constant at 0 per cent, Alberta's fiscal gap would be reduced by 1.3 per cent of GDP. Increased investments to social housing and services could also indirectly reduce healthcare expenditures, through improvements to physical and mental health outcomes (Dutton et al. 2018).

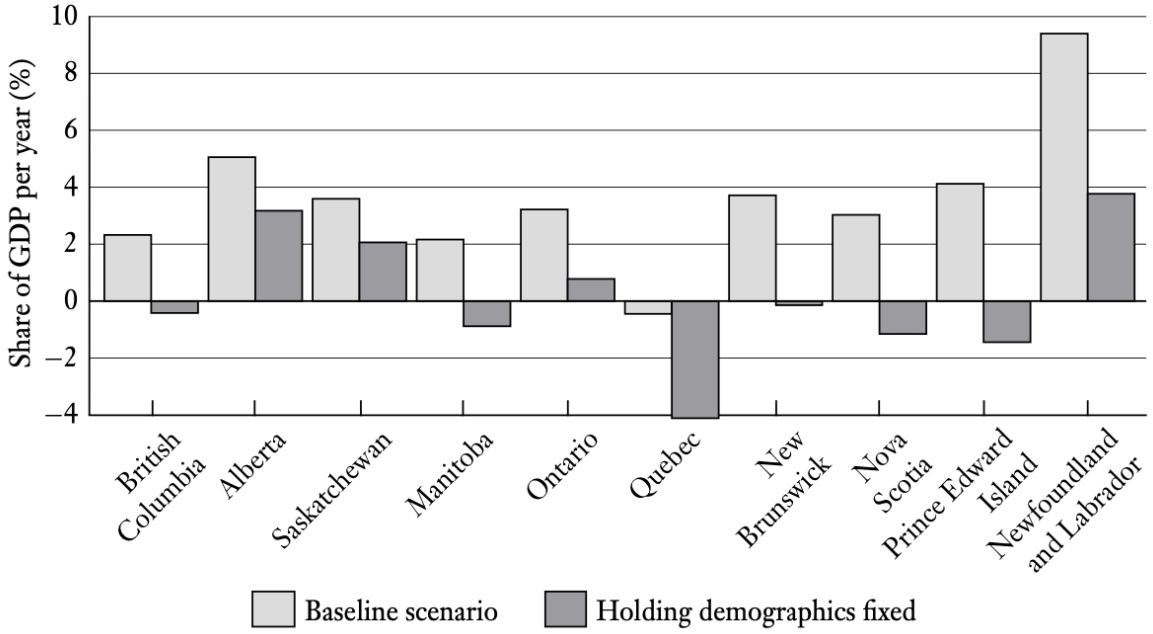

Figure 11: Effects of the aging Canadian population on provincial fiscal gaps. Under baseline scenario, Alberta's fiscal gap is projected to increase annually by approximately 5 per cent, further contributing to fiscal unsustainability. Source: Tombe (2020a).

Alternatively, finding innovative and efficient ways to reduce spending in social services and education can also be considered. With expenditures related to education, Smith (2021) proposes

that a potential solution to effectively reduce expenditures would be to privatize current services that are funded by the provincial government, such as providing grants to charter schools or encouraging homeschooling. Smith (2021) calculates that 7.2 per cent, or approximately $4 billion of expense reduction, can be achieved through reforms to healthcare and education expenditure policies. With regard to social service expenditures, Herrmann et al. (2008) writes that careful and efficient investments in social housing have proven to be effective at reducing poverty rates in Denmark and Ireland. Further, improvements to social services including Employment Insurance and the Canada Pension Plan, which encourage people to work longer, could be instrumental in both reducing spending in social services and in increasing government revenue through income tax (Herrmann et al. 2008). However, inefficient reduction of social services and education expenditures may lead to an increase in healthcare expenses, as in turn, poverty rates may increase, resulting in the deterioration of overall health and well-being (Dutton et al. 2018). For example, with the deterioration of social services and education, families may experience a greater difficulty affording healthier meals, resulting in poorer health outcomes. Altogether, pursuing the aforementioned policy options will require careful planning and deliberation. If successful, these changes could considerably reduce government expenditures and may also result in increased revenue, consequently guiding the province toward the path of sustainable public finances.

3. *REINTRODUCTION OF THE PROVINCIAL CARBON TAX AND THE EXCLUSION OF NATURAL RESOURE ROYALTIES FROM REVENUES*

The provincial carbon tax was eliminated on May 30, 2019 and subsequently replaced by the federal carbon tax. In Alberta, revenues received from the carbon tax are now collected by the federal government. However, 90 per cent of carbon tax revenues are returned to Albertans based on the province's share of emissions (Government of Canada [GOC] 2018). Following the Supreme Court of Canada's ruling that the federal carbon tax was constitutional, Saskatchewan decided to impose a provincial carbon tax so that revenues could be better used within the province instead (Government of Saskatchewan n.d.). The Alberta government could re-implement the provincial carbon tax to reclaim control of the carbon tax, as a means of providing a new source of revenue to the province. Under the current federal policy, revenues from carbon tax are projected to be over $1.8 billion in 2021, and over $2.8 billion by 2023 (Parliamentary Budget Office 2020). Assuming the GOA adopts the federal carbon tax framework, the provincial government would receive these amounts as revenues instead of the federal government. Such revenues could provide the provincial government better fiscal capacities to deliver better public services, reduce dependence on royalty revenues, and fiscally rebuild public finances from the aftermath of the COVID-19 pandemic. Furthermore, revenues from a provincial carbon tax can be utilized to lower personal and corporate income taxes to increase economic growth and prosperity in Alberta (McKenzie 2019). Crisan and McKenzie (2021) calculate that Alberta's fiscal gap could be narrowed to 0.4 per cent of GDP by 2030, if the Alberta government can reduce per capita expenditures to the national average and implement a provincial carbon and sales tax.

Owing to the volatility of market prices for natural resources, it is a challenge to project future revenues that the Alberta government will receive. As oil market prices affect producer revenues, government revenues received would also be variable. This is demonstrated in Budget 2014, where the provincial government had received natural resource revenues of less than $3.1 billion; however, over $10 billion in revenue was projected. A similar example can be noted in Budget 2021, where although $5.1 billion in revenue was projected from natural resources, the provincial government only received 1.9 billion. Shiell and Busby (2008) suggest that the unpredictability of the GOA's revenue is a result of the instability of natural resource revenues. Therefore, revenues from natural resources should be excluded and replaced with a more stable source, such as the PST.

Alberta has the option to invest excess revenues from the provincial carbon tax and exclusion of natural resources from mainstream revenue sources into a wealth fund to increase the government's ability to provide future public services. The Norwegian government established a similar sovereign wealth fund in 1990 to invest natural resources revenue surpluses (mainly from the energy sector) into the fund. In 2008, the sovereign wealth fund contained around $325 billion in assets. At the end of 2020, this skyrocketed to over $1.5 trillion, amounting to approximately $290,000 per Norwegian citizen, according to the 2020 annual report published by Norges Bank, Norway's central bank.

In 1976, Alberta created a similar sovereign wealth fund, known as the Heritage Savings Fund (HSF). In 1987, the HSF contained approximately $12.7 billion, and grew to $16.6 billion in 2008 (Shiell and Busby 2008). At the beginning of 2021, the HSF contained $17.3 billion in

assets (GOA 2021b), amounting to only $4,000 per Albertan. The slow growth of Alberta's HSF relative to Norway's wealth fund coupled with persistent budget deficits are clear indicators that the provincial government should consider investing more into the HSF and re-instate the provincial carbon tax. Additionally, the replacement of natural resource revenues with a PST would improve predictability of Alberta's revenue (McKenzie 2019; Shiell and Busby 2008; Tombe 2018). By enacting these policy options, the Alberta government would be better situated to attain more sustainable public finances as a means of ensuring the prosperity and well-being of Albertans.

4. INTRODUCTION OF A PROVINCIAL SALES TAX

Currently, Alberta is the only Canadian province that does not charge levy a PST or harmonized sales tax (HST) on goods and services provided to consumers. Introducing PST in the province could provide an important and stable source of revenue to the provincial government. McKenzie (2019) noted that, between 1993 and 2018, revenues obtained from PST accounted for 23 per cent of total revenue generated by other provinces. The authors further calculated that a 6 per cent PST would generate approximately $4.0 billion in 2022, closing 26.5 per cent of Alberta's fiscal gap as a result. Their calculation assumes that the same low-income credit is applied to the PST (similar to the federal GST/HST credit). Combining a 6 per cent PST rate and reducing per capita expenditures to the national average would close approximately 76.5 per cent of Alberta's fiscal gap, or approximately 3.21 per cent of GDP. The PST could indeed be a replacement to unpredictable natural resource revenues, and may prove to be a key contributor to the resolution of Alberta's unsustainable public finances.

Many view the PST as a form of a regressive tax, as lower-income households pay a larger proportion of their total income to sales tax compared to wealthier households. As a result, lower-income households would be more affected by the PST. This issue can be addressed through the introduction of the PST tax credit, where lower income individuals would receive a PST refund to provide financial relief. The PST tax credit would be similar to the current GST/HST tax credit benefit administered by the Canada Revenue Agency (GOC 2017). However, the majority of Albertans oppose the introduction of PST, and this is considered to be politically unpopular and risky (Salomons and Béland 2020). A sudden introduction of a PST of 6 per cent is postulated to be extremely unwelcomed amongst Albertans, especially during an economic downturn. Therefore, a gradual introduction and increase of PST may be more appropriate if the provincial government opts to implement this policy. McKenzie (2019) suggests that revenues received from a PST rate of 8 per cent would be enough to triple the basic personal amount, effectively lowering payable personal income tax amongst lower-income Albertans. Finally, Mintz and Bazel (2013) and McKenzie (2019) write that PST revenues provide the Alberta government with the ability to not only close the fiscal gap, but also to concurrently lower personal and corporate income tax rates.

Given the economic strain caused by the COVID-19 pandemic, a volatile natural resource market, rising healthcare expenditures and the projected increase in debt-to-GDP ratio, serious consideration should be given to introducing PST in Alberta. If this policy is successful, the PST would increase government revenues, and steer public finances toward fiscal sustainability.

5. *INCREASING PROVINCIAL INCOME TAX RATES, INTRODUCING A LUXURY TAX*

In Table 1, the provincial government expects to receive $19 billion in revenue coming solely from tax revenues in 2021-2022, including personal and corporate income taxes. Revenues received from taxes represent the largest share of total government revenue. Therefore, increasing tax rates could significantly grow revenue to fund rising healthcare expenditures and other government spending. In this section, modifications to personal income tax (PIT) and corporate income tax (CIT) are discussed.

Among other Canadian provinces, Alberta has the highest basic personal amount exemption, at $19,369 in 2021 (GOA 2021a). Albertans pay 10 per cent in provincial income tax for the first $131,220 of their taxable income. This is less than the federal income tax bracket, where 15 per cent of federal income tax applies for the first $49,020 of taxable income. Combining the high basic personal amount and the low-income tax rate means that the Alberta government receives the least revenues from income tax among other provincial governments (FON 2021b). According to Budget 2021, Alberta would receive an additional $13.3 billion in revenue if the provincial government adopted Ontario's tax rates and structures (GOA 2021a). Therefore, with an increase in PIT (for higher income earners) and CIT tax rates, as well as a decrease of the basic personal income, the GOA would receive increasing revenues, thereby improving fiscal sustainability. Similar to the introduction of the PST, tax increases are likely unpopular; as such, implementing these increases would be politically risky. A high tax rate would most likely discourage people from working, resulting in lower labour growth that would in turn generate less income tax revenue for the government. However, an increase in tax rates would be an

effective solution to address Alberta's unsustainable public finances. For these reasons, careful and deliberate analysis of this option must be undertaken prior to policy implementation.

With regards to PIT, McKenzie (2019) describes that there exists three measures of an optimal income tax, which determine the equity-efficiency trade-off and therefore the point at which revenue can be maximized from tax rate increases. His study primarily assesses the changes to income tax rates of higher income earners. The first characteristic is measuring tax elasticities. Measuring tax elasticities is required to predict government revenues and public perception of newly introduced taxes or tax rate changes. Analyzing public behaviour provides insights on the effectiveness of tax rate changes. High tax elasticity results in higher efficiency costs to higher income earners. Second, he finds that the distribution among high income earners is clustered and skewed. Finally, the social welfare weight in consideration of the optimal income tax is also utilized. Social welfare weight is an equity concept, wherein the allocation of resources determines the well-being of the collective society. Based on these measures, McKenzie (2019) calculates the top marginal tax rate that maximizes the revenue collected from the top 1 per cent of the income distribution is 28 per cent, as opposed to the current 15 per cent. Therefore, it appears that there may be scope for increasing the top marginal tax rate in Alberta.

The CIT is also a significant source of revenue, and it indirectly affects revenues received from PIT. For example, if a corporation were to move from Alberta to another jurisdiction to attain a lower CIT, the province would receive reduced revenue from CIT, in addition to fewer employment opportunities and less PIT revenue. Further, asset and equity investments would likely decline as investors would receive lower after-tax returns (McKenzie 2019). McKenzie

(2019) writes that every $1 revenue received from CIT costs the Alberta economy $1.91. Furthermore, a 1 per cent CIT increase results in the reduction of hourly wages by 0.46 per cent (McKenzie and Ferede 2017). Calculations performed by Ferede and Dahlby (2016) calculate that the CIT rate which maximizes government revenues is 15.2 per cent. From 2015 to 2019, the CIT rate was 12 per cent (GOA n.d.). Comparison between the GOA's CIT rate and the revenue-maximizing CIT rate calculated by Ferede and Dahlby (2016) reveal that the provincial government could have increased the CIT slightly to approximately 15 per cent. However, implementing the revenue-maximizing CIT rate may not be ideal, given the harmful impact it could have on investments and ultimately to government revenue. Additionally, reduced investments negatively affect employment through wages and productivity. Thus, the reliance on the CIT as a primary revenue source should be avoided; rather, the provincial government should rely on more stable sources of revenue such as PIT and PST.

The findings presented by McKenzie (2019), Ferede and Dahlby (2016), and McKenzie and Ferede (2017) are consistent with the results demonstrated by Dahlby and Ferede (2012), who argue that the CIT had a significantly higher tax elasticity when compared to PIT and PST. Therefore, significant welfare gains can be realized with the reduction of CIT and the introduction of PST in Alberta (Dahlby and Ferede 2012).

A complimentary policy the government could implement as an additional source of revenue would be the luxury tax, wherein tax revenues could be collected from certain goods or items considered to be 'non-essential' or 'luxurious', such as jewelry and expensive vehicles. As denoted in the federal 2021 Budget, the federal government intends on introducing a Luxury

Goods Tax on certain products, such as aircrafts and automobiles valued over $100,000 and boats valued over $250,000 (GOC 2021). The Parliamentary Budget Office (PBO) estimates that this will provide an additional $45 million to the federal government in 2021-2022, and $150 million in 2022-2023. As luxury taxes are set go into effect on January 1, 2022, it is difficult to estimate the proportion of these taxes that Albertans will pay. Therefore, it is a challenge to project the revenue the provincial government will receive from luxury taxes. Furthermore, projecting this revenue depends on many other circumstances, such as the type of goods that the tax applies to and the demand for the such goods. However, given Alberta's historically high per capita GDP, it can be assumed Alberta's government would be able to receive additional revenue from the introduction of luxury taxes. As with other taxes introduced in this paper, luxury taxes may be an unpopular option and politically risky. Although revenue projections from luxury taxes are less significant, this policy may be instrumental in closing Alberta's fiscal gap, when supplemented with other policy options.

Should the Alberta government decide to adjust income tax rates to reduce the fiscal gap, introducing PST and increasing PIT should be considered. Increasing PIT would yield higher revenues, similar to introducing PST and a tax on luxury goods.

CLOSING ALBERTA'S FISCAL GAP

To address the widening provincial fiscal gap, the government of Alberta should undertake a balanced approach by working on both sides of the ledger, focusing on both restricting expenditures and generating additional revenue. Given the variation of the government's natural resource revenues, these revenues should not be relied on to fund government expenditures.

Rather, any future proceeds from natural resources may be better invested into the HSF to enhance future public service delivery and to contribute to Alberta's financial prosperity.

It is evident that Alberta is facing a systemic sustainability problem largely independent of the COVID-19 pandemic, despite the recent contributory role that the pandemic has played in the deterioration of the province's finances and economy. Although public finances are projected to return to a pre-COVID-19 state as Alberta's economy slowly recovers, the sustainability of Alberta's finances remains questionable. However, there are levers on both sides of the budget constraint that can be used to address this issue. That said, the provincial government possesses the fiscal capacity to generate sufficient revenue to fund essential program expenditures.

Not one fiscal option available should be relied on to reduce the fiscal gap. Eliminating the fiscal gap by expenditure reductions alone may require drastic and unrealistic policies. There may be some relief from increases in federal transfers; Tombe (2020a) calculates that if the federal government increases transfers by 25 per cent, the fiscal gap would reduce by 0.5 per cent of GDP. However, this remains insufficient to close Alberta's fiscal gap of 4.2 per cent of GDP. As an adjuvant means of optimizing revenue and closing the fiscal gap, income taxes could be increased and PST could be implemented until the debt-to-GDP ratio stops rising. However, this is very likely to be an extremely unpopular policy, and no Alberta government has openly implemented for tax increases.

Ultimately, a combination of the fiscal policy options presented may be the most viable option to secure Alberta's fiscal future. Although some policy options such as the PST are less favourable,

a gradual introduction or increase of revenue-generating policies is recommended. On revenue generation, McKenzie (2019) proposes that Alberta could return to fiscal sustainability if the PST and provincial carbon tax were implemented, and the PIT for higher income earners is increased.

For example, if a PST rate of 6 per cent along with a reduction of per capita expenditures to the national per capita average were imposed, Alberta's fiscal gap could be dramatically reduced by 3.21 per cent of GDP by 2022: almost enough to close the fiscal gap and produce budget surpluses to reduce debt-to-GDP ratio (Crisan and McKenzie 2021). Further, freezing real per capita healthcare spending would help reduce the fiscal gap by 1 per cent of GDP. Of course, these are extreme measures which could shock the economy, healthcare system and Albertans. Relying on a single policy option is also subject to economic shocks. Therefore, gradual implementation of various fiscal policies may be an effective solution to reduce accumulating debt-to-GDP ratio and return Alberta's fiscal state to sustainability.

CONCLUSIONS

The increase in debt-to-GDP ratio and primary deficits are clear evidence that Alberta's public finances are currently unsustainable. The solution to ensuring sustainability requires that the government maintains, or reduces, the debt-to-GDP ratio. In Alberta, the threat of a rapidly aging population translates to increasing healthcare costs. Further, debt servicing costs are projected to increase as government debt accumulates. These present significant challenges to the provincial government. Additionally, the debt-to-GDP ratio has been increasing at an alarming rate, indicating that public finances are unsustainable. Therefore, significant and effective reforms to fiscal policy must be considered to prevent unsustainable public finances.

Unsustainable public finances impede the government's ability to repay debt and ultimately the ability to further finance important public services that Albertans rely on, such as healthcare and education. Fortunately, Alberta's fiscal gap and debt is still manageable; a variety of policy options exist to reduce government debt and the debt-to-GDP ratio. Utilizing efficient and effective fiscal policies can help Alberta re-attain sustainable public finances. The Alberta government can implement efficient fiscal policies on both the expenditure and revenue sides of the ledger. The necessities and cost-benefit analysis should be analyzed for expenditures, and innovative ways to restrict spending should be explored. Further, Alberta's government should rely less on natural resource revenues to fund program expenditures including healthcare and social assistance. Historically, royalties from natural resources have proven to be challenging to project due to unpredictable market conditions. Therefore, revenues from natural resources would be better invested in the HSF instead. More stable sources of revenue, such as increasing PIT on the wealthy, and introducing the provincial sales tax, luxury tax and carbon tax should be

considered. Implementing these tax measures could significantly generate more revenue for the provincial government in order to continue funding public services.

Closing Alberta's fiscal gap and moving public finances towards sustainability should involve a balance of reducing expenditures and utilizing taxes. In order to achieve this balance, the provincial government should consider equity and efficiency very carefully. Regardless of the policy options selected, the government should implement these changes gradually and monitor its effectiveness to avoid economic shocks. As Alberta recovers and navigates through the COVID-19 pandemic, ensuring public finances remain sustainable in the long-run through careful planning is of utmost importance. This ensures Albertans and the economy are prepared for future economic downturns and challenges that may lie ahead.

REFERENCES

Canadian Institute for Health Information. 2021. *National Health Expenditure Trends*, 2020. Ottawa, ON: CIHI.

Constitution Act, 1867 (UK), 30 & 31 Vict, c 3, s 91 & 92, reprinted in RSC 1985, Appendix II, No 5.

Crisan, Daria, and Kenneth J. McKenzie. 2021. "Revenue Options to Close the Fiscal Gap in Alberta: Pick Your Poison." The School of Public Policy Publications. https://www.policyschool.ca/wp-content/uploads/2021/06/AF23_Fiscal-Gap_Crisan-McKenzie.pdf.

Dahlby, Bev, and Ergete Ferede. 2012. "The Effects of Tax Rate Changes on Tax Bases and the Marginal Cost of Public Funds for Canadian Provincial Governments." International Tax and Public Finance 19 (6): 844–83. https://doi.org/10.1007/s10797-012-9210-7.

Dahlby, Bev. 2019. "Reforming the Federal Fiscal Stabilization Program." The School of Public Policy Publications, June, 1-20. https://doi.org/10.11575/SPPP.V12I0.68076.

Dutton, Daniel J., Pierre-Gerlier Forest, Ronald D. Kneebone, and Jennifer D. Zwicker. 2018. "Effect of Provincial Spending on Social Services and Health Care on Health Outcomes in Canada: An Observational Longitudinal Study." Canadian Medical Association Journal 190 (3): E66–71. https://doi.org/10.1503/cmaj.170132.

Ferede, Ergete, and Bev Dahlby. 2016. "The Costliest Tax of All: Raising Revenue through Corporate Tax Hikes Can Be Counter-Productive for the Provinces." The School of Public Policy Publications, March, Vol 9 (2016). https://doi.org/10.11575/SPPP.V9I0.42577.

Finances of the Nation. 2021a. "Equalization Simulator." Accessed June 14, 2021. https://financesofthenation.ca/equalization/.

———. 2021b. "Government Revenue and Expenditure." Accessed June 14, 2021. https://financesofthenation.ca/real-fedprov/.

Government of Alberta. 2021a. "Fiscal Plan: Protecting Lives and Livelihoods." Budget 2021. https://open.alberta.ca/dataset/6f47f49d-d79e-4298-9450-08a61a6c57b2/resource/ec1d42ee-ecca-48a9-b450-6b18352b58d3/download/budget-2021-fiscal-plan-2021-24.pdf.

———. 2021b. "Alberta Heritage Savings Trust Fund Quarterly Report." 2020-21 Third Quarter. https://open.alberta.ca/dataset/ee01fe55-ac45-4bc9-b46e-34259ae6e3b9/resource/19bc8e86-98ec-4632-86c8-549c76150435/download/2020-21-third-quarter-report-heritage-fund.pdf.

———. n.d. "Alberta Tax Overview." Accessed June 22, 2021. https://www.alberta.ca/taxes-levies-overview.aspx.

Government of Canada. 2017. “GST/HST Credit.” Accessed June 20, 2021. https://www.canada.ca/en/revenue-agency/services/forms-publications/publications/rc4210/gst-hst-credit.html.

———. 2018. “Putting a Price on Pollution: Carbon Pollution Pricing Systems across Canada.” Accessed June 19, 2021. https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work.html.

———. 2021. “A Recovery Plan for Jobs, Growth, and Resilience.” Budget 2021. https://www.budget.gc.ca/2021/report-rapport/anx6-en.html.

Government of Saskatchewan. n.d. “A Made-in-Saskatchewan Climate Change Strategy | Environmental Protection and Sustainability.” Accessed June 19, 2021. https://www.saskatchewan.ca/business/environmental-protection-and-sustainability/a-made-in-saskatchewan-climate-change-strategy.

Herrmann, Peter, Arno Tausch, Almas Heshmati, and Chemen S. J. Bajalan. 2008. “Efficiency and Effectiveness of Social Spending.” SSRN Scholarly Paper. Rochester, NY: Social Science Research Network. https://papers.ssrn.com/abstract=1136283.

McKenzie, Kenneth, and Ergete Ferede. 2017. “Who Pays the Corporate Tax? Insights from the Literature and Evidence for Canadian Provinces.” SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2957894.

McKenzie, Kenneth. 2019. “Altering the Tax Mix in Alberta.” The School of Public Policy Publications, Vol 12. https://doi.org/10.11575/SPPP.V12I0.68390.

Mintz, Jack, and Philip Bazel. 2013. “Enhancing the Alberta Tax Advantage with a Harmonized Sales Tax.” SSRN Electronic Journal. https://doi.org/10.2139/ssrn.2330562.

Miyazaki, Tomomi, and Kazuki Onji. 2017. “The Sustainability of Japan’s Government Debt: A Review.” Theoretical Economics Letters 07 (06): 1632–45. https://doi.org/10.4236/tel.2017.76110.

Norges Bank Investment Management. 2021. “Annual Report 2020.” https://www.nbim.no/contentassets/fd871d2a4e2d4c1ab9d3d66c98fa6ba1/annual-report-2020_government-pension-fund-global_web.pdf.

Parliamentary Budget Office. 2020. “Reviewing the Fiscal and Distributional Analysis of the Federal Carbon Pricing System.” https://www.pbo-dpb.gc.ca/web/default/files/Documents/Reports/RP-1920-024-S/RP-1920-024-S_en.pdf.

———. 2021. “Luxury Goods Sales Tax.” https://www.pbo-dpb.gc.ca/en/blog/legislative-costing-notes--notes-evaluation-cout-mesure-legislative/LEG-2122-005-S--luxury-goods-sales-tax--taxe-ventes-produits-luxe.

Royal Bank of Canada. 2021. "Canadian Federal and Provincial Fiscal Tables." http://www.rbc.com/economics/economic-reports/pdf/canadian-fiscal/prov_fiscal.pdf.

Salomons, Geoff, and Daniel Béland. 2020. "The Presence of an Absence: The Politics of Provincial Sales Tax in Alberta." American Review of Canadian Studies 50 (4): 418–35. https://doi.org/10.1080/02722011.2020.1851980.

Shiell, Leslie, and Colin Busby. 2008. "Resource Revenues and Fiscal Sustainability in Alberta." Working Paper. http://ruor.uottawa.ca/handle/10393/41373.

Statistics Canada. 2019. "Population Projections for Canada (2018 to 2068), Provinces and Territories (2018 to 2043)." https://www150.statcan.gc.ca/n1/pub/91-520-x/91-520-x2019001-eng.html.

Smith, Danielle. 2021. "Alberta's Key Challenges and Opportunities." The School of Public Policy Publications.

Tombe, Trevor. 2018. "A Precarious Future: Investigating Alberta's Long-Term Fiscal Gap." The School of Public Policy Publications, November, Vol 11 (2018). https://doi.org/10.11575/SPPP.V11I0.52965.

———. 2020a. "Finances of the Nation: Provincial Debt Sustainability in Canada: Demographics, Federal Transfers, and Covid-19." Canadian Tax Journal 68 (4): 1083–1122. https://doi.org/10.32721/ctj.2020.68.4.fon.

———. 2020b. "An (Overdue) Review of Canada's Fiscal Stabilization Program." IRPP Insight 31. Montreal: Institute for Research on Public Policy.

———. 2021. "Fiscal Planning and Sustainability in Alberta." SPP Pre-Publication Series. https://www.policyschool.ca/wp-content/uploads/2021/05/AF20_Fiscal-Planning_Tombe.pdf.