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ALBERTA'S PUBLIC DEBT: ENTERING THE THIRD CRISIS*

Robert Ascah

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ALBERTA FUTURES PROJECT PRE-PUBLICATION SERIES

Alberta has a long history of facing serious challenges to its economy, including shocks in the form of resource price instability, market access constraints, and federal energy policies. However, the recent and current challenges seem more threatening. It seems that this time is truly different.

The collapse of oil and gas prices in 2014 combined with the rapid growth of U.S. oil production, difficulties in obtaining approval for infrastructure to reach new markets and uncertainty regarding the impacts of climate change policies world-wide have proven to be strong headwinds for the province's key energy sector. Together, the negative effects on employment, incomes and provincial government revenues have been substantial. To make matters worse, in early 2020 the COVID-19 pandemic struck a major blow to the lives and health of segments of the population and to livelihoods in many sectors. The result has been further employment and income losses, more reductions in government revenues and huge increases in government expenditures and debt. These events, combined with lagging productivity, rapid technological shifts, significant climate policy impacts and demographic trends, call for great wisdom, innovation, collective action and leadership to put the province on the path of sustainable prosperity.

It is in this context that we commissioned a series of papers from a wide range of authors to discuss Alberta's economic future, its fiscal future and the future of health care. The plan is that these papers will ultimately be chapters in three e-books published by the School of Public Policy. However, in the interest of timeliness and encouraging discussion, we are releasing selected chapters as pre-publications.

1.0 INTRODUCTION

Many questions arise about the fiscal impact of COVID-19 and the depressed state of Alberta's energy-based economy.

- When has government borrowed too much?
- What will rapidly rising debt levels mean for Alberta taxpayers?
- What are the critical debt thresholds for the Province?
- What do borrowing constraints mean in terms of adjustment to the levels of provincial revenue generation and provincial expenditures?
- What role will credit rating agencies play as they evaluate debt thresholds in relation to those in other provinces?
- What do higher debt levels mean for the Alberta Tax Advantage and Alberta's long-term economic growth?
- What role does the federal government play in monitoring provincial deficits and debt levels?

This chapter will address these complex questions in several ways. I start with defining public debt, noting the objectives of debt management. I recount the Alberta government's history with public debt, alternating between periods of debt accumulation and debt decumulation which track commodity prices and production cycles of Alberta's resource-based economy. Slowly creeping into public discourse are the liabilities associated with asset retirement obligations or unfunded environmental liabilities which energy companies are legally responsible for. I quantify the size of these liabilities, which may become the responsibility of the Alberta government, with implications for Alberta's credit rating. I review the role of credit rating agencies, which can have an important impact on institutional investors. I conclude with recommendations to political actors and policymakers and offer general conclusions about the role of public debt.

2.0 PUBLIC DEBT AND DEBT MANAGEMENT

Public debt is an obligation or promise of a governmental body (directly or through an agent) to pay interest when due and repay the debt obligation when it matures. It is largely immaterial to the creditor whether the funds are supplied for war, a pandemic or for electoral gain. State debt is issued without priority,[1] with the principal repayable on its due date whether payable in local or foreign currency. In this study, public debt includes debt or loans *guaranteed* by the Government of Alberta.

Debt servicing costs are a statutory provision under Alberta's *Financial Administration Act,* meaning the Legislative Assembly does not vote annual appropriations for these payments. Debt servicing payments therefore are *primus inter pares,* eliminating legislative debate about these charges unless the *Financial Administration Act* is

1 In contrast to corporate debt which may have a variety of subordination levels.

amended. Appendix A provides examples of the layers of public debt whose source of repayment depends on a government's revenues which, in turn, depend on the health of the economy and the willingness and ability of voters to pay taxes.

Under section 92(3) of the *Constitution Act,* provincial governments have the authority to raise money "on the sole credit of the province." This provides extraordinary flexibility to support economic development and community building within their territories. However, unlike the federal government, which has exclusive jurisdiction over banking and currency, provinces cannot constitutionally create their own currencies.[2] This power accords the federal government power to capture *seigneurage* or the benefit of repaying its debts by issuing more currency. This distinction has important implications in the fiscal relationship between federal and provincial governments, granting the federal government primacy in financial markets.

Debt management is a critical, and under-appreciated, function of modern government. The objectives of debt management include:

1. Orderly issuance and retirement of public debt;
2. Minimizing overall borrowing (interest and issuance) costs;
3. Assuring a broad market to absorb new debt and refinancing issuance;
4. Preventing "bottlenecks" during which there is a coincidence of maturing debt with heavy borrowing requirements; and
5. Minimizing risks of debt servicing through the use of derivatives (Ascah, 1999, 2-3).

3.0 DEBT AND GUARANTEE ISSUANCE, 1908-2020

Alberta's public debt issuance can be understood in terms of (1) the recurring rise in indebtedness, (2) fiscal crises, and (3) debt payback. Growing indebtedness has occurred in three time periods, and full debt repayment has been achieved twice, in the early 1950s and the mid-2000s. The accumulation and payback of debt is closely associated with movements in commodity prices.[3] Five measures of indebtedness are used: components of the direct and guaranteed debt; financial assets; net debt; debt as a percentage of provincial income; and debt charges as a percentage of government revenue. Prices of principal resources dominating the Alberta economy during these periods are shown as an economic backdrop for the periodic shocks faced by Alberta's economy.

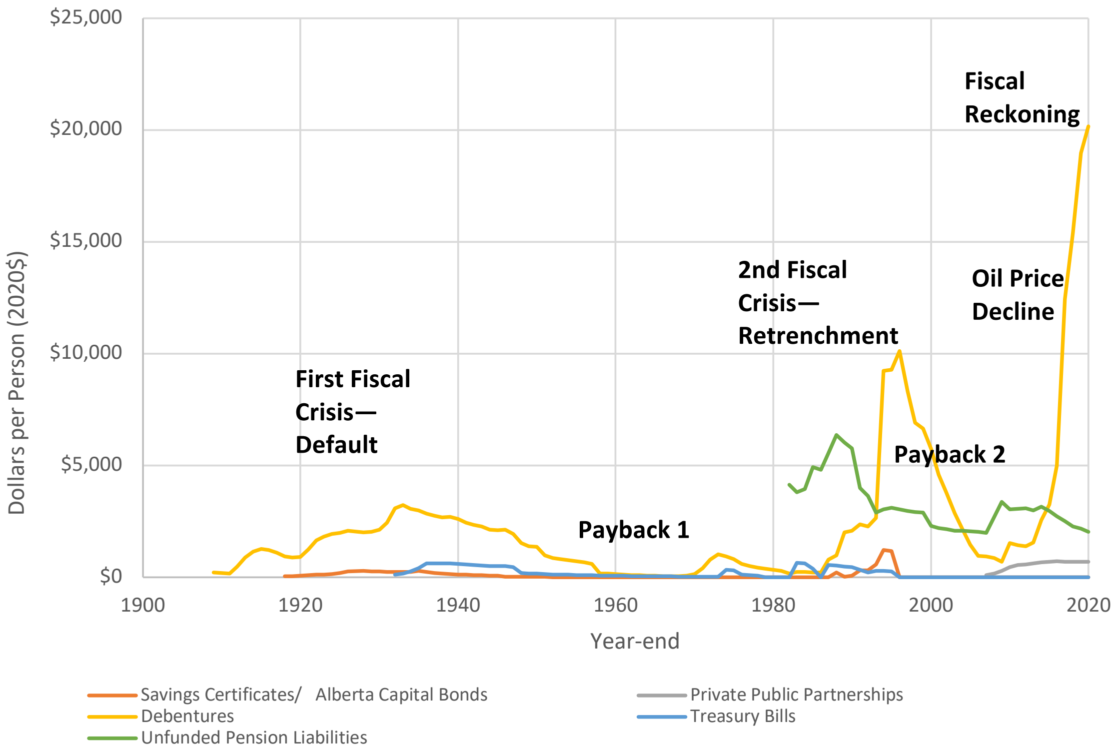
2 This did not stop the Social Credit government in 1937 from issuing "Prosperity Certificates" to stimulate purchasing power in the province. These certificates were not accepted at banks and most retailers.

3 Interested readers are referred to Eric J. Hanson's magisterial work *Financial History of Alberta: 1905-1950,* a condensed version of Hanson's massive Brown University Ph.D. dissertation, edited by Paul Boothe and Heather Edwards. The data reflected in the following charts relies on data from Hanson cross checked against the *Public Accounts of Alberta.*

3.1 DIRECT DEBT

During Alberta's early years, three themes emerge. First, major borrowing supported economic development *viz.* the telephone system, irrigation districts, public works, and railways. Second, borrowing was payable in two or more currencies, reflecting Canada's immature debt markets. This manner of borrowing created problems as Britain abandoned the gold standard in 1931. And third, indirect or contingent liabilities for railway or irrigation guarantees were major components of the young province's indebtedness.

Figure 1: Components of Direct Debt, CPI Adjusted, 1908-2020



Sources: *Public Accounts of Alberta*, 1908-2020. Note: Alberta's fiscal year end was December until 1928 when it changed to March 31. Population: Dominion Bureau of Statistics and Statistics Canada. CPI deflator: Boothe, Table 2.3 and Bank of Canada Inflation Calculator https://www.bankofcanada.ca/rates/related/inflation-calculator/ Accessed 31 March 2021.

Figure 1 shows Alberta's per capita debt grew rapidly prior to World War I before access to domestic and international capital markets was shut off by the Dominion government's war finance efforts (Hanson, 37-42, 65-66). As the post-war recession gave way to a commodity boom and capital markets re-opened, the province borrowed liberally between 1919 to 1925. Per capita debt began to level off as Alberta's population grew rapidly and was remarkably stable until the effects of the option-pay bonds raised the debt servicing costs while government revenues fell dramatically. Treasury bill borrowing evolved in the early 1930s as the Dominion government sought to assure capital markets that provincial governments had recourse to short-term funding to prevent default. Treasury bills were also used during the 1980s as Alberta's economy entered recession. In the late 1980s, the province tapped retail savings as Alberta Capital Bonds were marketed through financial institutions. This practice was discontinued as the costs did not justify the political benefits of a retail debt instrument paying slightly above market rates. During the late 1990s and into the mid-2000s Alberta's debenture debt was slowly retired.

Beginning in the early 1980s, Alberta's *Public Accounts* began to record the unfunded pension fund liabilities, which I am treating as part of Direct Debt. Unfunded pension liabilities relate to public sector pension funds, such as the Local Authorities Pension Plan or the Alberta Teachers Retirement Fund, whose assets were then insufficient to cover pension liabilities when due. The amount of the liability has declined steadily since 1989 as measures to restore proper funding have taken place. The assumption by the government of the pre-1992 liability of teachers' pensions represents about 80 per cent of the total liability. A new part of direct debt is Private-Public Partnerships (P3) which represent the long-term liability of payments to builders and asset managers constructing, operating and maintaining traditional public infrastructure such as ring roads or schools.

3.2 GUARANTEED DEBT

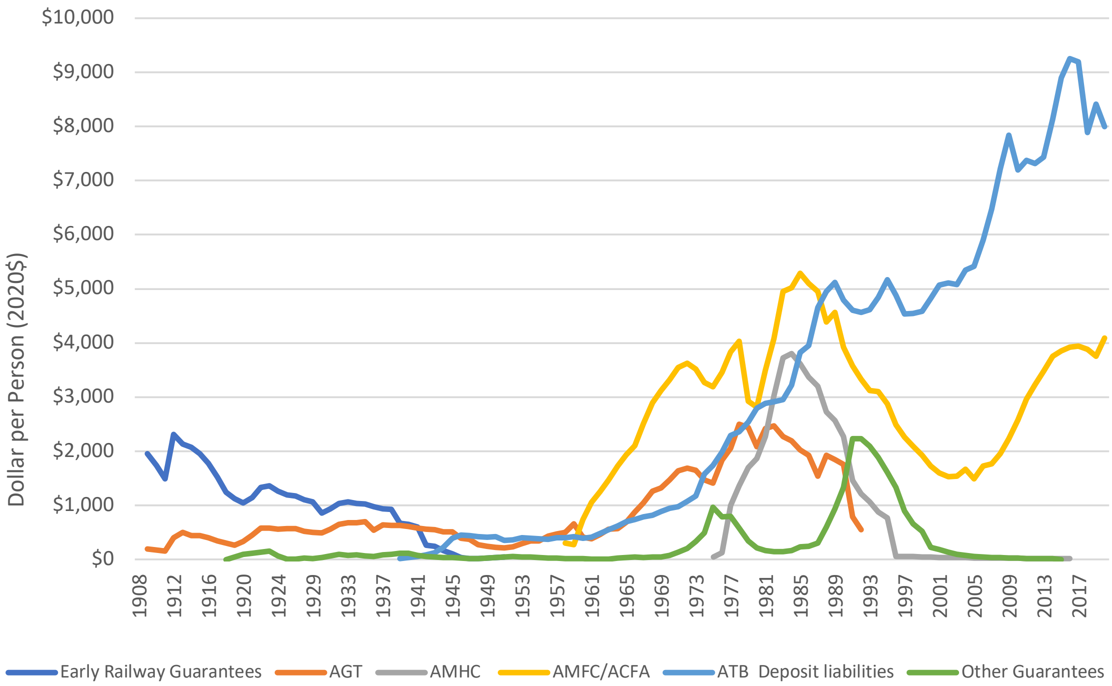
The analytical treatment of guaranteed debenture and bank debt is a challenging topic. Different forms of guaranteed debt rose to prominence in different eras of the province's economic and social development. Figure 2 records debt guaranteed by the provincial government which became unserviceable in the 1930s when grain prices collapsed and direct debtors (irrigation districts, telephones, and railways) could not generate sufficient cash flow to service their debts, compelling the provincial government to step in to service the debt. The 1936 default and subsequent debt reorganization (1946) reflect several factors which are recounted in Hanson (171-187, 360-377) and Ascah (53-80). Chief among the factors was the United Farmers of Alberta (UFA) government's refusal to raise taxes during the boom period (Ascah, 1999, 54-56; Bank of Canada, 8) and Alberta's heavy debt burden compared with that of other western provinces (Hanson, Figure 8.24).

Telephone debt made up a significant portion of the public debt up until 1923 and was soon overtaken by provincial guarantees of railway and irrigation district guaranteed debentures. Of the contingent liabilities identified in the 1924 *Public Accounts*, $17.1 million was for three small railways, $6.3 for irrigation districts and $22.5 million in guarantees for branch lines operated by the restructured Canadian National Railways. (*Public Accounts*, 119; Hanson, 103-108).

During the payback periods (1950s, 2000s) guaranteed debt declined along with direct debt. Starting in the late 1950s a new form of guaranteed provincial debt emerged: municipal debt. As the oil boom brought hundreds of thousands of new residents into Alberta and rural areas began to depopulate, heavy demands were being made on the provincial government from urban politicians. The creation of the Alberta Municipal Financing Corporation in 1958 enabled all municipalities to avail themselves of the Province's under-utilitized credit rating. Other guarantees grew during this period, including that of Alberta Government Telephones (AGT) to fulfil business and home requirements. The emergence of social housing in the early 1970s to respond to a massive influx of newcomers lead to the creation of the Alberta Housing Corporation in 1975.

The financing of social housing through the Alberta Housing Corporation and the Alberta Mortgage and Housing Corporation (AMHC) became particularly problematic in the 1980s when a real estate crash and very high interest rates proved a financial drain on the finances of the new Getty government. For the Alberta Municipal Financing Corporation (AMFC), now the Alberta Capital Finance Authority (ACFA), there is a degree of circularity in this borrowing arrangement since the provincial government annually advances money to municipal governments for capital and operating purposes. ACFA's current mandate also extends to lending to regional airport authorities which are facing serious cash flow issues due to COVID-19.

Figure 2: Components of Guaranteed Debt, CPI Adjusted, 1908-2020



Sources: *Public Accounts of Alberta*, 1908-2020. Population: Dominion Bureau of Statistics and Statistics Canada. CPI deflator: Boothe, Table 2.3 and Bank of Canada Inflation Calculator https://www.bankofcanada.ca/rates/related/inflation-calculator/ Accessed 31 March 2021. ATB Financial *Annual Reports,* various years; and *Public Accounts of Alberta*, various years.

As indicated, the Alberta Treasury Branches' (ATB) deposit liabilities, guaranteed by the province, have grown rapidly. While offset by ATB assets in the form of loans to Albertans and Alberta businesses and short term securities, these assets become less secure during severe economic contractions. This is because ATB's profitability and capital reserves erode at a time when the Province's fiscal flexibility is likewise stretched. The capacity of the Province to repay and refinance its debt depends on the health of Alberta's economy which also affects repayment of ATB loans and the adequacy of ATB's loan loss provisions.[4]

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4 Below I include in calculations of public debt ATB liabilities in developing a range of definitions of net debt.

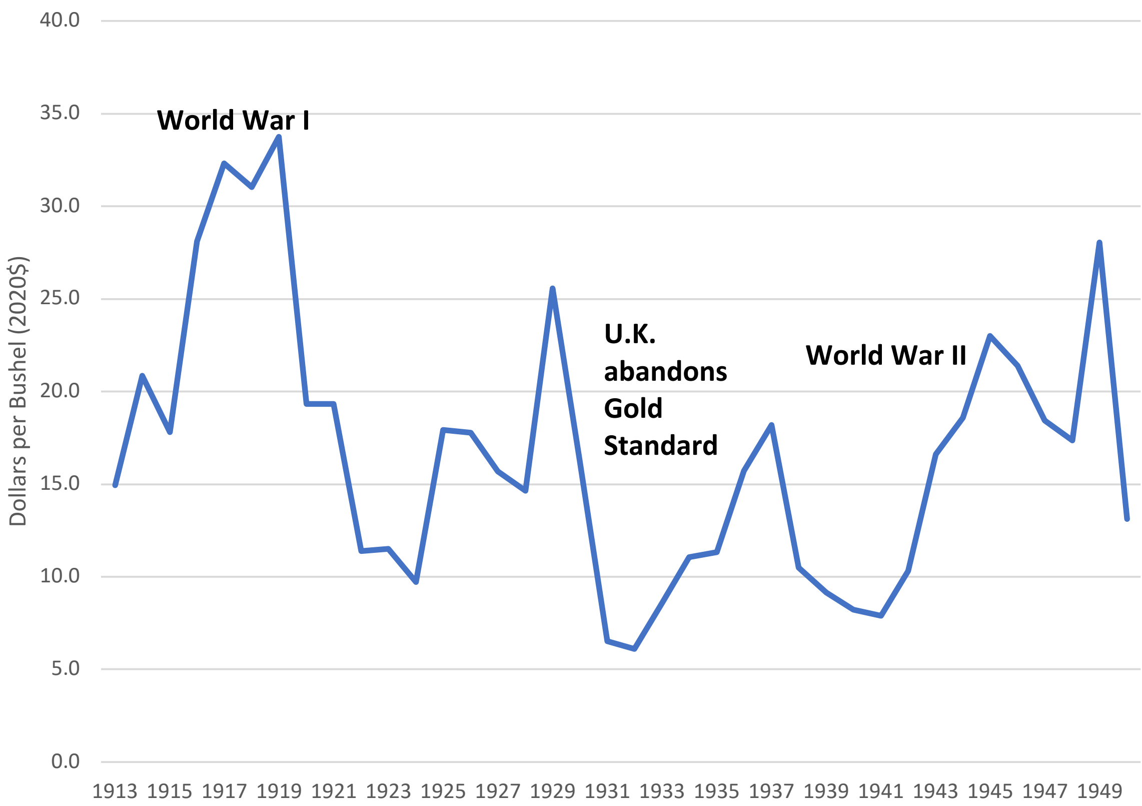
All periods of fiscal crisis arise from what might be termed a “perfect storm” created by the coincidence of economic and fiscal stress forcing the Province to either default for idiosyncratic reasons or seriously restructure its spending and/or revenues.

4.0 ALBERTA’S DEBT CYCLES

4.1 FIRST CYCLE — AGRICULTURE AS ECONOMIC DRIVER

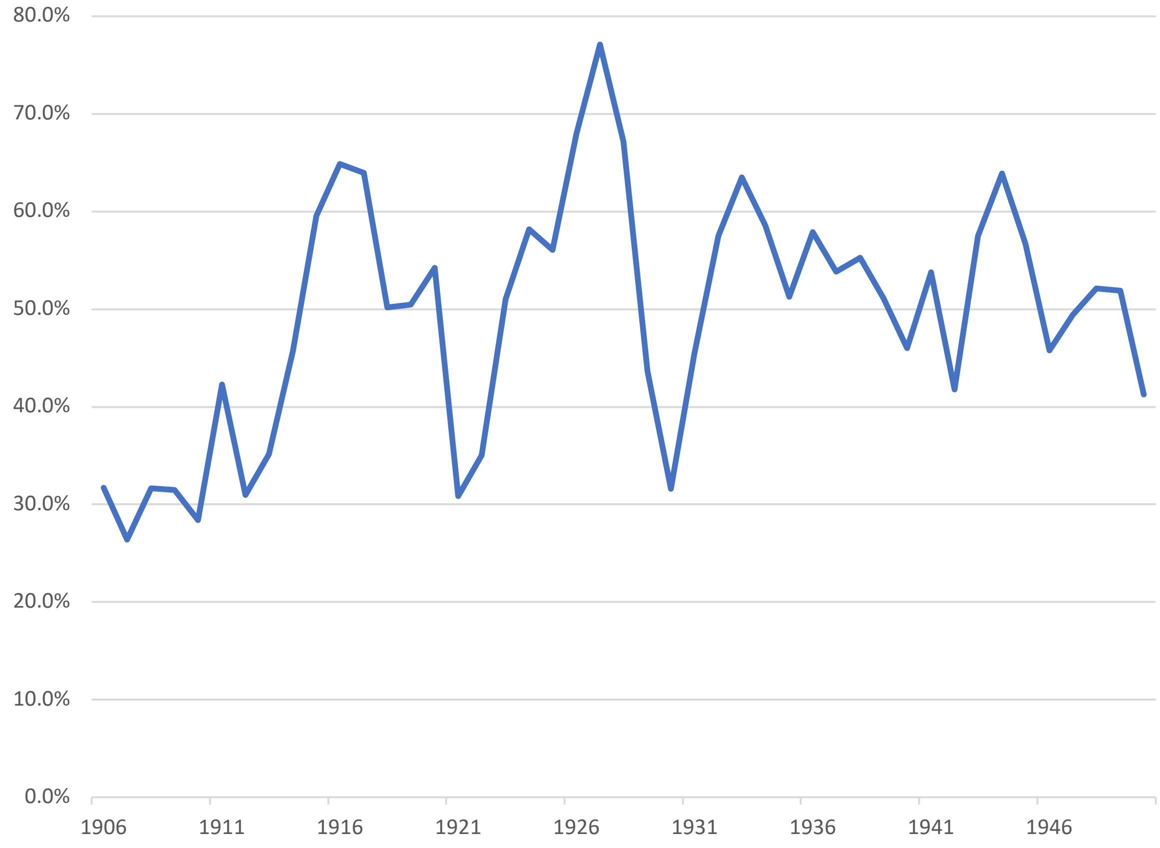
Alberta has a long history of economic cycles driven by commodity prices. Currently oil and gas price fluctuations loom large, but in the province’s early history, agriculture was dominant. Figures 3 and 4 illustrate the importance of farm income to the provincial economy up to 1950 and the price volatility experienced by wheat producers throughout this 40-year period (Ascah,1999, Chart 4.1). Borrowing difficulties began in the early 1930s with the collapse of wheat prices which had underwritten the great expansion of the Province’s economy. Wheat prices peaked at $1.75 per bushel in 1928 ($25.6 in 2020 dollars) which led to more immigrants into the young province seeking their fortunes. While agriculture’s share of provincial GDP is currently very low (about 1.8 per cent), having been supplanted by almost every other sector (especially oil and gas at 16.1 per cent of GDP), the lessons of the past continue to resonate.

Figure 3: Wheat Prices, CPI Adjusted, 1913-1950



Source: Hanson, 2003, pp. 61, 87,123, 160 and *Canada Year Book*.

Figure 4: Value of Agriculture as Per Cent of Provincial Income, 1906-1950



Sources: Provincial Income, Boothe, Table 2.3. 1906-1918: Net Value of Agriculture, Hanson Tables 2.2, 5.4; 1921-1935: Value of Field Crops, Hanson, Tables 4.2, 5.2; 1936-1950, Statistics Canada, Series M99-108. Realized farm gross income, 1926 to 1974

4.2 FIRST DEBT CRISIS

The existence of multiple pay bonds, entitling the holder to receive payment in either sterling, U.S. or Canadian dollars, dealt a serious blow to the province's finances in the early 1930s. These payment option choices caused principal and interest payments to rise well beyond what was anticipated (Hanson, 294).[5]

The 1 April 1936 default represents the first fiscal crisis in the province. The Alberta government refused to meet the contractual requirements of direct and guaranteed debt after desperate efforts were made to avoid default (Hanson 175-76). The Aberhart government declared it would not submit to domination by banks, the Dominion Government and eastern lawyers representing both banks and the Dominion. It was an audacious move sending shivers down the backs of investment bankers in London and New York, Canada's new central bank governor, and Canada's banking establishment. This fiscal crisis demonstrated how closely Dominion and provincial governments' creditworthiness are related.

5 Between 1929 and 1936, the fiscal year just before the default, debt charges rose by 46 per cent.

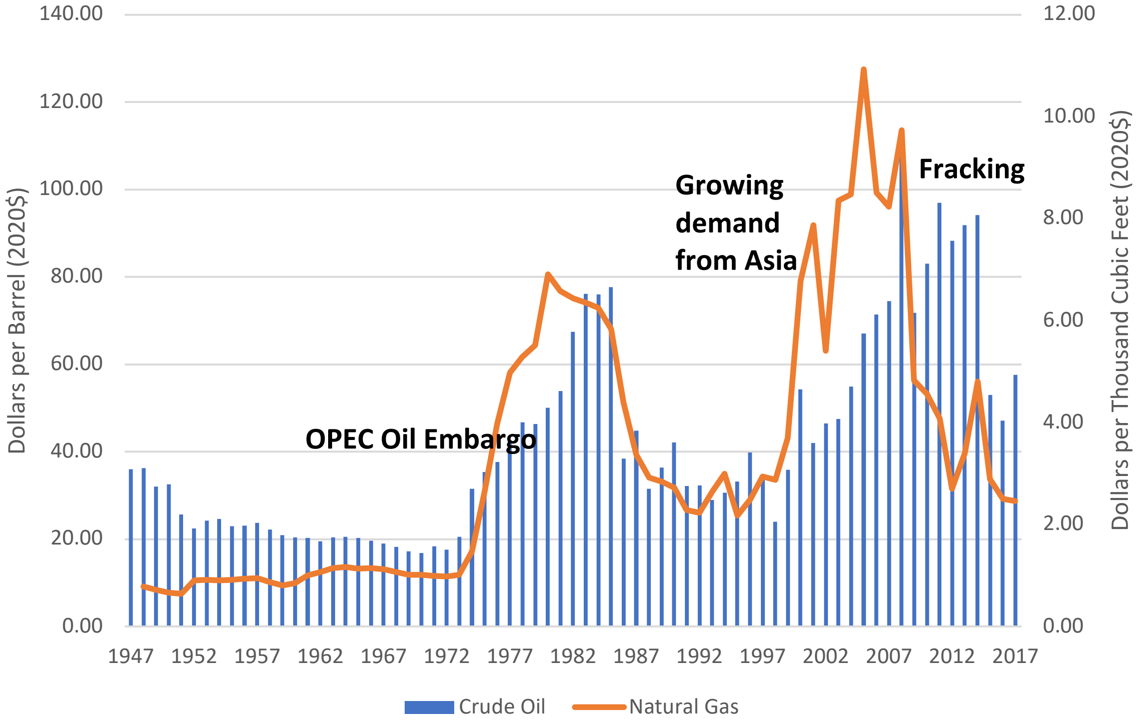
The provincial Cabinet quickly adopted a balanced budget philosophy to safeguard the Province's capacity to function within its jurisdiction. It ran balanced budgets, including providing for sinking funds to pay back the debt. From 1936 to 1946, when the Debt Reorganization Program took effect, the Social Credit government ran 10 surpluses, with a budgetary surplus in 1946 reaching $6 million or 20 per cent of revenue (1953-54, *Public Accounts,* Statement No. 18). This was in sharp contrast to the preceding six consecutive deficits of the UFA government. The Social Credit's adherence to balanced budgets, the 1946 Debt Reorganization Program, and sharp rise in royalties after 1947 helped to eliminate the net debt by 1953.

4.3 OIL BECOMES AN ECONOMIC DRIVER

Alberta's financial situation improved dramatically as resource rents became a dominant source of revenue after the discovery of oil at Leduc in 1947. Figure 5 illustrates oil and natural gas prices over a 70-year period. The chart shows the strong price environment for oil and natural gas which super-charged the Alberta economy, enriching the provincial treasury. The economic expansion was fueled by capital investment of the energy industry supplemented by construction in residential, commercial, institutional, and industrial sectors. However, with the impact of the National Energy Program in the early 1980s and then the later collapse of energy prices, Alberta suffered one of its most serious downturns and the provincial government's public finances suffered greatly.

Alberta's finances continued to be problematic with significant deficits and accumulating debt. By the early 1990s there was a growing public and political consensus that deficits and rising debt were a serious problem. Moreover, consensus emerged that the government must deal with the issue quickly and vigorously. The so-called Klein Revolution (retrenchment) lowered government spending and, with rising oil and natural gas prices, a series of growing fiscal surpluses allowed rapid pay down of the province's debt.

Figure 5: Average Prices of Oil and Natural Gas, Western Canada, CPI Adjusted, 1947-2017

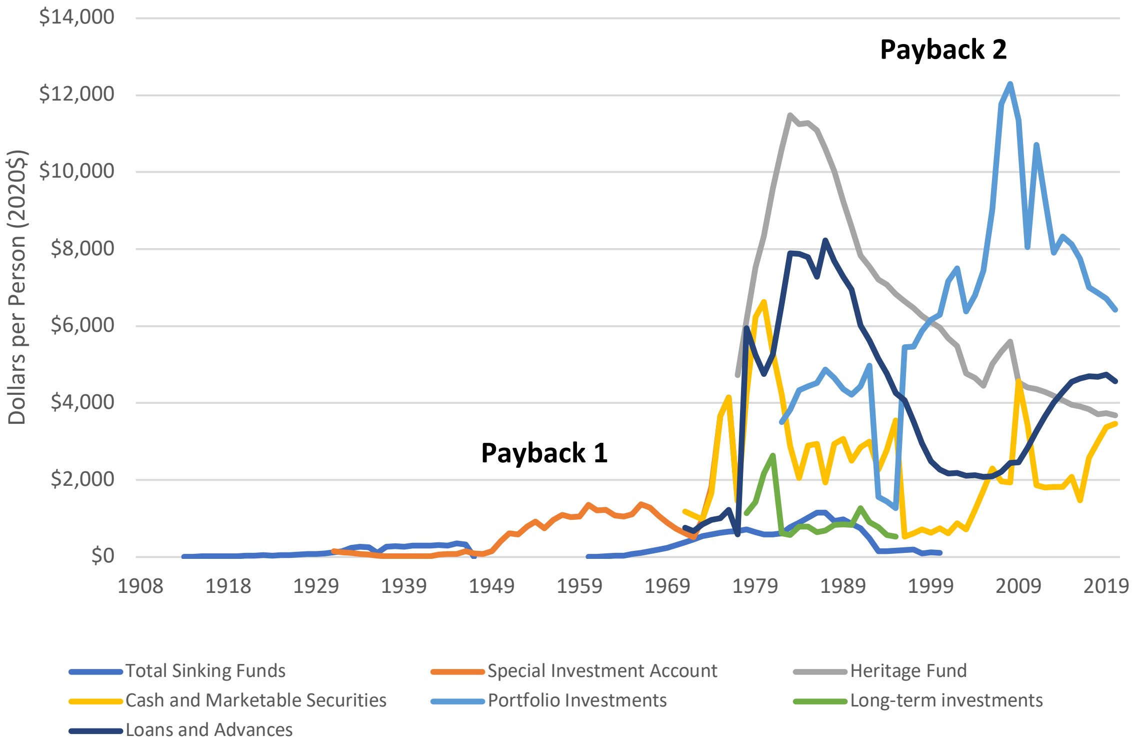


Source: Canadian Association of Petroleum Producers, https://www.capp.ca/resources/statistics/ Accessed 3 April 2021.

4.4 FINANCIAL ASSETS

With the growth of royalties revenues associated with the rise of oil and gas prices (Figure 5) and concomitant expansion of the oil and gas industry, the Alberta government began a significant accumulation of financial assets. The Alberta Heritage Savings Trust Fund was established in 1976 by the Lougheed government. Critical in the evaluation of financial assets is whether they are claims on an external third party or a claim on an emanation of the provincial Crown. In the case of sinking funds, a mechanism to ensure repayment of a debenture (bond) at maturity, the debtor invests in its own debt (*Public Accounts*, 1932, Statement No. 16) to retire an issue of the debtor. However, are guaranteed debentures of AMFC secured by loans to Alberta municipalities truly loans to an external third party? ATB's loans are the loans to Alberta taxpayers — how then is one to assess the quality of the offsetting loan security, for example Alberta commercial real estate or Alberta oil and gas wells or drilling rigs? Under situations of regional financial duress, such as the Great Depression or the severe contraction of the provincial economy in the 1980s, the question is how much of an offset should these loans be accorded, particularly if the debtor population is seeking a debt moratorium? While these scenarios are rare, they are more likely than a casual observer might think.

Figure 6: Government of Alberta Financial Assets Per Capita, CPI Adjusted, 1908-2020



Sources: *Public Accounts of Alberta*, 1908-2020. Population: Dominion Bureau of Statistics and Statistics Canada. CPI deflator: Boothe, Table 2.3 and Bank of Canada Inflation Calculator https://www.bankofcanada.ca/rates/related/inflation-calculator/ Accessed 31 March 2021.

Given the uncertainties in when and how financial claims will be made on the Province as debtor or as guarantor, two financial asset streams, which reflect changes to accounting presentation, are defined. In the first classification, I have aggregated sinking funds, Special Investment Account (1931-1977) and the Heritage Fund (1977-present) as a narrow definition of financial assets. The second, broader classification is based on accounting treatment starting in 1975 which sets out cash and marketable securities, portfolio investments, long-term investments, and loans and advances[6]. The challenging part is that some financial assets are securities issued to the Heritage Fund, such as those of the housing corporation or AGT issued during the Lougheed administration. The expansion of financial assets takes place during the 1950s to 1970s and the early 2000s,[7] consistent with the payback periods.

6 I have excluded equity in commercial enterprises principally because of the inherent vulnerability of ATB's loan book to downturns in the provincial economy and current significant exposure to oil and gas loans and commercial real estate.

7 During the early 2000s, with bountiful natural gas prices, rebounding oil prices, and vast new oilsands investments, a number of investment funds were set up including the Debt Retirement Fund and the Stabilization Fund which housed residual surpluses of the Province. Other endowment funds were created, such as the Alberta Heritage Science and Engineering Research Fund. However, I have excluded endowment funds since they are conceptually perpetual endowments which would not legitimately be offsets to pay down debt.

4.5 ENVIRONMENTAL LIABILITIES

The discussion so far has ignored additional indirect or contingent liabilities of the Government associated with the cost of environmental remediation of hundreds of thousands of oil and gas wells, as well as pipelines and oil sands facilities. Recent stories[8] on environmental liabilities concerning the oil and gas and oilsands sector beg the question of *how* and *whether* such liabilities might be factored into Alberta's credit rating.[9]

Each rating agency takes a slightly different approach to examining environmental, social and governance (ESG) issues, an evolving approach to how corporations respond to stakeholders as opposed to shareholders' interests (Carney, 383-417). Moody's and S&P ratings consider GHG emissions, carbon transition, waste, water, and land use. S&P and Moody's have a specific ratings system (Moody's, 2020; S&P, 2020). For governments, attention is paid to risk events where a material, financial impact would be felt, including costs arising from natural disasters like floods or forest fires. Particular consideration is given to hydrocarbon "sovereigns" like Alberta or Saudi Arabia whose finances will be affected by global decarbonization trends. Special attention in Alberta's case would be "the likely credit impacts that regulatory frameworks and ESG-related laws, policies and regulations will have on rated issuers and sectors as a whole "(Moody's, 5).

The question of how to measure environmental liabilities of Alberta's oil sector is controversial since there is a wide range of estimates for the cost of clean-up. Furthermore, how does one quantify the Alberta government's exposure to clean-up costs where the regulatory structure and jurisprudence support a polluter pay concept (Supreme Court of Canada)?

Table 1 presents two estimates of industry liabilities for clean-up costs. The first column is the official estimates of the Alberta Energy Regulator (AER). The second column is an estimate prepared by the Alberta Liabilities Disclosure Project (ALDP, 2018). The results of the ALDP analysis are based on internal estimates by the AER's then Vice-president of Liabilities (Wadsworth; de Souza et al). The main differences between the two columns are: 1) AER does not include thousands of pipelines; 2) for oil and gas wells, the ALDP combines the reclamation estimates commissioned for the AER's internal study with ADLP's private sector study and Orphan Well Association (OWA) abandonment cost estimates. This results in average well clean-up cost of $82,722 in the AER estimate compared to a range of $160,229 to $279,086 estimated by the ALDP; and 3) bitumen estimate taken from Wadsworth study and extrapolated back in time based on the cumulative production of bitumen (ALDP). At present, the security posted by energy companies against these liabilities is about $2 billion. It is highly questionable, given the record of the AER in ensuring smaller producers are financially capable of meeting

8 There have been many investigative stories about the AER including de Souza *et al*, Jones, Lewis and Jones, and MacIntosh.

9 Environmental, Social and Governance (ESG) rating methodologies are in their infancy but gaining more attention and have more potential for downside credit risk than upside risk. "Site remediation, for example at chemical plants, oil refineries or nuclear power facilities, can create large clean-up liabilities for their owners or insurers, which could transition to governments if companies fail to fulfill their obligations" (Moody's, 10).

their reclamation obligations, that this security is sufficient to defray large capital expenditures to remediate oil wells and oilsands mines and facilities.

Table 1 AER Estimates and Internal AER Estimates of Environmental Liabilities

Years	AER O&G + Bitumen Total ($millions)	Wadsworth / ALDP Total ($millions)
Up to 1991	9,843	56,070
1992	10,379	58,575
1993	11,127	61,670
1994	12,038	65,244
1995	12,877	68,504
1996	13,806	72,056
1997	14,958	76,383
1998	16,094	80,695
1999	17,261	85,062
2000	18,772	90,599
2001	20,411	96,402
2002	21,940	101,883
2003	23,833	108,505
2004	26,182	116,690
2005	28,494	124,681
2006	30,986	133,337
2007	33,211	141,233
2008	35,272	148,579
2009	37,002	155,011
2010	38,971	162,250
2011	41,135	170,168
2012	43,368	178,457
2013	45,670	187,076
2014	48,013	195,806
2015	50,453	205,280
2016	52,815	214,552
2017	55,594	225,281
2018	58,288	236,068

Sources: Column 1-Regan Boychuk (2018) and Column 2-Wadsworth with historical data from Boychuk (2018).

The wide disparity between the AER estimate and Wadsworth's was quickly disavowed by the AER in November 2018 when Wadsworth's presentation was released under access to information legislation.[10] The vast differences between the two set of numbers suggests caution in ascribing future clean-up costs and what portion, if any, would fall back on Alberta taxpayers. There is considerable doubt about the capacity

10 https://www.aer.ca/providing-information/news-and-resources/news-and-announcements/news-releases/public-statement-2018-11-01 Accessed April 11, 2021. See also De Souza et al. (2018).

and willingness of small producers to fulfill their regulatory obligations when many small producers remain delinquent on rural municipal taxes. Contributing to higher probabilities that Alberta taxpayers may foot part of the reclamation cleanup is the exercise of AER's regulatory discretion when applying its liability management ratings[11] to small oil and gas companies. To date, the Alberta government has provided over $300 million of loans to the OWA to speed up the orphan well reclamation effort. In April 2020, the federal government stepped in to provide $1.7 billion to four oil and gas producing provinces ($1 billion to Alberta) to speed up the reclamation clean-up employing thousands of unemployed oilpatch workers to do so. Although the likelihood of these large liabilities turning into valid legal claims against the provincial government may be remote, the reticence of the Government, and its agent the AER, to enforce security may form the basis of future legal claims against the Crown by landholders and First Nations directly affected by perceived regulatory failures.

4.6. NET DEBT (ASSETS) 1992-2017

Net debt/assets results from subtracting government's financial liabilities from its financial assets. There are a range of outcomes for when a liability guaranteed by provincial government will become payable. Questions arise with respect to the qualitative nature of financial assets appearing on the province's balance sheet. The deposit liabilities of ATB, loans to regional airport authorities and loans to large urban and rural municipal governments facing an eroding tax base should be examined separately. The political calculation when dealing with debtors who are agents of the Crown, ATB borrowers, voters, municipalities or regionally influential corporations may expand the net of government liabilities by precluding the realization of security provided.

Figure 7 presents the 1992-2018 period with the estimates of environmental liabilities taken from Table 1. Guaranteed debt is calculated in two ways — with and without ATB deposit liabilities. Financial assets are grouped into two categories: the first is a narrow definition including sinking fund assets, Special Investment Account and the Heritage Fund; the second includes the sum of cash and marketable securities, portfolio and long-term investments and loans and advances. Four net debt/assets scenarios are presented which hug together closely. In addition, the total lower range of estimated environmental liabilities is added to less pessimistic net debt scenario and the total higher environmental liability range is added to the most pessimistic net debt definition. These scenarios are illustrative to show the relative magnitude of how the Government of Alberta's liability management strategy could change as major energy assets become stranded.

Figure 7 provides some context for future discussions about Alberta's long-term fiscal sustainability if such potential liabilities are not addressed through vigorous enforcement of the security requirements for large- and small-scale producers.

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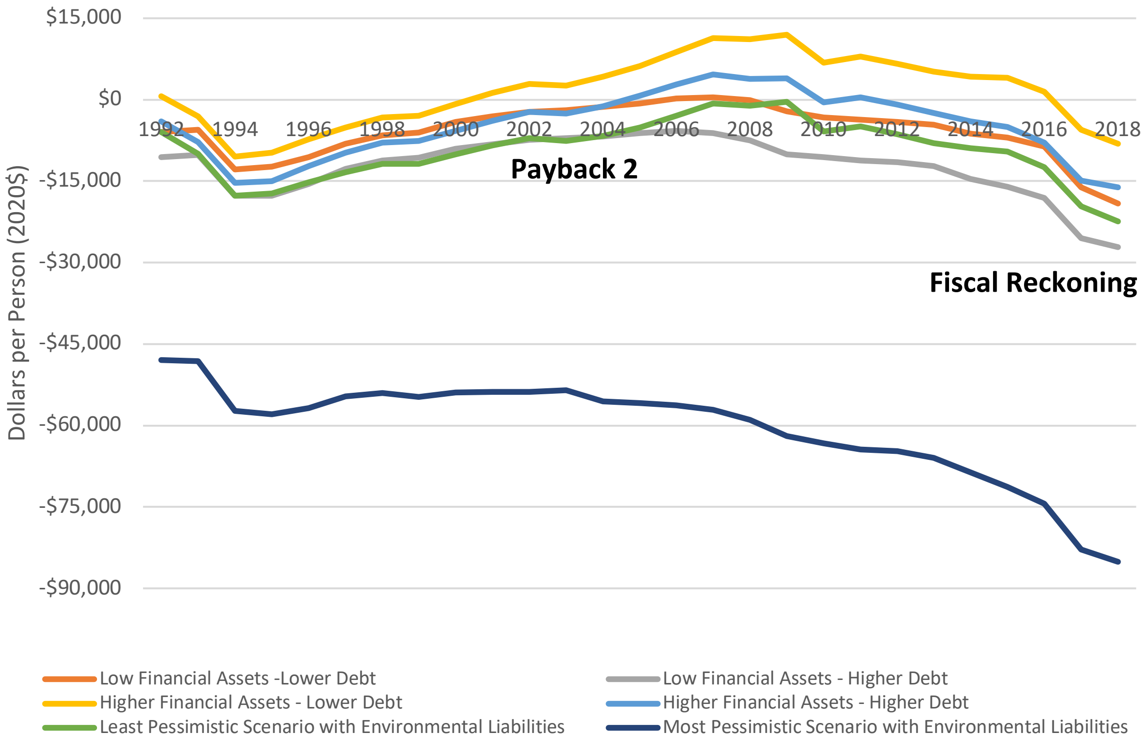
[11] The liability management rating is used by the AER to help assess a company's ability to address its abandonment, remediation and reclamation obligations. AER's administration of the program has come under criticism in the media.

Figure 7: Net Debt/Assets including Environmental Liabilities, CPI Adjusted, 1992-2018



Sources: Debt, guaranteed debt and financial assets- *Public Accounts*, various years. Population: Dominion Bureau of Statistics and Statistics Canada. CPI deflator: Boothe, Table 2.3 and Bank of Canada Inflation Calculator https://www.bankofcanada.ca/rates/related/inflation-calculator/ Accessed 31 March 2021.

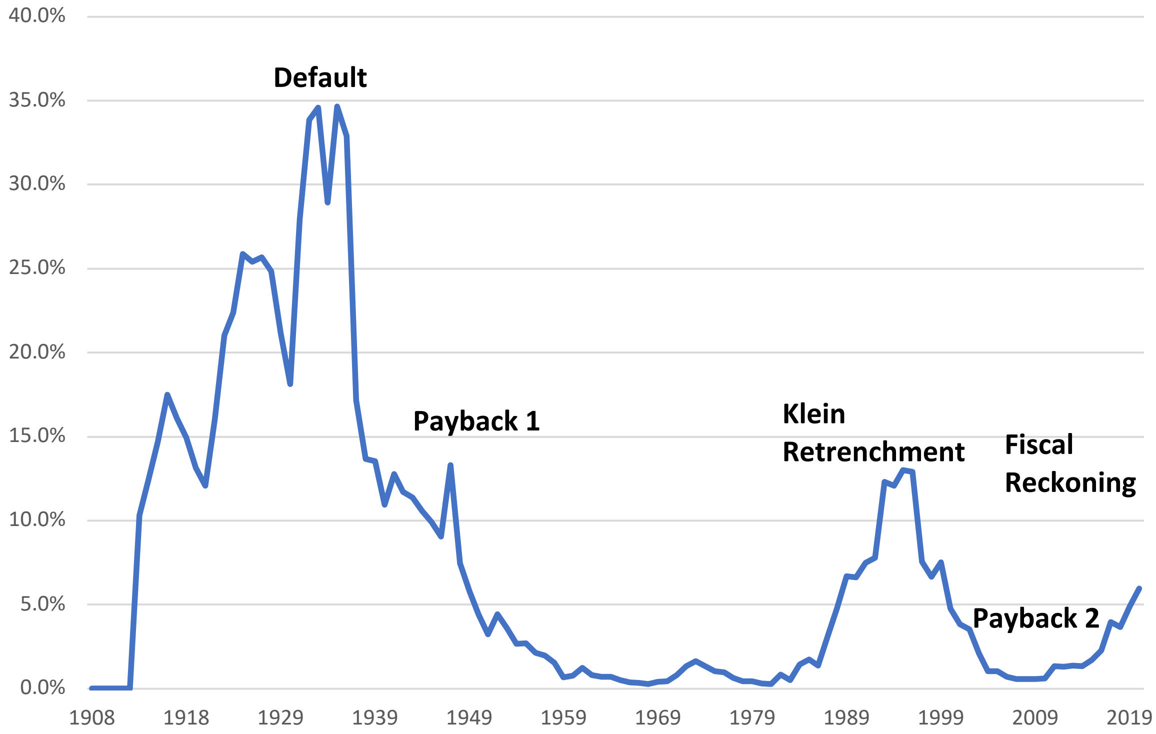
4.7 2006-PRESENT: BOOM AND BUST AGAIN

The present period of rapid debt accumulation began with falling real oil prices that coincided with the global financial crisis in 2008 and the emergence of fracking in the U.S. driving natural gas prices down precipitously. Offsetting the decline in natural gas investment was a massive expansion in the oilsands centred in the Fort McMurray area. Alberta's debt has grown significantly throughout the 2010s even with bountiful energy royalties up until 2015. Debt accumulation accelerated since 2015 when oil prices dropped again on a sustained basis.

4.8 REVENUE SUPPORTING REPAYMENT

Figure 8 shows a key metric for investors and rating agencies: the relationship between the costs of debt servicing and the revenue required to pay interest on the outstanding debt, to repay principal and to refund maturing debts. The figure shows the dramatic upward shifts when resource prices fell and significant declines when resource prices were buoyant. As with the previous figures, these movements correspond to periods of accumulating debt and periods when debt was retired and financial assets began to build.

Figure 8: Government of Alberta Debt Charges as Per Cent of Alberta Government Revenue, 1908-2020

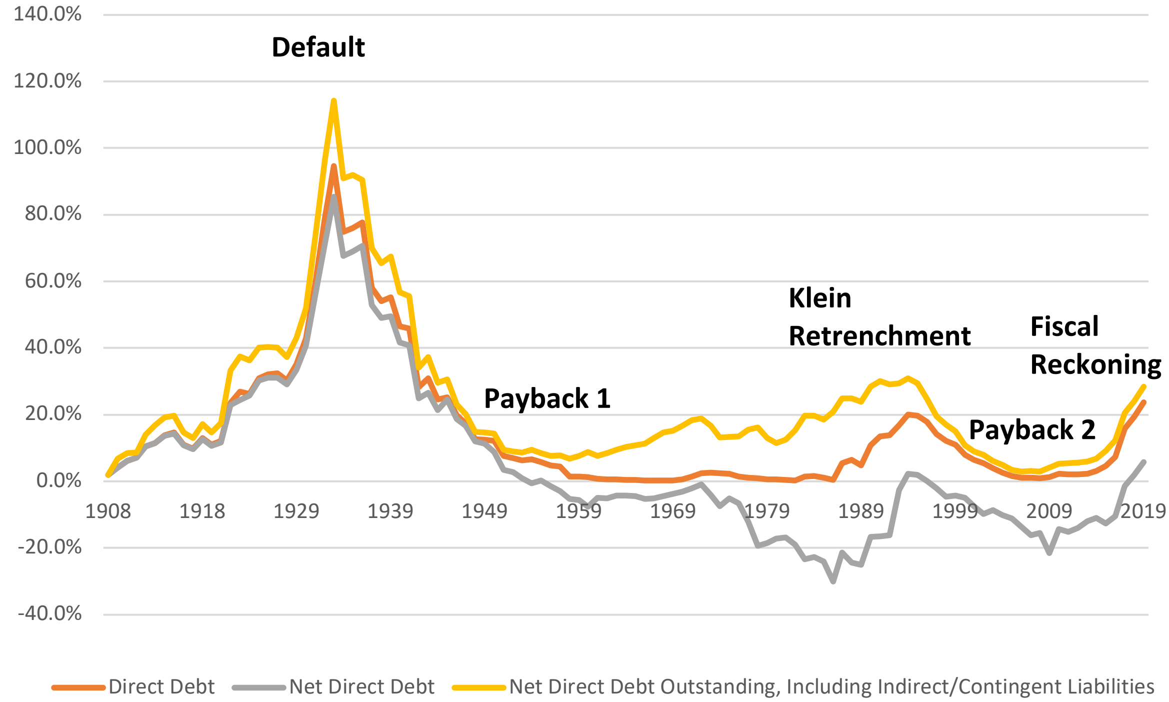


Source: *Public Accounts of Alberta*, various years and Kneebone and Wilkins, 2018.

4.9 DEBT AND PROVINCIAL INCOME

Figure 9 compares different measures of public debt with the capacity of the provincial economy to service the debt. The data shows the relationship between movements in the economy and the fiscal situation facing the province. What has occurred repeatedly in Alberta is the coincidence of accumulated debt with an accompanying decline in provincial income. Alberta's commodity-based economy is particularly vulnerable to undesirable fiscal outcomes as political leadership responds to public demands for services and infrastructure funded by revenue projections which have failed to materialize.

Figure 9: Measures of Alberta Public Debt as Per Cent of Provincial Income (GDP), 1908-2020



Sources: Provincial Income/GDP: 1906-1960, Boothe Table 2.3; 1961-1980 Statistics Canada, Table: 36-10-0325-01 (formerly CANSIM 384-0015); 1981-2019, Statistics Canada, Table: 36-10-0221-01 (formerly CANSIM 384-0037). 2020: Province of Alberta, *Fiscal Plan*, 2021, 44.

5.0 CREDIT RATING AGENCIES

Rating agencies combine financial, economic, and regulatory knowledge to make judgments about the repayment capacity of issuers of securities in global capital markets. These ratings do not constitute guarantees of repayment: rather, they provide a score and an opinion from the analysis of issuers' business and industry prospects. Ratings are an important guide for institutional investors in selecting their portfolios.

Rating agencies derive their revenue from investors who subscribe to their services as well as from issuers who have their securities rated. A rating normally assures issuers that they will obtain buyers for their securities. Each agency has its own published methodologies[12] which provide readers with an understanding on how the rating is formulated. Ratings involve subjective judgments by internal committees about the trend or outlook for future ratings. The agencies provide both short-term and long-term ratings. The long-term is defined usually as more than 2 years, although some securities rated could mature in 100 years.

12 https://www.moodys.com/researchandratings/methodology/003006001/rating-methodologies/methodology/003006001/003006001/-/0/0/-/0/-/-/en/global/rr accessed 14 March 2021.

Table 2 - Alberta's Credit Ratings 7 July 2021

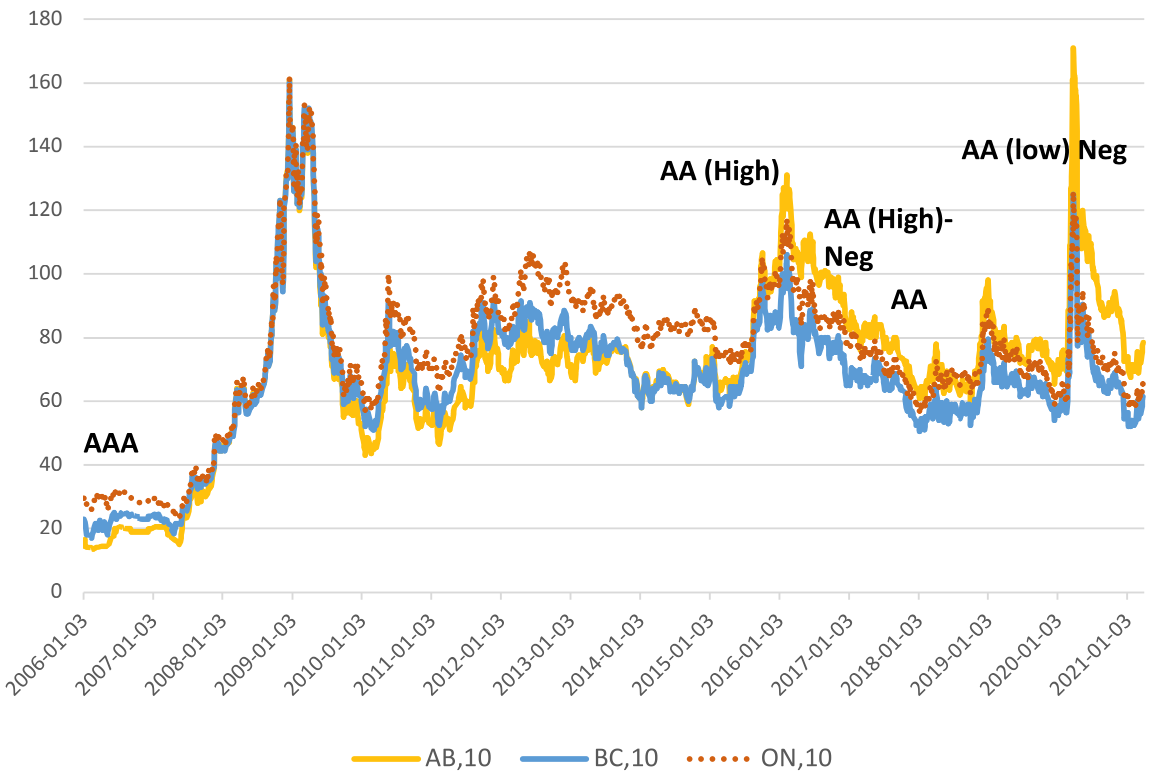
Agency	Long-term Rating		Short-term Rating
DBRS Morningstar	AA	(Low) (negative trend)	R-1 (mid) (stable trend)
Moody's Investors Services	Aa3	(outlook stable)	P-1
S&P Global	A	(outlook stable)	A-1
Fitch Ratings Inc.	AA-	(outlook stable)	F1+

Source: Alberta Treasury Board and Finance, Investor Relations, accessed July 7, 2021 https://www.alberta.ca/investor-relations.aspx

From the security issuers' perspective, a lower rating makes it more difficult to sell bonds because institutional investor policies limit exposure to bonds with lower ratings, especially bonds below investment grade (below BBB). Credit ratings normally reflect the cost of borrowing relative to benchmark securities, such as Government of Canada bond issues of the same duration. Ontario, with a strong diversified economy, sound credit rating, and large volumes of securities has traditionally been viewed as the benchmark provincial security. Up until oil prices fell in late 2014, Alberta paper was trading at or below Ontario securities (Figure 10). This situation has reversed in the past 5 years and now, with more debt outstanding and more issuance expected, Alberta spreads are wider than they have been in the last 30 years, and higher than those in BC and Ontario. Ten basis points may seem a minor difference. However, when placed in the context of Alberta's current borrowing program ($20 billion), a 10-basis point difference represents $20 million in added interest costs on an *annual* basis. $20 million is hardly a trivial matter for smaller government programs facing budgetary cuts.

As the figure shows, Alberta lost its AAA credit rating in April 2015 and its current rating is AA low (DBRS/Morningstar).

Figure 10: Ten-Year Provincial Bond Spreads (Daily) relative to Government of Canada, 2006-2020



Source: BMO Capital Markets.[13]

6.0 QUESTIONS

6.1 WHEN HAS GOVERNMENT BORROWED TOO MUCH?

The short answer is the public will not know until the Government finds it can no longer borrow. A famous Ernest Hemingway quote when asked how he went bankrupt goes: "Two ways. Gradually, then suddenly." Financial events occur when a bank, government or business is no longer capable of paying its debts or its employees when due. (This happened to some Alberta school boards during the Great Depression). Rising credit spreads on debt is one indicator of financial stress and the market for credit default swaps attempts to price likelihood of default. However, it turns out that financial markets are not very reliable in predicting a financial crisis until a funding crisis is evident.

From the historical charts there is little doubt that Alberta's finances are in very poor shape and arguably worse than the situation facing Ralph Klein in the 1990's. In the words of Premier Kenney, Alberta is facing a "fiscal reckoning". Bond markets tend to be forgiving, as the possibility of a federal bailout reduces bondholders' fears that they will hold devalued securities (Hanniman, 2020, 283-284). What is decidedly different

[13] Special thanks to Professor Kyle Hanniman of Queen's University for making this information available to me.

in 2021, compared with the fiscal retrenchment under the Klein administration, is the historically low interest rates which mask future problems of refunding maturing debt.

6.2 WHAT WILL RAPIDLY RISING DEBT LEVELS MEAN FOR ALBERTA TAXPAYERS?

Rising debt levels will produce escalating debt servicing costs, alongside more debt issuance, especially if (when) interest rates rise. This will put pressure on the government to raise taxes, possibly including a sales tax and higher fees for government services. The squeeze produced by rising debt servicing means lower budgets for services provided by the Alberta government, including health and education. This prospect will have potential negative impacts on social mobility, economic inequality, economic growth and equality of opportunity.

6.3 WHAT ARE THE CRITICAL DEBT THRESHOLDS FOR THE PROVINCE?

There are no fixed indicators which definitively mean that a government can no longer borrow. There is an array of unpredictable factors that are national and international and outside the Alberta government's control. For example, what happens if the world's reserve currency, the U.S. dollar, no longer performs its function? What happens if technological change eliminates the need for fossil fuels as a key transportation fuel? From the proceeding analysis, it seems clear that, without fundamental changes to tax and expenditure policy, Alberta is near some sort of debt threshold, though there is some uncertainty precisely how near.

6.4 WHAT ROLE WILL CREDIT RATING AGENCIES PLAY AS THEY EVALUATE DEBT THRESHOLDS IN RELATION TO OTHER PROVINCES?

Rating agency opinions reflect their vantage point as experts who compare the creditworthiness of sub-national debt. Agencies' analytical capacity to dissect a government's accounting systems, knowledge of the underlying drivers in a government's capacity to manage its finances, combined with an international perspective are important factors in their evaluation. Other Canadian provincial governments are the most obvious comparator for Alberta debt given common accounting frameworks and intergovernmental fiscal arrangements. While an implicit federal guarantee makes it highly unlikely that a Canadian province will fall below an investment grade rating, agencies' insights enable markets to more accurately function by pricing their bids for these securities.

6.5 WHAT DO HIGHER DEBT LEVELS MEAN FOR THE ALBERTA TAX ADVANTAGE AND ALBERTA'S LONG-TERM ECONOMIC GROWTH?

Higher debt levels mean that Alberta's tax advantage will become difficult to sustain. The Government's narrative that Alberta is an expenditure outlier is being displaced by a growing public awareness that Alberta is also a revenue outlier.

Whether higher taxes will impair Alberta's long-term economic performance is beyond the scope of this study. This is a very controversial issue within public finance and political science and, given the innumerable factors influencing investment and political decisions, confirmation bias may be a factor here in arguments for and against the low tax policy prescription. As Tombe (Tombe, 2020, 1085) has argued, if public debt is rising faster than real economic growth a government's borrowing ultimately becomes unsustainable: "At some point, abrupt changes in fiscal policy—either increasing revenues or decreasing program spending—would be required to avoid default."

6.6 WHAT IS THE ROLE THE FEDERAL GOVERNMENT PLAYS IN MONITORING PROVINCIAL DEFICITS AND DEBT LEVELS?

The recent financial stress in provincial funding in March and April 2020 involved central bank purchases of provincial securities. This action suggested some provinces, notably Newfoundland,[14] were facing difficulties borrowing (Drummond, 2021; Hanniman, 2021). Although the federal government has been primarily focussed on the public health file and administering new spending programs, the Bank of Canada's willingness to buy provincial securities demonstrates that the federal state cares about provinces' capacity to tap capital markets. Canada as a whole faced financing prospects in March 2020 not unlike during World War II, with borders closed and financial markets on the point of seizing up. This was a scary period when national government and central banks became for a short while the only trusted debt issuers.

7.0 RECOMMENDATIONS

The paper has emphasized the interconnectedness of Alberta's fiscal situation and its economic circumstances. Here I present two proposals that may reduce the possibility of a future fiscal crisis: (1) issuance of commodity-indexed bonds; and (2) a return to mandatory sinking fund contributions.

The Alberta government's financial vulnerability is highly correlated to commodity prices. One method of managing the government's financial risk would be to pay low rates of interest when oil prices are low and higher interest rates when the economy and the Province's finances are buoyant. This "natural hedge" is one method of reducing future debt servicing costs when resource prices are low and remain low for some time.

Alberta voters may suffer from "fiscal illusion" in that they are generally unaware whether money used in providing services has been borrowed or raised through various taxes. For political actors facing difficult budgetary choices, borrowing presents an attractive choice in the sense that future governments and taxpayers may be forced to deal with consequences of over-borrowing relative to taxing. Borrowing allows difficult budgetary trade-offs to be deferred to the future. With exceptionally low interest rates, there has also been a perception that borrowing is practically free. Establishing rules to set aside significant funds each year for debt retirement would force politicians to make difficult budgetary choices (i.e., cut spending or

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14 Muskrat Falls is a major source of NL's fiscal challenges underlining the importance of a broad consideration of what constitutes public debt.

raise taxes) earlier. Given Alberta's apparent inability to save resource revenue, the sinking fund requirement should be a statutory provision that would prevent deciding annually whether to contribute or not. This method would be achieved by embedding mandatory sinking fund contributions in debenture agreements.

8.0 CONCLUSION

Public debt matters. Public debt comes in many forms. Centralized control over public debt is necessary to inform budgetary discussions which tend to focus on spending rather than taking a wholistic view on how spending proposals may be financed. Rising public debt began in the 1920s to build the province's infrastructure and to foster economic development. However, expectations that the future would take care of itself were not fulfilled as the commodity-based economy was devastated by falling prices of wheat, natural gas, oil and bitumen.

The current fiscal crisis is similar to previous crises because prices for Alberta's principal export commodities have fallen and prospects for a recovery are increasingly uncertain. In addition, the expansion of oil sands is much in doubt, reducing the large capital investments which have driven economic growth and development over the first decade and a half of the 21st century. Grave uncertainty about future economic prospects, possible legal challenges to how the oil industry has been regulated and the environmental consequences of oil and bitumen extraction, will mount. These issues are tantamount to the reputational risks of the Province as a debt issuer.[15] Although industry is responsible for reclaiming properties damaged through resource extraction, there is considerable doubt as to the adequacy of financial security pledged for reclamation and the capacity and willingness of industry to pay for oilsands remediation (Auditor General of Alberta, 2015, 25-33, 2021, 29-34). The uncertainty of who will pay will emerge as a critical issue for the Province's credit rating and its credibility as a steward of Alberta's natural endowments.

15 Kelsey Johnson of Reuters reported in November 2018 that Sweden's central bank had sold off Alberta government bonds. "Sweden's central bank sells off bonds from Canadian province over climate concerns." accessed April 13, 2021. https://www.reuters.com/article/us-canada-bonds-sweden-idUSKBN1XN2O9

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APPENDIX A – LAYERS OF PUBLIC DEBT

COMPONENTS OF PUBLIC DEBT

Direct debt — unsecured, direct obligations of the Crown in Right of Alberta. Source of repayment from revenues of provincial government including royalties, taxes, and fees. Debt issued through Finance Ministry. Issuance may be on behalf of the General Revenue Fund, other regulated funds, or other provincial agencies such as ATB Financial or the ACFA.

Guaranteed Debenture debt — usually unsecured but supported by financial viability of the borrowing entity. Examples include Alberta Government Telephones, Edmonton, Dunvegan & B.C. Railway, AEC Power, Irrigation Districts. Source of repayment from corporate revenues.

Guaranteed bank, credit union or ATB loans. Examples include loans to Dreco Energy Services, Regional Planning Commissions, small grain dealers, farmers, students. Source of repayment from borrowers, including any security taken (e.g., real property).

Liabilities or guarantees of Agents of the Crown. Examples include accounts payables of Crown agents, Toronto-Dominion Bank loan to West Edmonton Mall guaranteed by ATB, letters of credit or undrawn credit facilities provided by ATB. Source of repayment from financial assets of corporations.

About the Author

Robert Ascah was born in Lachine Quebec. He holds degrees in Commerce and Public Administration from Carleton University. He completed his Ph.D. in political science at the University of Alberta in 1984. He joined for the Alberta public service in 1984 (Federal and Intergovernmental Affairs) and moved to Alberta Treasury in 1986. At Treasury he was responsible for financial sector policy, foreign borrowing and liaison with credit rating agencies. In 1996, he joined Alberta Treasury Branches becoming responsible for government relations, strategic planning, and economic research. In August 2009 he was appointed Director of the Institute for Public Economics at The University of Alberta where he served for four years. In 1999, Ascah's Ph.D. dissertation *Politics and Public Debt- The Dominion, the Banks and Alberta's Social Credit* was published by the University of Alberta Press. His current research interests include Alberta fiscal history, the history of ATB, and appointments to Alberta agencies. His blog is Abpolecon.ca

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