



# Impact: How Government Decisions Affect Alberta's Fiscal Sustainability

February 2016



## Contents

<b>Executive Summary .....</b>	<b>2</b>
<b>Recommendations .....</b>	<b>3</b>
<b>Qualitative Factors .....</b>	<b>4</b>
Political Landscape.....	5
Economic Environment.....	6
Credit Strengths .....	9
Credit Challenges .....	12
Rating History.....	15
Outlook .....	16
<b>Quantitative Factors.....</b>	<b>17</b>
Key Statistics .....	18
Government Budget Assumptions.....	19
Oil Price Benchmark (West Texas Intermediate, US\$/bbl) .....	23
Alberta Natural Gas Reference Price Benchmark (Cdn\$/GJ) .....	23
Canada-U.S. Exchange Rate Benchmark (U.S. cents/Cdn\$) .....	23
Light-Heavy Oil Price Differential Benchmark (WTI-WCS Price Differential, U.S.\$/bbl) .....	23
Ratio Analysis .....	28
<b>Peer Group Comparison .....</b>	<b>32</b>



## Executive Summary

In times of economic hardship, the people of Alberta rely on their government to keep the province strong. Both the revenue and the expenditure sides of government must be approached with care, prudence, and a conservative attitude. This paper discusses the government's plan, and offers critiques and suggestions on how to make government finances better.

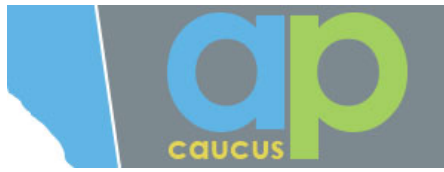
With the recent release of the third quarter fiscal and economic update, it has become apparent that the decisions, policies and forecasts used by the Government of Alberta must be made with accuracy. The overly optimistic forecasts made in Budget 2015 have placed the future generations of Alberta in jeopardy with increased levels of debt, and a lack of a plan to repay said debt.

First, the Alberta Party Caucus examined the literature of the three major credit rating agencies. This analysis provided insight into the facets which third parties consider when issuing a credit opinion. Next, the Alberta Party Caucus looked closely at the government revenue and expenditure projections. This scrutiny provided insight into the best practices for government forecasting and budgetary planning. Finally, the Alberta Party Caucus inspected the impacts recent government decisions have had on the Canadian bond market. By studying the factors responsible for bond pricing, decision makers and the public can be aware of the choices that need to be made in order to keep Alberta attractive for investment.

This analysis led to various recommendations which, if implemented, would strengthen the financial position of the province. It is up to government officials, community leaders, and the public to take charge and put these recommendations in place.

## Recommendations

1. Use the most conservative figure available for forecasting purposes
2. Eliminate borrowing for operational spending
3. Develop and implement a debt affordability analysis to be incorporated into the annual budget which should include:
  - a. A statement of average interest rate and average term to maturity of provincial debt for the most recent fiscal year and projected average interest rates and average terms to maturity of provincial debt for subsequent fiscal years, consistent with the fiscal plan presentation.
  - b. A statement of factors responsible for the growth in Alberta's debt on a historical, current and future year basis, consistent with the fiscal plan presentation.
  - c. An objective review of credit agency ratings, including any recent changes in the Province's credit rating or the outlook assigned by the major ratings agencies, as well as highlights of the strengths and weaknesses cited by the credit rating agencies.
  - d. Debt capacity calculations, including the maximum amount of new debt the government can issue while remaining within prescribed debt limits and the amount of new debt issued for planned capital projects falling within these bounds.
  - e. Calculations of debt capacity under alternative scenarios to see how estimates of debt capacity change under different assumptions about debt issuance, credit ratings, interest rates and bond spreads, etc.
  - f. Statement and description of key provincial and credit agency debt metrics or ratios (i.e. debt as a percentage of GDP, debt as a percentage of revenues, and debt servicing costs as a percentage of revenues) for the current fiscal year and subsequent fiscal years, consistent with the fiscal plan presentation.
  - g. Benchmarking analysis that compares key provincial and credit agency debt metrics and ratios with those of other provinces and peers.
  - h. A review of the continued appropriateness of existing debt limits and other debt management practices.



## Qualitative Factors



## Political Landscape

Standard & Poor's (Dec 18, 2015)

- Canada's provincial-federal institutional framework is "very predictable and well balanced"
- Alberta receives significant transfers from the federal government through Canada Health Transfer and Canada Social Transfer payments
- Total transfers (operating and capital) represented C\$5.9 billion in fiscal 2015 (about 12% of operating or total revenues), which was down from the previous year largely due to the effect of federal disaster relief related to the flooding in Calgary
- Previous governments have shown a willingness and capacity to substantially cut operating spending, which had bolstered our assessment of the province's budgetary flexibility. We believe that with the election, that willingness has decreased due to the government's resolve to protect jobs

DBRS (Nov 30, 2015)

- Alberta introduced a new budget on October 27, 2015—the first budget under the newly elected New Democratic Party government. The Province now plans to return to fiscal balance by 2019–20, two years later than planned by the previous government
- The newly elected New Democratic government moved to cancel cuts to health-care and education programs that had been announced by the prior administration

Moody's (Aug 6, 2015)

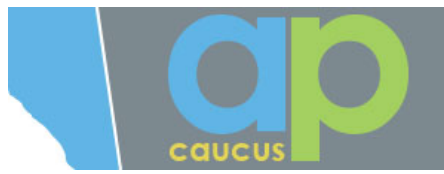
- The newly elected NDP government has passed an increase of the corporate income tax rate to 12% from 10%, effective July 1, 2015
- The small business rate of 3% percent will remain the same
- The province imposes a 10% flat personal income tax rate but the introduction of a more progressive tax system for personal incomes above CAD 125,000 will begin to be implemented on October 1, 2015
- The high likelihood of [federal] support reflects our assessment of the federal government's incentive to minimize the risk of potential disruptions to capital markets if Alberta or any province were to default. It also indicates a moderately positive federal government policy stance as illustrated by the flexibility inherent in the system of federal-provincial transfers



## Economic Environment

Standard & Poor's (Dec 18, 2015)

- We assess the provincial economy as strong despite the plunge in oil prices and declining real GDP that we expect for 2015
- The concentration in the oil and gas industry tempers our assessment of the provincial economy. In 2014, the industry, which includes supporting activities, represented about 27% of real GDP and about 6% of employment
- We estimate the provincial GDP per capita to be about US\$80,800 (2012-2014), which we consider to be high compared with that of peers
- Real GDP rose 4.5% (5.1% in 2014); nominal GDP increased 9.1%, compared with 10.2%
- Employment grew 2.2% (2.5% in 2013) and the unemployment rate was 4.7%, up only slightly from 2013
- For 2015, the province expects real and nominal GDP to decline 1.0% and 9.4%, respectively
- In 2016, we believe real and nominal GDP should rebound, with about 1.0% and 4.0% growth, respectively
- Capital spending represented 13% of fiscal 2015 total expenditures, up from fiscal 2014
- We estimate that modifiable revenues and capital spending will represent 86% of operating revenues and 14% of total expenditures, respectively, for the 2014-2018 period
- Long-term population growth has been robust, which makes it difficult to cut expenditures, especially health and education
- The province is the sole owner of Alberta Treasury Branch (ATB) and guarantees the deposits of its customers. Total deposit and other liabilities of ATB were C\$34.6 billion at the end of fiscal 2014
- The province has budgeted for an operating deficit of about 5% of projected operating revenues and a large after-capital deficit of 22% of projected total revenues for fiscal 2016
- General government or own-purpose tax-supported debt, which includes own-purpose direct debt and guarantees, was down about 3% to about C\$26.1 billion by the end of fiscal 2015
- Total tax-supported debt, which includes on-lent debt, guarantees, and obligations under public-private partnership agreements, stood at C\$29.4 billion and represented 59% of fiscal 2015 consolidated operating revenues.
- At fiscal year-end 2015, the province had cash and temporary investments of about C\$40 billion including equity holdings of C\$12 billion, which was up from C\$37 billion at the end of fiscal 2014
- Alberta had free cash and liquid assets of about C\$27 billion



DBRS (Nov 30, 2015)

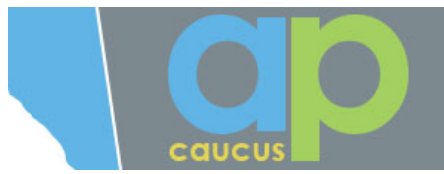
- Real GDP is budgeted to contract by 1.0% in 2015, which compares with the current private sector consensus tracked by DBRS of -1.2%
- The rapid decline in commodity prices has led to a notable decline in investment intentions
- Risks remain tilted to the downside, and the Province remains heavily exposed to commodity price volatility
- As was first announced in June 2015, the Province is moving forward with new revenue measures to offset the decline in resource royalties. These include:
  - raising the general corporate income tax rate to 12% from 10% beginning July 1, 2015
  - replacing the flat personal income tax regime with a more progressive structure comprising five tax brackets beginning October 1, 2015
  - raising tobacco taxes and alcohol mark-ups
- In total, new revenue measures are projected to generate \$1.5 billion in additional revenues in 2015–16 and \$2.3 billion on a full-year basis
- Despite the increases, Alberta's tax regime remains very competitive, and the Province has considerable capacity to raise taxes further, if willing
- Revenue projections are now based on USD 50/barrel WTI in 2015–16, rising to USD 61/barrel in 2016–17 and USD 68/barrel in 2017–18. A USD 1/barrel change in WTI is estimated to impact the fiscal plan by approximately \$170 million
- A significant decline in non-renewable resource revenues will contribute to an almost 11% decline in total revenues in 2015–16 from the prior year, while corporate income tax receipts and investment income will also see declines
- Education and social services will see increases of 3.0% and 5.8%, respectively
- To help partially insulate the provincial economy from slowing investment in the energy sector, the Province plans to increase its five-year capital program by \$4.5 billion, or approximately 15%, relative to the prior plan
- Rising debt will boost interest charges by 6.9%, although they still remain very affordable at just 1.8% of total revenues
- Alberta's debt structure remains prudent, with only very modest foreign-currency exposure (5%) and floating-rate exposure (7%) as of March 31, 2015
- According to Statistics Canada's survey of investment intention, non-residential construction, machinery and equipment spending is forecast to decline by 11% in 2015, with declines in the oil and gas sector alone expected to be as much as 40%
- Significant oil sands investment in prior years will see oil production continue to rise over the medium term as projects reach completion and new production comes on stream outweighing declines in conventional oil production
- Housing starts are forecast to decline by 8.4%, according to Canada Mortgage and Housing Corporation





Moody's (Aug 6, 2015)

- As an oil-producing province, Alberta's economy and its fiscal situation are vulnerable to the current weakness in oil prices.
- Alberta currently faces a large budgetary deficit, a potential increase in debt and a reduction in its liquidity sources in 2015-16 and beyond.
- The province has entered this downturn from a position of fiscal and financial strength. This provides flexibility to weather a temporary downturn.
- The province will need to adjust its operating and capital expenditures to a period of lower expected revenues over the next few years as oil prices will likely recover only gradually over the next 2-3 years.
- High population growth for over a decade has broadened its tax base but also makes it difficult for Alberta to cut back on investments in infrastructure
- Alberta is rated at the high end of Canadian provinces, whose ratings remain in a narrow range of Aaa to Aa2.
- Alberta's net direct and indirect debt has increased to around 30% of total revenues in fiscal year 2014-15 and could increase to close to 50%-60% of total revenues by fiscal year 2016-17.
- These higher levels of debt would still be among the lowest of all Canadian provinces.
- Given the province's vulnerability to commodity price volatility, we expect oil-producing provinces to have a lower debt burden and substantially higher liquidity reserves compared to more diversified economies
- Unfettered access to a broad range of tax bases and the ability to alter expenditure programs provide Canadian provinces with substantial flexibility to meet fiscal challenges
- Canadian provinces benefit from a high degree of fiscal policy flexibility that is more akin to that of sovereign governments than to many of their international sub-sovereign peers
- Positive institutional factors increase Canadian provinces' ability to manage through economic downturns and handle relatively high debt burdens
- We expect oil prices will increase only gradually over the next 2-3 years (latest closing price WTI 48.41 \$/barrel as of July 24, 2015)
- In 2014-15, Alberta's oil revenues accounted for around 15% of total consolidated revenue
- We also consider the likelihood of extraordinary support coming from the federal government (Canada, rated Aaa, stable) to prevent a default by the province, should this extreme situation ever occur



## Credit Strengths

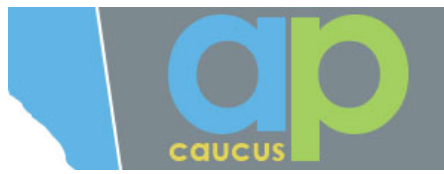
Standard & Poor's (Dec 18, 2015)

- We believe Alberta's budgetary flexibility is strong
- Modifiable (own-source) revenues represented 89% of operating revenues in fiscal 2015 (year ended March 31), which was in line with the long-term average
- Alberta's contingent liabilities are what we consider low
- Financial results for fiscal 2015 strengthened slightly as the operating surplus rose to 12% of operating revenues from 10% in fiscal 2014
- Alberta's high cash reserves ... help to improve our view of its budgetary performances and offset some of the long-term volatility seen in financial results
- According to our estimates, operating deficits should narrow to 2% in fiscal 2017 and zero by fiscal 2018
- Under our base-case forecast for fiscal years 2014-2018, we expect that Alberta will record an average operating surplus of about 3% of adjusted operating revenues and a large average after-capital deficit of about 12% of total revenues
- We continue to view the province's debt burden as moderate despite the rapid increase in its debt burden expected in the next two years
- Own-purpose tax-supported debt fell modestly, to 54% of operating revenues in fiscal 2015 from 56% a year earlier
- Alberta's interest expense remained very low and stable, representing 1.5% of adjusted operating revenue
- Interest expense should stay well below 5% of projected operating revenues in the next two fiscal years
- In our opinion, Alberta's liquidity levels are exceptional because of the province's continuing large holdings of cash and temporary investments
- We estimate that the province's free cash, liquid assets, and committed facilities will have represented almost 9x the next 12 months' debt service as of Sept. 30, 2015



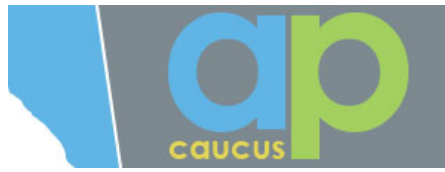
Moody's (Aug 6, 2015)

- Alberta has entered the current oil price downturn with low debt levels (30% of total revenue in 2014-15) and with a strong liquidity profile
- Cash and investments net of sinking funds amounted to around 270% of net direct and indirect debt and covered around 84% of annual expenditures
- The province's liquidity buffer is the highest of any Canadian province and exceeds the liquidity buffer of most US States. This provides the province with a cushion to withstand a temporary period of low oil prices and resulting budgetary deficits
- Alberta's financial assets include the Heritage Savings Trust Fund of CAD 15.0 billion and a CAD 6.5 billion Contingency Account (both at March 31, 2015)
- We do not anticipate a depletion of the Heritage Fund, a long-term savings fund created to invest a portion of Alberta's oil revenues for the benefit of future generations
- The province's low debt burden, its wealthy economy characterized by high income of its residents (average annual personal disposable income per capita \$35,189 in 2013), low unemployment rates (4.7% in 2014) and a low marginal tax rate provide all budgetary flexibility
- The province has also entered the current downturn from a position of fiscal strength, evidenced by the achievement of a CAD 1.1 billion consolidated surplus in 2014-15
- Alberta had been the growth engine of Canada for a substantial period of time thanks to a buoyant oil industry and resulting high population growth which supported household spending, housing markets and residential construction
- Alberta's estimated real GDP growth of 4.4% in 2014 remained above the expected national average of 2.5% in 2014
- Despite weaker oil prices, Alberta expects oil production to increase until 2020, albeit at a lower level than previously projected
- The Province of Alberta enjoys significant flexibility in its financial management
- The province has leeway to increase taxes
- The forecasted higher debt burden would still be among the lowest of all Canadian provinces
- ATB Financial has experienced strong growth in its loan portfolio over recent years
- Even under a severe stress scenario, we believe the province's financial exposure would remain limited
- The pension deficit has remained fairly stable and the province has implemented various measures to contain future pension liability growth and pension contributions such as increasing the age of retirement post 2015 or increasing early retirement penalties
- We expect Alberta to continue managing proactively its pension liabilities



DBRS (Nov 30, 2015)

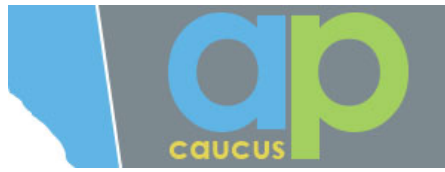
- As investment recovers from steep declines, a modest recovery is expected in 2016, with the Province forecasting real GDP growth 0.9%, which is just slightly below the current private sector consensus
- Although Alberta's DBRS-adjusted debt-to-GDP ratio is expected to peak at just under 15% by 2019–20, this is still a low debt burden in relation to other provinces. Furthermore, assets in the Contingency Account reached \$6.5 billion as of March 31, 2015, providing the Province with a modest degree of flexibility to finance deficits over the near term
- Despite recent increases to personal and corporate income taxes, the Province administers the most competitive tax system in the country and does not levy a sales tax. This provides Alberta with considerable flexibility to raise taxes further if needed, provided there is a political appetite to do so
- Alberta has historically been one of the provinces least reliant on federal transfers (13% of total revenues in 2014–15), which minimizes its exposure to changes in federal transfer programs
- Relative to provincial peers, Alberta boasts above-average population growth supported by steady international and interprovincial immigration and one of the highest birth rates in Canada. In addition, the median age (36.2 years) is the lowest across all provinces. This adds support to Alberta's economic growth potential when the current resource headwinds subside



## Credit Challenges

Standard & Poor's (Dec 18, 2015)

- [Oil and gas] exposure brings economic and fiscal volatility as oil and gas prices move, as the decline in oil prices indicates
- The prospects for energy prices have caused us to reassess Alberta's growth prospects as average, from above-average previously
- Despite solid results in fiscal 2015, we view Alberta's budgetary performances as weak stemming chiefly from the expected deterioration in results for fiscal 2016 and the following two years
- We believe the province's financial results are more volatile than those of other Canadian provinces because of the strong correlation of provincial revenues, especially nonrenewable resource revenues, with oil and natural gas prices
- With the province's fiscal 2016 borrowing plan, debt and debt burdens will rise substantially. We expect own-purpose tax-supported debt to rise to C\$34.3 billion by the end of fiscal 2016 and to C\$56.4 billion at the end of fiscal 2018 (80% and 119% of forecast operating revenues, respectively)
- We expect total tax-supported debt to increase to C\$38.8 billion by fiscal year-end 2016 and to C\$63.8 billion at fiscal year-end 2018, or to 87% and 131% of forecast consolidated operating revenues, respectively
- We expect Alberta's liquidity levels to decline in the next two years as the province uses its Contingency Account balance (C\$6.5 billion at the end of fiscal 2015) to partially fund the operating deficits it expects in fiscal years 2016 and 2017



Moody's (Aug 6, 2015)

- Alberta will likely use a significant portion of its Contingency Account to fund future deficits.
- In recent years the [Contingency] fund's net income has been used to support program expenses
- We expect the province to post real GDP growth rates close to zero in 2015 as a result of the oil price downturn
- As oil prices have declined sharply since last fall, Alberta faces a potential deficit of CAD 5.0 billion in 2015-16 and an extended period of deficits beyond that
- The province's debt burden could increase to 50-60% over the next 2-3 years from around 30% of revenues in 2014-15 as a result of lower revenues from oil royalties and continued heavy investment in infrastructure
- The province will need to rely on a combination of tight cost controls, revenue raising measures, and contingency fund drawdowns, as it returns to fiscal balance over the next few years
- Alberta faces some contingent liability risk via its provincial-owned bank, ATB Financial.
- The province guarantees ATB Financial's debt of around CAD 3.0 billion and customer deposits
- [ATB] would likely be reliant on the province in a period of financial stress
- Gross impaired loans could increase modestly as a result of lower oil prices but in 2013-14 amounted to only 0.44% of the total loan portfolio
- The province has also underfunded pension liabilities of around CAD 11.2 billion at March 31, 2015 (23% of revenues)



DBRS (Nov 30, 2015)

- For 2015–16, the budget points to a deficit of \$6.1 billion compared with \$5.0 billion at the time of the March budget. On a DBRS-adjusted basis, this equates to a shortfall of approximately \$9.8 billion, or 2.9% of GDP—the second-largest fiscal gap among all provinces
- Over the medium term, the deficit is projected to decline gradually before returning to a small surplus in 2019–20. This translates into DBRS-adjusted deficits of roughly 2.7% to 0.8% of GDP
- The current plan is based on a recovery in oil prices and containing spending, which has yet to be proven
- Based on budget estimates, DBRS-adjusted debt is forecast to rise by almost 25% in 2015–16
- Given the notable decline anticipated in nominal GDP, this is expected to boost the debt-to-GDP burden to 9.8%, up from 7.1% in 2014–15
- Ongoing fiscal deficits and an elevated capital plan will continue to pressure debt needs over the medium term. As a result, the debt-to-GDP ratio, as calculated by DBRS, is projected to reach approximately 14.0% by 2017–18 and peak at just under 15% in the outer two years of the fiscal plan
- As was first noted by DBRS in 2013, continued worsening of the debt outlook to the point where the debt-to-GDP ratio could remain above 15% for an extended period would put downward pressure on the ratings
- Royalty revenues add considerable volatility to fiscal results, as well as an element of uncertainty to the budgeting process. Non-renewable resource revenues accounted for 18% of total revenues in 2014–15 but have ranged from 18% to 40% over the past ten years. For 2015–16, they are projected to fall to 6% of total revenues
- As in other provinces, health care consumes the largest portion of program costs and, because of above-average inflationary pressures and increasing utilization, continues to grow at rates that outstrip growth in provincial revenues. Indeed, Alberta has been one of the least successful provinces at containing healthcare spending, with growth averaging 5.4% over the previous four years, although DBRS acknowledges that the Province has been facing above-average population growth
- Unfunded pension liabilities totaled \$11.2 billion as of March 31, 2015, and represent over 40% of Alberta’s DBRS-adjusted debt burden. DBRS notes that the majority of these obligations (\$8.4 billion) relate to the pre-1992 teachers’ pension plan, an obligation that is expected to reach a peak in the next three or four years and then begin to gradually decline
- Investment returns add considerable volatility to Alberta’s financial performance. In 2014–15, the Heritage Fund recognized gains of \$1.8 billion, down from \$2.3 billion in the previous year



## Rating History

- Alberta has received an AAA credit rating from rating agencies since 2001

### Standard & Poor's (Dec 18, 2015)

- Alberta issuer credit rating downgraded from **AAA/Stable/A-1+** to **AA+/Stable/A-1+**
- Alberta senior unsecured debt downgraded from **AAA** to **AA+**
- Alberta Capital Finance Authority senior unsecured debt downgraded from **AAA** to **AA+**

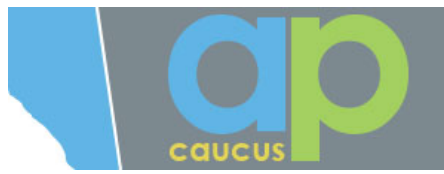
### DBRS (Nov 30, 2015)

- DBRS Limited (DBRS) has confirmed the Issuer Rating of the Province of Alberta (the Province) at **AAA**, along with its Long-Term Debt and Short-Term Debt ratings at **AAA** and **R-1 (high)**, respectively

### Moody's (Aug 6, 2015)

- Moody's Province of Alberta Rating
  - Outlook: **Stable**
  - Senior Unsecured Debt: **Aaa**
  - Short Term Issuer Rating: **P-1**
- Moody's ATB Rating
  - Outlook: **Stable**
  - Issuer Rating: **Aaa**
  - Short Term Issuer Rating: **P-1**





## Outlook

Standard & Poor's (Dec 18, 2015)

- The stable outlook reflects our expectations that the province's liquidity will continue to be exceptional in the next two years, real GDP growth will be positive in 2016 and 2017, and that the debt burden will remain moderate despite large deficit-driven increases in fiscal years 2016-2018
- The inability of the province to control operating and capital spending that leads to negative operating balances, after-capital deficits (above 15% of total revenues), and continuing large annual increases in the debt burden that are expected to persist beyond our outlook horizon or a precipitous decline in liquidity could place downward pressure on the ratings.
- Conversely, a return to after-capital surpluses and the reoccurrence of above-average economic growth prospects could result in a positive outlook or upgrade

DBRS (Nov 30, 2015)

- The trends remain Stable based on DBRS's view that the current deterioration in oil prices, and resulting deterioration in fiscal outlook and increase in debt, is manageable but is likely to exhaust flexibility within the current ratings
- Further erosion in the fiscal outlook, leading to potentially higher debt than currently projected, would be cause for concern for DBRS

Moody's (Aug 6, 2015)

- The Aaa long-term debt rating assigned to the Province of Alberta benefits from the province's:
  - Low debt burden and high debt affordability;
  - Substantial holdings of cash and investments (around 270% of net direct and indirect debt at March 31, 2015)
  - The scale and wealth of its economy
- A loss of fiscal discipline leading to significant, sustained increases in debt burden above 60% of revenue combined with evidence of failure to protect the fair value of its long-term investment fund, the Heritage Fund, could exert downward pressure on Alberta's Aaa rating



## Quantitative Factors



## Key Statistics

Moody's (Aug 6, 2015)

Fiscal Year Ending March 31	2011	2012	2013	2014	2015
Net Direct & Indirect Debt as a % of Revenues	14.6	14.4	17.8	23.9	30.4
Net Direct & Indirect Debt as a % of GDP	2.1	2.1	2.4	3.5	4.1
Cash Financing Surplus (Requirement) as a % of Revenues	(14.0)	(10.6)	(17.2)	(6.5)	(2.4)
Consolidated Surplus (Deficit) as a % of Revenues	(5.8)	(0.3)	(7.3)	(0.6)	2.3
Total Interest Expense as a % of Revenues	1.2	1.2	1.2	1.2	1.5
Intergovernmental Transfers as a % of Revenues	14.1	12.0	11.9	14.3	12.1
Real GDP Growth (%)	5.7	4.5	3.8	4.4	0.4

Standard & Poor's (Dec 18, 2015)

Fiscal Year Ending March 31	2013	2014	2015	2016	2017	2018
Population	3,888,552	4,007,748	4,120,897	4,196,457	4,255,207	4,314,780
Population Growth (%)	2.6	3.1	2.8	1.8	1.4	1.4
GDP per capita (CDN)	80,360	85,947	91,183	81,124	83,204	87,225
Real GDP Growth (%)	3.9	5.1	4.8	(1)	0.9	2.4
Unemployment Rate (%)	4.6	4.6	4.7	5.8	6.2	5.8

DBRS (Nov 30, 2015)

Fiscal Year Ending March 31	2015	2014	2013	2012	2011
Net Debt/GDP (%)	9.8	7.1	6.7	5.4	4.7
Surplus (Deficit)/GDP (%)	(2.9)	(0.4)	(0.2)	(1.4)	(0.5)
Federal Transfers/Total Revenue (%)	15.9	13.0	11.4	11.9	12.0
Debt Servicing Costs/Total Revenue (%)	1.8	1.5	1.3	1.2	1.2
Real GDP Growth (%)	(1.0)	4.8	5.1	3.9	6.4



## Government Budget Assumptions

### Revenue and Expenditure Analysis

#### Revenues

The government plan is based on strong revenue growth averaging about 6.6% per year over the next five years, i.e. 2016 through 2020. This is generally in line with the government's estimates for growth in the economy; a broad measure of total non-energy revenue growth. Alberta's nominal GDP is estimated by the government to grow at about 6% per year over the next five calendar years.

Under the government's plan, WTI crude oil prices are projected to average about \$70.50 U.S. per barrel over the next four fiscal years, while bitumen prices are projected to average about \$62.85 Canadian per barrel over the same time frame. Natural gas prices are projected to average \$3.25 per GJ over the forecast period.

Primary household income and employment growth, proxies used to calculate growth in the personal income tax base, are estimated by the NDP to grow at 4.3% and 1.7% per year, respectively, between 2016 and 2020.

The net corporate operating surplus, a loose proxy for calculating growth in the corporate income tax base, is forecast to grow at 21.5% per year between 2016 and 2020.

However, Alberta's economic and energy price outlook has deteriorated significantly since the fall of 2015, placing the government's plan to balance the budget in 2019/20 in very serious jeopardy.

The Alberta Party has surveyed a number of private sector forecasters (i.e. the Conference Board of Canada, TD Bank, CIBC World Markets, BMO Capital Markets, RBC Capital Markets, Laurentian Bank, National Bank, Scotiabank, Deloitte, GLJ Petroleum Consultants, McDaniel and Associate, Sproule Associates and the U.S. Energy Information Administration) to assess the most current projections for Alberta's economy between 2016 and 2020.

The following table of key economic indicators, which drive total non-energy revenue growth, including personal income tax and corporate income tax, shows the difference between the forecasts in the 2015 budget and the average of the latest private sector forecasts. On estimates of growth in nominal GDP, primary household income, net corporate operating surplus, and employment, the government plan is far more bullish than the latest private sector forecasts.

Key Economic Indicators (2016-2020)	NDP Budget 2015 Average	Average Private Sector Forecasts	Difference
Nominal GDP Growth (%)	6.0%	4.7%	-1.3%
Primary Household Income Growth (%)	4.3%	3.9%	-0.4%
Net Corporate Operating Surplus Growth (%)	21.5%	9.2%	-12.3%
Employment Growth (%)	1.7%	1.0%	-0.7%
Unemployment Rate (%)	5.4%	5.4%	0%

The following table of key price indicators, which help drive non-renewable revenues (NRR), shows the difference between the forecasts in the 2015 budget and the average of private sector forecasts. These indicators include bitumen royalties, crude oil royalties and natural gas royalties. On estimates of non-renewable revenues (NRR), including bitumen royalties, crude oil royalties and natural gas royalties, the government plan is again far more bullish than the latest private sector forecasts.

While there is some gain in NRR due to the lower exchange rate (4.5 cent positive difference), the negative price differences on WTI crude oil prices, WCS bitumen prices, and the Alberta gas reference price (ARP), far outweigh any gains achieved from the favorable exchange rate differential.

Key Price Indicators (2016 -2020)	NDP Budget 2015 Average	Average Private Sector Forecasts	Difference
WTI Crude Oil (USD/BBL)	\$70.50	\$60.17	-\$10.33
WCS Bitumen Price (CDN/BBL)	\$62.85	\$57.36	-\$5.49
Natural Gas (CDN/GJ)	\$3.25	\$2.97	-\$0.28
Exchange rate (USD/CDN)	82.75 cents	78.25 cents	+4.5 cents

Downside risk to the government's plans revenue forecast continues to be significant, primarily related to slower employment growth and growing numbers of unemployed Albertans which impact household income and personal income taxes; and low energy prices, continued strong U.S. non-conventional oil and gas production, lack of pipeline takeaway capacity for Alberta's oil sands production and sliding corporate profits which impact NRR and corporate income taxes.

#### *Expenses*

The government plan is based on holding operating spending to just 2.2% per year over the next four fiscal years, i.e. 2016/17 through 2019/2020, including restraining spending on health care to less than 2.8% per year over the forecast period.

However, there are a number of risks to meeting these ambitious operating expense targets.

The government plan for constraining operating spending at an average of 2.2% per year over the next four fiscal years is less than the combined projected average growth in population and inflation (3.5%) in Alberta over the same time frame.

However, operating spending levels projected under the government plan do not include operating grants under the Carbon Tax Adjustment Fund for low- and middle-income Albertans, rural communities and small businesses, or operating grants for an energy efficiency program.

The operating expense forecast under the government plan also does not include funding for phasing-in of full-day kindergarten, as outlined in the 2015 NDP Election Platform. There is also an increasing likelihood that number of other operating spending commitments announced in the 2015 Fall Budget may not be fully funded over the forecast period.



The operating expense targets in the government plan do not include any details on how the government intends to reach its targets for savings arising out of “program re-allocations”, which are projected to increase from \$250 million annually to \$400 million annually over the forecast period.

The deterioration in Alberta’s economic forecast since the 2015 Fall Budget will also place pressure on benefit programs such as income supports, AISH, supports to persons with disabilities, homelessness and outreach support, as well as operating grants provided to support adult learning.

Although the government plan intends to hold health care operating spending to just 2% per year, beginning in FY 2018/19, there is no detailed plan provided in Fall Budget 2015 on how the government intends to “bend the health care spending curve”.

With respect to capital grants, the government plan does not include any capital grants to municipalities for “green infrastructure” under the Alberta Climate Change Leadership Plan.

There are a number of other additional downside risks to the government’s plan expense outlook including the infrastructure renewal and maintenance backlog, operating costs associated with increased capital spending, public sector salary and wage settlements, and higher borrowing costs due to increased bond rate spreads with AAA jurisdictions, such as B.C., and the recent downgrade of the Province’s credit rating by Standard and Poor’s.

In the absence of significant additional fiscal action from the government to deal with the large revenue shortfall arising from the a deteriorating economy and depressed energy prices, as evidenced by the most recent private sector price forecasts, budget deficits in FY 2016/17, 2017/18, and 2018/19 will be far larger than forecast.

Increasing budget deficits over the next four fiscal years will also likely increase the level of borrowing for the operating plan, increasing debt servicing costs beyond the estimates laid out.

## Non-Renewable Resource Revenue Analysis

The economic environment has changed substantially since budget 2015 was released. While the government of Alberta does not have direct control over global commodity prices, the projections used in the budgetary process dictate the future planning process for all parties which interact with the Government of Alberta. Below is comparison of the assumptions used in the 2015 budget, the Q3 economic update, and projections derived from the market using both historical and forward contract pricing.

### Budget 2015 Assumptions

<i>Fiscal Year</i>	2015	Q3 Update	2016	2017
<i>WTI (USD/BBL)</i>	50.00	45.00	61.00	68.00
<i>WCS (CND/BBL)</i>	46.50	41.60	55.90	60.50
<i>Differential (USD/BBL)</i>	13.60	13.40	16.30	18.50
<i>Exchange Rate (USD/CDN)</i>	0.78	0.76	0.80	0.82
<i>Natural Gas Price (CDN/GJ)</i>	2.60	2.30	2.80	3.20

### Market Projections

<i>Fiscal Year</i>	2015	2016	2017
<i>WTI (USD/BBL)</i>	45.70	37.70	42.82
<i>WCS (CDN/BBL)</i>	42.83	45.88	52.25
<i>Differential (USD/BBL)</i>	12.72	4.21	4.68
<i>Exchange Rate (USD/CDN)</i>	0.77	0.73	0.73
<i>Natural Gas Price (CDN/GJ)</i>	2.52	2.12	2.60

### Non-Renewable Resource Revenue Projections Comparison (\$M)

<i>Fiscal Year</i>	2015	2016	2017
<i>Budget 2015 Projection</i>	2,767	3,412	4,365
<i>Market Based Projection</i>	2,248	1,558	2,614
<i>Difference</i>	(519)	(1,854)	(1,751)
<i>Q3 Updated Projection</i>	2,474		

Clearly the accuracy of these projections is vitally important to the stability of Alberta. Even accounting for the surpluses created by the exchange rate and differential divergences, Alberta is facing a cumulative revenue shortfall of up to \$4 billion. The information found following this page is a breakdown of both industry consensus and market projections around four areas of sensitivity. The industry consensus is built using an average of industry analyst projection reports, and the market projections are created using forward contract pricing publicly available through various financial sources.



### Oil Price Benchmark (West Texas Intermediate, US\$/bbl)

Organization	2015	2016	2017	2018	2019	2020
<b>CBoC (Oct. 2015)</b>	48.73	37.06	45.29			
<b>TD Economics (Jan 2016)</b>	48.75	43.75	58.50	-	-	-
<b>CIBC Economics (Jan. 2016)</b>	48.71	45.00	65.00	75.00	-	-
<b>BMO Economics (Jan 2016)</b>	48.69	40.00	50.00	-	-	-
<b>RBC (Jan. 2016)</b>	48.75	40.28	56.53	-	-	-
<b>Laurentian Bank Economics (Feb. 2016)</b>	47.33	49.50	75.00	-	-	-
<b>National Bank (Dec. 2015)</b>	49.00	50.00	57.00			
<b>Scotiabank Economics (Jan. 2016)</b>	49.00	45.00	50.00	-	-	-
<b>Deloitte (Dec. 2015)</b>	48.68	42.00	48.45	57.20	66.35	75.75
<b>GLJ (Jan. 2016)</b>	48.82	44.00	52.00	58.00	64.00	70.00
<b>McDaniel and Associates (Jan. 2016)</b>	48.85	45.00	53.60	62.40	69.00	73.10
<b>Sproule and Associates (Jan. 2016)</b>	48.80	43.90	60.00	70.00	80.00	81.20
<b>EIA (Feb. 2016)</b>	48.67	37.59	50.00	-	-	-
<b>PBO (Dec. 2015)</b>	50.00	49.00	53.00	55.00	57.00	59.00
<b>Finance Canada (Nov. 2015)</b>	49.00	54.00	64.00	68.00	70.00	74.00
<b>Dodge (Oct. 2015)</b>	51.00	52.75	54.50	56.25	58.00	63.00
<b>Average Calendar Year</b>	<b>48.92</b>	<b>44.93</b>	<b>55.80</b>	<b>63.63</b>	<b>67.34</b>	<b>71.76</b>

### Alberta Natural Gas Reference Price Benchmark (Cdn\$/GJ)

Organization	2015/16	2016/17	2017/18	2018/19	2019/20
Average of GLJ (ARP) (Cdn\$/GJ) (Jan. 2016) and Deloitte (ARP) (\$Cdn/GJ) (Dec., 2015)	<b>2.48</b>	<b>2.50</b>	<b>2.89</b>	<b>3.12</b>	<b>3.36</b>

### Canada-U.S. Exchange Rate Benchmark (U.S. cents/Cdn\$)

Organization	2015	2016	2017	2018	2019	2020
<b>CBoC (Oct., 2015)</b>	78.00	71.00	77.00	81.00	83.00	84.00
<b>TD Economics (Jan. 2016)</b>	76.50	71.25	74.75	-	-	-
<b>CIBC Economics (Jan 2016)</b>	72.00	72.00	75.50	-	-	-
<b>BMO Economics (Feb. 2016)</b>	78.30	69.70	73.70	-	-	-
<b>Laurentian Bank Economics (Feb. 2016)</b>	76.50	74.50	79.50	-	-	-
<b>Scotiabank Economics (Feb. 2016)</b>	72.00	72.00	79.00	-	-	-
<b>RBC (Jan. 2016)</b>	78.00	72.00	78.00	-	-	-
<b>National Bank (Feb. 2016)</b>	76.50	72.50	78.00	-	-	-
<b>Deloitte (Dec. 2015)</b>	78.30	74.00	77.00	80.00	80.00	80.00
<b>GLJ (Jan. 2016)</b>	78.32	72.50	75.00	77.50	80.00	82.50
<b>McDaniel and Associates (Jan. 2016)</b>	78.00	73.00	75.00	80.00	80.00	82.50
<b>Sproule and Associates (Jan. 2016)</b>	78.30	74.62	80.00	83.00	85.00	85.00
<b>PBO (November 2015)</b>	78.40	75.40	75.00	74.90	74.70	74.70
<b>Finance Canada (Dec. 2015)</b>	78.20	75.40	78.80	81.40	83.30	84.90
<b>Average</b>	<b>76.95</b>	<b>72.85</b>	<b>76.88</b>	<b>79.69</b>	<b>80.86</b>	<b>81.94</b>

### Light-Heavy Oil Price Differential Benchmark (WTI-WCS Price Differential, U.S.\$/bbl)

	2015	2016	2017	2018	2019	2020
<b>Average</b>	<b>13.92</b>	<b>13.28</b>	<b>12.52</b>	<b>14.44</b>	<b>13.77</b>	<b>13.26</b>



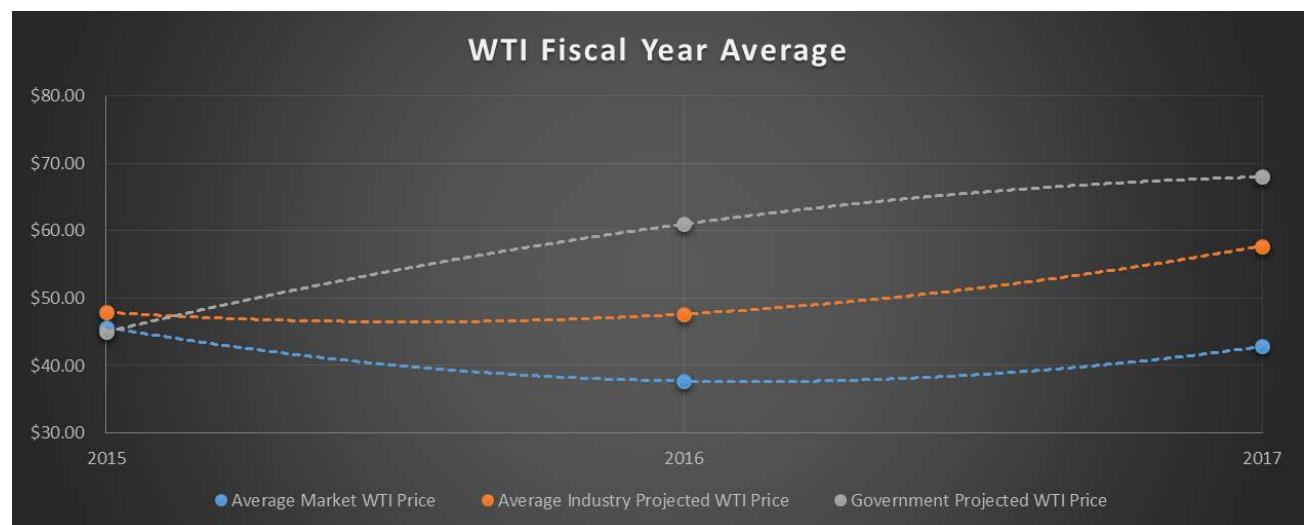
## WTI Forecast

The difference in WTI price moving forward is a projection with significant impacts on the provincial government's budget. Each \$1 decrease in the price of WTI is worth \$170 million in non-renewable resource revenue.

The difference between the projections set out in the 2015 budget and the current market projects comprised of historic prices and futures contracts is \$4.30/barrel. Furthermore, the difference between the 2015 budget and current industry projections is \$2.08/barrel. These differences mean that the 2015 non-renewable resource revenue presented in the budget is off between \$731 million and \$354 million. This is partly accounted for in the Q3 update, when the WTI benchmark price was revised down to \$45/barrel.

The troubling trend can be seen when these projections are drastically off over time. Over the course of the next three years the cumulative shortfall in revenues will be between \$8.9 billion and \$4.4 billion. To put this into perspective, the cumulative shortfall facing the government of Alberta is the equivalent of removing the entire ministry of education from the budget for one year.

The divergence of government projections and actual price figures can be crippling for Alberta. The revenue gained through royalties will remain volatile moving forward and is risky to rely on for program funding.



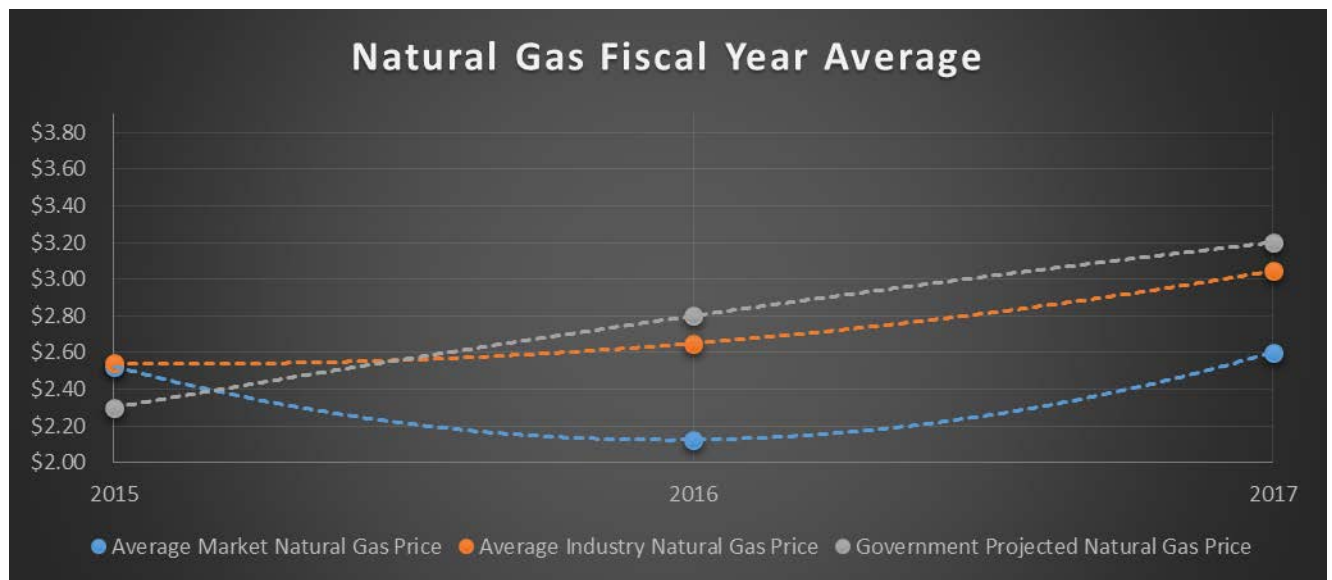
<i>Fiscal Year</i>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<i>Average Market WTI Price</i>	\$ 45.70	\$ 37.70	\$ 42.82
<i>Average Industry Projected WTI Price</i>	\$ 47.92	\$ 47.65	\$ 57.76
<i>Government Projected WTI Price</i>	\$ 45.00	\$ 61.00	\$ 68.00

## Natural Gas Forecast

Another source of non-renewable resource revenue for the government is royalties attained through natural gas production. Each \$0.10 decrease in the price of natural gas is worth \$35 million in revenue for the provincial government.

Having experienced a radical price shift in the past, the price of natural gas has become much less volatile. However, these differences mean that the 2015 non-renewable resource revenue presented in the 2015 budget is off between \$265 thousand and \$210 thousand.

The trend moving forward shows a divergence in projects. Over the course of the next three years the cumulative shortfall in revenues will be between \$4.73 million and \$1.26 million. While certainly not as drastic as oil revenue shortfalls, this sum of money could go a long way towards paying for essential services Albertans rely on.



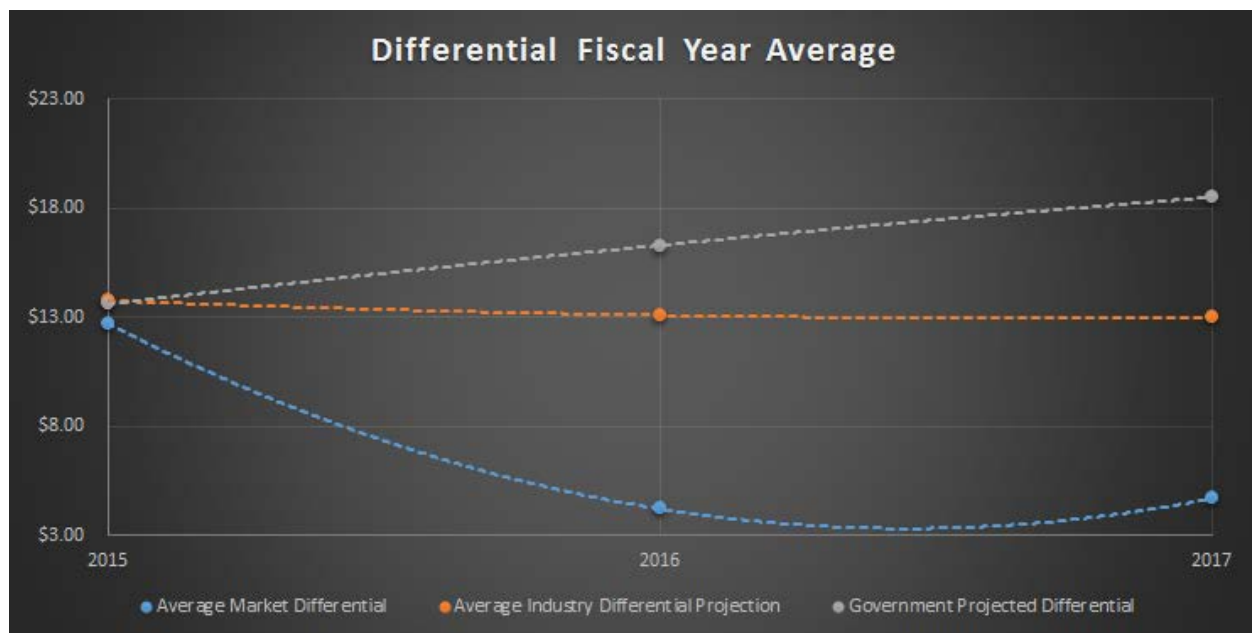
<i>Fiscal Year</i>	2015	2016	2017
<i>Average Market Natural Gas Price</i>	\$ 2.52	\$ 2.12	\$ 2.60
<i>Average Industry Natural Gas Price</i>	\$ 2.54	\$ 2.65	\$ 3.05
<i>Government Projected Natural Gas Price</i>	\$ 2.30	\$ 2.80	\$ 3.20

## Differential Forecast

One factor that has dramatic impacts on the provincial budget is the differential between light crude oil and heavy crude oil. This factor is relevant in the Alberta context due to the geo-political reality that Alberta faces when exporting our resources. When contemplating the global price Alberta takes when selling oil, it is mainly this attribute that would be affected should pipeline projects get approved. In short, the larger the differential the weaker the price Alberta receives for its oil.

According to the 2015 Alberta budget, for every \$1 increase to the differential, there is approximately a \$105 million decrease to provincial revenues. This means that for the difference between the 2015 budget projection of \$13.60/barrel and both the market derived projection of \$12.72/barrel as well as the average industry projection of \$13.76/barrel, the budget could be off by a surplus of \$92.31 million or by a \$16.8 million deficit.

The trend moving forward shows a very clear divergence between all three projections. The market projection is reflective of the depressed price of WTI along with the consistently low exchange rate. These two factors contribute to make the differential very narrow. Industry experts on the other hand are forecasting a much more substantial increase in the price per barrel of WTI which would increase the differential holding all things equal. The cumulative effect of these difference mean the 2015 budget projection could have a surplus between \$2,813 million and \$898 million. It is interesting to note that in this case, the 2015 budget projection is the more conservative estimate.



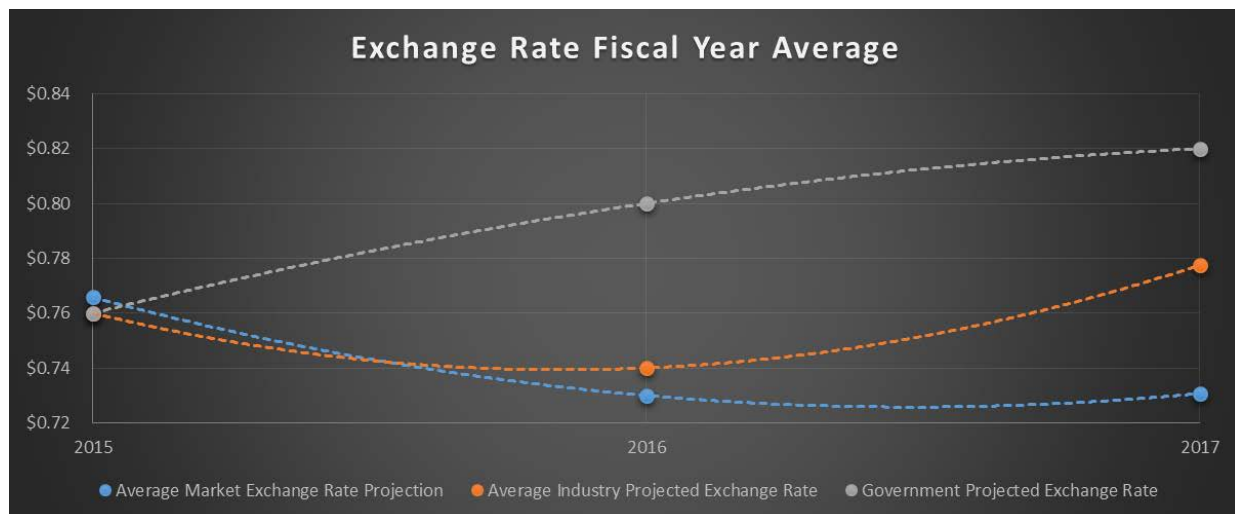
<i>Fiscal Year</i>	2015	2016	2017
<i>Average Market Differential</i>	\$ 12.72	\$ 4.21	\$ 4.68
<i>Average Industry Differential Projection</i>	\$ 13.76	\$ 13.09	\$ 13.00
<i>Government Projected Differential</i>	\$ 13.40	\$ 16.30	\$ 18.50

## Exchange Rate Forecast

One of the more important sensitivities that impact Alberta's export driven economy is the exchange rate. Generally speaking, the lower the exchange rate, the more Alberta is able to export to our trade partners. This means that while a relatively low Canadian dollar might not be good for those wishing buy imported goods from other countries, a low dollar is good for our economy.

The 2015 provincial budget has a rather optimistic view of the Canadian dollar and has it strengthening each year. This trend is not echoed by either industry or the market however. In the 2015 fiscal year, the market averages the exchange rate at \$0.77 USD/\$1 CAD and industry experts project the exchange rate to average out at \$0.76 USD/\$1 CAD.

The cumulative effect over the next three fiscal years of these projections mean that there will be a surplus between \$2,040 million and \$1,440 million. Again in this instance, the government projection is the more conservative in terms of revenue calculations.



<i>Fiscal Year</i>	2015	2016	2017
<i>Average Market Exchange Rate Projection</i>	\$ 0.77	\$ 0.73	\$ 0.73
<i>Average Industry Projected Exchange Rate</i>	\$ 0.76	\$ 0.74	\$ 0.78
<i>Government Projected Exchange Rate</i>	\$ 0.76	\$ 0.80	\$ 0.82

## Ratio Analysis

### Debt to GDP

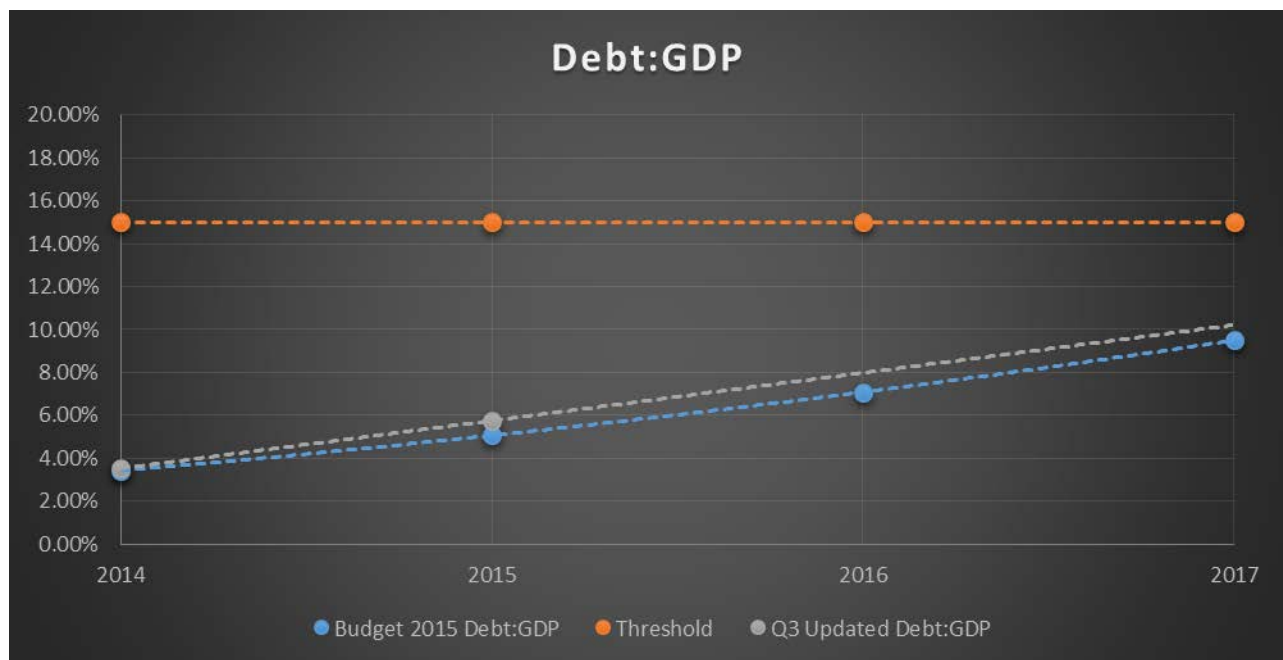
#### Purpose

- Common measure used to evaluate a jurisdiction's debt burden, which is calculated as the jurisdiction's total amount of debt divided by the jurisdiction's GDP
- Credit ratings agencies use this measure of resources primarily to facilitate comparisons of debt burdens between Canadian provincial governments
- Used by DBRS in their rating methodology reports as one of the benchmarks for rating the debt affordability of the provinces
  - DBRS requires that the debt to GDP ratio be less than 15% for a AAA rated jurisdiction

#### Trend

- The Alberta NDP government has substantially increased borrowing not only for capital expenditures, but also to cover operating expenses
  - This would also increase the debt to GDP ratio holding all other factors constant
- The combined effect of both of these events is causing the debt to GDP ratio to increase significantly in Alberta
- The Alberta Party Caucus predicts that if the Government of Alberta is required to borrow to fund the proposed \$10 billion deficit in the 2016 fiscal year, this metric will meet or exceed the 15% threshold within four years

#### Graph



Fiscal Year	2014	2015	2016	2017
Budget 2015 Debt:GDP	3.42%	5.09%	7.06%	9.51%
Q3 Updated Debt:GDP	3.53%	5.75%	-	-
Threshold	15.00%			

## Total Debt to Revenues

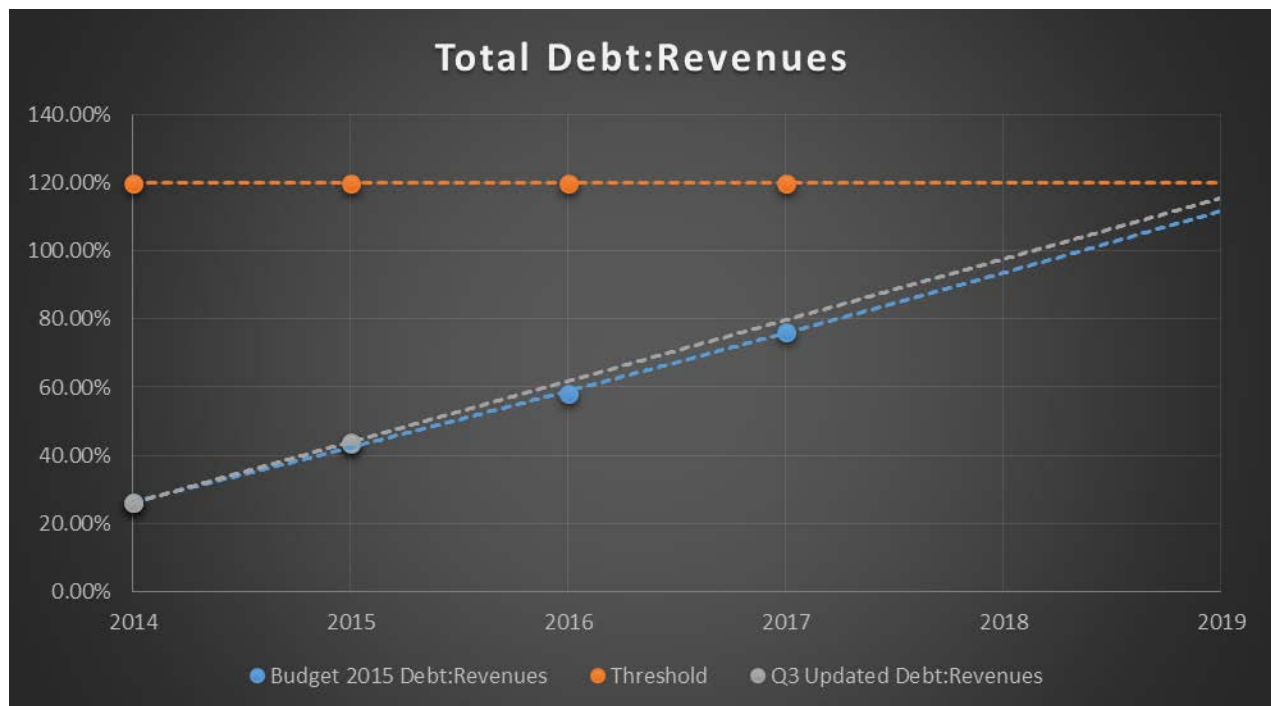
### Purpose

- A measure to gauge affordability based on a government's outstanding debt at a given point
- Captures the long-term nature of the debt obligation
- Explains the debt burden in relation to recurrent resources available to cover costs
- Used by Standard and Poor's in its rating methodology report as one of the benchmarks for rating debt affordability

### Trend

- With the collapse of oil prices, Alberta's revenue has dropped significantly
  - This would increase the ratio holding all other factors constant
- The Alberta NDP government has substantially increased borrowing not only for capital expenditures, but also to cover operating expenses
  - This would also increase the debt to revenues ratio holding all other factors constant
- Standard and Poor's uses a threshold of less than 120%
- The Alberta Party Caucus predicts that should the Government of Alberta substantially increase borrowing to cover the proposed \$10 billion deficit in the 2016 fiscal year, this metric will approach the threshold within the next four years

### Graph



Fiscal Year	2014	2015	2016	2017
Budget 2015 Debt:Revenues	26.00%	43.25%	57.96%	76.29%
Q3 Updated Debt:Revenues	26.00%	43.91%	-	-
Threshold	120.00%			

## Debt Servicing Costs to Total Revenue

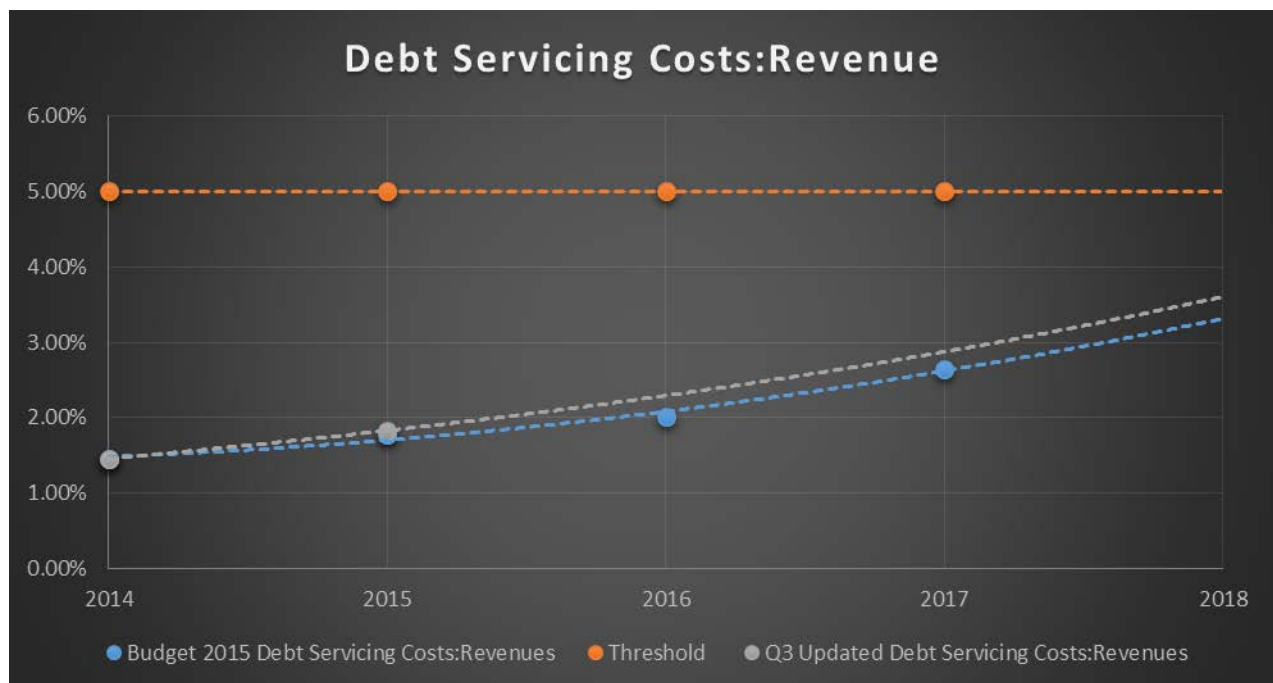
### Purpose

- Most frequently used metric to assess the affordability of debt obligations
- Compares the principal and interest costs associated with debt for a given period with revenues over the same length of time
- The best indicator of the near-term affordability of debt
- Used by DBRS and Standard and Poor's in their rating methodology reports

### Trend

- With the collapse of oil prices, Alberta's revenue has dropped significantly
  - This would increase the ratio holding all other factors constant
- The Alberta NDP government has substantially increased borrowing not only for capital expenditures, but also to cover operating expenses
  - This would also increase the debt to revenues ratio holding all other factors constant
- Standard and Poor's uses a threshold of 5% as a AAA rating standard
- With the government's announcement that the 2016 fiscal year may feature a \$10 billion deficit, this metric will approach the 5% threshold within the next four years

### Graph



Fiscal Year	2014	2015	2016	2017
Budget 2015 Debt Servicing Costs:Revenue	1.46%	1.78%	2.01%	2.64%
Q3 Updated Debt Servicing Costs:Revenue	1.46%	1.83%	-	-
Threshold	5.00%			



## Surplus to GDP

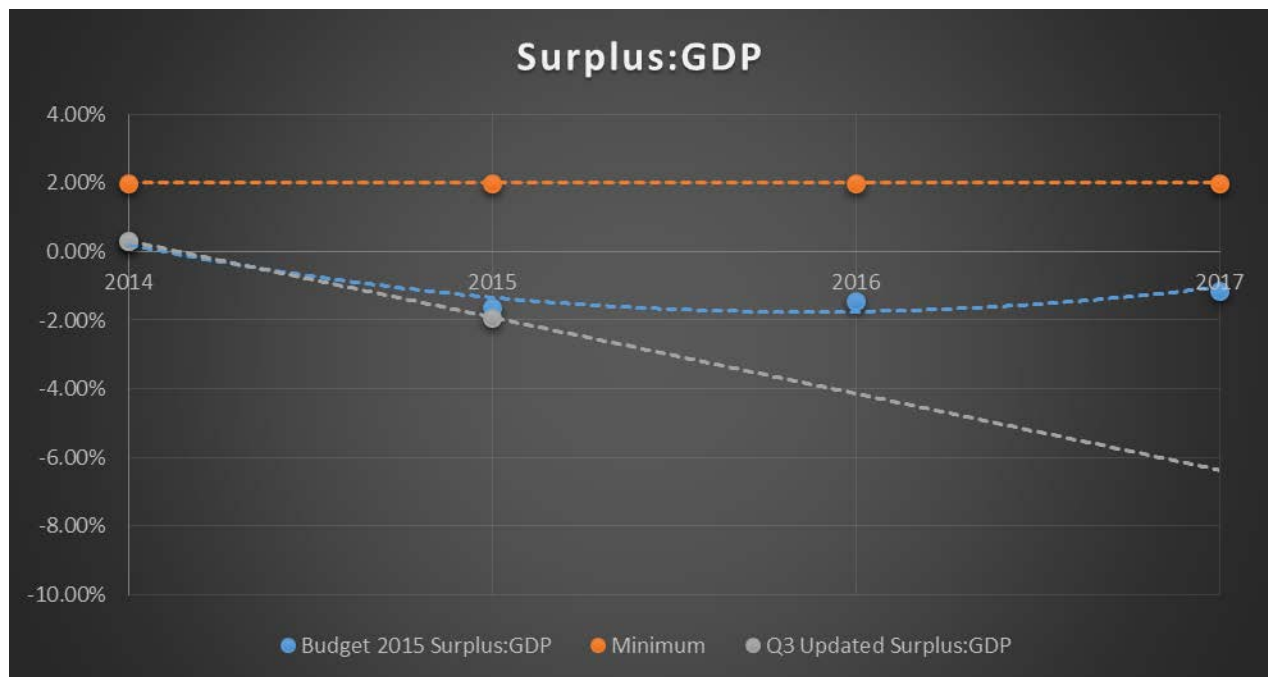
### Purpose

- A measure to gauge provincial cash flows in relation to economic output
- Captures the ongoing affect to provincial assets and the relative strength of the economy
- Used by DBRS as a metric in assessing the provinces credit rating

### Trend

- As the province is currently in a period of deficit financing the ratio will be negative
- The Government of Alberta has suggested that the 2016 fiscal year could feature a \$10 billion deficit which would severely impact this ratio
- DBRS requires that a jurisdiction have a recurring consolidated surplus to GDP ratio of more than 2% in order to maintain a AAA rating
- Currently, the ratio is much lower than the 2% minimum, and the Alberta Party Caucus is predicting that this metric will not recover for some time

### Graph



<i>Fiscal Year</i>	2014	2015	2016	2017
<i>Budget 2015 Surplus:GDP</i>	0.30%	(1.64%)	(1.44%)	(1.14%)
<i>Q3 Fiscal Updated Surplus:GDP</i>	0.31%	(1.92%)	-	-
<i>Required Minimum</i>	2.00%			



## Peer Group Comparison

One important source of cash for any government is derived through debt. Debt funding is used by the Government of Alberta to fund capital projects such as schools, roads, hospitals, etc. As well, in the 2015 provincial budget the government has once again begun to use debt to pay for operational spending which, until recently, was not the norm in Alberta. This increased reliance on debt leverages the assets of the province now in order to receive funding which weakens the provinces financial position over time until the debt has been repaid. While the province does have a strong balance sheet, meaning a strong base of assets to borrow against, this continued financial leveraging becomes more risky the more it is used. This is why monitoring the level of debt for Alberta is vitally important not only for current residents, but also for future generations.

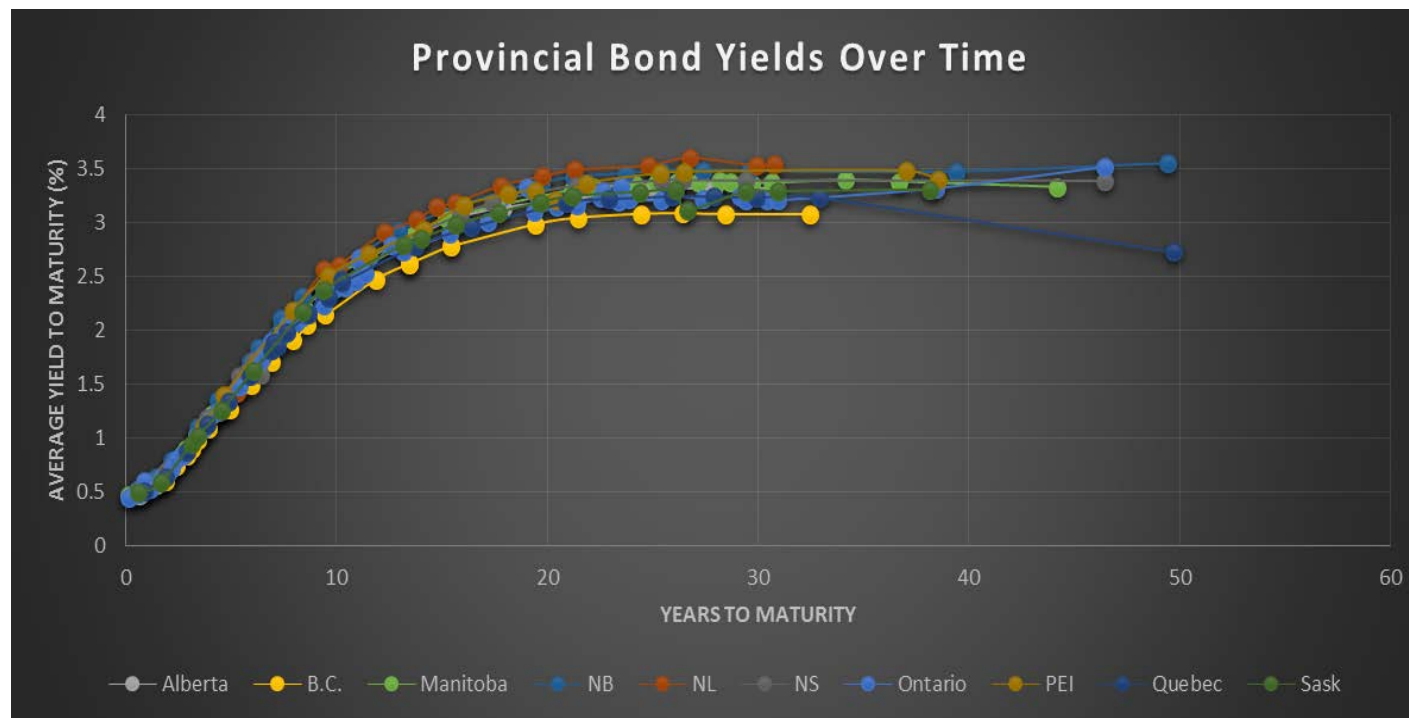
Below is a comparison of the credit ratings of each of the Canadian provinces, by the three major bond rating agencies. Looking at this comparison, it can be seen that Alberta ranks very highly relative to the other Canadian provinces. Due to this fact, Alberta is able to access some of the lowest cost debt available through the bond market. However, Standard & Poor's has already downgraded Alberta's credit rating from the coveted AAA to AA+. Additionally, the other two rating agencies have placed Alberta on notice of a credit downgrade. Usually, once an agency has placed an entity on notice, a credit downgrade is likely to follow.

#### Provincial Credit Rating Comparison \*

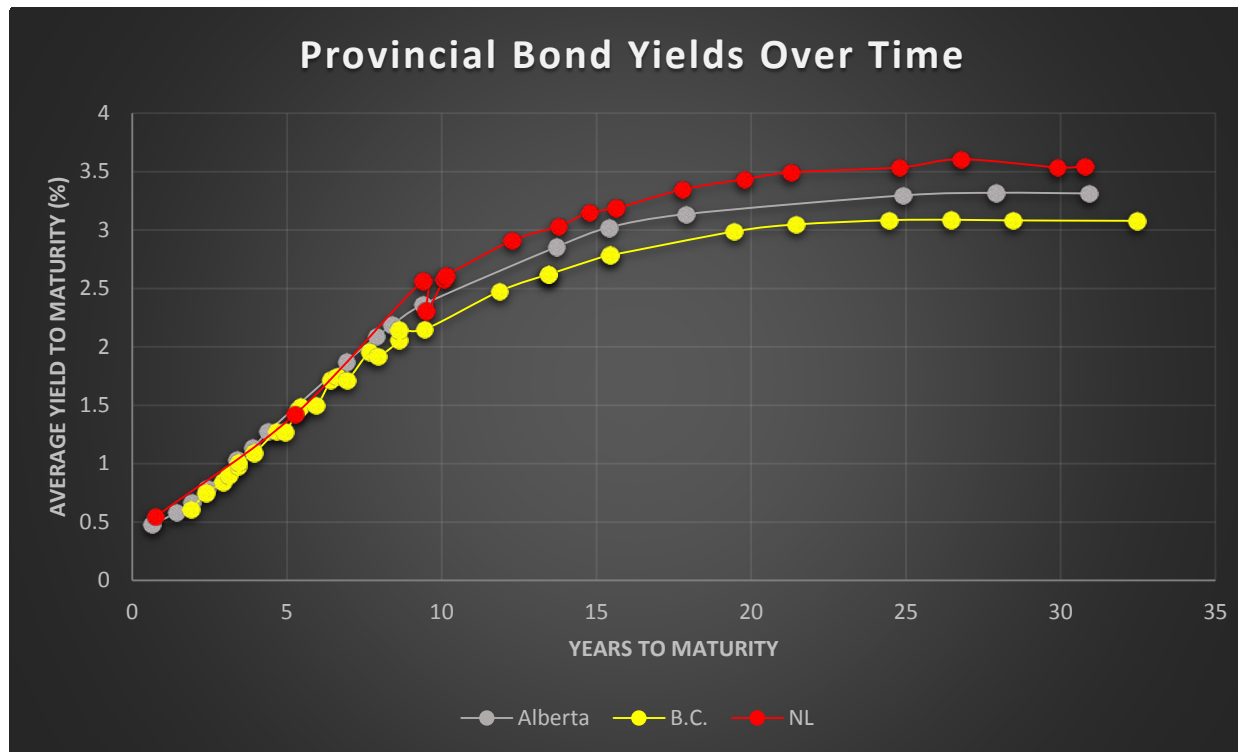
Province	Standard & Poor's	Dominion Bond Rating Service (DBRS)	Moody's Investors Service
Alberta	AA+	AAA	Aaa
British Columbia	AAA	AA (high)	Aaa
Saskatchewan	AAA	AA	Aaa
Manitoba	AA	A (high)	Aa2
Ontario	A+	AA (low)	Aa2
Quebec	A+	A ( high)	Aa2
New Brunswick	A+	A (high)	Aa2
Nova Scotia	A+	A (high)	Aa2
Newfoundland	A+	A	Aa2
Prince Edward Island	A	A	Aa2

\* Ratings reports are issued to individual provinces and not necessarily at the same time.

The question still remains though, how does this actually effect the province? To answer this question it is first helpful to examine where Alberta stands relative to our neighbors. The graph below is a plot of the 10 provinces' current bond offerings. It is easy to see that interest rates are lower when the time until the bonds mature is shorter, and vice versa for when time until maturity is longer. It is also easy to see that all the provinces are able to attain different rates from their counterparts. Without diving into fixed income security pricing theory too deeply, a bond's interest rate (Yield to Maturity) is comprised of a number of factors including provincial population, credit rating, liquidity, etc. Ultimately though, it is the yield to maturity which dictates the amount of money the province can raise through a bond offering.



To explain how this process works, let's look at only three provinces: Alberta, B.C., and Newfoundland. As can be seen in the following graph, Alberta receives rates that are in between the other two provinces. An important concept to know is that there is an inverse relationship between bond yields and bond prices. This means generally, the higher the yield to maturity, the lower the price of the bond. With that in mind, when we examine these three provinces bond offerings, we can tell that Newfoundland's bond yield is higher than Alberta's and therefore the price of the Newfoundland bond must be lower than the price of Alberta's bonds. The opposite is true when comparing Alberta's bonds and B.C.'s bonds. This comparison allows us to see the difference between these three provinces when it comes times to issue a bond on the market.





Using this data in a hypothetical bond release, we can calculate the actual funding differences between the provinces. Below is a chart that has this hypothetical situation outlined:

**Bond Issue (FV): \$1,000,000,000**

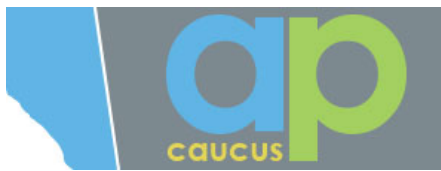
**Funds Received (PV): \$1,000,000,000**

**Payments (P/Y): Semi-annual**

**Payback Period (N): 30 years**

Province	Bond length in years	YTM (Given by graph)	Final Payout	Funds received at issue	Annual Payment	Cumulative Interest Payments
<b>AB</b>	30	3.25%	\$1 billion	\$1 billion	\$32.5 million	\$975 million
<b>B.C.</b>	30	3.05%	\$1 billion	\$1 billion	\$30.5 million	\$915 million
<b>NL</b>	30	3.5%	\$1 billion	\$1 billion	\$35 million	\$1.050 billion

This hypothetical situation shows how even a few basis point difference in the provincial bond's yield to maturity can result in a multi-million dollar debt servicing cost difference. In the example above, because of the different yield to maturity, Alberta would pay \$2,500,000 less interest than Newfoundland, and \$2,000,000 more than B.C. Cumulatively, over the life of this bond, these differences become exasperated. At the end of the bond, Alberta would have paid \$75 million less than Newfoundland, but \$60 million more than B.C. in debt servicing costs. This is the reason that the province must focus on maintaining a high credit rating, and ensuring that the public service runs efficiently. By focusing on these facets, the provincial government can ensure that Alberta pays the least amount possible for our debt funding.



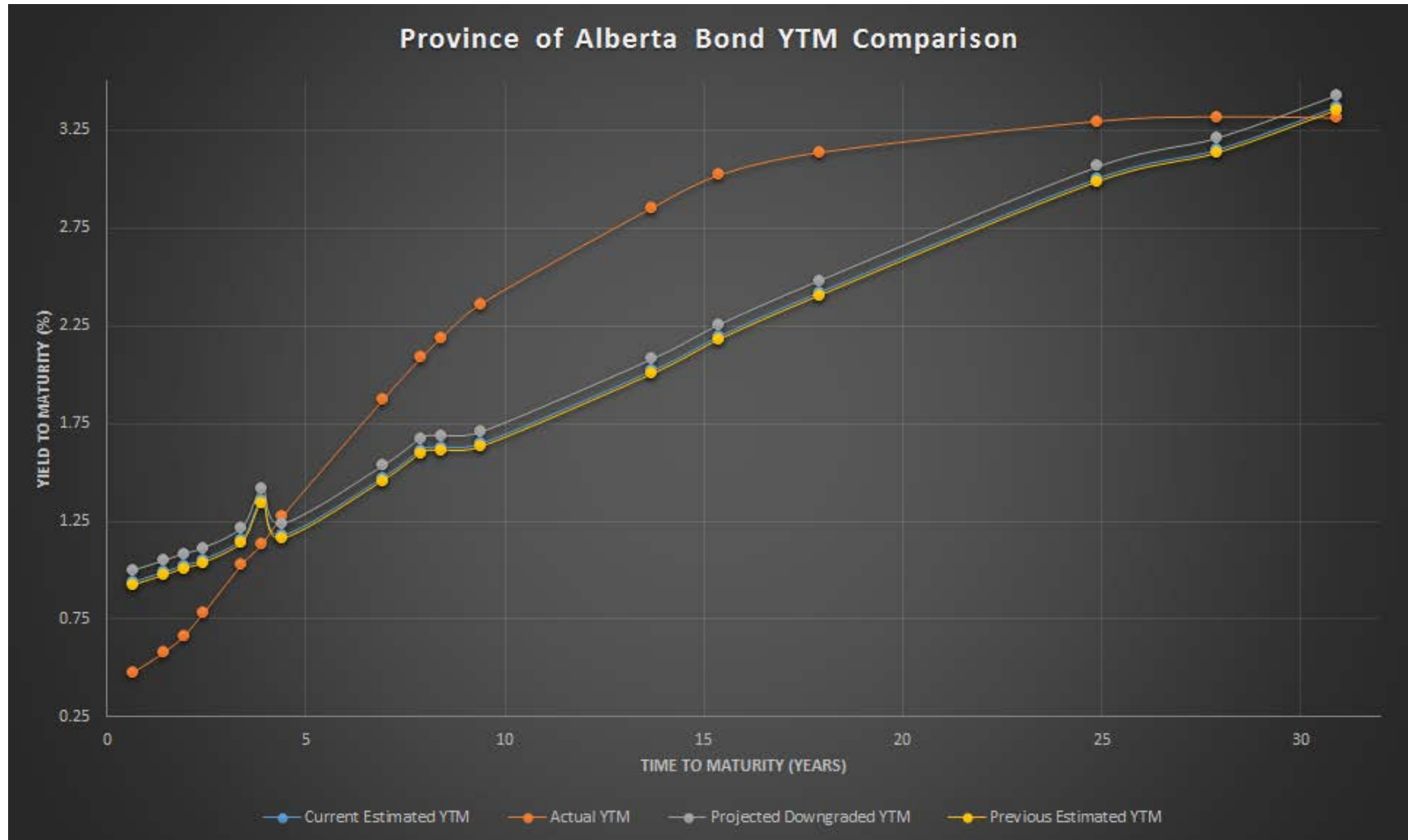
By understanding the basics of fixed income securities (bonds), we can now compare Alberta to the rest of the provinces. First the Alberta Party Caucus took the bond issue data of all of the provinces and ran a multiple regression. This technique produced an equation which can be used to evaluate Alberta against the other provinces. As well, this equation allows us to manipulate some variables to produce “what-if” scenarios. Below is the regression output. This regression explains: approximately 77% of the movement of bond yield to maturity; uses time, population, credit strength, and coupon rates as explanatory factors and; is statistically significant at a 95% confidence level for the regression itself and the explanatory variables.

<i>Regression Statistics</i>	
Multiple R	0.878175277
R Square	0.771191817
Adjusted R Square	0.767440863
Standard Error	0.480722518
Observations	249

<i>ANOVA</i>					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	4	190.0507632	47.51269	205.5989	6.82E-77
Residual	244	56.38697003	0.231094		
Total	248	246.4377332			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	1.057412497	0.133216503	7.937549	7.5E-14	0.795011	1.319814	0.795011	1.319814
Years Until Maturity	0.076587167	0.002796106	27.39065	2.17E-76	0.07108	0.082095	0.07108	0.082095
Population (Thousands)	-1.43918E-05	6.14697E-06	-2.34129	0.020023	-2.6E-05	-2.3E-06	-2.6E-05	-2.3E-06
Relative Credit Strength	-0.135387088	0.065544785	-2.06557	0.039926	-0.26449	-0.00628	-0.26449	-0.00628
Coupon Rate	0.079169291	0.0153548	5.155996	5.22E-07	0.048924	0.109414	0.048924	0.109414

Using the regression equation, the Alberta Party Caucus created a graph comparing the actual yield to maturities with three different predicted yield to maturity scenarios.





The major focal point is the difference between the yellow “Previous Estimated YTM” and the gray “Projected Downgraded YTM”. The previous estimated YTM shows the scenario when all of the major credit rating agencies had Alberta at their top respective rating. The projected downgraded YTM depicts the scenario where all three credit rating agencies have downgraded Alberta’s credit. This change shows approximately a 6 basis point change in the provinces YTM. Again using a hypothetical \$1 billion bond release, we can see the collective impact of these changes.

Scenario	Bond length in years	YTM (Given by graph)	Final Payout	Funds received at bond issue	Annual Interest Payment	Cumulative Interest Payments
<b>Before Any Credit Downgrades</b>	30	3.26%	\$1 billion	\$1 billion	\$32.6 million	\$978 million
<b>After Credit Downgrades</b>	30	3.32%	\$1 billion	\$1 billion	\$33.2 million	\$996 million

In terms of debt servicing costs, after the credit downgrade, this \$1 billion bond issue would cost Alberta an extra \$600,000 per year. While this figure seems relatively small in relation to the entire provincial budget, the cumulative impact is much larger. Staying focused on only this specific bond issue, the difference in the yield to maturity results in an extra \$18,000,000 in interest costs over the life of the bond.

Extrapolating these findings to the entirety of the provincial budget, we find that a credit rating downgrade has serious negative implications. Traditionally, the Government of Alberta will retire old debt by issuing a new bond. If we take the total borrowing figure forecasted for the 2017 fiscal year and compare the differences in yield to maturity due to a credit rating downgrade, we get a true sense of how serious this situation is.

Scenario	Payback Period in Years	YTM (Given by graph)	Fund paid at debt retirement	Funds received at debt issue	Annual Interest Payment	Cumulative Interest Payments
<b>Before Any Credit Downgrades</b>	30	3.26%	\$36.5 billion	\$36.5 billion	\$1.192 billion	\$35.76 billion
<b>After Credit Downgrades</b>	30	3.32%	\$36.5 billion	\$36.5 billion	\$1.214 billion	\$36.42 billion

This scenario shows that if all provincial debt were to be refinanced at the new yield to maturity, Alberta would pay an extra \$22 million per year in debt servicing costs, or an extra \$660 million over the life of these bonds. This means that Alberta would lose the ability to build much needed infrastructure projects like schools, hospitals, etc. every year.