

March 22, 2018

Economic diversification & long-term deficit reduction in focus

Highlights

- After a couple of very tough years, Alberta's economy regained important traction in 2017, as real GDP shot 4.5% higher. That led all the provinces and was considerably better than originally projected.
- A more forceful economic recovery allowed for better-than-expected fiscal results. Alberta estimates it ran a \$9.1 billion deficit in the 2017-18 fiscal year, down from the peak deficit level of \$10.8 billion established in 2016-17 and a \$1.4 billion improvement vs the original budget plan for 2017-18.
- Real GDP is expected to climb 2.7% this year, moving "closer to a full recovery", followed by roughly 2½% average annual gains thereafter. Nominal growth is pegged at 4.7% in 2018, ranging from 4.3% to 6% in the subsequent three years.
- "Returning to balance" is one the budget's three central pillars, along with diversifying the economy and protecting vital public services. The budget is notable for its additional transparency and detail around the longer-term deficit reduction plan, spelling out for the first time the precise assumptions that underpin a return to balance by 2023-24.
- The budget puts the 2018-19 deficit at \$8.8 billion, equivalent to ~18% of total revenue or 2.5% of GDP (at the high end of the provincial spectrum). The medium-term fiscal plan would see the deficit falling to \$7.9 billion in 2019-20 and then to \$7.0 billion by 2020-21. Progress on the deficit accelerates from there, culminating in a \$0.7 billion surplus come 2023-24. Almost 70% of the cumulative, six-year fiscal improvement arrives in the final three years of the deficit elimination plan.
- There's an explicit "risk adjustment" of \$500 million for 2018-19, growing to \$700 million in 2019-20 and hitting \$1 billion in 2020-21. The longer-term fiscal targets do not incorporate a risk adjustment.
- Despite a stronger and more diversified economy, getting back to balance will also require cost containment. Operating spending growth will need to be held to an average annual rate of 3.1% until the books are balanced, below the combined rate of headline inflation and population growth each and every year through 2023-24. The federal portion of a carbon levy would be used to support public services.
- WTI is projected to average US\$59/bbl in the coming fiscal year (vs current spot of \$64.20). The all-important light-heavy differential is pegged at US\$22.40/bbl for 2018-19 (vs current level of \$23.50). Economic and fiscal assumptions incorporate key pipeline expansions, specifically the Line 3 replacement and the Trans Mountain Expansion. Alberta is nonetheless moving to bolster value-added activity in-province, earmarking fully \$2 billion in grants/loan guarantees/royalty credits to leverage energy sector investment.
- With cumulative deficits of \$21.5 billion (before the risk adjustment) slated for the coming three years, Alberta's net debt will continue to accumulate (from a relatively low base). The net debt-to-GDP ratio, which is due to end 2017-18 at 6.0% would rise to 8.7% in the coming year, reaching 12.4% by 2020-21. There's a stated commitment to maintain one of the lowest net debt ratios in Canada.
- The Heritage Fund is valued at \$15.6 billion as at the end of 2017-18, with inflation proofing set to bring it up to \$16.6 billion by March 2021.
- A \$5 billion "cash reserve" provides a buffer should market access deteriorate unexpectedly and is a prudent approach for an issuer with non-trivial borrowing requirements.
- Alberta expects to tap debt capital markets for \$15.4 billion in term funding in 2018-19. Long-term funding needs are ~\$17½ billion in the two subsequent fiscal years. The borrowing strategy would see 30-40% of term funding sourced from international markets. The domestic (C\$) program focuses on maintaining large, liquid benchmark bonds, with MTN issuance likely to be "infrequent".

Important recovery secured in 2017

After a couple of very tough years, Alberta's economy regained important traction in 2017, as real GDP shot 4.5% higher. That led all the provinces and was considerably better than originally projected—last year's budget had assumed 2.6% growth. Given firmer energy prices, nominal growth was a brisk 6.8% last year.

This more forceful economic recovery allowed for better-than-expected fiscal results. Consistent with the previously released Q3 update, Alberta now estimates it ran a \$9.1 billion deficit in the 2017-18 fiscal year (which concludes in just a few days from now). That's down from the peak deficit level of \$10.8 billion established in 2016-17 and also marks a \$1.4 billion improvement vs the original budget plan for 2017-18. While part of the in-year success (\$500 million) reflects the release of an unneeded "risk adjustment", it's clear from the detailed fiscal tables that revenue ended up on a much sturdier footing than originally foreseen.

Indeed, there was nearly \$2 billion (+4.4%) of incremental revenue in 2017-18 vs plan. Specifically, there was some \$780 million in extra resource revenue (mainly via conventional oil and natural gas royalties, and bonus land sales), a major (almost +\$1 billion) assist from buoyant investment income at the Province's endowment funds (notably the Heritage Fund), alongside stronger net income from government business enterprises (reflecting recoveries in the "Balancing Pool", which manages the cost tied to the return of power purchase agreements).

This revenue windfall meant that even with extra spending—program expense was \$1.17 billion or more than 2% above plan—some welcome progress on the deficit was recorded.

Sustained economic expansion...

Where does Alberta go from here? Well, the Province sees itself moving from economic recovery to a more sustained (and diversified) expansion. Real GDP is expected to climb 2.7% this year, moving "closer to a full recovery", followed by roughly 2½% average annual gains thereafter. Nominal growth is pegged at 4.7% in 2018, ranging from 4.3% to 6% in the subsequent three years.

It's always worth lining up budget planning assumptions with the private sector consensus. On that score, the government has built in above-consensus real GDP gains each year from 2018 to 2021, but has assumed slower nominal growth this year and next vis-à-vis private sector forecasters.

What's driving growth? For starters, demographics are favourable; Alberta is a relatively young province, which continues to enjoy healthy population growth. Some segments of non-residential investment, manufacturing

output and exports look quite bright (specifically in refining and petrochemicals). Of note, the new Sturgeon Refinery produced its first diesel at the end of last year.

The investment outlook in the oil sands may still be cloudy, but earlier investments continue to pay dividends in the form of rapidly expanding bitumen production. To wit, raw bitumen production jumped 12% in 2017-18 and is expected to expand at another double-digit clip (11% or >300K/bpd) this coming fiscal year. Further gains are eyed in each of two following years, leaving raw bitumen output at nearly 3.5 million barrels a day come 2020-21.

... key part of fiscal recovery path

Given the improving economic backdrop, it would be reasonable to expect further progress on the deficit. Thus, "returning to balance" is one the budget's three central pillars, along with diversifying the economy and protecting vital public services.

The budget is notable for its additional transparency and detail around the longer-term deficit reduction plan, spelling out for the first time the precise assumptions that underpin a return to balance by 2023-24. Even if one must always treat long-term economic and fiscal forecasts with a degree of caution, it's nice to see the deficit elimination strategy taking shape and we certainly welcome this addition to Alberta's budget documents.

First things first: the budget puts the 2018-19 deficit at \$8.8 billion, equivalent to -18% of total revenue or 2.5% of GDP (placing Alberta's relative budget shortfall at the high end of the provincial spectrum). Total revenues are expected to grow 2.1%, which might not sound that sturdy until you factor in the stellar, 10.9% surge in the prior fiscal year. Personal and corporate income taxes are expected to lead in 2018-19. Operating expenses are projected to grow a bit more than 3%, falling in real per capita terms.

The medium-term fiscal plan would see the deficit falling to \$7.9 billion in 2019-20 and then to \$7.0 billion by 2020-21. After that, progress on the deficit is meant to accelerate, culminating in a \$0.7 billion surplus come 2023-24.

Looking at the full six years of Alberta's remaining deficit reduction path, you might reasonably identify two sub-eras last three years apiece: 2018-19 to 2020-21, when revenue growth is somewhat slower and deficit reductions are more gradual; and 2021-22 to 2023-24, when revenue growth picks up (particularly resource revenue), allowing the budgetary red ink to be erased more quickly. Break down the numbers and you'll find that almost 70% of the \$9.8 billion cumulative, six-year fiscal improvement arrives in the final three years of the plan.

What really underpins this deficit reduction plan? Well, there's that positive growth story we outlined up front (solid, sustained real GDP growth, annual population gains in the neighbourhood of 1½%, more jobs, falling unemployment, contributions from a more diverse set of sectors, etc). And to be clear, the economic and fiscal assumptions incorporate key pipeline expansions, specifically the Line 3 replacement and the Trans Mountain Expansion (TMX). Although unbuilt and facing opposition in certain corners, these projects are thought to alleviate pipeline bottlenecks in 2020-2021.

Despite a stronger and more diversified economy, getting back to balance will also require cost containment. As the Province concedes: "the budget will not balance itself." So, there will be a focus on "practical" agreements with labour unions, where job security will be offered up in exchange for wage freezes. Non-unionized government workers can expect their salaries to remain frozen, while certain high-paid executives (including in the broader public sector) will see salaries, bonuses and perks cut. Some government agencies, boards and commissions will be dissolved or amalgamated.

Overall, operating spending growth will need to be held to an average annual rate of 3.1% until the books are balanced, well shy of historical gains and below the combined rate of headline inflation and population growth each and every year through 2023-24. Savings/efficiencies will continue to be sought (e.g., drug costs, corporate services, travel/hospitality), while the capital plan will revert to more "normal" levels, consistent with a recommendation from former-BoC Governor David Dodge. The idea here is that as the economy recovers, extraordinary (and highly simulative) capital spending becomes less necessary. We tend to agree with Mr. Dodge on this. Funding arrangements for municipal governments, put in place when oil prices were quite high, will also be reworked.

Energy assumptions, sensitivities, risk adjustment and fiscal room

As for the commodity price assumptions, here are the essential numbers (taken directly from the budget):

Energy and Economic Assumptions

	Forecast		Estimate		Target	
	2017-18	2018-19	2019-20	2020-21	2019-20	2020-21
WTI Oil (US\$/bbl) ⁽⁷⁾	54.00	59.00	60.00	63.00		
Light-Heavy Differential (US\$/bbl) ⁽⁷⁾	14.50	22.40	21.00	22.30		
WCS@Hardisty (Cdn\$/bbl) ⁽⁷⁾	50.40	46.00	48.80	50.90		
Natural Gas (Cdn\$/GJ) ⁽⁷⁾	1.90	2.00	2.20	2.40		
Conventional Crude Oil Production (000s barrels/day)	449	461	468	466		
Raw Bitumen Production (000s barrels/day)	2,855	3,163	3,302	3,462		
Interest Rate (10-year Canada bonds, %)	1.90	2.50	2.90	3.10		
Exchange Rate (US\$/Cdn\$) ⁽⁷⁾	78.0	80.0	80.0	80.0		

As you can see from the above table, WTI is projected to average US\$59/bbl in the coming fiscal year (vs current spot of \$64.20). The all-important light-heavy differential is

pegged at US\$22.40/bbl for 2018-19 (vs current level of \$23.50). Detailed "benchmarking tables" (conducted on a calendar year basis) reveal that the government has assumed a larger differential than the average private sector forecast for each year from 2018 to 2021. (That gap vs consensus averages more than US\$4/bbl over that four-year period.) Note that new rules related to the sulphur content of marine fuels are thought to reduce demand for bunker fuel (sourced from heavy oil). You don't have to be a commodity strategist to appreciate that the realized light-heavy differential will also, in part, be a function of whether the aforementioned pipelines get put in place. After all, as the budget plainly states: "there is limited pipeline capacity to the two largest heavy oil markets in the world, the US Gulf Coast and Asia". From Alberta's perspective, TMX is absolutely critical.

Not content to stand still, Alberta is moving to bolster value-added activity in-province. Fully \$2 billion has been earmarked in grants/loan guarantees/royalty credits to leverage investment in the energy sector, be it new upgrading facilities, petrochemical manufacturing plants or for petrochemical feedstock infrastructure.

Official sensitivities provide a gauge (admittedly an imperfect/nuanced one) as to how much fiscal pressure could emerge should energy prices fail to cooperate... or more positively, how much brighter things could get should oil prices top assumptions and/or the differential narrow in more than expected:

Fiscal Sensitivities to Key Assumptions in Budget, 2018-19

(millions of dollars)	Change	Net Impact (2018 – 2019)
Oil Price (WTI US\$/bbl)	-\$1.00	-265
Light-Heavy Differential (US\$/bbl)	+\$1.00	-210
Natural Gas Price (Cdn\$/GJ)	-10 Cents	+10 ⁽⁹⁾
Exchange Rate (US\$/Cdn\$)	+1 cent	-198
Interest Rates	+1%	-226
Primary Household Income	-1 %	-150

Clearly, even modest moves in the differential can have material bearing on Alberta's revenue outlook. Note, however, that the Province has prudently built some padding into the fiscal plan. There's an explicit "risk adjustment" set at \$500 million in 2018-19, growing to \$700 million in 2019-20 and hitting an even one billion dollars in 2020-21. The longer-term fiscal targets (i.e., for 2021-22 and beyond) do not incorporate a risk adjustment.

A final word on longer-term energy assumptions and the contribution to deficit reduction. Based on further projected gains in WTI (US\$73/bbl by 2023-24), a progressively smaller differential (US\$18.4/bbl by 2023-24) and higher production levels, resource royalties are projected to top \$10 billion by 2023-24, comprising almost 16% of total revenue or about double the share anticipated in 2018-19. So notwithstanding the focus on diversifying the economy and reducing the Province's reliance on resource revenue, that very revenue source appears quite important to the government's deficit

reduction plan. Fact is, over the coming six years, resource royalties are expected to outgrow the remaining revenue pie by margin of more than 3:1. The government has also indicated that the federal portion of a carbon levy would be used to support public services.

When it comes to the so-called “tax advantage”, Alberta estimates its 2018-19 edge at no less than \$11 billion vs its nearest provincial competitor (British Columbia). In other words, were Alberta to match the tax framework (including carbon pricing) of its Western neighbour, individuals and businesses would be remitting an extra \$11 billion to Edmonton (all else equal). Alberta’s tax edge vs Ontario is projected at some \$14 billion/year. As with BC, the majority of that advantage reflects the fact that Alberta remains the only province without a sales tax.

A quick aside on cannabis legalization (and related revenue): the Province estimates it will bring in \$80 million/year by 2019-20, pursuant to a federal-provincial revenue sharing agreement. Other tax items of note include a new digital media tax credit and extended investor tax credits, all of which are designed to aid diversification, spur innovation and foster a vibrant tech sector. In the same vein, the government is investing in 3,000 new post-secondary technology spaces and enhancing technology scholarships. A tuition freeze has been extended for a fourth year. As at the federal level, Alberta is moving to implement “gender budgeting”, including gender analysis in planning/reporting/programming.

Balance sheet dissection and a look at borrowing needs

In recent years, outsized deficits have meant the Province’s net financial position has eroded rapidly, admittedly from a *very strong* starting point. Recall that Alberta had a nifty net financial asset position prior to the collapse in energy prices. But as 2017-18 draws to a close, net debt tops \$20 billion—still quite low by provincial standards but a sharp enough deterioration to have triggered earlier credit rating actions.

With cumulative deficits of \$21.5 billion (before the risk adjustment) slated for the coming three years, Alberta’s net debt will continue to accumulate (again, from a relatively low base).

The Province expects to add just over \$10 billion to net debt in 2018-19, bringing the level to \$30.5 billion. Net financial

debt is seen topping \$48 billion by 2020-21. The associated net debt-to-GDP ratio, which is due to end 2017-18 at 6.0% would rise to 8.7% in the coming year, reaching 12.4% by 2020-21. The government has stated its commitment to maintain one of the lowest net debt ratios in Canada and it should be noted that the projected peak level (13.1% in 2021-22) would be lower than the *current* debt ratio in every other provincial jurisdiction.

Part of what holds down Alberta’s net debt burden is a collection of financial assets, including endowment funds (of which the Heritage Savings Trust Fund is the most material). The Heritage Fund is valued at \$15.6 billion as at the end of 2017-18, with inflation proofing set to bring it up to \$16.6 billion by March 2021.

You’ll find a new balance sheet item in the form of a \$5 billion “cash reserve”, which was built up in the outgoing fiscal year (financed via incremental short-term borrowing). Consider this a prudential liquidity facility, similar to what some other provinces have put in place. It’s a buffer should market access deteriorate unexpectedly and is a prudent approach for an issuer with non-trivial borrowing requirements.

The Province’s aggregate gross funding need (\$26.1 billion in 2018-19) incorporates borrowing for the capital plan, for the fiscal plan (i.e., related to the deficit), net Crown requirements, as well as the roll-over of debt (including some \$10 billion in short-term paper).

Alberta expects to tap debt capital markets for \$15.4 billion in term funding in 2018-19. Long-term funding needs are ~\$17½ billion in the two subsequent fiscal years. The stated borrowing strategy would see 30-40% of term funding sourced from international markets, including via large US\$ global issues (SEC registered) in 3s through 10s, alongside other foreign currency trades should market conditions prove favourable (e.g., GBP, EUR). The domestic (C\$) program focuses on maintenance of large, liquid benchmark bonds (in the area of \$3-5 billion in outstandings). The current maturity profile would appear to accommodate significant new issuance in key benchmark tenors. This public benchmark focus means MTN issuance is likely to be “infrequent”.

Warren Lovely

Alberta • 2018 Budget

Alberta

(millions of dollars)

CONSOLIDATED FINANCIAL STATEMENT BASIS

	Actual 2016-17	Budget 2017-18	Forecast 2017-18	Budget 2018-19	Target 2019-20	Target 2020-21
Revenue	42,293	44,918	46,881	47,879	50,615	53,848
Personal income tax	10,763	11,177	10,855	11,387	11,984	12,635
Corporate income tax	3,769	3,918	3,852	4,551	5,293	5,719
Other taxes	5,649	6,667	6,504	6,961	7,271	7,641
Resource revenue - Bitumen royalties	1,483	2,546	2,358	1,785	2,184	2,926
Resource revenue - other		1,208	2,176	2,044	1,999	2,075
Transfers from the Government of Canada	7,979	7,988	7,918	8,218	8,470	8,645
Investment income	3,698	2,193	3,061	2,884	3,161	3,357
Net Income from Government Business Enterprises	543	2,506	3,294	2,777	2,707	2,844
Premiums, Fees and Licences	3,701	3,683	3,742	3,854	3,929	3,996
Other	3,094	3,032	3,121	3,419	3,617	4,010
Expense	53,077	54,915	55,947	56,181	57,827	59,818
Operating expense incl. re-allocation and in-year savings	44,661	45,906	46,370	47,765	49,053	50,291
Climate Leadership Plan operating expense	1,379	868	577	1,035	1,132	1,198
Climate Leadership Plan capital grants	2	68	391	423	446	286
Capital grants to local authorities and others	2,159	3,302	3,729	1,706	1,352	1,596
Disaster / emergency assistance	1,191	235	495	206	200	200
Amortization / inventory consumption / loss on disposals	3,210	3,375	3,362	3,434	3,577	3,677
Debt servicing costs	1,018	1,398	1,355	1,921	2,434	2,937
Pension provisions	(543)	(237)	(332)	(310)	(366)	(365)
Risk adjustment	-	(500)	-	(500)	(700)	(1,000)
Surplus (Deficit)	(10,784)	(10,497)	(9,066)	(8,802)	(7,912)	(6,970)
Contingency account - balance at beginning of year	3,625	2,299	2,299	1,661	-	-
Surplus (deficit)	(10,784)	(10,497)	(9,066)	(8,802)	(7,912)	(6,970)
Pension provisions	(543)	(237)	(332)	(310)	(366)	(365)
Direct borrowing for Capital plan	4,686	5,954	5,434	3,772	3,687	4,265
Capital investment	(3,714)	(4,786)	(4,138)	(3,455)	(3,370)	(3,486)
Amortization and other cash adjustments	444	772	2,970	96	(214)	(325)
Direct borrowing for the Fiscal plan	8,585	6,495	4,494	7,038	8,175	6,881
Contingency account - balance at end of year	2,299	-	1,661	-	-	-
Capital plan	6,578	9,175	9,165	6,444	5,884	6,032
Capital grants	2,159	3,302	3,729	1,706	1,352	1,596
Climate Leadership Plan	2	68	391	423	446	286
Capital investments	4,417	5,805	5,045	4,315	4,087	4,149
Contingency account	2,299	-	1,661	-	-	-
Other financial assets	63,988	62,607	67,914	70,563	72,938	75,738
Pension liabilities	10,023	9,981	9,691	9,381	9,015	8,650
Direct borrowing for capital projects	21,006	26,984	26,457	30,246	33,951	38,233
Liabilities of self-supporting lending organizations	18,385	18,968	18,446	19,236	19,967	20,300
Other liabilities	25,774	29,789	35,250	42,210	49,781	56,714
Net financial assets	(8,901)	(23,115)	(20,269)	(30,510)	(39,776)	(48,159)
Non financial assets (net of amortization)	46,622	50,507	48,924	50,363	51,717	53,130
Net assets (variation equals surplus (deficit))	37,721	27,392	28,655	19,853	11,941	4,971
Financing requirements			24,153	26,107	28,682	28,736
Borrowing for provincial corporations			2,276	756	1,025	1,018
Direct borrowing for capital purposes			5,434	3,772	3,687	4,265
Re-financing of maturing debt			6,899	14,446	16,103	16,586
Direct borrowing for the Fiscal Plan			4,494	7,038	7,824	6,880
Other			5,050	95	43	(13)
Of which long term debt				15,400	17,600	17,500

Source: Alberta 2018 Budget

Economics and Strategy

Montreal Office

514-879-2529

Stéfane Marion

Chief Economist and Strategist
stefane.marion@nbc.ca

Paul-André Pinsonnault

Senior Fixed Income Economist
paulandre.pinsonnault@nbc.ca

Krishen Rangasamy

Senior Economist
krishen.rangasamy@nbc.ca

Marc Pinsonneault

Senior Economist
marc.pinsonneault@nbc.ca

Matthieu Arseneau

Senior Economist
matthieu.arseneau@nbc.ca

Angelo Katsoras

Geopolitical Analyst
angelo.katsoras@nbc.ca

Kyle Dahms

Economist
kyle.dahms@nbc.ca

Jocelyn Paquet

Economist
jocelyn.paquet@nbc.ca

Toronto Office

416-869-8598

Warren Lovely

MD & Head of Public Sector Strategy
warren.lovely@nbc.ca

General

This Report was prepared by National Bank Financial, Inc. (NBF), (a Canadian investment dealer, member of IIROC), an indirect wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on the Toronto Stock Exchange.

The particulars contained herein were obtained from sources which we believe to be reliable but are not guaranteed by us and may be incomplete and may be subject to change without notice. The information is current as of the date of this document. Neither the author nor NBF assumes any obligation to update the information or advise on further developments relating to the topics or securities discussed. The opinions expressed are based upon the author(s) analysis and interpretation of these particulars and are not to be construed as a solicitation or offer to buy or sell the securities mentioned herein, and nothing in this Report constitutes a representation that any investment strategy or recommendation contained herein is suitable or appropriate to a recipient's individual circumstances. In all cases, investors should conduct their own investigation and analysis of such information before taking or omitting to take any action in relation to securities or markets that are analyzed in this Report. The Report alone is not intended to form the basis for an investment decision, or to replace any due diligence or analytical work required by you in making an investment decision.

This Report is for distribution only under such circumstances as may be permitted by applicable law. This Report is not directed at you if NBF or any affiliate distributing this Report is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that NBF is permitted to provide this Report to you under relevant legislation and regulations.

National Bank of Canada Financial Markets is a trade name used by National Bank Financial and National Bank of Canada Financial Inc.

National Bank Financial Inc. or an affiliate thereof, owns or controls an equity interest in TMX Group Limited ("TMX Group") and has a nominee director serving on the TMX Group's board of directors. As such, each such investment dealer may be considered to have an economic interest in the listing of securities on any exchange owned or operated by TMX Group, including the Toronto Stock Exchange, the TSX Venture Exchange and the Alpha Exchange. No person or company is required to obtain products or services from TMX Group or its affiliates as a condition of any such dealer supplying or continuing to supply a product or service.

Canadian Residents

NBF or its affiliates may engage in any trading strategies described herein for their own account or on a discretionary basis on behalf of certain clients and as market conditions change, may amend or change investment strategy including full and complete divestment. The trading interests of NBF and its affiliates may also be contrary to any opinions expressed in this Report.

NBF or its affiliates often act as financial advisor, agent or underwriter for certain issuers mentioned herein and may receive remuneration for its services. As well NBF and its affiliates and/or their officers, directors, representatives, associates, may have a position in the securities mentioned herein and may make purchases and/or sales of these securities from time to time in the open market or otherwise. NBF and its affiliates may make a market in securities mentioned in this Report. This Report may not be independent of the proprietary interests of NBF and its affiliates.

This Report is not considered a research product under Canadian law and regulation, and consequently is not governed by Canadian rules applicable to the publication and distribution of research Reports, including relevant restrictions or disclosures required to be included in research Reports.

UK Residents

This Report is a marketing document. This Report has not been prepared in accordance with EU legal requirements designed to promote the independence of investment research and it is not subject to any prohibition on dealing ahead of the dissemination of investment research. In respect of the distribution of this Report to UK residents, NBF has approved the contents (including, where necessary, for the purposes of Section 21(1) of the Financial Services and Markets Act 2000). This Report is for information purposes only and does not constitute a personal recommendation, or investment, legal or tax advice. NBF and/or its parent and/or any companies within or affiliates of the National Bank of Canada group and/or any of their directors, officers and employees may have or may have had interests or long or short positions in, and may at any time make purchases and/or sales as principal or agent, or may act or may have acted as market maker in the relevant investments or related investments discussed in this Report, or may act or have acted as investment and/or commercial banker with respect hereto. The value of investments, and the income derived from them, can go down as well as up and you may not get back the amount invested. Past performance is not a guide to future performance. If an investment is denominated in a foreign currency, rates of exchange may have an adverse effect on the value of the investment. Investments which are illiquid may be difficult to sell or realise; it may also be difficult to obtain reliable information about their value or the extent of the risks to which they are exposed. Certain transactions, including those involving futures, swaps, and other derivatives, give rise to substantial risk and are not suitable for all investors. The investments contained in this Report are not available to retail customers and this Report is not for distribution to retail clients (within the meaning of the rules of the Financial Conduct Authority). Persons who are retail clients should not act or rely upon the information in this Report. This Report does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for the securities described herein nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever.

This information is only for distribution to Eligible Counterparties and Professional Clients in the United Kingdom within the meaning of the rules of the Financial Conduct Authority. NBF is authorised and regulated by the Financial Conduct Authority and has its registered office at 71 Fenchurch Street, London, EC3M 4HD.

NBF is not authorised by the Prudential Regulation Authority and the Financial Conduct Authority to accept deposits in the United Kingdom.

U.S. Residents

National Bank of Canada Financial Inc. (NBCFI), a broker-dealer registered with the U.S. Securities and Exchange Commission and a member of the Financial Industry Regulatory Authority (FINRA), and a member of the Securities Investor Protection Corporation (SIPC), is distributing this Report in the United States. NBCFI operates pursuant to a 15 a-6 Agreement with its Canadian affiliate, NBF Inc.

This Report has been prepared in whole or in part by **personnel** employed by non-US affiliates of NBCFI that are not registered as broker/dealers in the US. These non-US **personnel** are not registered as associated persons of NBCFI and are not licensed or qualified as research analysts with FINRA or any other US regulatory authority and, accordingly, may not be subject (among other things) to FINRA restrictions regarding communications by a research analyst with the subject company, public appearances by research analysts and trading securities held in a research analyst account.

The author(s) who prepared these Reports certify that this Report accurately reflects his or her personal opinions and views about the subject company or companies and its or their securities, and that no part of his/her compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed in this Report as to the securities or companies.

NBF compensates the authors of this Report from a variety of sources, and such compensation is funded by the business activities of NBF including, Institutional Equity and Fixed Income Sales and Trading, Retail Sales, the correspondent clearing business and Corporate and Investment Banking.

Because the views of its personnel may differ, members of the National Bank Financial Group may have or may in the future issue Reports that are inconsistent with this Report, or that reach conclusions different from those in this Report. To make further inquiry related to this Report, United States residents should contact their NBCFI registered representative.

This document is intended for institutional investors and is not subject to all of the independence and disclosure standards under FINRA rules applicable to debt research Reports prepared for retail investors. This Report may not be independent of the proprietary interests of NBF, NBCFI, or their affiliates. NBF, NBCFI, or their affiliates may trade the securities covered in this Report for their own account and on a discretionary basis on behalf of certain clients. Such trading interests may be contrary to the recommendation(s) offered in this Report.

HK Residents

With respect to the distribution of this report in Hong Kong by NBC Financial Markets Asia Limited ("NBCFMA") which is licensed by the Securities and Futures Commission ("SFC") to conduct Type 1 (dealing in securities) and Type 3 (leveraged foreign exchange trading) regulated activities, the contents of this report are solely for informational purposes. It has not been approved by, reviewed by, verified by or filed with any regulator in Hong Kong. Nothing herein is a recommendation, advice, offer or solicitation to buy or sell a product or service, nor an official confirmation of any transaction. None of the products issuers, NBCFMA or its affiliates or other persons or entities named herein are obliged to notify you of changes to any information and none of the foregoing assume any loss suffered by you in reliance of such information.

The content of this report may contain information about investment products which are not authorized by SFC for offering to the public in Hong Kong and such information will only be available to, those persons who are Professional Investors (as defined in the Securities and Futures Ordinance of Hong Kong ("SFO")). If you are in any doubt as to your status you should consult a financial adviser or contact us. This material is not meant to be marketing materials and is not intended for public distribution. Please note that neither this material nor the product referred to is authorized for sale by SFC. Please refer to product prospectus for full details.

There may be conflicts of interest relating to NBCFMA or its affiliates' businesses. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may be purchased or sold by NBCFMA or its affiliates, or in other investment vehicles which are managed by NBCFMA or its affiliates that may purchase or sell such securities and instruments.

No other entity within the National Bank of Canada group, including National Bank of Canada and National Bank Financial Inc, is licensed or registered with the SFC. Accordingly, such entities and their employees are not permitted and do not intend to: (i) carry on a business in any regulated activity in Hong Kong; (ii) hold themselves out as carrying on a business in any regulated activity in Hong Kong; or (iii) actively market their services to the Hong Kong public.

Copyright

This Report may not be reproduced in whole or in part, or further distributed or published or referred to in any manner whatsoever, nor may the information, opinions or conclusions contained in it be referred to without in each case the prior express written consent of NBF.