Market View
Economics and Strategy

NATIONAL BANK OF CANADA FINANCIAL MARKETS

July 21, 2022 - (Vol. VI, No. 59 Act 2)

Continued: A bond supply-valuation dance in 3 acts

By Warren Lovely & Ethan Currie

In a traditional supply-and-demand model, an increased quantity of something generally requires a cheaper price to clear the market, all else being equal. Over the years, we've tested the supply-price (or supply-spread) relationship in Canada's domestic bond market. We use this note—which serves as Act 2 of a three-part series—to update certain aspects of our work, keying on one of the most vital, frequently issued and actively traded sectors of our domestic credit market: provincial government bonds. Note: Act 1 is available here.

Act 2 ~ Old school vs. new school supply-spread relationship in provincial bond market

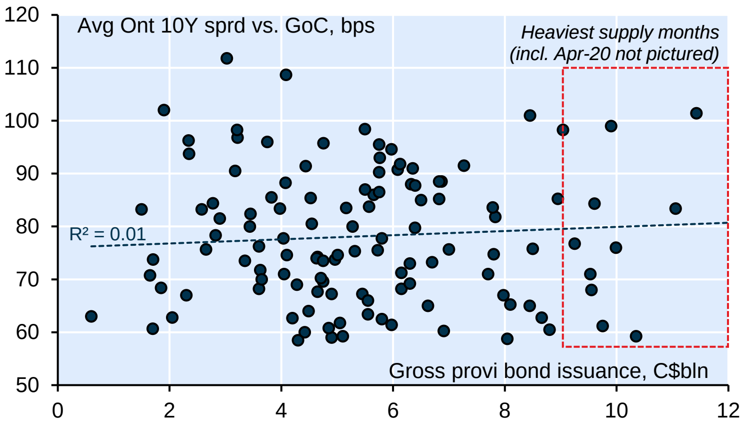
(i) On the face of it, **a consistent and/or statistically significant relationship between provincial bond supply and credit spreads appears hard to come by**. Witness the shotgun blast-style relationship between gross issuance and spreads over the past decade.

(ii) A given month of **supersized gross provincial issuance is just as likely as not to correspond with *tighter* not *wider* provincial bond spreads**. A favourable market backdrop often encourages/emboldens issuers (i.e., strong market tone pulls in supply). Looked at another way, issuers know enough to back away from the market when sentiment is shaky, generally preferring not to validate wide(r) spreads.

➢ Aside: There's some evidence that the skewing of provincial supply to the long end and/or the dumping outsized duration into the market contributes to a contemporaneous steepening of the provincial credit curve.

i) Scattershot! Link btw supply & spreads tough to isolate?

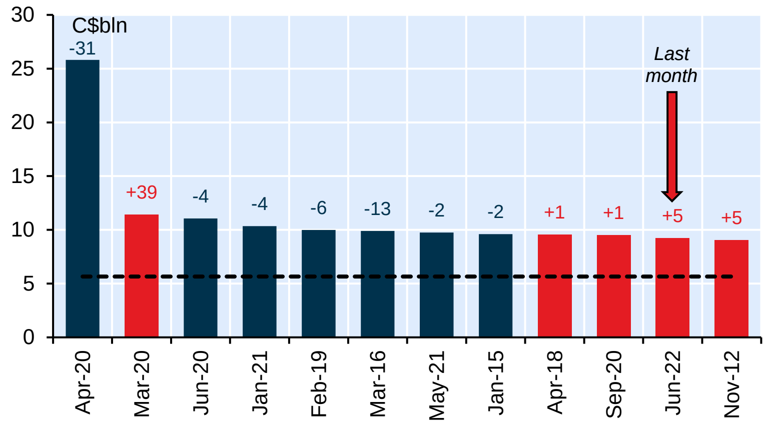
Monthly domestic provincial bond issuance & average spread: Last 10 yrs



Source: NBF, Bloomberg | Note: Domestic issuance only (i.e., CAD issues); spread is monthly average of constant maturity indications; 120M to Jun-22

ii) Heavy supply hasn't necessarily meant wider spreads

12 largest months of domestic provincial bond issuance (& spread change)



Source: NBF, Bloomberg | Note: Gross domestic issuance; figures above bars denote M/M chg in Ont 10Y spread; blue shading=tighter; red=wider; dotted line is 10Y avg supply

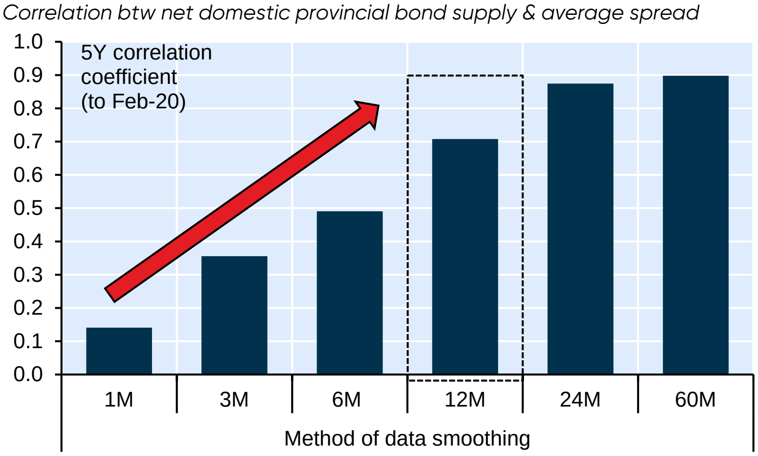
(iii) Notwithstanding (i-ii), **by smoothing high(er) frequency tallies, supply's influence on valuations emerges**. For example, smoothing supply and spreads over 12 months produced a correlation coefficient of 0.7 in the half-decade leading up to the pandemic. The direction of the relationship is intuitive (i.e., more supply⇔wider spread), even if the correlation isn't entirely stable/consistent over time.

(iv) As one might expect, **net bond supply—as opposed to gross issuance—has exerted the greater influence on spreads historically**.

➢ Aside: The empirical record advances the argument that international issuance supports domestic spreads (at the margin), since the diversion of bonds to foreign markets/investors arithmetically leaves less paper for domestic investors to digest.

iii) Smoothing spawns (some) statistical satisfaction

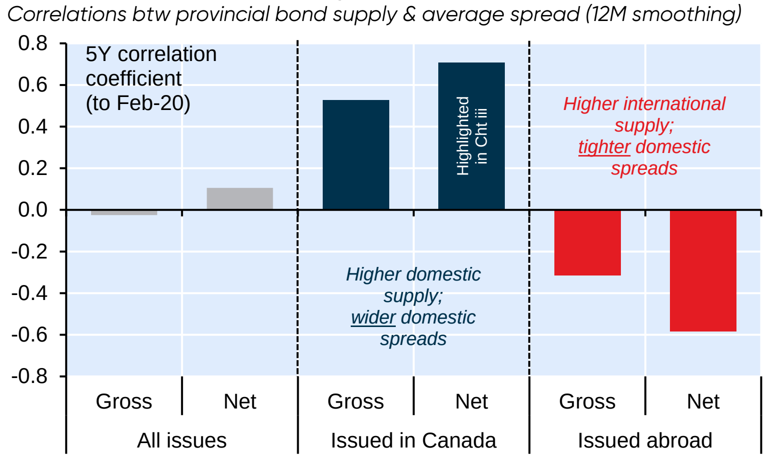
Correlation btw net domestic provincial bond supply & average spread



Source: NBF, StatCan | Note: Correlation with spread based on monthly avg of Ont 10Y constant maturity indications; correlation is up to onset of COVID-19 pandemic

iv) Best to key on 'net' vs. 'gross' (while supply diversion has paid off)

Correlations btw provincial bond supply & average spread (12M smoothing)



Source: NBF, StatCan | Note: Correlation with spread based on monthly avg of Ont 10Y constant maturity indications; correlation is up to onset of COVID-19 pandemic

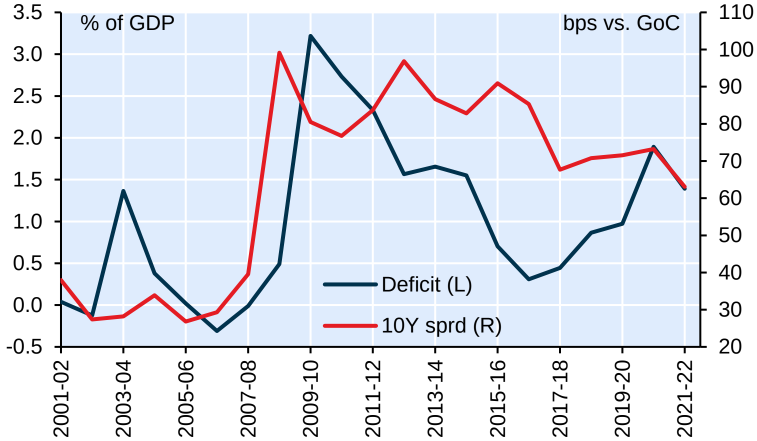
(v) By way of fundamental background, the historical net bond supply we've studied is partly the manifestation of provincial budgetary shortfalls. It's admittedly tough to day trade provincials on the basis of annual budgetary figures that are updated only infrequently and/or with a lag, but the simple point is that **fiscal results matter**. And while a perfect fit with spreads has generally proven elusive, swings in **provincial budget balances tend to do a respectable job informing spread direction/momentum** while…

(vi) **… net debt burdens (i.e., scaled to GDP)—which obviously evolve more slowly—help dictate the trend level for spreads**.

- ➢ Aside: Since we're studying spreads to the GoC curve, you might argue that the *relative* fiscal performance/standing of provincial governments vs. the feds may be more informative. We'll concede that budgetary balance gaps and/or net debt differentials (provi vs. fed) have left a bit to be desired when it comes to forecasting provincial spreads. Nonetheless, we'd emphasize that provincial budget balances have been improving faster and provincial debt burdens receding quicker than at the federal level of late. While partly cyclical, it's been sufficient to arrest a 12-year-long deterioration in average provincial credit quality (from 2009 to 2021)

v) Fiscal results have influenced spread momentum…

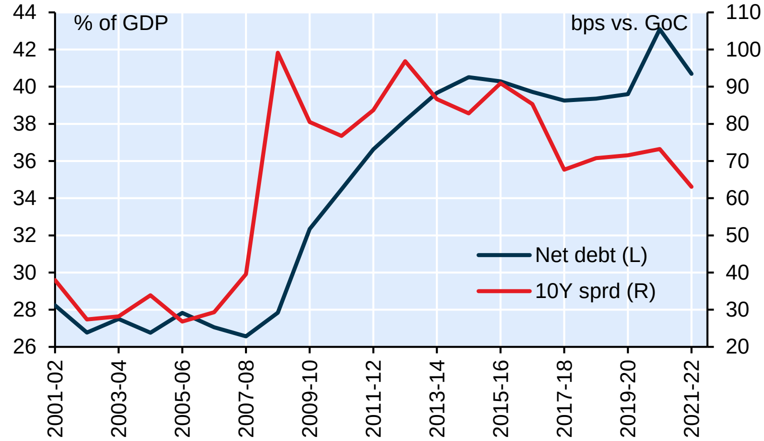
Ontario budget deficit & domestic spread: Fiscal year basis



Source: NBF, Ontario | Note: Fiscal results include interim estimate for 2021-22; bond spread represents fiscal year average of domestic constant maturity NI indications

vi) … while leverage informs broader spread level

Ontario net debt burden & domestic spread: Fiscal year basis



Source: NBF, Ontario | Note: Fiscal results include interim estimate for 2021-22; bond spread represents fiscal year average of domestic constant maturity NI indications

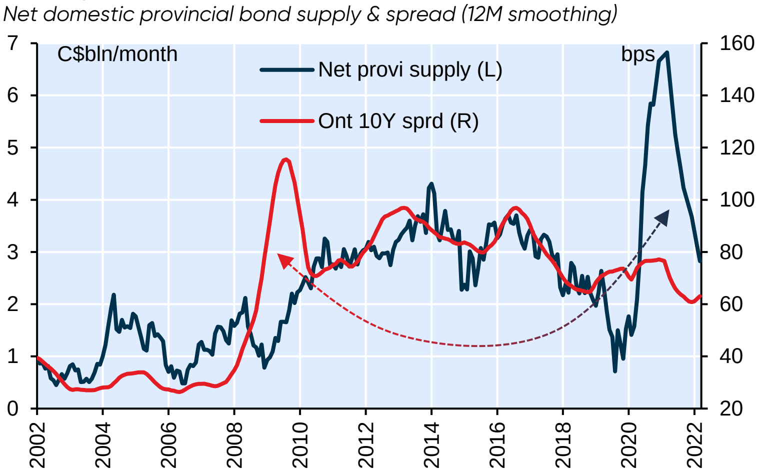
(vii) Critically, **COVID-19 (and the extraordinary suite of policies that the pandemic ultimately spawned) has represented something of a regime shift for financial markets, including credit**. Net bond supply trends have seemingly, and at least temporarily, lost some (much?) of their sway over valuations since early 2020. That's an observation that might apply equally well to the sovereign bond market as it does to provis.

- ➢ Aside: **This isn't the first time the supply-spread relationship has broken down**. Mind you, the last pronounced disconnect—in/around the Global Financial Crisis—was essentially the flip-side of what we've observed more recently. Back then, spreads blew out quicker and more significantly than net supply developments might have implied, reverting to more 'expected' levels by 2010.

(viii) **As the correlation between provincial bond supply and spreads has shrunk, so too has the estimated impact of a given supply shock** (i.e., the coefficient on net bond supply has been a fraction of the pre-pandemic trend). By way of example, the roughly C$50 billion annualized increase in trend provincial bond supply (CAD, net) brought about by the pandemic might have required a ~40 bp increase in 10-year provi spreads, at least based on old-school/pre-COVID statistical linkages. Instead, our new school rules (taking into account earlier massive policy supports, including central bank balance sheet measures) meant a mountain of provincial paper ultimately required less than 10 bp of widening in trend spreads to clear the market.

vii) Regime shift! Supply-spread dynamic re-cast since 2020

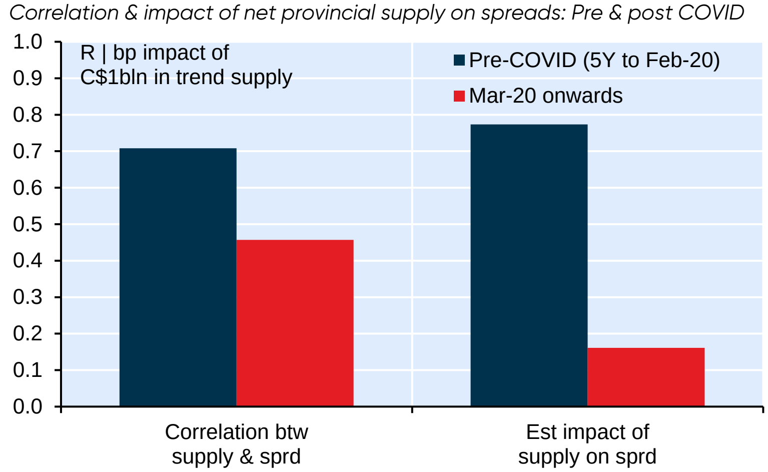
Net domestic provincial bond supply & spread (12M smoothing)



Source: NBF, StatCan

viii) Visualizing supply's waning impact on valuations

Correlation & impact of net provincial supply on spreads: Pre & post COVID



Source: NBF, StatCan | Note: Correlations & coefficients based on 12M smoothing

(ix) The corollary to point (viii) also holds. **Whereas provincial deficits have melted away *much* faster than expected—driving underlying cash requirements down—a still-distorted market has seemingly meant little relief in benchmark provincial spreads** (vs. the risk-free curve or on an asset swap basis). Again, this highlights the reduced sway net supply exerts when anxiety is particularly elevated and when extraordinary policies are either being adopted (e.g., extreme rate hikes) or unwound (e.g., balance sheet measures). If, as and when the current fixation on inflation recedes and net supply regains a more material/traditional impact on spreads, a lighter issuance path could be a significant technical tailwind for provis. That of course assumes that we arrive at a 'normalized' policy environment without sparking a recession, which would presumably kick off a fresh round of deficit financing. Risks linked to a more adverse scenario are non-trivial.

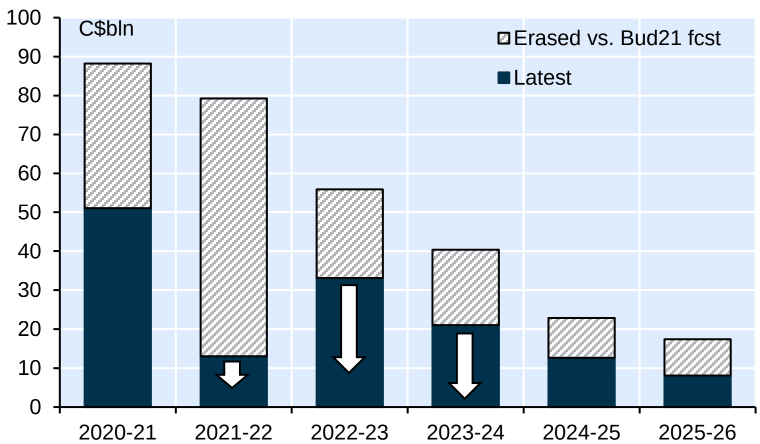
- ➢ Aside: The less-than-perfect relationship between supply and spreads currently in evidence raises the question: Are bond investors simply quicker to adjust to shifting economic/fiscal winds than provincial treasures, driving spreads wider (tighter) in advance of an ultimate pick-up (slowdown) in net bond supply. There's *some* evidence to back this up, with a study of pre-COVID tendencies suggesting spreads might ultimately lead supply by as much as 9 months. Markets, as they say, tend to be efficient.
- ➢ Additional (fiscal) aside: The cumulative improvement to provincial finances so far communicated is truly without precedent. Indeed, the overall magnitude of the fiscal re-write is almost hard to comprehend. As it stands, C$165 billion of provincial red ink has been erased since spring 2021 (which is a multi-year tally for all ten provinces). Last fiscal year alone (i.e., 2021-22), the combined provincial budget balance morphed from a C$80 billion projected deficit to what will be a near-balanced tally once all provinces have presented their audited public accounts. Notwithstanding slowdown/recession risks, residual improvements to current and future fiscal year balances are still expected as updates arrive. The net result is a massive comedown in underlying borrowing needs, and yet provincial spreads are wider/steeper across the credit curve vs. the end of fiscal 2020-21, weakness having been more heavily concentrated this calendar year as inflation anxiety took deeper root.

(x) Even if today's reduced supply has failed to translate into tighter spreads (vs. Canadas or on an ASW basis), **provincial fiscal/financing developments are clearly influencing RV within the sector and vs. key comps.** Those provinces securing a more forceful/rapid fiscal recovery have seen their spreads firm in relative terms (in some cases dramatically), with certain of these marginal adjustments validated by credit rating developments. As a supplement to point (v) then, ***relative* fiscal results matter**. While we've come a long way on relative re-pricing, we still we scope for adjustment in some key provincial relationships. Despite recent weakness, commodity prices remain sufficiently accretive from a resource royalty perspective. Meantime, rapid/jumbo rate hikes have thrown housing markets into correction, with some regions looking more vulnerable than others. Overall, we would continue to favour low-leverage and resource-levered names vs. those with outsized housing/interest-rate exposure, which is a view that could be expressed a variety of ways.

- ➢ Aside: As we highlighted in Act 1, domestic provincial supply has receded faster than for corporates (inclusive of financials), which goes some way towards explaining today's provi-corp basis. As always, there are any number of idiosyncrasies to control for when lining provis up against corps/financials, including industry-, security- and term-specific considerations, select credit rating risks, relative financing requirements and other seasonals. We invite a nuanced conservation. More fundamentally, broader risk sentiment remains the most forceful driver of cross-credit levels. And while our baseline macro forecast foregoes a formal recession call, we appreciate that a mounting economic slowdown (likely to continue through 2023) has left some favouring defensive positioning. That may be an understandable bias, although broader sentiment could ultimately be cheered if we see evidence that central bankers are prepared to stand down *before* policy rates are pushed into excessively restrictive territory. That, in turn, will require some serious inflation relief, which we expect to materialize in the coming months. You could dub this a soft landing scenario, although quite simply, near-term inflation relief remains a most vital caveat to our broader macroeconomic and financial market outlook.

ix) Evaporating deficits buoy fundamental/technical picture

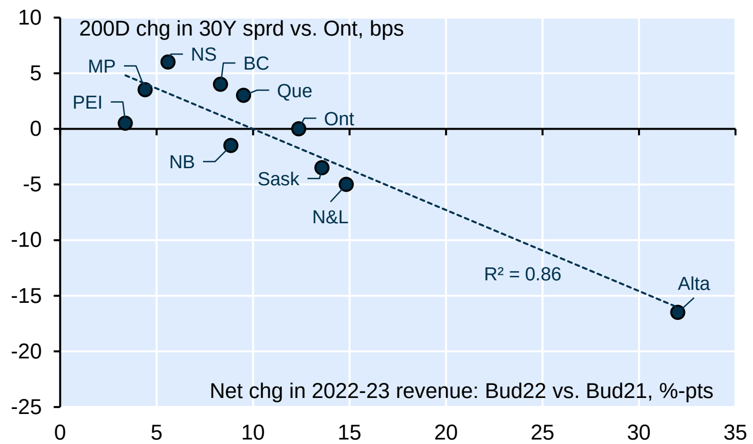
Aggregate provincial budget deficit: Latest estimates vs. Budget 2021



Source: NBF, prov gov'ts | Note: 2021-22 includes interim estimates; 2022-23 & beyond to be re-stated via upcoming fiscal updates; arrows denote expected revision

x) Relative fiscal performance re-pricing basis spreads

Change in provincial revenue vs. change in relative bond spread



Source: NBF, prov gov'ts | Note: Revenue chg refers to budget-to-budget adjustment; spread chg is relative to Ontario, based domestic constant maturity NI indications

Note: This collection of points, (i) through (x), is meant as a jumping off point for Act 3, which marries the supply picture with other key drivers of our credit outlook that have been hinted at here. Second intermission...

Economics and Strategy

Montreal Office
514-879-2529

Stéfane Marion
Chief Economist and Strategist
stefane.marion@nbc.ca

Matthieu Arseneau
Deputy Chief Economist
matthieu.arseneau@nbc.ca

Kyle Dahms
Economist
kyle.dahms@nbc.ca

Daren King
Economist
daren.king@nbc.ca

Jocelyn Paquet
Economist
jocelyn.paquet@nbc.ca

Alexandra Ducharme
Economist
alexandra.ducharme@nbc.ca

Angelo Katsoras
Geopolitical Analyst
angelo.katsoras@nbc.ca

Toronto Office
416-869-8598

Warren Lovely
Chief Rates and Public Sector Strategist
warren.lovely@nbc.ca

Taylor Schleich
Rates Strategist
taylor.Schleich@nbc.ca

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 70 St. Mary Axe, London, EC3A 8BE.

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

U.S. Residents

With respect to the distribution of this report in the United States of America, National Bank of Canada Financial Inc. ("NBCFI") which is regulated by the Financial Industry Regulatory Authority (FINRA) and a member of the Securities Investor Protection Corporation (SIPC), an affiliate of NBF, accepts responsibility for its contents, subject to any terms set out above. To make further inquiry related to this report, or to effect any transaction, United States residents should contact their NBCFI registered representative.

This report is not a research report and is intended for Major U.S. Institutional Investors only.

This report is not subject to U.S. independence and disclosure standards applicable to research reports.

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.