



An eye to the coming June cash deluge

By Warren Lovely & Taylor Schleich

In precisely 18 weekdays, Canada's domestic bond market will be awash in cash. Starting on June 1st, continuing on June 2nd and picking back up mid-month, investors will be handed billions and billions of dollars in coupon payments and redemption proceeds. Yes, we've observed walls of cash before, but the sheer magnitude and concentration of June (and December) cashflows remain striking. The seasonal deluge of bond market cash tends to leave an imprint on rates and credit markets, influencing the behaviour of investors and issuers alike.

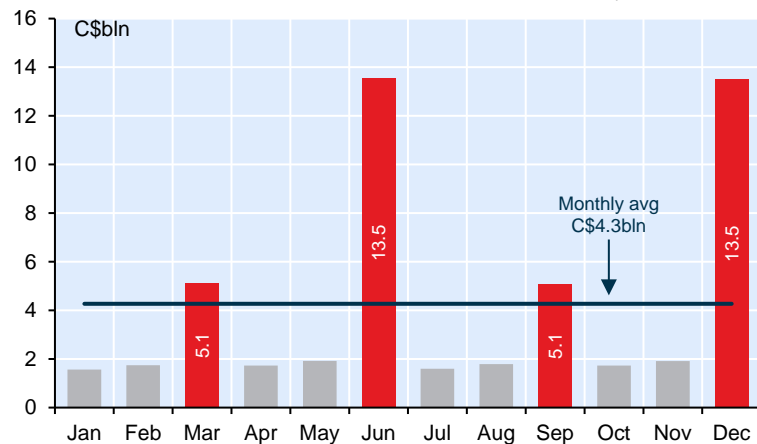
Here, we put June 2022's cash into context. We explore empirical performance in Canadian rates and public sector credit markets. We offer simulated impacts on bond indices. There are a number of additional angles, ample nuance and some special considerations for 2022. For example, June 1st brings not only massive GoC-related cash, but coincides with a Bank of Canada interest rate decision (+50 bps). The last time the BoC announced on June 1st? That was back in 2010, when a short-lived tightening cycle kicked off whilst the Fed remained sidelined.

As always, treat seasonal and empirical analysis with caution. Past is not necessarily prelude and current location clearly matters. Today's rates curve is much-less steep, which could limit the coupon- and roll-inspired flattener that we've often observed as index duration extends. After all, we're still contending with a re-pricing of longer-term nominal yields (and term premia) as actual and expected inflation steps up. Meantime, we have a nascent QT process running in the background... the first of its kind for Canada.

June 2nd is a key date for provincial bond markets. That's when some large bonds mature, pay out or roll. Note that we have more regular/frequent 10-year benchmarks in the provincial market, so traditional seasonal valuation patterns may not hold. Moreover, this June 2nd will be notable for another reason, as Ontarians head to the polls in a general election. Ontario's related funding blackout could leave cash-rich investors hunting for other product leading up to and following the vote. Just one more unique wrinkle for 2022. Read on...

Chart 1: Canada's bond cash really rains down in June

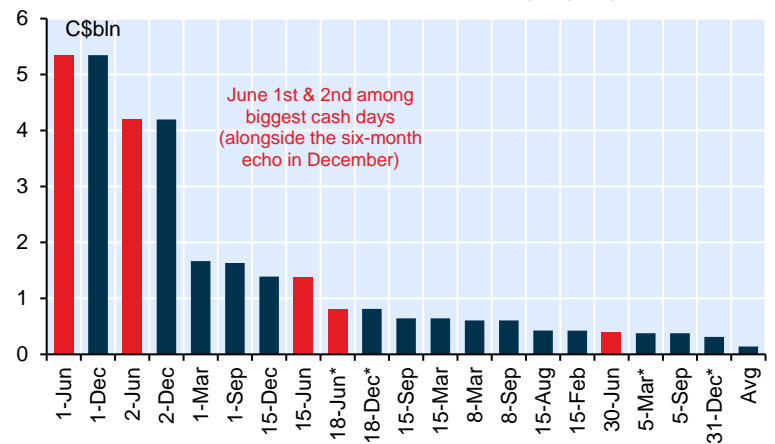
FTSE Canada Universe Bond Index cashflows: 2022 at start of year



Source: NBF, FTSE Russell | Note: Cashflows depicted in Charts 1-3 based on NBF analysis of FTSE Canada Universe Bond Index constituents/outstandings as at start of 2022

Chart 2: June 1st/2nd huge cash days

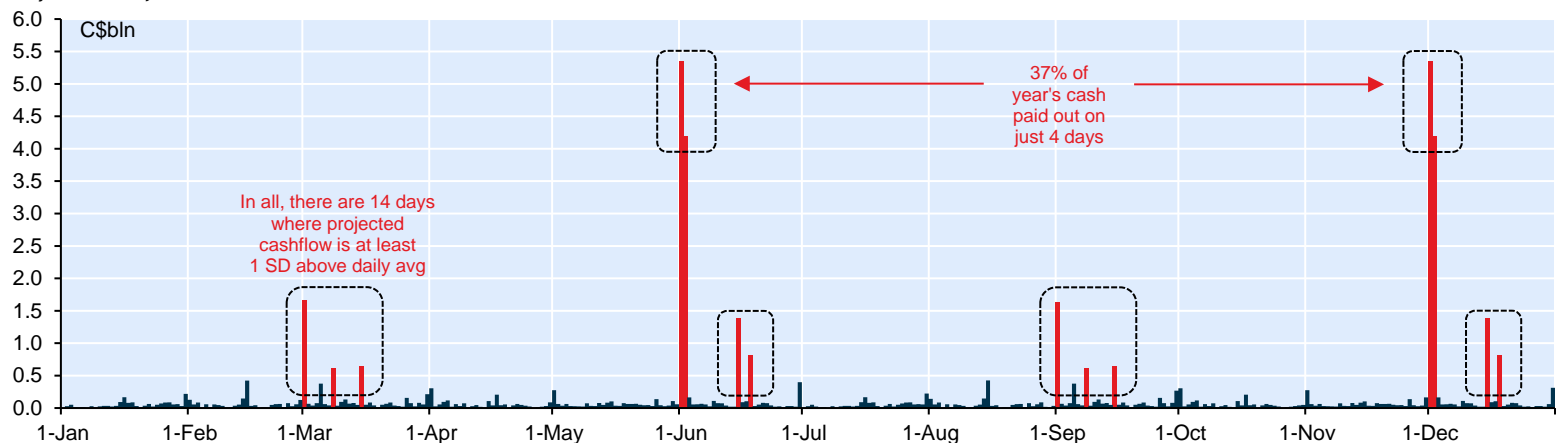
FTSE Canada Universe Bond Index cashflows: 2022 by key days



Source: NBF, FTSE Russell | Note: Asterisk (*) denotes a day that falls on weekend in 2022

Chart 3: Putting Canada's ultra-lumpy cash in context... June 1st/2nd simply impossible to ignore

Projected daily FTSE Canada Universe Bond Index cash flows: 2022

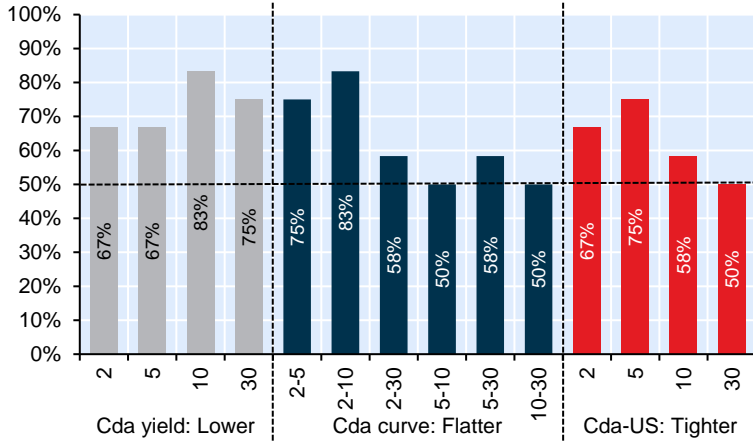


Source: NBF, FTSE Russell

When 2022 kicked off, over C\$50 billion of FTSE Canada Universe Bond Index cash was due to flow. A disproportionate amount arrives in June (and also in December). This June, the single biggest slugs come on 1st and 2nd of the month. June 15th cashflows are likewise material. Meanwhile, June 18th cash will be less chunky and technically delayed, as the 18th falls on a Saturday this year.

Chart 4: Searching for consistently profitable trades

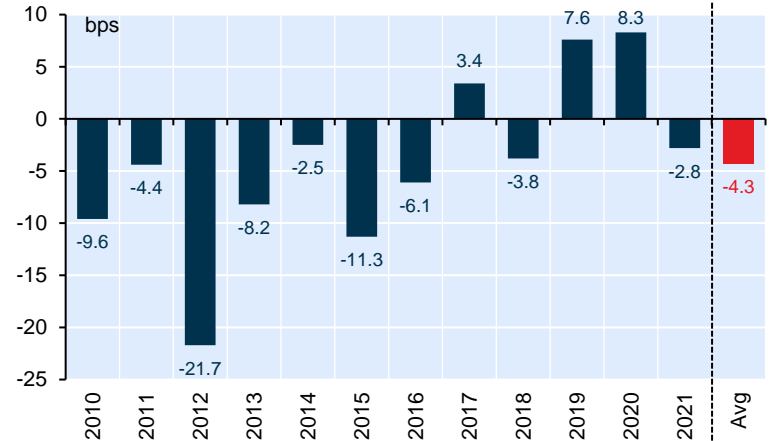
Past success rate vs. expected direction in Canadian rates 10D up to 1-Jun



Source: NBF, Bloomberg | Note: Success rates based on 12Y period from 2010-21

Chart 5: Success rates/averages don't tell whole story

Net change in Canada-US 5s in 10D leading up to 1-Jun

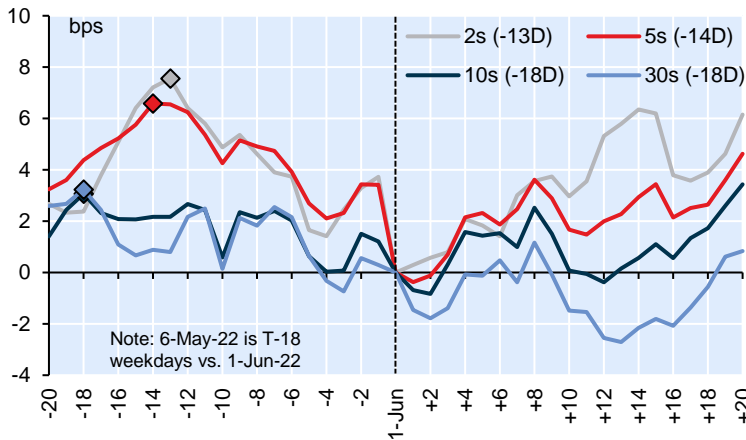


Source: NBF, Bloomberg

Looking back over the past dozen years, the empirical record (for what it's worth) tends to support a curve flattener and outperformance of Canadas vs. USTs in the lead up to June 1st. Canada-US 5s technically has demonstrated the most consistent success, tightening three-quarters of the time. This trade worked in 2021 but had been a hit-or-miss proposition from 2017-20. Caution advised.

Chart 6: Optimal entry vs. UST 13-18 days prior (i.e., about now)

Cumulative change in Canada-US yield differentials relative to 1-Jun

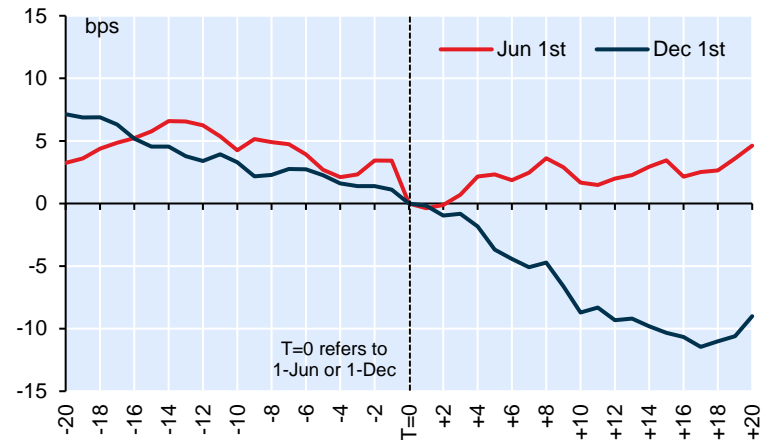


Source: NBF, Bloomberg | Note: Avg change based on 12Y period from 2010-21

Empirically speaking, optimal entry for a long Canada, short UST position is generally T-18 to T-13 weekdays prior to June 1st... which is more or less NOW! History argues for putting it on sooner for longer tenors, whereas 2s and 5s tend to outperform a touch later. The post-June 1st follow-through has been less than compelling, particularly vs. December 1st where gains tend to extend.

Chart 7: X-market follow through less compelling vs. Dec 1st

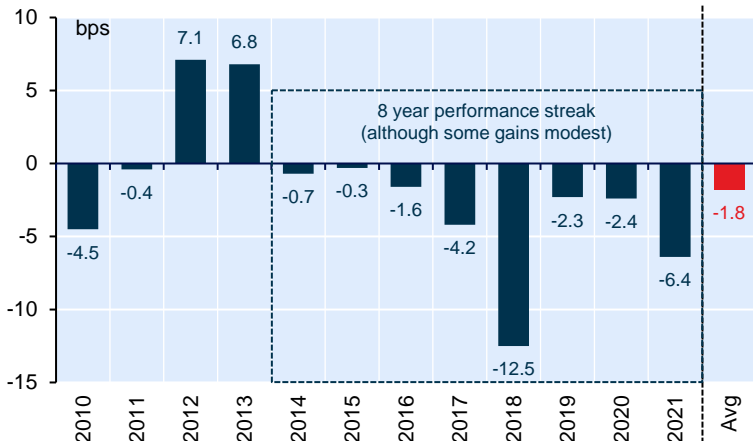
Cumulative change in Canada-US 5s relative to 1-Jun & 1-Dec



Source: NBF, Bloomberg | Note: Avg change based on 12Y period from 2010-21

Chart 8: Historical perspective on Canada curve flattener

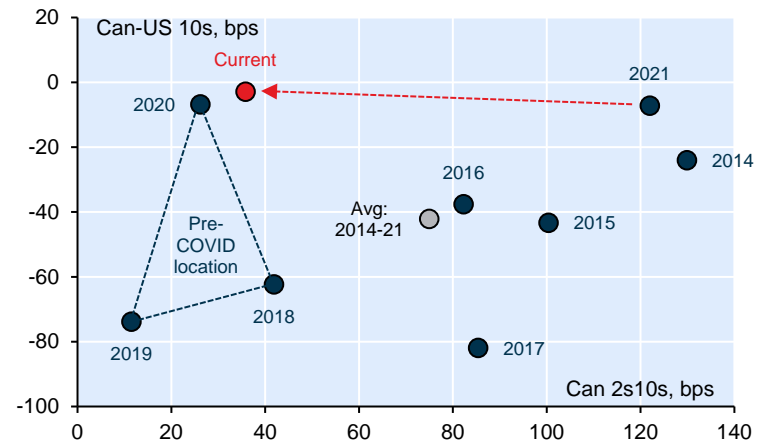
Net change in Canada 2s10s curve in 10D leading up to 1-Jun



Source: NBF, Bloomberg

Chart 9: Location? Flatter than '21 but cheaper vs. USTs

Canada-US yield differential & Canada curve 20D prior to 1-Jun (incl. current)

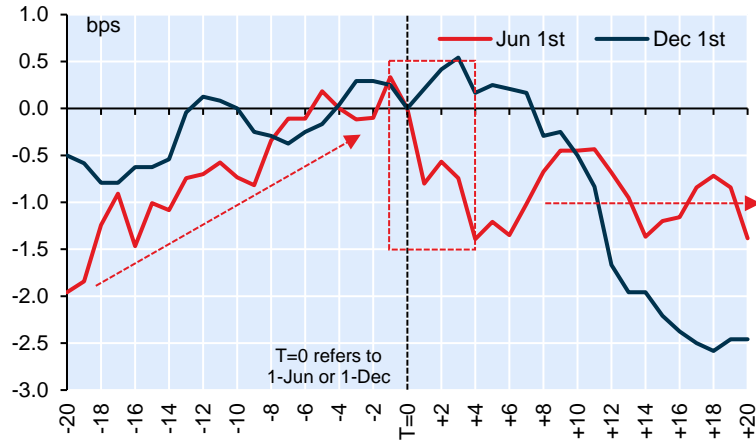


Source: NBF, Bloomberg | Note: Current refers to 5-May (which is T-19 vs. 1-Jun)

There's been success playing the curve flattener into June 1st, the historical success rate most impressive for 2s10s (followed by 2s5s). An eight-year performance streak for 2s10s is on the line as June 1st approaches. While today's curve is *much* flatter than this time last year, it's no flatter than 2019 or 2020. Meantime, Canada 10s appear relatively cheaper vs. USTs than in years gone by.

Chart 10: Is there a performance window for provis?

Cumulative change in Ontario 10Y spread vs. GoC relative to 1-Jun & 1-Dec

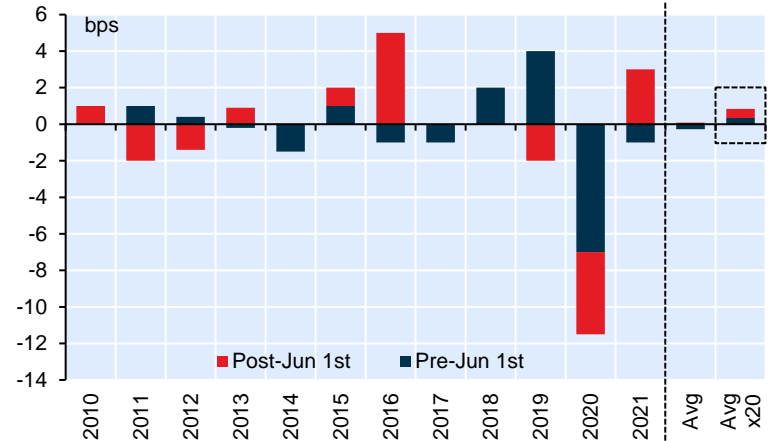


Source: NBF, Bloomberg | Note: Avg spread change based on 12Y period from 2010-21

Historical averages suggest a tendency for provincial cash spreads to cheapen up in May. Excess cash has allowed for some early June tightening in the past, but performance typically fades 5 or so days into the month. This contrasts with December tendencies. We caution that a 2020 spread rally clearly skews the average pre/post June move, given our relatively modest sample size (12 years).

Chart 11: Provi performance record distorted by 2020 rally

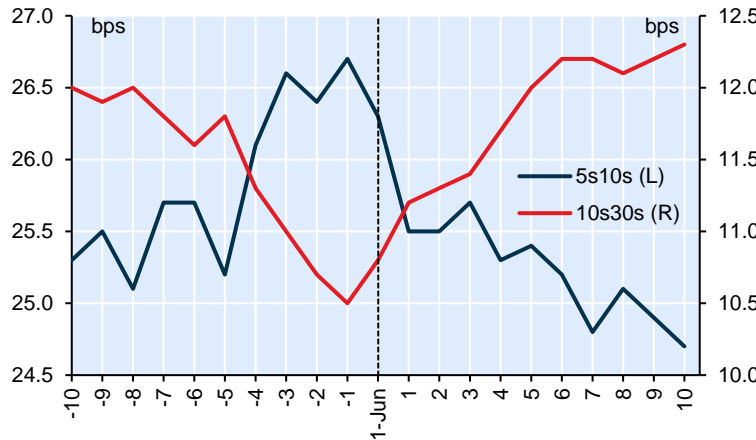
Change in Ontario 30Y spread vs. GoC in the 10D before/after 1-Jun



Source: NBF, Bloomberg | Note: Avg x20 excludes 2020 experience

Chart 12: In past, 10Y underperformed on curve into cash

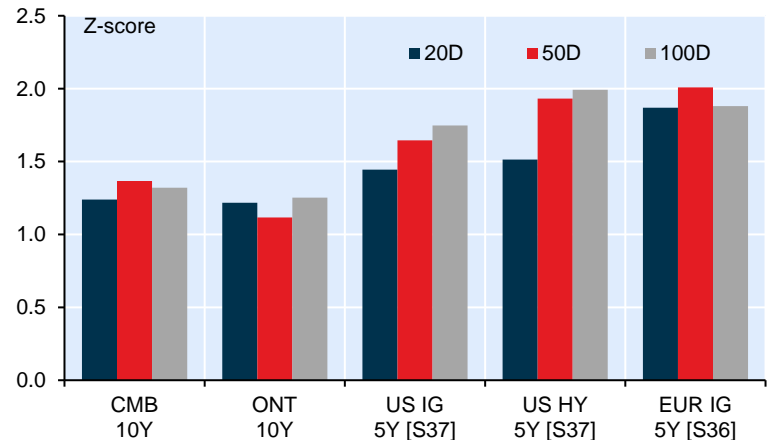
Average Ontario credit box in the 10D before/after 1-Jun



Source: NBF | Note: Based on constant maturity spreads over latest 5Y (excl. 2020)

Chart 13: Lower beta provis have widened less (but market fluid)

20- to 100-day Z-scores for Cdn public sector spreads vs. corporate indices

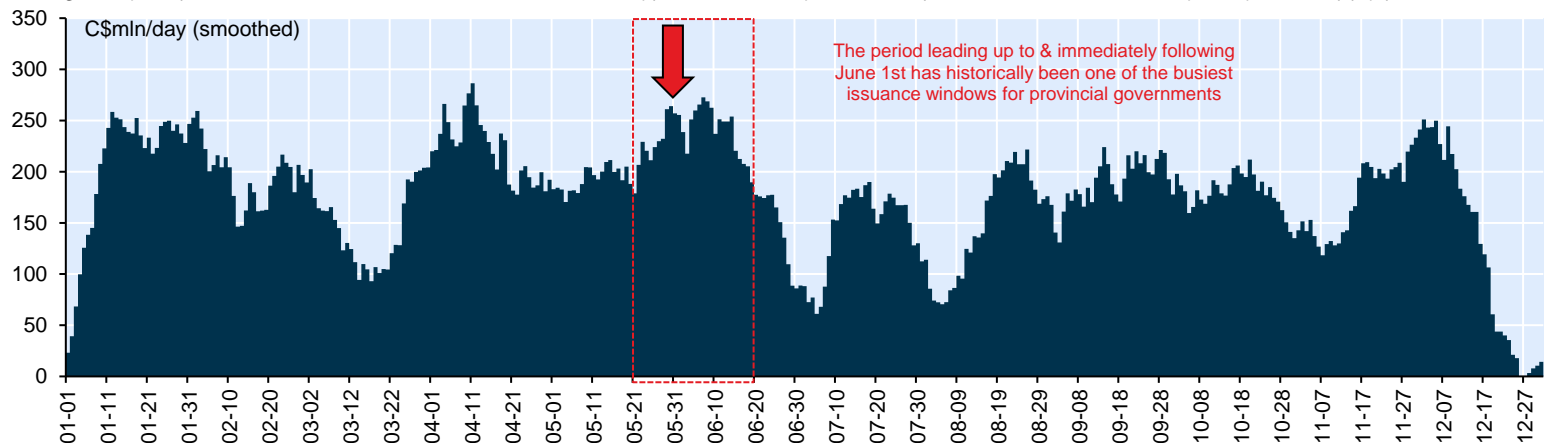


Source: NBF, Bloomberg | Note: Based on secondary levels as at 5-May @ 17:00

We're hesitant to trade the credit curve based on cashflows alone. Strictly speaking, the empirical record hints at 10Y underperformance vs. the wings up to June 1st, the 10s30s credit box often steepening as June progressed. Mind you, today's more frequent 10Y benchmarks could nullify past tendencies, with presumably less acute portfolio re-positioning. To us, provis have clearly bolstered their 'low-beta' bona fides in recent weeks. Having suffered less damage, RV screens might flag provis as 'rich' vs. comps (notably corps). We favour defensive sectors as financial conditions tighten.

Chart 14: Not surprisingly, provincial issues often lean into seasonal cash, with late May/early June typically quite active

Average daily C\$ provincial bond issuance over the course of a 'typical' calendar year, with a particular focus on late May, early June supply patterns

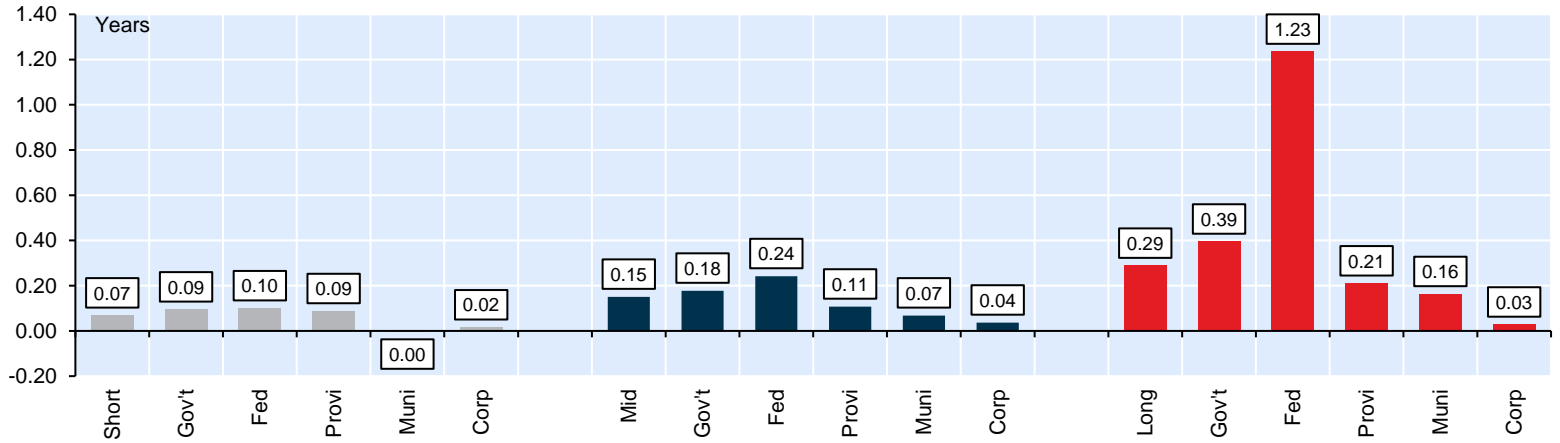


Source: NBF, Bloomberg | Note: Based on marketable provincial bond issuance over 12Y period (2010-21); levels smoothed +/- 5 days to more clearly identify underlying tendencies

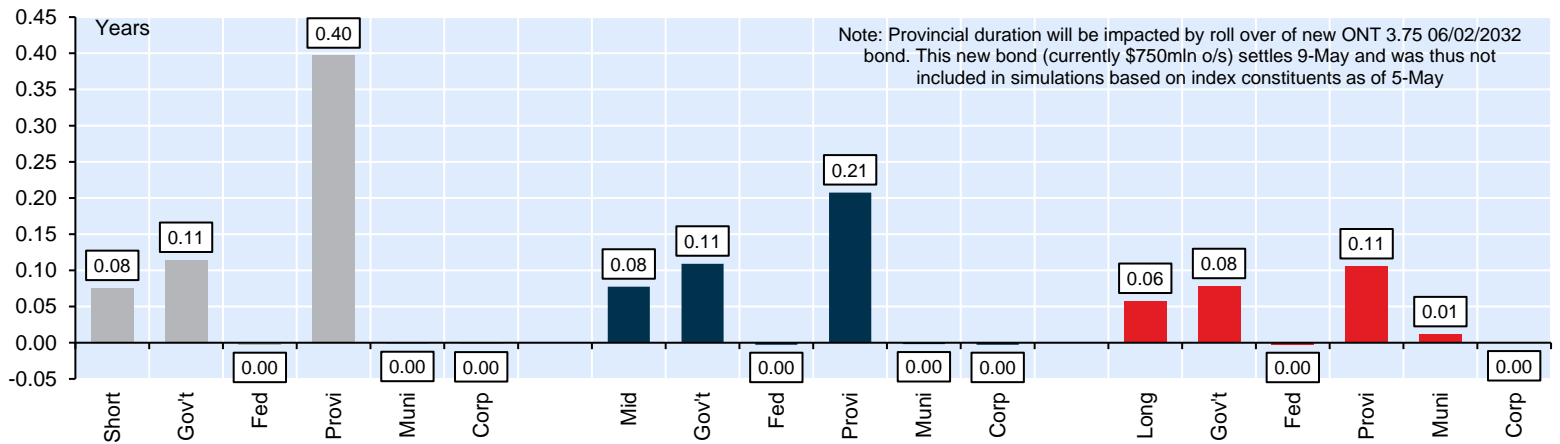
Provincial issuers are well attuned to seasonal dynamics, with supply often ramping up into June's deluge of cash. All told, [provinces have -C\\$110 billion to borrow in 2022-23](#), and we're collectively slow off the mark in April. So expect plenty of action in the coming weeks. A caveat: Ontario's June 2nd election and resulting funding blackout should temporarily create room for others this June.

Charts 15–18: Nature of index extension differs notably across June's three key days

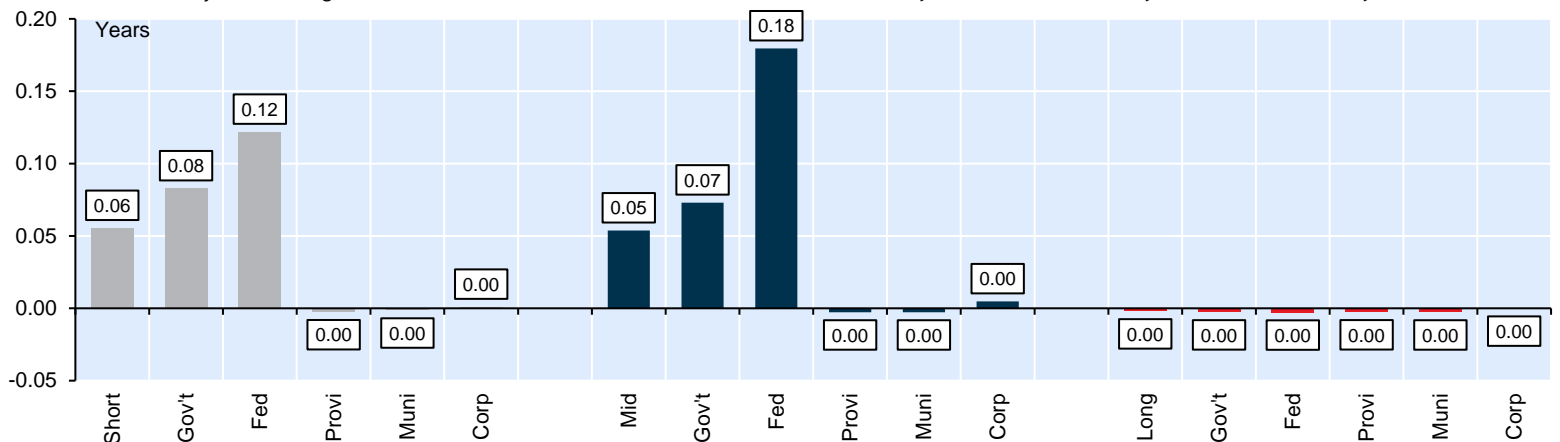
June 1st effects: Projected change in modified duration of FTSE Canada Universe Bond Index by term & sector: Tuesday 31-May to Wednesday 1-Jun



June 2nd effects: Projected change in modified duration of FTSE Canada Universe Bond Index by term & sector: Wednesday 1-Jun to Thursday 2-Jun



June 15th effects: Projected change in modified duration of FTSE Canada Universe Bond Index by term & sector: Tuesday 14-Jun to Wednesday 15-Jun



Source: NBF, FTSE Russell | Note: NBF simulations conducted 6-May, using 5-May closing values/constituents; assumes no change in yield curve

June 1st effects (top chart) > C\$5.63 billion in Universe cashflows. NBF estimates +0.060 year increase in modified duration of Universe, with two-thirds of duration increase attributable to roll effects. Duration increase of Long bucket particularly notable, as Long Federal sector extends estimated +1.2 years. Should support performance of longer dated Canadas.

June 2nd effects (middle chart) > C\$4.28 billion in Universe cashflows. NBF estimates +0.073 year increase in modified duration of Universe, with nearly 80% of duration increase attributable to roll effects. Notable duration increase expected for both Short and Mid buckets, most apparent in Provincial sector. The ultimate duration adjustment will be impacted by the new ONT 2032 bond, which had yet to settle when our sims were run. Overall, the clear majority of affected holdings relate to Ontario bonds, where an upcoming June 2nd general election is likely to impact this issuer's ability to tap early June cash.

June 15th effects (bottom chart) > C\$1.48 billion in Universe cashflows. NBF estimates +0.041 year increase in modified duration of Universe, with ~90% of duration increase attributable to roll effects. Duration increase largely a Canada Housing Trust story, as Short Federal and Mid Federal sectors extend most significantly. Negligible changes throughout Long bucket.

Note: Refer to Table 1 on page 5 for specific roll outs and roll overs. Actual duration adjustments subject to underlying market levels and index composition, which will change in lead up to June 1st.

Table 1: The specific bonds driving significant roll effects... 28 securities with current holdings of \$100 billion on three key days
 Specific bond issues rolling out of FTSE Canada Universe Bond Index or rolling from one bucket to another: June 1st, June 2nd & June 15th

Rolling out of FTSE Canada Universe Bond Index														
On 1-Jun					On 2-Jun					On 15-Jun				
Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %
CAN	1.50	01-Jun-23	9,761	0.54	ONT	2.85	02-Jun-23	12,100	0.68	CANHOU	2.35	15-Jun-23	10,500	0.58
CAN	8.00	01-Jun-23	851	0.05	MP	2.55	02-Jun-23	3,050	0.17					
PPLCN	2.56	01-Jun-23	600	0.03	NBRNS	2.85	02-Jun-23	1,000	0.06					
Total rolling out			11,211	0.62	Total rolling out			16,150	0.90	Total rolling out			10,500	0.58

Rolling over from MID to SHORT bucket of FTSE Canada Universe Bond Index														
On 1-Jun					On 2-Jun					On 15-Jun				
Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %
CAN	1.00	01-Jun-27	6,281	0.32	ONT	2.60	02-Jun-27	11,978	0.65	CANHOU	2.35	15-Jun-27	12,073	0.65
ALTA	2.55	01-Jun-27	5,700	0.31	MP	2.60	02-Jun-27	1,500	0.08	PPLCN	4.24	15-Jun-27	500	0.03
CPPIBC	2.85	01-Jun-27	1,500	0.08	SCDA	2.65	02-Jun-27	1,000	0.05					
NS	2.10	01-Jun-27	954	0.05	ONT	7.60	02-Jun-27	706	0.05					
CAN	8	01-Jun-27	917	0.06	NF	1.25	02-Jun-27	500	0.03					
NWRWPT	2.80	01-Jun-27	750	0.04										
IPLCN	4.23	01-Jun-27	700	0.04										
AIREIN	3.37	01-Jun-27	325	0.02										
NAVCAN	7.40	01-Jun-27	199	0.01										
NS	6.60	01-Jun-27	159	0.01										
Total rolling MID to SHORT			17,485	0.94	Total rolling MID to SHORT			15,684	0.85	Total rolling MID to SHORT			12,573	0.67

Rolling over from LONG to MID bucket of FTSE Canada Universe Bond Index														
On 1-Jun					On 2-Jun					On 15-Jun				
Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %	Issuer Ticker	Cpn %	Maturity Date	O/S C\$mIn	Weight %
CAN	2.00	01-Jun-32	12,405	0.63										
Q	6.25	01-Jun-32	4,033	0.27										
HYDONE	6.93	01-Jun-32	448	0.03										
FNFACA	2.85	01-Jun-32	354	0.02										
Total rolling LONG to MID			17,239	0.95	Total rolling LONG to MID			N/A		Total rolling LONG to MID			N/A	

Source: NBF, FTSE Russell | Note: Relevant securities as of 5-May; O/S refers to "current holdings"; weight refers to Universe & is based on current holdings; a number of additional bonds will roll out or roll over on other days during June 2022, but we've concentrated on the three days where coupon & roll effects tend to be most pronounced; notables include two BRCOL bonds that roll over either Long to Mid or Mid to Short on 18-Jun, while a couple of large financial securities roll out on 9-Jun & 20-Jun; contact NBF for additional details

As of the close on May 5th, there were 28 unique securities comprising 5.5% of the FTSE Canada Universe Bond Index due to roll out or roll over on June 1st, June 2nd or June 15th. We're talking about over C\$100 billion in combined proceeds. Note that the above table and related figures do not include Ontario's fresh new 10-year bond (ONT 3.75% 06/02/2032, C\$750 million new issue, settling May 9th). Look for that bond to be re-opened once or twice over the course of May. The new Ontario 2032 bond won't stay in the Long bucket for long, rolling over to the Mid bucket on June 2nd. This roll will contribute to a duration extension for the Long Provincial sector not technically captured in our simulation analysis, which was based on index constituents prior the new bond's settlement.

Table 2: Examining past performance in/around June 1st

Average move (net) & success rates in Canada interest rates (yields, curves, butterflies, vs. US) & provincial credit in days before/after June 1st (based on 2010-21)

		Canada Outright				Canada Curves						Canada Flies				
		2-year	5-year	10-year	30-year	2s-5s	2s-10s	2s-30s	5s-10s	5s-30s	10s-30s	2s-5s-10s	2s-5s-30s	2s-10s-30s	5s-10s-30s	
Days before / after 1-Jun	-20	-7.8	-12.4	-11.5	-11.2	-4.6	-3.7	-3.4	0.9	1.1	0.2	-5.5	-5.7	-3.9	0.7	
	-10	-8.4	-10.6	-10.2	-9.4	-2.2	-1.8	-1.0	0.4	1.2	0.8	-2.6	-3.4	-2.6	-0.4	
	-5	-4.8	-6.0	-5.7	-5.4	-1.2	-0.9	-0.6	0.3	0.6	0.3	-1.5	-1.8	-1.2	0.0	
	-3	-5.3	-5.8	-4.5	-3.5	-0.5	0.8	1.8	1.2	2.2	1.0	-1.7	-2.7	-0.2	0.3	
	-1	-3.8	-3.9	-2.4	-1.5	-0.1	1.4	2.3	1.5	2.4	0.9	-1.6	-2.5	0.5	0.6	
	+0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	+1	1.8	2.7	3.0	2.3	0.9	1.2	0.5	0.3	-0.4	-0.7	0.7	1.4	1.9	1.0	
Days before / after 1-Jun	+3	0.8	2.0	3.7	3.7	1.3	3.0	2.9	1.7	1.6	-0.1	-0.4	-0.4	3.0	1.7	
	+5	2.7	5.0	6.3	5.7	2.3	3.6	2.9	1.3	0.6	-0.7	1.0	1.7	4.3	2.0	
	+10	3.4	2.5	1.6	0.2	-1.0	-1.8	-3.2	-0.8	-2.3	-1.4	-0.1	1.3	-0.4	0.6	
	+20	5.7	5.8	3.7	0.1	0.1	-2.0	-5.6	-2.1	-5.7	-3.6	2.1	5.7	1.5	1.5	
	Success rate (%)	-20	58%	92%	92%	83%	92%	75%	58%	67%	58%	42%	58%	75%	75%	67%
	-10	67%	67%	83%	75%	75%	83%	58%	50%	58%	50%	75%	67%	58%	58%	
-5	58%	67%	67%	75%	67%	50%	67%	50%	50%	50%	50%	58%	83%	67%		
+5	25%	42%	25%	25%	25%	25%	42%	42%	42%	67%	58%	42%	25%	25%		
+10	33%	42%	42%	50%	58%	58%	58%	58%	67%	75%	58%	50%	42%	33%		
+20	42%	42%	50%	58%	58%	75%	75%	58%	67%	58%	42%	42%	58%	50%		
Criteria	Lower yield				Flatter yield curve						Belly performance					

		Canada-US Differential				Canada-US Boxes						Ontario spread/credit curves				
		2-year	5-year	10-year	30-year	2s-5s	2s-10s	2s-30s	5s-10s	5s-30s	10s-30s	10-year	30-year	9s-10s	10s-30s	
Days before / after 1-Jun	-20	-2.7	-3.2	-1.4	-2.6	-0.6	1.3	0.1	1.8	0.6	-1.2	2.0	0.9	0.0	-1.1	
	-10	-4.9	-4.3	-0.6	-0.1	0.6	4.3	4.7	3.7	4.1	0.4	0.7	-0.3	0.0	-1.0	
	-5	-1.7	-2.7	-0.6	-0.6	-1.0	1.0	1.0	2.1	2.1	0.0	-0.2	-0.5	0.0	-0.3	
	-3	-2.5	-2.3	-0.1	0.7	0.1	2.4	3.2	2.2	3.0	0.8	0.1	-0.2	0.1	-0.3	
	-1	-3.7	-3.4	-1.2	-0.3	0.3	2.5	3.4	2.2	3.1	0.9	-0.3	-0.3	0.0	0.0	
	+0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	+1	0.3	-0.4	-0.7	-1.5	-0.7	-1.0	-1.8	-0.3	-1.1	-0.8	-0.8	-0.5	0.0	0.3	
Days before / after 1-Jun	+3	0.8	0.7	0.3	-1.4	-0.1	-0.5	-2.2	-0.4	-2.1	-1.7	-0.7	-0.5	0.1	0.2	
	+5	1.8	2.3	1.4	-0.1	0.5	-0.4	-2.0	-0.9	-2.4	-1.6	-1.2	-0.8	0.1	0.4	
	+10	3.0	1.7	0.1	-1.5	-1.3	-2.9	-4.5	-1.6	-3.2	-1.6	-0.5	0.1	0.1	0.5	
	+20	6.1	4.6	3.4	0.8	-1.5	-2.7	-5.3	-1.2	-3.8	-2.6	-1.4	-0.5	0.3	0.9	
	Success rate (%)	-20	33%	42%	58%	67%	67%	67%	58%	67%	75%	75%	33%	42%	25%	92%
	-10	67%	75%	58%	50%	50%	42%	42%	42%	33%	33%	33%	50%	25%	92%	
-5	67%	50%	58%	58%	50%	50%	50%	50%	50%	42%	33%	33%	42%	58%		
+5	50%	33%	33%	58%	50%	67%	67%	50%	58%	67%	50%	50%	42%	42%		
+10	33%	50%	50%	58%	58%	75%	75%	67%	67%	58%	42%	33%	33%	25%		
+20	25%	58%	42%	58%	67%	67%	67%	42%	50%	67%	50%	50%	42%	25%		
Criteria	Relatively tighter yield vs. US				Relatively flatter yield curve vs. US						Tighter credit spread, flatter credit curve					

Source: NBF, Bloomberg | Note: Based on week days; success rates calculated over 12Y period, covering 2010-21; success rates reflect the percentage of time the expected direction of trade held in pre- & post-cash period; examples of the 'a priori' direction of trade include: Canada outright = lower yield; Canada curves = flatter; Canada-US yield differentials = tighter/narrower; refer to "Criteria" for nature of tests & expected direction



Economics and Strategy

Montreal Office

514-879-2529

Stéfane Marion

Chief Economist and Strategist
stefane.marion@nbc.ca

Kyle Dahms

Economist
kyle.dahms@nbc.ca

Alexandra Ducharme

Economist
alexandra.ducharme@nbc.ca

Matthieu Arseneau

Deputy Chief Economist
matthieu.arseneau@nbc.ca

Daren King

Economist
daren.king@nbc.ca

Angelo Katsoras

Geopolitical Analyst
angelo.katsoras@nbc.ca

Jocelyn Paquet

Economist
jocelyn.paquet@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

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.

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 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.

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.