

Industry Note

Equity Research

August 3, 2022

Metals & Minerals

Uranium Weekly - Trans-Caspian Shipping Route a Work in Progress

The Ux Consulting (UxC) weekly spot price indicator published earlier this week increased to US\$48.50/lb, up US\$1.75/lb, or +3.7% over last week. Since mid-May, the spot uranium price has been trading in a tight range between \$45-\$50/lb.

A significant proportion of Kazatomprom's products are exported on a primary route through Russia to the Port of St. Petersburg. The company is monitoring the growing list of sanctions on Russia and the potential impact they could have on the transportation of products through Russian territory. To date, Kazatomprom noted that there are no issues or restrictions on its activities related to the supply of its products to customers worldwide. Kazatomprom shipped its Q2/22 volumes via St. Petersburg without any disruptions or logistical/insurance-related issues. A Trans-Caspian route, which has been successfully used as an alternative route since 2018, helps to mitigate the risk of the primary route being unavailable. Kazatomprom has sought to reinforce a number of transit agreements with the authorities along the Trans-Caspian route; the company has received approval to ship 3,500 tons of uranium and has applied for an increase in order to accommodate potential total shipments by Kazatomprom and its joint venture partners in excess of that quota.

Cameco continues to delay shipment of its share of Inkai production and has received no deliveries from Inkai's 2022 production. Although the work on enabling shipping via the Trans-Caspian route continues, management indicated that there is no confirmed date as to when the first shipment will proceed via this route. Cameco would typically receive ~4 million pounds/year from Inkai. Management indicated that it is hopeful in getting the necessary regulatory approvals and resolving the contractual issues within the next several weeks to allow the transport of uranium via the Trans-Caspian route. However, management also noted that the nuclear industry should recognize that this is yet another example of the fragility of the nuclear fuel supply chain.

Before Russia's invasion of Ukraine, increasing price volatility, tightening supply in the spot market, and an increasing recognition that long-term supply is under threat were already contributing to nuclear utilities becoming more concerned about security of supply across the fuel supply chain. We expect uranium prices to see upward pressure over the medium term as utilities proceed with the difficult process of de-risking and repositioning their nuclear fuel supply chains away from Russian supply in what is already a tightly supplied market. In addition, we believe that Russia's actions have highlighted energy security, particularly in Europe, further bolstering the case for nuclear power.

Greg Barnes

Craig Hutchison, P. Eng

Derick Ma, CFA, CPA, CA

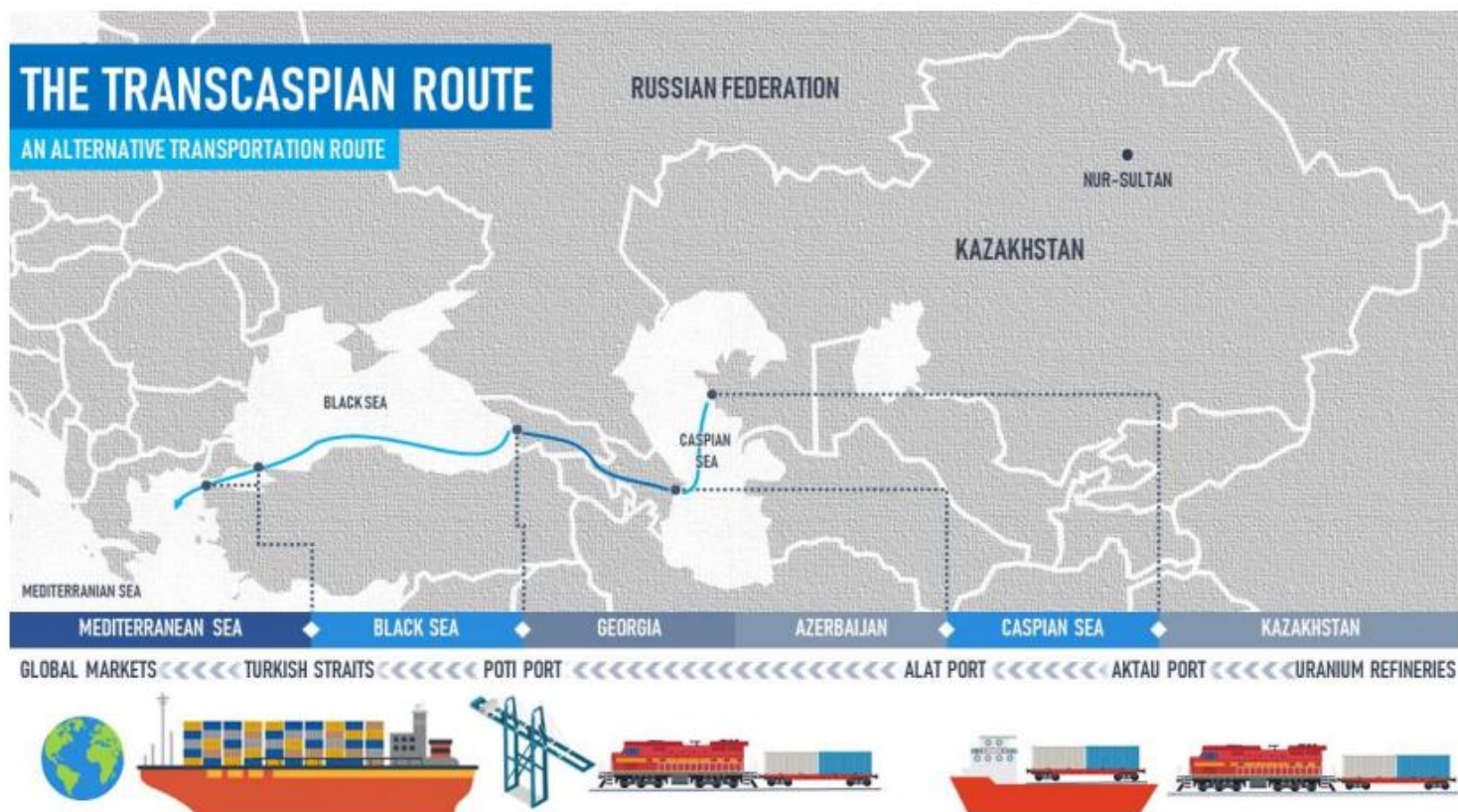
Nicholas Clarke, CFA (Associate)

Industry Note

Equity Research

August 3, 2022

Exhibit 1. The Trans-Caspian Uranium Transportation Route



Source: Kazatomprom

Exhibit 2. Uranium Comparable Table – EV/lb U₃O₈

	Ticker	3-Aug-22 Share Price (C\$)	EV (US\$mm)	Corporate Resources ¹			EV/Res		
				2P (Mlbs)	M+I (Mlbs)	Global Resources (Mlbs)	EV/2P (US\$/lb)	EV/M&I (US\$/lb)	EV/All (US\$/lb)
Cameco Corp.	CCO	31.71	9,737.6	471.2	457.1	612.0	20.67	21.30	15.91
Denison Mines Corp.	DML	1.53	915.0	98.6	161.0	183.0	9.28	5.68	5.00
Fission Uranium Corp.	FCU	0.74	365.3	-	102.4	135.2	n/a	3.57	2.70
Laramide Resources Ltd.	LAM	0.52	82.3	-	36.0	102.7	n/a	2.29	0.80
NexGen Energy Ltd.	NXE	5.33	1,968.7	234.1	256.7	337.4	8.41	7.67	5.83
Peninsula Energy Ltd.	PEN	0.17	121.9	-	15.8	53.6	n/a	7.71	2.27
Paladin Energy, Ltd.	PDN	0.67	1,536.2	62.9	96.1	176.7	24.44	15.99	8.69
UEX Corp.	UEX	0.49	200.1	-	110.1	146.2	n/a	1.82	1.37
Uranium Energy Corp.	UEC	5.27	1,171.4	-	116.4	149.6	n/a	10.06	7.83
Ur-Energy Corp.	URE	1.52	239.4	-	20.7	27.3	n/a	11.57	8.77
Median							14.97	7.69	5.42
Average							15.70	8.77	5.92

1: Resources are shown inclusive of reserves; M&I-I includes historical resource estimates.

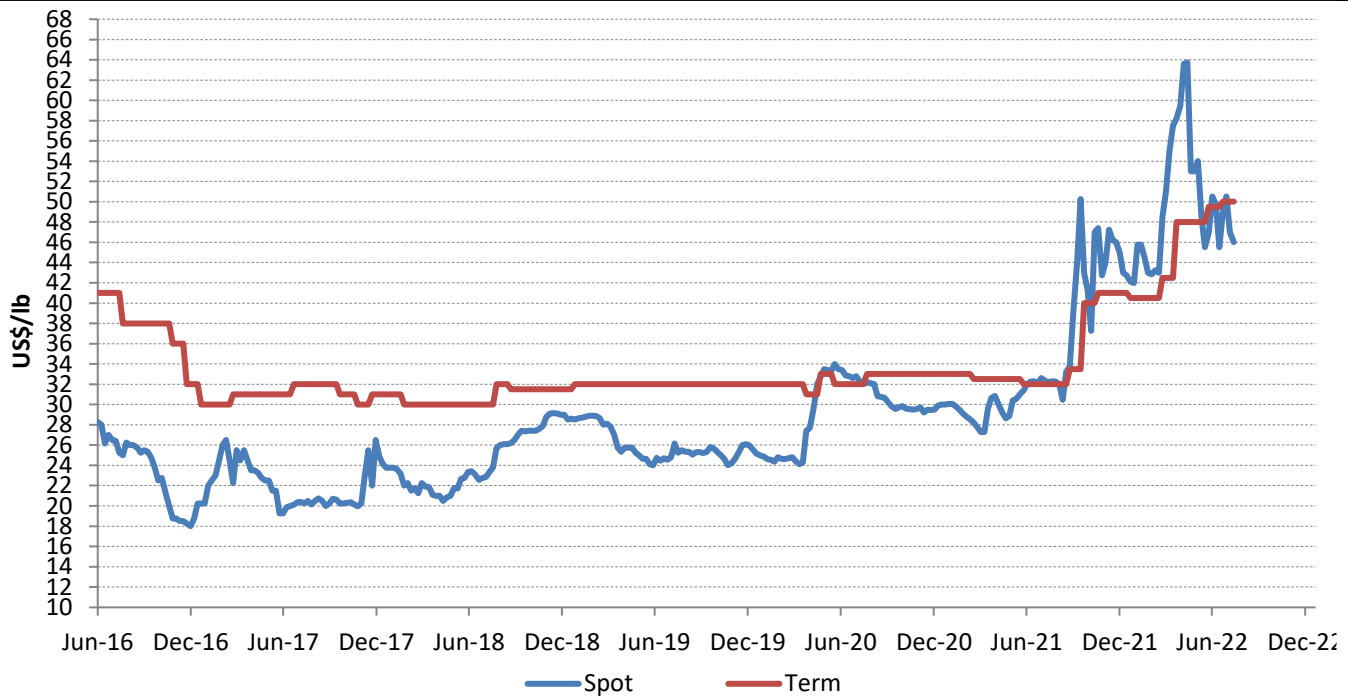
Source: Company Reports; TD Securities; Capital IQ

Industry Note

Equity Research

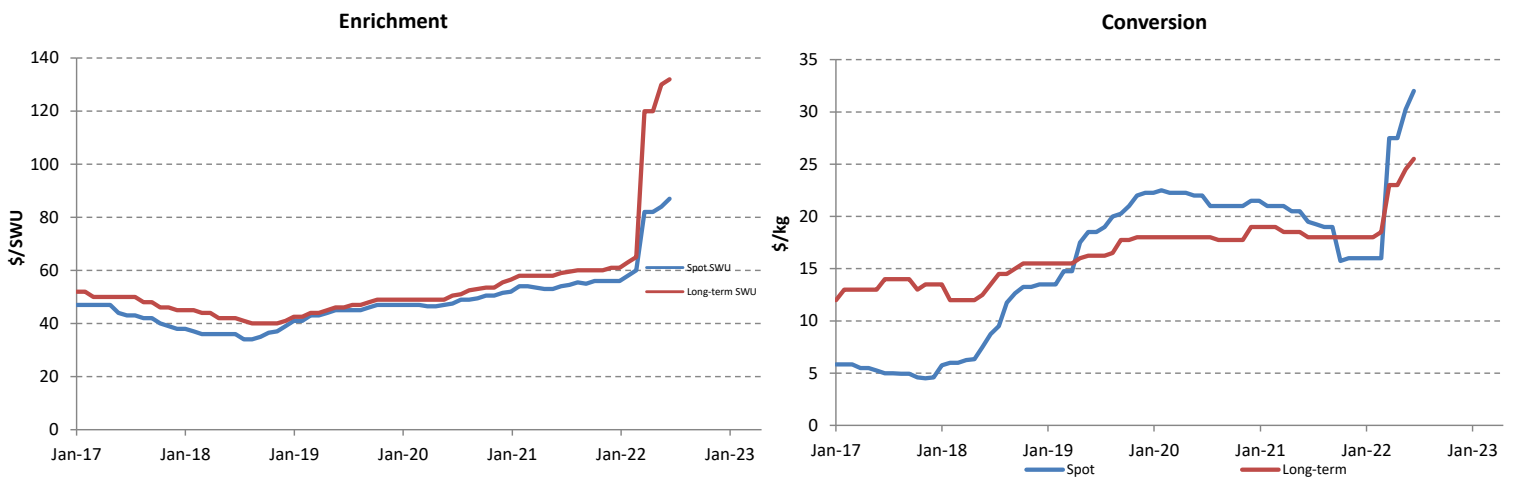
August 3, 2022

Exhibit 3. Weekly Spot and Term Uranium Prices (US\$/lb)



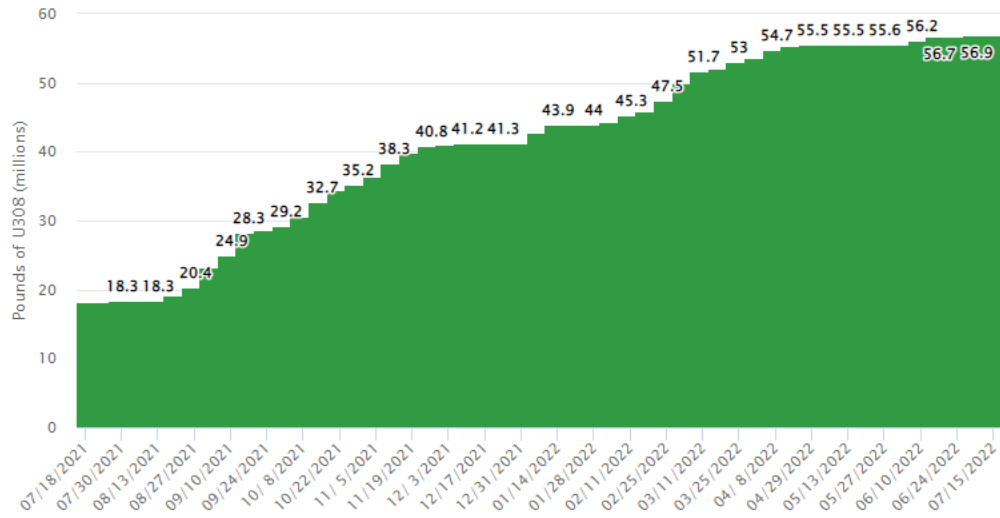
Source: UxC; TD Securities estimates

Exhibit 4. Monthly SWU and Conversion Pricing



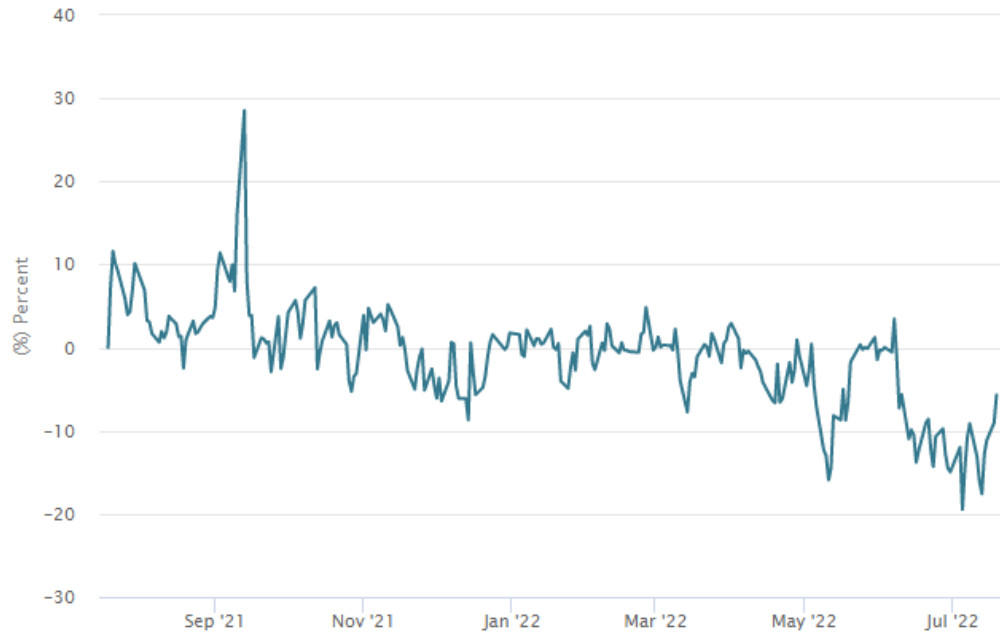
Source: UxC; TD Securities estimates

Exhibit 5. Sprott Physical Uranium Trust – Growth in Uranium Holdings Since July 2021



Source: Sprott Physical Uranium Trust

Exhibit 6. Sprott Physical Uranium Trust – Premium/Discount to NAV Since July 2021



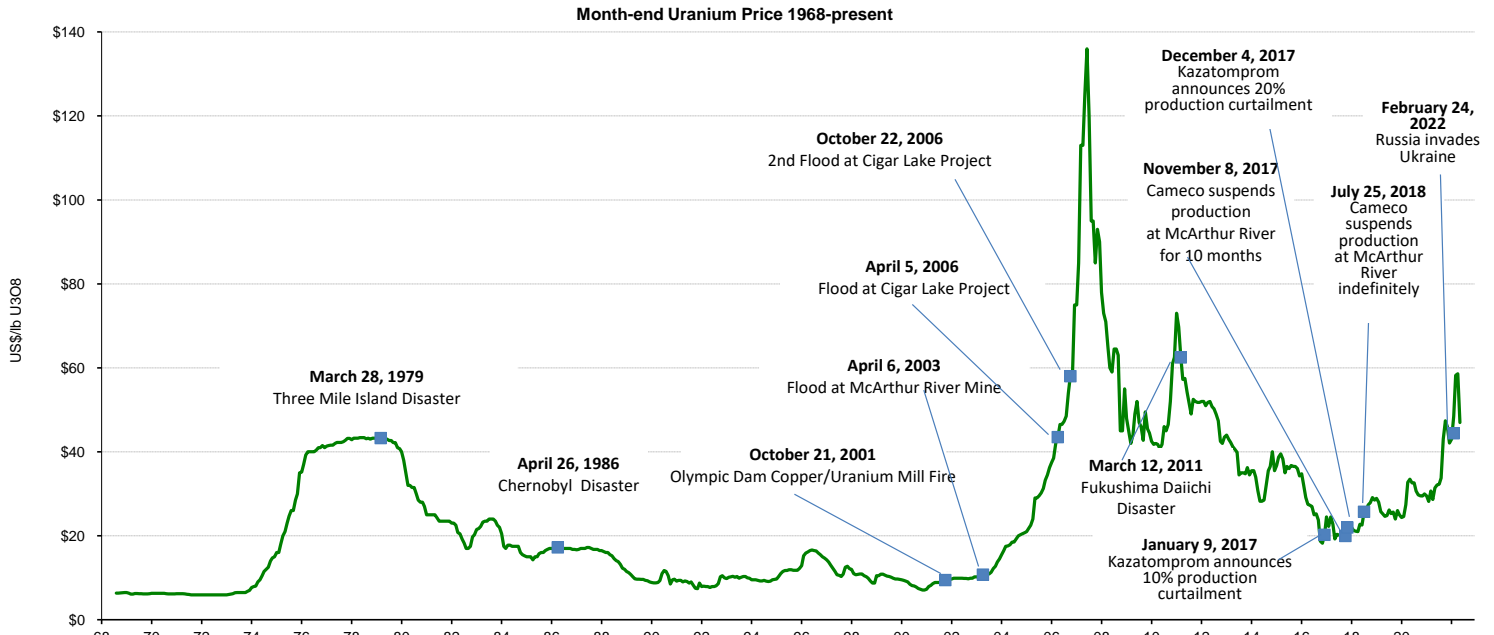
Source: Sprott Physical Uranium Trust

Industry Note

Equity Research

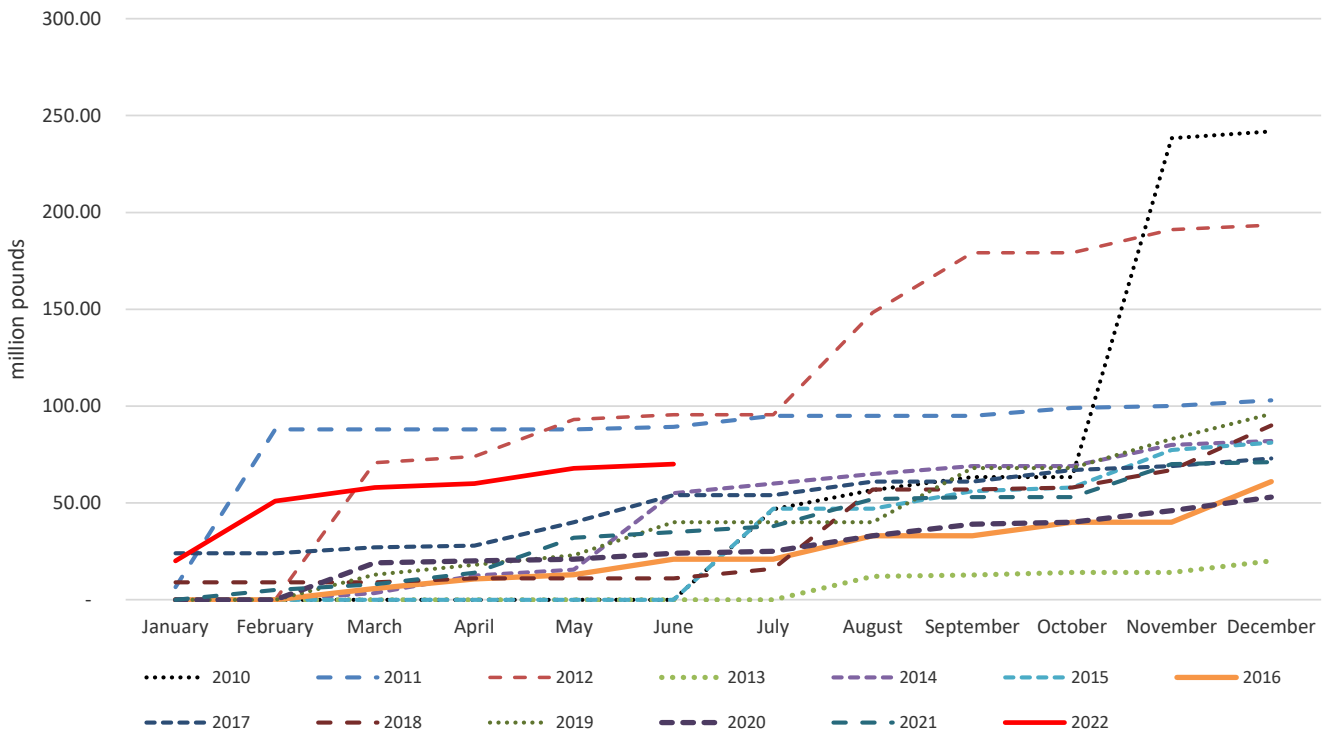
August 3, 2022

Exhibit 7. Uranium Price Since 1968 and Event Catalysts



Source: UxC, media reports, TD Securities estimates

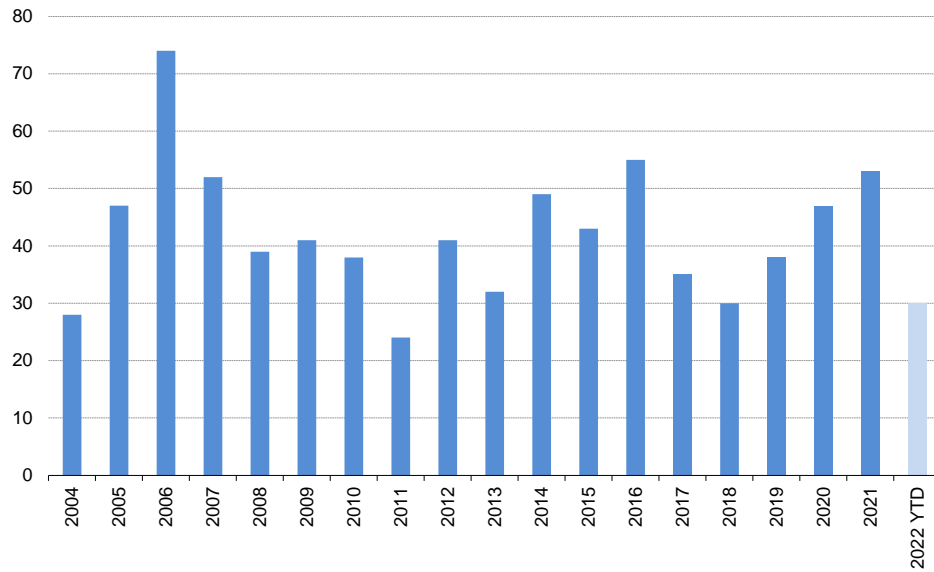
Exhibit 8. Cumulative Annual Term Contracting Volumes



Source: UxC; TD Securities estimates

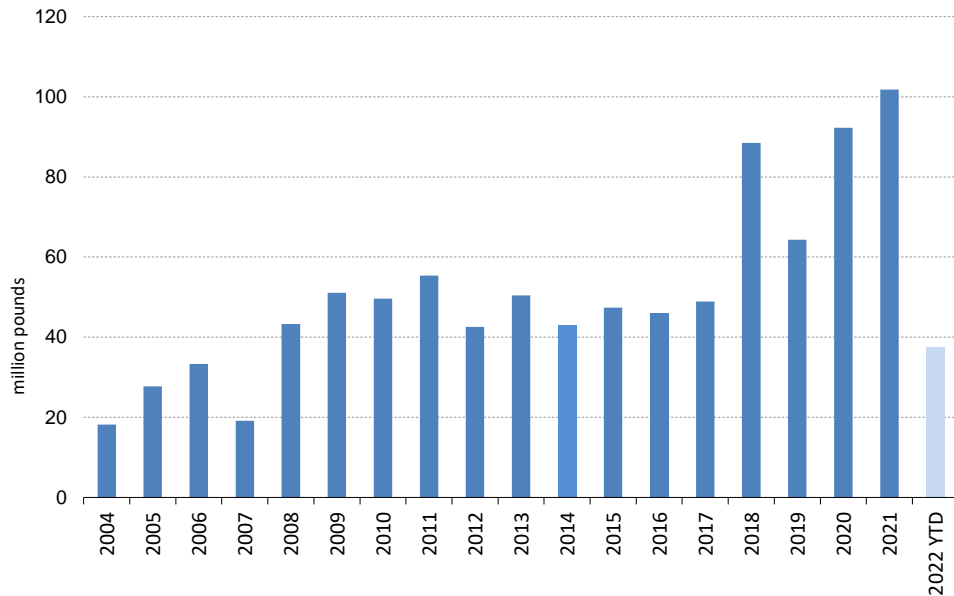


Exhibit 9. Annual Number of Term Contracts Signed



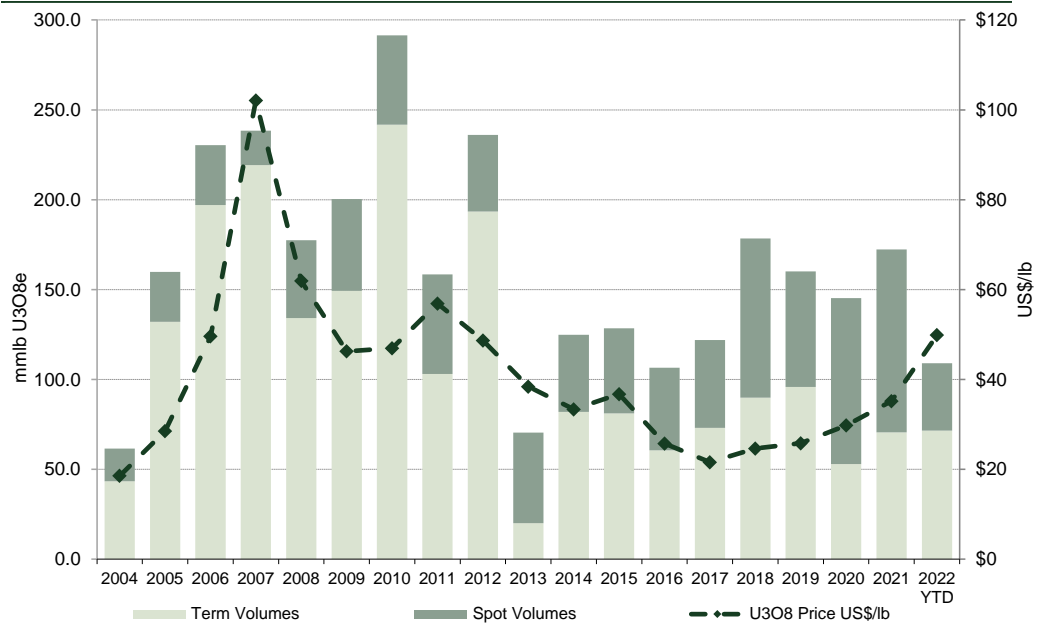
Source: UxC; TD Securities estimates

Exhibit 10. Annual Spot Uranium Market Volume



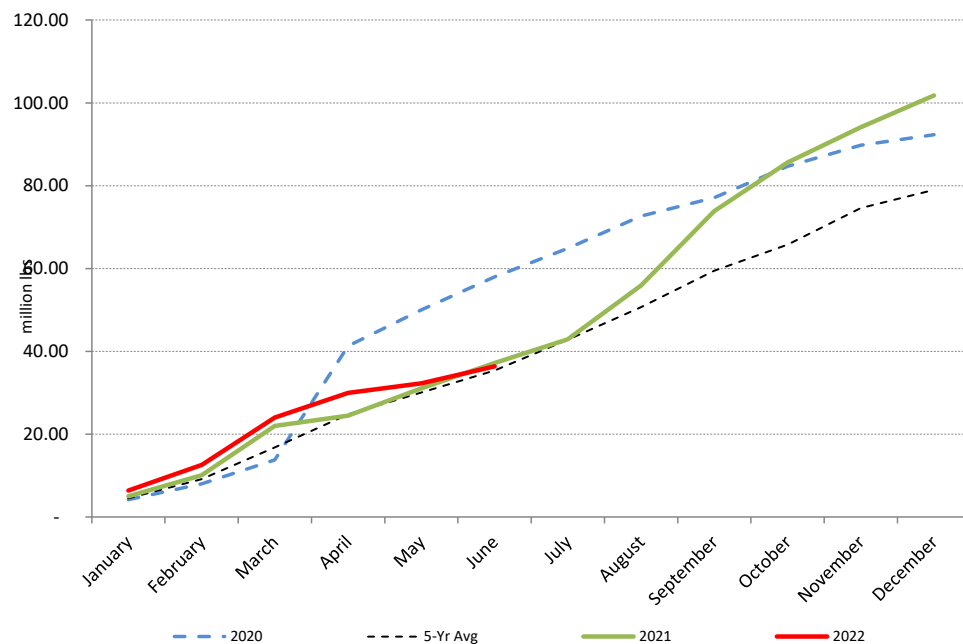
Source: UxC; TD Securities estimates

Exhibit 11. Spot and Term Volumes



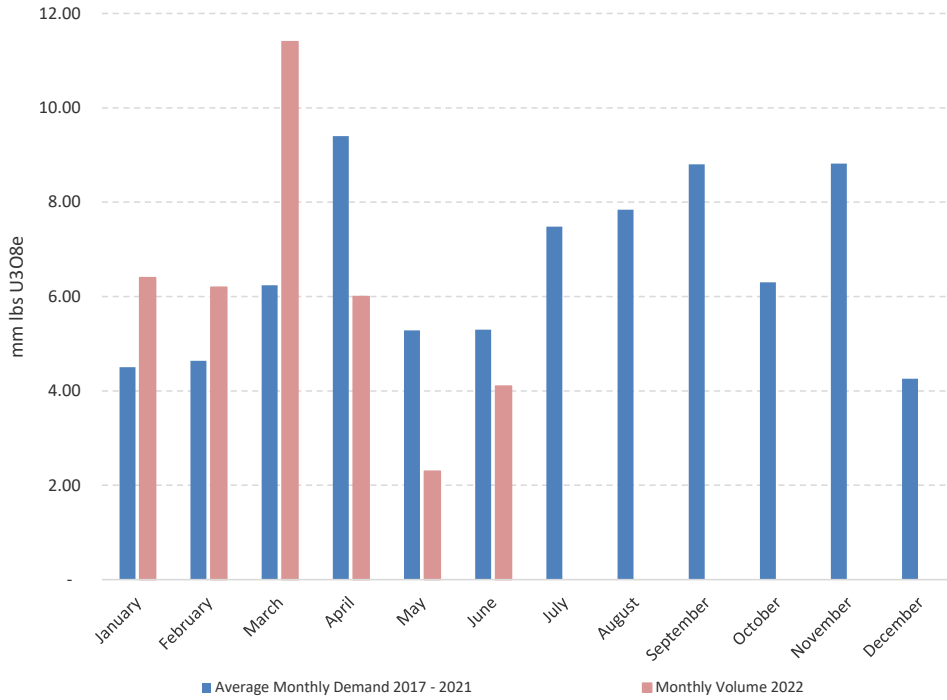
Source: UxC; TD Securities estimates

Exhibit 12. Historical vs. 2022 Cumulative Monthly Spot Volumes



Source: UxC; TD Securities estimates

Exhibit 13. Monthly Average Spot Volumes



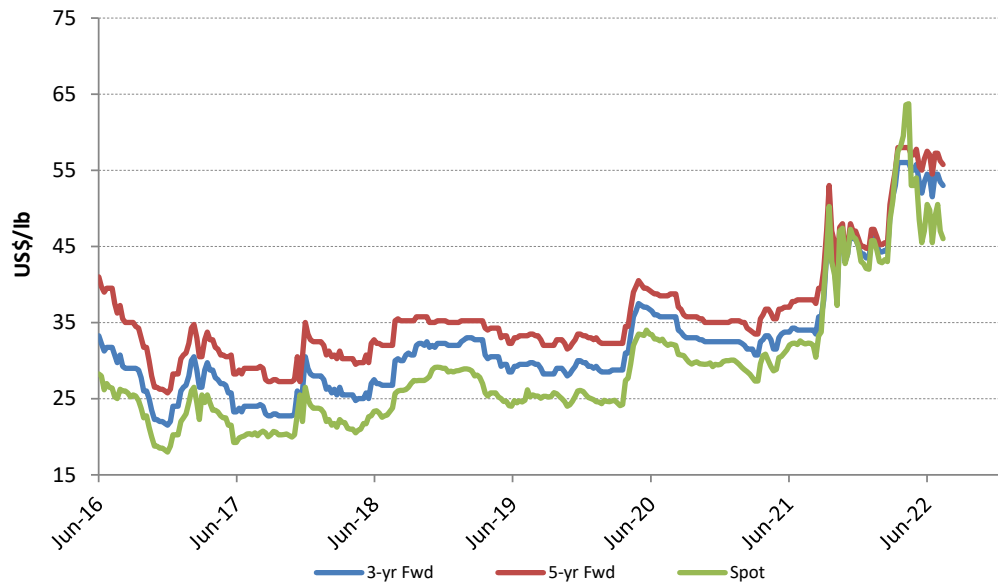
Source: UxC; TD Securities estimates

Exhibit 14. Uranium Term Price Premium to Spot (US\$/lb)



Source: UxC; TD Securities estimates

Exhibit 15. Uranium Prices – Spot, 3yr Fwd and 5yr Fwd



Source: UxC

Exhibit 16. Fund Implied Price (FIP) and Spot Price



Source: UxC; TD Securities estimates



Industry Note

Equity Research

August 3, 2022

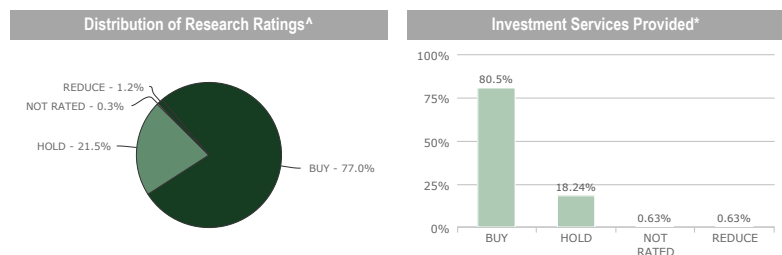
TD Securities Equity Research Disclosures

Company	Ticker	Disclosures
1. TD Securities Inc., TD Securities (USA) LLC or an affiliated company has managed or co-managed a public offering of securities within the last 12 months with respect to the subject company.		
2. TD Securities Inc., TD Securities (USA) LLC or an affiliated company has received compensation for investment banking services within the last 12 months with respect to the subject company.		
3. TD Securities Inc., TD Securities (USA) LLC or an affiliated company expects to receive compensation for investment banking services within the next three months with respect to the subject company.		
4. TD Securities Inc. or TD Securities (USA) LLC has provided investment banking services within the last 12 months with respect to the subject company.		
5. A long position in the securities of the subject company is held by the research analyst, by a member of the research analyst's household, or in an account over which the research analyst has discretion or control.		
6. A short position in the securities of the subject company is held by the research analyst, by a member of the research analyst's household, or in an account over which the research analyst has discretion or control.		
7. A long position in the derivative securities of the subject company is held by the research analyst, by a member of the research analyst's household, or in an account over which the research analyst has discretion or control.		
8. A short position in the derivative securities of the subject company is held by the research analyst, by a member of the research analyst's household, or in an account over which the research analyst has discretion or control.		
9. TD Securities Inc. and/or an affiliated company is a market maker, or is associated with the specialist that makes a market, in the securities of the subject company.		
10. TD Securities Inc. and/or affiliated companies own 1% or more of the equity securities of the subject company.		
11. A partner, director or officer of TD Securities Inc. or TD Securities (USA) LLC, or a research analyst involved in the preparation of this report has, during the preceding 12 months, provided services to the subject company for remuneration.		
12. This security has Subordinate voting shares.		
13. This security has Restricted voting shares.		
14. This security has Non-voting shares.		
15. This security has Variable voting shares.		
16. This security has Limited voting shares.		

Additional Important Disclosures

Price Graphs

Full disclosures for all companies covered by TD Securities can be viewed at <https://portal.tdsecurities.com/alpha/important-disclosures> by TD Securities' institutional equity clients.



Current as of: August 3, 2022

[^] Percentage of subject companies under each rating category: BUY (covering ACTION LIST BUY, BUY and SPECULATIVE BUY ratings), HOLD, and REDUCE (covering TENDER and REDUCE ratings) and NOT RATED (covering UNDER REVIEW, SUSPENDED, and NOT RATED).

^{*} Percentage of subject companies within each of the four categories (BUY, HOLD, REDUCE, and NOT RATED) for which TD Securities Inc. has provided investment banking services within the last 12 months.

Definition of Research Ratings

ACTION LIST BUY: The stock's total return is expected to exceed a minimum of 15% (with higher thresholds for less liquid, more risky securities) over the next 12 months and it is a top pick in the Analyst's sector.

BUY: The stock's total return is expected to exceed a minimum of 10% (with higher thresholds for less liquid, more risky securities) over the next 12 months.

SPECULATIVE BUY: The stock's total return is expected to exceed a minimum of 30% over the next 12 months (with higher thresholds for less liquid securities); however, there is material event risk associated with the investment that could result in a significant loss.

HOLD: The stock's total return is expected to be between 0% and 10%, (with higher thresholds for less liquid, more risky securities) over the next 12 months.

Industry Note

Equity Research

August 3, 2022

TENDER: Investors are advised to tender their shares to a specific offer for the company's securities or to support a proposed combination reflecting our view that a superior offer is not forthcoming.

REDUCE: The stock's total return is expected to be negative over the next 12 months.

SUSPENDED: Due to evolving circumstances, we can no longer generate what we consider a defensible target price and rating at the current time.

UNDER REVIEW: Our rating is under review pending additional information and/or analysis. The prior rating should not be relied on.

NOT RATED: We do not currently produce a recommendation and a target price on this security.

Risk ratings are relative to other companies in the TD Securities Equity Research coverage universe. In order of increasing risk, our risk ratings are **LOW, MEDIUM, HIGH, and SPECULATIVE**. These risk ratings are not meant to be compared to ratings on other securities and asset classes outside our Equity Research coverage universe.

Overall Risk Rating in order of increasing risk: Low (6.7% of coverage universe), Medium (41.7%), High (44.2%), Speculative (7.4%)

Research Dissemination Policy

TD Securities makes its research products available in electronic and/or printed formats. If there are any subsequent material changes to the reports it publishes, TD Securities will as soon as practicable distribute such reports with the relevant changes to its institutional clients who are entitled to receive them. Entitled institutional clients may also receive our research via third-party platforms including, but not limited to, Bloomberg, FactSet, Refinitiv, and S&P Capital IQ. All research is available by password to entitled institutional clients at <https://portal.tdsecurities.com/alpha> TD Securities may also update proprietary models; these models may be obtained by entitled institutional clients by contacting the research analyst directly. There is no planned frequency of updates to these models.

Analyst Certification

Each analyst of TD Securities Inc. whose name appears on page 1 of this research report hereby certifies that (i) the recommendations and opinions expressed in the research report accurately reflect the research analyst's personal views about any and all of the securities or issuers discussed herein that are within the analyst's coverage universe and (ii) no part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the provision of specific recommendations or views expressed by the research analyst in the research report.

Disclaimer

This material is for general informational purposes only and is not investment advice nor does it constitute an offer, recommendation or solicitation to buy or sell a particular financial instrument. It does not have regard to the specific investment objectives, financial situation, risk profile or the particular needs of any specific person who may receive this material. No representation is made that the information contained herein is accurate in all material respects, complete or up to date, nor that it has been independently verified by TD Securities. Recipients of this analysis or report are to contact the representative in their local jurisdiction with regards to any matters or questions arising from, or in connection with, the analysis or report.

Historic information regarding performance is not indicative of future results and investors should understand that statements regarding future prospects may not be realized. All investments entail risk, including potential loss of principal invested. Performance analysis is based on certain assumptions, the results of which may vary significantly depending on the modelling inputs assumed. This material, including all opinions, estimates and other information, constitute TD Securities' judgment as of the date hereof and is subject to change without notice. The price, value of and income from any of the securities mentioned in this material can fall as well as rise. Any market valuations contained herein are indicative values as of the time and date indicated. Such market valuations are believed to be reliable, but TD Securities does not warrant their completeness or accuracy. Different prices and/or valuations may be available elsewhere and TD Securities suggests that valuations from other sources be obtained for comparison purposes. Any price or valuation constitutes TD Securities' judgment and is subject to change without notice. Actual quotations could differ subject to market conditions and other factors.

TD Securities disclaims any and all liability relating to the information herein, including without limitation any express or implied representations or warranties for, statements contained in, and omissions from, the information. TD Securities is not liable for any errors or omissions in such information or for any loss or damage suffered, directly or indirectly, from the use of this information. TD Securities may have effected or may effect transactions for its own account in the securities described herein. No proposed customer or counterparty relationship is intended or implied between TD Securities and a recipient of this document.

TD Securities makes no representation as to any tax, accounting, legal or regulatory issues. Investors should seek their own legal, financial and tax advice regarding the appropriateness of investing in any securities or pursuing any strategies discussed herein. Investors should also carefully consider any risks involved. Any transaction entered into is in reliance only upon the investor's judgment as to financial, suitability and risk criteria. TD Securities does not hold itself out to be an advisor in these circumstances, nor do any of its representatives have the authority to do so.

The information contained herein is not intended for distribution to, or use by, any person in any jurisdiction where such distribution or use would be contrary to applicable law or regulation or which would subject TD Securities to additional licensing or registration requirements. It may not be copied, reproduced, posted, transmitted or redistributed in any form without the prior written consent of TD Securities.

If you would like to unsubscribe from our email distribution lists at any time, please contact your TD Securities Sales Contact. If you are located in Europe, Asia, Australia or New Zealand you may also unsubscribe by emailing us at Privacy.EAP@tdsecurities.com.

For more information, refer to our [Privacy Policy](https://www.tdsecurities.com/ca/en/privacy-security). <https://www.tdsecurities.com/ca/en/privacy-security>

Australia

If you receive this document and you are domiciled in Australia, please note that this report is intended to be issued for general information purposes only and distributed through Toronto Dominion (South East Asia) Limited ("TDSEA"). TDSEA does not hold itself out to be providing financial advice in these circumstances. TD Securities is a trademark and represents certain investment dealing and advisory activities of Toronto-Dominion Bank and its subsidiaries, including TDSEA. The Toronto-Dominion Bank is not an authorized deposit-taking or financial services institution in Australia. TDSEA is a holder of an Australian Financial Services Licence (528885) and is regulated in Australia by the Australian Securities and Investments Commission.

Canada

Canadian clients wishing to effect transactions in any security discussed herein should do so through a qualified salesperson of TD Securities or TD Securities Inc. TD Securities Inc. is a member of the Canadian Investor Protection Fund.

China, India, and South Korea

Insofar as the document is received by any persons in the People's Republic of China ("PRC"), India and South Korea, it is intended only to be issued to persons who have the relevant qualifications to engage in the investment activity mentioned in this document. The recipient is responsible for obtaining all relevant government regulatory approvals/licenses themselves, and represents and warrants

Industry Note

Equity Research

August 3, 2022

to The Toronto-Dominion Bank that the recipient's investments in those securities do not violate any law or regulation, including, but not limited to, any relevant foreign exchange regulations and/or overseas investment regulations. The Toronto-Dominion Bank has a representative office in Shanghai, Mumbai and Seoul which should be contacted for any general enquiry related to The Toronto-Dominion Bank or its business. However, neither any of the Toronto-Dominion Bank offshore branches/subsidiaries nor its representative offices are permitted to conduct business within the borders of the PRC, India and South Korea. In locations in Asia where the Bank does not hold licenses to conduct business in financial services, it is not our intention to, and the information contained in this document should not be construed as, conducting any regulated financial activity, including dealing in, or the provision of advice in relation to, any regulated instrument or product. This publication is for general information only, without addressing any particular needs of any individual or entity, and should not be relied upon without obtaining specific advice in the context of specific circumstances.

Hong Kong SAR (China)

This document, which is intended to be issued in Hong Kong SAR (China) ("Hong Kong") only to Professional Investors within the meaning of the Securities and Futures Ordinance (the "SFO") and the Securities and Futures (Professional Investor) Rules made under the SFO, has been distributed through Toronto-Dominion Bank, Hong Kong Branch, which is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission.

Japan

For Japanese residents, please note that if you have received this document from The Toronto-Dominion Bank entities based outside Japan, it is being provided to qualified financial institutions ("QFI") only under a relevant exemption to the Financial Instruments and Exchange Act.

If you have received this document from TD Securities (Japan) Co., Ltd., it is being provided only to institutional investors. TD Securities (Japan) Co., Ltd. is regulated by the Financial Services Agency of Japan and is distributing this document in Japan as a Type 1 Financial Instruments Business Operator registered with the Kanto Local Finance Bureau under registration number, Kinsho 2992, and a member of Japan Securities Dealers Association.

New Zealand

The Toronto-Dominion Bank is not a "registered bank" in New Zealand under the Reserve Bank Act 1989.

Singapore

This report is distributed in Singapore by The Toronto-Dominion Bank, Singapore Branch, and recipients in Singapore of this report are to contact The Toronto-Dominion Bank, Singapore Branch in respect of any matters arising from, or in connection with, this report. The Toronto-Dominion Bank, Singapore Branch is regulated by the Monetary Authority of Singapore. Where this report is issued or promulgated in Singapore, it is only intended for distribution to a person who is an accredited investor, expert investor or institutional investor as defined in the Securities and Futures Act (Cap. 289), the Securities and Futures (Prescribed Specific Classes of Investors) Regulations 2005, or the Securities and Futures (Classes of Investors) Regulations 2018 issued by the Monetary Authority of Singapore.

United Kingdom and Europe

This document is prepared, issued or approved for issuance in the UK by TD Securities Limited and in Europe by TD Global Finance unlimited company in respect of investment business. The Toronto-Dominion Bank is authorised by the Prudential Regulation Authority and subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. TD Securities Limited is authorised and regulated by the Financial Conduct Authority. TD Global Finance unlimited company, trading as TD Securities, is regulated by the Central Bank of Ireland. Insofar as the document is issued in or to the United Kingdom, it is intended only to be issued to persons who (i) are persons falling within Article 19(5) ("Investment professional") of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (as amended, the "Financial Promotion Order"), (ii) are persons falling within Article 49(2)(a) to (d) ("High net worth companies, unincorporated associations, etc.") of the Financial Promotion Order, or (iii) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated. Insofar as the document is issued in or to the European Union, it is intended only to be issued to persons categorised as 'Per Se Professional' or 'Eligible Counterparties' as defined in S.I. No 375 of 2017, European Union (Markets in Financial Instruments) Regulations 2017, Schedule 2. Clients in the United Kingdom wishing to effect transactions in any security discussed herein should do so through a qualified salesperson of TD Securities Limited. European clients wishing to effect transactions in any security discussed herein should do so through a qualified salesperson of TD Global Finance unlimited company. Insofar as the information in this report is issued in (i) the UK, it has been issued with the prior approval of TD Securities Limited and (ii) in Europe, it has been issued with the prior approval of TD Global Finance unlimited company. Article 20 Market Abuse Regulation 596/2014 ("MAR") requires market participants who produce or disseminate Investment Recommendations or other information recommending or suggesting an investment strategy to take reasonable care that such information is objectively presented, and to disclose their interests or indicate conflicts of interest. In accordance with the MAR requirements, see the [Investment Recommendations Disclaimer](#) for relevant information in relation to The Toronto-Dominion Bank – London Branch, TD Bank Europe Limited, TD Securities Limited and TD Global Finance unlimited company. <https://www.tdsecurities.com/tds/document/MAR-IR-Disclaimer>

United States

U.S. clients wishing to effect transactions in any security discussed herein must do so through a registered representative of TD Securities (USA) LLC.

TD Securities is a trademark of The Toronto-Dominion Bank and represents TD Securities Inc., TD Securities (USA) LLC and TD Securities Limited and certain investment and corporate banking activities of The Toronto-Dominion Bank and its subsidiaries.

© Copyright 2022 The Toronto-Dominion Bank. All rights reserved.

Full disclosures for all companies covered by TD Securities can be viewed at <https://portal.tdsecurities.com/alpha/important-disclosures>