# GLOBAL Equity



Jim Allworth Vancouver, Canada jim.allworth@rbc.com

# A fresh look at the U.S. recession scorecard

Equity investors are contending with a confluence of several economically significant developments: war in Ukraine, surging energy and commodity prices, worrying inflation data, central banks intent on tightening, and bond yields rapidly climbing above pre-pandemic levels. All these, and more, have raised concerns about the potential for broad economic weakness down the road. Those concerns have already produced a pullback in equities, and although markets appear to have regained their footing for now, more events of this kind cannot be ruled out as the year progresses. With the exception of the Ukraine tragedy, these crosscurrents seem to us part and parcel of a global economy transitioning from the high growth rates that usually accompany the first year or so of recovery from recession to the less-dynamic "middle innings" of an economic expansion. In that phase, we would expect GDP growth to remain positive (although Europe looks to be headed for some challenging quarters) while corporate

### **Equity views**

Region	Previous	Current
Global	+	+
United States	+	+
Canada	=	=
Continental Europe	+	=
United Kingdom	=	=
Asia (ex Japan)	=	=
Japan	=	=

+ Overweight; = Market Weight; - Underweight Source - RBC Wealth Management

earnings and share prices are likely to advance further.

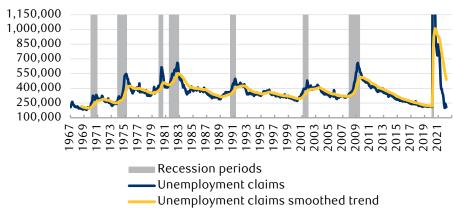
So long as the U.S. economy can avoid recession, we believe global investors should remain committed to equities. Our U.S. recession scorecard continues to give the economy a green light, although some of our seven indicators are now "less green" than others. Below, we outline the arithmetic of each with an assessment of how vulnerable each might be to turning negative.

#### U.S. recession scorecard

	Status		
Indicator	Expansionary	Neutral	Recessionary
Yield curve (10-year to 1-year Treasuries)	✓		
Unemployment claims	✓		
Unemployment rate	✓		
Conference Board Leading Economic Index	<b>✓</b>		
Free cash flow of non-financial corporate business	<b>✓</b>		
ISM New Orders minus Inventories	<b>✓</b>		
Fed funds rate vs. nominal GDP growth	<b>✓</b>		

### Strong labor market

U.S. unemployment insurance claims



Note: Shaded areas indicate recessions

Source - RBC Wealth Management, Federal Reserve Bank of St. Louis (FRED); data through 3/1/22

## Unemployment rate and unemployment benefit claims

These two indicators should be looked at together. The smoothed trend of the unemployment rate has usually turned upward at the start of a recession, or immediately before. It is an unusually timely indicator, as it is reported within a week after the end of each month. Although it gives very little in the way of early warning, its signals have always been visible right at the start of the economic downturn rather than months into it. This is especially useful because the start date of a recession is usually only announced definitively by the National Bureau of Economic Research about a year down the road.

The smoothed trend of the monthly average of unemployment claims has typically turned higher two to six months ahead of the unemployment rate's upward turn, giving fair warning of an approaching recession some months in advance. It has produced occasional false signals, but none of those were subsequently confirmed by the unemployment rate. It is available very close to the end of each month.

Both the unemployment rate and the number of claims would have to double from current levels over the next several months to turn their trends higher. Both are at or close to multi-decade lows, but could go even lower, in our view.

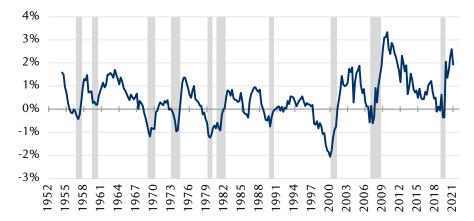
With businesses of all sizes in virtually every sector concerned by labour shortages, and with 11.3 million jobs on offer versus 6.3 million persons unemployed, we think most employers would be reluctant to lay anyone off in the near term. Even if the economy were to slow from here, we believe most businesses would go on hiring if they could find qualified applicants.

## Free cash flow of non-financial corporate businesses

This indicator measures the cash generated by non-financial corporate businesses as a percentage of GDP. It is derived from the Federal Reserve's quarterly Financial Accounts of the United States, and has given only one false positive signal in more than 65 years. In all other cases when this indicator has fallen below zero, a recession has followed—typically, two to three quarters later. More particularly, shrinking corporate cash flows have most often signaled an upcoming period of weaker capital spending, a highly cyclical component of GDP. Today, this indicator looks to be in no danger of signaling an approaching recession any time soon.

### Robust corporate health

U.S. nonfinancial corporate sector: Free cash flow as % of GDP (including foreign earnings retained abroad)



Note: Shaded areas indicate recessions

Source - RBC Wealth Management, Federal Reserve Bank of St. Louis (FRED); data through 10/31/21

## Conference Board Leading Economic Index (LEI)

This indicator signals a recession is on the way when it falls below where it was a year ago. It has always done so at least three months before the start of a recession (the pandemic downturn being the only exception), often six months before, and occasionally earlier. The LEI may have peaked for this economic cycle in Q2 of last year, but it remains a long way above where it was a year ago. Arithmetically, we don't think this indicator could turn negative on a 12-month basis until at least late Q2 of this year, or more likely Q3—and then only if the economy were to

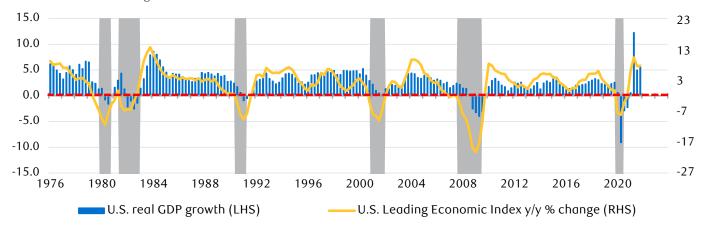
deteriorate swiftly in the intervening months. It is one of the strongest of the recession indicators we follow, and we think it is a long way from giving a negative signal.

### The yield curve

This very reliable indicator laboured in obscurity for decades, but is now followed minute-by-minute by a financial press that apparently needs something to obsess about 24/7. A yield curve inversion—that is, short-term interest rates higher than long-term rates—has preceded the start of every recession for the past 75 years,

### More growth ahead

Conference Board Leading Economic Index for the U.S.

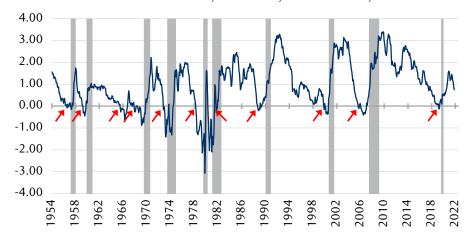


Note: Shaded areas indicate recessions

Source - The Conference Board, U.S. Department of Commerce, RBC Wealth Management; data through Q4 2021

#### Consistent with sustained growth

Yield differential between the U.S. 10-year Treasury Note and the 1-year Note



Note: Shaded areas indicate recessions and arrows indicate where yield curve inverts Source - RBC Wealth Management, Federal Reserve Bank of St. Louis (FRED); data through 3/1/22

with an average lead time of roughly 11 months.

Bond trading desks typically focus on the relationship between 2-year and 10-year Treasury yields. The Fed, when it comments on this topic, typically refers to the 90-day T-Bill yield versus the 10-year. We use the 1-year Treasury yield, a quieter maturity on the curve, as our short-term component.

Yield curve inversions have occasionally occurred after stock market peaks, but never more than a month or two later, and well before the associated bear markets reached the stage of serious declines. On average, the 1-year/10-year Treasury yield curve has inverted about six months prior to the peak of the stock market.

Today, the 10-year Treasury yield is still roughly 75 basis points higher than the 1-year yield. Inversion, were it to occur, would flip this indicator to red—but as things stand, we think that possibility is a long way off. A narrowing to something under 30 basis points would induce us to shift to a more cautionary yellow (neutral) rating.

### The federal funds rate versus the nominal GDP growth rate

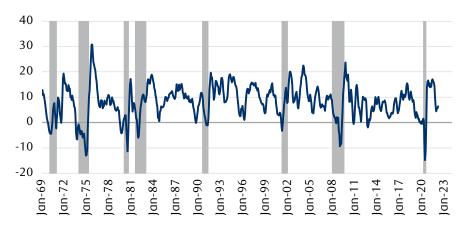
Since 1954, the federal funds rate has typically moved above the nominal (i.e., not adjusted for inflation) year-over-year growth rate of GDP prior to the onset of a recession. There have been two exceptions: in 1957 and 2020, the funds rate crossed that threshold one month after the recession began. It is not an ideal timing tool, as there have been several false positive signals, but with the exception of the two "close calls" noted, a fed funds rate in excess of nominal GDP growth has been a precondition of all U.S. recessions.

At the end of 2021, the nominal GDP growth rate stood at 10.6%, more than 10 percentage points above the 0.08% fed funds rate. We expect the year-over-year nominal GDP run rate will slow to between 7% and 8% by the end of this year, and decrease further to between 4% and 5% by late 2023.

The Federal Reserve hiked the funds rate by 25 basis points at its March meeting. The market is now pricing in a pair of 50 basis point hikes in April and June, followed by four more quarter-point increases this year and another four next year. That would put the funds rate at 2.25% by the end of 2022, and 3.25% at the end of

### Support waning

ISM Manufacturing New Orders minus Inventories



Note: Shaded areas indicate recessions

Source - RBC Wealth Management; Institute for Supply Management; data through 1/4/22

2023—still well short of the projected GDP run rate, by our reckoning.

(Keep in mind that the market's forecasts of Fed rate setting are usually wrong, often spectacularly so. For example, through much of last year the market expected no Fed rate hikes in 2022, with perhaps one sneaking in by year's end.)

The Fed's own "dot plot" projection (which has a similarly uneven record of predicting rate changes) is somewhat more subdued, with the funds rate hitting 2% by the end of this year and 2.75% next year.

Getting the funds rate above our projections for nominal GDP growth within the next 12 months would require GDP to grow far more slowly than we expect, or the fed funds rate to rise much more quickly. Either would be a tall order, in our view.

## ISM New Orders minus Inventories

Two components of the ISM Manufacturing Index, taken together, have a helpful track record of signaling recessions as they begin or shortly before. The difference between the New Orders component and the Inventories component

has turned negative near the start of most U.S. recessions. But it has also registered occasional false positives, signaling that a recession was imminent when none subsequently arrived. Moreover, this indicator only relates to activity in the manufacturing sector (some 15% of the U.S. economy) and is derived from a survey rather than hard data. Therefore, we view this as a corroborative indicator—one to pay attention to if other, longer-term indicators are implying a recession is on the way. The spread between New Orders and Inventories has narrowed from its post-pandemic peak of a few months ago, but remains well above zero.

### Stay committed to equities

We recommend global portfolios remain moderately Overweight equities. However, we recently reduced our recommended exposure to Europe to Market Weight from Overweight, acknowledging that the dislocations of the Ukraine war can be expected to take a toll on the EU economy.

### Research resources

This document is produced by the Global Portfolio Advisory Committee within RBC Wealth Management's Portfolio Advisory Group. The RBC Wealth Management Portfolio Advisory Group provides support related to asset allocation and portfolio construction for the firm's investment advisors / financial advisors who are engaged in assembling portfolios incorporating individual marketable securities.

The Global Portfolio Advisory Committee leverages the broad market outlook as developed by the RBC Investment

Strategy Committee (RISC), providing additional tactical and thematic support utilizing research from the RISC, RBC Capital Markets, and third-party resources.

The RISC consists of senior investment professionals drawn from individual, client-focused business units within RBC, including the Portfolio Advisory Group. The RISC builds a broad global investment outlook and develops specific guidelines that can be used to manage portfolios. The RISC is chaired by Daniel Chornous, CFA, Chief Investment Officer of RBC Global Asset Management Inc.

### Global Portfolio Advisory Committee members

Jim Allworth – Co-chair Investment Strategist, RBC Dominion Securities Inc.

**Kelly Bogdanova** – Co-chair Portfolio Analyst, RBC Wealth Management Portfolio Advisory Group U.S., RBC Capital Markets, LLC

**Frédérique Carrier** – Co-chair Managing Director & Head of Investment Strategies, RBC Europe Limited

Mark Bayko, CFA – Head, Portfolio Management, RBC Dominion Securities Inc.

**Rufaro Chiriseri**, **CFA** – Head of Fixed Income – British Isles, RBC Europe Limited

Janet Engels – Head, Portfolio Advisory Group U.S., RBC Wealth Management, RBC Capital Markets, LLC

**Thomas Garretson, CFA** – Fixed Income Senior Portfolio Strategist, RBC Wealth Management Portfolio Advisory Group, RBC Capital Markets, LLC

**Ryan Harder, CFA** – Fixed Income Portfolio Advisor, Portfolio Advisory Group, RBC Dominion Securities Inc.

Patrick McAllister, CFA – Manager, Equity Advisory & Portfolio Management, Portfolio Advisory Group, RBC Dominion Securities Inc.

Alan Robinson – Portfolio Analyst, RBC Wealth Management Portfolio Advisory Group – U.S. Equities, RBC Capital Markets, LLC

**Michael Schuette, CFA –** Multi-Asset Portfolio Strategist, RBC Wealth Management Portfolio Advisory Group – U.S., RBC Capital Markets, LLC

**David Storm, CFA, CAIA** – Chief Investment Officer, BI & Asia, RBC Europe Limited

**Tat Wai Toh** – Head of Portfolio Management, BI & Asia, Royal Bank of Canada, Singapore Branch

**Joseph Wu**, **CFA** – Portfolio Manager, Multi-Asset Strategy, RBC Dominion Securities Inc.

### Additional Global Insight contributors

**Luis Castillo** – Fixed Income Portfolio Advisor, Portfolio Advisory Group, RBC Dominion Securities Inc.

Jasmine Duan – Investment Strategist, RBC Investment Services (Asia) Limited

**Nicholas Gwee, CFA** – Portfolio Manager, Royal Bank of Canada, Singapore Branch

Calvin Ng – Head of Fixed Income Advisory Hong Kong, RBC Wealth Management Hong Kong, RBC Investment Services (Asia) Limited **Sunny Singh, CFA** – Canadian Equities Portfolio Advisor, RBC Wealth Management Portfolio Advisory Group – Equities, RBC Dominion Securities Inc.

Richard Tan, CFA – Canadian Equities Portfolio Advisor, RBC Wealth Management Portfolio Advisory Group – Equities, RBC Dominion Securities Inc.

**Nicolas Wong, CFA** – Head of FX, Asia & BI, Royal Bank of Canada, Singapore Branch

### **Analyst Certification**

All of the views expressed in this report accurately reflect the personal views of the responsible analyst(s) about any and all of the subject securities or issuers. No part of the compensation of the responsible analyst(s) named herein is, or will be, directly or indirectly, related to the specific recommendations or views expressed by the responsible analyst(s) in this report.

### **Important Disclosures**

In the U.S., RBC Wealth Management operates as a division of RBC Capital Markets, LLC. In Canada, RBC Wealth Management includes, without limitation, RBC Dominion Securities Inc., which is a foreign affiliate of RBC Capital Markets, LLC. This report has been prepared by RBC Capital Markets, LLC which is an indirect wholly-owned subsidiary of the Royal Bank of Canada and, as such, is a related issuer of Royal Bank of Canada.

### Non-U.S. Analyst Disclosure

One or more research analysts involved in the preparation of this report (i) may not be registered/qualified as research analysts with the NYSE and/or FINRA and (ii) may not be associated persons of the RBC Wealth Management and therefore may not be subject to FINRA Rule 2241 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account.

In the event that this is a compendium report (covers six or more companies), RBC Wealth Management may choose to provide important disclosure information by reference. To access current disclosures, clients should refer to <a href="https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2">https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2</a> to view disclosures regarding RBC Wealth Management and its affiliated firms. Such information is also available upon request to RBC Wealth Management Publishing, 250 Nicollet Mall, Suite 1800, Minneapolis, MN 55401-1931.

References to a Recommended List in the recommendation history chart may include one or more recommended lists or model portfolios maintained by RBC Wealth Management or one of its affiliates. RBC Wealth Management recommended lists include the Guided Portfolio: Prime Income (RL 6), the Guided Portfolio: Dividend Growth (RL 8), the Guided Portfolio: ADR (RL 10), and the Guided Portfolio: All Cap Growth (RL 12). RBC Capital Markets recommended lists include the Strategy Focus List and the Fundamental Equity Weightings (FEW) portfolios. The abbreviation 'RL On' means the date a security was placed on a Recommended List. The abbreviation 'RL Off' means the date a security was removed from a Recommended List.

### **RBC Capital Markets Distribution of Ratings**

For the purpose of ratings distributions, regulatory rules require member firms to assign ratings to one of three rating categories – Buy, Hold/Neutral, or Sell – regardless of a firm's own rating categories. Although RBC Capital Markets' ratings of Outperform (O), Sector Perform (SP), and Underperform (U) most closely correspond to Buy, Hold/Neutral and Sell, respectively, the meanings are not the same because RBC Capital Markets' ratings are determined on a relative basis.

### Distribution of ratings – RBC Capital Markets Equity Research

As of March 31, 2022

			Investment Banking Services Provided During Past 12 Months	
Rating	Count	Percent	Count	Percent
Buy [Outperform]	841	57.68	330	39.24
Hold [Sector Perform]	569	39.03	172	30.23
Sell [Underperform]	48	3.29	3	6.25

#### **Explanation of RBC Capital Markets Equity Rating System**

An analyst's "sector" is the universe of companies for which the analyst provides research coverage. Accordingly, the rating assigned to a particular stock represents solely the analyst's view of how that stock will perform over the next 12 months relative to the analyst's sector average.

Outperform (O): Expected to materially outperform sector average over 12 months. Sector Perform (SP): Returns expected to be in line with sector average over 12 months. Underperform (U): Returns expected to be materially below sector average over 12 months. Restricted (R): RBC policy precludes certain types of communications, including an investment recommendation, when RBC is acting as an advisor in certain merger or other strategic transactions and in certain other circumstances. Not Rated (NR): The rating, price targets and estimates have been removed due to applicable legal, regulatory or policy constraints which may include when RBC Capital Markets is acting in an advisory capacity involving the company.

As of March 31, 2020, RBC Capital Markets discontinued its Top Pick rating. Top Pick rated securities represented an analyst's best idea in the sector; expected to provide significant absolute returns over 12 months with a favorable risk-reward ratio. Top Pick rated securities have been reassigned to our Outperform rated securities category, which are securities expected to materially outperform sector average over 12 months.

**Risk Rating:** The Speculative risk rating reflects a security's lower level of financial or operating predictability, illiquid share trading volumes, high balance sheet leverage, or limited operating history that result in a higher expectation of financial and/or stock price volatility.

#### Valuation and Risks to Rating and Price Target

When RBC Capital Markets assigns a value to a company in a research report, FINRA Rules and NYSE Rules (as incorporated into the FINRA Rulebook) require that the basis for the valuation and the impediments to obtaining that valuation be described. Where applicable, this information is included in the text of our research in the sections entitled "Valuation" and "Risks to Rating and Price Target", respectively.

The analyst(s) responsible for preparing this research report have received (or will receive) compensation that is based upon various factors, including total revenues of RBC Capital Markets, LLC, and its affiliates, a portion of which are or have been generated by investment banking activities of RBC Capital Markets, LLC and its affiliates.

#### Other Disclosures

Prepared with the assistance of our national research sources. RBC Wealth Management prepared this report and takes sole responsibility for its content and distribution. The content may have been based, at least in part, on material provided by our third-party correspondent research services. Our third-party correspondent has given RBC Wealth Management general permission to use its research reports as source materials, but has not reviewed or approved this report, nor has it been informed of its publication. Our third-party correspondent may from time to time have long or short positions in, effect transactions in, and make markets in securities referred to herein. Our third-party correspondent may from time to time perform investment banking or other services for, or solicit investment banking or other business from, any company mentioned in this report.

RBC Wealth Management endeavors to make all reasonable efforts to provide research simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. In certain investment advisory accounts, RBC Wealth Management or a designated third party will act as overlay manager for our clients and will initiate transactions in the securities referenced herein for those accounts upon receipt of this report. These transactions may occur before or after your receipt of this report and may have a shortterm impact on the market price of the securities in which transactions occur. RBC Wealth Management research is posted to our proprietary Web sites to ensure eligible clients receive coverage initiations and changes in rating, targets, and opinions in a timely manner. Additional distribution may be done by sales personnel via e-mail, fax, or regular mail. Clients may also receive our research via third-party vendors. Please contact your RBC Wealth Management Financial Advisor for more information regarding RBC Wealth Management research.

Conflicts Disclosure: RBC Wealth Management is registered with the Securities and Exchange Commission as a broker/dealer and an investment adviser, offering both brokerage and investment advisory services. RBC Wealth

Management's Policy for Managing Conflicts of Interest in Relation to Investment Research is available from us on our website at <a href="https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2">https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2</a>. Conflicts of interests related to our investment advisory business can be found in Part 2A Appendix 1 of the Firm's Form ADV or the RBC Advisory Programs Disclosure Document. Copies of any of these documents are available upon request through your Financial Advisor. We reserve the right to amend or supplement this policy, Part 2A Appendix 1 of the Form ADV, or the RBC Advisory Programs Disclosure Document at any time.

The authors are employed by one of the following entities: RBC Wealth Management USA, a division of RBC Capital Markets, LLC, a securities broker-dealer with principal offices located in Minnesota and New York, USA; RBC Dominion Securities Inc., a securities broker-dealer with principal offices located in Toronto, Canada; RBC Investment Services (Asia) Limited, a subsidiary of RBC Dominion Securities Inc., a securities broker-dealer with principal offices located in Hong Kong, China; Royal Bank of Canada, Singapore Branch, a licensed wholesale bank with its principal office located in Singapore; and RBC Europe Limited, a licensed bank with principal offices located in London, United Kingdom.

### Third-party Disclaimers

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of MSCI Inc. ("MSCI") and Standard & Poor's Financial Services LLC ("S&P") and is licensed for use by RBC. Neither MSCI, S&P, nor any other party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability and fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of their affiliates or any third party involved in making or compiling the GICS or any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

References herein to "LIBOR", "LIBO Rate", "L" or other LIBOR abbreviations means the London interbank offered rate as administered by ICE Benchmark Administration (or any other person that takes over the administration of such rate).

#### Disclaimer

The information contained in this report has been compiled by RBC Wealth Management, a division of RBC Capital Markets, LLC, from sources believed to be reliable, but no representation or warranty, express or implied, is made by Royal Bank of Canada, RBC Wealth Management, its affiliates or any other person as to its accuracy, completeness or correctness. All opinions and estimates contained in this report constitute RBC Wealth Management's judgment as of the date of this report, are subject to change without notice and are provided in good faith but without legal responsibility. Past performance is not a guide to future performance, future returns are not guaranteed, and a loss of original capital may occur. Every province in Canada, state in the U.S., and most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to

their residents, as well as the process for doing so. As a result, the securities discussed in this report may not be eligible for sale in some jurisdictions. This report is not, and under no circumstances should be construed as, a solicitation to act as securities broker or dealer in any jurisdiction by any person or company that is not legally permitted to carry on the business of a securities broker or dealer in that jurisdiction. Nothing in this report constitutes legal, accounting or tax advice or individually tailored investment advice. This material is prepared for general circulation to clients, including clients who are affiliates of Royal Bank of Canada, and does not have regard to the particular circumstances or needs of any specific person who may read it. The investments or services contained in this report may not be suitable for you and it is recommended that you consult an independent investment advisor if you are in doubt about the suitability of such investments or services. To the full extent permitted by law neither Royal Bank of Canada nor any of its affiliates, nor any other person, accepts any liability whatsoever for any direct, indirect or consequential loss arising from, or in connection with, any use of this report or the information contained herein. No matter contained in this document may be reproduced or copied by any means without the prior written consent of Royal Bank of Canada in each instance. In the U.S., RBC Wealth Management operates as a division of RBC Capital Markets, LLC. In Canada, RBC Wealth Management includes, without limitation, RBC Dominion Securities Inc., which is a foreign affiliate of RBC Capital Markets, LLC. This report has been prepared by RBC Capital Markets, LLC. Additional information is available upon request.

To U.S. Residents: This publication has been approved by RBC Capital Markets, LLC, Member NYSE/FINRA/SIPC, which is a U.S. registered broker-dealer and which accepts responsibility for this report and its dissemination in the United States. RBC Capital Markets, LLC, is an indirect wholly-owned subsidiary of the Royal Bank of Canada and, as such, is a related issuer of Royal Bank of Canada. Any U.S. recipient of this report that is not a registered broker-dealer or a bank acting in a broker or dealer capacity and that wishes further information regarding, or to effect any transaction in, any of the securities discussed in this report, should contact and place orders with RBC Capital Markets, LLC. International investing involves risks not typically associated with U.S. investing, including currency fluctuation, foreign taxation, political instability and different accounting standards.

**To Canadian Residents:** This publication has been approved by RBC Dominion Securities Inc. RBC Dominion Securities Inc.\* and Royal

Bank of Canada are separate corporate entities which are affiliated. \*Member Canadian Investor Protection Fund. ® Registered trademark of Royal Bank of Canada. Used under license. RBC Wealth Management is a registered trademark of Royal Bank of Canada. Used under license.

RBC Wealth Management (British Isles): This publication is distributed by RBC Europe Limited and RBC Investment Solutions (CI) Limited. RBC Europe Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority (FCA registration number: 124543). Registered office: 100 Bishopsgate, London, EC2N 4AA, UK. RBC Investment Solutions (CI) Limited is regulated by the Jersey Financial Services Commission in the conduct of investment business in Jersey. Registered office: Gaspé House, 66-72 Esplanade, St Helier, Jersey JE2 3QT, Channel Islands, registered company number 119162.

**To Hong Kong Residents:** This publication is distributed in Hong Kong by Royal Bank of Canada, Hong Kong Branch which is regulated by the Hong Kong Monetary Authority and the Securities and Futures Commission ('SFC'), and RBC Investment Services (Asia) Limited, which is regulated by the SFC.

To Singapore Residents: This publication is distributed in Singapore by the Royal Bank of Canada, Singapore Branch, a registered entity licensed by the Monetary Authority of Singapore. This material has been prepared for general circulation and does not take into account the objectives, financial situation, or needs of any recipient. You are advised to seek independent advice from a financial adviser before purchasing any product. If you do not obtain independent advice, you should consider whether the product is suitable for you. Past performance is not indicative of future performance. If you have any questions related to this publication, please contact the Royal Bank of Canada, Singapore Branch. Royal Bank of Canada, Singapore Branch accepts responsibility for this report and its dissemination in Singapore.

© 2022 RBC Capital Markets, LLC – Member NYSE/FINRA/SIPC © 2022 RBC Dominion Securities Inc. – Member Canadian Investor Protection Fund © 2022 RBC Europe Limited © 2022 Royal Bank of Canada All rights reserved RBC1524

