GLOBAL
Insight
WEEKLY

Wealth Management

Perspectives from the Global Portfolio Advisory Committee

October 20, 2022

Are earnings the next shoe to drop?

Kelly Bogdanova – San Francisco

Amid what seems to be a never-ending barrage of headwinds, market uncertainty has zeroed in on the U.S. corporate profit outlook. We look at how investors can expect the 2023 earnings picture to take shape, and what that means for U.S. equity exposure in portfolios.

For the past two months the U.S. equity market has been battered by persistent inflation, the Fed's aggressive rate hikes (and plans for more), the further spike in Treasury yields, and heightened expectations of recession and cuts in corporate earnings estimates. Instability in the UK has also weighed on the market lately.

It's no wonder the S&P 500 traded down to a new low of this bear market cycle, retreating 25 percent year to date on October 12.

Market participants continue to keep an eye on all of these issues, but are now most focused on the profit outlook for S&P 500 companies given the Q3 corporate reporting season is upon us.

While we think a lot of earnings negativity has already been priced into the market, uncertainty about 2023 profits could generate more volatility in coming months because there is a wide range of potential outcomes.

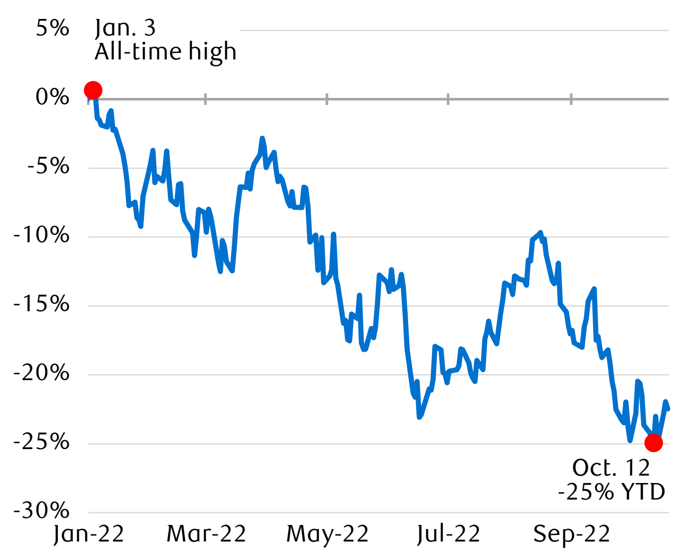
So far, so (somewhat) good

Q3 earnings reports have been good thus far, especially among big banks and investment firms. There have also been bright spots in the Consumer Staples sector and defense industry.

But it's very early days. We anticipate there will be a number of hiccups and misses in a variety of sectors given the high-profile earnings warnings that occurred before the reporting season began. This would be normal considering the economic headwinds.

The S&P 500 continues to struggle

Under pressure due to persistent inflation as well as concerns about Fed rate hikes, the economy, and earnings growth



Based on 12/31/21 = 0

Source - RBC Wealth Management, Bloomberg; daily data through 10/19/22

For perspectives on the week from our regional analysts, please see pages 3-4.

The magnitude of Q3 earnings beats are lagging the historical averages—also no surprise due to the challenges facing the economy. With almost 20 percent of the S&P 500's market capitalization having reported, earnings are exceeding the consensus forecast by 2.5 percent, lower than the pre-COVID average of 5.2 percent. Revenues are beating by 1.1 percent, a bit higher than the pre-pandemic norm.

The Q3 consensus forecast is for S&P 500 earnings growth of 3.1 percent year over year, according to Refinitiv I/B/E/S. When all is said and done, that figure could rise a percentage point or two even if the magnitude of earnings beats remains muted for the companies that have yet to report.

The S&P 500 full-year 2022 consensus forecast now seems more realistic to us. It has retreated to $222 per share from $229 per share in early July. While RBC Capital Markets' estimate of $216 is lower, we think earnings for the full year will end up within this zone.

First, the bad news

Our bigger concern is that the 2023 consensus forecast still seems far too lofty despite the fact that it has drifted down to $239 per share from $251 per share in early July.

We think this forecast is unachievable given the mounting economic headwinds created by ongoing inflation, Fed rate hikes, and higher borrowing costs (the 30-year fixed rate mortgage has spiked to 7.2 percent, for example). In our view, these factors are bound to pressure S&P 500 earnings. And if a full-blown recession occurs—which is looking more and more likely according to our economic indicators—the pressure on earnings could be meaningful.

RBC Capital Markets forecasts S&P 500 earnings of $208 per share in 2023, much lower than the $239 consensus estimate. This translates into zero earnings growth from 2021 through 2023, as the chart illustrates.

RBC's earnings estimates incorporate weak and sluggish economic activity in Q4 of this year and Q1 of next year, but do not assume a full-blown recession. If a recession does indeed unfold, there would be downside risk to RBC's 2023 earnings estimate.

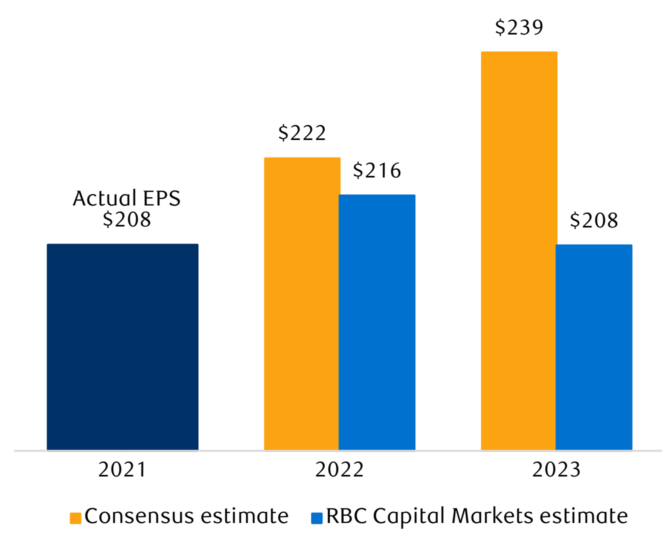
Surrounding the previous 11 recession periods since the 1950s, S&P 500 earnings fell 23.6 percent, on average, from peak month to trough month, according to RBC Global Asset Management. Interestingly, during the four periods that were associated with inflation shocks, there was a lesser 17.7 percent average earnings decline.

And now, the good news

The good news is we don't think most institutional investors (managers of mutual funds, hedge funds, and pension funds) expect the S&P 500 to deliver $239 per share in earnings next year. In fact, we consider that forecast by the collective group of Wall Street industry analysts to be stale—very stale.

RBC's earnings estimates are more conservative, especially for 2023

S&P 500 earnings per share (EPS) - actual and estimates



Source - Refinitiv I/B/E/S, RBC Capital Markets U.S. Equity Strategy; data as of 10/19/22

This is because very few management teams have provided full-year 2023 earnings guidance, and therefore the many industry analysts that collectively represent the consensus forecast have not gone out on a limb with their earnings estimates for next year. A meaningful proportion of management teams will likely provide guidance during the Q4 reporting season in January and February of 2023.

We think large institutional investors understand this, and therefore the market is probably factoring in 2023 earnings somewhere between the lofty consensus forecast and RBC Capital Markets' forecast.

And that's not all

The even better news is that if history is a guide, investors probably don't have to wait for the 2023 consensus earnings estimate to completely adjust to its trough level for the market to begin a sustainable recovery. RBC Capital Markets, LLC's Head of U.S. Equity Strategy Lori Calvasina points out that the S&P 500 tends to bottom three to six months before the end of a downward earnings revision cycle.

Calvasina wrote, "The question in our minds isn't whether 2023 estimates get cut enough over the next month or so. It's whether they are cut enough so that the final clean-up can happen in the next reporting season when companies traditionally do a deeper dive into their year-ahead outlooks, which tends to prompt bigger adjustments from the sell-side analyst community."

In the meantime, volatility—both to the upside and downside—will likely persist. We continue to recommend Market Weight exposure to U.S. equities. While earnings and economic vulnerabilities remain, a lot of bad news has already been priced into the market.

UNITED STATES

Michael Roedl – Minneapolis

- **This week's housing market data continued to disappoint as rising mortgage rates weighed on demand** from prospective homebuyers across the country. Residential housing starts dropped 8.1% in September, while building permit applications for new single-family homes fell 3.1% to just above a two-year low. According to the Mortgage Bankers Association, 30-year fixed mortgage rates advanced another 12 basis points (bps) last week to 7.2%, the highest rate since 2002. Homebuilder sentiment has declined every month this year, and currently sits at the lowest level since the early days of the pandemic, as illustrated by the chart.

- **October's Empire State Manufacturing Survey showed a third consecutive month of contraction in business activity**, with the index falling nearly eight points to -9.1, suggesting a larger share of factories within the region are growing pessimistic about their future outlook for 2023 amid growing recession risks. According to the report by the Federal Reserve Bank of New York, about 36% of respondents expect general business conditions to worsen over the next six months. The report is among the first of several regional bank surveys to be released in the coming weeks, which should provide more clues on the state of the economy.

- **The vast majority of U.S. fixed income markets are facing heavy selling pressure** this month, on the heels of a **hotter-than-expected September Consumer Price Index (CPI) report**; the gain in Core CPI (excluding food and energy), the Fed's preferred measure of inflation, was particularly noteworthy. In our view, the elevated inflation data will likely cement 75 bps rate hikes in November and December, which would bring the Fed's upper-bound target rate to 4.75%—the highest level since 2007.

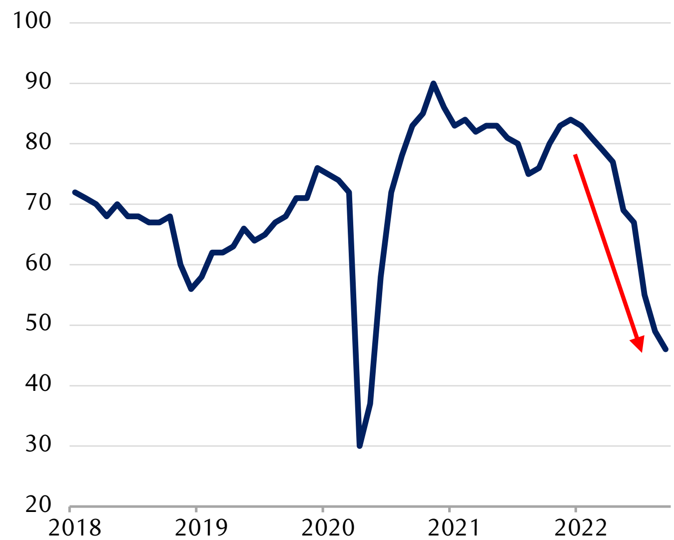
CANADA

Mila Krunic & Matt Altro – Toronto

- **The Canadian Consumer Price Index (CPI) rose 6.9% y/y in September, topping consensus expectations of 6.7%**. In the latest CPI report, Statistics Canada said the slight deceleration from 7.0% inflation in August was mostly attributable to lower gasoline prices, which fell 7.4% m/m in September. Food prices, however, kept on soaring, rising by 10.3% y/y after a 9.8% y/y increase in August. Food prices have outstripped the overall inflation rate for 10 consecutive months. On a monthly basis, Canada's CPI rose 0.1% in September, slightly ahead of the consensus expectation that it would remain flat. Core CPI, which does not include the more volatile food and energy components, registered a year-over-year increase of 5.4% in September, compared to a 5.3% y/y gain the prior month. Following the elevated inflation readings for September, **RBC Economics expects the Bank of Canada to raise the overnight rate by at least 50 basis points next week**.

U.S. homebuilder sentiment has declined every month this year on surging mortgage rates

National Association of Home Builders Market Index



Source - RBC Wealth Management, Bloomberg; data through 9/30/22

- Canada's housing market has been making headlines for quite some time now. Given the current economic backdrop and expectations for headwinds to continue, RBC Economics is anticipating further volatility. **According to recent housing data, both activity and prices continue to trend lower in many local markets, with September marking the seventh straight monthly decline in home resales (-3.9%)**. The composite MLS Home Price Index has fallen by 8.8% since peaking in February, with smaller markets in Ontario that experienced outsized price appreciation during the pandemic leading the correction. As interest rates tick higher and affordability issues within Canada continue to escalate, RBC Economics expects further softness for the housing market.

EUROPE

Thomas McGarrity, CFA & Rufaro Chiriseri, CFA – London

- **Following a series of U-turns and missteps, UK Prime Minister Liz Truss announced her resignation after less than two months in office, making her tenure the shortest in UK history**. A leadership election will be held within the next week, with a result by Friday, Oct. 28, ahead of the fiscal statement by newly appointed Chancellor of the Exchequer Jeremy Hunt on Monday, Oct. 31. Rishi Sunak, a former chancellor under Prime Minister Boris Johnson and runner-up to Truss in the recent leadership contest, and Penny Mordaunt, the leader of the House of Commons, are the two frontrunners.

- **The initial market response was relatively muted, with the pound and UK government bonds having already staged a considerable rebound earlier in the week** after the new chancellor embraced fiscal orthodoxy. Hunt abandoned most of the unfunded £45 billion tax cut plan proposed within the "mini budget" of Sept. 23, and signaled further tax increases and public spending cuts would be forthcoming within his fiscal statement.

- Since Hunt's announcement at the start of the week, **the pound has extended its recent recovery against the U.S. dollar**, rising by around 1%; **gilts have also rallied**, with yields on the 10-year and 30-year bonds falling by 48 and 87 basis points (bps), respectively. The relative calm may not last long, however, given the uncertainty around leadership as well as the weak economic outlook.

- **The UK posted another record-breaking inflation reading, with price growth surging to 10.1% y/y in September from 9.1% y/y in August**—the highest level in 40 years. The largest contributors were food prices and household and utilities costs, which rose by 14.5% y/y and 20.2% y/y, respectively. RBC Capital Markets estimates that when the government's current energy price freeze ends in April 2023, inflation could see another peak close to 11%. This upward surprise in inflation places the Bank of England (BoE) under pressure. BoE Governor Andrew Bailey recently stated that current "inflationary pressures will require a stronger response than we perhaps thought in August." Markets are currently pricing in a rate hike of almost 100 bps at the central bank's upcoming meeting. However, **the market-implied interest rate peak in 2023 has dropped from 5.5% to 5%**, reflecting the lowered inflationary impulse pressures relative to expectations under the previous chancellor's fiscal plans.

ASIA PACIFIC

Jasmine Duan – Hong Kong

- **Hong Kong equities led the correction in the region this week, with the benchmark Hang Seng Index sliding to its lowest level since April 2009**. Investors remain concerned about the economic outlook in China and Hong Kong. Meanwhile, the offshore renminbi retreated to about 7.27 against the U.S. dollar, the lowest point since August 2010. The weakness in Hong Kong real estate stocks persisted for the second day on Thursday as markets were disappointed by the property-related measures announced by Hong Kong Chief Executive John Lee at his policy address on Wednesday. Investors are concerned about the measures' ability to boost housing demand.

- **The 20th National Congress of the Chinese Communist Party (Party Congress) kicked off on Oct. 16**. President Xi Jinping delivered a speech at the opening ceremony that reviewed the party's work in the last five years and set the future policy agenda. **We think the speech shows policy continuity** as the development focus going forward remains on high-end technology, new energy, and domestic consumption, etc. In addition, "high-quality development" is still the top priority for the country. Xi reiterated that the overall development objectives for the year 2035 are to substantially grow per capita GDP to be on par with that of a mid-level developed country.

- Before the Party Congress, **state media doubled down on the zero-COVID policy stance** and defended the approach. However, **we believe before there is an official policy change, state media typically justifies the current policy, and that this does not serve as forward-looking guidance**. As such, we still expect a gradual reopening after the Party Congress. The latest sign to support our view is that the biggest Chinese airlines announced this week they intend to increase the number of international flights starting next week.

Hong Kong's benchmark Hang Seng Index drops to the lowest level since April 2009

Source - RBC Wealth Management, Bloomberg; daily data through 10/20/22

MARKET
Scorecard

Data as of October 19, 2022

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	3,695.16	3.1%	-22.5%	-18.2%	7.8%
Dow Industrials (DJIA)	30,423.81	5.9%	-16.3%	-14.2%	7.9%
Nasdaq	10,680.51	1.0%	-31.7%	-29.4%	-7.0%
Russell 2000	1,725.76	3.7%	-23.1%	-24.2%	6.9%
S&P/TSX Comp	18,674.40	1.2%	-12.0%	-11.4%	14.7%
FTSE All-Share	3,777.93	0.4%	-10.2%	-8.3%	14.1%
STOXX Europe 600	397.73	2.5%	-18.5%	-15.1%	8.4%
EURO STOXX 50	3,471.24	4.6%	-19.2%	-16.7%	7.1%
Hang Seng	16,511.28	-4.1%	-29.4%	-36.0%	-32.7%
Shanghai Comp	3,044.38	0.7%	-16.4%	-15.3%	-8.1%
Nikkei 225	27,257.38	5.1%	-5.3%	-6.7%	15.2%
India Sensex	59,107.19	2.9%	1.5%	-4.2%	46.2%
Singapore Straits Times	3,022.80	-3.4%	-3.2%	-5.5%	18.8%
Brazil Ibovespa	116,274.24	5.7%	10.9%	5.1%	17.9%
Mexican Bolsa IPC	46,217.44	3.6%	-13.2%	-11.8%	22.7%
Gov't bonds (bps change)	**Yield**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. 10-Yr Treasury	4.134%	30.5	262.3	249.6	336.5
Canada 10-Yr	3.545%	37.2	211.9	191.7	295.3
UK 10-Yr	3.878%	-21.5	290.7	270.9	370.9
Germany 10-Yr	2.376%	26.8	255.3	248.2	300.4
Fixed income (returns)	**Yield**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. Aggregate	4.97%	-1.1%	-15.6%	-15.2%	-16.3%
U.S. Investment-Grade Corp	5.90%	-1.0%	-19.6%	-19.0%	-18.4%
U.S. High-Yield Corp	9.46%	1.4%	-13.6%	-12.8%	-4.6%
Commodities (USD)	**Price**	**MTD**	**YTD**	**1 yr**	**2 yr**
Gold (spot $/oz)	1,628.95	-1.9%	-10.9%	-7.9%	-14.4%
Silver (spot $/oz)	18.47	-2.9%	-20.8%	-22.0%	-24.3%
Copper ($/metric ton)	7,483.00	-2.6%	-23.2%	-28.6%	10.7%
Oil (WTI spot/bbl)	85.55	7.6%	11.1%	3.1%	109.5%
Oil (Brent spot/bbl)	92.36	5.0%	18.7%	8.6%	116.7%
Natural Gas ($/mmBtu)	5.44	-19.6%	45.8%	6.9%	94.5%
Currencies	**Rate**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. Dollar Index	112.8850	0.7%	18.0%	20.4%	20.8%
CAD/USD	0.7265	0.5%	-8.2%	-10.2%	-4.2%
USD/CAD	1.3764	-0.5%	8.9%	11.3%	4.3%
EUR/USD	0.9775	-0.3%	-14.0%	-16.0%	-16.9%
GBP/USD	1.1223	0.5%	-17.1%	-18.7%	-13.3%
AUD/USD	0.6270	-2.0%	-13.7%	-16.1%	-11.4%
USD/JPY	149.8900	3.6%	30.2%	31.0%	42.2%
EUR/JPY	146.5200	3.3%	11.9%	10.1%	18.1%
EUR/GBP	0.8710	-0.7%	3.5%	3.3%	-4.2%
EUR/CHF	0.9818	1.5%	-5.4%	-8.6%	-8.3%
USD/SGD	1.4250	-0.7%	5.6%	5.9%	4.9%
USD/CNY	7.2287	1.6%	13.7%	13.3%	8.2%
USD/MXN	20.1057	-0.2%	-2.1%	-0.7%	-5.1%
USD/BRL	5.2808	-2.5%	-5.3%	-5.4%	-5.9%

Equity returns do not include dividends, except for the Brazilian Ibovespa. Bond yields in local currencies. Copper Index data and U.S. fixed income returns as of Wednesday's close. Dollar Index measures USD vs. six major currencies. Currency rates reflect market convention (CAD/USD is the exception). Currency returns quoted in terms of the first currency in each pairing.

Examples of how to interpret currency data: CAD/USD 0.72 means 1 Canadian dollar will buy 0.72 U.S. dollar. CAD/USD -8.2% return means the Canadian dollar fell 8.2% vs. the U.S. dollar year to date. USD/JPY 149.89 means 1 U.S. dollar will buy 149.89 yen. USD/JPY 30.2% return means the U.S. dollar rose 30.2% vs. the yen year to date.

Source - Bloomberg; data as of 10/19/22

Authors

Matt Altro – Toronto, Canada
matt.altro@rbc.com; RBC Dominion Securities Inc.

Kelly Bogdanova – San Francisco, United States
kelly.bogdanova@rbc.com; RBC Capital Markets, LLC

Rufaro Chiriseri, CFA – London, United Kingdom
rufaro.chiriseri@rbc.com; RBC Europe Limited

Jasmine Duan – Hong Kong, China
jasmine.duan@rbc.com; RBC Investment Services (Asia) Limited

Mila Krunic – Toronto, Canada
mila.krunic@rbc.com; RBC Capital Markets, LLC

Thomas McGarrity, CFA – London, United Kingdom
thomas.mcgarrity@rbc.com; RBC Europe Limited

Michael Roedl – Minneapolis, United States
michael.roedl@rbc.com; RBC Capital Markets, LLC

Disclosures and Disclaimer

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 https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2 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.

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 September 30, 2022

			Investment Banking Services Provided During Past 12 Months	
Rating	Count	Percent	Count	Percent
Buy [Outperform]	844	57.18	260	30.81
Hold [Sector Perform]	580	39.30	161	27.76
Sell [Underperform]	52	3.52	5	9.62

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.

Ratings: 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 RBC Capital Markets' 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, and its affiliates, a portion of which are or have been generated by investment banking activities of RBC Capital Markets 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 short-term 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 https://www.rbccm.com/GLDisclosure/PublicWeb/DisclosureLookup.aspx?EntityID=2. 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; by RBC Dominion Securities Inc., a securities broker-dealer with principal offices located in Toronto, Canada; by RBC Investment Services (Asia) Limited, a subsidiary of RBC Dominion Securities Inc., a securities broker-dealer with principal offices located in Hong Kong, China; by Royal Bank of Canada, Singapore Branch, a licensed wholesale bank with its principal office located in Singapore; and by RBC Europe Limited, a licensed bank with principal offices located in London, United Kingdom.

Research Resources

This document is produced by the Global Portfolio Advisory Committee within RBC Wealth Management's Portfolio Advisory Group. The RBC WM 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 Committee leverages the broad market outlook as developed by the RBC Investment Strategy Committee, providing additional tactical and thematic support utilizing research from the RBC Investment Strategy Committee, RBC Capital Markets, and third-party resources.

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.

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. 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.

RBC Wealth Management (British Isles): This publication is distributed by RBC Europe Limited and Royal Bank of Canada (Channel Islands) 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. Royal Bank of Canada (Channel Islands) 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.

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.

Wealth Management