GLOBAL
Insight
WEEKLY

Wealth Management

Perspectives from the Global Portfolio Advisory Committee July 21, 2022

Not your average earnings season

Kelly Bogdanova – San Francisco

With the U.S. economy decelerating, Q2 corporate results should shed light on more than just earnings per share and sales data. We think investors need to look deeper at the data and the clues about the path forward.

With inflation raging, the Fed aggressively hiking interest rates, economic momentum slowing, and recession risks rising, we think the Q2 corporate earnings reporting season is of heightened importance. Earnings news in the coming days and weeks could shape the market's near-term path and provide hints about prospects for profit growth over the medium term.

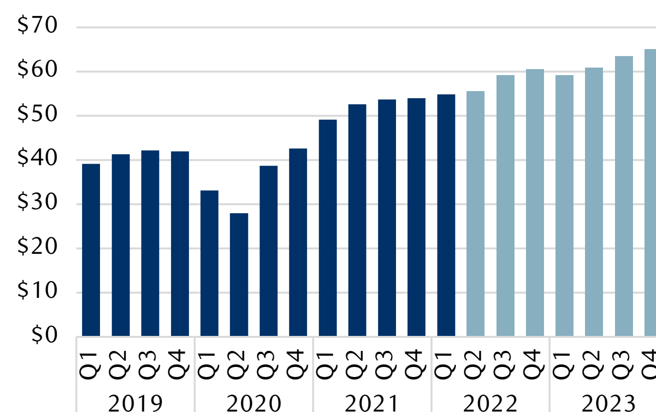
Six things to take note of during earnings season:

High earnings hurdle: The S&P 500 is facing a very challenging year-ago comparison as earnings growth surged 88 percent in Q2 2021—by far the strongest post-COVID-19 crisis recovery quarter. This is the main reason the Q2 2022 consensus forecast of 5.7 percent growth looks tepid and is below the long-term average. But we think five percent or better growth would be respectable on top of the high hurdle from the prior year.

High-profile misses: There have already been some big misses in Q2 results and/or guidance such as those from AT&T, Baker Hughes, International Business Machines, JPMorgan Chase, and Carnival Cruise Lines. Given the unique inflation and currency headwinds, and importantly the overall deceleration in domestic and global economic momentum, we think there will be more high-profile misses. To us, this would signal the earnings cycle is maturing—at the very least.

Are earnings estimates too optimistic?

S&P 500 quarterly earnings per share



Note: Actual earnings in dark blue, consensus estimates in light blue

Source - RBC Wealth Management, Refinitiv I/B/E/S; data as of 7/21/22

Profit margin scrutiny: We will be closely monitoring underlying margin trends due to high raw materials, warehouse, and transport costs and because of lingering supply chain challenges and mounting wage pressures. Some companies should be able to maneuver through these headwinds by maintaining pricing power. For example, PepsiCo reported that it has successfully passed along price increases to customers. But we think other

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

Investment and insurance products offered through RBC Wealth Management are not insured by the FDIC or any other federal government agency, are not deposits or other obligations of, or guaranteed by, a bank or any bank affiliate, and are subject to investment risks, including possible loss of the principal amount invested.

Priced (in USD) as of 7/20/22 market close (unless otherwise stated). Produced: 7/21/22 3:27 pm ET; Disseminated: 7/21/22 3:40 pm ET
For important disclosures, required non-U.S. analyst disclosures, and authors' contact information, see page 6.

companies will fail to keep pace with higher input and wage costs. We expect margin pressures to cause some high-profile earnings misses and negative guidance.

The consensus forecast has S&P 500 profit margins declining 6.7 percent in Q2—not bad in light of the inflationary pressures and especially considering margins were very strong a year ago. But when we strip out the Energy sector's ultra-robust Q2 margin growth forecast of 192 percent, the S&P 500 margin estimate retreats to a less acceptable -10.3 percent.

Lower beat rates: So far, Q2 earnings and revenue beat rates are lagging prior periods. While a high proportion of companies are still exceeding consensus forecasts, the *magnitude* of the beats is lower than normal. The earnings surprise level—the amount by which earnings growth exceeds the consensus forecast—is pacing at 3.6 percent, below the pre-pandemic 5.2 percent average. When beat levels compress, this typically means analysts' estimates have become loftier and more challenging to clear, and/or the earnings growth cycle is entering a later, more mature phase. We think all of these factors are at play this earnings season, and are signals the cycle is losing momentum.

Sector distortions: In any given earnings season, there are sector or industry distortions worth watching. For Q2, they are more pronounced and primarily come from Energy, Financials, and the FAANG technology-oriented stocks.

The Energy sector is expected to provide an outsized boost to S&P 500 earnings with its eye-popping 260 percent year-over-year estimated consensus earnings growth rate. The sector is benefitting greatly from high crude oil, refined product, and natural gas prices. While the overall S&P 500 earnings growth rate is pacing at 5.7 percent, if the Energy sector is excluded the rate drops to -2.5 percent.

In contrast, the Financials sector is a drag on S&P 500 earnings. Banks have an unusually difficult comparison from the year-ago period because back then they released significant COVID-19 loan-loss reserves, which resulted in very strong profit growth. Now it's time to pay the piper. With many firms in the Financials sector having already reported Q2 results, the sector's earnings are forecast to decline 21.2 percent year over year. S&P 500 earnings growth is pacing at 13.8 percent excluding the Financials sector, much higher than the 5.7 percent rate including the sector.

The FAANG stocks as a group—Meta Platforms (the new name for Facebook), Apple, Amazon, Netflix, and Alphabet (Google)—are forecast to post a Q2 earnings loss of 21 percent. But other tech-oriented stocks are projected to have a good quarter overall by growing 5 percent as a whole.

Stripping out some of the major distortions from S&P 500 earnings results can provide a better view of the underlying trends for the rest of the index, as the table illustrates.

Questionable forward estimates: Since the global financial crisis in 2008-09, we think company management teams have become more cautious with their forward earnings estimates—they have little incentive to go out on a limb. And compared to years ago, a higher proportion of companies don't even forecast beyond the next quarter, which can be frustrating for investors. This means Wall Street industry analysts, whose estimates represent the consensus forecast, don't have as much formal corporate guidance as they used to. And when the economy wobbles and wavers—like it is now—we think the consensus estimates become more uncertain and less useful as a guidepost.

We don't have a lot of confidence in the consensus forecasts for coming quarters. If recession risks continue to rise, we think earnings growth for this cycle will peak soon. Whether this would occur with earnings results from Q2, Q3, or Q4 2022 or in early 2023 is difficult to gauge; we think it would depend on the timing and pace of economic deceleration. But once the peak is reached, in a recessionary environment, we think earnings growth could decline roughly 10 percent to 25 percent from the peak level, like it has surrounding prior inflationary periods as we demonstrated in last week's missive.

Because of the economic and earnings vulnerabilities, we would take the quarterly consensus estimates shown in the chart on page 1 and the corresponding full-year 2022 and 2023 consensus forecasts of $228 and $249 per share, respectively, with a grain of salt. The forecasts call for steady growth, but surrounding a recession, we think profits would retreat. The rest of the Q2 earnings season may provide hints as to how the future earnings path could play out.

How the earnings season is shaping up so far

S&P 500 Q2 2022 dashboard

	Q2 year-over-year growth actual & estimated thus far		
	Revenue	Margins	EPS
S&P 500	11.1%	-6.7%	5.7%
Key sectors/groups			
Energy	67.7%	192.0%	259.8%
Financials	-3.8%	-20.3%	-21.2%
Tech+	7.5%	-12.9%	-4.5%
FAANG	5.7%	-27.8%	-21.0%
Tech+ ex FAANG	9.2%	-4.8%	5.0%
Estimates excluding key groups			
S&P 500 ex Energy	6.5%	-10.3%	-2.5%
S&P 500 ex Financials	13.2%	0.0%	13.8%
S&P 500 ex Energy & Financials	8.1%	-6.5%	2.2%
S&P 500 ex Tech+	11.9%	-2.0%	11.3%

Notes: The data represents those companies that have reported so far (actual results) and consensus estimates for those that have yet to report. The "Tech+" category represents technology stocks within the Information Technology sector and those that are included in other sectors. "FAANG" repesents the shares of META (Facebook's new ticker), AAPL, AMZN, NFLX, GOOGL (Alphabet Class A shares).

Source - National research correspondent, Refinitiv I/B/E/S, FactSet; data as of 7/21/22

UNITED STATES

Ben Graham, CFA – Minneapolis

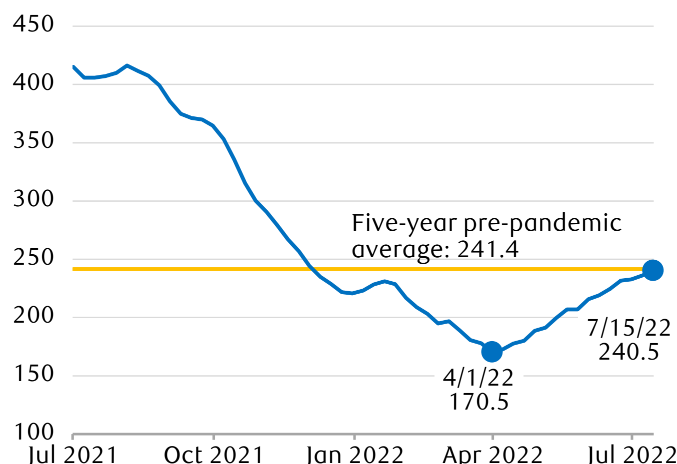
- **U.S. equities are broadly higher thus far this week, with Growth stocks outperforming Value stocks**, as the S&P 500 has climbed 3.1% as of Thursday morning trading. The Nasdaq Composite is 4.9% higher and the Dow Jones Industrial Average is up 1.9% for the week. Sector leadership is evident in Consumer Discretionary, Information Technology, Industrials, and Materials, while Utilities has moved more than 2% lower and both Health Care and Consumer Staples are less than 1% lower for the week. Since the May relative performance highs, the Russell 1000 Growth Index has outperformed the Russell 1000 Value Index by 7.7 percentage points, narrowing Growth's YTD relative underperformance to 12.2 percentage points, from more than 20 percentage points previously. The Growth Index is still down more than 20% this year, while Value flirts with low-double-digit declines.

- **Investors are bracing for next week's Federal Reserve meeting and guidance on the central bank's next steps in its effort to combat inflation**. Markets are expecting the meeting to produce an interest rate hike of 75 basis points (bps), despite some previous fears of a 100 bps hike. This smaller increase (though still remarkably large, in historical terms) would bring the federal funds rate to a range of 2.25%–2.50%, and these expectations have been piling pressure on the short end of the Treasury yield curve. This pressure, in tandem with slowing economic momentum and continued inflationary trends, has created a yield curve backdrop in which the 1-year Treasury rate is higher than the 10-year rate by about 19 bps, a phenomenon known as a **yield curve inversion**. We think this indicates an increasing risk of economic recession.

- **Economic data released thus far this week have been less constructive than in recent months** in terms of their read-throughs on the economy, **but the silver lining is that the recent data are relieving some pressure on the Fed** in terms of rate hikes. Housing starts declined 2.0% in June relative to May levels, surprising markets given the consensus expectation of 2.9% growth, while existing home sales also came in lower than expected. On the labor front, initial unemployment claims climbed more than expected to 251,000 for the week ending July 15, bringing the four-week moving average to 241,000–the highest level this year, but in line with pre-pandemic averages.

U.S. unemployment claims tick higher, move toward pre-pandemic levels

Weekly initial unemployment claims, four-week average for the last year (thousands)



Source - RBC Wealth Management, FactSet; data through 7/15/22

CANADA

Sean Killin & Richard Tan, CFA – Toronto

- **Higher interest rates are likely to push the Canadian economy into a period of moderate economic contraction in 2023, according to a report from RBC Economics, but the Bank of Canada (BoC) remains of the view that additional rate hikes are warranted** because rising private sector inflation expectations could disrupt the effective inflation-targeting strategy the BoC has been implementing for the past three decades. With last week's larger-than-expected interest rate hike of 100 basis points, it appears highly likely there will be an impact on demand and prices, as inflation breakevens—a market-based measure of inflation expectations—have recently shown signs of decreasing. **RBC Economics expects the Canadian economy's contraction to be short-lived, with monetary tightening plateauing early in the year**. Its forecasts see a modest 1.5 percentage point rise in the unemployment rate through the end of 2023, bringing it to 6.6%, which would still be more than two percentage points below the 8.7% peak during the 2008–2009 recession. Sectors that are more sensitive to interest rates—such as Real Estate, which accounts for roughly 10% of Canadian GDP—could also impose a modest drag on the Canadian economy.

- While we acknowledge that the business cycle has matured, we note that there is a distinction between the economy and the equity market. Put simply, stocks tend to be forward-looking, meaning current prices are based in part on expectations for the future. Therefore, **the correction that has occurred so far in 2022 may have largely priced in a mild recessionary scenario, in our view**. For instance, the S&P/TSX Composite is now trading at roughly 11x 2023 consensus earnings estimates, a sizeable discount to its long-term average of approximately 15x. **As we head into the quarterly earnings season, we believe key focus areas will be the durability of corporate profits and forward guidance**. With respect to the former, cost inflation remains topical (driven by factors such as supply chain disruptions and tight labour markets) and thus some degree of margin compression should be expected, in our view. As it pertains to guidance, we believe there is a risk that firms could revise their guidance lower, as the economy has slowed, particularly if the financial health of consumers starts to weaken at the margins.

EUROPE

Rufaro Chiriseri, CFA & Thomas McGarrity, CFA – London

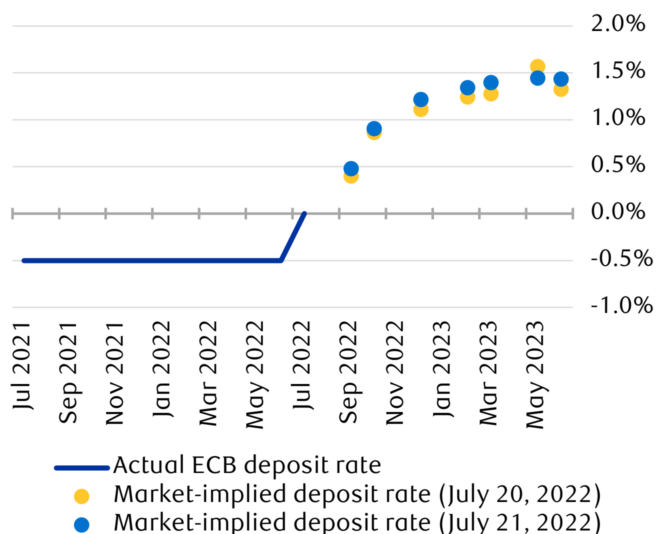
- **The European Central Bank (ECB) raised interest rates by 50 bps on Thursday, putting an end to the era of negative interest rates with its first rate hike in more than a decade**. Markets had expected a 25 bps increase until Tuesday, when a Reuters article, citing unnamed sources, suggested that a 50 bps increase was being discussed. The central bank pointed to rising inflation risks and the depreciation of the euro against the U.S. dollar in its rationale for the outsized move. The ECB Governing Council also abandoned previous forward guidance and stated that future moves would be data-dependent and determined on a month-by-month basis. Prior to the rate decision, the market had been pricing in a cumulative 170 bps of policy tightening this year, but expectations jumped to a cumulative 205 bps of tightening following the more hawkish statement.

- **The ECB also revealed long-awaited details of its "transmission protection instrument" (TPI)**. In a nutshell, subject to meeting the ECB's conditions, the central bank has the ability to make bond purchases in countries experiencing a "deterioration in financing conditions not warranted by country-specific fundamentals." The ECB maintains full discretion, is capable of "going big" on purchases, and will not publish all details on the TPI.

- The collapse of Prime Minister Mario Draghi's Italian government, after three of his coalition partners withdrew their support in a confidence vote on Wednesday, led to his resignation, a development that increases the likelihood of a snap election in October. **The German-Italian sovereign yield spread widened to intraday highs of 240 bps, close to the levels that prompted the ECB's emergency meeting in June**. The move was led by Italian yields, likely in response to the heightened political risks.

The end of the EU's negative policy era

European Central Bank deposit rate



Source - RBC Wealth Management, Bloomberg; data as of 12:30 pm ET, 7/21/22

- **The European equity market was buoyed by Russia restarting gas flows to Europe** via the Nord Stream 1 pipeline following a 10-day period of annual maintenance. Gas shipments resumed at 40% of capacity, in line with pre-maintenance levels. While the resumption of gas flows should help ease investors' and politicians' anxiety in the short term, **it remains highly uncertain whether the EU will be able to boost gas storage inventories to its target of 80% of capacity by Nov. 1**, versus around 65% at present, to ensure sufficient supply for the coming winter.

ASIA PACIFIC

Jasmine Duan – Hong Kong

- **Sentiment on China equities weakened during the week, as investors worried that homebuyers' suspension of mortgage repayments on undelivered housing projects could pose a fresh risk to China's property market and the broader economy**. In our view, the direct impact is manageable so far, as most banks have reported that affected mortgages account for less than 0.01% of their total mortgage loans outstanding. However, a greater concern is that an escalation in defaults could have a broader impact on financial and social stability. We think a timely reaction and policy response from regulators and local governments is vital and necessary. Currently, banking regulators are asking banks to grant grace periods of another six to 12 months for homebuyers, and to offer credit enhancement tools in an effort to ensure housing delivery.

- We believe the intention of the mortgage boycott is to push developers to finish their projects. Therefore, as long as developers resume project development, homebuyers should start repaying their mortgages. However, **we believe this issue will remain an overhang for the Chinese economy and equities outlook, and is likely to produce short-term market volatility**.

- **Didi Global Inc., China's ride-hailing giant, has been fined more than RMB 8 billion (US$1.2 billion) by Chinese regulators for violating cybersecurity, data security, and personal information protection laws**. The fine is significant, equaling about 5% of Didi's revenues last year. We think this could mark the end of the cybersecurity investigation, allowing the company to gradually resume normal business operations. Market participants believe that along with the fine, the regulators will soon allow Didi to restore its app to domestic app stores and potentially proceed with its plan to list its shares on the Hong Kong Stock Exchange, as previously reported by The Wall Street Journal, citing sources familiar with the regulator's plans.

MARKET
Scorecard

Data as of July 20, 2022

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	3,959.90	4.6%	-16.9%	-8.4%	21.8%
Dow Industrials (DJIA)	31,874.84	3.6%	-12.3%	-7.6%	19.5%
Nasdaq	11,897.65	7.9%	-24.0%	-17.9%	10.5%
Russell 2000	1,827.95	7.0%	-18.6%	-16.7%	24.5%
S&P/TSX Comp	19,020.67	0.8%	-10.4%	-4.6%	17.5%
FTSE All-Share	4,009.11	1.7%	-4.7%	1.9%	15.8%
STOXX Europe 600	422.51	3.8%	-13.4%	-5.4%	12.5%
EURO STOXX 50	3,585.24	3.8%	-16.6%	-9.4%	5.8%
Hang Seng	20,890.22	-4.4%	-10.7%	-23.4%	-16.6%
Shanghai Comp	3,304.72	-2.8%	-9.2%	-6.6%	-0.3%
Nikkei 225	27,680.26	4.9%	-3.9%	1.1%	21.8%
India Sensex	55,397.53	4.5%	-4.9%	6.1%	48.0%
Singapore Straits Times	3,170.29	2.2%	1.5%	1.9%	21.2%
Brazil Ibovespa	98,286.83	-0.3%	-6.2%	-21.6%	-5.9%
Mexican Bolsa IPC	47,132.49	-0.8%	-11.5%	-4.3%	29.8%
Gov't bonds (bps change)	**Yield**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. 10-Yr Treasury	3.027%	1.4	151.6	180.5	241.6
Canada 10-Yr	3.118%	-10.5	169.2	193.9	260.4
UK 10-Yr	2.139%	-9.0	116.8	157.5	198.8
Germany 10-Yr	1.257%	-7.9	143.4	166.7	171.7
Fixed income (returns)	**Yield**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. Aggregate	3.77%	0.2%	-10.1%	-11.0%	-11.2%
U.S. Investment-Grade Corp	4.69%	0.8%	-13.7%	-14.5%	-12.7%
U.S. High-Yield Corp	8.38%	2.7%	-11.9%	-10.4%	0.6%
Commodities (USD)	**Price**	**MTD**	**YTD**	**1 yr**	**2 yr**
Gold (spot $/oz)	1,695.82	-6.2%	-7.3%	-6.3%	-6.7%
Silver (spot $/oz)	18.67	-7.9%	-19.9%	-25.1%	-6.2%
Copper ($/metric ton)	7,254.50	-12.1%	-25.5%	-22.0%	11.7%
Oil (WTI spot/bbl)	102.26	-3.3%	32.8%	51.7%	150.6%
Oil (Brent spot/bbl)	106.73	-7.0%	37.2%	53.9%	146.6%
Natural Gas ($/mmBtu)	7.86	44.9%	110.7%	102.8%	379.0%
Currencies	**Rate**	**MTD**	**YTD**	**1 yr**	**2 yr**
U.S. Dollar Index	107.0790	2.3%	11.9%	15.2%	11.7%
CAD/USD	0.7760	-0.1%	-1.9%	-1.6%	5.0%
USD/CAD	1.2886	0.1%	2.0%	1.6%	-4.8%
EUR/USD	1.0175	-2.9%	-10.5%	-13.6%	-11.1%
GBP/USD	1.1975	-1.7%	-11.5%	-12.1%	-5.4%
AUD/USD	0.6885	-0.3%	-5.2%	-6.1%	-1.9%
USD/JPY	138.2800	1.9%	20.2%	25.9%	28.9%
EUR/JPY	140.7000	-1.1%	7.5%	8.7%	14.6%
EUR/GBP	0.8497	-1.3%	1.0%	-1.7%	-6.0%
EUR/CHF	0.9887	-1.2%	-4.7%	-8.9%	-8.0%
USD/SGD	1.3931	0.2%	3.3%	2.0%	0.3%
USD/CNY	6.7558	0.8%	6.3%	4.2%	-3.3%
USD/MXN	20.5451	2.1%	0.1%	1.9%	-8.7%
USD/BRL	5.4653	4.0%	-2.0%	4.7%	2.5%

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 0.77 means 1 Canadian dollar will buy 0.77 U.S. dollar. CAD/USD -1.9% return means the Canadian dollar fell 1.9% vs. the U.S. dollar year to date. USD/JPY 138.28 means 1 U.S. dollar will buy 138.28 yen. USD/JPY 20.2% return means the U.S. dollar rose 20.2% vs. the yen year to date.

Source - Bloomberg; data as of 7/20/22 market close

Authors

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

Ben Graham, CFA – Minneapolis, United States
benjamin.graham@rbc.com; RBC Capital Markets, LLC

Sean Killin – Toronto, Canada
sean.killin@rbc.com; RBC Dominion Securities Inc.

Richard Tan, CFA – Toronto, Canada
richard.tan@rbc.com; RBC Dominion Securities Inc.

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

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

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

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 June 30, 2022

			Investment Banking Services Provided During Past 12 Months	
Rating	Count	Percent	Count	Percent
Buy [Outperform]	851	58.41	290	34.08
Hold [Sector Perform]	560	38.44	169	30.18
Sell [Underperform]	46	3.16	6	13.04

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.

® 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 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.

© 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
RBC1253

Wealth Management