GLOBAL Insight

WEEKLY

Perspectives from the Global Portfolio Advisory Committee

June 16, 2022

Wealth

Management

Tough choices for the Fed

Thomas Garretson, CFA – Minneapolis

As the Federal Reserve and other global central banks unleash aggressive rate hikes in their efforts to tame inflation, the potential for high interest rates to trigger an economic slowdown remains a concern for markets. We look at the difficult choices facing policymakers, and what could drive policy changes.

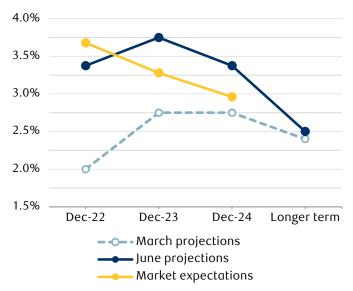
The early reaction to this week's hotly anticipated Federal Reserve meeting was one of modest relief as the tone from Fed Chair Jerome Powell was relatively dovish despite an aggressive rate hike of 75 basis points (bps). In the run-up to the meeting, fears had increased that the Fed could launch an all-out assault on inflation after the Consumer Price Index reached a fresh high along with an unsettling rise in consumer inflation expectations just days prior to the meeting. But Powell appeared to take a nuanced view of inflation, and noted that many of the key factors fueling it remain largely out of the Fed's control while downplaying the idea that 75 bps hikes could become the norm. However, it was little more than a fleeting moment of calm, as global central banks remain on the offensive, driving stocks lower, and sovereign yields higher.

Pump it up

The Fed has almost no good options at the moment, in our view, and uncertainty has only increased at a time when many had hoped it would begin to fade.

Front-loaded and higher rate hikes seen leading to earlier rate cuts

Fed rate projections and market expectations



Source - RBC Wealth Management, Bloomberg, Federal Reserve median rate projections; Market expectations based on Overnight Index Swap Rates

For perspectives on the week from our regional analysts, please see pages 4-5.

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 6/15/22 market close (unless otherwise stated). Produced: 6/16/22 4:38 pm ET; Disseminated: 6/16/22 4:58 pm ET For important disclosures, required non-U.S. analyst disclosures, and authors' contact information, see page 7

That was evident this week as Powell offered little in the way of forward guidance, leading markets to the idea that the data would dictate the magnitude of upcoming rate hikes.

But as RBC Capital Markets, LLC Chief U.S. Economist Tom Porcelli noted this week, there's a risk that the Fed will have to walk into its July 26–27 meeting with a nine percent year-over-year inflation print, and there may even be some upside to that number as the national average for a gallon of gas is already up nearly \$0.40 through the midpoint of the month to \$5.00. Just as Powell initially dismissed the idea of a 75 bps rate hike earlier this year, a number like that could put a surprising 100 bps move on the table. As it stands, the market is currently split on whether the July meeting will feature a 50 bps or 75 bps move.

As the first chart shows, the end result was that the Fed markedly pumped up its rate hike forecasts compared to its economic projections in March. And while the central bankers previously foresaw holding rates flat from 2023 into 2024, they now see the potential for rate cuts.

Market pricing is even more aggressive, not only in terms of front-loading rate hikes this year, but also in terms of rate cuts, now seen potentially as early as 2023. But it remains to be seen whether the market is pricing those rate cuts next year in response to recession risks, or because it expects the Fed will have achieved its goal of bringing inflation down and will therefore be able to make some insurance cuts in order to deliver a soft economic landing and to support continued economic expansion.

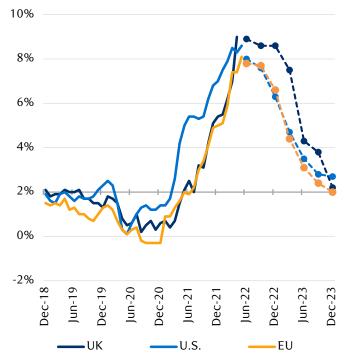
A global challenge

Inflation isn't just a U.S. problem, but rather a global challenge. As the second chart shows, headline inflation appears yet to peak across major global economies.

While the Fed has been widely criticized (perhaps justifiably) for coming too late to the rate hike game, the Bank of England—the first of the major global central banks to begin raising rates—has only seen inflation continue to accelerate in the UK. This makes it more likely that policymakers across the pond will deliver their own supersized rate hike of

Global inflationary pressures persist as central banks wait for confirmation of a peak

Monthly CPI and quarterly consensus forecasts



Source - RBC Wealth Management, Bloomberg consensus forecasts based on Bloomberg Analyst Survey for June 2022, shown by dashed lines

50 bps at their next meeting, in August, following a fifth consecutive 25 bps move this week.

Consensus expectations call for UK inflation to remain near its current elevated level for the remainder of the year, while in the U.S. and Europe, both markets and policymakers are now expected to get their first indication that inflation is on the move lower by the fourth quarter. In light of these expectations, our base case is now that the Fed's aggressive rate hike campaign will continue for the balance of 2022, but that policy rates will be held flat into 2023 as the chances for rate cuts grow.

Inflation is one thing, growth is another

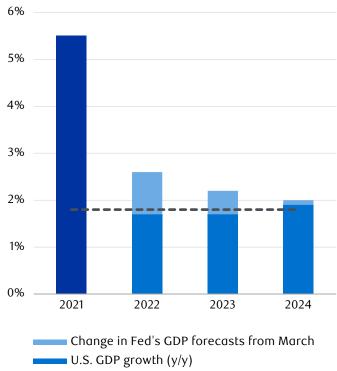
While inflation remains the primary concern of central banks and investors alike, we believe the focus will pivot back to economic growth sooner rather than later. In the U.S., following this week's economic data on consumer spending and the housing sector that showed a sharp slowdown on the back of mortgage rates breaching six percent for the first time since 2008, the Atlanta Fed's GDPNow model is currently projecting flat economic growth in Q2, down from an estimate of 1.9 percent growth on April 29, following the Q1 pullback of 1.5 percent. We think this could cause markets and policymakers to turn their focus toward growth concerns when the first official Q2 GDP estimate is released on July 28, just one day after the Fed's next meeting.

As the last chart shows, the Fed now envisions that its ramped-up rate hikes this year will cool economic growth below its potential levels this year and next—which naturally will relieve inflationary pressures. Note that the Fed is not targeting an economic contraction or recession in order to achieve this, just a stretch of below-trend growth. Should this effort succeed, the Fed's view that rates could fall in 2024 would then boost economic activity to above-trend levels.

We think the Fed will ultimately err on the side of caution as core inflation (excluding food and energy prices) has arguably shown signs of peaking, and should continue to fall faster than headline inflation as excess inventories and a cooling housing sector weigh on prices. While policymakers can't ignore high headline inflation and the risks it poses to inflation expectations, it may prove to be the case that investors and consumers hate the alternative to high inflation more than they hate high inflation. As Porcelli also noted: "Do they [Fed policymakers] just keep raising rates aggressively in the face of firm pump prices they have limited if any meaningful ability to control? It's hard to believe that's actually what they want to do. The economic repercussions from following this approach for even a modest stretch of time would drive us into something potentially ugly."

Finally, while recession talk and the risk of an economic downturn have both increased as a result of aggressive policy tightening campaigns—and are likely to continue to do so, in our view—such an outcome is not inevitable. To a large extent, market valuations may already reflect those risks; and while the word "recession" always has an unpleasant connotation, neither the depth nor the duration

Fed envisions modest growth slowdown to tame inflation, but reacceleration by 2024



---Fed's estimate of long-term potential GDP

Source - RBC Wealth Management, Bloomberg, U.S. Federal Reserve; dashed line shows projection based on Q4 year-over-year data

of any potential pullback would be easily gauged in advance. We suspect that a mild contraction in economic activity could allow supply chains time and space to recover, setting the stage for a more sustainable expansion in the aftermath.

There may be no good answers ... there might not even be any answers. But central bankers will keep working to control the things they think they can control, while higher rates won't necessarily cool demand for food or boost oil production. And while inflation remains front and center, growth concerns will remain back-of-mind, and could move into the driver's seat of policy choices sooner than many might appreciate.

UNITED STATES

Ben Graham, CFA – Minneapolis

 U.S. equities are likely on track for their tenth weekly decline in the last 11 weeks. With the latest Fed meeting leading to a 0.75 percentage point increase in the fed funds rate, U.S. stocks appear to be following the playbook from last month. Upon the Fed's announcement, equities rallied into the close on Wednesday, June 15. Then, on Thursday, June 16, they opened lower, more than reversing the prior session's gains. This is similar to what occurred in May of this year when the Fed last met. In both cases, markets initially took a positive view of the Fed's tougher inflation-fighting actions, only later to change course due to the possibility that the Fed's more aggressive and front-loaded rate hikes could dent economic growth and raise recession risks. During the most recent selloff, market leadership, what little of it that there was, came from defensively positioned equities in the Utilities, Consumer Staples, and Health Care sectors.

Thus far this week, major indexes are trading sharply lower with the S&P 500 down 6.0% as of midday trading on Thursday, June 16. The Nasdaq is down a similar amount, the Dow Jones is holding up slightly better, and small caps, as measured by the Russell 2000, are down nearly 8%. Energy has been the best-performing sector in recent months, but even this sector is now nearly 15% below its 52-week high reached roughly a week ago. The worst-performing sectors are nearly 40% off their 52week highs, as Communication Services and Consumer Discretionary have each declined 37% from their late 2021 highs.

Because of the risks to growth, economic news is (and will be) front and center for the equity market. Retail sales were one of the releases in focus this week.

U.S. equity market declines

Declines from 52-week highs by sector and index

Sectors & indexes	Percent off 52-week high
Energy	-14.6%
Materials	-15.1%
Health Care	-15.3%
Utilities	-16.7%
Consumer Staples	-17.4%
Industrials	-19.8%
Real Estate	-25.1%
Financials	-26.0%
Information Technology	-30.5%
Consumer Discretionary	-36.8%
Communication Services	-37.1%
Dow Jones Industrial Average	-19.0%
S&P 500	-23.8%
Nasdaq Composite Index	-34.2%

Source - RBC Wealth Management, FactSet; data as of 11:15 AM CT, 6/16/22

The data surprised to the downside as both the headline data and a narrower group of industries represented by the control group (excludes autos, gasoline, building materials, and office materials) were softer than expected. The headline retail sales release saw May purchases decline 0.3% from April's levels, despite persistent inflation. This was well below the expectation of 0.2% growth in purchases. RBC Capital Markets put the data in perspective: "Even with all this inflation out there, that degree of price pressure could not 'inflate' nominal spending into a positive gain. In other words, REAL spending in this mostly goods report fell sharply (it was down about -1.5%). This slowing in goods spending is going to show up in core prices, just give it a little time/have patience on this—something the Fed is seemingly running out of." Additionally, housing starts of 1.55 million were lighter than consensus expectations of 1.72 million, which provides more evidence that the housing market is starting to slow on the back of higher mortgage rates. Initial unemployment claims of 229,000 matched the reported level from the prior week.

CANADA

Richard Tan, CFA – Toronto

■ The S&P/TSX Composite Index is on pace for back-toback weekly declines driven in part by runaway inflationary data and revised market expectations that central banks will have to further accelerate their rate hiking plans as a means to tame inflation. On the negative side of the equation, the S&P/TSX Composite has given back its yearto-date gains and is now down approximately 8% on the year and is roughly 11% off its all-time highs, as of June 15. On a more positive tone, the Canadian equity market continues to perform well relative to global indexes due to strong contributions from resource sectors, namely Energy and Materials, which are up approximately 39% and 2% on the year, respectively. We would also highlight that Q1 corporate earnings overall were quite healthy, in our view, and management commentary for the full-year outlook was generally supportive of continued earnings growth. The S&P/TSX Composite is one of the few markets globally where consensus estimates for fiscal 2022 have moved higher year-to-date. Importantly, upward revisions to full-year earnings were broad-based across sectors, even as Energy and Materials drove the lion's share of the upward revisions.

■ Furthermore, we would note that the S&P/TSX Composite is trading below 12x consensus earnings estimates for 2023 versus its long-term average of approximately 15x. From a sector perspective, we believe certain traditional defensive sectors (i.e., Real Estate, Communication Services, and Utilities) are trading at rich valuations relative to historical averages. The remaining sectors screen fair to attractive, in our view, but we would emphasize that the Health Care and Technology sectors will likely remain volatile driven by the combination of deteriorating fundamentals and/or greater sensitivity to interest rates. With respect to the latter, **the Canadian bond markets are now pricing in a 75 basis point (bps) rate hike in July and the equivalent of nine 25 bps hikes before year-end**. All else equal, this could increase the overnight policy rate to over 3.50% versus the 1.50% rate today.

EUROPE

Rufaro Chiriseri, CFA – London

The European Central Bank (ECB) held an emergency meeting on Wednesday to address soaring sovereign bond yields across the eurozone's most indebted nations. The yield on 10-year Italian and Greek debt rose to 4.16% and 4.70%, respectively. The Governing Council decided to reinvest redemptions from the €1.7 trillion Pandemic Emergency Purchase Programme in a flexible manner and will speed up its work on the new "anti-crisis tool" to minimise an "uneven transmission" of monetary policy across the euro area, otherwise known as fragmentation. Though short on detail, the announcement sparked a rally in Italian and Greek sovereign debt with 10-year yields falling by 36 basis points (bps) and 45 bps, respectively. Following the hawkish Federal Reserve and Bank of England (BoE) meetings, German 10-year Bund yields rose to 1.8%, while breaking news of the ECB's intent to launch the new "anti-crisis tool" by July kept the Italian-German 10-year bond spreads contained around 200 bps.

■ As widely expected, the BoE raised the Bank Rate from 1% to 1.25% and struck a hawkish tone, suggesting it would "act forcefully in response" to persistent inflation pressures. Inflation rose to a multi-decade high of 9% in April, leading the BoE to upwardly revise its forecast for October 2022 to 11% from 10% previously. The Monetary Policy Committee's forward guidance also shifted to indicate unanimous support for more aggressive tightening and backing for larger moves, opening the door to 50 bps moves in the future. As markets digested the minutes of the policy meeting, yields on UK 10-year Gilts jumped 33 bps to intraday highs of 2.73%. Markets now expect the Bank Rate to reach 3% at year-end, with 50 bps moves fully priced in for the next three meetings.

■ Further BoE policy tightening is likely warranted, in our view, given its expectations for unemployment to fall further, though the May data showed a slight uptick to 3.8% from 3.7% in April. We believe current market pricing appears excessive given the weaker growth outlook. That being said, higher expected inflation and a tighter labour market present a risk to our view.

ASIA PACIFIC

Nicholas Gwee, CFA – Singapore

Asia Pacific shares traded sharply lower as of midweek, with the MSCI AC Asia Pacific Index testing the one-year low of 157.54 reached in May 2022. Stocks in Asia received a temporary boost on Thursday from Fed Chair Jerome





Source - RBC Wealth Management, Bloomberg; daily data through 6/15/22

Powell's comment that large interest rate hikes will likely be rare following the Fed's biggest increase in borrowing costs since 1994. **Meanwhile**, **Chinese equities continued on a recovery trajectory** for a second consecutive week despite Beijing and Shanghai resuming mass COVID-19 testing and a delay to the planned reopening of schools in the capital.

According to a Bloomberg report, some hedge funds are taking positions based on their expectations that the Bank of Japan (BoJ) will be unable to sustain its yield-curve control (YCC) policy and that the central bank will cave in and move away from its easy monetary policy (BlueBay Asset Management, an RBC-owned company, was mentioned in the report). Currently, the consensus expects the BoJ to maintain its monetary policy at its meeting this Friday. A growing minority of economists believes the BoJ may tweak its YCC policy at the October meeting when it publishes its quarterly outlook report. Japan's core consumer prices rose 2.1% y/y in April, reaching the BoJ's 2% target for the first time since 2015. Wages have remained firm and are expected by market participants to rise further. Financials sector shares typically rise when interest rates move higher. And when the Financials sector has risen in the past, Japan's stock market overall has tended to outperform given the BoJ's more moderate tightening than that of the Fed and the European Central Bank.

• Cathay Pacific Airways Ltd. (293 HK) is planning to recruit 4,000 staff between now and the end of 2023 to replenish its severely depleted workforce and gear up for an anticipated recovery in air travel. Cathay intends to bring in 700 pilots and about 2,000 cabin crew, with the remaining positions open for frontline airport staff. Including Cathay's subsidiaries, the total hiring plan numbers around 8,000.

MARKET Scorecard

Data as of June 15, 2022

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 -2.0% return means the Canadian dollar fell 2.0% vs. the U.S. dollar year to date. USD/JPY 133.66 means 1 U.S. dollar will buy 133.66 yen. USD/JPY 16.1% return means the U.S. dollar rose 16.1% vs. the yen year to date.

Source - Bloomberg; data as of 6/15/22 market close

Equities (local currency)	Level	MTD	YTD	1 уг	2 уг
S&P 500	3,789.99	-8.3%	-20.5%	-10.8%	23.6%
Dow Industrials (DJIA)	30,668.53	-7.0%	-15.6%	-10.6%	19.0%
Nasdaq	11,099.15	-8.1%	-29.1%	-21.1%	14.1%
Russell 2000	1,731.14	-7.1%	-22.9%	-25.4%	21.9%
S&P/TSX Comp	19,611.56	-5.4%	-7.6%	-3.1%	27.7%
FTSE All-Share	4,013.14	-4.5%	-4.6%	-1.7%	19.4%
STOXX Europe 600	413.10	-6.8%	-15.3%	-10.0%	17.0%
EURO STOXX 50	3,532.32	-6.8%	-17.8%	-14.8%	12.6%
Hang Seng	21,308.21	-0.5%	-8.9%	-25.6%	-10.4%
Shanghai Comp	3,305.41	3.7%	-9.2%	-7.1%	14.4%
Nikkei 225	26,326.16	-3.5%	-8.6%	-10.6%	22.3%
India Sensex	52,541.39	-5.4%	-9.8%	-0.4%	58.1%
Singapore Straits Times	3,105.85	-3.9%	-0.6%	-2.2%	18.8%
Brazil Ibovespa	102,806.82	-7.7%	-1.9%	-21.0%	11.3%
Mexican Bolsa IPC	48,344.97	-6.6%	-9.2%	-5.0%	29.2%
Gov't bonds (bps change)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Treasury	3.286%	44.2	177.6	179.4	256.4
Canada 10-Yr	3.461%	57.0	203.5	208.0	294.2
UK 10-Yr	2.468%	36.7	149.7	171.0	226.3
Germany 10-Yr	1.644%	52.2	182.1	187.6	209.0
Fixed income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	4.14%	-4.1%	-12.6%	-12.3%	-12.5%
U.S. Investment-Grade Corp	4.99%	-4.7%	-16.1%	-15.2%	-12.4%
U.S. High-Yield Corp	8.49%	-5.5%	-13.0%	-11.2%	1.2%
Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot \$/oz)	1,835.43	-0.1%	0.3%	-1.3%	6.4%
Silver (spot \$/oz)	21.71	0.7%	-6.9%	-21.5%	24.9%
Copper (\$/metric ton)	9,218.75	-2.4%	-5.4%	-3.3%	62.3%
Oil (WTI spot/bbl)	115.31	0.6%	49.8%	59.9%	210.6%
Oil (Brent spot/bbl)	119.00	-3.1%	53.0%	60.8%	199.6%
Natural Gas (\$/mmBtu)	7.55	-7.3%	102.4%	133.0%	352.3%
Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	104.7900	3.0%	9.5%	15.7%	8.4%
CAD/USD	0.7753	-1.9%	-2.0%	-5.5%	5.2%
USD/CAD	1.2898	2.0%	2.1%	5.9%	-5.0%
EUR/USD	1.0452	-2.6%	-8.1%	-13.8%	-7.7%
		-2.6% -3.3%	-8.1% -10.0%	-13.8% -13.5%	-7.7% -3.4%
GBP/USD	1.0452				
GBP/USD AUD/USD	1.0452 1.2180	-3.3%	-10.0%	-13.5%	-3.4%
GBP/USD AUD/USD USD/JPY	1.0452 1.2180 0.7004	-3.3% -2.4%	-10.0% -3.6%	-13.5% -8.9%	-3.4% 1.2%
GBP/USD AUD/USD USD/JPY EUR/JPY	1.0452 1.2180 0.7004 133.6600	-3.3% -2.4% 3.9%	-10.0% -3.6% 16.1% 6.7%	-13.5% -8.9% 21.4% 4.7%	-3.4% 1.2% 24.5%
GBP/USD AUD/USD USD/JPY EUR/JPY EUR/GBP	1.0452 1.2180 0.7004 133.6600 139.7000 0.8581	-3.3% -2.4% 3.9% 1.2% 0.7%	-10.0% -3.6% 16.1% 6.7% 2.0%	-13.5% -8.9% 21.4% 4.7% -0.3%	-3.4% 1.2% 24.5% 15.0% -4.5%
USD/JPY EUR/JPY EUR/GBP EUR/CHF	1.0452 1.2180 0.7004 133.6600 139.7000 0.8581 1.0383	-3.3% -2.4% 3.9% 1.2% 0.7% 0.8%	-10.0% -3.6% 16.1% 6.7% 2.0% 0.1%	-13.5% -8.9% 21.4% 4.7% -0.3% -4.7%	-3.4% 1.2% 24.5% 15.0% -4.5% -3.4%
GBP/USD AUD/USD USD/JPY EUR/JPY EUR/GBP EUR/CHF USD/SGD	1.0452 1.2180 0.7004 133.6600 139.7000 0.8581 1.0383 1.3862	-3.3% -2.4% 3.9% 1.2% 0.7% 0.8% 1.2%	-10.0% -3.6% 16.1% 6.7% 2.0% 0.1% 2.8%	-13.5% -8.9% 21.4% 4.7% -0.3% -4.7% 4.4%	-3.4% 1.2% 24.5% 15.0% -4.5% -3.4% -0.4%
GBP/USD AUD/USD USD/JPY EUR/JPY EUR/GBP EUR/CHF	1.0452 1.2180 0.7004 133.6600 139.7000 0.8581 1.0383	-3.3% -2.4% 3.9% 1.2% 0.7% 0.8%	-10.0% -3.6% 16.1% 6.7% 2.0% 0.1%	-13.5% -8.9% 21.4% 4.7% -0.3% -4.7%	-3.4% 1.2% 24.5% 15.0% -4.5% -3.4%

Authors

Thomas Garretson, CFA – Minneapolis, United States tom.garretson@rbc.com; RBC Capital Markets, LLC

Ben Graham, CFA – Minneapolis, United States

benjamin.graham@rbc.com; RBC Capital Markets, LLC

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

Nicholas Gwee, CFA – Singapore

nicholas.gwee@rbc.com; Royal Bank of Canada, Singapore Branch

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

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

