April 9, 2020

RBC WEALTH MANAGEMENT

Global Insight Weekly

Driven to distraction?

Frédérique Carrier – London

With the unrelenting speed and sway of newsflow over the past few weeks, market moves that would have normally attracted attention have largely passed with nary a glance. We zero in on the action in emerging markets, size up the challenges facing this asset class, and suggest how to position portfolios.

Under the radar

Chinese equities are a case in point. Their recent outperformance has been more abrupt than most think. As put by RBC Global Asset Management Inc. Chief Economist Eric Lascelles, early in 2020 "recriminations were flying against China given its status as the point of origin for the disease" and its heavy-handed approach to confinement measures. The renminbi floundered in response to the weaker growth outlook and as the epidemic was at that time considered purely a Chinese event.

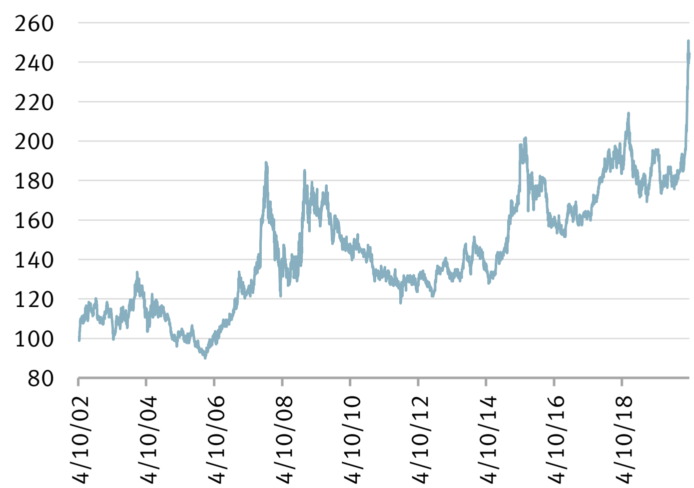
Fast forward a few months, and we're seeing a reversal of China's misfortunes, and prior criticism of a draconian lockdown has flipped to praise. It helps that COVID-19 is no longer seen as a Chinese-centric issue. Moreover, as Lascelles notes, the original epicenter in China "remains nicely under control" and the country's "economic rebound appears to be vigorous" as China slowly reactivates its economy.

This sea change is best illustrated by the outperformance of Chinese equities relative to other emerging markets, the most dramatic in more than 15 years. In fact, whereas the MSCI Emerging Markets ex China Index has retraced all its gains since 2009, the MSCI China Index has only retraced its advance since 2019.

China's outperformance may also reflect investors' concerns regarding other emerging economies. The MSCI India Index suffered its worst single-day drop ever in March despite India being a beneficiary of lower oil prices. Apprehension about several generations living in the same house making for fertile

Chinese equities abruptly outperform

MSCI China Index relative to MSCI Emerging Markets ex China Index (Apr. 10, 2002 = 100)



Source - Bloomberg, RBC Wealth Management; data through 4/3/20

Market pulse

Click here for authors' contact information. Priced (in USD) as of 4/9/20 market close, ET (unless otherwise stated). **For important disclosures and required non-U.S. analyst disclosures, see page 7.**
Produced: Apr 9, 2020 16:24ET; Disseminated: Apr 9, 2020 16:44ET

ground for the virus to spread combined with containment measures that crimp economic growth spooked investors.

But it is the MSCI Emerging Markets Latin America Index that has suffered the most as all the gains made relative to the MSCI World Index since 2003 have been wiped out. Most Latin American countries heavily rely on commodities, and the collapse in their prices has robbed governments of an important source of revenue.

Emerging is difficult

Other than a few Asian nations such as South Korea and Taiwan, most emerging countries lack adequate resources to deal with the health care crisis spawned by the COVID-19 epidemic.

Health care systems in emerging nations are more precarious than in developed countries, with the number of hospital beds per 1,000 inhabitants much lower than in Europe or the U.S. According to the World Bank, India, for instance, has 0.7 beds per 1,000 people, Mexico 1.5, and Brazil 2.2, compared to 2.9 in the U.S. and 8.2 in Germany, a country with an admittedly well-endowed health care system.

There are usually many fewer social safety nets in emerging countries than found in Europe or Canada. Also, authorities in emerging countries do not have the same latitude to inject large amounts of money into their economies as their U.S. counterparts do. Such action would cause emerging currencies to depreciate, an undesirable outcome for emerging market nations as a large proportion of their corporate debt is denominated in foreign currency, usually U.S. dollars.

If these structural challenges weren't enough, cyclical difficulties are also mounting. Global demand for manufactured goods and commodities, on which most of these countries heavily depend, have come to a stand-still. According to International Monetary Fund (IMF) chief Kristalina Georgieva, nearly $90 billion have left emerging markets and developing economies in a widespread flight to safety.

It is therefore not surprising that the IMF has received requests for help from more than 90 countries over the past few weeks. As Georgieva put it, "The same way the virus hits vulnerable people with medical preconditions hardest, the economic crisis hits vulnerable economies the hardest."

But it is not all bleak. The IMF has a war chest that exceeds $1 trillion, representing a high 25 percent of the total stock of emerging market debt, according to Polina Kurdyavko, head of emerging market debt at BlueBay (an RBC Group company). This is more than the IMF had at its disposal during the Asian financial crisis of 1998 and the global financial crisis in 2008.

Outperformance since 2003 now fully wiped out

MSCI Emerging Markets Latin America Index relative to MSCI World Index (Apr. 24, 1998 = 100)

Source - Bloomberg, RBC Wealth Management; data through 4/8/20

How hard the hit?

But it is undeniable that economies everywhere will be severely hit this year. To wit, Lascelles has lowered his 2020 forecast for U.S. GDP growth to -7.7 percent from -3.2 percent as COVID-19's impact on the depth and duration of the downturn are becoming clearer.

Economic contraction overall in emerging markets will likely be less severe thanks to the underlying structural "catch-up" potential they enjoy. Moreover, China, the largest component of the asset class, is reactivating its economy and pressing on with its strategy of redirecting its efforts from servicing global markets to focusing on domestic consumption and servicing its own market of 1.4 billion people.

Still, given the uncertainties, we believe investors would do well to focus on those countries best equipped to deal with the current challenges. We have a long-held Overweight position on Asia ex-Japan equities. The region, which includes China, is a key beneficiary of lower oil prices. Moreover, many countries in the region have been praised for their focused and disciplined handling of the COVID-19 outbreak and have actively supported their domestic economies during this ordeal.

United States

Tom Garretson, CFA – Minneapolis; Alan Robinson – Seattle

- **Another week, another massive Fed development** with $2.3 trillion in lending programs announced. Though the basic framework was known beforehand, the details—and numbers—lit a fire under risk assets, particularly corporate bonds. The Fed has $750 billion earmarked for bond purchases, and **unexpectedly announced that it will expand beyond investment-grade bonds and into high-yield bonds and related exchange-traded funds (ETFs)**. However, the expanded purchasing will only apply to firms that were investment-grade-rated on or after Mar. 22, as the Fed likely recognizes that potential downgrades amid historic economic challenges could limit access to the Fed's facilities just when quality companies need it most. The Fed may also be trying to get ahead of potential market stress from forced selling by funds due to downgrades, and the possibility that a glut of new supply in high-yield markets could create its own market dislocations.

- But as unbelievable as it may sound, the $2.3 trillion reflects the Fed lending against just $195 billion of the $454 billion appropriated to it by the CARES Act. Should the central bank need to utilize the full amount, **the war chest could expand beyond $5 trillion**.

- **Equities rallied during the holiday-shortened week on evidence social distancing measures are starting to control the spread of COVID-19**. The Institute for Health Metrics and Evaluation (IHME), a Seattle-based independent research center, provided a less pessimistic projection for daily new cases and now projects Apr. 12 as the national peak for daily deaths from COVID-19.

- State-by-state data indicate **regions that implemented lockdown measures early in the pandemic are already showing declining case trends**, but in states with fewer restrictions, caseloads and fatalities continue to rise.

- Investors cited progress in disease control as evidence of light at the end of the tunnel for the economy, although **the IHME cautioned these projections assume social distancing will remain in force until the end of May at the earliest**.

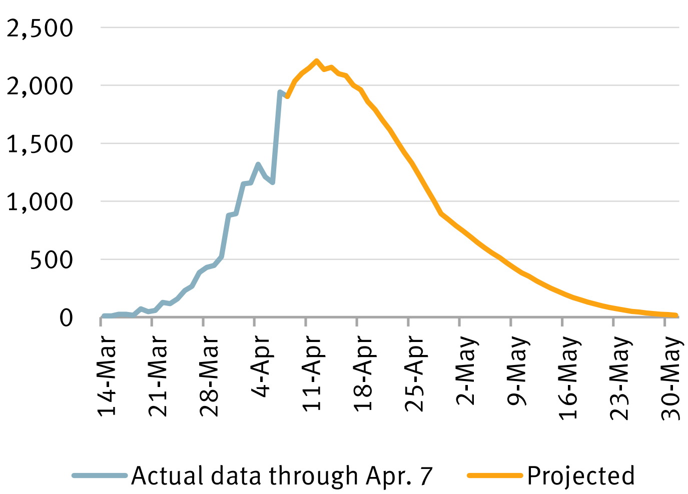
- Economists continued to revise projections of the extent of the economic hit caused by stay-at-home measures. **RBC Global Asset Management Chief Economist Eric Lascelles lowered his base-case forecast for 2020 U.S. GDP growth to -7.7%, from -3.2% previously**. He believes that although the origins of the shock are exogenous, the likely duration of the downturn will still cause real economic damage.

- **Media bellwether Walt Disney Co. (DIS)** appears to have benefited from some stay-at-home trends this year. It **announced Apr. 9 that paid subscriptions to its Disney+ streaming service had surpassed 50 million** as consumers increasingly seek home entertainment options. The pace of the increase surprised investors, as the developed-market subscriber count was up 50% since Feb. 4. The stock has underperformed the market this year due to theme park closures, but its media arm appears to provide welcome diversification.

- **Shares of package delivery companies FedEx Corp. (FDX) and United Parcel Service Inc. (UPS) were buoyed** during the week by reports Amazon.com Inc. (AMZN) was halting a delivery service known as Amazon Shipping that directly competes with these companies. However, we believe **the reprieve may be only temporary** as Amazon cited a need to focus its resources on warehouse fulfilment thanks to a surge in online shopping.

Social distancing measures are starting to impact disease projections

U.S. COVID-19 daily fatalities: Peak expected Apr. 12, 2020



Source - Institute for Health Metrics and Evaluation, University of Washington, RBC Wealth Management

Canada

Richard Tan, CFA & Meika McKelvey – Toronto

- While the S&P/TSX Composite Index has bounced off its Mar. 23 lows, **sentiment within the Energy landscape remains bleak**, and the sector continues to be one of the worst performers year to date. In an environment where

West Texas Intermediate and Western Canadian Select have collapsed below $30 and $10 per barrel, respectively, we believe **nothing is off the table as companies will have to make some tough financial decisions** in order to remain a going concern. In an attempt to shore up balance sheets, we've witnessed reductions in planned capital expenditures, dividend cuts, and suspensions of share buyback programs from the bulk of the sector. In some cases, companies have downsized their operations or have opted to shut-in production because economics at current prices simply do not make sense.

- On Apr. 9, Saudi Arabia and Russia agreed in principle for further production cuts in an effort to balance global demand-supply dynamics. However, we believe **valuations in the Energy sector will likely remain depressed** because of uncertainties related to implementation and softer demand as a result of COVID-19. All else equal, backing into Energy via the infrastructure assets such as pipelines and midstreams should provide portfolios with some relative ballast, in our view.

- Canada closed out the holiday-shortened week with the release of a labour force survey from Statistics Canada showing that the **Canadian economy shed more than one million jobs in March**. The result was worse than consensus expectations for around 500,000 jobs to be lost, which already would have been the worst month for job losses on record in Canada. The fall in employment was split relatively evenly between full-time (-474,000) and part-time (-537,000), and the **unemployment rate shot up to 7.8%** in March from 5.6% in February. The significant decline in Canadian jobs was not a surprise, with the survey taken over Mar. 15–21, when federal officials already reported that approximately one million employment insurance claims had been filed. While there remains significant uncertainty surrounding future job losses and increases in the unemployment rate (RBC Economics expects the rate to peak at approximately 15% in Q2), **the one thing that is clearly evident to us is that next month's figures will be worse**.

Europe

Frédérique Carrier & Thomas McGarrity, CFA – London

- **In the UK, dividends are under unprecedented pressure**. More than 40% of UK companies have already cut dividend payouts, exceeding the number seen in 2008 amid the early stages of the financial crisis. **Current futures contracts are predicting UK companies will slash dividends by around 55% in 2020.** This is too pessimistic, in our view, as it implies that dividends from commodity-related sectors will almost entirely be lost in 2020, whereas in reality, they may only be reduced. We would argue a 35%–40% cut at the index level is more realistic. We believe the current prospective 5.3% dividend yield (source: Bloomberg) on the UK's FTSE All-Share Index overstates the yield that will likely be achieved on UK equities over the next 12 months given the widespread dividend cuts.

- **In Europe, only slow progress seems to have been made on a coordinated effort to help support the economy**. National governments overall have responded quickly and decisively to the crisis, announcing packages worth some 15% of GDP on average including loans and guarantees.

- **However, a burden-sharing solution at the EU level remains elusive**. Such a coordinated effort is important as European countries' fiscal solidarity could influence how the EU is perceived for years to come. Strong cooperation in the guise of a European Stability Mechanism (ESM) credit line with very light conditionality, jointly financed unemployment support, or common debt instruments would enhance support for the EU, in our opinion. Conversely, failure to act could undermine the long-term cohesion of the EU and the eurozone.

- At the time of writing, **the meetings of Eurogroup finance ministers are ongoing**. Very weak economic data out of France and Germany may focus minds on the issue at hand.

Asia Pacific

Jasmine Duan – Hong Kong & Nicholas Gwee, CFA – Singapore

- **Asia equity markets have traded mostly higher** for the week, led by Japan and India. **Japan's government announced a $992 billion stimulus package** to cushion the economic impact of COVID-19. The package (approximately 20% of Japan's GDP) is one of the largest among advanced economies and twice the amount market observers were expecting. Japan also announced a **state of emergency for Tokyo and six other prefectures**, covering 44% of the population, which will last through May 6. Given the sharp increase of new cases in Tokyo, we believe the lockdown is necessary to stem the spread of COVID-19, but it **will likely drag Japan into a deeper recession** in 2020.

- **The months-long lockdown of Wuhan, China was lifted on Apr. 8**, one day after China reported no deaths for the first time since it began publishing figures. Anyone who has a "green" code on a smartphone health app is now allowed to travel. Elsewhere, IHS Markit now forecasts China's light vehicle production will drop 11.5% y/y in 2020 followed by a 7.5% expansion in 2021.

- **Hong Kong's government announced a new $17.7 billion stimulus package** to support the economy amid the COVID-19 outbreak with **a focus on job retention**. The government will provide a guaranteed employment plan and wage subsidies to qualified employers. In return, employers must not lay off employees during the subsidy period. Separately, **the Hong Kong Monetary Authority will "adjust regulatory parameters" to enable banks to lend more**, releasing a total lending capacity of HK$1 trillion, as well as other sector-specific measures to boost liquidity.

- **The Australian Prudential Regulation Authority has asked banks and insurers to limit discretionary capital distribution** so they have sufficient capacity to continue essential functions including lending and underwriting insurance. We believe the Big 4 Australian banks will likely adopt the new guidance and lower their dividend payouts accordingly. Analysts are now expecting dividend cuts of up to 40% in FY2020.

MARKET SCORECARD

Data as of April 9, 2020

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	2,789.82	7.9%	-13.6%	-3.1%	6.8%
Dow Industrials (DJIA)	23,719.37	8.2%	-16.9%	-9.3%	-1.1%
NASDAQ	8,153.58	5.9%	-9.1%	3.1%	17.3%
Russell 2000	1,246.73	8.1%	-25.3%	-20.1%	-17.7%
S&P/TSX Comp	14,166.63	5.9%	-17.0%	-13.3%	-7.0%
FTSE All-Share	3,233.24	4.0%	-23.0%	-20.3%	-18.3%
STOXX Europe 600	331.80	3.7%	-20.2%	-14.0%	-11.6%
EURO STOXX 50	2,892.79	3.8%	-22.8%	-15.3%	-15.3%
Hang Seng	24,300.33	3.0%	-13.8%	-19.4%	-19.6%
Shanghai Comp	2,825.90	2.7%	-7.4%	-12.8%	-10.0%
Nikkei 225	19,345.77	2.3%	-18.2%	-11.3%	-10.8%
India Sensex	31,159.62	5.7%	-24.5%	-20.0%	-7.8%
Singapore Straits Times	2,571.32	3.6%	-20.2%	-22.7%	-25.5%
Brazil Ibovespa	77,681.90	6.4%	-32.8%	-19.3%	-6.8%
Mexican Bolsa IPC	34,567.79	0.0%	-20.6%	-23.4%	-28.1%

Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot $/oz)	1,680.56	6.6%	10.8%	28.9%	25.8%
Silver (spot $/oz)	15.33	9.7%	-14.1%	0.7%	-7.1%
Copper ($/metric ton)	4,978.20	0.8%	-19.0%	-23.1%	-26.7%
Oil (WTI spot/bbl)	22.76	11.1%	-62.7%	-64.4%	-64.1%
Oil (Brent spot/bbl)	31.87	40.1%	-51.7%	-54.9%	-53.6%
Natural Gas ($/mmBtu)	1.74	6.3%	-20.4%	-35.4%	-35.3%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	0.719%	5.0	-119.8	-178.2	-206.0
Canada 10-Yr	0.763%	6.6	-93.9	-96.7	-137.6
U.K. 10-Yr	0.306%	-5.0	-51.6	-79.8	-110.1
Germany 10-Yr	-0.347%	12.4	-16.2	-33.7	-85.1

Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	1.57%	0.2%	3.4%	9.5%	14.1%
U.S. Invest Grade Corp	3.30%	0.9%	-2.8%	6.0%	11.0%
U.S. High Yield Corp	9.39%	0.1%	-12.6%	-7.4%	-1.7%

Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	99.5160	0.5%	3.2%	2.6%	10.8%
CAD/USD	0.7155	0.6%	-7.1%	-4.6%	-9.2%
USD/CAD	1.3976	-0.6%	7.6%	4.8%	10.1%
EUR/USD	1.0925	-1.0%	-2.6%	-3.0%	-11.3%
GBP/USD	1.2462	0.3%	-6.0%	-4.5%	-11.8%
AUD/USD	0.6338	3.4%	-9.7%	-11.0%	-17.7%
USD/JPY	108.5000	0.9%	-0.1%	-2.4%	1.6%
EUR/JPY	118.5300	-0.1%	-2.7%	-5.3%	-9.9%
EUR/GBP	0.8767	-1.3%	3.6%	1.6%	0.5%
EUR/CHF	1.0559	-0.4%	-2.7%	-6.2%	-10.4%
USD/SGD	1.4167	-0.4%	5.3%	4.7%	8.0%
USD/CNY	7.0429	-0.6%	1.1%	4.9%	11.7%
USD/MXN	23.5328	-0.6%	24.3%	24.3%	28.2%
USD/BRL	5.1072	-1.9%	26.7%	35.2%	49.2%

Source - Bloomberg. Note: 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. Data as of 9:35 pm GMT 4/9/20.

Examples of how to interpret currency data: CAD/USD 0.71 means 1 Canadian dollar will buy 0.71 U.S. dollar. CAD/USD -7.1% return means the Canadian dollar fell 7.1% vs. the U.S. dollar year to date. USD/JPY 108.50 means 1 U.S. dollar will buy 108.50 yen. USD/JPY -0.1% return means the U.S. dollar fell 0.1% vs. the yen year to date.

Authors

Frédérique Carrier – London, United Kingdom
frederique.carrier@rbc.com; RBC Europe Limited

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

Alan Robinson – Seattle, United States
alan.robinson@rbc.com; RBC Capital Markets, LLC

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

Meika McKelvey – Toronto, Canada
meika.mckelvey@rbccm.com; RBC Dominion Securities Inc.

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

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: Richard Tan and Meika McKelvey, employees of RBC Wealth Management USA's foreign affiliate RBC Dominion Securities Inc.; Frédérique Carrier and Thomas McGarrity, employees of RBC Wealth Management USA's foreign affiliate RBC Europe Limited; Jasmine Duan, an employee of RBC Investment Services (Asia) Limited; and Nicholas Gwee, an employee of Royal Bank of Canada, Singapore Branch contributed to the preparation of this publication. These individuals are not registered with or qualified as research analysts with the U.S. Financial Industry Regulatory Authority ("FINRA") and, since they are not associated persons of RBC Wealth Management, they may not be subject to FINRA Rule 2241 governing communications with subject companies, the making of public appearances, and the trading of securities in accounts held by research analysts.

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, 60 South Sixth St, Minneapolis, MN 55402.

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

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 our ratings are determined on a relative basis.

Distribution of Ratings - RBC Capital Markets, LLC Equity Research
As of March 31, 2020

			Investment Banking Services Provided During Past 12 Months	
Rating	Count	Percent	Count	Percent
Buy [Outperform]	755	51.64	220	29.14
Hold [Sector Perform]	619	42.34	126	20.36
Sell [Underperform]	88	6.02	11	12.50

Explanation of RBC Capital Markets, LLC 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 our Outperform rated securities category, which are securities expected to materially outperform sector average over 12 months.

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

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

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

Other Disclosures

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

RBC Wealth Management endeavors to make all reasonable efforts to provide research simultaneously to all eligible clients, having regard to local time zones in overseas jurisdictions. In certain investment advisory accounts, RBC Wealth Management or a designated third party will act as overlay manager for our clients and will initiate transactions in the securities referenced herein for those accounts upon receipt of this report. These transactions may occur before or after your receipt of this report and may have a 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.

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

Disclaimer