

Emerging markets: A ripe climate

Frédérique Carrier - London

The development of safe, effective vaccines and a weak U.S. dollar solidify our constructive view of emerging market equities, and undemanding valuations further burnish their appeal. We maintain our long-standing preference for Asia (ex-Japan).

It's been a long year of turmoil and turbulence, but the development of COVID-19 vaccines allows us to end the year on a note of optimism. Much of the newsflow about the vaccine rollouts and their positive impact on the recovery has focused on the U.S. and Europe, the genesis of these innovations and among the first nations to roll out the protection against COVID-19. The UK is the first country in the West to have already started its vaccine campaign.

The vaccines will be a shot in the arm for emerging markets (EM) as well. Rollouts are widely expected in the second half of next year. Some Asian countries enjoy a well-established health care infrastructure and should have little difficulty with vaccine logistics.

For many EMs, however, distributing the vaccine is a tall order, particularly in view of the ultra-cold storage requirement of the Pfizer/BioNTech vaccine (-70 degrees Celsius). The rollout of the Ebola vaccine in 2003 provides a somewhat encouraging precedent: it was successfully distributed in parts of Africa, despite requiring a similar storage temperature. Vaccines with less complicated logistics may well become available down the road too.

One can be forgiven for thinking that as the vaccines are initially rolled out in advanced economies, EMs stand to lose out. But that is not necessarily the case.

Many EMs, including Thailand, South Korea, and Turkey, rely heavily on exports, accounting for a hefty 60 percent, 40 percent, and 33 percent of GDP, respectively. So, as the global

cycle picks up, these economies should benefit. Countries like Thailand, Mexico, and Turkey, which generate 23 percent, 16 percent, and 12 percent of GDP, respectively, from tourism, could enjoy an incremental recovery on the return of freshly vaccinated tourists.

Our national research correspondent points out that EM equities tend to outperform when global Purchasing Managers' Indexes, gauges of economic activity, increase thanks to companies' high operating leverage or high fixed-cost base, and because of pronounced exposure to cyclical sectors, which account for some 50 percent of the MSCI Emerging Markets Index.

EMs as a whole have been severely affected by the pandemic, based on daily new confirmed cases. However, Asia has made progress reducing infection levels due to the early, stringent measures in several countries. Over the past two months, the surge in daily infections in developed markets has surpassed that experienced in EMs. India's infection numbers, which

Market pulse

- 4 U.S. equity performance, inflation, and jobs
- 4 Bank of Canada holds rates steady
- 5 Hurdles to Brexit deal remain; ECB boosts stimulus
- 5 FTSE Russell to remove eight Chinese companies

Click <u>here</u> for authors' contact information. Priced (in USD) as of 12/10/20 market close, ET (unless otherwise stated). **For important disclosures and required non-U.S. analyst disclosures, see page 7.** Produced: Dec 10, 2020 15:10ET; Disseminated: Dec 10, 2020 15:43ET



seemed to spiral out of control midyear, are falling, even as Europe and the U.S. grapple with a second and third wave, respectively.

Early this year, many, including us, were concerned that the COVID-19 outbreak could spark a new EM financial crisis with a wave of defaults and devaluations. These fears have proved overblown. Thanks to authorities, including the International Monetary Fund, stepping in, that situation has been avoided. Vaccine rollouts in EMs should further underpin the EM economic recovery, even though the rollouts will happen later than in developed nations.

According to the Organization for Economic Co-operation and Development, emerging market Asia will top the economic growth leaderboard in 2021, thanks to China, which is expected to grow eight percent in 2021, while India should come in just under that at some 7.9 percent. Latin America is likely to lag, with Mexico growing 3.6 percent and Brazil an even more meager 2.6 percent.

Weak greenback, strong EM currencies

The prospect of a weaker U.S. dollar is another key reason why we're constructive on EM equities.

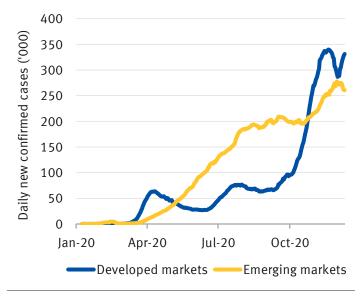
Since vaccine breakthroughs were announced in November, investors have become increasingly confident in the return of economic growth. A less fearful outlook is visible in the performance of the U.S. Dollar Index, which has weakened by four percent against a basket of major currencies in that time. Since the peak of the COVID-19 crisis in March, the Dollar Index has weakened by some 12 percent.

According to consensus forecasts, dollar weakness could persist into 2021. Ultralow interest rates could make the dollar less attractive, while more predictable trade policies under a Joe Biden presidency could further dull the greenback's luster as a "safe-haven" currency.

As investors gain confidence in the global economic outlook, they will likely seek higher-yielding assets. Q4 2020 is already shaping up to be one of the strongest quarters for inflows into EMs since 2013, with non-resident portfolio flows totaling some \$76 billion in November, significantly above October's \$23 billion. These capital flows are likely to continue as EM currencies are undervalued and government bond yields are higher.

According to our national research correspondent, EM currencies are nearly as undervalued as they were during the Asian financial crisis despite some countries' balance of payments surpluses being close to a 20-year high. In addition, the interest rate on EM local government debt compared to that of the U.S. is significantly higher, even adjusting for inflation. This higher spread should attract foreign investors.

Q4 surge in COVID-19 infection rates more virulent in developed markets than in emerging markets



Note: Calculated as the 7-day moving average of daily infections Source - RBC Wealth Management, RBC Global Asset Management, European Centre for Disease Prevention and Control, Macrobond; data through 12/10/20

Moreover, Chinese government bonds will be included in the FTSE World Government Bond Index in October 2021. This reflects China's ongoing progress with market reforms and increased access for global investors. China is the world's second-largest bond market with some \$16 trillion outstanding. According to our national research correspondent, foreign investors own only three percent of Chinese government bonds against a benchmark weighting that could potentially rise to approximately 15 percent.

A conducive environment

Strengthening EM currencies and undemanding equity valuations underpin a constructive case for EM equities.

Historically, there has been a distinct positive relationship between strong currencies and equities. Our national research correspondent finds that over the past 15 years most EM equities have outperformed as currencies in these countries strengthened. This occurs because a stronger national currency makes it easier for EMs to cope with heavy external debt loads, which our national research correspondent estimates at around \$5.2 trillion.

EM equities also appear undervalued. Our national research correspondent calculates that on a sector-adjusted price-toearnings basis, EM equities trade at a discount of some 20 percent to developed markets, close to a 15-year low, with most sectors trading at a discount to their developed market equivalent. Looking at price-to-book value shows a similar picture, with EM equities trading at a 30 percent discount to developed markets.

For China, we believe the current valuation looks fair, with the onshore index, the CSI 300, trading at 14.7x the consensus forward earnings estimate, in line with the five-year average.

Parting thoughts

Risks to this constructive outlook include a difficult vaccine rollout and a take-up that's too low to allow social-distancing measures to be relaxed in both developed nations and EMs. Perhaps less likely, a decision by the Federal Reserve to tighten policy sooner than expected would also upset the outlook. Countries that have ratcheted up debt to finance government spending, such as Brazil, would be particularly vulnerable, in our view.

Overall, we believe that the prospects for EM equities look attractive for 2021. They've had a good run recently, surpassing their year's high, achieved in January, and the MSCI Emerging Markets Index is up 67 percent since the March lows, in line with the gains generated by the S&P 500. Better entry points are possible, but on a one-year view, we are positive on the asset class, with a preference for Asia (ex-Japan), and China in particular. Having weathered the COVID-19 crisis more successfully, this region's finances make it less vulnerable to an eventual Fed tightening cycle.

With contributions from Juan Carlos Cure.

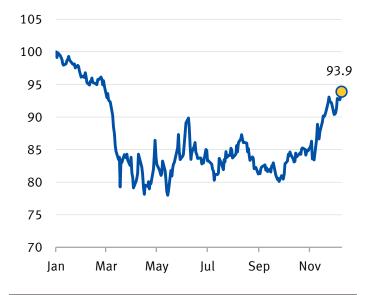


United States

Ben Graham, CFA - Minneapolis

- U.S. equities have built on their 2020 gains in December despite modest declines for the week. The small-cap Russell 2000 is the only index to advance thus far this week with its 1.6% move higher. The Nasdaq and Dow Jones Industrial Average are down similar amounts between 0.4% and 0.5%, while the S&P 500 is the worst weekly performer with a 0.8% decline. Energy remains the only sector on track to close higher for the week with a gain of 2.3%. All other sectors are lower, but defensively oriented sectors such as Health Care, Consumer Staples, and Utilities are providing relative leadership. REITs, Financials, and Communication Services are the worst-performing sectors thus far this week.
- In the <u>Dec. 8 Daily Deck</u>, RBC Capital Markets, LLC Chief U.S. Economist Tom Porcelli looks at small business activity and prospects for inflation in 2021. He sees surprising activity on the labor resource side of the equation—specifically, small businesses' plans to increase employment jumped to recent highs in the latest report and are actually back to February 2020 levels. He also points out that job openings remain elevated and that the share of small firms able to find qualified talent remains around 50%. Quality of labor is the number one challenge for small businesses, with 24% reporting difficulty in this area. As Porcelli notes, the labor market appears to be tightening, and something has to give.

Despite lagging in 2020, small caps have been rallying in Q4 Relative performance of S&P Small Cap 600 to S&P 500



Note: Indexed to 100, falling lines represent large-cap outperformance, rising lines represent small-cap outperformance
Source - RBC Wealth Management, FactSet; data through 12/9/20

- That something is wages. With wages on the rise, Porcelli's team is looking for a year-over-year inflation increase next year, with the potential for a smooth vaccine rollout to accelerate wage and goods inflation beyond current expectations.
- A week of light economic data means jobless claims have received the lion's share of attention. Initial claims hit
 853,000, which was an acceleration from last week and well above the consensus expectation of 712,000.



Canada

Carolyn Schroeder & Arete Zafiriou - Toronto

- According to RBC Economics, the Canadian economy isn't likely to return to pre-pandemic levels before 2022. The COVID-19 shock varied across industries and regions as border closures, disrupted supply chains, and shutdowns weighed heavily on Canadian exports during the early part of the pandemic. So far, the manufacturing sector has been less impacted by second-wave restrictions, and strong demand for goods rather than services has helped non-energy exports. Now, Canadian energy and travel exports face the steepest climb ahead. The massive shock to global oil prices in 2020 continues to drag down energy exports. While the return to a new normal could lift energy volumes and prices, the sector faces an uncertain future as renewable power prices are falling and governments globally have committed to billions of dollars in green investments aimed at decarbonizing economic activity. In addition, hardhit industries like accommodation and food services are suffering in part from a lack of international tourism, which remains limited by travel restrictions—underscoring the fact that Canada's services sector isn't just domestically **focused**. Recovery in these export sectors will depend on not just Canadian but global success in containing the virus, in our view.
- At its final meeting of 2020 on Dec. 9, the Bank of Canada (BoC) made no policy changes, as was widely expected. It kept the overnight rate at 0.25% and will maintain its pace of Government of Canada bond purchases of at least CA\$4 billion per week. The BoC reiterated that it will hold rates steady until economic slack is absorbed and its 2% inflation target is sustainably reached. Based on October's Monetary Policy Report, this isn't anticipated until 2023. However, RBC Economics expects steeper growth after the first quarter of 2021 to bring this timeline forward. The BoC noted that the global rebound has been unfolding as forecasted and developments on the vaccine front are positive, but added that recent waves of infections pose a risk to the pace of the recovery.



Frédérique Carrier & Alastair Whitfield – London

- The Financial Times described the hastily arranged in-person meeting between UK Prime Minister Boris Johnson and European Commission President Ursula von der Leyen as a "damp squib": significant obstacles remain and yet again a new deadline, this time Dec. 14, was set to resolve them. Businesses which export to the EU look on, aghast, aware they have to be ready for the end of the current trading relationship with the EU at the end of the month, but not knowing yet what the new requirements might be ... the country awaits ...
- UK GDP for October pointed to some resiliency. Despite social-distancing measures, the economy expanded 0.4% m/m, better than consensus estimates, boosted by Brexit stockpiling. RBC Capital Markets calculates that the economy is still 8% below its immediate pre-crisis level. The tighter restrictions imposed in November will affect readings going forward, though the risk to RBC Capital Markets' estimate of a Q4 contraction of 3.6% looks skewed to the upside, in our view.
- The ECB delivered on market expectations in providing its own injection to the euro area economy, increasing the size and tenor of its Pandemic Emergency Purchase Plan by €500 billion to €1.85 trillion for a further nine months through to March 2022. Additionally, the ECB announced another series of targeted longer-term refinancing operations (TLTROs) that are slated to run to the end of 2021. This comes in spite of recent renewed optimism on the rollout of vaccines as efforts are being made by the central bank to dampen an expected significant economic contraction in Q4.
- The ECB also announced updated economic forecasts for the region, now projecting a contraction of 7.3% in GDP for 2020 (decline of 8% previously), with growth expected to rebound next year to +3.9%. The central bank expects inflation to pick up gradually, but forecasts it will continue to undershoot the near 2% target through to 2023 at just 1.4%.



Asia Pacific

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

 Asia Pacific equity markets traded mostly higher during the week, except for the Chinese markets. Investors' confidence in the Chinese stock market was shaken at the beginning of the week by index provider FTSE Russell's decision to remove eight Chinese companies from its benchmarks. Meanwhile, there is lingering fear that other index providers may follow FTSE Russell in removing companies that are deemed by the U.S. to have ties to the

China leads the Asia Pacific region despite recent underperformance

YTD performance, indexed to 100



Source - RBC Wealth Management, FactSet; data through 12/9/20

Chinese military. We believe the actual impact on the fundamentals and cash flow of the affected listed companies should be limited, as they have limited exposure to the U.S. However, we think there could be a greater impact on future fund flows, particularly from the U.S., creating an overhang on the stocks.

- China's exports jumped 21.1% y/y in November, the largest increase since February 2018. Meanwhile, imports rose 4.5% y/y, missing consensus expectations. Together, these numbers brought China's November trade surplus to \$75.4 billion, the highest on record. The latest data suggest that the economic rebound in China remains on track.
- Japan's government has announced its third fiscal stimulus of 2020, a JPY 30.6 trillion package aimed at speeding up the economic recovery. In contrast to the two previous packages, which focused on direct support for businesses and households, the new stimulus has a stronger emphasis on investment with a focus on new digital and green technologies. The new focus suggests there is likely sufficient direct support for businesses, and the government is ready to move towards investment for the future.
- SoftBank Group (9984 JP) is considering a "slow-burn" buyout, according to an unsubstantiated Bloomberg report. The company is reportedly considering a new strategy to go private by gradually buying back outstanding shares until founder Masayoshi Son has a big enough stake to enable him to squeeze out the remaining investors. According to the report, the approach would likely take more than a year and would mean the Japanese company would continue to sell assets to fund successive buybacks. However, the Bloomberg report as well as other media reports noted that some analysts are skeptical about the buyout.



Data as of December 10, 2020

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	3,668.10	1.3%	13.5%	17.1%	39.1%
Dow Industrials (DJIA)	29,999.26	1.2%	5.1%	7.6%	22.8%
Nasdaq	12,405.81	1.7%	38.3%	44.0%	76.7%
Russell 2000	1,922.70	5.7%	15.2%	17.8%	33.2%
S&P/TSX Comp	17,593.34	2.3%	3.1%	3.8%	19.5%
FTSE All-Share	3,708.98	4.7%	-11.6%	-7.4%	1.0%
STOXX Europe 600	393.15	1.0%	-5.5%	-3.0%	16.0%
EURO STOXX 50	3,522.31	0.9%	-6.0%	-4.1%	16.7%
Hang Seng	26,410.59	0.3%	-6.3%	-0.1%	2.6%
Shanghai Comp	3,373.28	-0.5%	10.6%	15.6%	30.5%
Nikkei 225	26,756.24	1.2%	13.1%	14.3%	26.1%
India Sensex	45,959.88	4.1%	11.4%	14.2%	31.5%
Singapore Straits Times	2,824.96	0.7%	-12.3%	-10.7%	-8.1%
Brazil Ibovespa	115,128.60	5.7%	-0.4%	4.0%	34.0%
Mexican Bolsa IPC	43,518.71	4.2%	-0.1%	2.1%	5.2%
Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot \$/oz)	1,835.64	3.3%	21.0%	25.4%	47.5%
Silver (spot \$/oz)	24.00	6.0%	34.4%	44.0%	65.2%
Copper (\$/metric ton)	7,705.50	1.8%	25.3%	26.9%	26.6%
Oil (WTI spot/bbl)	46.78	3.2%	-23.4%	-21.0%	-8.3%
Oil (Brent spot/bbl)	50.30	5.7%	-23.8%	-21.8%	-16.1%
Natural Gas (\$/mmBtu)	2.57	-10.7%	17.5%	13.6%	-43.4%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	0.906%	6.7	-101.1	-93.5	-195.1
Canada 10-Yr	0.737%	6.6	-96.5	-86.3	-132.1
U.K. 10-Yr	0.201%	-10.4	-62.1	-59.8	-99.8
Germany 10-Yr	-0.603%	-3.2	-41.8	-30.8	-84.9
Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	1.21%	-0.4%	6.9%	6.9%	19.2%
U.S. Invest Grade Corp	1.87%	-0.7%	8.7%	9.0%	25.6%
U.S. High Yield Corp	4.40%	1.0%	6.1%	7.6%	16.4%
Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	90.7840	-1.2%	-5.8%	-6.8%	-6.6%
CAD/USD	0.7850	2.1%	2.0%	3.8%	5.2%
USD/CAD	1.2739	-2.0%	-1.9%	-3.7%	-4.9%
EUR/USD	1.2141	1.8%	8.3%	9.5%	6.9%
GBP/USD	1.3298	-0.2%	0.3%	1.1%	5.9%
AUD/USD	0.7538	2.6%	7.4%	10.7%	4.8%
USD/JPY	104.2300	-0.1%	-4.0%	-4.1%	-8.0%
EUR/JPY	126.5500	1.7%	3.9%	4.9%	-1.7%
EUR/GBP	0.9130	2.0%	7.9%	8.3%	1.0%
EUR/CHF	1.0764	-0.7%	-0.9%	-1.4%	-4.3%
USD/SGD	1.3350	-0.5%	-0.8%	-1.7%	-2.8%
USD/CNY	6.5440	-0.5%	-6.0%	-7.0%	-5.3%
USD/MXN	20.0110	-0.8%	5.7%	3.9%	-1.5%
USD/BRL	5.0192	-6.3%	24.5%	32.8%	27.9%

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 16:35 pm ET 12/10/20.

Examples of how to interpret currency data: CAD/USD 0.78 means 1 Canadian dollar will buy 0.78 U.S. dollar. CAD/USD 2.0% return means the Canadian dollar rose 2.0% vs. the U.S. dollar year to date. USD/JPY 104.23 means 1 U.S. dollar will buy 104.23 yen. USD/JPY -4.0% return means the U.S. dollar fell 4.0% vs. the yen year to date.

Authors

Frédérique Carrier – London, United Kingdom

frederique.carrier@rbc.com; RBC Europe Limited

Juan Carlos Cure – London, United Kingdom

juancarlos.cure@rbc.com; RBC Europe Limited

Ben Graham, CFA – Minneapolis, United States

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

Carolyn Schroeder - Toronto, Canada

carolyn.schroeder@rbc.com; RBC Dominion Securities Inc.

Arete Zafiriou – Toronto, Canada

arete.zafiriou@rbc.com; RBC Dominion Securities Inc.

Alastair Whitfield - London, United Kingdom

alastair.whitfield@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

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 whollyowned subsidiary of the Royal Bank of Canada and, as such, is a related issuer of Royal Bank of Canada.

Non-U.S. Analyst Disclosure: Carolyn Schroeder and Arete Zafiriou, employees of RBC Wealth Management USA's foreign affiliate RBC Dominion Securities Inc.; Frédérique Carrier, Juan Carlos Cure, and Alastair Whitfield, 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 (0), **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.

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.

Distribution of Ratings - RBC Capital Markets, LLC Equity Research As of September 30, 2020								
			Investment Banking Services Provided During Past 12 Months					
Rating	Count	Percent	Count	Percent				
Buy [Outperform]	788	52.96	248	31.47				
Hold [Sector Perform]	619	41.60	135	21.81				
Sell [Underperform]	81	5.44	11	13.58				

Ratings:

Outperform (0): 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 thirdparty 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

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

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

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

To Canadian Residents: This publication has been approved by RBC Dominion Securities Inc. RBC Dominion Securities Inc.* and Royal Bank of Canada are separate corporate entities which are affiliated. *Member-Canadian Investor Protection Fund. ®Registered trademark of Royal Bank of Canada. Used under license. RBC Wealth Management is a registered trademark of Royal Bank of Canada. Used under license.

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

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

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

- © RBC Capital Markets, LLC 2020 Member NYSE/FINRA/SIPC
- © RBC Dominion Securities Inc. 2020 Member Canadian Investor Protection
- © RBC Europe Limited 2020
- © Royal Bank of Canada 2020

All rights reserved

RBC1253