November 12, 2020

RBC WEALTH MANAGEMENT

Global Insight Weekly

Just what the doctor ordered?

Frédérique Carrier – London

A vaccine at last—and it appears to be a successful one at that. This helps us look through the COVID-19 valley and focus more confidently on the recovery and post-pandemic world. Do investors need to rethink positioning?

Good news at last

The Pfizer/BioNTech COVID-19 vaccine announcement on November 9 was received by equity markets with enthusiasm, with the S&P 500 rallying 1.2 percent on the day, and the MSCI World Index reaching a new all-time high the day after. The results markedly surpassed general expectations, especially in terms of the vaccine's efficacy in preventing symptoms, and some market participants seemed surprised by the timing of its availability. The vaccine is likely to be the first one to receive regulatory approval in the U.S. and Europe, which could happen within weeks.

The vaccine's efficacy rate of more than 90 percent, far exceeding the U.S. Food and Drug Administration's (FDA) 50 percent hurdle rate, is remarkably high for a first-generation vaccine. This could mean other vaccines using a similar technology are likely to be successful as well.

Some questions remain, including how safe the vaccine is, though this data should also be available within weeks. With time, we will find out how long the vaccine protection lasts and how efficient it is when used on the elderly, as cohorts are added to the trial.

Enthusiasm for the Pfizer/BioNTech vaccine is tempered by logistical challenges. It requires two doses to be administered three weeks apart. It also needs to be stored in dry ice to ensure a temperature of minus 70 degrees Celsius (-94 F) or below—a challenge for governments considering rolling it out, particularly for developing countries and those in temperate regions.

Once safety data is released, emergency use filing can be done in the U.S. and Europe. After receiving the full efficacy data in December, the FDA can approve the drug. Pfizer/BioNTech expects that 50 million doses can be available by year-end and 1.3 billion doses next year (i.e., 750 million vaccinated). For context, the EU has ordered 300 million doses, the U.S. 100 million, and the UK 30 million.

The possibility of vaccines taming the pandemic is becoming more tangible. Data for two other vaccines are due before the end of the year. The vaccine being developed by AstraZeneca and Oxford University is possibly the most eagerly anticipated. Based on a different technology, only one dose is required, and it wouldn't need to be kept below freezing temperatures, suggesting it would be more scalable than Pfizer/BioNTech's. Moreover, it is reportedly already known to be effective for the elderly. We should also know the results of the Moderna vaccine trial by year-end and the results of four others will likely come in sometime in the first half of next year. Should most of these be successful, the global vaccination rollout could make important inroads next year.

Market pulse

Click here for authors' contact information. Priced (in USD) as of 11/12/20 market close, ET (unless otherwise stated). **For important disclosures and required non-U.S. analyst disclosures, see page 6.**
Produced: Nov 12, 2020 14:25ET; Disseminated: Nov 12, 2020 16:45ET

Good for the economy

To be sure, the manufacturing capacity and the distribution of the vaccine will not be in place to save the winter in the Northern Hemisphere. Social distancing and lockdown measures will likely stay in place for now, capping economic growth in the economically important Q4 2020 and possibly in Q1 2021. But the Pfizer/BioNTech data brings forward the possibility of a better outlook for economic growth in 2021 for several reasons, and as such, it is undeniably good news.

The availability of a vaccine and the success of its technology likely reduces the risk of a potential third wave in autumn 2021. Knowing there is an end to the crisis in sight, some governments could opt to give more generous fiscal relief than would have otherwise been the case. Our national research correspondent thinks a U.S. COVID-19 stimulus package of $1 trillion is more likely than one of $500 billion. A vaccine also helps investors to look through the COVID-19 valley and focus more confidently on the recovery and the post-pandemic world.

The vaccine announcement brought on abrupt risk-on moves in financial markets that day. The S&P 500 closed up 1.2 percent, a performance that came on top of post-election gains which had been the highest in history.

The S&P 500's move camouflages an aggressive rotation in equity markets. Momentum strategies, in which investors buy securities when their prices have been rising and sell those when they have been declining, had their worst performance since 2009. The FAANGs (Facebook, Amazon, Apple, Netflix, and Google parent Alphabet), which have led market gains since March, also retreated abruptly. These technology companies' business models have thrived in the COVID-19 era, with their stocks being widely perceived by market participants as defensive investments in these difficult times. Globally, megacaps underperformed riskier small caps. Struggling Financials and Energy stocks roared upwards. Meanwhile, the oversold FTSE All-Share Index, a broad index of UK stocks, closed up approximately five percent, a rarely seen showing and its second-best performance since the 2016 Brexit referendum.

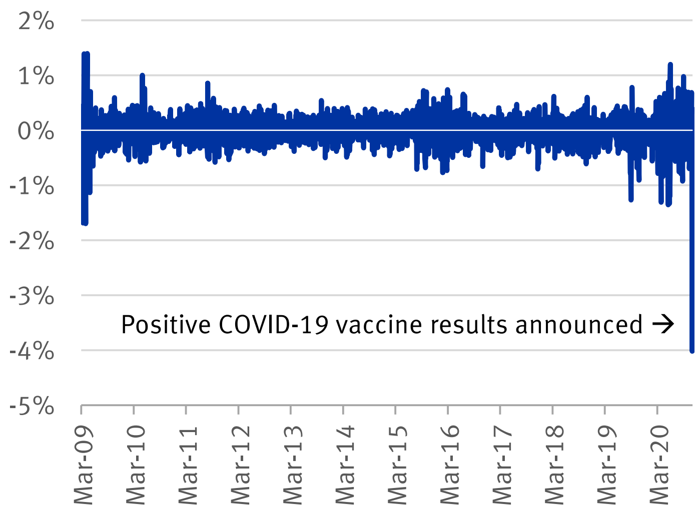
Other traditional growth indicators also pointed to an improvement in the economic outlook: the U.S. yield curve steepened, with the yield on the 10-year Treasury note increasing to 0.95 percent from 0.80 percent prior to the vaccine announcement. Profit-takers brought gold prices down to $1,855/oz, perhaps a sign of a safer environment.

A flash in the pan?

For investors, the question is whether these aggressive one-day moves herald a broader, more sustained rotation towards cyclical positions. To be fair, they were probably also a function of crowded positions, i.e., investors all chasing similar themes and being heavy in certain sectors (such as the FAANG group with their resilient business models for the current environment) while avoiding others (like the Energy sector due to the sharp fall in oil prices and banks due to ultralow interest rates). The aggressive market rotation also facilitated a record valuation differential between growth and value stocks.

Sharpest market reversal since 2009

Daily price change in the Bloomberg US Pure Momentum Portfolio Total Return Index



Source - Bloomberg; daily data through 11/10/20

A general and longer-lasting rotation towards reflationary positioning, or economically-sensitive stocks, would require inflation expectations to continue their ascent and Treasury yields to extend their moves upward.

For now, we believe it's reasonable to expect a period of consolidation for equities following the sharp gains since the U.S. elections and vaccine news. Moreover, the global economy is not out of the woods yet, and investors may start to ponder the logistical challenges of rolling out vaccines globally.

Investors should use this time to consider their portfolios' exposure to cyclicality, or economically-sensitive stocks. The possibility of viable vaccines should enable investors to look through the crisis and assess companies that were most affected by COVID-19 on the basis of normalised earnings. Many of these companies' stocks will appear undervalued, in our view. We recommend adding some exposure to cyclicals and value stocks to take advantage of the likely improvement in economic conditions that COVID-19 vaccines could bring.

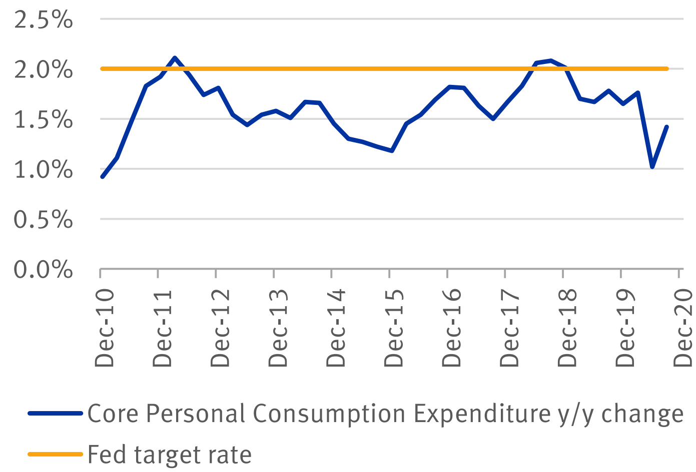
United States

Atul Bhatia, CFA – Minneapolis

- **Investors sold Treasury bonds this past week on a trifecta of headlines.** Nonfarm payroll data showed the U.S. private sector added over 900,000 jobs in October, helping bring the unemployment rate down to 6.9%; the U.S. election—while not resulting in a unified government—has likely opened the doors to at least moderate fiscal stimulus in the early days of the new administration; and the efficacy data for a COVID-19 vaccine raised hopes for a potential return to normal social activity by mid-2021. The combined impact of the news flow was **sufficient to push 10-year government bond yields up to nearly 1%, their highest level since March** of this year, as investors moved into more economically-sensitive assets.
- **While the headlines were positive for potential future economic growth, the impact on Federal Reserve policy is less clear.** The Fed's new average inflation targeting regime should have the central bank on hold until inflation is well-established and has been at least moderately above 2% for sufficient time to compensate for the years of below-target inflation. That combination—plus the need for low policy rates to help the U.S. government fund its debt burden—will likely require the Fed to be on hold for many years.
- **Corporate bonds—particularly those from riskier, lower-rated issuers—have performed particularly well** in November as economic growth and low policy rates are a tremendous boon. The Bloomberg Barclays US Corporate High Yield Bond Index is now priced to yield just under 4.6%, down almost 1.2% in November and below even pre-pandemic levels. The historically low yield on that index, however, is largely attributable to Fed policy and the overall drop in government bond yields; the portion linked to corporate issuer risk—the credit spread—is still above pre-pandemic levels, although it too is down 0.9% since the end of October. **With so few opportunities to generate yield in fixed income, corporate bonds will likely continue to attract investor interest.**

No pressure on the Fed to raise rates

Accumulated sub-target inflation argues for extended monetary accommodation



Source - RBC Wealth Management, Bloomberg

Canada

Richard Tan, CFA & Arete Zafiriou – Toronto

- **The S&P/TSX Composite rallied more than 3% from last Friday's close**, driven by greater clarity regarding the U.S. elections and the announcement of a potential COVID-19 vaccine. News of the latter broke on November 9 and, in our view, ultimately led to a sharp market rotation away from growth- to value-oriented stocks. **Structural pandemic successes** such as video conferencing tools, e-commerce, and gold companies **experienced sizeable pullbacks** as capital rotated into sectors that have been decimated by the socially distanced environment. Examples include Real Estate and Energy, which have been among the worst-performing sectors through the majority of 2020 due to lower retail foot traffic, work-from-home trends, and reduced energy consumption levels. The idea that the economy could return to some degree of normalcy caused these sectors to re-rate but, generally speaking, most stocks within them are experiencing significant year-to-date losses. Overall, we believe **momentum is in the value camp** but we note that tax-loss selling season is also around the corner and many of these value stocks could be likely candidates from our perspective.
- **The Canadian labor market added 84,000 new jobs in October.** Employment grew 0.5% m/m, according to Statistics Canada, a slower pace than the average of 2.7% since May, as a number of provinces tightened COVID-19 containment measures in response to an increase in infections. Notably, the accommodation and food services sector lost 48,000 jobs in October after five months of job gains. Over 85% of the losses occurred in Quebec, one of the earliest provinces to put renewed restrictions on indoor dining and bars. The labor market has yet to recover to pre-shock levels, with more than 600,000 fewer people working than in February. The **unemployment rate has dropped from its 13.7% peak in May to 8.9% in October**, but remains above the 2008–09 financial crisis peak of 8.7%.

Europe

Frédérique Carrier & Thomas McGarrity, CFA – London

- **Spurred by encouraging vaccine news, UK and European markets rallied** during the week. The FTSE All-Share Index gained nearly 7% and the STOXX Europe 600 ex UK nearly 4% in the three days after the announcement of positive results from the Pfizer/BioNTech COVID-19 vaccine trial. The FTSE's gains were helped by its heavy tilt towards **Energy and Financials**; these two sectors had sold off strongly due to the economic impact of the pandemic, and **both stand to benefit from a potential vaccine-driven improvement in economic prospects**. The FTSE's UK oil and gas subindex gained 19%, and the financial stocks close to 10% with life insurers in particular registering strong gains. In Europe, banks and the oil and gas subsectors led the gains and were up 16% and 13%, respectively.
- **In the UK, Q3 GDP expanded by 15.5% quarter over quarter**, a strong bounce after a nearly 20% q/q contraction in the preceding quarter. The expansion brought the UK economy to 92% of its pre-pandemic level at the end of September. With the reintroduction of lockdown measures, we believe the gap will not close before year's end, even if the hit to activity is not as severe as it was in the spring given restrictions are not as drastic. **RBC Capital Markets expects Q4 GDP to contract by 3.4% compared to Q3**, leaving full-year 2020 GDP decline in the 11.5% region.
- **Europe's overall industrial production declined in September, but this was due to a drop in Italy** following an exceptionally strong production number in August; all other countries reported a small expansion. This suggests **the European industrial sector's recovery remained healthy** in September despite additional lockdown measures imposed in several countries. This trend may weaken somewhat going forward the longer the measures remain in place.

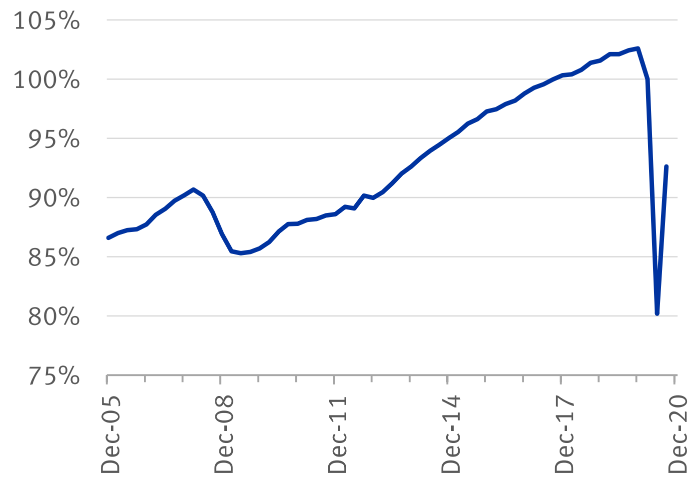
Asia Pacific

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

- Following the Pfizer vaccine results news, a rotation from growth to value stocks occurred globally, including in **China and Hong Kong equities. China banking, China property, and energy stocks led the market, while tech stocks sold off**.

Strong September bounce, but UK GDP still at 2014 levels

UK GDP as percentage of 3/31/20 level



Source - RBC Wealth Management, Bloomberg

- The Asia tech decline gained momentum after **China released a consultation paper** on guidelines for anti-trust activities regarding internet platforms on Nov. 10. The regulation aims to promote fair competition, protect consumers' rights, and ensure sustainable, healthy development of the platform-based economy. The news **triggered further profit-taking of tech stocks**, particularly for Alibaba (9988 HK) and Meituan (3690 HK), as investors worry that the business of platform leaders will be affected more. The Hang Seng TECH Index slumped 11.4% on Tuesday and Wednesday. Feedback on the guidelines will be accepted until Nov. 30. Due to the ambiguity of the enforcement and lack of clarity on the effective date, the introduction of guidelines may be a short-term overhang for tech stocks.
- **Despite recent regulatory headwinds, Alibaba reported strong Singles' Day (Nov. 11) sales** with total sales for the Singles' Day Festival of RMB 498.2 billion representing 26% y/y growth. The strong growth was **boosted by the introduction of an additional sales window** Nov. 1–3.
- **DBS (DBS SP) Q3 2020 results came in ahead of expectations** with profit before allowances down 9% q/q (-8% y/y) and net profit up 4% q/q (-20% y/y). Quarter-over-quarter net profit improved as business momentum recovered with fee income rebounding 17% to pre-COVID-19 levels, softening the impact of lower interest rates as well as a decline in trading income from a high base. **A SG$0.18 dividend was declared**, in line with Monetary Authority of Singapore guidance.

MARKET SCORECARD

Data as of November 12, 2020

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	3,537.01	8.2%	9.5%	14.4%	29.7%
Dow Industrials (DJIA)	29,080.17	9.7%	1.9%	5.0%	14.5%
Nasdaq	11,709.59	7.3%	30.5%	38.0%	62.6%
Russell 2000	1,708.47	11.0%	2.4%	7.1%	12.5%
S&P/TSX Comp	16,582.18	6.4%	-2.8%	-1.9%	9.4%
FTSE All-Share	3,569.99	13.3%	-14.9%	-12.1%	-7.7%
STOXX Europe 600	385.16	12.5%	-7.4%	-5.3%	6.4%
EURO STOXX 50	3,428.20	15.9%	-8.5%	-7.7%	7.3%
Hang Seng	26,169.38	8.6%	-7.2%	-3.3%	2.1%
Shanghai Comp	3,338.68	3.5%	9.5%	14.5%	26.9%
Nikkei 225	25,520.88	11.1%	7.9%	8.5%	14.6%
India Sensex	43,357.19	9.4%	5.1%	7.5%	24.5%
Singapore Straits Times	2,711.90	11.9%	-15.9%	-17.0%	-11.6%
Brazil Ibovespa	102,507.00	9.1%	-11.4%	-4.0%	19.9%
Mexican Bolsa IPC	40,335.95	9.1%	-7.4%	-6.4%	-6.9%

Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot $/oz)	1,876.60	-0.1%	23.7%	28.9%	56.3%
Silver (spot $/oz)	24.27	2.6%	35.9%	44.7%	73.4%
Copper ($/metric ton)	6,866.00	2.4%	11.7%	17.5%	13.0%
Oil (WTI spot/bbl)	41.12	14.9%	-32.7%	-27.6%	-31.4%
Oil (Brent spot/bbl)	43.44	16.0%	-34.2%	-30.0%	-38.0%
Natural Gas ($/mmBtu)	2.95	-12.0%	34.8%	12.6%	-22.1%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	0.880%	0.6	-103.8	-105.5	-230.2
Canada 10-Yr	0.720%	5.7	-98.2	-88.3	-178.5
U.K. 10-Yr	0.348%	8.6	-47.4	-45.8	-110.4
Germany 10-Yr	-0.536%	9.1	-35.1	-28.4	-93.4

Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	1.28%	-0.1%	6.2%	7.0%	18.5%
U.S. Invest Grade Corp	1.98%	0.7%	7.2%	8.9%	23.9%
U.S. High Yield Corp	4.73%	3.0%	4.2%	6.4%	14.2%

Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	92.9700	-1.1%	-3.5%	-5.4%	-4.7%
CAD/USD	0.7609	1.3%	-1.2%	0.7%	0.8%
USD/CAD	1.3142	-1.3%	1.2%	-0.7%	-0.8%
EUR/USD	1.1808	1.4%	5.3%	7.3%	5.3%
GBP/USD	1.3118	1.3%	-1.0%	2.1%	2.1%
AUD/USD	0.7231	2.9%	3.0%	5.7%	0.8%
USD/JPY	105.1200	0.4%	-3.2%	-3.6%	-7.7%
EUR/JPY	124.1200	1.8%	1.9%	3.4%	-2.8%
EUR/GBP	0.9002	0.1%	6.4%	5.0%	3.1%
EUR/CHF	1.0807	1.2%	-0.4%	-1.1%	-4.7%
USD/SGD	1.3497	-1.2%	0.3%	-0.9%	-2.5%
USD/CNY	6.6130	-1.2%	-5.0%	-5.6%	-5.0%
USD/MXN	20.6385	-2.5%	9.0%	6.8%	1.4%
USD/BRL	5.4575	-5.0%	35.4%	44.4%	45.0%

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 8:35 pm GMT 11/12/20.

Examples of how to interpret currency data: CAD/USD 0.76 means 1 Canadian dollar will buy 0.76 U.S. dollar. CAD/USD -1.2% return means the Canadian dollar fell 1.2% vs. the U.S. dollar year to date. USD/JPY 105.12 means 1 U.S. dollar will buy 105.12 yen. USD/JPY -3.2% return means the U.S. dollar fell 3.2% vs. the yen year to date.

Authors

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

Atul Bhatia, CFA – Minneapolis, United States
atul.bhatia@rbc.com; RBC Capital Markets, LLC

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

Arete Zafiriou – Toronto, Canada
arete.zafiriou@rbc.com; RBC Dominion Securities Inc.

Thomas McGarrity, CFA – London, United Kingdom
thomas.mcgarrity@rbccm.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 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 Arete Zafiriou, 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.

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 (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

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 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.