

Global Insight

Weekly

Vision will be anything but 20/20 in 2020

Thomas Garretson, CFA – Minneapolis

The collapse in global yields has delivered robust 2019 portfolio performance, but one that is unlikely to be repeated in 2020. We look at fixed income portfolio positioning amid an increasingly blurry outlook for 2020.

As the investment industry's annual tradition of year-ahead outlooks shifts into high gear, one thing is becoming clear, the outlook is anything but.

For fixed income investors, the outlook may be even more challenging. As the chart shows, the collapse in global yields over the last 12 months is the largest we have seen during the post-financial crisis period. But that drop in yields has also delivered outsized overall performance. Over that same time period, the Bloomberg Barclays U.S. Aggregate Bond Index has returned 11 percent, a performance rarely matched over the past 30 years. But while portfolio statements may look sublime for 2019, many investors are likely wondering if the only way is down from here.

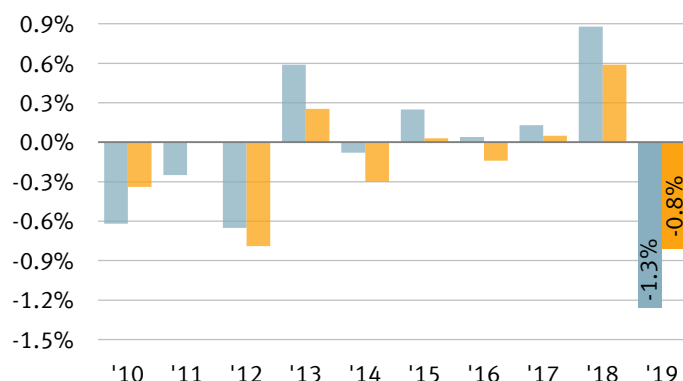
So after what's looking to be a banner year for fixed income performance, and amid an uncertain outlook, here's a walk through how we are thinking about portfolio positioning for U.S. fixed income in the year ahead.

2020 U.S. fixed income strategy

The chart on page 2 shows the total return performance of major U.S. fixed income sectors over the last five years. One thing to note is that often one year's best performer is the next year's worst.

We also show what we expect the order of performance might be in 2020. As you may also note, it's the same order as in 2015—a year when Treasury yields barely budged and credit spreads, or the yield compensation over Treasuries for credit risks, widened throughout the year as global growth fears rose. Sound familiar? That essentially forms the backdrop of how we expect 2020 to play out.

2019's vanishing yields set the stage for a challenging 2020



■ Bloomberg Barclays US Aggregate Bond Index Yield
■ Bloomberg Barclays Global Aggregate Bond Index Yield

Source - RBC Wealth Management, Bloomberg; trailing 12-month change in yields from Nov. 21 to Nov. 20 of each year

Market pulse

- 3 Decoding a key U.S. labor market trend
- 3 The state of Canadian manufacturing
- 4 French luxury goods powerhouse making a bold move
- 4 U.S. Congress passes pro-Hong Kong rights bill

The next edition of the *Global Insight Weekly* will be published on December 5.

Click [here](#) for authors' contact information. Priced (in USD) as of 11/21/19 market close, ET (unless otherwise stated). **For important disclosures and required non-U.S. analyst disclosures, see [page 6](#)**
Disseminated: Nov 21, 2019 17:11ET; Produced: Nov 21, 2019 17:08ET



**Wealth
Management**

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

As always, the direction of Treasury yields will dictate the performance of most fixed income assets classes in 2020 given most are priced in some way off of Treasuries, though to varying degrees.

So starting with our expectations for Treasury returns. We think the 10-year Treasury yield, currently around 1.75 percent, will end 2020 near that level, if not slightly lower. In that scenario, Treasuries should return roughly two percent for the year. So against that benchmark, we see three sectors outperforming Treasuries, and two sectors lagging.

Our three outperformers*

Municipals – current yield:

1.83 percent; duration of five years

Investor demand for munis has been robust in 2019, while new supply has failed to keep pace. Though supply should increase next year, we think demand will remain. The relative value in munis appears favorable at the moment, as 10-year munis yield about 88 percent of Treasuries, in line with recent averages, while the defensive nature of the sector should continue to draw investor flows.

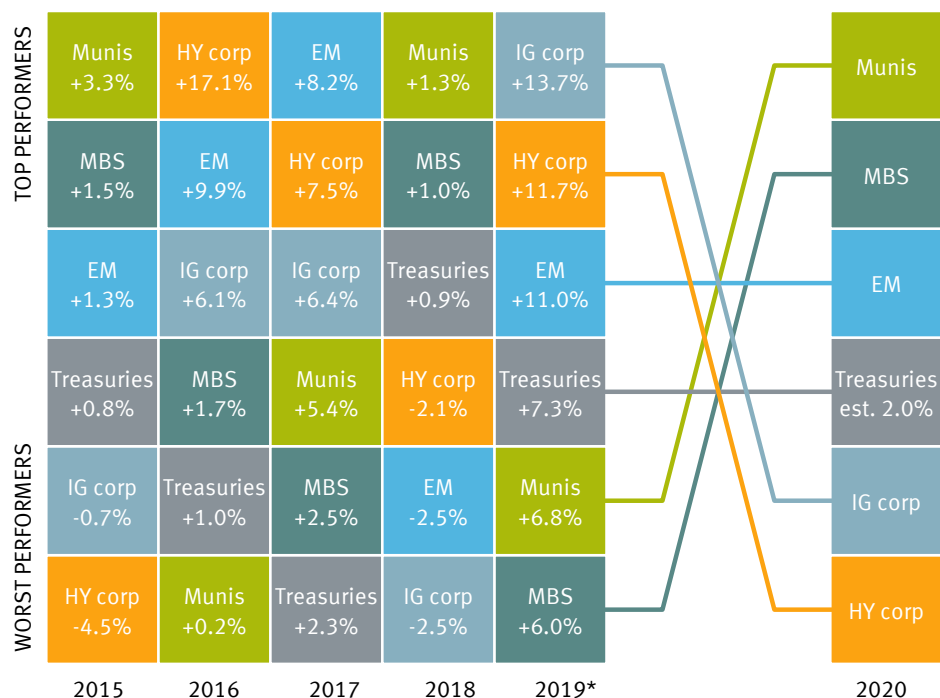
Agency mortgage-backed securities (MBS) – current yield:
2.50 percent; duration of three years

The setup for agency MBS should be quite favorable in 2020, in our view. Despite economic headwinds and uncertainty, the tailwinds for the U.S. housing market should overpower with low unemployment, rising wages, and low mortgage rates. The sector benefits from lower duration, the full backing of the U.S. government, and attractive relative value with a +0.50 percent yield advantage over Treasuries—near the highest levels seen since 2013.

Emerging market (EM) government debt – current yield:
5.05 percent; duration of six years

U.S. dollar-denominated EM debt may seem like a sector at odds with an uncertain global outlook, but we think there is value at the moment, while all of the policy easing by global central banks over the course of 2019 could bear fruit in 2020, with EM debt likely to benefit. In a world of disappearing yields, the 5.05 percent yield for EM is near the average of the last five years, and this could be a space to add income to portfolios for investors with appropriate risk tolerances.

Ranked returns: We see 2019's worst performers setting the pace in 2020



Note: MBS = Agency mortgage-backed securities, EM = Emerging market government debt, IG corp = Investment-grade corporates, HY corp = High-yield corporates

Source - RBC Wealth Management, Bloomberg Barclays bond indexes; *2019 returns through 11/19/19

Our two underperformers

Investment-grade corporates – current yield:

2.87 percent; duration of eight years

As the chart shows, investment-grade corporates led the way with a 14 percent return in 2019, a performance that will be nearly impossible to match next year. The sector currently yields just 1.06 percent over comparable Treasuries, which is well below average. Should economic risks rise, so too might that spread, which could cause total returns to trail Treasuries.

High-yield corporates – current yield: 5.81 percent; duration of three years

Finally, while high-yield corporates do not carry a lot of interest rate risk, they carry elevated credit risk and valuations that look somewhat rich at the moment as the sector yields below six percent and only four percent over Treasuries—near the lowest levels in years.

Coping with the market's ups and downs

While many expect greater market volatility in 2020, fixed income investors have the luxury of knowing that the future value of their investment—barring a default—is par. We think the month-to-month and year-to-year gyrations of bond prices should be of little concern for buy-and-hold investors. But at times of elevated uncertainty, understanding risk exposures from year-to-year can help maintain solid performance.

*Duration is a measure of sensitivity to yield movements, i.e., a duration of five years means that a one percent rise in yields would cause bond prices to fall by approximately five percent, and vice versa.



United States

Alan Robinson – Seattle

- U.S.-China trade negotiations were in the spotlight again after the **U.S. Congress passed a bill that could withdraw Hong Kong's special trading rights if the territory is judged to be insufficiently autonomous from China**. Stocks sold off on this news, but not dramatically. On the surface, this seemed surprising given the negative implications of a deterioration in trade negotiations that might have arisen due to an increase in tensions with China. But this relatively **mild reaction in the market signals to us that investors believe both sides are still looking for a trade "win"** to take the attention away from the domestic issues of the impeachment inquiry in the U.S. and unrest in Hong Kong. This point was underlined by China downplaying retaliation over the bill and, according to Bloomberg, China's chief trade negotiator indicating cautious optimism over a potential deal.
- RBC Capital Markets, LLC Head of U.S. Equity Strategy Lori Calvasina published an update on hedge fund equity holdings** for the third quarter ended September 2019. We pay attention to this survey because it often flags notable shifts in investment flows with implications for sector and style performance over the medium term. The recent review is the first to include the September period, in which we saw a rotation from growth to value stocks. Calvasina's study suggests that the "smart money" is still underinvested in value stocks, and that **if the rotation out of growth and back to value persists, then hedge funds will likely be a major incremental buyer of value stocks**.
- Initial claims for unemployment benefits rose** to 227,000 for the week ended Nov. 16. This data has a **good historical record of indicating changes in the economy**, and is one of six key indicators we track to monitor the likelihood of a U.S. recession. The recent uptick was notable in that it **broke a long streak of "lower lows"** in the data, and importantly ticked above the 20-month moving average for the fifth time this year. One data point doesn't make a trend, but we will be watching this series more closely given the age of the current economic expansion.



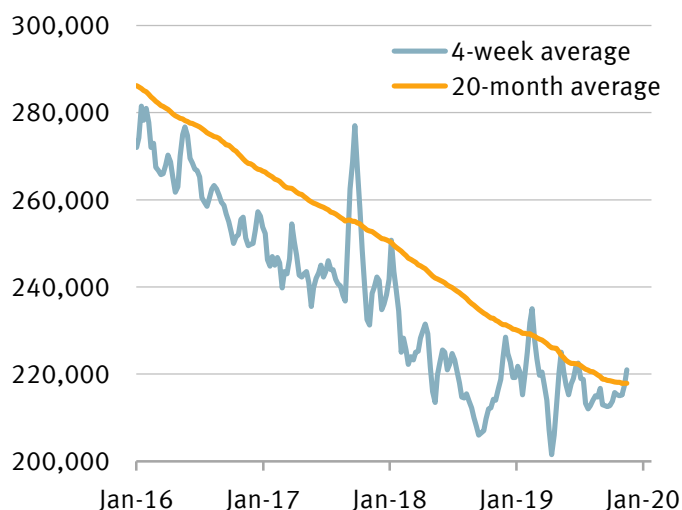
Canada

Arete Zafiriou & Sayada Nabi – Toronto

- Canadian manufacturing sales fell to CA\$57.4 billion in September, a 0.2% decrease from August and a 1.2% decrease from September 2018**. Sales were weighed down by the clothing manufacturing; electrical equipment, appliance and component; and printing and related support

Potential trend change for key labor market indicator

First-time claims for unemployment benefits



Source - RBC Wealth Management, U.S. Department of Labor; weekly data series through 11/16/19, seasonally adjusted

activities industries. Ten out of 21 industries saw sales decrease in September, representing approximately 62% of the Canadian manufacturing sector. According to Statistics Canada, the United Auto Workers strike in September and October impacted a number of motor vehicle plants, and the petroleum and coal product industry was hurt by partial shutdowns for maintenance. RBC Economics believes these factors are transitory, but that the auto sector may continue to see weakness through the winter. Going forward, **RBC Economics expects U.S.-China trade to be a key factor driving Canadian manufacturing sales, as anything that helps the U.S. manufacturing sector also helps cross-border production chains**.

- It was a tighter October for the Canadian housing market, but home prices were still able to pick up some steam**, according to RBC Economics. The national Home Price Index increased at a rate of 1.8% y/y and 1.3% m/m in October. RBC Economics notes the value of homes sold is rising at a faster pace and the rate of the increase has been noticeably quicker over the past four months. Despite the value of homes sold increasing, the number of units available for resale was relatively flat following seven consecutive months of growth. Compared to September, housing inventories contracted by 1.8%, which limited supply and options for buyers in the market. This, in turn, pulled the nationwide sales-to-new-listings ratio higher to 0.64, indicating tighter demand and supply conditions in the market. Although the different parts of Canada face differing challenges in their respective housing markets, RBC Economics believes home buyer demand has returned to normal levels, demand-supply conditions are tight, and prices are increasing at a moderate

rate. Looking ahead to the next year, **RBC economic expects low interest rates, strong labour markets, and rapid population growth to continue the recovery.**



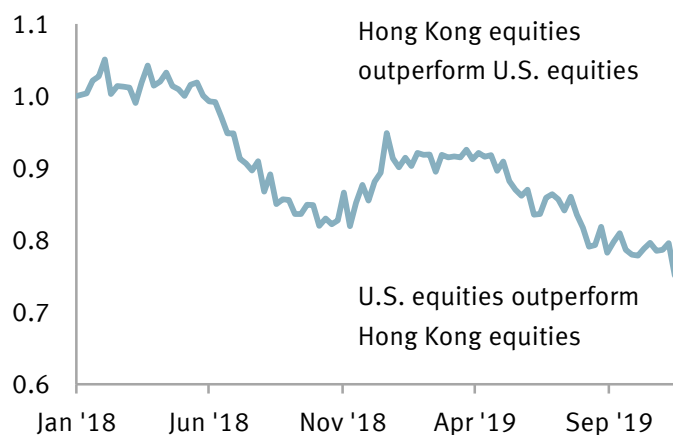
Europe

Frédérique Carrier & Thomas McGarrity, CFA – London

- The past week made up for a dearth of macroeconomic data by producing a rich flow of corporate news.
- In Europe, **French luxury goods powerhouse LVMH**, whose market capitalisation is almost as large as that of the top four continental banks combined, **revised upwards its bid for Tiffany**, the U.S. jeweler best known for its engagement rings. The owner of Moët champagne and TAG Heuer watches increased its offer to just under \$16 billion, or \$130 per share according to the *Financial Times*—some 30% above the share price before the two companies began talks. **This is a bold move given LVMH derives one-third of its sales from Asia, where economic growth is decelerating.**
- **Meanwhile in the UK, the Labour Party vowed to nationalise BT Group's Openreach division if it wins the December general election**, as part of its pledge to provide every home and business in the country free full-fibre broadband by 2030. **This would be a significant negative for BT, but we believe it is unlikely** as a Labour-majority government is a low-probability scenario according to current polls. As highlighted in last week's *Global Insight Weekly* focus article, "[Breaking the Brexit impasse?](#)", we believe Labour's most extreme policies, such as its nationalisation agenda, are unlikely to be enacted in the scenario of a Labour-led minority government.

Hong Kong equities continue to decline on unrest

Hang Seng Index returns relative to the S&P 500



Source - RBC Wealth Management, Bloomberg; weekly data from 1/1/18 through 11/15/19

- Elsewhere, **British American Tobacco (BATS) shares gained 3%** as news emerged that the U.S. Department of Health and Human Services had dropped plans to limit the nicotine levels in cigarettes to non-addictive levels. The company generates over 40% of its profits in the U.S.
- At its capital markets day, **Aviva presented a strategic update focused on simplification and improved execution within its existing businesses**, rather than on a major shift in the shape of the group that had been widely expected by market participants. The relatively new CEO stated that he is "committed to running Aviva better."
- **Sage Group's full-year results were broadly in line with consensus expectations.** After announcing that it would sell its Sage Pay payments business, the company announced a £250 million capital return.



Asia Pacific

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

- Asian equities were largely driven by the news of trade talks this week. Bloomberg reported that **China's chief negotiator, Vice Premier Liu He, said he was "cautiously optimistic" about reaching a phase one trade deal with the U.S.** However, the U.S. Congress passed the **Hong Kong Human Rights and Democracy Act**, which would require the State Department to conduct an annual review on whether Hong Kong remains sufficiently autonomous to justify its special trade privileges and give the U.S. president a mandate to protect U.S. citizens and others in Hong Kong from rendition or abduction to China through measures including sanctions on mainland officials. President Donald Trump may sign the bill, which adds uncertainty to the U.S.-China relationship.
- **Hong Kong's economic data continues to deteriorate. The city's unemployment rate from August to October jumped to 3.1%** from 2.9% in July to September. The unemployment rate for those working in food and beverage services rose to 6.1%, the highest in more than six years. Separately, data compiled by Bloomberg shows passenger numbers on the city's metro system plunged 25.6% y/y to 108.5 million in October. MTR Corp. (66 HK) recently has been closing its subway lines as early as 6:00 p.m. to repair facilities damaged by protesters. We expect upcoming economic data to show further weakness.
- **To lower borrowing costs and shore up the economy, China pruned the new benchmark rate**, the loan prime rate (LPR), on Nov. 20. The 5-year LPR, on which many lenders base their mortgage rates, was cut to 4.80% from 4.85%. The 1-year LPR was lowered to 4.15% from 4.20%.



MARKET SCORECARD

Data as of November 21, 2019

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	3,103.54	2.2%	23.8%	17.1%	19.4%
Dow Industrials (DJIA)	27,766.29	2.7%	19.0%	13.5%	17.7%
NASDAQ	8,506.21	2.6%	28.2%	22.0%	24.0%
Russell 2000	1,583.99	1.4%	17.5%	6.4%	4.3%
S&P/TSX Comp	16,999.19	3.1%	18.7%	12.6%	5.7%
FTSE All-Share	4,002.37	0.2%	8.9%	3.7%	-1.7%
STOXX Europe 600	402.22	1.4%	19.1%	13.3%	3.6%
EURO STOXX 50	3,679.66	2.1%	22.6%	16.7%	2.8%
Hang Seng	26,466.88	-1.6%	2.4%	1.9%	-11.2%
Shanghai Comp	2,903.64	-0.9%	16.4%	9.5%	-14.9%
Nikkei 225	23,038.58	0.5%	15.1%	7.1%	2.8%
India Sensex	40,575.17	1.1%	12.5%	15.3%	21.2%
Singapore Straits Times	3,192.21	-1.2%	4.0%	5.1%	-6.8%
Brazil Ibovespa	107,496.70	0.3%	22.3%	23.2%	44.1%
Mexican Bolsa IPC	43,255.43	-0.2%	3.9%	4.2%	-10.2%
Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot \$/oz)	1,464.67	-3.2%	14.2%	19.5%	14.4%
Silver (spot \$/oz)	17.11	-5.5%	10.4%	18.0%	0.9%
Copper (\$/metric ton)	5,855.00	1.5%	-1.6%	-6.6%	-14.9%
Oil (WTI spot/bbl)	58.53	8.0%	28.9%	7.5%	3.2%
Oil (Brent spot/bbl)	63.66	5.7%	18.3%	0.3%	1.7%
Natural Gas (\$/mmBtu)	2.59	-1.7%	-12.0%	-41.9%	-14.3%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	1.771%	8.0	-91.4	-129.2	-58.5
Canada 10-Yr	1.477%	6.5	-49.0	-88.2	-44.2
U.K. 10-Yr	0.754%	12.5	-52.3	-64.2	-52.0
Germany 10-Yr	-0.325%	8.2	-56.7	-70.1	-67.6
Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	2.27%	-0.1%	8.8%	11.0%	9.1%
U.S. Invest Grade Corp	2.87%	0.0%	13.9%	15.4%	12.0%
U.S. High Yield Corp	5.81%	-0.1%	11.6%	9.5%	9.9%
Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	97.9710	0.6%	1.9%	1.3%	4.3%
CAD/USD	0.7529	-0.9%	2.7%	-0.4%	-3.8%
USD/CAD	1.3283	0.9%	-2.6%	0.4%	4.0%
EUR/USD	1.1060	-0.8%	-3.5%	-2.8%	-5.8%
GBP/USD	1.2906	-0.3%	1.2%	1.0%	-2.5%
AUD/USD	0.6787	-1.6%	-3.7%	-6.6%	-10.4%
USD/JPY	108.6100	0.5%	-1.0%	-3.9%	-3.4%
EUR/JPY	120.1200	-0.3%	-4.5%	-6.7%	-9.0%
EUR/GBP	0.8570	-0.6%	-4.7%	-3.8%	-3.4%
EUR/CHF	1.0984	-0.2%	-2.4%	-3.0%	-5.6%
USD/SGD	1.3630	0.2%	0.0%	-0.7%	0.6%
USD/CNY	7.0289	-0.1%	2.2%	1.5%	6.0%
USD/MXN	19.3884	0.8%	-1.3%	-4.3%	3.3%
USD/BRL	4.1950	4.4%	8.3%	10.5%	28.9%

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 8:35 pm GMT 11/21/19.

Examples of how to interpret currency data: CAD/USD 0.75 means 1 Canadian dollar will buy 0.75 U.S. dollar. CAD/USD 2.7% return means the Canadian dollar rose 2.7% vs. the U.S. dollar year to date. USD/JPY 108.61 means 1 U.S. dollar will buy 108.61 yen. USD/JPY -1.0% return means the U.S. dollar fell 1.0% vs. the yen year to date.

Authors

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

Arete Zafiriou – Toronto, Canada

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

Sayada Nabi – Toronto, Canada

sayada.nabi@rbc.com; RBC Dominion Securities Inc.

Frédérique Carrier – London, United Kingdom

frederique.carrier@rbc.com; RBC Europe Limited

Thomas McGarrity, CFA – London, United Kingdom

thomas.mcgarritty@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: Sayada Nabi 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, LLC ratings of Top Pick/Outperform, Sector Perform, and Underperform 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, 2019				
Rating	Count	Percent	Investment Banking Services Provided During Past 12 Months	
			Count	Percent
Buy [Top Pick & Outperform]	748	51.73	208	27.81
Hold [Sector Perform]	618	42.74	126	20.39
Sell [Underperform]	80	5.53	3	3.75

Ratings:

Top Pick (TP): Represents analyst's best idea in the sector; expected to provide significant absolute total return over 12 months with a favorable risk-reward ratio. **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.

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: Riverbank House, 2 Swan Lane, London, EC4R 3BF, 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 2019 – Member NYSE/FINRA/SIPC

© RBC Dominion Securities Inc. 2019 – Member Canadian Investor Protection Fund

© RBC Europe Limited 2019

© Royal Bank of Canada 2019

All rights reserved

RBC1253