

Global Insight

Weekly



A closer look

Short story

Tom Garretson, CFA – Minneapolis

Concerns about the flat Treasury yield curve aren't going away anytime soon, but in our view, it's not going to steepen anytime soon either. Based on the last Fed rate hike cycle, the current flatness of the curve might be signaling to investors that it's finally time to shorten duration.

Treasury yields have mostly recovered over the past week after a sharp move lower following geopolitical risks surrounding Italy, but despite the 10-year Treasury once again nearing the 3% level, investors are still facing the flattest yield curves since 2007. The yield curve continues to dominate headlines for its potential economic implications, but we are looking at the current flatness of the yield curve as an opportunity to shift strategy for bond buyers.

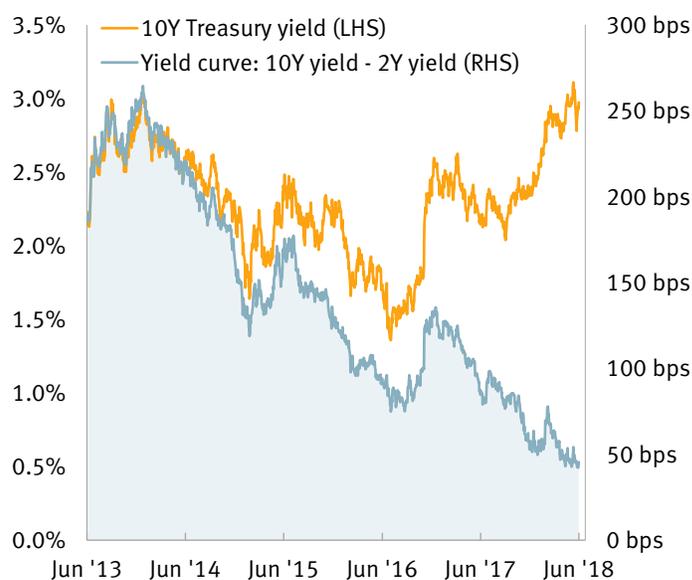
Singing a different tune

For much of this economic cycle we have advocated for maintaining a long duration bias in portfolios on expectations of limited upside for yields, and for the curve to flatten as the Fed embarked on raising short-term rates. This has worked over the past five years with the Bloomberg Barclays US Aggregate 10+ Year Bond Index returning 20.4%, compared to just 4.1% on the US Aggregate 1-3 Year Index.

But while investors have been able to ride a flattening yield curve to outperformance thus far, at what point might the curve be flat enough that this relationship reverses and the short end of the curve starts to outperform?

There have only been roughly four periods of sustained Fed rate hike cycles since 1980, hardly enough to draw statistically significant conclusions from, so for simplicity we looked at the Fed's most recent 2004–06 cycle. As the top chart on the next page shows, it wasn't until the yield curve, as measured by the yield difference between 10-year and 2-year Treasuries, dipped below 50 basis points (bps) that the short end of the curve began to outperform the long end, as measured by the two indexes previously mentioned. With the 10-year to 2-year yield curve at 44 bps, we would now recommend that investors begin to put money to work at the short end of yield curves.

Yield curve flatness at 5Y low, even as 10Y yield hits 5Y high



Source - RBC Wealth Management, Bloomberg; data through 6/6/18

Market pulse

- 3 U.S. job openings outweigh the unemployed
- 3 The weak link in the Canadian government debt chain
- 3 Crunch vote looms for Brexit amendments
- 4 Musings on a possible U.S./North Korea meeting

Click [here](#) for authors' contact information.

Priced (in USD) as of 6/7/18 market close, EST (unless otherwise stated).

For important disclosures and required non-U.S. analyst disclosures, see [page 6](#).



Wealth
Management

The curve is unlikely to steepen

At this stage, the only scenario, in our view, that is likely to steepen the yield curve would be the Fed signaling that it's going to slow the pace of rate hikes, or further down the road, deliver the next rate cut. Even in a scenario where late-cycle dynamics begin to play out—higher commodity prices, inflation, and growth—which would likely push the 10-year Treasury yield higher, we believe it would likely be met with faster Fed rate hikes, pushing front-end yields higher in lockstep. In that scenario, the short end should still outperform due to lower duration, or lower interest rate sensitivity.

Barbell work

To be sure, we are not recommending a wholesale shift to short duration. As with any portfolio, there is value in diversification. But between the short (1–5 years), intermediate (5–10 years), and long (10+ years) parts of the curve, we think the most uncertainty lies in the intermediate section.

Therefore, investors may find value in a barbell approach to putting money to work in fixed income, or focusing on the short and long end. Investors will likely benefit from rising short-term yields, while we see the 30-year Treasury as anchored around current levels—it has failed to trade above 3.25% since 2015, compared to a yield of 3.12% as of June 6.



What's moving markets

Trade winds

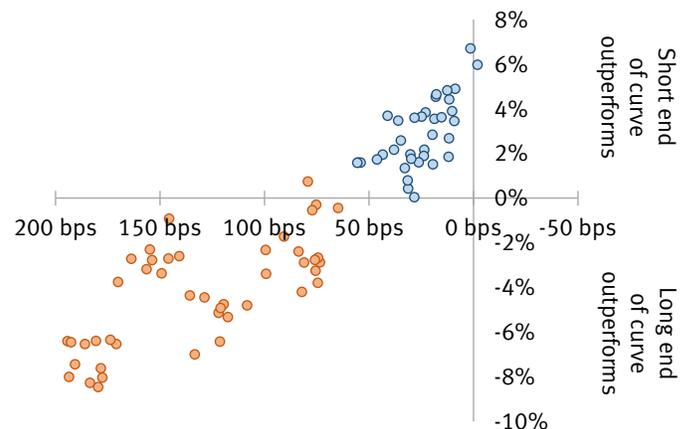
The exemptions from steel and aluminum tariffs granted to select U.S. allies have expired, prompting responses from Mexico, Canada, and the EU, including retaliatory tariffs on an estimated \$3B, \$12.8B, and \$3.3B of U.S. goods, respectively. The new tariffs complicate ongoing NAFTA negotiations. RBC Global Asset Management currently sees a 55% chance of a new deal, a 20% chance it is left in its current form, and a 25% chance it is torn up altogether.

While RBC Global Asset Management projects a mere 15% chance of an all-out trade war, the uncertainty of prolonged negotiations could drag on growth. Regional business surveys have shown sustained confidence in the economic outlook, but comments suggest uncertainty around tariffs boosting prices and disrupting supply chains. Companies must weigh whether to invest in new production as potentially costly trade policies loom, prompting considerations of curbed production or delayed investment, just as business investment in the U.S. starts to pick up.

The bottom line is that trade is a developing story, but markets appear to have become accustomed to threats of new tariffs. The VIX Index, which measures expected equity volatility, averaged 14.2 in May, the lowest monthly average since January, despite ongoing trade negotiations. Investors have,

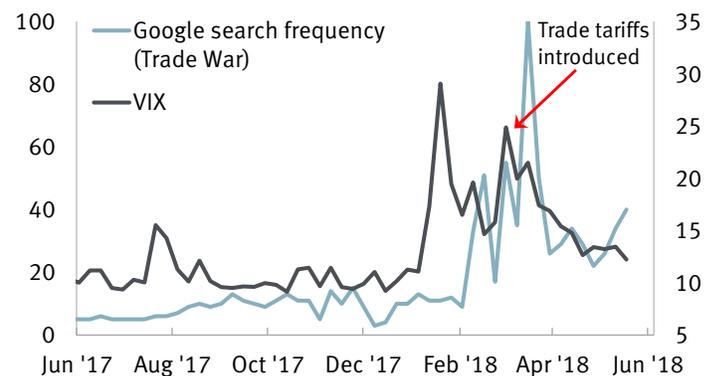
All told, we think the front end of the curve currently offers a win-win proposition for investors: the opportunity to reinvest at higher yields should the Fed maintain the march to higher rates, or the chance for bond prices at the front end to rally higher should the Fed ease off the rate hike throttle in the face of flat yield curves.

Short duration starts to outperform long duration when yield curve flattens below 50 bps



Source - RBC Wealth Management, Bloomberg; shows total return on Bloomberg Barclays US Aggregate 1-3Y Index minus return on US Aggregate 10+ Year Bond Index for the 6 months following various yield curve levels during the 2004-2006 rate hike cycle; data through 6/6/18

Equity markets growing accustomed to trade threats



Source - RBC Wealth Management, Bloomberg; data through 6/3/18

however, sought shelter in the form of domestic-focused small-cap stocks, which have outperformed the S&P 500 by 7.6% since March 1.

Despite concerns, we remain constructive on the growth outlook of the U.S. economy. The Atlanta Fed projects Q2 GDP growth of 4.5%, as spending rebounds and corporate investment accelerates, and as RBC Global Asset Management recently noted, “U.S. tax cuts currently provide a much greater U.S. tailwind than protectionist actions do a headwind.”



United States

Bill Kuehn, CFA & Sam Renikoff – Minneapolis

- **Oil prices declined** early in the week on a one-two punch of the **largest rise in domestic inventories since 2009** as well as the **U.S. asking Saudi Arabia to increase oil production by 1 million barrels per day** to offset the reduction in supply from Iran. While the market is focused on the potential for increased Saudi output, RBC Capital Markets' commodities strategist still believes **the biggest driver of oil prices will be Iran's reaction to the U.S. withdrawal from the Joint Comprehensive Plan of Action**, aka the Iran nuclear deal. Iran's supreme leader warned that the country will resume its nuclear activities unless Europe continues to purchase Iranian crude oil. Worryingly, some Iranian officials have discussed exiting from the Nuclear Non-Proliferation Treaty, which explicitly implies the country's nuclear activity is for military purposes. **RBC Capital Markets recommends an Overweight position on Energy equities** given the backdrop for oil.
- In April, there were **more open jobs than total unemployed workers**, according to JOLTS jobs data. There were a reported 6.698 million help wanted signs in the U.S., the highest level on record, in contrast to only 6.065 million unemployed workers. The data points to how tight the labor market has become, in addition to highlighting the **massive structural mismatch between worker skill level and business labor needs**. This report comes on the heels of May's nonfarm payrolls report that showed another 223,000 workers were hired in May, pushing the hiring rate up to 3.8%—the fastest pace of this cycle and drastically reducing the pool of available workers. The **"tightness" in the labor market increases the likelihood of upward wage pressure** as *qualified* workers on average now have more than one open job available to them, giving active labor market participants negotiating power for higher wages that has not been seen in decades. Faster wage growth increases the risk that we could see a more hawkish Fed at the June 13 meeting.

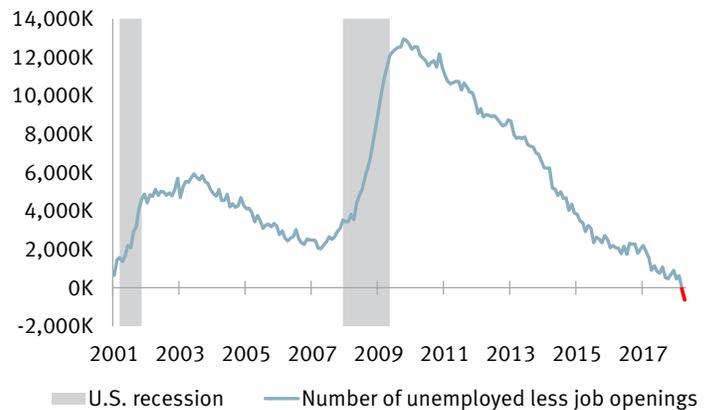


Canada

Diana Di Luca – Toronto

- At its May meeting, **the Bank of Canada (BoC) provided a clear message that it will continue to raise interest rates gradually until the economy shows signs that it cannot take any more**. The market thinks this point will be reached when the overnight lending rate hits 2.25%, an additional four 25 basis point rate hikes from today. We think the BoC is more likely to be slower to raise

U.S. job openings outweigh the unemployed



Source - RBC Wealth Management, Bloomberg; data through 4/30/18

rates, rather than faster, which leads us to believe there is appropriate compensation for interest rate risk in short-to-intermediate maturity bonds. We also think this approach is more likely to generate inflationary pressure, which could lead to higher bond yields in the longer end of the curve.

- When thinking about the government finance challenges Europe faces at the moment, a domestic concern that comes to mind is Canadian provincial debt. While not a perfect parallel, the story in Europe centres around overly indebted governments, and we believe the provinces are the weak link in the Canadian government debt chain. **With Ontario's election upon us, questions about the province's budget will follow regardless of the winner. This could soften the broader market tone in the provincial bond market**, as Ontario represents approximately 15% of the Canadian bond index. As credit spreads on provincial bonds versus federal bonds are near the narrowest level in a decade, we think it is timely to rotate away from provincial bonds into federal bonds.
- **Following a lull of over two months, three preferred share new issues came to market in Canada in late May**, for a total of CA\$850M. The preferred share market reached a two-month high in mid-May, but has since declined as the risk-off tone in global markets led to a decline in Government of Canada bond yields. Lower interest rates decrease the cash flow profile of the approximately 80% of the preferred share market that is comprised of rate-reset and floating-rate issues beyond the next reset date.



Europe

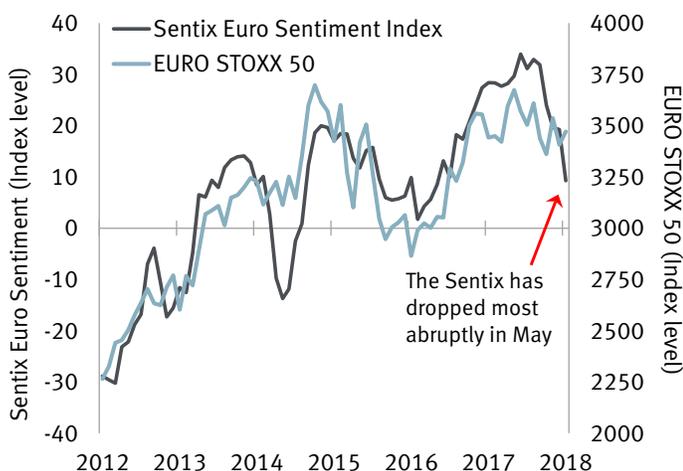
Frédérique Carrier & Thomas McGarrity, CFA – London

- **In Italy, the coalition government of far-left and far-right parties was appointed and a non-euro-sceptic finance minister put forward. Markets were relieved** and the Italy-

German 10-year Bund spread narrowed from +290 basis points (bps) to a level still higher than a month ago of +210 bps. However, as this populist government is bent on fiscal profligacy and reversing economic reforms, **the risk of a funding crisis remains.**

- Political uncertainty in Italy over the last month caused the June **Sentix Euro Index, which measures investor confidence over the next six months, to fall from 19.2 in May to 8.3**, its lowest level since November 2016. The recent loss of European momentum might not be over yet.
- Contrastingly, the **U.K. produced firm economic data in May** with the services Purchasing Managers' Index (PMI) increasing in expansionary territory from 52.8 in April to 54.0, whilst the manufacturing PMI rose from 53.9 to 54.4. The market is now pricing an approximate 55% probability of a 25 bps August rate hike, up from 40% the prior week.
- Brexit continues to offer very low visibility and an increasingly demanding timeline. On June 12, **the House of Commons will consider and vote on no less than 15 amendments made by the House of Lords to the EU withdrawal bill.** They aim at softening the U.K. government's stance on Brexit, and include exploring the possibility of staying in a customs union, and forcing the government to follow the lead of Parliament in the event of "no deal."
- Some of these votes are too close to call. If the government loses any of them, it may not necessarily guarantee a change of tack, but it would be a **barometer of support within the House of Commons for a softer Brexit stance.**
- Separately, the *Financial Times* reported on June 5 that **Prime Minister Theresa May will not release a detailed plan on the future trading relationship with the EU ahead of the June 28 EU summit**, as her cabinet still disagrees on the matter. This could put much pressure on the October EU summit, when the final exit deal is supposed to be agreed upon.

Sentiment Index tumbles



Source - RBC Wealth Management, Bloomberg; data through 6/6/18



Asia Pacific

Jay Roberts, CFA – Hong Kong

- **While Asian equities outside Japan have continued to trade sideways**, performance in the month of May was **notably better than other emerging markets.** The MSCI Emerging Market Index fell by 3.8% in May, underperforming the flat performance of the MSCI World Index by 4%. Weakness in certain currencies was a key factor.
- **Emerging market Asia declined by 1.5%** in May, while Latin America endured a 14% decline in the month and Europe, Middle East, and Africa declined by 6%. The declines in Greece (-19%) and Brazil (-16%) were severe. **MSCI China actually rose by 1.5%.**
- **The meeting between President Trump and Kim Jong-un of North Korea may take place in Singapore on June 12.** What comes of this unusual meeting is anyone's guess. In our view, it is quite unlikely that North Korea will move towards full denuclearization. This path has been well trodden and the regime has reneged on any previously agreed move in that direction. That said, the **unpredictable nature of Trump is a novel ingredient in the mix.** In terms of the optics of this meeting, **our view is that it is a win, and a big one at that, for Kim** insofar as a face-to-face meeting with the U.S. president is unprecedented, puts Kim on a par with other globally important leaders, and gives him significant face.
- As the U.S.-China trade dispute continues, **the Trump administration threw embattled Chinese telecom and networking company ZTE (763 HK) a lifeline** by allowing it to resume purchases of U.S. technology goods subject to certain stringent conditions. **ZTE will pay a \$1B fine, change its executive team, and allow a U.S. compliance team to inspect company operations.** Over one-quarter of the components that ZTE, a major Chinese company, uses for its products come from the U.S. Following the ban imposed by the U.S. on ZTE for doing business with North Korea and Iran, the company had effectively halted production, hamstringing a company that is strategically important for China. Perhaps in response to this olive branch, **China may increase its purchases of U.S. goods by around \$25B this year.** However, the overall situation remains fluid and still represents a meaningful source of risk for markets.
- **The Reserve Bank of Australia once again kept its benchmark interest rate unchanged** at a record low of 1.5%. The market expects this policy to persist, pricing in only a small chance of a rate hike over the next year. **RBC Capital Markets thinks that the Australian economy's fairly strong start to the year will not be sustained** "given the unfolding moderation in the housing sector and the added challenge this poses to household consumption."



MARKET SCORECARD

Data as of June 7, 2018

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	2,770.37	2.4%	3.6%	13.9%	31.2%
Dow Industrials (DJIA)	25,241.41	3.4%	2.1%	19.2%	40.7%
NASDAQ	7,635.07	2.6%	10.6%	21.2%	53.9%
Russell 2000	1,667.78	2.1%	8.6%	19.4%	41.3%
S&P/TSX Comp	16,192.78	0.8%	-0.1%	5.3%	12.7%
FTSE All-Share	4,245.88	0.6%	0.6%	3.9%	22.9%
STOXX Europe 600	385.94	0.8%	-0.8%	-0.8%	11.5%
EURO STOXX 50	3,459.77	1.6%	-1.3%	-2.5%	13.8%
Hang Seng	31,512.63	3.4%	5.3%	21.3%	47.8%
Shanghai Comp	3,109.50	0.5%	-6.0%	-1.0%	5.9%
Nikkei 225	22,823.26	2.8%	0.3%	14.2%	36.9%
India Sensex	35,463.08	0.4%	4.1%	13.4%	31.3%
Singapore Straits Times	3,473.08	1.3%	2.1%	7.5%	21.9%
Brazil Ibovespa	73,851.47	-3.8%	-3.3%	16.9%	46.3%
Mexican Bolsa IPC	45,476.57	1.8%	-7.9%	-7.7%	-1.4%
Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot \$/oz)	1,296.96	-0.1%	-0.5%	0.8%	4.3%
Silver (spot \$/oz)	16.71	1.8%	-1.3%	-5.1%	2.0%
Copper (\$/metric ton)	7,211.25	5.4%	0.1%	29.0%	58.0%
Oil (WTI spot/bbl)	65.95	-1.6%	9.2%	44.2%	31.0%
Oil (Brent spot/bbl)	77.30	-0.4%	15.6%	60.8%	50.3%
Natural Gas (\$/mmBtu)	2.93	-0.7%	-0.7%	-2.9%	18.5%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	2.926%	6.7	52.1	75.3	120.8
Canada 10-Yr	2.286%	4.2	24.1	87.7	106.5
U.K. 10-Yr	1.400%	17.0	21.0	39.9	13.3
Germany 10-Yr	0.484%	14.3	5.7	21.5	43.4
Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	3.35%	-0.8%	-2.2%	-1.3%	-0.2%
U.S. Invest Grade Corp	4.02%	-0.9%	-3.6%	-1.0%	2.5%
U.S. High Yield Corp	6.35%	0.4%	0.2%	2.6%	15.8%
Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	93.4410	-0.6%	1.4%	-3.4%	-0.4%
CAD/USD	0.7706	-0.1%	-3.1%	4.1%	-1.9%
USD/CAD	1.2978	0.2%	3.2%	-3.9%	1.9%
EUR/USD	1.1803	0.9%	-1.7%	4.9%	3.9%
GBP/USD	1.3422	0.9%	-0.7%	3.6%	-7.7%
AUD/USD	0.7623	0.7%	-2.4%	1.0%	2.2%
USD/JPY	109.7100	0.8%	-2.6%	-0.1%	2.2%
EUR/JPY	129.4900	1.8%	-4.3%	4.7%	6.2%
EUR/GBP	0.8794	0.0%	-1.0%	1.2%	12.6%
EUR/CHF	1.1570	0.4%	-1.1%	6.5%	5.5%
USD/SGD	1.3339	-0.3%	-0.2%	-3.5%	-1.3%
USD/CNY	6.3921	-0.3%	-1.8%	-5.9%	-2.7%
USD/MXN	20.4979	2.9%	4.3%	12.5%	11.7%
USD/BRL	3.9166	5.2%	18.2%	19.8%	13.8%

Source - Bloomberg. Note: Equity returns do not include dividends, except for the German DAX and 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 6/7/18.

Examples of how to interpret currency data: CAD/USD 0.77 means 1 Canadian dollar will buy 0.77 U.S. dollar. CAD/USD -3.1% return means the Canadian dollar fell 3.1% vs. the U.S. dollar year to date. USD/JPY 109.71 means 1 U.S. dollar will buy 109.71 yen. USD/JPY -2.6% return means the U.S. dollar fell 2.6% vs. the yen year to date.

Authors

Tom Garretson, CFA – Minneapolis, United States

tom.garretson@rbc.com; RBC Capital Markets, LLC

Bill Kuehn, CFA – Minneapolis, United States

william.kuehn@rbc.com; RBC Capital Markets, LLC

Sam Renikoff – Minneapolis, United States

sam.renikoff@rbc.com; RBC Capital Markets, LLC

Diana Di Luca – Toronto, Canada

diana.diluca@rbc.com; RBC Dominion Securities Inc.

Frédérique Carrier – London, United Kingdom

frederique.carrier@rbc.com; Royal Bank of Canada Investment Management (U.K.) Ltd.

Thomas McGarrity, CFA – London, United Kingdom

thomas.mcgarritty@rbc.com; Royal Bank of Canada Investment Management (U.K.) Ltd.

Jay Roberts, CFA – Hong Kong, China

jay.roberts@rbc.com; RBC Dominion Securities Inc.

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: Diana Di Luca and Jay Roberts, employees of RBC Wealth Management USA's foreign affiliate RBC Dominion Securities Inc.; and Frédérique Carrier and Thomas McGarrity, employees of RBC Wealth Management USA's foreign affiliate Royal Bank of Canada Investment Management (U.K.) Limited; 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), and former lists called the Guided Portfolio: Large Cap (RL 7), the Guided Portfolio: Midcap 111 (RL 9), and the Guided Portfolio: Global Equity (U.S.) (RL 11). 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 (TP)/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.

Rating	Count	Percent	Investment Banking Services Provided During Past 12 Months	
			Count	Percent
Buy [Top Pick & Outperform]	865	53.49	275	31.79
Hold [Sector Perform]	667	41.25	147	22.04
Sell [Underperform]	85	5.26	7	8.24

Explanation of RBC Capital Markets, LLC Equity Rating System

An analyst's "sector" is the universe of companies for which the analyst provides research coverage. Accordingly, the rating assigned to a particular stock represents solely the analyst's view of how that stock will perform over the next 12 months relative to the analyst's sector average.

Ratings:

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 received 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 the member companies 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 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 Web site 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 II of the Firm's Form ADV or the Investment Advisor Group 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 II of the ADV, or 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; and by Royal Bank of Canada Investment Management (U.K.) Limited, an investment management company 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 or consequential loss arising from 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 consent of Royal Bank of Canada. 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 Royal Bank of Canada Investment Management (U.K.) Limited and RBC Investment Solutions (CI) Limited. Royal Bank of Canada Investment Management (U.K.) Limited is authorised and regulated by the Financial Conduct Authority (Reference number: 146504). 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. Financial Services provided to Australia: Financial services may be provided in Australia in accordance with applicable law. Financial services provided by the Royal Bank of Canada, Hong Kong Branch are provided pursuant to the Royal Bank of Canada's Australian Financial Services Licence ('AFSL') (No. 246521).

To Singapore Residents: This publication is distributed in Singapore by the Royal Bank of Canada, Singapore Branch, a registered entity granted offshore bank licence 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 2018 - Member NYSE/FINRA/SIPC

© RBC Dominion Securities Inc. 2018 - Member Canadian Investor Protection Fund

© RBC Europe Limited 2018

© Royal Bank of Canada 2018

All rights reserved

RBC1253