Global Insight Weekly



A closer look

Light at the end of the oil pipeline?

Laura Cooper - London

With October's stock market correction still fresh in everyone's minds, the oil selloff has further frayed already-taut market nerves. But we see conditions that should enable oil to claw back from the bear market, and we maintain a constructive outlook on oil prices.

The rapid fall in crude oil prices is rattling already-volatile financial markets, with investors' flight from Energy stocks dragging global equity markets lower. Following a rough October, the S&P 500 has risen only 0.7% so far in November as a correction in the Technology sector has been met by weakness in Energy stocks. The MSCI European Energy Index is tracking its worst quarterly performance since 2015, while declines in oil heavyweights in Asia have kept the Hang Seng Index and Shanghai Composite under pressure.

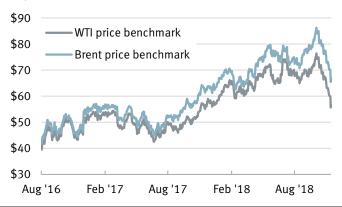
Crude oil prices have plunged deep into bear market territory with West Texas Intermediate (WTI), the U.S. benchmark, falling more than 25% from a four-year high on October 3 and recording its longest stretch of daily declines on record. Brent crude, the international benchmark price, recorded a commensurate drop over the same period, falling by around \$20 per barrel to touch its lowest level since April.

Fear over fundamentals

Growing fears of softer oil demand are coming from a weaker global growth backdrop, which, alongside indications of an oversupplied oil market, have sent benchmark prices tumbling. A lack of commitment from OPEC and its allies to curb production at their recent meeting further aggravated the selloff; WTI recorded its largest one-day drop since 2014, falling 7% to slip below \$55 for the first time since December 2017. The move contributed to one of the largest 5-day drops on record, of 21%, which sent technical indicators deep into oversold extremes and investor sentiment plummeting to multi-year lows.

Growing fears of imbalances in crude oil markets have sent prices tumbling

Price per barrel of crude oil



Source - RBC Wealth Management, Bloomberg; data through 11/15/18

Market pulse

- 3 Canadian bond market blues
- U.S. value stocks gaining traction relative to growth
- What the Brexit deal means
- Chinese tech giant rebounds from disappointing quarter

The Global Insight Weekly will not be published next week. The next edition will be available November 29 in North America and November 30 in Europe and Asia.



The extent of the selloff appears difficult to reconcile with energy market fundamentals. RBC Capital Markets sees scope for crude oil prices to recover.

Clawing back from a bear market

Economic indicators pointing to a deceleration in global growth are feeding investor concerns that global commodity demand could wane. Data in China, Japan, and Europe have softened recently.

At the same time, signs that higher volumes of crude oil could outpace the expansion of demand have exacerbated price pressures. Rising U.S. shale production has propelled domestic supplies to record levels while Saudi Arabia and Russia, the world's other largest producers, ramped up production in recent months to make up for any Iranian barrels that could be pulled from the market due to renewed U.S. sanctions. But the Trump administration's recent decision to grant temporary sanction waivers for select countries that import Iranian oil has compounded fears of a market glut.

Signs of intervention by major oil producers to bring price relief, which could limit further downside in crude oil prices, are growing. Amid the accelerating crude oil selloff, some OPEC members expressed a willingness to curtail supply in advance of the organization's December 6 meeting. Russia hasn't yet tipped its hand, but has consistently expressed the importance of partnering with OPEC to steady the oil market.

With balance in the crude oil market crucially dependent on Saudi Arabia, the country's recent vow to do "whatever it takes" to contain price weakness further points to a price recovery, in our view. This steadfast approach should remain despite escalating pressure from the Trump administration to maintain current elevated production levels to ensure prices remain low.

RBC Capital Markets, LLC Commodity Strategist Michael Tran maintains a constructive outlook for prices, arguing that the magnitude of the pullback is not warranted by current market fundamentals. Iranian sanctions could ultimately spur a more material supply pullback, especially as the temporary exemptions expire. Meanwhile, Saudi Arabia could quickly turn off its production taps, and heightened geopolitical tensions could limit the degree of imbalance in the market.

On the demand side, with China accounting for 35% of total global oil consumption growth since 2010, a domestic economic slowdown is dampening prospects for global oil demand. Even so, Tran sees bright spots in Chinese demand because the economy is more dependent on gasoline for autos than ever before, and that demand is sticky. Also, surging air travel is a key demand component, and the most underappreciated, according to Tran. Finally, the gradual feed-through of fiscal stimulus should support the economy and crude oil demand over time.

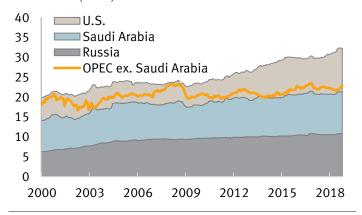
A weaker global growth backdrop is raising concerns of softer oil demand

Purchasing Managers' Indexes for the manufacturing sector



Source - RBC Wealth Management, Bloomberg; data through 10/31/18

The world's largest oil producers have ramped up production Million barrels per day



Source - RBC Wealth Management, U.S. Department of Energy, Bloomberg; data through 10/31/18

Maintaining constructive outlook

The speed of the drop in crude oil prices is exacerbating already-fragile market nerves in the wake of last month's equity market correction; however, the price downturn pales in comparison to that seen in mid-2014 when the downdraft fuelled a profit recession in the S&P 500.

If anything, recent shifts in the oil market could provide tailwinds to overall equity market performance. Notably, the alleviation of headline inflation pressures from the price drop could temper fears of the need for aggressive Federal Reserve tightening. Market expectations for future hikes have slipped since the oil price correction.

Concerns dominating the largely healthy fundamentals should reverse course and bring relief to the crude oil market, in our view. RBC Capital Markets sees scope for crude oil prices to trend higher with its latest forecasts targeting WTI breaking above \$75 per barrel and Brent climbing to \$85 per barrel by year-end 2019



Canadian bond market blues: Short-term pain

Joseph Wu, CFA - Toronto

2018 has been a disappointing year for many fixed income investors as it is on track to be only the fourth down year for the broad Canadian bond market since 1981. While we believe the macro environment for bonds could remain challenging in the near term, we see ample investment opportunities in short-term, high-quality bonds to justify investors maintaining a disciplined allocation to the asset class.

A reality check

Negative returns for the Canadian bond market have been a rare occurrence. Since 1981, there have been just three instances in which calendar-year returns for the FTSE TMX Canada Universe Bond Index were in the red (see chart). Although this index is down just roughly 1% year to date, the perception for investors is likely to be much worse, owing to the fact that bonds have reliably generated positive returns for nearly 40 years.

It is never comfortable to sit through losses, but the underappreciated silver lining from the recent price weakness in bonds is that yields are now considerably higher than they have been for some time. The implications of higher starting yields are two-fold. First, they imply more room for yields to fall to provide "cushion" for equity drawdowns. This increases the scope of diversification that bonds can deliver for a portfolio during periods of sharp risk aversion. Second, they help to boost longer-term return expectations, as there is a strong correlation between starting bond yield levels and subsequent bond returns. In fact, bond investors with a maturity profile that is shorter than their investment horizon should benefit from a higher rate as this could enable them to realize a higher return over their full horizon.

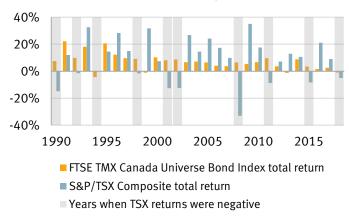
While there are invariably times when bonds' diversifying attributes are tested—such as in 1994—the shaded areas in the chart illustrate plainly that bonds remain an effective diversifier for equity drawdown risk over the long term, reliably acting as a "shock absorber" when the TSX has struggled.

The playbook

With the Canadian economy on a solid footing and the Bank of Canada in the midst of a rate-hike cycle, we believe the balance of risk for bond yields remains biased to the upside on a 12-month horizon. Against this outlook, we suggest investors continue to focus on the following guidance in positioning their bond portfolios:

Annual and 2018 year-to-date total returns

Canadian universe bond index and TSX Composite



Source - Bloomberg; data through 10/31/18

- Focus on short duration: Given the meagre compensation for extending term, a focus on short-to-intermediate maturities (i.e., 1–10 years) remains prudent, in our view. Shorter-dated bonds are by no means immune to rising rates, but their returns tend to be less volatile, while coupon payments and matured principal can be reinvested at prevailing higher-yielding bonds more frequently and sooner. Moreover, expectations of an additional three 25 basis points rate hikes are already reflected in short-term Government of Canada bond yields.
- Improve credit quality: Narrow credit spreads denoting paltry compensation for taking on credit risk means investors are not giving up much yield by moving up the quality ladder. With the risk-reward trade-off favouring higher-grade bonds, we continue to advocate investors upgrade quality across their bond portfolios (e.g., high yield to investment grade (IG) and IG to government).
- Explore discount bonds: In contrast to recent years when many bonds were trading above par value (i.e., locking in capital losses as prices usually move to par at maturity), the rising rate environment over the past 24 months has led to an increase in the opportunity set of bonds trading below par value (i.e., potential for capital gains as prices usually move to par at maturity). These discount bonds could appeal particularly to taxable investors, given lower tax rates on capital gains versus interest income.

Pricing in this article as of 10/31/18, unless otherwise stated.



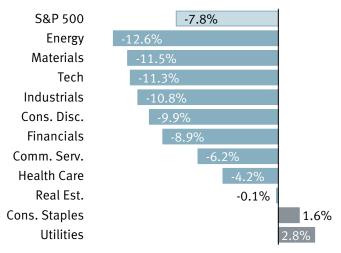
United States

Ben Graham, CFA - Minneapolis

- U.S. equity markets are broadly lower, declining 3% or more in most major indexes so far this week. Losses have been widespread with the Consumer Discretionary, Tech, and Health Care sectors leading the way lower. The recent underperformance in these groups has assisted in the reversal of the style trade, as value stocks continue to gain traction relative to growth stocks and the recent selloff brings growth's year-to-date outperformance back to May 2018 levels. Put differently, the outperformance that growth generated relative to value from June to September has been erased in recent weeks as value stocks take their turn to lead.
- After accounting for nearly all of the H1 2018 S&P 500 attribution, the FAANGM Complex of Facebook, Apple, Amazon, Netflix, Alphabet (Google), and Microsoft has shed its leadership role. These companies accounted for 94% of the S&P 500's first six months return. Since then, the complex has delivered an equal-weighted average return of -9.6% vs. the 0.6% decline for the S&P 500. Microsoft and Apple are the only two firms trading higher than their June 30 closing prices with Netflix being the worst performer in the group, down 26.8%. The difference in the performance of these stocks at the start of the year versus now nearly perfectly mirrors the growth and value trends evolving in the market at this time.
- Economic data continues to highlight an expanding economy driven by a healthy U.S. consumer. Retail sales were robust in October and inflationary data, as measured by the Consumer Price Index, was in line with

U.S. sector returns have been under pressure since the September highs

S&P 500 price returns by sector, since 9/20/2018



Source - RBC Wealth Management, FactSet; data through 11/14/18

expectations. Given this backdrop and the fact that our indicators are not signaling a recession in the next 12 months, we would continue to give equities the benefit of the doubt and **hold Market Weight positions** in U.S stocks.



Canada

Diana Di Luca - Toronto

- Bank of Canada (BoC) Governor Stephen Poloz doesn't see rising yields and a flattening curve as particularly worrisome for the Canadian economy, according to comments he made in a speech to the U.K. Chamber of Commerce on November 5. "These characteristics do not point to a gloomy economic outlook by any means—rather, they are welcome symptoms of normalization," he said, adding that "investors can no longer expect yields to be suppressed by extraordinary monetary policies." The speech continues a recent trend from Poloz who, after making comments about the necessity of the Overnight Lending Rate reaching neutral (estimated at 2.5%–3.5%) at the BoC's latest rate announcement, is doing his part to prepare Canadians for a future of higher borrowing costs.
- The market is currently pricing in three further BoC hikes (to 2.50%), which is at the bottom end of what Poloz is suggesting the terminal rate for this credit cycle will be. RBC Economics has released its updated interest rates forecast, calling for two rate hikes in 2019 and another two in 2020, bringing the Overnight Lending Rate to 2.75% by Q2 2020. With the markets still not fully pricing in what Poloz has been messaging, we see more downside than upside for the long end of the yield curve. We continue to advocate staying short on duration until the yield curve re-steepens and offers the opportunity to put money to work at higher yields. The next rate hike is priced in for January, with a December hike a possibility, although unlikely, in our view.
- The TSX Preferred Share Index has sold off considerably in recent weeks, with October ending 3.2% lower and November 1.3% lower so far. The selloff appears to have been driven largely by a risk-off tone in equity markets, wider credit spreads, and increased exchange-traded fund redemptions. The selloff has created some pockets of value in the preferred share market; however, we favour active management through single-line products versus managed solutions.



Europe

Frédérique Carrier & Thomas McGarrity, CFA – London

 U.K. and EU negotiators have agreed on a draft of a provisional Withdrawal Agreement for the U.K. to formally leave the EU. This is a positive development, though the probability of a "no deal" scenario—currently at some 20%—will likely not decline until it is clear that the current government and Parliament support the agreement.

- The 585-page document includes: the Brexit bill (provisions for the £39B owed to the EU and EU citizen rights); plans for a transition that maintains the status **quo until up to 2021** with a possible one-off extension to an undefined date; the outline of a future trading relationship including a free trade agreement on goods and some services; and the "backstop plan" that aims to ensure no hard border with Ireland by keeping the whole of the U.K. in a customs union with the EU until an alternative trading arrangement that avoids a border is reached.
- U.K. Cabinet approval of the Withdrawal Agreement means a specially convened EU summit can now take place on November 25 for the EU to sign off on the deal, after which a vote in the U.K. Parliament can occur. As the deal is very contentious, this is now the big hurdle, given the U.K. government's thin 13-seat working majority. The possibility of staying in the customs union is anathema to passionate Brexiteers, while many pro-European Conservatives oppose the truncated future relationship with the U.K.'s major trading partner.
- As such, headline risk will be acute for a while. Prime Minister Theresa May could face a no-confidence vote. We would expect her to survive it, and our base case remains that Parliament will eventually approve the deal. If she doesn't survive, the situation becomes even more complex and uncertain as it raises the specter of elections. Unless Article 50 (the two-year window for the U.K. to negotiate the terms of its exit from the EU) is extended, the U.K. would leave the EU on March 29, 2019, with or without a transition in place.
- For now, we would expect the drama to be felt mostly in currency markets. In the event the deal goes through, a relief rally in U.K. equities, particularly for stocks with meaningful domestic exposure, would be likely given current low valuations. Until then, domestic stocks are likely to stay out of favour and we maintain our bias to stocks with international revenues.



Asia Pacific

Jay Roberts, CFA - Hong Kong

· Asian equities moved slightly lower during the week but, overall, have remained relatively steady following the sharp selloff in October, a month that capped poor performance for Asian stocks in 2018. Most markets are down more than 10% for the year.

- There were **some gains in Chinese stocks** on news that China may outline a series of concessions on trade to the U.S. We think there is no short-term solution to the problem. We believe that reports regarding trade discussions diverted attention from what is arguably the more important issue facing the Chinese economy **financial deleveraging**. As a result of this necessary policy to curb excessive growth in lending in non-standard channels, credit growth in China continues to decelerate consistently.
- **Total social financing** (TSF) is a term used to describe aggregate credit growth in China. The People's Bank of China revised the definition of TSF twice this year to include some new sources of credit growth such as local government special bond issuance (most spending takes place at the local government, not central government level) and certain asset-backed securities. Adjusting for these new items, TSF in October rose by 9.1% y/y. While this may appear high, it is the lowest ever growth rate since the TSF data series was initiated.
- In currencies, the Chinese renminbi did not weaken over USDCNY7.00 but rather held on to its recent, modest gain to 6.92. However, we forecast the currency to resume its downward trend in 2019.
- The **Japanese yen gave up some of its gains** against the dollar to USDJPY113.5. Weakness in the yen is largely positive for the Japanese equity market. We view the TOPIX index as attractive overall at this level and maintain an Overweight rating on that market.
- Chinese internet giant **Tencent** (700 HK), which operates dominant businesses in online gaming and social media in the world's largest internet market by users, in addition to having significant investment in other internet firms, announced Q3 results. This was closely watched because the company had reported a surprising miss in the prior quarter. Earnings surged 30% y/y in Q3, which was better-than-expected but also significantly impacted by a sizeable, one-time item from the IPO of Meituan (3690 HK).
- Earnings growth was propelled by online advertising profits, which rose by 47% y/y. This helped to offset relative weakness in the gaming sector, which has long been the principal driver of the stock. The gaming business is facing uncertainty due to changing regulations in China, in part to address addiction to online gaming.
- At a 9% weighting, Tencent is one of the largest stocks in the Hang Seng Index. On balance, the results were viewed positively by investors with the stock gaining 5.8% on the day. Tencent shares had more than doubled in 2017 and then declined by approximately 45% since January.



Data as of November 15, 2018

Equities (local currency)	Level	MTD	YTD	1 yr	2 yr
S&P 500	2,730.20	0.7%	2.1%	6.5%	25.2%
Dow Industrials (DJIA)	25,289.27	0.7%	2.3%	8.7%	33.6%
NASDAQ	7,259.03	-0.6%	5.2%	8.2%	37.6%
Russell 2000	1,524.12	0.8%	-0.7%	4.1%	17.0%
S&P/TSX Comp	15,144.88	0.8%	-6.6%	-4.6%	2.6%
FTSE All-Share	3,857.13	-1.2%	-8.6%	-4.6%	4.3%
STOXX Europe 600	358.43	-0.9%	-7.9%	-6.2%	5.7%
EURO STOXX 50	3,190.31	-0.2%	-9.0%	-10.0%	4.6%
Hang Seng	26,103.34	4.5%	-12.8%	-9.5%	16.9%
Shanghai Comp	2,668.17	2.5%	-19.3%	-21.6%	-16.8%
Nikkei 225	21,803.62	-0.5%	-4.2%	-1.0%	23.4%
India Sensex	35,260.54	2.4%	3.5%	7.6%	34.0%
Singapore Straits Times	3,054.53	1.2%	-10.2%	-9.3%	9.2%
Brazil Ibovespa	85,973.06	-1.7%	12.5%	21.4%	44.1%
Mexican Bolsa IPC	41,450.65	-5.7%	-16.0%	-13.1%	-7.9%
Commodities (USD)	Price	MTD	YTD	1 yr	2 yr
Gold (spot \$/oz)	1,213.32	-0.1%	-6.9%	-5.1%	-1.3%
Silver (spot \$/oz)	14.30	0.4%	-15.6%	-15.9%	-16.3%
Copper (\$/metric ton)	6,107.50	1.2%	-15.3%	-9.3%	10.4%
Oil (WTI spot/bbl)	56.46	-13.6%	-6.6%	2.0%	23.2%
Oil (Brent spot/bbl)	66.70	-11.6%	-0.3%	7.8%	42.1%
Natural Gas (\$/mmBtu)	3.92	20.1%	32.6%	27.1%	44.5%

Govt bonds (bps chg)	Yield	MTD	YTD	1 yr	2 yr
U.S. 10-Yr Tsy	3.110%	-3.3	70.5	78.8	89.1
Canada 10-Yr	2.390%	-10.4	34.5	47.8	85.4
U.K. 10-Yr	1.373%	-6.4	18.3	8.7	-0.6
Germany 10-Yr	0.360%	-2.5	-6.7	-1.6	5.2
Fixed Income (returns)	Yield	MTD	YTD	1 yr	2 yr
U.S. Aggregate	3.59%	0.2%	-2.2%	-1.9%	0.9%
U.S. Invest Grade Corp	4.29%	0.1%	-3.6%	-2.6%	2.7%
U.S. High Yield Corp	7.04%	-0.5%	0.5%	1.8%	10.9%
Currencies	Rate	MTD	YTD	1 yr	2 yr
U.S. Dollar Index	97.0550	-0.1%	5.4%	3.5%	-3.2%
CAD/USD	0.7585	-0.2%	-4.7%	-3.2%	2.0%
USD/CAD	1.3184	0.2%	4.9%	3.3%	-2.0%
EUR/USD	1.1332	0.2%	-5.6%	-3.9%	5.7%
GBP/USD	1.2780	0.1%	-5.4%	-3.0%	2.6%
AUD/USD	0.7277	2.9%	-6.8%	-4.1%	-3.7%
USD/JPY	113.6100	0.6%	0.8%	0.6%	4.0%
EUR/JPY	128.7400	0.8%	-4.8%	-3.3%	9.9%
EUR/GBP	0.8867	0.1%	-0.2%	-0.9%	3.0%
EUR/CHF	1.1405	0.0%	-2.5%	-2.1%	6.2%
USD/SGD	1.3755	-0.7%	3.0%	1.4%	-2.7%
USD/CNY	6.9392	-0.5%	6.6%	4.8%	1.2%
USD/MXN	20.2207	-0.6%	2.9%	5.0%	-0.2%
USD/BRL	3.7848	1.7%	14.4%	14.2%	10.2%

Source - Bloomberg. Note: Equity returns do not include dividends, except for the Brazilian Ibovespa. Bond yields in local currencies. Copper Index data and U.S. fixed income returns as of Wednesday's close. Dollar Index measures USD vs. six major currencies. Currency rates reflect market convention (CAD/USD is the exception). Currency returns quoted in terms of the first currency in each pairing. Data as of 8:35 pm GMT 11/15/18.

Examples of how to interpret currency data: CAD/USD 0.75 means 1 Canadian dollar will buy 0.75 U.S. dollar. CAD/USD -4.7% return means the Canadian dollar fell 4.7% vs. the U.S. dollar year to date. USD/JPY 113.61 means 1 U.S. dollar will buy 113.61 yen. USD/JPY 0.8% return means the U.S. dollar rose 0.8% against the yen year to date.

Authors

Laura Cooper – London, United Kingdom

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

Joseph Wu, CFA - Toronto, Canada

joseph.wu@rbc.com; RBC Dominion Securities Inc.

Ben Graham, CFA – Minneapolis, United States

benjamin.graham@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.mcgarrity@rbc.com; Royal Bank of Canada Investment Management (U.K.) Ltd.

Jay Roberts, CFA - Hong Kong, China

jay.roberts@rbc.com; RBC Investment Services (Asia) Limited

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: Joseph Wu and Diana Di Luca, employees of RBC Wealth Management USA's foreign affiliate RBC Dominion Securities Inc.; Frédérique Carrier, Laura Cooper, and Thomas McGarrity, employees of RBC Wealth Management USA's foreign affiliate Royal Bank of Canada Investment Management (U.K.) Limited; and Jay Roberts, an employee of RBC Investment Services (Asia) 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/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.

Distribution of Ratings - RBC Capital Markets, LLC Equity Research As of September 30, 2018							
		•	Investment Banking Services				
			Provided During	Provided During Past 12 Months			
Rating	Count	Percent	Count	Percent			
Buy [Top Pick & Outperform]	859	54.33	251	29.22			
Hold [Sector Perform]	646	40.86	125	19.35			
Sell [Underperform]	76	4.81	5	6.58			

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 (0): Expected to materially outperform sector average over 12 months. Sector Perform (SP): Returns expected to be in line with sector average over 12 months. Underperform (U): Returns expected to be materially below sector average over 12 months. Restricted (R): RBC policy precludes certain types of communications, including an investment recommendation, when RBC is acting as an advisor in certain merger or other strategic transactions and in certain other circumstances. Not Rated (NR): The rating, price targets and estimates have been removed due to applicable legal, regulatory or policy constraints which may include when RBC Capital Markets is acting in an advisory capacity involving the company.

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/ <u>DisclosureLookup.aspx?EntityID=2</u>. 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

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 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 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