# A requiem for the new era?

Monthly Perspectives // Portfolio Advice & Investment Research May 2018

Is this the end of the new era thesis? You know the one that expounds the benefits of globalization and free trade. A flat world of interconnectedness, where big data is computed to uncover our every want, where every aspect of our lives is shared online, all from the confines of our wired and alarmed homes; a safe place where we don't have to use our computers or tablets, perhaps not even our thoughts, because a robot will do most of the work for us. Soon will come a time when we won't have to drive anymore, thanks to artificial intelligence, thus providing ample time to tweet our opinions and finally figure out what blockchain is.

How will we pay for it all? That is of no concern with the new era thesis, thanks to an all-knowing omnipresent U.S. Federal Reserve (Fed). In this new world, central banks have seemingly perfected the economy: no inflation, no financial market volatility and no financial losses because, like clockwork, financial assets always go up in value. This new paradise, or paradigm at least, is compliments of a collaborative effort of central bankers in Washington DC, bureaucrats in Beijing and whiz kids in Silicon Valley.

This month, we review the first quarter of 2018 and consider this new era thesis in order to bring things back to earth. Additionally, we look to where we may be in the coming few months, how to separate the wheat from the chaff and what to do about it.

In this issue

# Who invited volatility back to the party?

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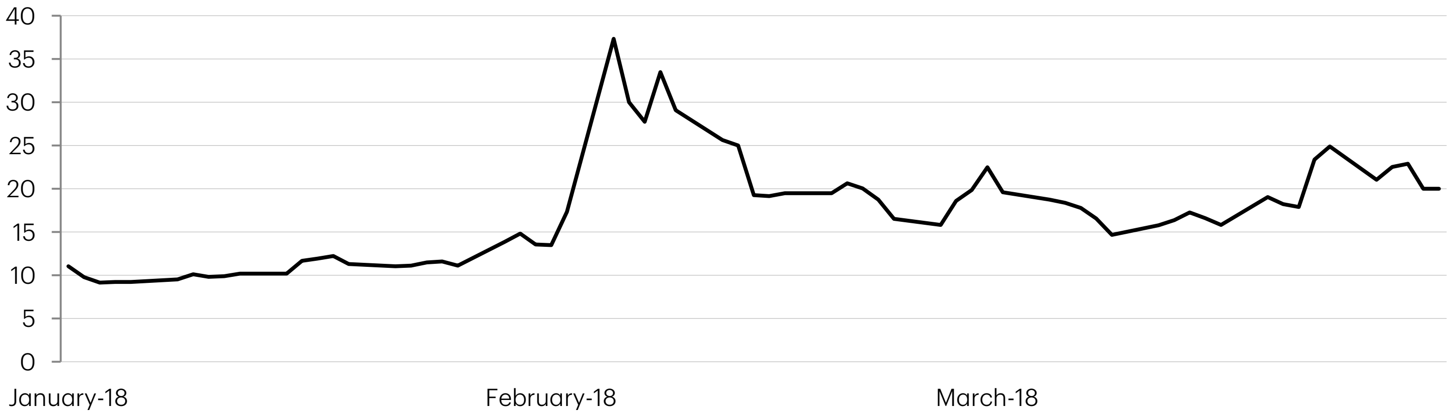
**Figure 1: CBOE Volatility Index (VIX)**




Source: FactSet as at March 31, 2018. CBOE: Chicago Board Options Exchange.

The first quarter of 2018 was all about the return to a more normal environment. After an extended period of remaining at an abnormally low level, volatility has indeed returned to the capital markets. There is little doubt that it was time for a rest in the upward momentum of steady positive equity returns, but the swift retrenchment of early February took many investors by surprise.

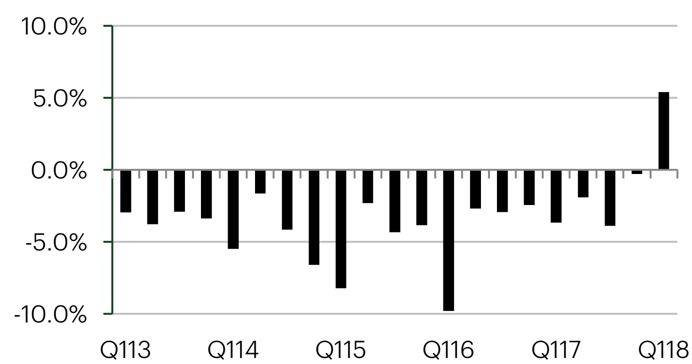
Hindsight being as wonderful as it is, it is clear in retrospect that equity markets in the U.S. had overreached. Having spent most of 2017 in an upward arc on expectations for market friendly policy, the S&P 500 Index (S&P 500) tacked on 7.55% in total return from January 2 to January 26, after the Tax Cuts and Jobs Act (the "Act") was signed into law on December 22, 2017. To be sure, the Act provided a meaningful boost to earnings estimates for both the first quarter and full year 2018. As fourth quarter earnings were announced, companies took the opportunity to provide estimates of the impact of the Act and analysts' estimates moved higher. According to FactSet, by the end of Q1/2018, the result was the largest increase in quarterly bottom-up EPS estimates (+5.4%) during a quarter since the company began tracking estimates in 2002. Earnings estimates, on average, have declined 5.5% during quarters over the last 10 years.

By the end of Q1/2018, the annual earnings growth estimate for the S&P 500 stood at +17.4%, much higher than the 10.5% growth expectation at the beginning of December. Full-year growth estimates also increased by 7.1% during the quarter. Again, this was the largest increase in the annual bottom-up estimate over the first three months of any year since 1996, when FactSet began tracking annual bottom-up estimates.

### So with all this seemingly positive news, what happened?

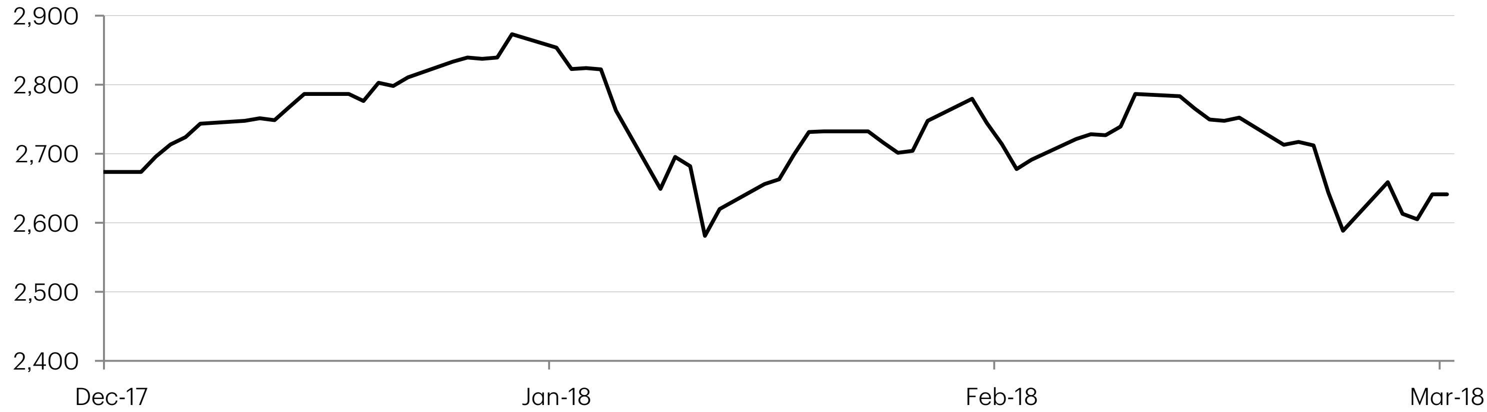
First and most importantly, the market became worried about the pace of interest rate increases. After starting January at 2673.61, the S&P 500 climbed almost 7.5% to hit a peak closing price of 2872.87 on Friday January 26. Then the S&P 500 softened by about 1.7% to close the month. On Friday February 2, the January payrolls report showed that nonfarm payrolls were 200,000 compared to an expected 175,000, and that average hourly earnings had grown by 2.9% compared to an expected 2.6%. On that day, the S&P 500 lost a little over 2.1%, and on the following Monday it suffered a further 4.1% loss. After trying to rebound for a couple of days, the losses continued with the market setting an interim closing low of 2581.00 on February 8, down over 10.1% from that closing high in just nine trading days.

**Figure 2: S&P 500 Change in Quarterly Bottom-Up EPS**




Source: FactSet as at May 11, 2018. EPS: Earnings Per Share.

**Figure 3: S&P 500 Index**




Source: FactSet as at March 31, 2018.

Over that same time frame, the famed CBOE (Chicago Board Options Exchange) Volatility Index, the VIX, climbed from 11.08 on January 26 to peak at 37.32 on February 5. Over the whole of 2017, the VIX had not been higher than 16.04. For the full quarter, the S&P 500 lost 32.7 points or 1.2%. On a total return basis, the index lost just 0.3%.

It seems that market participants become suddenly concerned about the payroll report indicating a possibility of an overheating economy and therefore the potential for inflation. Inflation would bring with it higher interest rates both from the U.S. Federal Reserve (Fed), and from the bond markets selling off and pushing longer-term yields higher. Remember that when interest rates rise, bonds become—at the margin—a more attractive alternative to equities.

Canadian equities as represented by the S&P/TSX Composite Index (S&P/TSX) fared somewhat better than the S&P 500 through the volatility, and yet ended the quarter with a greater loss. The Canadian headline index peaked on January 4 at 16,412.94. By January 26, when the S&P 500 peaked, the S&P/TSX was down (173.72 points or 1%) but had absolutely no participation in the U.S. rally. However, this was not all that strange given that the focus of that rally was the Tax Cuts and Jobs Act. The S&P/TSX bottomed the day after the S&P 500 set the interim low on February 8 at 15034.53 for a peak-to-trough loss of 8.4%. After rallying to 15714.66 in late February, the S&P/TSX closed the quarter at 15367.29 for a loss of 5.2%. On a total return basis, the Canadian index lost 2.7%.

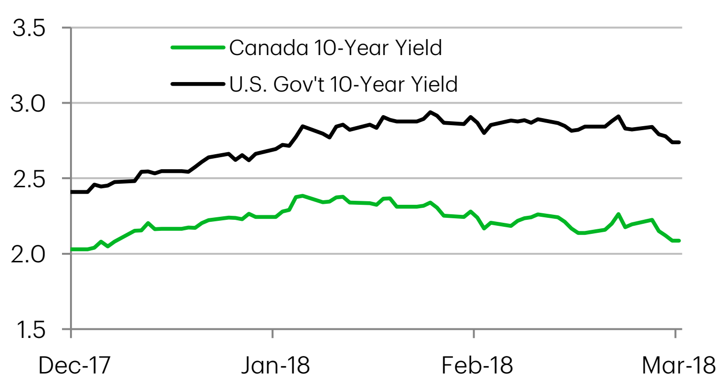
### What about fixed income markets – what did they do in the first quarter?

Interest rates moved up (i.e. bonds sold off). Over the course of Q1/2018, 10-year U.S. treasuries moved from yielding 2.41% to a peak of 2.94% and closed the quarter at 2.74%. 10-year Government of Canada bonds moved from staring the quarter at 2.03% to a peak of 2.38% and closed the quarter at 2.09%. The key difference between the two markets is the expectation around the future path for the central banks. In the United States, under new chair Jay Powell, The Fed is expected to be a touch more hawkish than the Bank of Canada, particularly given the stimulus given to the U.S. economy by the Tax Cuts and Jobs Act, which had no Canadian parallel.

**Figure 4: S&P/TSX Composite Index**


Source: FactSet as at March 31, 2018.

**Figure 5: 10-Year Yields (%)**




Source: FactSet as at March 31, 2018.

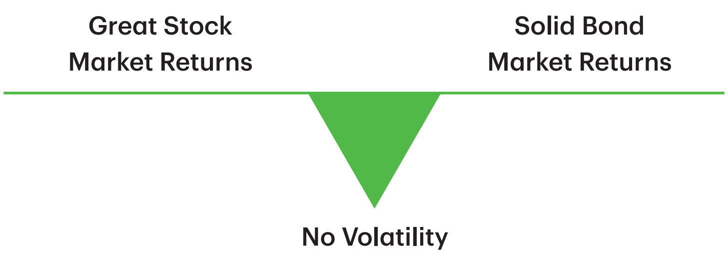
# Requiem for the new era thesis

Brad Simpson, CIM, FCSI, Chief Wealth Strategist and Head of Portfolio Advice & Investment Research

There is a Paul Simon song where he sings, "Believing I had supernatural powers I slammed into a brick wall ". So far, 2018 has felt a little bit like that. We sashayed into a new year with such promise; we had all the ingredients of a perfect economy:

- Easy credit/low interest rates
- Slow growth with no inflation
- Benevolent U.S. Federal Reserve (Fed)
- Exuberant free trade
- Fantastic FANGS (Facebook, Amazon, Netflix and Google)

Result, the perfect triumvirate:




We human beings have always gotten ahead of ourselves with this new era stuff, and as if on cue, the first quarter of 2018 sent us a reminder. First, there is the difficult reality that the Fed has begun to slowly reverse their stimulus program switching gears from ever lower interest rates and its policy of quantitative easing (QE) to quantitative tightening (QT). Both measures have a tightening effect on an economy that, while healthy, is not growing nearly as well as it has in past recoveries. There is an old investment proverb "Don't fight the fed" which means that investors would be well advised to invest in a way that aligns with current monetary policies of the Fed, rather than against it. In a low rate environment, it is less expensive for corporations to borrow money, which can be used to grow business and increase profits or they can refinance debt at lower rates, increasing profits by decreasing expenses. This usually has a positive impact on equity prices – as we have witnessed over much of the past decade. But the opposite is also true. Additionally, there is a supply and demand element at work here. When bond yields get low enough, investors look elsewhere for returns, this fact has had a significant impact on equity prices. Figure 6 highlights the fact that the yield on a 2-Year U.S. Treasury Bond is now higher than the dividend yield of the S&P 500 Index, something we have not witnessed since September 2008.

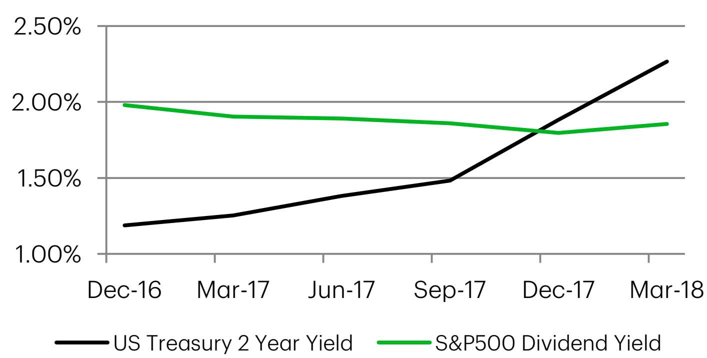
Rising interest rates also have a significant impact on bond prices as they have an inverse relationship; when rates raise bond prices decrease. Like stocks, bonds, and those invested in them, have enjoyed a profitable extended run thanks to QE.

This interest rate/bond price relationship is like a universal financial law, almost like gravity. Again, consider figure 6, over the past year, the yield of a 2-Year U.S. Treasury has moved significantly. We think this has contributed greatly to the increased downward pressure experienced by equities and bonds so far this year (figure 7).

Adding to this interest rate headwind is a changing environment for credit spreads, which is the different interest rate return offered between government bonds (little risk), investment grade bonds (more risk) and high yield bonds (even more risk). When credit spreads are narrow, as they have been for almost the past five years, returns are very good for bonds, particularly corporate ones. The risk is if and when spreads expand significantly, the opposite will be true. We think our peers over at Picton Mahoney Asset Management encapsulate this risk well in their excellent current piece "Shot across the bow":

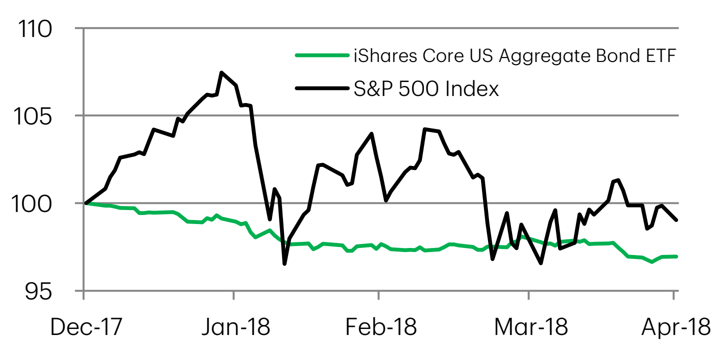
Credit market spreads are beginning to widen. This has been a very robust credit cycle, characterized by historically tight spreads, but there are risks brewing in the credit markets:

**Figure 6: Significant Crossover**




Source: Bloomberg Finance L.P., Factset. As at May 7, 2018.

**Figure 7: Prelude to Something Bigger?**



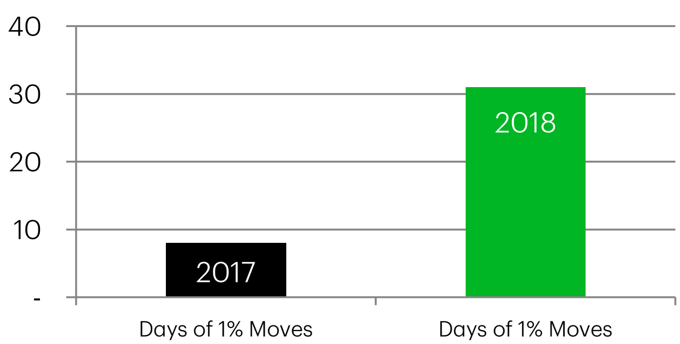

Source: Bloomberg Finance L.P., Factset. As at May 7, 2018.
Price rebased to 100; in USD.

- Investment-grade credits are trading at historically high durations, with little extra yield compensation to offset the risk of higher interest rates.
- The share of BBB-rated credit in the investment-grade universe has roughly doubled since the beginning of 2009 (it is now 50%), and new issues are increasingly light on covenants that protect investors.
- In both the high-yield and investment-grade credit markets, price discovery has been compromised by passive strategies that often pay “through the quote” to assure fast execution when flows are rolling in.

The current TD Wealth Asset Allocation Committee (WAAC) ratings for government bonds, investment grade and high yield are all neutral.

Causing further strain on the new world thesis has been the rising global trade tensions. Not so long ago, the benefits of free trade were seen as given, no more. A few weeks ago, the Trump administration announced tariffs on imported steel and aluminum and then followed this up with imposing tariffs on $50 billion of Chinese imports. Counter punching, China announced an equal $50 billion of tariffs on U.S. imports. Key issues include: asymmetric market access, alleged IP theft, forced IP transfers and China’s industrial policy. Perhaps the biggest bone of contention: The U.S. demand that China stop subsidizing the 10 high-tech industries targeted in the “Made in China 2025” program. While both sides may be acting like children in a school-yard, this is no child's play and equity markets have acted accordingly. In 2017 the S&P 500 had eight daily price moves of 1% or more, in 2018 there have already been 31 (Figure 8).

**Figure 8: The Return of Volatility**




Source: Bloomberg Finance L.P., Factset. As at May 7, 2018.

The following perspective from Capital Group, one of the world’s oldest and largest (and for my money, respected) investment management organizations, with $1.7 trillion in assets under management with offices around the globe in the Americas, Asia, Australia and Europe, is helpful:

*Trade negotiations can often be characterized by abrasive rhetoric as participants on all sides try to extract maximum benefits, and what we see unfold in the political arena over the next few months or couple of years may not be that different. While negotiations of this type are by their nature unpredictable, the outcomes need not be extremely positive or negative for one side or the other. China’s rise as an economic power and its major influence on global growth is another important aspect of the shift in the world order. The U.S. and China have economic and financial interdependencies that are deep and complex, and, in our view, will likely lead to terms of trade that are ultimately accommodating and beneficial for all parties.*

WAAC expects trade tensions to remain a market theme, and a source of volatility, for years to come. However, an outright trade war, one that could cause a recession, strikes us as an unlikely scenario.

Perhaps the biggest development so far in 2018 has been the change of tone in the technology sector. In the 1980s Barry Levinsion wrote and directed a movie called Tin Men, which in part is a story about the no holds barred tactics of door-to-door aluminum siding salespeople in the 1950s. The movie is very much about an end of an era for an industry and its crescendo is the scene when industry executives are being grilled at congressional hearings for their questionable practices. I couldn’t help thinking of this movie and the parallels as I watched Mark Zuckerberg, founder and CEO of Facebook, testifying about the company's data privacy issues before the U.S. Senate Judiciary Committee and the Committee on Commerce, Science and Transportation. For much of the past decade, technology companies have been given a free pass from investors, legislators and the general public more focused on their business promise than their business practices. Sergey Brin, Google’s co-founder and President of Google's parent company Alphabet Inc., well encapsulate the current shift some technology companies are experiencing, in his most recent note to Alphabet shareholders:

Technology companies have historically been wide-eyed and idealistic about the opportunities that their innovations create. And for the overwhelming part, the arc of history shows that these advances, including the internet and mobile devices, have created opportunities and dramatically improved the quality of life for billions of people...However, there are very legitimate and pertinent issues being raised, across the globe, about the implications and impacts of these advances... We are on a path that we must tread with deep responsibility, care, and humility.

We believe that this current environment is a speed bump in what our colleague and legendary investor, Bill Priest, CEO over at Epoch Investment Partners, refers to as the second industrial revolution in the industrial age:

- Although the impact of the Second Machine (or Digital) Age was difficult to see for the first few decades, as even exponential growth from a small base is not visible for a long time, we believe technological innovation reached an inflection point around 2007.

- The Digital Age and the transition from "atoms" to "bits" implies a capital-light economy in which technology is being substituted for labour and physical assets. This points to higher ROE—in fact, all three components should rise (profit margins, asset utilization and leverage).
- Since progress in the Digital Age is exponential rather than linear, the business world has never seen disruption at this speed and scale before: witness the dramatic transformation in industries such as newspaper, film, music, telecommunications, retail, transportation, and accommodation.
- Additionally, platforms are arguably the best business models ever created, benefiting from low marginal costs, with their distinctive asset-light nature and powerful network effects. Winner-takes-all dynamics have resulted in neo-monopoly profits for dominant firms and increased concentration in most sectors.
- Moreover, the pace of technological change continues to accelerate, suggesting we are nowhere near the late stages of this transformation.
- The ability of companies to generate free cash flows is becoming increasingly dependent on how they adapt their business models to the Digital Age. We believe companies that can consistently generate free cash flow and allocate it competently will provide investors with the best returns

Perhaps the greatest lesson from recent events is to not be solely transfixed on a handful of companies like Facebook, Apple Netflix and Google. A more prudent strategy may be to harness the impact of this transformative age on portfolios. Think of it as being more focused on the general store instead of just gold. Essentially, Mr. Priest is suggesting that the real fruits to this age are to be found with companies taking full advantage of the substitution of tech for labour and physical assets because the companies doing this across all sectors have a greater outlook for greater cash flow growth. This is particularly relevant for investors focused on dividends and income.

## Interesting times

"Interesting times" is a great icebreaker at a social function and in the current environment, it will rapidly lead to a discussion about the 4 "Ts": Trump, trade, taxes and technology*.

Amidst all this it is hard not to feel like the new era thesis came to an end. We will leave that decision to future academics that have devoted their intellectual lives to the study of periodization.

There is still compelling evidence to suggest that the genie is out of the bottle: Globalization continues, interconnectedness is alive and well, and technology will continue to have a dramatic impact on our lives. However, we have not achieved perfection. In a world that is open and complex, the only thing you can be certain of is that uncertain things will occur. Higher inflation along with significantly higher interest rates, while unlikely, are possible. Credit can restrict and spreads can widen when you least expect it. Rapid advances in technology will continue to provide ethical challenges and, despite our preference for linear returns, companies will fail, countries will teeter and volatility in financial markets will be the result.

The second quarter promises to be interesting with a number of items that capital markets will be able to fret over. On the agenda are the U.S. withdrawal from the Iranian nuclear containment deal, a meeting with North Korean dictator Kim Jung Un, the storm clouds gathering over the president's personal lawyer Michael Cohen and a possible rate hike from the Fed. Given the old saw that markets need to climb a wall of worry, this could all prove to be positive: There is plenty to worry about. May you live in interesting times indeed! In the end, the job of a money manager or advisor is not to divine the future, but to craft and manage portfolios based on clients' needs and objectives. We continue to believe that there will be a broad range of potential outcomes. The key from here is to ensure that investment portfolios are structured to meet the numerous opportunities that this environment offers, while making sure they are built with the most appropriate asset allocation and risk diversification strategies possible.

**TD Wealth Asset Allocation Committee (WAAC)**

From the perspective of WAAC, we retain our neutral mix between fixed income and equities, and continue to favour global over Canada. Throughout the year, we have been keeping a close eye on the rise in protectionism as this risk may lead to further volatility going forward. NAFTA negotiations are at a crucial juncture and the relationship between the U.S. and China will be tested at upcoming discussions. We expect trade frictions to persist for some time.

WAAC continues to believe a focus on companies at the high-end of the quality spectrum is warranted, particularly those that generate substantial free cash flow, who return that cash to shareholders through rising dividends over time. In addition, WAAC would advocate holding some cash as "dry powder" so that investors can potentially take advantage of volatility by buying high quality stocks that are oversold on trade-war news. Finally, for Canadians, WAAC continue to advocate having exposure to global markets and the U.S dollar, as we believe the Canadian dollar could depreciate if the trade situation worsens.

*Sometimes there are 5 "Ts" but Trump and Terrible are often interchangeable so for the sake of brevity I have gone with four.

# Market review

| | | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) | (%) |
|---|---|---|---|---|---|---|---|---|---|---|
| Canadian Indices ($CA) Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| S&P/TSX Composite (TR) | 52,501 | 1.82 | -1.41 | -2.78 | 3.11 | 3.87 | 7.76 | 7.45 | 4.19 | 6.14 |
| S&P/TSX Composite (PR) | 15,608 | 1.57 | -2.16 | -3.71 | 0.14 | 0.83 | 4.61 | 4.30 | 1.14 | 3.62 |
| S&P/TSX 60 (TR) | 2,508 | 1.66 | -1.66 | -3.03 | 3.33 | 4.39 | 8.54 | 8.10 | 4.11 | 6.28 |
| S&P/TSX SmallCap (TR) | 1,003 | 5.03 | -0.95 | -3.09 | 0.19 | 4.59 | 5.52 | 3.30 | 2.29 | - |
| U.S. Indices ($US) Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| S&P 500 (TR) | 5,193 | 0.38 | -5.77 | -0.38 | 13.27 | 10.57 | 12.96 | 14.86 | 9.02 | 6.42 |
| S&P 500 (PR) | 2,648 | 0.27 | -6.22 | -0.96 | 11.07 | 8.29 | 10.64 | 12.47 | 6.69 | 4.43 |
| Dow Jones Industrial (PR) | 24,163 | 0.25 | -7.60 | -2.25 | 15.39 | 10.64 | 10.24 | 11.37 | 6.54 | 5.03 |
| NASDAQ Composite (PR) | 7,066 | 0.04 | -4.66 | 2.36 | 16.84 | 12.66 | 16.25 | 17.06 | 11.34 | 6.88 |
| Russell 2000 (TR) | 7,613 | 0.86 | -1.79 | 0.78 | 11.54 | 9.64 | 11.74 | 13.82 | 9.49 | 7.39 |
| U.S. Indices ($CA) Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| S&P 500 (TR) | 6,665 | -0.07 | -1.61 | 1.92 | 6.42 | 12.71 | 18.57 | 19.17 | 11.67 | 5.85 |
| S&P 500 (PR) | 3,399 | -0.18 | -2.08 | 1.33 | 4.35 | 10.38 | 16.13 | 16.69 | 9.28 | 3.87 |
| Dow Jones Industrial (PR) | 31,014 | -0.20 | -3.52 | 0.01 | 8.41 | 12.78 | 15.72 | 15.54 | 9.13 | 4.46 |
| NASDAQ Composite (PR) | 9,070 | -0.41 | -0.45 | 4.72 | 9.78 | 14.84 | 22.02 | 21.45 | 14.05 | 6.30 |
| Russell 2000 (TR) | 9,772 | 0.41 | 2.55 | 3.11 | 4.79 | 11.76 | 17.30 | 18.08 | 12.15 | 6.81 |
| MSCI Indices ($US) Total Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| World | 8,470 | 1.21 | -4.99 | 0.05 | 13.84 | 8.16 | 9.88 | 12.24 | 6.08 | 5.77 |
| EAFE (Europe, Australasia, Far East) | 8,212 | 2.39 | -3.88 | 0.94 | 15.07 | 5.44 | 6.38 | 9.53 | 2.91 | 4.96 |
| EM (Emerging Markets) | 2,548 | -0.42 | -6.74 | 1.04 | 22.14 | 6.39 | 5.11 | 6.72 | 2.51 | 7.89 |
| MSCI Indices ($CA) Total Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| World | 10,872 | 0.76 | -0.80 | 2.36 | 6.96 | 10.25 | 15.34 | 16.45 | 8.66 | 5.20 |
| EAFE (Europe, Australasia, Far East) | 10,540 | 1.93 | 0.36 | 3.28 | 8.11 | 7.48 | 11.66 | 13.64 | 5.41 | 4.39 |
| EM (Emerging Markets) | 3,270 | -0.87 | -2.63 | 3.37 | 14.76 | 8.44 | 10.33 | 10.72 | 5.00 | 7.30 |
| Currency | Level | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| Canadian Dollar ($US/$CA) | 77.91 | 0.45 | -4.23 | -2.26 | 6.43 | -1.90 | -4.73 | - | -2.37 | 0.54 |
| Regional Indices (Native Currency) Price Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs | 20 Yrs |
| London FTSE 100 (UK) | 7,509 | 6.42 | -0.32 | -2.32 | 4.24 | 2.56 | 3.15 | 4.73 | 2.12 | 0.01 |
| Hang Seng (Hong Kong) | 30,808 | 2.38 | -6.32 | 2.97 | 25.16 | 3.07 | 6.26 | 8.06 | 1.81 | 5.59 |
| Nikkei 225 (Japan) | 22,468 | 4.72 | -2.73 | -1.30 | 17.04 | 4.80 | 10.14 | 18.17 | 4.96 | 1.83 |
| Benchmark Bond Yields | | 3 Month | | 5 Yr | | 10 Yr | | 30 Yr | | |
| Government of Canada Yields | | 1.22 | | 2.15 | | 2.33 | | 2.41 | | |
| U.S. Treasury Yields | | 1.82 | | 2.78 | | 2.94 | | 3.12 | | |

| Canadian Bond Indices ($CA) Total Return | Index | 1 Month | 3 Months | YTD | 1 Yr | 3 Yrs | 5 Yrs | Since 1/1/2012 | 10 Yrs |
|---|---|---|---|---|---|---|---|---|---|
| FTSE TMX Canada Universe Bond Index | 1,029 | -0.86 | 0.04 | -0.76 | -0.93 | 1.40 | 2.48 | 2.82 | 4.34 |
| FTSE TMX Canadian Short Term Bond Index (1-5 Yrs) | 698 | -0.07 | 0.38 | 0.15 | -0.83 | 0.79 | 1.47 | 1.68 | 2.84 |
| FTSE TMX Canadian Mid Term Bond Index (5-10 Yrs) | 1,111 | -0.82 | 0.32 | -0.81 | -2.67 | 1.20 | 2.43 | 3.07 | 4.87 |
| FTSE TMX Long Term Bond Index (10+ Yrs) | 1,670 | -2.00 | -0.64 | -2.00 | 0.04 | 2.30 | 3.82 | 4.15 | 6.40 |

Sources: TD Securities Inc., Bloomberg Finance L.P. TR: total return, PR: price return. As at April 30, 2018.

# Important information

This report is for informational purposes only and is not an offer or solicitation with respect to the purchase or sale of any investment fund, security or other product. Particular investment, trading, or tax strategies should be evaluated relative to each individual's objectives. [Graphs and charts are used for illustrative purposes only and do not reflect future values or future performance.]This document does not provide individual financial, legal, investment or tax advice. Please consult your own legal, investment and/or tax advisor.

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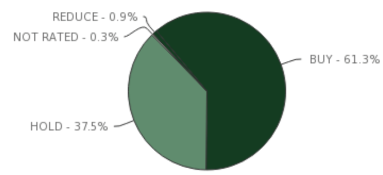
Research Ratings

Action List BUY: The stock's total return is expected to exceed a minimum of 15%, on a risk-adjusted basis, over the next 12 months and it is a top pick in the Analyst's sector.

BUY: The stock's total return is expected to exceed a minimum of 15%, on a risk-adjusted basis, over the next 12 months. SPECULATIVE BUY: The stock's total return is expected to exceed 30% over the next 12 months; however, there is material event risk associated with the investment that could result in significant loss. HOLD: The stock's total return is expected to be between 0% and 15%, on a risk-adjusted basis, over the next 12 months. TENDER: Investors are advised to tender their shares to a specific offer for the company's securities. REDUCE: The stock's total return is expected to be negative over the next 12 months.

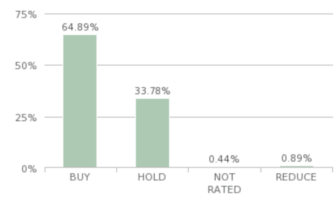
Overall Risk Rating in order of increasing risk: Low (6.8% of coverage universe), Medium (38.3%), High (45.7%), Speculative (9.2%)

**Distribution of Research Ratings**




Percentage of subject companies under each rating category—BUY (covering Action List BUY, BUY and Spec. BUY ratings), HOLD and REDUCE (covering TENDER and REDUCE ratings).
As at May 2, 2018.

**Investment Services Provided**




Percentage of subject companies within each of the three categories (BUY, HOLD and REDUCE) for which TD Securities Inc. has provided investment banking services within the last 12 months.
As at May 2, 2018.

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