



## Preferred Share ETFs: A Closer Look in Volatile Times

Preferred shares in Canada have come under considerable pressure since the beginning of October 2018 and volatility has intensified over the last month leading to outsized declines relative to other asset classes. Given the heavy ownership of preferred shares amongst a narrow list of institutions and wealth managers in Canada, the recent declines caused great concern from the Street. This interest motivated us to provide an update on the preferred share industry as it relates to ETFs through our periodic ETF Insights publication, which delves into the details of a specific market or topic related to ETFs. Volume 4 of our ETF Insights report addresses the factors leading and contributing to the decline in the preferred share market in Canada today and historically, the structural differences leading the divergence between the US and Canadian preferred share market performance, and strategies investors can implement to mitigate the increased volatility.

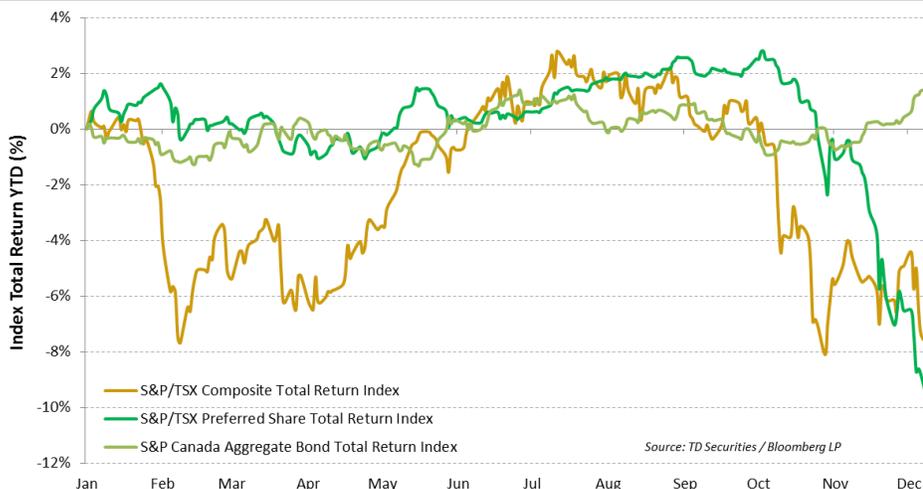
### In This Report...

- **Preferred Share Performance & Basics:** Highlights the recent performance of preferred shares relative to other assets and describes the basic nomenclature of the preferred share market.
- **History Tells Half the Story:** A look back at previous corrections and provides hints at how historic factors affecting preferred shares may be impacting the market today.
- **What Is Moving the Preferred Share Market Today:** Examines the current correction and various factors directly affecting preferred shares today.
- **Canada vs US Preferred Share Market:** With significant differences between the US & Canadian market, the impacts of those differences are very clear today and explained herein.
- **Opportunities & Mitigating Tactics:** The selloff brought new opportunities and opened up investors to various mitigating strategies.

### Preferred Shares Underperform

Since October 1<sup>st</sup> the S&P/TSX Preferred Share Total Return Index (TXPRAR Index) declined 11.6%, a significant move for an asset class often considered a hybrid between common stock and a debt instrument. In this same period the broad equity market (as measured by the S&P/TSX Composite Total Return Index) in Canada was down 7.8% and the bond market in Canada (as measured by the S&P Canada Aggregate Bond Total Return Index) was up 1.48%.

Recent Performance of the Preferred Share Market in Canada: Preferred shares have underperformed Canadian equity bond markets year-to-date.



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# ETF Insights

ETF Trading | Canada

Year to date performance for these three indices paints a similar story. As seen in Exhibit 1 below, preferred shares are now underperforming its most closely related asset classes year-to-date. One would believe that as a hybrid security, the performance of preferred shares would be somewhere in the middle if not closer to bonds, but one needs to first understand the different types of preferred shares and the Canadian preferred share market specifically to understand why they have not behaved as such for some time now.

## Preferred Share Basics

Before we hit the pavement, let's first refresh the concept of preferred shares and the main features of this security. A preferred share is a funding vehicle that falls between debt instruments and common shares in the capital structure. Preferred shares make similar periodic payments to investors similar to stock dividends and bond coupons, and are often impacted by changes in interest rates and/or the ability of the issuer to honor its required payments. As the name implies, preferred shares have preferential treatment over any payments made to investors in the form of dividends and, as such, are in demand from investors looking for high and secure dividends. As a hybrid product, the performance of the company will have an impact over its own preferred shares with respect to the company's increasing or decreasing ability to pay the required dividend. In most cases however common and preferred shares are not tightly correlated. Liquidity concerns and other influences related to market structure will also drive price moves, which will be addressed later in this report. Preferred shares also have a fixed income component that makes the attractiveness of the dividend paid vary depending on interest rates.

There are a variety of preferred share types issued in North America, and the different features offered will have a significant impact over the performance and behavior of these ETFs. In order to understand the main differences, below we touch on the most relevant features of preferred shares:

- **Fixed Rate:** Preferred shares that periodically (usually quarterly) pay a fixed dividend, usually as a percentage to par value.
- **Floating Rate:** Preferred shares that periodically (usually quarterly) pay a floating dividend tied to either

prime or a spread over three month treasury bills.

- **Fixed-Reset:** Preferred shares that usually pay a fixed dividend for the first five years, and subsequently offer optionality to the investor on whether to receive floating or fixed for the next five years.
- **Perpetual:** Preferred shares that do not have a fixed maturity date and are rather scheduled to pay dividends in perpetuity.
- **Callable:** Preferred shares give the issuer the option to buy back a preferred share issue at a specific date and price. When the specific issue is trading at a premium, the issuer may call the preferred share and then re-issue new preferred shares with a lower dividend rate.

While preferred shares will fluctuate based on several factors, they are not typically owned for capital appreciation, rather for dividend income.

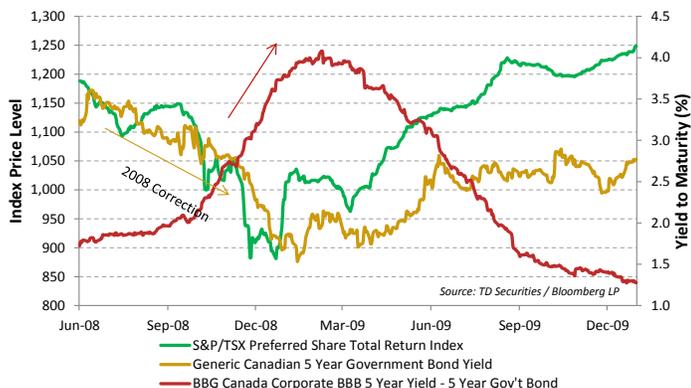
## History Tells Half the Story

There are a variety of factors that historically influenced the behavior of preferred shares in Canada. To understand which factors are moving preferred share ETFs today, it is important to first look back at previous corrections in preferred shares and examine some of the potential culprits.

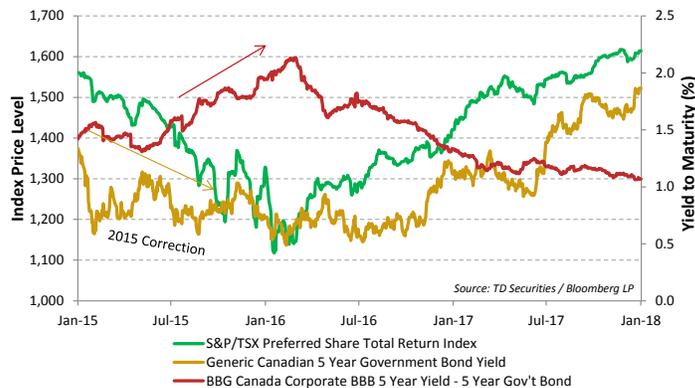
The two most recent significant corrections in preferred shares took place in 2008 and 2015 alongside the financial crisis and the Chinese stock market crash respectively. Both these corrections had some common elements including declining government bond yields, dovish central banks, increasing volatility, and widening credit spreads. Exhibits two and three plot the TXPRAR Index throughout the 2008 and 2015 corrections alongside five year credit spreads in Canada and five year government bond yields. Both corrections saw government bond yields decline (orange arrows) and credit spreads widen significantly (red arrows) while preferred shares in Canada declined. Discussions of whether the chicken or the egg came first aside, these two conditions were prevalent at the time and likely impacted the performance of preferred shares.

As a hybrid, widening credit spreads unfavorably impacted investor's confidence that issuers would delay or miss the

**Exhibit 2: The 2008 Canadian Preferred Shares Correction:**  
Declining government bond yields and widening credit spreads played a large role.



**Exhibit 3: The 2015 Canadian Preferred Shares Correction:**  
Declining government bond yields and widening credit spreads played a large role.



required dividend payments, and as such contributed to the weakness in preferred shares. It is less straight forward to draw a line between preferred shares and declining government bond yields. As a bond like product, one would believe that preferred shares would be negatively correlated to declining rates. This would be the case with fixed rate preferred shares, but the market in Canada is more heavily skewed towards fixed-resets which are less sensitive to changes in interest rates. Admittedly, the Canadian preferred market had a greater portion of fixed rate preferreds back in 2008 than currently, but fixed-reset issues dominated in 2015 onwards. The higher share of callable fixed-reset preferred shares translates into this asset class in Canada behaving more like a common stock with an upside cap when rates are rising while remaining exposed to downside when rates are declining.

Exhibit 4 provides a timeline of the preferred share issuance in Canada by notional and type. Before 2008 fixed rate preferred issuance was considerably higher as a percentage of total issuance, but after 2008 fixed-reset issuance dominated. TD's Preferred Share Trading desk notes that the reasons behind the shift were two fold, credit agencies decreased the equity treatment of retractables and OSFI no longer treated previously issued preferred shares as Tier 1 capital as they would be replaced by Non-Viable Contingent Capital (NVCC) debt instruments. Both of these events combined with lower rates fueled a frenzy of new fixed-reset preferred share issues. As a result the preferred share market was more bond like before 2008 and less bond like thereafter, which explains why preferreds were more negatively correlated to government bond yields in 2008 than 2015, and to an even lesser extent today.

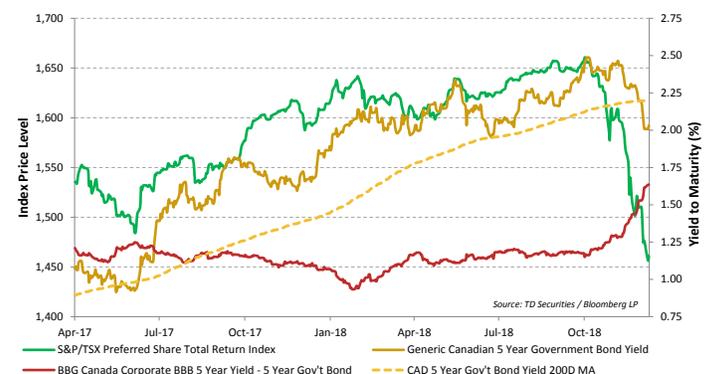
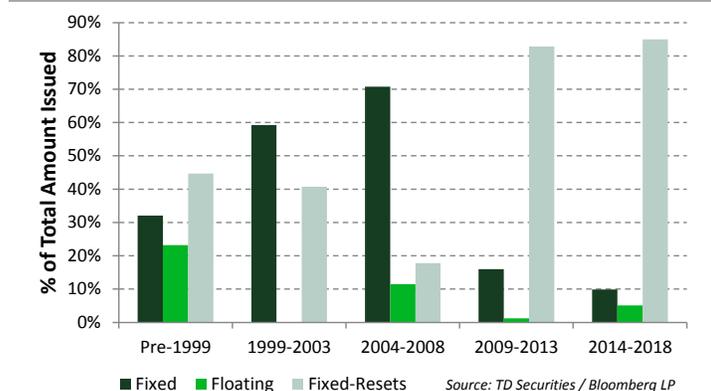
### What Is Moving the Preferred Share Market Today?

The preferred share market today has been accompanied by a recent turn lower in five year government yields and a rise in credit spreads as can be seen in Exhibit 5. Although credit spreads are not as high as they were in 2015 and 2008, the deterioration of credit in early October had a clear impact over preferred shares. It is important to also note that Canadian equity markets peaked in August and the VIXC index began its climb mid-September, well in advance of the recent correction in preferred shares. The deterioration of credit and weaker equity markets can therefore be said to have played a key role in the current decline of the preferred share market.

The recent decline in five year government of Canada bond yields drove yields below previous support levels and below the 200 day moving average. However, it is not clear whether the recent swing into a more dovish stance by the FED fueled or caused the recent decline in preferred shares. The decline in five year government bond yields looks to have started after the broad preferred share market decline. This leads us to believe that in the case of this most recent correction lower, government bond yields contributed to the decline, but did not ignite the decline.

**Exhibit 4: Composition of New Preferred Share Issues over Time: Fixed preferred shares have become less popular in the last decade.**

**Exhibit 5: Preferred Market Selloff Leaders – Widening credit spreads led the decline and government bond yields followed suit.**



The preferred market correction in 2015 also had very different market dynamics that we are not seeing today. With government bond yields approaching zero and concerns of negative rates, many investors held preferred shares without reset floors, which hurt these preferred shares as they reset at much lower rates. Following the 2015 correction many new issues contained a reset floor (not banks), which caps some of the downside in a declining rate environment and leads preferred shares to behave differently in such an environment.

These two factors alone do not fully explain the magnitude of the recent correction in preferred shares and ETFs. The current preferred market has a variety of new factors that we believe also significantly contributed to the timing, volatility and veracity of the move, all of which we explore below:

- A. **Institutionalization of The Preferred Share Market:** Over the last decade and to a higher degree after 2015 institutional client interest in the preferred share market increased dramatically. New issues used to be dominated by individual investors, but in 2015 large institutions requiring large tickets and allocations began to play a larger role. Large reset spreads and yields in a declining rates environment enticed many new taxable institutions and most recently ETF manufacturers into the space. Institutions continue to play a significant role, but a more modest role today. The larger the allocations, the larger the influence of one investor over a single issue and/or the broad preferred share market.

Institutions have also popularized the use of program trading when executing orders for their portfolios to improve efficiencies, but such programs can also have significant impact over markets that are not liquid such as the preferred share market. The indiscriminate use of such programs may at times put undue pressure over the broad market.

**B. Growth of Preferred Share ETFs:** Preferred share ETFs in Canada have grown at a stunning pace, and now represent 4.7% of total ETF AUM in Canada and 9.4% of the total preferred share market in Canada. These numbers are lower in the US where preferred shares ETFs represent <1% of total ETF AUM and 8.4% of the total US preferred share publicly traded market. In addition, ETFs being the more public and more actively traded cousin of the mutual fund, will naturally be more in the spotlight when it comes to its flows.

Market makers are generally buyers of preferred shares with creations and sellers with redemptions. Market makers are tasked with executing ETF orders in an orderly fashion, but also need to balance orderly execution with managing risk in a timely manner. This tight balance often puts pressure on the illiquid preferred share market both on up and down days.

Although ETFs are easy targets, recent ETF flows in Canada paint a slightly more modest picture with regards to their impact over preferred shares themselves. Despite the preferred share decline beginning early in October, ETFs continued to inflow assets well into October and not until late November did preferred ETF flows turn net negative. Admittedly, there were a couple large outflow days led by passive ETFs, but outflows have been fairly small in size and have been executed in an orderly fashion.

spot of the underlying preferred share ETF relative to the strikes of the long digital calls and the buffer put. Most importantly, despite the initial growth of the notes market on preferred share ETFs, the total market size is now relatively small, and many of these notes have either been called away, or the gamma profile is small enough that there is limited hedging impact with the underlying preferred share market. Market makers would have the most impact on the initial delta hedge of the note, but given the declining notional outstanding it's safe to say that the impact is limited.

**D. Tax Loss Selling:** Timing is everything in capital markets, and preferred shares are no different. The timing of the selloff near the end of the year allowed many money managers to use preferred shares and ETFs for tax loss selling purposes. This indiscriminate selling of preferred shares and ETFs without any fundamental backing often leads to dislocations in the market and undue pressure over the preferred share market. However, tax loss selling tends to subside towards the end of December as investors go on holidays, often leading to a relief rally at the end of December.

**E. Risk Adverse Dealers:** The degradation of credit and weakness of equity markets in Canada translated into preferred share market maker balance sheets becoming slightly more conservative.

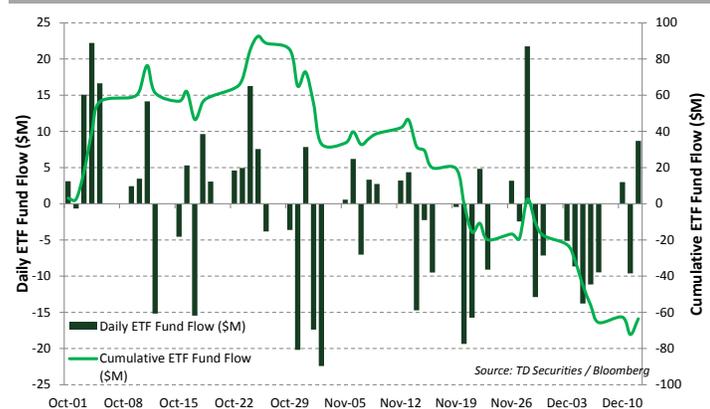
**F. Relative Yield:** Declining rates put preferred shares under the comparative limelight, as the dividend yield of common shares and the fixed coupon of the higher rated bonds became more attractive to investors.

Although widening credit spreads and continued weakness in capital markets initially led the slowdown in the preferred share market in Canada, the combination of the aforementioned factors and a turn towards a more dovish stance with declining government bond yields have taken hold of a fairly illiquid market and bullied it lower faster and with a greater magnitude than can probably be justified by fundamentals. The illiquidity and inefficiency of the preferred share market in Canada can both be a blessing and a drag on this asset class. It provides portfolio manager with opportunities to purchase undervalued and sell overvalued securities. However, the same liquidity factor allows the combination of program trades, ETF outflows, tax loss selling, to negatively impact the preferred share market in times of distress. Once the fundamentals of the preferred share market took a turn lower, the aforementioned factors dragged preferred shares lower beyond what would be expected by fundamentals.

**Canada vs US Preferred Share Market**

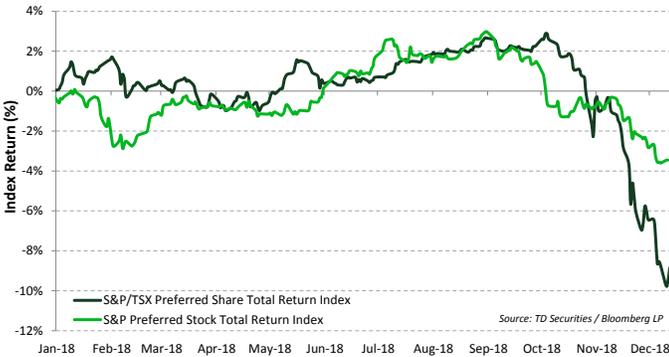
The recent divergence in the Canadian preferred market relative to the US preferred market attracted significant attention from investors. Since the beginning of October, the S&P/TSX Preferred Share Total Return Index underperformed the US S&P Preferred Stock Total Return Index by almost 7% while government 5-year yields have largely moved in lockstep. While thinner liquidity in the Canadian market may exacerbate volatility in Canada, much of the difference in performance can also be explained by structural differences between the markets as examined below:

**Exhibit 6: Canadian Preferred ETF Fund Flows – Canadian redemptions did not initially instigate selling in the underlying preferred share market.**



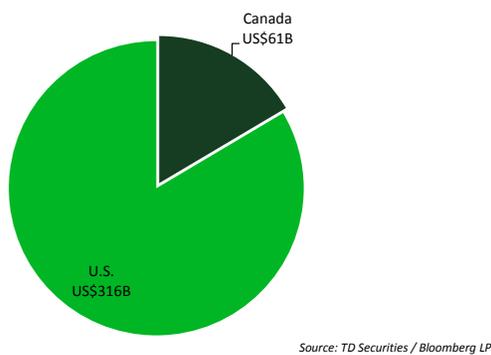
**C. Growth of Structured Notes on Preferred Share ETFs:** The success, liquidity and ease of use of preferred share ETFs resulted in growth in structured notes on preferred share ETFs. The most popular ETF notes issued in the Canadian market are step-up autocallables, which has long call optionality within its structure. For hedging purposes, market makers will switch between being long or short gamma positions depending on the path of the stock and the

**Exhibit 7: Canadian vs US Preferred Share Market Performance – The Canadian preferred share market has underperformed considerably lately.**



The Canadian publicly-issued preferred shares market is fairly small with only ~USD\$61B outstanding. This is only a fraction of the US market which currently has ~USD\$316B outstanding and publicly traded, or roughly 5.2x the Canadian market (although much smaller than the 12x ratio between equity markets). Given the gap in sheer size of the overall market and the average issuance size, the Canadian preferreds market is relatively more limited in liquidity and share price performance tends to be more susceptible to fund flows.

**Exhibit 8: Size of Preferred Share Market in North America – The US Preferred Share market dominates the Canadian market.**



In addition, we highlight the differences in composition of the two markets in Exhibit 9 & 10 below.

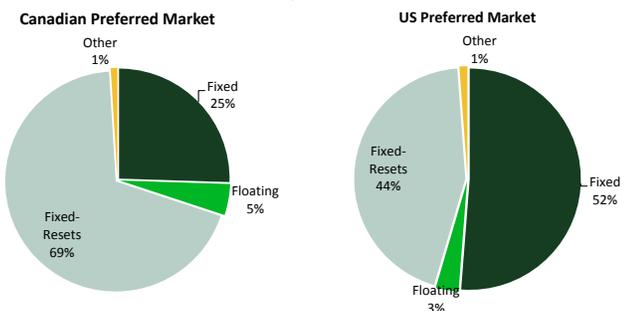
The majority of the Canadian preferred share market is comprised of fixed-resets, with 69% of the market value classified as such. Conversely, the US market is largely dominated by fixed rate preferred shares (approximately 52% of the market value). This structural difference can result in a marked divergence in performance as dividends are re-adjusted periodically for fixed-reset preferreds (generally based on government bond yields plus a predetermined spread at the reset date), while fixed rate preferreds have stable dividends and are structured more like traditional bonds.

In a rising rate environment, fixed-resets are generally more attractive relative to fixed rate preferreds as prices bake in expectations for higher dividends at the next reset date, while fixed rate preferreds have dividends locked in at lower rates. The opposite is true in a falling rate environment, where fixed preferreds with dividends locked in at higher rates are more attractive relative to fixed resets which are expected to reset at lower rates. The Canadian preferred market, with a significantly higher proportion of fixed-resets relative to the US, would reasonably be expected to underperform in periods of rapid deterioration as we have experienced recently and outperform in periods of rising rates.

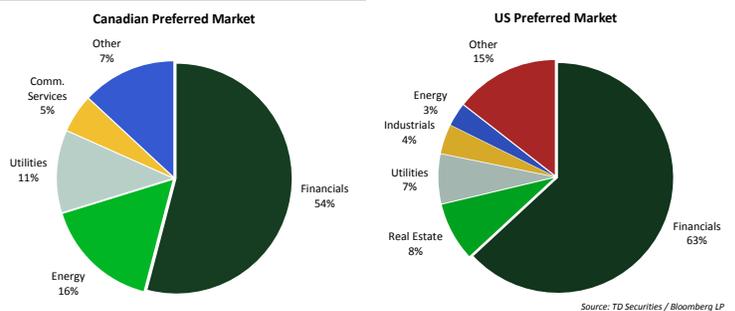
The Canadian and US preferred share markets also have key distinctions in their composition. Although financials are by far the most common issuers of preferred shares in both countries, the Canadian preferred market has a higher concentration in a few sectors. Most notably, 16% of preferred shares in Canada by notional were issued by energy companies compared to 3% in the US. The weakness in the Canadian energy sector since mid-2018 weighed over the Canadian preferred share market as a result.

Another consideration is the impact of changes in credit spreads. The recent widening of credit spreads impacted preferred share prices negatively across the board. However, for fixed rate preferreds the impact is somewhat offset by the positive impact from lower interest rates as discussed above. At the same time, pricing for fixed-resets is negatively impacted both by lower rates and higher credit spreads. As such, during periods when credit spreads are widening very quickly due to bearish market sentiment we would expect fixed-resets to be more volatile than fixed rate preferreds. This is reflected in Exhibit 11 as the Canadian preferreds market, which consists of a higher proportion of resets, spiked in volatility recently and also back in late 2015.

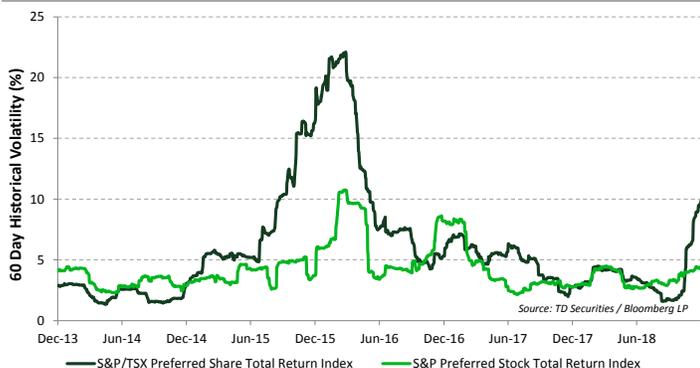
**Exhibit 9: Preferred Notional Composition of US & Canadian Public Markets: Fixed-resets dominate in Canada and fixed rate in the US.**



**Exhibit 10: Preferred Share Public Notional Issued by Sectors: The majority of preferred shares are issued by Financials companies.**



**Exhibit 11: Historical Volatility – The S&P TSX Preferred Total Return Index has recently spiked in volatility relative to its U.S. counterpart.**



**What Should Investor Do?**

Owning preferred shares continues to be a viable strategy for earning outsized yields and positioning for long-term rising interest rates. However, investors must digest the reasons for the recent moves in the space and make informed decisions on how to best navigate through a potentially volatile future.

Given an understanding of the various factors that are impacting the preferred share market, below are a few strategies for the current preferred share market:

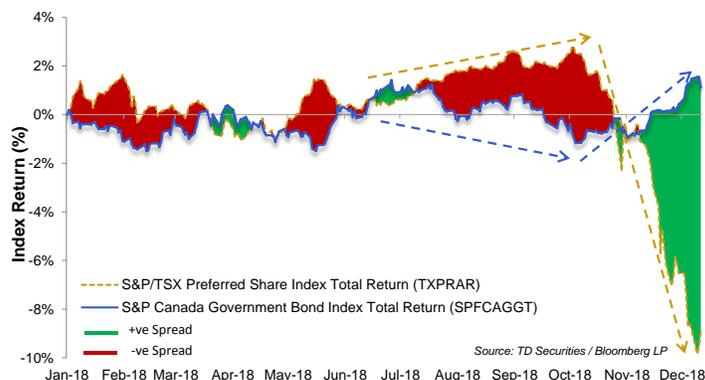
**Buy / Hold Single Preferred Shares That May Be Fundamentally Undervalued:** The preferred share market is demonstrating a deterioration of its connection between price action and fundamentals. Similar to ETFs, preferreds demonstrate equity-like behaviour by trading on equity exchanges but are closer in nature to a fair value instrument like bonds. Preferreds offer yields that may be measured against comparable bonds or benchmarks in order to gauge the premium earned for duration and credit risk. Being lower on the capital structure than bonds, preferred shares should naturally trade at a higher yield. However when preferreds trade at spreads significantly wider than normal on bonds from the same issuer, investors should consider being long-term holders of these fundamentally undervalued securities. Market action driven by program trading and flows coupled with a smaller institutional investor base compared to other asset classes causes these fundamental dislocations to be more frequent, which active managers can identify opportunistically. A declining correlation between interest rates and perpetual preferred shares highlights this observation, creating opportunities for buy-and-hold investors investing for the long-term.

**Consider US Preferred Share ETFs to Reduce Volatility:** Investors that wish to participate in the preferred share market but want to consider a potentially lower volatility option could weigh the merits of US preferred shares and related ETFs. As mentioned, the US preferred share market is composed of mainly fixed rate perpetuals that are closer to traditional bonds than rate resets. Similar to bonds, these fixed-rate products tend to benefit when rates fall. When markets are declining, widening credit spreads are offset by falling interest rates. While US preferreds decline in line with deteriorating credit, their performance is

cushioned by gains from lower rates. US preferred share ETFs could provide holders with heightened yield participation at a volatility level more palpable for conservative investors. The natural hedging effect of falling rates offsetting wider credit spreads resulted in many US preferred share funds trading with lower volatility than US government bond funds, an observation that may be compelling for the risk-averse. It is important to note that as a holder of US securities, Canadian investors could face dividend withhold taxes.

**Pair CAD Preferred Shares ETFs with Government Bond ETFs to Reduce Credit and Interest Rate Risk:** The upside potential of Canadian preferred shares may be particularly attractive if some of the risks affecting the asset class could be mitigated. One portfolio strategy is to pair a CAD preferred share ETF with a long-term government bond ETF. While rate reset preferreds decline when interest rates fall, a long government bond position will appreciate and hedge against the loss. Holding a mix of preferred shares and government bonds also reduces the portfolio's total credit exposure and suppresses volatility associated with widening credit spreads. The correlation between long government bonds and Canadian preferred share ETFs have been increasingly negative, demonstrating the magnitude of the diversification opportunity possible through holding both products.

**Exhibit 12: Canadian Government Bonds ETFs Serve as Natural Offsets to Preferred Share ETFs**



**Conclusion**

The enormous pressure Canadian Preferred shares and ETFs have come under started with weakness in equity markets and widening credit spreads and was exacerbated by declining government bond yields. A variety of factors have contributed to the veracity of the decline. The magnitude of this move presents investors with an opportunity to buy undervalued preferred securities or ETFs that are able to take advantage of such dislocations, to look south of the border for lower risk yield through ETFs on US preferred shares, or to complement an existing preferred share ETF position with long-term government bonds that offset some of the risk of declining rates. Despite the structural factors playing a role in the volatility of the market and the relative illiquidity of the preferred share market in Canada, ETFs will continue to facilitate investments in the preferred share space through ease of use, tradability and transparency.



# ETF Insights

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## Appendix A. List of Canadian Preferred Share ETFs

| Canadian Preferred Share ETFs |   |                  |               |               |                    |           |
|-------------------------------|---|------------------|---------------|---------------|--------------------|-----------|
| Ticker                        | Name  | AUM (CAD)        | Strategy      | Geo Focus     | Management Fee (%) | Inception |
| ZPR                           | BMO Laddered Preferred Share Index ETF                              | \$ 1,797,082,122 | Indexing      | Canada        | 0.45%              | Nov-2012  |
| HPR                           | Horizons Active Preferred Share ETF                                 | \$ 1,538,220,148 | Discretionary | Canada        | 0.55%              | Nov-2010  |
| CPD                           | iShares S&P/TSX Canadian Preferred Share Index ETF                  | \$ 1,434,112,100 | Indexing      | Canada        | 0.45%              | Apr-2007  |
| RPF                           | RBC Canadian Preferred Share ETF                                    | \$ 851,652,158   | Discretionary | Canada        | 0.53%              | Sep-2016  |
| DXP                           | Dynamic Ishares Active Preferred Shares ETF                         | \$ 516,262,615   | Discretionary | Canada        | 0.58%              | Jan-2017  |
| XPF                           | iShares S&P/TSX North American Preferred Stock Index ETF CAD-Hedged | \$ 212,324,405   | Indexing      | North America | 0.45%              | Nov-2010  |
| DIVS                          | Evolve Active Canadian Preferred Share ETF                          | \$ 202,092,425   | Discretionary | Canada        | 0.65%              | Sep-2017  |
| PPS                           | Invesco Canadian Preferred Share Index                              | \$ 181,360,716   | Indexing      | Canada        | 0.45%              | Jun-2011  |
| HFP                           | Horizons Active Floating Rate Preferred Share ETF                   | \$ 132,929,335   | Discretionary | Canada        | 0.55%              | Oct-2013  |
| RPS                           | Purpose Canadian Preferred Share Fund                               | \$ 113,282,268   | Discretionary | Canada        | 0.75%              | Mar-2017  |
| PR                            | Lysander-Slater Preferred Share Active ETF                          | \$ 98,627,086    | Discretionary | Canada        | 0.65%              | Aug-2015  |
| ZUP                           | BMO US Preferred Share Index ETF                                    | \$ 69,831,335    | Indexing      | US            | 0.45%              | Feb-2017  |
| FPR                           | First Asset Preferred Share ETF                                     | \$ 64,946,325    | Indexing      | North America | 0.65%              | May-2016  |
| RPU                           | Purpose US Preferred Share Fund                                     | \$ 61,797,110    | Discretionary | US            | 0.80%              | Mar-2017  |
| TPRF                          | TD Active Preferred Share ETF                                       | \$ 20,938,970    | Discretionary | Canada        | 0.45%              | Nov-2018  |
| ZHP                           | BMO US Preferred Share Hedged to CAD Index ETF                      | \$ 11,240,324    | Indexing      | US            | 0.45%              | Feb-2017  |
| ZUP.U                         | BMO US Preferred Share Index ETF                                    | \$ 9,215,800     | Indexing      | US            | 0.45%              | Feb-2017  |
| DCP                           | Desjardins Canadian Preferred Share ETF                             | \$ 9,138,700     | Indexing      | Canada        | 0.45%              | Apr-2017  |
| RPU.B                         | Purpose US Preferred Share Fund                                     | \$ 6,582,804     | Discretionary | US            | 0.80%              | Mar-2017  |
| RPU.U                         | Purpose US Preferred Share Fund                                     | \$ 4,930,570     | Discretionary | US            | 0.80%              | Jul-2017  |
| BPRF                          | Brompton Flaherty & Crumrine Investment Grade Preferred ETF         | \$ 972,000       | Discretionary | US            | 0.75%              | Oct-2018  |

## Appendix B. List of US Preferred Share ETFs

| US Preferred Share ETFs |   |                   |               |               |                    |           |
|-------------------------|---|-------------------|---------------|---------------|--------------------|-----------|
| Ticker                  | Name  | AUM (USD)         | Strategy      | Geo Focus     | Management Fee (%) | Inception |
| PFF                     | iShares U.S. Preferred Stock ETF                              | \$ 14,094,650,000 | Indexing      | US            | 0.46%              | Mar-2007  |
| PGX                     | Invesco Preferred ETF   | \$ 4,523,995,000  | Indexing      | US            | 0.50%              | Jan-2008  |
| FPE                     | First Trust Preferred Securities and Income ETF               | \$ 3,197,759,000  | Discretionary | Global        | 0.85%              | Feb-2013  |
| VRP                     | Invesco Variable Rate Preferred ETF                           | \$ 1,585,040,000  | Indexing      | US            | 0.50%              | May-2014  |
| PGF                     | Invesco Financial Preferred ETF                               | \$ 1,442,391,000  | Indexing      | US            | 0.50%              | Dec-2006  |
| PSK                     | SPDR Wells Fargo Preferred Stock ETF                          | \$ 594,820,200    | Indexing      | US            | 0.45%              | Sep-2009  |
| PFXF                    | VanEck Vectors Preferred Securities ex Financials ETF         | \$ 504,348,500    | Indexing      | US            | 0.40%              | Jul-2012  |
| SPFF                    | Global X SuperIncome™ Preferred ETF                           | \$ 178,338,700    | Indexing      | North America | 0.58%              | Jul-2012  |
| PFFD                    | Global X U.S. Preferred ETF                                   | \$ 174,575,100    | Indexing      | US            | 0.23%              | Sep-2017  |
| FPEI                    | First Trust Institutional Preferred Securities and Income ETF | \$ 101,468,200    | Discretionary | Global        | 0.85%              | Aug-2017  |
| IPFF                    | iShares International Preferred Stock ETF                     | \$ 50,817,850     | Indexing      | Global        | 0.55%              | Nov-2011  |
| PREF                    | Principal Spectrum Preferred Securities Active ETF            | \$ 49,764,300     | Discretionary | Global        | 0.55%              | Jul-2017  |
| EPRF                    | Innovator S&P Investment Grade Preferred ETF                  | \$ 15,167,570     | Indexing      | US            | 0.47%              | May-2016  |
| PFFA                    | Virtus InfraCap U.S. Preferred Stock ETF                      | \$ 10,224,940     | Discretionary | US            | 0.80%              | May-2018  |

## Appendix C. Largest Publicly-Traded Canadian and U.S. Preferred Share Issuances

| Issuer        | Dividend Rate | Issue Date | Market Value<br>(USD \$mm) | Dividend Type | Sector      |
|---------------|---------------|------------|----------------------------|---------------|-------------|
| <b>Canada</b> |               |            |                            |               |             |
| POW CN        | 6.10          | 2/22/2007  | \$1,131                    | Fixed-Reset   | Financials  |
| TD CN         | 4.85          | 9/8/2016   | \$760                      | Fixed-Reset   | Financials  |
| TRP CN        | 4.90          | 11/21/2016 | \$744                      | Fixed-Reset   | Energy      |
| RY CN         | 5.50          | 3/7/2016   | \$580                      | Fixed-Reset   | Financials  |
| CM CN         | 4.40          | 6/2/2017   | \$573                      | Fixed-Reset   | Financials  |
| ENB CN        | 5.15          | 11/23/2016 | \$557                      | Fixed-Reset   | Energy      |
| RY CN         | 5.50          | 12/16/2015 | \$552                      | Fixed-Reset   | Financials  |
| TD CN         | 5.50          | 1/14/2016  | \$544                      | Fixed-Reset   | Financials  |
| BMO CN        | 4.85          | 10/21/2016 | \$460                      | Fixed-Reset   | Financials  |
| ENB CN        | 6.38          | 4/12/2018  | \$448                      | Fixed-Reset   | Energy      |
| <b>US</b>     |               |            |                            |               |             |
| BAC US        | 7.25          | 1/29/2008  | \$8,745                    | Fixed         | Financials  |
| JPM US        | 5.99          | 4/23/2008  | \$5,995                    | Fixed-Reset   | Financials  |
| WFC US        | 7.50          | 4/17/2008  | \$5,075                    | Fixed         | Financials  |
| GE US         | 5.00          | 1/20/2016  | \$4,527                    | Fixed-Reset   | Industrials |
| WFC US        | 6.56          | 2/8/2008   | \$3,513                    | Fixed-Reset   | Financials  |
| UEP US        | 5.50          | 4/24/2002  | \$3,353                    | Fixed         | Utilities   |
| BDX US        | 6.13          | 5/16/2017  | \$2,945                    | Fixed         | Health Care |
| ALLY US       | 8.40          | 3/7/2011   | \$2,703                    | Fixed-Reset   | Financials  |
| JPM US        | 5.00          | 6/9/2014   | \$2,478                    | Fixed-Reset   | Financials  |
| C US          | 8.89          | 10/5/2010  | \$2,362                    | Fixed-Reset   | Financials  |

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