

December and Full Year 2017 – Breaking Records like a Broken Record

- *Canadian ETFs smashed previous records with inflows of \$26 billion in 2017*
- *A record number of new providers (11 in total) also entered the ETF marketplace this year*
- *Another record: 169 new products launched in 2017, including unique themes and innovative quant strategies*
- *In this report we review some key trends, including regulatory changes and active ETF growth*

2017 Year in Review

ETFs in Canada finished the year with \$26 billion in flows, a 56% increase over the previous annual record set in 2016 (*Chart 1*). Economic expansion across the globe laid the groundwork for record-breaking asset flows and benchmark returns. A global stock market rally combined with low volatility offered a tailwind for investors who flocked to ETFs to access different corners of the market. Coupled with broad-based market increases, this banner year of inflows brought total assets in Canada to \$147 billion (*Chart 2*). Below we highlight some key trends and moments from an eventful 2017:

- **Record breaking year:** Canadian ETFs broke the record set in 2016 with a whopping \$26 billion dollars of inflows, the highest ever in Canadian ETF history.
- **Record number of new ETFs:** 169 product launches from 24 providers made year 2017 a very active year for new ETFs. This represents a 70% increase in new ETF launches compared with last year. In terms of fund flows, new ETFs contributed a significant 22% to annual flows while existing products took up the remaining 78%.

Chart 1: Canadian ETF Flows by Year

Source: National Bank Financial, Bloomberg

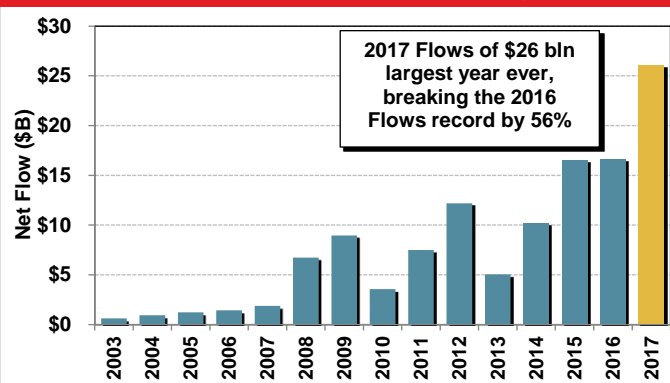
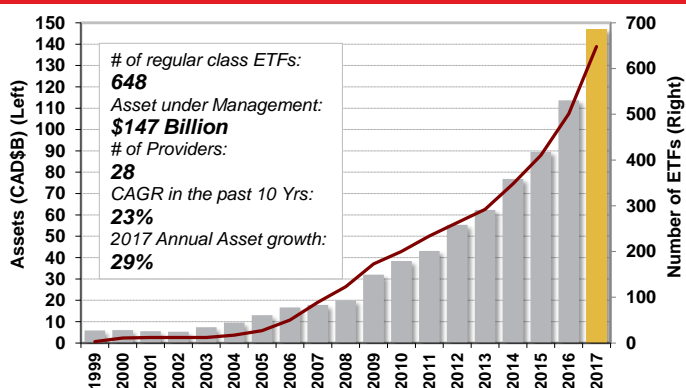


Chart 2: Canadian ETF Growth Highlights

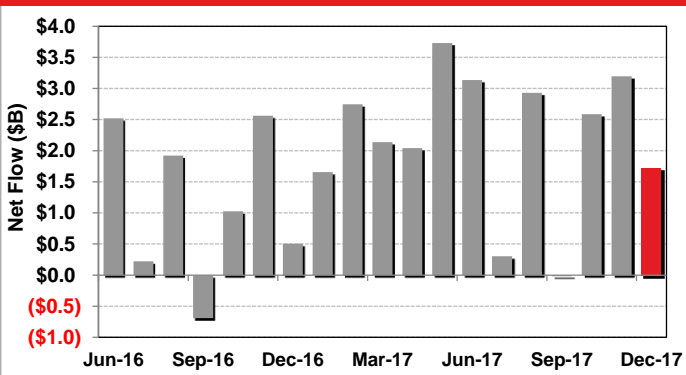
Source: NBF, Bloomberg



- **Product innovation ongoing:** Though the lion's share of flows went to index-tracking, broad-based products, the Canadian ETF market saw a surge of innovation in 2017. For example, Horizons launched the Marijuana Life Sciences ETF (**HMMJ**) in April 2017, and before the year ended, it crossed \$500 million in AUM. Horizons also launched an Active A.I. Global Equity ETF (**MIND**), with a portfolio of ETFs selected by artificial intelligence technology. New provider Evolve Funds and incumbent provider Purpose both filed prospectuses for Bitcoin ETFs that plan to obtain exposure to the cryptocurrency's performance through CBOE Bitcoin futures. The Canadian ETF landscape was bubbling with activity in the form of new thematic ETFs, multi-factor ETFs, actively-managed ETFs and asset allocation ETFs, all launched in 2017.

Chart 3: Canadian ETF Flows by Month

Source: National Bank Financial, Bloomberg



- **Passive is steady as she goes:** passively-managed ETFs represent the majority of Canadian ETF assets. 73% of total Equity ETF assets are cap-weighted index-tracking ETFs; in 2017, a proportionate 72% of the flows went to these types of ETFs, speaking to their importance as fundamental portfolio building blocks (*Table 1*). A deepening attitude of cost consciousness is driving these passive flows, as we see some evidence of rotations from cheap ETFs (*XIU*) to even cheaper (*XIC*, *ZCN*, *HXT*, *VCN*) providing very similar exposure. Another prime example of this trend would be the nearly \$1 billion of flows to *XUU*, a relatively new broad/multi-cap U.S. equity ETF that charges only 7 bps.
- **Strategic ETFs Gaining traction:** we define strategic ETFs as those that track an index with alternative ways of screening or weighting underlying securities other than market cap, and these ETFs take up 16% of total Equity ETF assets. They accounted for 18% of total Equity ETF flows in 2017, roughly on par with their asset percentage (16%). Dividend themed, Low Volatility and Multi-Factor strategies attracted the majority of these flows.
- **Active Strategies re-emerged as a market darling in 2017:** Active ETFs have a long history in Canada, but in 2017 we saw renewed activity in this space, especially on the Fixed Income side (*Table 2*). Among fixed income ETFs, active products captured 41% of the inflows, considerably above their 19% share of total Fixed Income ETF assets. Major contributors were new active bond funds from PIMCO (*PMIF*), Active Pref ETFs from RBC (*RPF*), Horizons (*HPR*) and Dynamic/iShares (*DXP*) and First Asset's Investment Grade Corp. ETF (*FIG*) managed by Marret Asset Management. The increasing popularity of this category speaks to the conviction shared by Canadian investors that there might be a place for active management among opaque and difficult-to-access asset classes.
- **Industry consolidation:** In 2017 a record number of new providers came to the market (see "*Flows by Provider*" below), but we also saw some signs of industry consolidation. In November, Evolve Funds announced acquisition of Sphere's ETFs with the changes expected to be implemented in January 2018. Additionally, WisdomTree Canada acquired the Questrade ETFs, and the deal was finalized in December 2017.
- **Regulatory changes:** 2017 was the first full year under new rules for increased disclosure on advisor compensation (CRM 2). Many industry observers have been expecting these changes to raise cost awareness among the retail investor community, which could be an explanation for even more assets flocking to the ETF space. In addition, Canadian Security Administrators mandated ETF providers to start including increased risk and liquidity disclosures on their fund fact sheets in 2017. See our industry note on the topic here: [link](#).

Table 1 - 2017 Single Long Equity ETF Flows and Asset Sorted by 2017 Flows

	Return (%)	Flow (\$M)	% Flow (%)	Assets (\$M)
Cap-weighted passively-managed		72%	19	73%
ZCN - BMO S&P/TSX Composite	9.08	\$1,295	74	\$3,170
XIC - iShares S&P/TSX Composite	9.08	\$1,207	44	\$4,189
XUU - iShares U.S. Total Market	12.54	\$964	1216	\$1,123
XEF - iShares MSCI EAFE IMI	17.74	\$702	96	\$1,577
ZEA - BMO MSCI EAFE ETF	17.16	\$699	62	\$2,023
Rules-based Strategic		18%	22	16%
RWW/B - First Asset World Low Risk	8.66	\$282	NA	\$518
FLUS - Franklin Libertyqt U.S. Equity	NA	\$200	NA	\$216
PDC - PowerShares CDN Dividend	10.61	\$158	147	\$277
MKC - Mackenzie Max Diversify CA	8.74	\$127	850	\$148
MULC/B - Manulife Multifactor U.S.	NA	\$119	NA	\$124
Actively-managed		10%	16	11%
RID - RBC Quant EAFE Dividend	10.57	\$178	69	\$461
ZDI - BMO International Dividend	15.24	\$165	103	\$343
ZDV - BMO Canadian Dividend ETF	7.73	\$147	21	\$881
QUS - AGFiQ Enhanced Core U.S.	NA	\$134	NA	\$140
ZLE - BMO Low Vol Emerging Mkt	14.86	\$123	1043	\$138
Total Equity ETF Flows (\$M)		\$13,078	19	\$88,126

the % numbers in grey are % of total Equity ETF Flows or Asset for each category

Only top five ETFs are displayed; Total Returns are NAV-based; Source: NBF, Bloomberg

Table 2 - 2017 Fixed Income ETF Flows and Asset Sorted by 2017 Flows

	Return (%)	Flow (\$M)	% Flow (%)	Asset (\$M)
Passively - managed		59%	18	81%
ZAG - BMO Aggregate Bond ETF	2.30	\$1,216	57	\$3,333
ZJK - BMO High Yield U.S. Corp	NA	\$1,159	NA	\$1,141
ZCS - BMO Short Corporate Bond	0.83	\$410	32	\$1,650
ZPR - BMO Laddered Pref Share	14.51	\$373	23	\$2,169
ZDB - BMO Discount Bond ETF	1.72	\$328	149	\$545
Actively - managed		41%	86	19%
RPF - RBC Canadian Preferred	16.09	\$520	352	\$701
HPR - Horizons Preferred	15.56	\$479	51	\$1,537
DXP - Dynamic iShares Preferred	NA	\$336	NA	\$345
FIG - First Asset Investment Grade	4.55	\$293	302	\$395
PMIF - PIMCO Monthly Income	NA	\$276	NA	\$276
Total Fixed Income ETF Flows (\$M)		\$10,454	27	\$49,104

the % numbers in grey are % of total Equity ETF Flows or AUM for each category

Only top five ETFs are displayed; Total Returns are NAV-based; Source: NBF, Bloomberg

2017 Flows by Category: (*Table 3*) Canadian ETF flows in 2017 were almost equally divided between Equity and Fixed Income. Within the equity category, International Equity was the favourite as investors turned to International Developed and Emerging Markets to participate in the growth story while taking advantage of comparably favourable valuation. Interestingly, for both U.S. and International Equity, currency *non-hedged* products received the majority of the flows, and in the case of U.S. equity ETFs, currency-hedged ETFs even saw outflows. Starting in August of 2017, investors started to take profits from increases in the Canadian dollar by removing assets from currency

Table 3 - ETF Flows by Category - Full Year 2017

Category	AUM (\$M)	AUM (%)	Flow (\$M)	% Flow
Equity	\$88,126		\$13,078	19.2%
Canadian Equity	\$38,958	26.5%	\$2,919	8.5%
U.S. Equity	\$27,262	18.5%	\$3,528	17.0%
Int'l Equity	\$21,905	14.9%	\$6,631	50.8%
Fixed Income	\$49,104	33.4%	\$10,454	27.2%
Commodity	\$638	0.4%	\$33	5.7%
Multi-Asset	\$8,227	5.6%	\$2,286	40.0%
Levered Long	\$790	0.5%	\$271	41.2%
Inverse	\$303	0.2%	-\$86	-22.0%
Total	\$147,187		\$26,036	22.9%

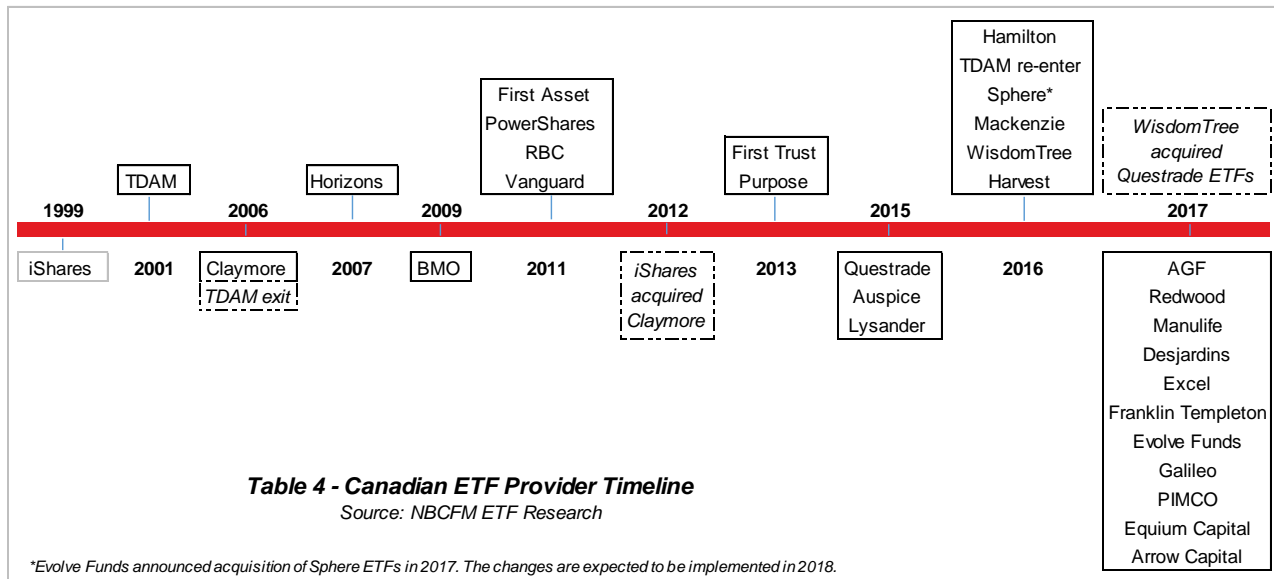
Source: National Bank Financial, Bloomberg

hedged versions of U.S. equity ETFs, shifting to currency non-hedged counterparts in expectation of greenback strengthening. Multi-asset ETFs also got a boost in flows mainly from covered call ETFs, while other multi-asset strategies such as put-write and asset allocation took up a smaller portion of the pie.

2017 Flows by Provider: See Tables 4 and 5 below

In Calendar 2017, a record number of new ETF providers entered the Canadian market. 11 new entrants launched a combined 60 products, bringing the number of Canadian ETF providers to 28 and the number of products to 648. The number of new ETF providers in 2017 was double that of 2016, and quadruple the number of new entrants from 2015. This spike in participation comes from a variety of sources: the new ETF providers are represented by existing fund managers in Canada as well as the U.S., and start-up shops too. In chronological order, the new providers are as follows:

- **AGF** introduced a suite of seven ETFs under its AGFiQ brand, including five equity ETFs for different regions and two multi-asset ETFs.
- **Redwood**, a subsidiary of Purpose, launched a suite of actively managed Canadian and U.S. preferred share ETFs, income-themed ETFs and multi-asset ETFs.
- **Manulife** launched a suite of multi-factor ETFs based on indices developed by Dimensional Fund Advisors.
- **Desjardins** entered the market with multi-factor controlled volatility equity ETFs and a suite of fixed income ETFs.
- **Excel Funds** launched two asset allocation ETFs with balanced and growth profile, respectively. Sun Life announced plans to acquire Excel Funds in September 2017.
- **Franklin Templeton** launched two actively-managed ETFs and two passively-managed ETFs tracking in-house indices.
- **Evolve Funds** launched a suite of thematic ETFs, as well as actively-managed equity and preferred share ETFs.
- **Galileo**, a subsidiary of U.S. Global, introduced a gold and precious metal miners ETF tracking their in-house index.
- **PIMCO** entered Canada with two actively-managed fixed income ETFs.
- **Equium Capital** launched ETF series of its global asset allocation fund.
- **Arrow Capital** launched a Fixed Income ETF, sub-advised by East Coast Fund Management.



On top of the record number of new entrants, incumbent ETF providers also had a great year of flows. Internal demand may explain part of the growth for providers like BMO and RBC, but it was not the full picture. The large providers topping the list was slightly changed as RBC had sizable creations in its actively-managed preferred-share ETF, its suite of Quant Dividend Leaders ETFs and its target maturity bond ETFs, among others.

Flows by Product Continued Next Page

Flows by Product: (Tables 6 and 7) The continuous flow to low-cost, broad-based, index-tracking ETFs is an ongoing story in Canada. Nine of the top ten inflows in 2017 went to either passive equity indexes for various regions, or to passive fixed income index ETFs for different credit profiles. The one actively-managed exception is on BMO's covered call ETF for Europe (ZWE). This hardly means that active ETFs are suffering, as illustrated in Table 1. While the active ETF numbers aren't as eye-popping, certain pockets of the market such as active fixed income are seeing renewed interest in the form of steady and positive inflows.

Of the top ten ETF outflows, eight of them are passively-managed ETFs as well. Although the numbers are muted by comparison (with the exception of XIU), the outflows can be explained by a diminished appeal for U.S. dollar hedging in the summer, as well as lower appetite for low volatility strategies in a bull market. These factors, in addition to structural outflows from ZHY (offset by structural inflows to new launch ZJK) could mostly explain the bulk of the outflows we observed in 2017.

Provider	AUM (\$M)	AUM (%)	Flow (\$M)	% Flow
1 iShares	\$59,761	40.6%	\$3,232	6.1%
2 BMO	\$46,575	31.6%	\$10,320	30.2%
3 Vanguard	\$13,700	9.3%	\$3,144	32.5%
4 Horizons	\$9,077	6.2%	\$2,295	36.2%
5 RBC	\$4,717	3.2%	\$2,321	103.5%
6 First Asset	\$3,848	2.6%	\$1,131	45.1%
7 PowerShares	\$3,504	2.4%	\$23	0.8%
8 Purpose	\$1,619	1.1%	\$333	26.2%
9 Mackenzie	\$1,296	0.9%	\$1,156	1021.0%
10 Harvest	\$441	0.3%	\$244	129.9%
11 First Trust	\$438	0.3%	\$31	7.9%
12 WisdomTree	\$379	0.3%	\$253	243.7%
13 AGF	\$340	0.2%	\$324	N.A.
14 PIMCO	\$299	0.2%	\$299	N.A.
15 Manulife	\$254	0.2%	\$243	N.A.
16 Franklin Templeton	\$242	0.2%	\$226	N.A.
17 TDAM	\$133	0.1%	\$67	107.7%
18 Desjardins	\$130	0.1%	\$130	N.A.
19 Redwood	\$108	0.1%	\$107	N.A.
20 Hamilton Capital	\$97	0.1%	\$77	478.1%
21 Lysander	\$91	0.1%	\$43	95.6%
22 Sphere	\$66	0.0%	\$28	83.8%
23 Evolve Funds	\$31	0.0%	\$30	N.A.
24 Auspice	\$23	0.0%	\$0	0.1%
25 Equium Capital	\$7	0.0%	\$7	N.A.
26 Galileo	\$5	0.0%	\$5	N.A.
27 Excel Funds	\$4	0.0%	\$4	N.A.
28 Arrow Capital	\$2	0.0%	\$1	N.A.
Questrade*	\$0	0.0%	-\$40	-112.7%
Total	\$147,187		\$26,036	22.9%

Source: National Bank Financial, Bloomberg

*WisdomTree CA acquired Questraded ETFs. The deal was finalized in Dec 2017

Ticker	Name	Flow (\$M)	% Flow
1 ZCN	BMO S&P/TSX Capped Composite Index ETF	\$1,295	74%
2 ZAG	BMO Aggregate Bond Index ETF	\$1,216	57%
3 XIC	iShares Core S&P/TSX Capped Composite	\$1,207	44%
4 ZJK	BMO High Yield US Corporate Bond	\$1,159	NA
5 XUJ	iShares Core S&P US Total Market Index ETF	\$964	1217%
6 XEF	iShares Core MSCI EAFE IMI Index ETF	\$702	96%
7 ZEA	BMO MSCI EAFE Index ETF	\$699	62%
8 ZSP	BMO S&P 500 Index ETF	\$676	23%
9 HXT	Horizon S&P/TSX 60 Index ETF	\$632	65%
10 ZWE	BMO Europe High Dividend Covered Call CAD-H	\$569	269%

Source: National Bank Financial, Bloomberg

Ticker	Name	Flow (\$M)	% Flow
1 XIU	iShares S&P/TSX 60 Index ETF	-\$1,878	-15%
2 ZHY	BMO High Yield US Corporate Bond CAD-H	-\$629	-59%
3 XSP	iShares Core S&P 500 Index ETF CAD-H	-\$444	-12%
4 XSB	iShares Core Canadian Short Term Bond	-\$368	-16%
5 CBO	iShares 1-5 Year Laddered Corporate Bond	-\$350	-18%
6 ZLB	BMO Low Volatility Canadian Equity ETF	-\$261	-20%
7 ZUE	BMO S&P 500 Hedged to CAD Index ETF	-\$254	-23%
8 PIB	PowerShares 1-10 Year Laddered IG Corporate	-\$248	NA
9 ZLD	BMO Low Volatility International Equity CAD-H	-\$187	-87%
10 ZDM	BMO MSCI EAFE Hedged to CAD Index ETF	-\$162	-22%

Source: National Bank Financial, Bloomberg

December 2017 Flows: Tables 8 - 11

Category	AUM (\$M)	AUM (%)	Flow (\$M)	% Flow
Equity	\$88,126		\$1,054	1.2%
Canadian Equity	\$38,958	26.5%	\$156	0.4%
U.S. Equity	\$27,262	18.5%	\$382	1.4%
Int'l Equity	\$21,905	14.9%	\$515	2.4%
Fixed Income	\$49,104	33.4%	\$492	1.0%
Commodity	\$638	0.4%	\$17	2.7%
Multi-Asset	\$8,227	5.6%	\$162	2.0%
Levered Long	\$790	0.5%	\$31	4.1%
Inverse	\$303	0.2%	-\$32	-9.2%
Total	\$147,187		\$1,724	1.2%

Source: National Bank Financial, Bloomberg

ETFs in Canada had a sizeable inflow of \$1.7 billion dollars in the final month of 2017. International currency non-hedged ETFs led the pack, bolstered by creations in Horizons Marijuana Life Sciences ETF (HMMJ), iShares Core MSCI EAFE IMI ETF (XEF) and newly launched Desjardins Emerging Market Multi-factor Controlled Volatility ETF (DFE). Fixed Income ETFs continue to attract assets. In December, short-term and aggregate bond ETFs were in demand, while high-yield credit ETFs reversed some outflows from November with a small inflow of \$8 million. Other than a large outflow from XIU, redemptions from other ETFs were relatively muted.

WisdomTree Canada finalized its deal with Questrade in December 2017, merging almost all of Questrade ETFs into its own product suite. Besides the incumbent providers, the new entrants are gaining traction at a fast pace: PIMCO had a 42% flow relative to last month's ending assets, mainly into its Monthly Income Fund (PMIF). Redwood also had above 40% flows, led by significant creations in its Canadian Preferred Share ETF (RPS). Equium Capital launched a global multi-asset ETF (ETAC), which had a 40% flow in December.

Provider	AUM (\$M)	AUM (%)	Flow (\$M)	% Flow
1 iShares	\$59,761	40.6%	-\$153	-0.3%
2 BMO	\$46,575	31.6%	\$947	2.1%
3 Vanguard	\$13,700	9.3%	\$233	1.7%
4 Horizons	\$9,077	6.2%	\$334	3.9%
5 RBC	\$4,717	3.2%	\$76	1.6%
6 First Asset	\$3,848	2.6%	\$113	3.0%
7 PowerShares	\$3,504	2.4%	-\$54	-1.5%
8 Purpose	\$1,619	1.1%	-\$12	-0.8%
9 Mackenzie	\$1,296	0.9%	\$60	4.9%
10 Harvest	\$441	0.3%	\$8	1.8%
11 First Trust	\$438	0.3%	-\$35	-7.4%
12 WisdomTree	\$379	0.3%	-\$2	-0.6%
13 AGF	\$340	0.2%	\$1	0.2%
14 PIMCO	\$299	0.2%	\$88	41.6%
15 Manulife	\$254	0.2%	\$0	0.0%
16 Franklin Templeton	\$242	0.2%	\$39	18.7%
17 TDAM	\$133	0.1%	\$7	5.1%
18 Desjardins	\$130	0.1%	\$28	27.3%
19 Redwood	\$108	0.1%	\$33	43.4%
20 Hamilton Capital	\$97	0.1%	\$7	7.6%
21 Lysander	\$91	0.1%	\$6	6.7%
22 Sphere	\$66	0.0%	\$0	0.0%
23 Evolve Funds	\$31	0.0%	\$5	17.2%
24 Auspice	\$23	0.0%	\$0	0.0%
25 Equium Capital	\$7	0.0%	\$2	39.9%
26 Galileo	\$5	0.0%	\$0	0.0%
27 Excel Funds	\$4	0.0%	\$0	0.0%
28 Arrow Capital	\$2	0.0%	\$1	N.A.
Questrade*	\$0	0.0%	-\$6	-98.4%
Total	\$147,187		\$1,724	1.2%

Source: National Bank Financial, Bloomberg;

*WisdomTree CA acquired Questrade ETFs. The deal was finalized in Dec 2017

Ticker	Name	Flow (\$M)	% Flow
1 ZCN	BMO S&P/TSX Capped Composite Index ETF	\$359	13%
2 XSH	iShares Core Canadian ST Corporate + Maple	\$150	22%
3 HXT	Horizon S&P/TSX 60 Index ETF	\$136	9%
4 XBB	iShares Core Canadian Universe Bond	\$106	5%
5 XIC	iShares Core S&P/TSX Capped Composite	\$97	2%
6 ZAG	BMO Aggregate Bond Index ETF	\$91	3%
7 RQK	RBC Target 2023 Corporate Bond Index ETF	\$88	1517%
8 ZSP	BMO S&P 500 Index ETF	\$85	2%
9 PMIF	PIMCO Monthly Income Fund	\$82	42%
10 HMMJ	Horizons Marijuana Life Sciences Index ETF	\$75	24%

Source: National Bank Financial, Bloomberg

Ticker	Name	Flow (\$M)	% Flow
1 XIU	iShares S&P/TSX 60 Index ETF	-\$711	-6%
2 CBO	iShares 1-5 Year Laddered Corporate Bond	-\$105	-6%
3 RQF	RBC Target 2018 Corporate Bond Index ETF	-\$90	-63%
4 XLB	iShares Core Canadian Long Term Bond	-\$75	-18%
5 ZCS	BMO Short Corporate Bond Index ETF	-\$65	-4%
6 PIB	PowerShares 1-10 Year Laddered IG Corporate	-\$63	NA
7 CLF	iShares 1-5 Year Laddered Government Bond	-\$47	-5%
8 XSB	iShares Core Canadian Short Term Bond	-\$41	-2%
9 XHB	iShares Canadian HYbrid Corporate Bond	-\$39	-7%
10 PSB	PowerShares 1-5 Year Laddered IG Corporate	-\$39	-5%

Source: National Bank Financial, Bloomberg

DISCLOSURES

Levered and Inverse Exchange-Traded Funds are very different from most ETFs. They pursue leveraged investment goals, and they are riskier than alternatives that do not use leverage because they magnify the performance of the benchmark on an investment. These ETFs seek daily leveraged investment results. The return of an inverse or levered ETF for periods longer than a single day, especially in periods of market volatility, may be completely uncorrelated to the return of the benchmark over such longer periods. Levered and inverse ETFs are intended to be used as short-term trading vehicles for investors managing their portfolios on a daily basis. They are not to be used by, and are not appropriate for, investors who intend to hold positions.

Unless otherwise agreed in writing, National Bank of Canada and its affiliates act solely in the capacity of an arm's length contractual counterparty and not as an adviser or fiduciary. Accordingly you should not regard transaction proposals or other written or oral communications from us as a recommendation or advice that a transaction is appropriate for you or meets your financial objectives. Any financial transaction involves a variety of potentially significant risks and issues. Before entering into any financial transaction, you should ensure that you fully understand the terms, have evaluated the risks and have determined that the transaction is appropriate for you in all respects. If you believe that you need assistance, you should consult appropriate advisers before entering into the transaction. The attached material does not constitute an offer to enter into any transaction. Such material is believed by us to be reliable, but we make no representation as to its accuracy or completeness. This brief statement does not purport to describe all of the risks associated with financial transactions and should not be construed as advice to you.

General – National Bank Financial (NBF) is an indirect wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on Canadian stock exchanges.

The particulars contained herein were obtained from sources which we believe to be reliable but are not guaranteed by us and may be incomplete. The opinions expressed are based upon our analysis and interpretation of these particulars and are not to be construed as a solicitation or offer to buy or sell the securities mentioned herein.

Research Analysts – The Research Analyst(s) who prepare these reports certify that their respective report accurately reflects his or her personal opinion and that no part of his/her compensation was, is, or will be directly or indirectly related to the specific recommendations or views as to the securities or companies.

NBF compensates its Research Analysts from a variety of sources. The Research Department is a cost centre and is funded by the business activities of NBF including, Institutional Equity Sales and Trading, Retail Sales, the correspondent clearing business, and Corporate and Investment Banking. Since the revenues from these businesses vary, the funds for research compensation vary. No one business line has a greater influence than any other for Research Analyst compensation.

Canadian Residents – In respect of the distribution of this report in Canada, NBF accepts responsibility for its contents. To make further inquiry related to this report, Canadian residents should contact their NBF professional representative. To effect any transaction, Canadian residents should contact their NBF Investment advisor.

U.S. Residents – With respect to the distribution of this report in the United States, National Bank of Canada Financial Inc. (NBCFI) is regulated by the Financial Industry Regulatory Authority (FINRA) and a member of the Securities Investor Protection Corporation (SIPC). This report has been prepared in whole or in part by, research analysts employed by non-US affiliates of NBCFI that are not registered as broker/dealers in the US. These non-US research analysts are not registered as associated persons of NBCFI and are not licensed or qualified as research analysts with FINRA or any other US regulatory authority and, accordingly, may not be subject (among other things) to FINRA restrictions regarding communications by a research analyst with the subject company, public appearances by research analysts and trading securities held a research analyst account.

All of the views expressed in this research report accurately reflect the research analysts' personal views regarding any and all of the subject securities or issuers. No part of the analysts' compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this research report. The analyst responsible for the production of this report certifies that the views expressed herein reflect his or her accurate personal and technical judgment at the moment of publication. Because the views of analysts may differ, members of the National Bank Financial Group may have or may in the future issue reports that are inconsistent with this report, or that reach conclusions different from those in this report. To make further inquiry related to this report, United States residents should contact their NBCFI registered representative.

UK Residents – In respect of the distribution of this report to UK residents, National Bank Financial Inc. has approved the contents (including, where necessary, for the purposes of Section 21(1) of the Financial Services and Markets Act 2000). National Bank Financial Inc. and/or its parent and/or any companies within or affiliates of the National Bank of Canada group and/or any of their directors, officers and employees may have or may have had interests or long or short positions in, and may at any time make purchases and/or sales as principal or agent, or may act or may have acted as market maker in the relevant investments or related investments discussed in this report, or may act or have acted as investment and/or commercial banker with respect thereto. The value of investments can go down as well as up. Past performance will not necessarily be repeated in the future. The investments contained in this report are not available to retail customers. This report does not constitute or form part of any offer for sale or subscription of or solicitation of any offer to buy or subscribe for the securities described herein nor shall it or any part of it form the basis of or be relied on in connection with any contract or commitment whatsoever.

This information is only for distribution to Eligible Counterparties and Professional Clients in the United Kingdom within the meaning of the rules of the Financial Conduct Authority. National Bank Financial Inc. is authorised and regulated by the Financial Conduct Authority and has its registered office at 71 Fenchurch Street, London, EC3M 4HD.. National Bank Financial Inc. is not authorised by the Prudential Regulation Authority and the Financial Conduct Authority to accept deposits in the United Kingdom.

HK Residents – With respect to the distribution of this report in Hong Kong by NBC Financial Markets Asia Limited ("NBCFMA") which is licensed by the Securities and Futures Commission ("SFC") to conduct Type 1 (dealing in securities) regulated activity, the contents of this report are solely for informational purposes. It has not been approved by, reviewed by, verified by or filed with any regulator in Hong Kong. Nothing herein is a recommendation, advice, offer or solicitation to buy or sell a product or service, nor an official confirmation of any transaction. None of the products issuers, NBCFMA or its affiliates or other persons or entities named herein are obliged to notify you of changes to any information and none of the foregoing assume any loss suffered by you in reliance of such information.

The content of this report may contain information about investment products which are not authorized by SFC for offering to the public in Hong Kong and such information will only be available to, those persons who are Professional Investors (as defined in the Securities and Futures Ordinance of Hong Kong ("SFO")). If you are in any doubt as to your status you should consult a financial adviser or contact us. This material is not meant to be marketing materials and is not intended for public distribution. Please note that neither this material nor the product referred to is authorized for sale by SFC. Please refer to product prospectus for full details.

There may be conflicts of interest relating to NBCFMA or its affiliates' businesses. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may be purchased or sold by NBCFMA or its affiliates, or in other investment vehicles which are managed by NBCFMA or its affiliates that may purchase or sell such securities and instruments.

DISCLOSURES

No other entity within the National Bank of Canada group, including NBF, is licensed or registered with the SFC. Accordingly, such entities and their employees are not permitted and do not intend to: (i) carry on a business in any regulated activity in Hong Kong; (ii) hold themselves out as carrying on a business in any regulated activity in Hong Kong; or (iii) actively market their services to the Hong Kong public.

Copyright – This report may not be reproduced in whole or in part, or further distributed or published or referred to in any manner whatsoever, nor may the information, opinions or conclusions contained in it be referred to without in each case the prior express written consent of National Bank Financial.

NBF is a member of the Canadian Investor Protection Fund.

The NBF Research Dissemination Policy is available on our website under Legal/Research Policy (link attached) <http://www.nbin.ca/cmst/site/index.jhtml?navid=712&templateid=243>

Click on the following link to see the company specific disclosures <http://www.nbin.ca/contactus/disclosures.html>

Click on the following link to see National Bank Financial Markets Statement of Policies <http://nbfm.ca/en/statement-of-policies/>

If a company specific disclosure is not found herein for a listed company, NBF at this time does not provide research coverage or stock rating for the company in question.