

July 2022: Redeploying Cash

- Stock markets rose as recession fear abate, but sluggish equity ETFs inflows suggest mixed sentiment
- Within equities, new money flowed into growth factor ETFs, a sign of returning bullishness among ETF investors
- Longer duration government bonds, investment grade corporate and high yield bond ETFs all welcomed sizable inflows while investors withdrew money from ultra-short term treasury bill ETFs
- Single stock leverage/inverse ETFs were introduced to the U.S. ETF market

Summary (Table 1, Chart 1): U.S. listed ETFs brought in flows of \$35.6 billion in July, mostly driven by demand for fixed income. The strong June job reports and better-than-expected corporate earnings helped alleviate recession fears among investors, propelling a long-awaited rebound in stocks, especially in the U.S. market. Despite the tentative turn in sentiment, equity ETF inflows were still sluggish in July, but it is encouraging to see a jump in growth-oriented ETF flows. In the same vein, corporate bond and high yield fixed income ETFs welcomed sizable creations as investors redeployed their parked cash from ultra-short term treasury bill ETFs to riskier assets. A new product category was introduced to the U.S. ETF market in July when AXS Investments launched eight *single stock* leveraged/inverse ETFs, a highly complex and potentially risky category deserving whole new levels of caution and caveat.

Equity ETFs by Geography (Table 4): Despite the strong rebound of S&P 500 of 9.2% in July, U.S. equity ETFs only took in \$6.3 billion, just a quarter of June's amount. Low-cost broad market index ETFs (VOO, IVV, VTI, QQQ) were the chief inflow contributors. Similarly, international/global equity ETF inflows failed to follow the rebounding performance of the MSCI EAFE Index, which rose by 5.0% in July. Investors still seem undecided about their equity returns' persistency.

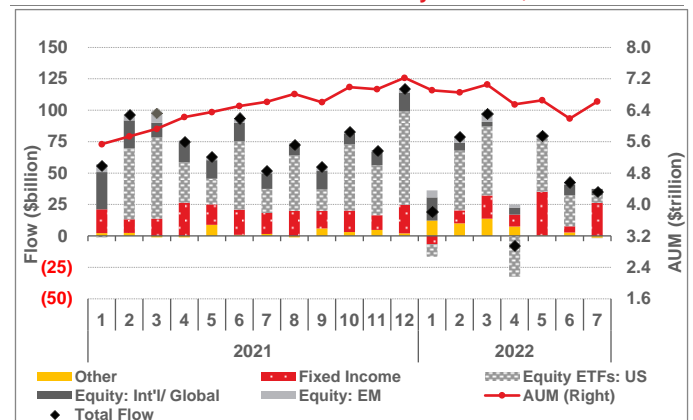
Despite an extremely strong USD relative to global currencies, we have observed a steep decline in the usage of USD-hedged foreign equity ETFs. In the years 2014 and 2015 when the dollar was also relatively strong, currency-hedged ETFs enjoyed historic inflows; at the same time, ETF providers in the U.S. issued a wave of product development and launches. In contrast, in 2022, so far, even though the USD Index has surpassed 2014-15 levels, inflows to currency-hedged equity ETFs have been virtually nonexistent (Chart 2). A possible cause is the lost appeal of international markets themselves because of fears related to conflict,

Table 1: ETF Flows by Category

	AUM (\$B)	Mkt Shr	July 2022		Jan-July 2022	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
Equity	\$5,073		\$10.8	0.2%	\$205.4	3.6%
U.S. Broad/Large-Cap	\$1,613	24%	\$7.7	0.5%	\$42.4	2.3%
U.S. Other	\$2,317	35%	-\$1.4	-0.1%	\$90.2	3.6%
Int'l / Global	\$872	13%	\$4.9	0.6%	\$48.6	4.9%
Emerging Markets	\$271	4%	-\$0.3	-0.1%	\$24.1	7.9%
Fixed Income	\$1,266	19%	\$26.2	2.2%	\$97.3	7.6%
Commodity	\$144	2%	-\$6.4	-4.1%	\$9.0	6.6%
Multi-Asset	\$63	1%	\$1.8	3.0%	\$14.3	26.2%
Levered Long	\$53	1%	\$0.1	0.2%	\$13.8	18.0%
Inverse	\$22	0%	\$3.0	12.9%	\$8.0	68.0%
Crypto-Asset	\$1	0%	\$0.0	5.5%	\$0.2	17.1%
Total	\$6,622	100%	\$35.6	0.6%	\$348.0	4.8%

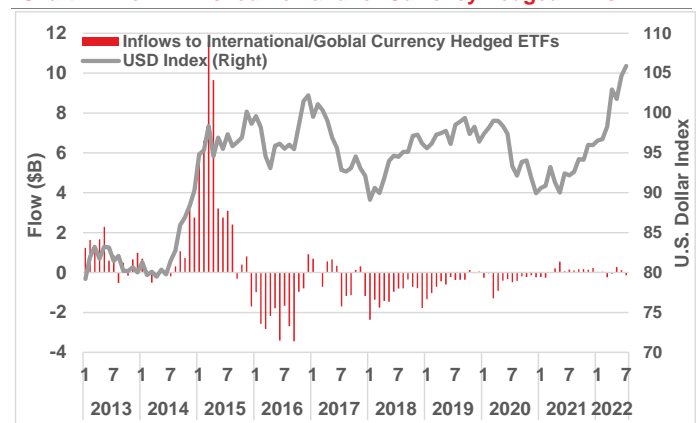
Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

Chart 1: U.S. Listed ETF Flow and AUM by month - \$348 billion YTD



Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

Chart 2: The Diminished Demand for Currency Hedged ETFs



Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

inflation and economic recession. In addition, many of the ETF investors who flooded into currency-hedged ETFs last decade were late adopters, entering positions after the USD strength trend died down—such investors would not have benefited from the currency hedging, and thus, the “user base” may still bear scars from a trade gone wrong.

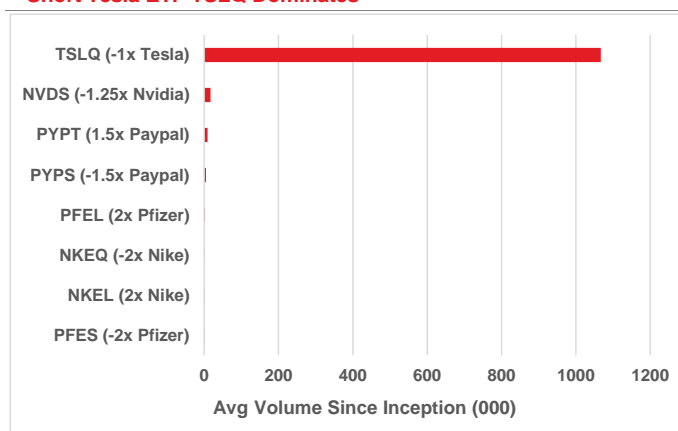
Equity Sector ETFs (Table 5): Sector and thematic ETFs suffered outflows of \$6.4 billion in July, even though all GICS sectors in the S&P 500 finished the month with gains. This was the third consecutive month of outflows for sector and thematic ETFs as a group. Energy continued to lead outflows within the sector category, despite outperforming the S&P 500 in July. On the inflow side, inflows to health care amounted to \$1.6 billion last month, followed by small inflows to utilities and consumer staples.

Equity Factor ETFs (Table 8): Factor ETFs received \$6.2 billion in creations during July. Growth, Dividend/Income and Low Volatility ETFs enjoyed asset growth, while Value ETFs suffered the most outflow among factor categories, an interesting reversal from recent months of strong demand. Performance-wise, the S&P 500 Growth Index increased by almost 13% in July, outperforming the S&P 500 Value Index by 7%.

Single Stock Leveraged/Inverse ETFs: Please note that all leveraged/inverse ETFs have complex path-dependent returns that can cause NAV erosion in volatile environments. They are not suitable for long-term buy-and-hold purposes.

In July, AXS Investment introduced the first U.S. listed *single stock leveraged/inverse* ETFs. These kinds of ETFs (ranging from -3x short, 1x single long to 3x leveraged) have been around in Europe since 2018 and their total AUM is about USD \$300 million. European investors use these products to speculate on popular U.S. stocks at a lower unit price and greater torque (rebalanced daily). In the U.S., the SEC struck down “extreme” leverage ratios of these single stock ETFs in light of the potential outsized risks borne by investors in the event of high stock volatility, not to mention the path dependency from daily rebalancing. The final approved products in the U.S. are all within range of -2x short and 2x long.

Chart 3: Trading Volumes of Single Stock Leveraged/Inverse ETFs – Short Tesla ETF TSLQ Dominates



Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

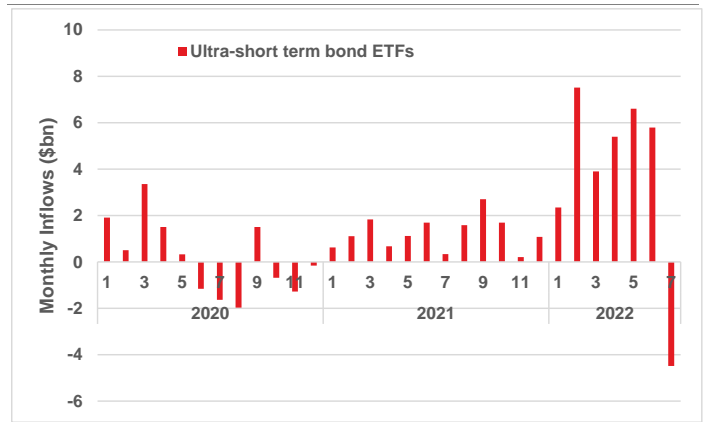
Eight single stock levered/inverse ETFs launched in July, featuring five large cap stocks (Tesla, NVIDIA, PayPal, Nike, Pfizer), but only AXS TSLA Bear Daily ETF (TSLQ) enjoyed early success so far and displayed high trading volume (Chart 3). TSLQ took in \$30 million in flow, but the rest gathered just \$2.1 million on average. Overall, these new ETFs contributed little to the \$3.0 billion that flowed into Leveraged/Inverse ETFs in July. The other inflows into the category went primarily towards inverse broad market (SQQQ, SPXU) and VIX futures (UVXY) products. At current AUM and flow levels, these single stock ETFs’ underlying impact to the reference stocks are not as significant as the much larger leveraged/inverse index ETFs. For example, TSLQ now has about 33,000 shares of short Tesla exposure, whereas SQQQ’s Tesla exposure is six times that. However, if TSLQ grew 1000 times and became a \$30 billion fund, then a single day 1% movement in the underlying could cause the ETF managers to trade half a million Tesla shares at the end of the session (in other words, a significant portion of Tesla’s current daily volume of about 30 million shares), always in the same direction as the stock’s performance.

Fixed Income ETFs (Tables 6, 7): Fixed Income ETFs saw more demand than equity ETFs in July. The asset class pulled in \$26 billion, or 74% of the month's total ETF inflows. Government bonds continued to be the most popular category, though investment grade corporate and high yield bonds ETFs started to gain traction given their increasingly attractive yields and investors' rising risk appetite. In terms of maturities breakdowns, ultra short-term bond ETFs (mostly treasury bills), which had been hoovering up enormous amounts of assets all year, suddenly had large redemptions in July. This could be a sign that investors have started to deploy their parked cash towards stocks or other risky assets within the fixed income asset class. We have seen this on display (i.e., redemption from cash-like ETFs) in the recovery phase of past drawdowns, such as during late 2020 when investors sensing a market bottom piled back into the stock market (Chart 4). The Fed raised the fed funds rate by 75 bps again in July to an upper bound of 2.5%, but the market still seems to be expressing a belief that moderate interest rates are here to stay for the long term; the 10-year treasury yield dropped sharply from 3.01% to 2.65%, pushing the "10-year - 2-year" Treasury spread to a much wider negative (inverted) spread of 25 bps as of July 29th.

ESG ETFs (Table 2): ESG ETFs received \$218 million in new money in July, largely driven by flows towards fixed income ESG ETFs, which went in parallel with creations in the wider fixed income ETF landscape. The largest fixed income ESG ETF, iShares ESG Aware U.S. Aggregate Bond ETF (EAGG), had \$216 million inflows, the largest ESG ETF inflow in July. Clean energy ETFs gained renewed interest after the U.S. Senator Joe Manchin agreed to back a \$370 billion climate and energy spending package on July 27. Clean energy stocks advanced in response; Invesco Solar ETF (TAN) increased by 20% on the month, which perhaps helped attract a large sum of \$163 million into the ETF.

Top Performing ETFs (Table 3): Blockchain ETFs rebounded significantly in July on the back of a 27% bitcoin price rally (a small move by ultra-volatile bitcoin standards). In a demonstration of the sector's eye-watering volatility, bitcoin miners such as Marathon Digital and Riot Blockchain surged 143% and 75%, respectively, in July, an outsized gain compared to the bitcoin's move. Mining stocks have been highly correlated with bitcoin prices, but they might swing with extra "gearing" because some retail investors may be speculating on the fortune of the crypto industry using these stocks instead of going directly to digital coins. Despite the rally in July, bitcoin is still nearly 50% down year-to-date; Marathon Digital and Riot Blockchain are still more than 60% below their start-of-the-year levels.

Chart 4: First Monthly Redemption for Ultra-Short Term Bond ETFs since 2021



Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

Table 2: U.S. Listed ESG ETFs – July 2022

Category	AUM (\$M)	AUM (%)	July 2022		Jan - July 2022	
			Flow (\$M)	Flow/AUM	Flow (\$M)	Flow/AUM
Equity	\$91,943	92%	\$117	0.1%	\$3,199	3.1%
Broad - U.S.	\$50,951	51%	-\$52	-0.1%	\$1,912	3.3%
Broad - DM	\$7,891	8%	\$33	0.4%	\$870	10.2%
Broad - EM	\$4,700	5%	-\$20	-0.4%	-\$452	-6.9%
Broad - Global	\$3,680	4%	\$27	0.8%	\$388	9.6%
Environment	\$6,864	7%	-\$46	-0.7%	\$428	5.7%
Clean Energy	\$14,683	15%	\$136	1.1%	-\$699	-4.4%
Social	\$2,298	2%	\$16	0.8%	\$356	15.6%
Other	\$661	1%	\$23	3.9%	\$261	54.3%
Commodities	\$1,313	1%	-\$75	-4.8%	-\$321	-17.1%
Multi-Asset	\$170	0%	\$3	1.6%	\$2	1.0%
Fixed Income	\$6,888	7%	\$174	2.6%	\$1,381	22.6%
Total Displayed	\$100,314	100%	\$218	0.2%	\$4,261	3.8%

Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

Table 3: Best Performing ETFs* – July 2022

Ticker	Name	Total Return (%)	AUM (\$M)	Flow (\$M)
1 UNG	United States Natural Gas Fund LP	53.8	564	-56
2 GAZ	iPath Series B Bloomberg Natural Gas TR	52.8	30	0
3 CRPT	First Trust SkyBridge Crypto Ind and Digital Econ	45.6	27	1
4 DAPP	VanEck Digital Transformation ETF	43.3	35	2
5 BITQ	Bitwise Crypto Industry Innovators ETF	42.0	71	3
6 IBLC	iShares Blockchain And Tech ETF	41.4	6	0
7 BKCH	Global X Blockchain ETF	37.9	61	0
8 DAM	Vaneck Digital Asset Mining ETF	37.0	2	0
9 UNL	United States 12 Month Natural Gas Fund LP	35.6	43	-6
10 SATO	Invesco Alerian Galaxy Crypto Economy ETF	34.4	4	0

*Excluding leveraged/inverse ETFs. Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

July 2022 ETF Flows: Tables 4 - 10

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,931		\$6.2	0.2%
Broad/Large Cap	\$1,613	32%	\$7.7	0.5%
U.S. Other	\$2,317	46%	-\$1.4	-0.1%
International Developed	\$522		\$3.3	0.7%
Broad Int'l Dev	\$401	8%	\$4.1	1.1%
Broad Europe	\$38	1%	-\$0.8	-2.1%
Japan	\$21	0%	\$0.0	0.2%
Canada	\$10	0%	-\$0.2	-2.4%
Other Developed	\$52	1%	\$0.2	0.4%
Emerging Markets	\$271		-\$0.3	-0.1%
Broad Cap Weighted	\$182	4%	\$0.3	0.1%
China (A+H)	\$29	1%	-\$0.3	-1.1%
Other EM	\$61	1%	-\$0.2	-0.4%
Global/Regional	\$350	7%	\$1.6	0.5%
Total Displayed	\$5,073	100%	\$10.8	0.2%

Source: National Bank of Canada, Bloomberg

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$102	12%	\$1.6	1.7%
Utilities	\$27	3%	\$0.3	1.2%
Consumer Staples	\$29	3%	\$0.1	0.3%
Technology	\$158	19%	-\$0.5	-0.3%
Communication Services	\$29	4%	-\$0.5	-1.7%
Consumer Discretionary	\$30	4%	-\$0.7	-2.7%
Industrials	\$32	4%	-\$0.9	-2.9%
Materials	\$43	5%	-\$1.0	-2.3%
Real Estate	\$84	10%	-\$1.0	-1.3%
Financials	\$58	7%	-\$1.6	-2.8%
Energy	\$79	10%	-\$1.8	-2.5%
ESG	\$91	11%	\$0.1	0.1%
Thematic	\$61	7%	-\$0.6	-1.0%
Total Displayed	\$822	100%	-\$6.4	-0.8%

*Includes all geographic focus; Source: National Bank of Canada, Bloomberg
QQQ is classified as a broad market ETF and does not belong to technology sector

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$291	23%	\$1.5	0.5%
U.S. Government	\$375	30%	\$11.3	3.2%
U.S. Municipals	\$88	7%	\$0.9	1.1%
U.S. I.G. Corporate	\$216	17%	\$6.8	3.3%
Developed Markets&Global	\$136	11%	\$0.2	0.2%
Emerging Markets	\$27	2%	\$0.4	1.5%
Sub-investment Grade	\$88	7%	\$4.8	6.1%
Convertibles and Preferreds	\$45	4%	\$0.3	0.7%
Total Displayed	\$1,266	100%	\$26.2	2.2%

Source: National Bank of Canada, Bloomberg

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$640	51%	\$14.3	2.4%
Ultra Short Term	\$141	11%	-\$4.5	-3.1%
Short Term	\$258	20%	\$3.5	1.4%
Mid Term	\$142	11%	\$5.1	3.9%
Long Term	\$55	4%	\$7.1	15.3%
Target Maturity	\$28	2%	\$1.1	4.2%
Rate Hedged	\$2	0%	-\$0.4	-16.7%
Total Displayed	\$1,266	100%	\$26.2	2.2%

Source: National Bank of Canada, Bloomberg

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Growth	\$335	19%	\$5.3	1.8%
Income	\$352	20%	\$3.3	1.0%
Low Vol	\$64	4%	\$2.4	4.1%
Quality	\$34	2%	-\$0.3	-0.9%
Momentum	\$22	1%	-\$0.5	-2.5%
Small/Mid Cap	\$424	24%	-\$1.3	-0.3%
Value	\$395	22%	-\$3.9	-1.0%
Multi-Factor and Other	\$139	8%	\$1.2	0.9%
Total Displayed	\$1,764	100%	\$6.2	0.4%

*Includes all geographic focus, excluding sector ETFs; Source: NBC, Bloomberg

Rank	Ticker	Name	Flow (\$B)	Flow/AUM
1	GOVT	iShares US Treasury Bond ETF	\$4.8	26.6%
2	TLT	iShares 20+ Year Treasury Bond ETF	\$4.1	20.5%
3	VOO	Vanguard S&P 500 ETF	\$3.8	1.5%
4	LQD	iShares iBoxx \$ IG Corporate Bond ETF	\$3.3	10.6%
5	IVV	iShares Core S&P 500 ETF	\$2.4	0.9%
6	TLH	iShares 10-20 Year Treasury Bond ETF	\$2.2	93.7%
7	VTI	Vanguard Total Stock Market ETF	\$1.8	0.7%
8	QQQ	Invesco QQQ Trust Series 1	\$1.7	1.1%
9	HYG	iShares iBoxx High Yield Corporate Bond ETF	\$1.6	12.4%
10	JNK	SPDR Bloomberg Barclays High Yield Bond ETF	\$1.5	24.9%
11	IEF	iShares 7-10 Year Treasury Bond ETF	\$1.5	7.5%
12	EFG	iShares MSCI EAFE Growth ETF	\$1.4	17.6%
13	USMV	iShares MSCI USA Min Vol Factor ETF	\$1.4	5.2%
14	USHY	iShares Broad USD High Yield Corporate Bond ETF	\$1.3	19.9%
15	IJR	iShares Core S&P Small-Cap ETF	\$1.3	2.1%
16	VUG	Vanguard Growth ETF	\$1.3	1.9%
17	JEPI	JPMorgan Equity Premium Income ETF	\$1.1	11.0%
18	SPLV	Invesco S&P 500 Low Volatility ETF	\$1.0	10.8%
19	VEA	Vanguard FTSE Developed Markets ETF	\$1.0	1.1%
20	SPYG	SPDR Portfolio S&P 500 Growth ETF	\$1.0	8.6%

Source: National Bank of Canada, Bloomberg

Rank	Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY	SPDR S&P 500 ETF Trust	-\$3.1	-0.9%
2	IWM	iShares Russell 2000 ETF	-\$2.9	-5.7%
3	BIL	SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	-\$2.5	-11.9%
4	GLD	SPDR Gold Shares	-\$2.5	-4.0%
5	SHV	iShares Short Treasury Bond ETF	-\$2.1	-9.5%
6	IJS	iShares S&P Small-Cap 600 Value ETF	-\$1.7	-19.9%
7	SLV	iShares Silver Trust	-\$1.1	-9.8%
8	TIP	iShares TIPS Bond ETF	-\$1.0	-3.4%
9	ITOT	iShares Core S&P Total US Stock Market ETF	-\$0.9	-2.3%
10	IWD	iShares Russell 1000 Value ETF	-\$0.8	-1.5%
11	XLF	Financial Select Sector SPDR Fund	-\$0.7	-2.6%
12	VB	Vanguard Small-Cap ETF	-\$0.7	-1.7%
13	IYE	iShares U.S. Energy ETF	-\$0.7	-25.3%
14	XLB	Materials Select Sector SPDR Fund	-\$0.6	-9.4%
15	ASHR	Xtrackers Harvest CSI 300 China A-Shares ETF	-\$0.6	-20.3%
16	MTUM	iShares MSCI USA Momentum Factor ETF	-\$0.6	-5.8%
17	XLY	Consumer Discretionary Select Sector SPDR Fund	-\$0.6	-4.0%
18	HDV	iShares Core High Dividend ETF	-\$0.5	-4.2%
19	XLI	Industrial Select Sector SPDR Fund	-\$0.5	-4.1%
20	PULS	PGIM Ultra Short Bond ETF	-\$0.5	-18.2%

Source: National Bank of Canada, Bloomberg

January - July 2022 ETF Flows: Tables 11 - 17

Table 11 - Equity ETF Flows by Geography - Jan-July 2022

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,931		\$132.6	3.0%
Broad/Large Cap	\$1,613	32%	\$42.4	2.3%
U.S. Other	\$2,317	46%	\$90.2	3.6%
International Developed	\$522		\$28.2	4.8%
Broad Int'l Dev	\$401	8%	\$28.1	6.3%
Broad Europe	\$38	1%	-\$7.7	-13.5%
Japan	\$21	0%	\$0.3	1.4%
Canada	\$10	0%	\$1.2	12.0%
Other Developed	\$52	1%	\$6.3	11.7%
Emerging Markets	\$271		\$24.1	7.9%
Broad Cap Weighted	\$182	4%	\$13.3	6.5%
China (A+H)	\$29	1%	\$7.7	27.9%
Other EM	\$61	1%	\$3.2	4.5%
Global/Regional	\$350	7%	\$20.4	5.0%
Total Displayed	\$5,073	100%	\$205.4	3.6%

Source: National Bank of Canada, Bloomberg

Table 12 - Equity ETF Flows by Sector and Themes* - Jan-July 2022

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$102	12%	\$9.4	8.9%
Consumer Staples	\$29	3%	\$5.6	23.5%
Utilities	\$27	3%	\$4.9	22.7%
Materials	\$43	5%	\$0.9	1.9%
Energy	\$79	10%	\$0.6	-1.0%
Technology	\$158	19%	\$1.5	-0.7%
Communication Services	\$29	4%	\$2.1	-4.9%
Real Estate	\$84	10%	\$2.8	-2.8%
Industrials	\$32	4%	\$3.9	-9.6%
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Financials	\$58	7%	-\$14.2	-16.8%
ESG	\$91	11%	\$3.1	3.0%
Thematic	\$61	7%	\$4.5	6.0%
Total Displayed	\$822	100%	-\$4.9	-0.5%

*Includes all geographic focus; Source: National Bank of Canada, Bloomberg
QQQ is classified as a broad market ETF and does not belong to technology sector

Table 13 - Fixed Income ETF Flows by Type - Jan-July 2022

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$291	23%	\$10.8	3.5%
U.S. Government	\$375	30%	\$69.0	21.0%
U.S. Municipals	\$88	7%	\$14.6	18.6%
U.S. I.G. Corporate	\$216	17%	\$9.2	4.1%
Developed Markets&Global	\$136	11%	\$9.0	6.6%
Emerging Markets	\$27	2%	-\$0.6	-1.7%
Sub-investment Grade	\$88	7%	-\$10.9	-10.0%
Convertibles and Preferreds	\$45	4%	-\$4.0	-7.1%
Total Displayed	\$1,266	100%	\$97.2	7.6%

Source: National Bank of Canada, Bloomberg

Table 14 - Fixed Income ETF Flows by Maturity - Jan-July 2022

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$640	51%	\$11.5	1.6%
Ultra Short Term	\$141	11%	\$27.1	23.4%
Short Term	\$258	20%	\$18.9	7.6%
Mid Term	\$142	11%	\$18.2	13.4%
Long Term	\$55	4%	\$16.9	34.9%
Target Maturity	\$28	2%	\$6.0	26.3%
Rate Hedged	\$2	0%	-\$1.3	-34.6%
Total Displayed	\$1,266	100%	\$97.3	7.6%

Source: National Bank of Canada, Bloomberg

Table 15 - Equity ETF Flows by Factor* - Jan-July 2022

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Income	\$352	20%	\$58.2	18.3%
Value	\$395	22%	\$26.8	6.7%
Growth	\$335	19%	\$9.9	2.4%
Low Vol	\$64	4%	\$4.4	6.7%
Small/Mid Cap	\$424	24%	\$1.8	0.4%
Quality	\$34	2%	-\$0.2	-0.5%
Momentum	\$22	1%	-\$1.9	-6.7%
Multi-Factor and Other	\$139	8%	\$9.3	6.3%
Total Displayed	\$1,764	100%	\$108.2	5.7%

*Includes all geographic focus, excluding sector ETFs; Source: NBC, Bloomberg

Table 16 - Top Single Long ETF Inflows - Jan-July 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	VOO Vanguard S&P 500 ETF	\$28.8	10.3%
2	VTI Vanguard Total Stock Market ETF	\$14.5	4.8%
3	IVV iShares Core S&P 500 ETF	\$14.2	4.2%
4	VTV Vanguard Value ETF	\$13.2	14.2%
5	TLT iShares 20+ Year Treasury Bond ETF	\$9.3	47.4%
6	SCHD Schwab US Dividend Equity ETF	\$8.3	26.6%
7	GOVT iShares US Treasury Bond ETF	\$8.3	51.0%
8	DFUV Dimensional US Marketwide Value ETF	\$7.8	NA
9	BND Vanguard Total Bond Market ETF	\$7.0	8.3%
10	SHV iShares Short Treasury Bond ETF	\$6.8	51.8%
11	XLV Health Care Select Sector SPDR Fund	\$6.5	18.4%
12	JEPI JPMorgan Equity Premium Income ETF	\$6.5	110.2%
13	SHY iShares 1-3 Year Treasury Bond ETF	\$6.4	30.9%
14	VUG Vanguard Growth ETF	\$6.1	6.7%
15	MUB iShares National Muni Bond ETF	\$6.0	23.8%
16	YYM Vanguard High Dividend Yield ETF	\$5.7	13.4%
17	USFR WisdomTree Floating Rate Treasury Fund	\$5.7	308.8%
18	COWZ Pacer US Cash Cows 100 ETF	\$5.6	439.6%
19	VEA Vanguard FTSE Developed Markets ETF	\$5.4	4.9%
20	IEF iShares 7-10 Year Treasury Bond ETF	\$5.3	30.3%

Source: National Bank of Canada, Bloomberg

Table 17 - Top Single Long ETF Outflows - Jan-July 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY SPDR S&P 500 ETF Trust	-\$29.3	-6.4%
2	XLF Financial Select Sector SPDR Fund	-\$7.5	-16.9%
3	VLUE iShares MSCI USA Value Factor ETF	-\$5.3	-32.7%
4	TIP iShares TIPS Bond ETF	-\$5.2	-13.3%
5	IWM iShares Russell 2000 ETF	-\$4.7	-6.8%
6	HYG iShares iBoxx High Yield Corporate Bond ETF	-\$4.3	-19.7%
7	SCHP Schwab US TIPS ETF	-\$3.4	-16.0%
8	XLY Consumer Discretionary Select Sector SPDR Fund	-\$2.7	-11.6%
9	XLI Industrial Select Sector SPDR Fund	-\$2.5	-14.1%
10	VGK Vanguard FTSE Europe ETF	-\$2.4	-10.8%
11	FDN First Trust Dow Jones Internet Index Fund	-\$2.3	-23.3%
12	BBEU JPMorgan BetaBuilders Europe ETF	-\$2.3	-23.8%
13	PFF iShares Preferred & Income Securities ETF	-\$2.2	-10.6%
14	IWN iShares Russell 2000 Value ETF	-\$2.1	-13.0%
15	MBB iShares MBS ETF	-\$2.0	-7.7%
16	FALN iShares Fallen Angels USD Bond ETF	-\$1.9	-38.4%
17	IYR iShares U.S. Real Estate ETF	-\$1.9	-25.2%
18	IWD iShares Russell 1000 Value ETF	-\$1.8	-3.1%
19	HYLB Xtrackers USD High Yield Corporate Bond ETF	-\$1.8	-27.7%
20	MINT PIMCO Enhanced Short Maturity Active ETF	-\$1.8	-13.3%

Source: National Bank of Canada, Bloomberg

Table 18: ETF Provider Table

Provider	AUM (\$B)	Mkt Shr	July 2022		Jan-July 2022	
			Flow (\$B)	Flow/ AUM	Flow (\$B)	Flow/ AUM
1 BlackRock iShares	\$2,241	34%	\$13.1	0.6%	\$86.3	3.5%
2 Vanguard	\$1,923	29%	\$12.1	0.7%	\$115.8	5.6%
3 State Street SSGA	\$995	15%	\$5.2	-0.6%	-\$4.2	-0.4%
4 Invesco	\$364	5%	\$2.9	0.9%	\$18.7	4.6%
5 Charles Schwab	\$257	4%	\$4.2	1.8%	\$19.7	7.2%
6 First Trust	\$136	2%	\$0.2	-0.1%	\$5.3	3.6%
7 JPMorgan	\$84	1%	\$2.1	2.6%	\$18.1	25.1%
8 ProShares	\$64	1%	\$2.8	5.0%	\$13.6	19.0%
9 Dimensional Holdings	\$60	1%	\$2.0	3.7%	\$20.7	45.8%
10 VanEck	\$53	1%	\$0.5	-1.0%	\$2.0	3.3%
11 WisdomTree	\$50	1%	\$1.0	2.2%	\$7.5	15.9%
12 Global X	\$39	1%	\$0.1	0.2%	\$3.2	7%
13 Fidelity	\$32	0%	\$0.3	1.0%	\$1.6	5%
14 Goldman Sachs	\$27	0%	\$0.3	1.1%	\$3.3	12.2%
15 Direxion	\$24	0%	\$0.1	0.3%	\$8.0	26.9%
16 PIMCO	\$24	0%	\$0.1	0.5%	-\$1.7	-6.2%
17 Northern Trust	\$21	0%	\$0.3	-1.4%	\$2.5	12.4%
18 DWS Xtrackers	\$20	0%	\$0.0	-0.2%	-\$1.3	-5.5%
19 ARK	\$16	0%	\$0.4	3.0%	\$0.7	2.4%
20 Pacer Financial	\$16	0%	\$0.5	3.6%	\$6.6	65.2%
Top 20 Total	\$6,444	97%	\$35.8		\$326.6	
Total ETF	\$6,622	100%	\$35.6		\$348.0	

Source: NBF ETF Research, Bloomberg. Data as of July 29, 2022

Appendix 1 - Glossary

Exchange Traded Funds (ETFs) are open-ended mutual funds in continuous distribution. This report also includes other Exchange Traded Products such as notes, grantor trusts, limited partnerships and unit investment trusts.

AUM (Assets Under Management): AUM is expressed in local currency, which is the U.S. dollar for the purpose of this report.

Market Share / AUM (%): AUM as % of category total AUM on the last line of the table.

Flow: The net dollar amount of fund creations and redemptions for the period based on daily NAV and the change in Shares Outstanding. Flows are expressed in local currency, which is the U.S. dollar for the purpose of this report.

Maturity: We categorize fixed income ETFs into the following maturity brackets:

- **Broad/Mixed:** ETF that holds issues from across more than one maturity bucket (short, mid and/or long-term).
- **Floating Rate:** ETF that mainly invests in floating rate issues with periodic interest rate resets.
- **Long-Term:** ETF that mainly invests in long-term issues and has a weighted average maturity greater than 10 years.
- **Mid-Term:** ETF that mainly invests in intermediate-term fixed issues and has a weighted average maturity between three and 10 years.
- **Short-Term:** ETF that mainly invests in short-term issues with weighted average maturity less than three years.
- **Target Maturity:** ETF that has a target maturity, such as a fixed date or year.
- **Rate Hedged:** ETF that uses derivatives to mitigate interest rate risk and to maintain a zero or negative portfolio duration.

NAV (Net Asset Value per share): ETF price is used when NAV is not available.

Flow/AUM (Flow as % AUM): Flow as a percentage of assets under management from the beginning of the period.

Defensive Sectors: We classify Consumer non-cyclicals, Energy, Health Care, Utilities as defensive sectors.

Cyclical Sectors: We classify Consumer Cyclical, Financials, Real Estate, Industrials, Information Technology, Materials, Communication Services as cyclical sectors.

All numbers are as of last month's final business day.

Appendix 2 - Equity ETF by Factor Categories

We group Factor Equity ETFs (exclude cap-weighted ETFs, sector ETFs and thematic ETFs) into the categories below. These groupings follow NBF's discretion and can differ from the ETF Provider's definition and classification from other sources.

Small/Mid Cap: A fund with small/mid cap focus.

Income: A fund with the primary goal of providing income. We classify a fund as belonging to the Income category when its strategy focuses on providing income, or the fund self-identifies as using an income strategy even though it may incorporate other factors in addition to income.

Value: A fund that invests primarily in the stocks that are considered undervalued using metrics such as price-to-earnings, price-to-book, EV/EBITA, etc.

Growth: A fund that invests primarily in fast-growing stocks using metrics such as earnings growth, sales growth, momentum, etc.

Momentum: A fund that invests primarily in high momentum stocks using metrics such as period returns.

Quality: A fund that invests primarily in high quality stocks using metrics like ROE, debt/equity, and earnings growth.

Low Vol or Risk: A fund that aims to achieve reduced portfolio volatility, either by screening for low volatility stocks, low beta stocks and/or minimizing the portfolio volatility.

Other: Any non-cap weighted factor strategy that is not covered by otherwise defined categories. This includes equal-weight, multi-factor, AlphaDEX and other fundamental-based ETFs.

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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.

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