

April 2022: Inflow Streak Broken by Bearishness

- Investors pulled out \$7.3 billion from the U.S. ETF market; it was the first monthly outflows in two and half years
- U.S. Equity ETFs had large redemptions as S&P 500 index fell continuously over the month
- A few bright spots of inflows in April were defensive sectors, dividend, treasury and commodities categories
- ESG investing showed resiliency when faced with challenging environment

Summary: April was challenging to many investors as the market faced headwinds from rate hikes, persistent inflation, war in Ukraine and COVID case surges in China. The U.S.-listed ETF market saw a net outflow of \$7.3 billion in April, the first month of net outflows in two and a half years. That says as much about April 2022 as it does regarding the past two years of runaway ETF asset growth.

Equity ETFs by Geography (Table 4): U.S. equity ETFs faced net outflows of \$32.4 billion, their single worst calendar month in history. Major broad market index ETFs (especially the “S&P 500 Trifecta” of IVV, SPY and VOO) each had redemptions of at least \$10 billion. The S&P 500 Index was down 8.8% in April and 13.0% YTD, one of its worst starts ever. The Dow Jones Industrial Average and Nasdaq Composite fell by 5% and 13%, respectively, in April. What is the source of this bearish action? Reported earnings in the U.S. look solid, but they seem to be overshadowed by fears of inflation and worries that the Fed’s decisions on monetary policy might trigger a recession.

Eyeing the next FOMC meeting, NBF’s Economics & Strategy team pointed out that markets have fully priced in three consecutive 50-bps moves, and the current expectation for the fed funds rate at year-end (2.77% according to Bloomberg) is well above the Fed’s target range of 1.75% to 2.00% signaled in March.

The situation in Eastern Europe is still highly uncertain as Russia’s invasion of Ukraine enters a third month. Perhaps in reaction to the risk of a wider conflict, another \$2.7 billion of assets were pulled out of broad Europe equity ETFs, or 5.8% of April’s starting AUM.

The outbreak of the highly transmissible Omicron variant in China has added another layer of gloom to the global economy. Shanghai, one of the largest economic hubs in the world, went into full lockdown for a month to contain the spread of the virus. Other major cities in China also took highly restrictive measures against COVID-19, causing severe global supply-chain disruptions as many factories were shut down. The CSI 300 index fell by 5% in April. On the ETF side, China-focused ETFs suffered outflows of \$700 million (2.6% month-starting assets).

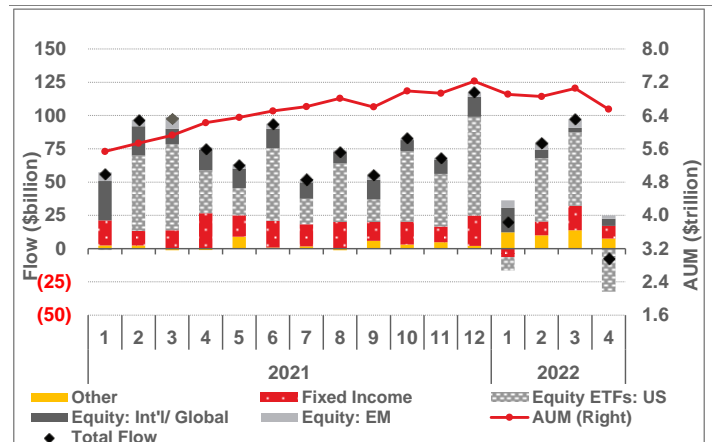
Equity Sector ETFs (Table 5): Sector ETFs overall had \$0.6 billion of outflow in April. Defensive sectors, such as Health Care, Consumer Staples and Utilities all welcomed new assets. For financial institutions, concerns linger that higher borrowing costs might outweigh potential gains to

Table 1: ETF Flows by Category

	AUM (\$B)	Mkt Shr	April 2022		Jan-Apr 2022	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
Equity	\$5,049		-\$24.3	-0.4%	\$114.7	2.0%
U.S. Broad/Large-Cap	\$1,569	24%	-\$34.8	-2.0%	\$0.3	0.0%
U.S. Other	\$2,295	35%	\$2.4	0.1%	\$60.2	2.4%
Int'l / Global	\$901	14%	\$5.5	0.6%	\$34.7	3.5%
Emerging Markets	\$284	4%	\$2.5	0.8%	\$19.5	6.4%
Fixed Income	\$1,199	18%	\$9.5	0.8%	\$32.0	2.5%
Commodity	\$170	3%	\$2.2	1.3%	\$21.2	15.6%
Multi-Asset	\$58	1%	\$2.4	4.1%	\$8.7	16.0%
Levered Long	\$53	1%	\$4.4	6.5%	\$10.4	13.6%
Inverse	\$19	0%	-\$1.4	-8.5%	\$3.1	26.5%
Crypto-Asset	\$1	0%	-\$0.1	-9.4%	\$0.0	0.4%
Total	\$6,549	100%	-\$7.3	-0.1%	\$190.1	2.6%

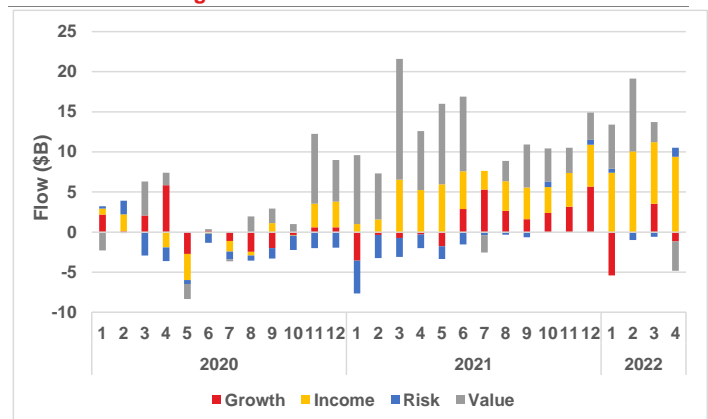
Source: NBF ETF Research, Bloomberg. Data as of April 29, 2022

Chart 1: U.S. Listed ETF Flow and AUM



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

Chart 2: Increasing Demand for Dividend/Income ETFs in 2022



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

profit margins that usually accompany a higher (i.e., steeper) yield curve. Financials saw a net outflow of \$7.0 billion in April, \$5.0 billion pouring out of Financial Select Sector SPDR Fund (XLF) alone, an amount that represents 10.8% of XLF's starting assets in April. XLF also declined by almost 10% in the month.

Equity Factor ETFs (Table 8): Investors increased their defensive positions in April while bearish sentiment took root. Most of factor ETF inflows went to dividend/income ETFs, such as JPMorgan Equity Premium Income ETF (JEPI). Low-volatility ETFs also saw buying interest in April, receiving \$1.1 billion in creation. Value, growth and small/mid-cap ETFs all suffered outflows.

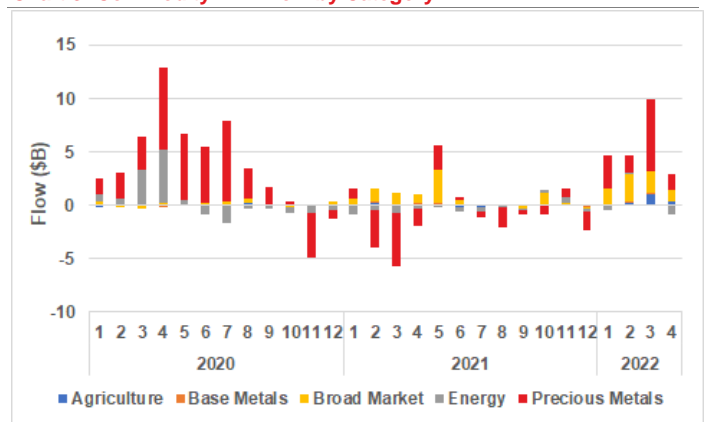
Fixed Income ETFs (Tables 6, 7): Fixed income ETFs plugged away in April with weaker-than-normal inflows of \$9.5 billion. Expectations are setting in that the Fed may take a more aggressive rate hiking path, raising the 10-year treasury yield up 58 bps in April. Government bond yields rose in parallel with significant widening of corporate spreads; U.S. BBB rated Corporate 10-year bonds' average spread increased by 22 bps to 1.79% over the course of April, the highest spread level we have seen since the 2020 COVID pandemic-induced credit crunch. iShares core U.S. aggregate bond ETF (AGG) is down 9.4% year-to-date. Faced with disappointing returns, in April ETF investors rotated from high-yield bonds towards T-bills, floating rate bonds, and short-term treasury bonds.

Commodity ETFs: Commodity ETFs had \$2 billion in flows last month, bringing year-to-date inflows to an eye-popping figure of \$21 billion. Broad commodity ETFs such as Invesco Optimum Yield Diversified Commodity Strategy No K-1 ETF (BDPC) and precious metal ETFs such as iShares Silver Trust (SLV) contributed to April's inflows while energy commodity ETFs such as USO shed assets (Chart 3).

ESG ETFs (Table 2): U.S.-listed ESG ETFs welcomed \$1.1 billion inflows in April while the total U.S. ETF market suffered a net outflow, demonstrating the resiliency of ESG investing even in challenging markets. Broad ESG ETFs that focused on U.S. equity led the inflows in April, followed by environmental-themed ETFs. Institutional investors are still playing a dominant role in ESG investing. For example, in April iShares ESG Aware MSCI EAFE (ESGD)'s \$219 million inflow and Goldman Sachs Future Planet Equity ETF (GSFP)'s \$102 million inflow came from institutional subscriptions, and SPDR MSCI USA Climate Pairs Aligned ETF (NZUS) launched in April with initial "seed capital" of \$150 million. Nevertheless, retail interest in ESG ETFs has accelerated, with evidence from the U.S. ETF market that grassroots investors are participating meaningfully. April's top ESG inflow ETF, iShares ESG Aware MSCI USA (ESGU), received massive demand of \$763 million. However, trade orders with size larger than \$1 million only accounted for about 23% of its value traded in April, suggesting that the remaining 77% of turnover came from smaller investors.

Top Performing ETFs (Table 3): Natural gas funds line the top of the "best performing ETF table" (Table 3) for the second month in a row. U.S. Natural gas price climbed to \$7.2/MMBtu at the end of April, driven by stronger demand from Europe for U.S. LNG exports as well as colder than normal weather across the U.S. VIX futures-based products also returned positively in April due to the recent spike in equity volatility—these products normally erode several percentage points per month because of futures roll costs. Simplify Interest Rate Hedge ETF (PFI) protects investors from rising interest rate risks by buying long-term interest rate swaptions. The ETF just crossed its first anniversary, but it has attracted

Chart 3: Commodity ETF Flow by Category



Source: NBF ETF Research, BlackRock. Data as of April 29, 2022

Table 2: U.S.-Listed ESG ETFs* – April 2022

Category	AUM (\$M)	AUM (%)	April 2022		Jan-Apr 2022	
			Flow (\$M)	Flow/AUM	Flow (\$M)	Flow/AUM
Equity	\$91,895	92%	\$986	1.0%	\$4,293	4.1%
Broad - U.S.	\$51,022	51%	\$649	1.2%	\$1,832	3.2%
Broad - DM	\$8,113	8%	\$243	2.9%	\$736	8.6%
Broad - EM	\$6,429	6%	\$70	1.0%	\$872	13.3%
Broad - Global	\$3,723	4%	\$35	0.9%	\$299	7.4%
Environment	\$6,941	7%	\$254	3.5%	\$532	7.0%
Clean Energy	\$12,624	13%	-\$329	-2.2%	-\$572	-3.6%
Social	\$2,265	2%	\$29	1.2%	\$311	13.6%
Other	\$580	1%	\$15	2.4%	\$178	36.9%
Commodities	\$1,608	2%	-\$66	-4.1%	-\$144	-7.7%
Multi-Asset	\$174	0%	-\$10	-5.4%	\$3	1.4%
Fixed Income	\$6,445	6%	\$216	3.3%	\$976	16.0%
Total Displayed	\$100,121	100%	\$1,125	1.0%	\$5,127	4.6%

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

Table 3: Best Performing ETFs* – April 2022

Ticker	Name	Total Return (%)	AUM (\$M)	Flow (\$M)
1	GAZ iPath Series B Bloomberg Natural Gas TR ETN	27.5	27	0
2	UNG United States Natural Gas Fund LP	26.3	440	-58
3	VXX iPath Series B S&P 500 VIX Short-Term ETN	24.7	682	-23
4	UNL United States 12 Month Natural Gas Fund LP	24.5	35	6
5	VIXY ProShares VIX Short-Term Futures ETF	24.5	449	-50
6	PFI Simplify Interest Rate Hedge ETF	19.7	256	36
7	RRH Advocate Rising Rate Hedge ETF	15.2	31	7
8	JJE iPath Series B Bloomberg Energy TR ETN	13.5	8	1
9	HDGE AdvisorShares Ranger Equity Bear ETF	13.4	124	10
10	VXZ iPath Series B S&P 500 VIX Mid-Term ETN	11.6	64	-1

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

a considerably large pool of assets (over \$250 million) thanks to the near-perfect environment for the product's stated strategy and the lucky timing of its launch.

April 2022 ETF Flows: Tables 4 - 10

Table 4 - Equity ETF Flows by Geography - April 2022

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,864		-\$32.4	-0.8%
Broad/Large Cap	\$1,569	31%	-\$34.8	-2.0%
U.S. Other	\$2,295	45%	\$2.4	0.1%
International Developed	\$536		\$0.6	0.1%
Broad Int'l Dev	\$406	8%	\$2.2	0.5%
Broad Europe	\$47	1%	-\$2.7	-5.1%
Japan	\$21	0%	\$0.2	1.0%
Canada	\$11	0%	-\$0.1	-0.7%
Other Developed	\$51	1%	\$1.0	1.7%
Emerging Markets	\$284		\$2.5	0.8%
Broad Cap Weighted	\$192	4%	\$3.3	1.7%
China (A+H)	\$25	0%	-\$0.7	-2.6%
Other EM	\$67	1%	-\$0.2	-0.2%
Global/Regional	\$365	7%	\$4.9	1.3%
Total Displayed	\$5,049	100%	-\$24.3	-0.4%

Source: National Bank of Canada, Bloomberg

Table 5 - Equity ETF Flows by Sector and Themes* - April 2022

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$96	11%	\$2.5	2.5%
Consumer Staples	\$30	3%	\$2.5	9.4%
Utilities	\$25	3%	\$1.9	7.6%
Materials	\$54	6%	\$1.3	2.3%
Technology	\$162	19%	\$0.8	0.5%
Real Estate	\$91	11%	\$0.6	0.7%
Energy	\$82	10%	\$0.4	0.5%
Industrials	\$36	4%	-\$0.6	-1.6%
Communication Services	\$30	3%	-\$1.4	-4.0%
Consumer Discretionary	\$33	4%	-\$1.6	-4.1%
Financials	\$69	8%	-\$7.0	-8.3%
ESG	\$91	11%	\$0.9	0.9%
Thematic	\$63	7%	\$1.4	2.0%
Total Displayed	\$861	100%	\$1.8	0.2%

*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 9 - Top Single Long ETF Inflows - April 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	SCHR Schwab Intermediate-Term U.S. Treasury ETF	\$3.1	67.9%
2	BIL SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	\$2.5	18.0%
3	XLV Health Care Select Sector SPDR Fund	\$1.6	4.3%
4	XLU Utilities Select Sector SPDR Fund	\$1.5	9.9%
5	MUB iShares National Muni Bond ETF	\$1.5	6.0%
6	VTI Vanguard Total Stock Market ETF	\$1.4	0.5%
7	GUSA Goldman Sachs Marketbeta US 1000 Equity ETF	\$1.4	NA
8	EBND SPDR Bloomberg Barclays EM Local Bond ETF	\$1.3	117.7%
9	VVO Vanguard FTSE Emerging Markets ETF	\$1.3	1.7%
10	JEPI JPMorgan Equity Premium Income ETF	\$1.3	15.9%
11	SMH VanEck Semiconductor ETF	\$1.2	14.5%
12	SCHD Schwab US Dividend Equity ETF	\$1.2	3.4%
13	XLP Consumer Staples Select Sector SPDR Fund	\$1.1	7.3%
14	BND Vanguard Total Bond Market ETF	\$1.1	1.3%
15	EEM iShares MSCI Emerging Markets ETF	\$1.1	3.9%
16	USFR WisdomTree Floating Rate Treasury Fund	\$1.1	37.2%
17	JCPI JPMorgan Inflation Managed Bond ETF	\$1.1	NA
18	VTEB Vanguard Tax-Exempt Bond Index ETF	\$1.1	7.3%
19	SHY iShares 1-3 Year Treasury Bond ETF	\$1.0	4.8%
20	HDV iShares Core High Dividend ETF	\$1.0	11.5%

Source: National Bank of Canada, Bloomberg

Table 6 - Fixed Income ETF Flows by Type - April 2022

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$284	24%	\$3.1	1.1%
U.S. Government	\$332	28%	\$9.4	2.8%
U.S. Municipals	\$79	7%	\$1.5	1.9%
U.S. I.G. Corporate	\$207	17%	-\$0.9	-0.4%
Developed Markets&Global	\$135	11%	\$0.1	0.1%
Emerging Markets	\$29	2%	\$0.5	1.7%
Sub-investment Grade	\$88	7%	-\$3.3	-3.5%
Convertibles and Preferreds	\$45	4%	-\$0.9	-1.8%
Total Displayed	\$1,199	100%	\$9.5	0.8%

Source: National Bank of Canada, Bloomberg

Table 7 - Fixed Income ETF Flows by Maturity - April 2022

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$620	52%	-\$1.4	-0.2%
Ultra Short Term	\$134	11%	\$5.4	4.2%
Short Term	\$244	20%	\$2.0	0.8%
Mid Term	\$130	11%	\$1.6	1.2%
Long Term	\$45	4%	\$0.9	1.9%
Target Maturity	\$24	2%	\$0.9	3.9%
Rate Hedged	\$3	0%	\$0.0	-1.2%
Total Displayed	\$1,199	100%	\$9.5	0.8%

Source: National Bank of Canada, Bloomberg

Table 8 - Equity ETF Flows by Factor* - April 2022

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Income	\$333	19%	\$9.4	2.8%
Low Vol	\$60	3%	\$1.1	1.8%
Quality	\$36	2%	\$0.7	1.9%
Momentum	\$22	1%	\$0.1	0.4%
Growth	\$318	18%	-\$1.2	-0.3%
Small/Mid Cap	\$428	25%	-\$2.2	-0.5%
Value	\$388	23%	-\$3.7	-0.9%
Multi-Factor and Other	\$139	8%	\$1.8	1.2%
Total Displayed	\$1,725	100%	\$6.1	0.3%

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

Table 10 - Top Single Long ETF Outflows - April 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	IVV iShares Core S&P 500 ETF	-\$12.0	-3.6%
2	SPY SPDR S&P 500 ETF Trust	-\$10.9	-2.6%
3	VOO Vanguard S&P 500 ETF	-\$10.4	-3.6%
4	XLF Financial Select Sector SPDR Fund	-\$5.0	-10.8%
5	QQQ Invesco QQQ Trust Series 1	-\$2.8	-1.4%
6	HYG iShares iBoxx High Yield Corporate Bond ETF	-\$1.9	-12.7%
7	SCHX Schwab US Large-Cap ETF	-\$1.8	-5.4%
8	IWM iShares Russell 2000 ETF	-\$1.8	-2.9%
9	SCHP Schwab US TIPS ETF	-\$1.6	-8.1%
10	TIP iShares TIPS Bond ETF	-\$1.6	-4.6%
11	JNK SPDR Bloomberg Barclays High Yield Bond ETF	-\$1.4	-18.2%
12	BBEU JPMorgan BetaBuilders Europe ETF	-\$1.1	-10.1%
13	VGK Vanguard FTSE Europe ETF	-\$1.1	-5.3%
14	VCSH Vanguard Short-Term Corporate Bond ETF	-\$1.0	-2.4%
15	IWV iShares S&P 500 Growth ETF	-\$1.0	-2.7%
16	IWD iShares Russell 1000 Value ETF	-\$1.0	-1.7%
17	FXD First Trust Consumer Discretionary AlphaDEX	-\$0.9	-58.8%
18	IEF iShares 7-10 Year Treasury Bond ETF	-\$0.9	-4.9%
19	FDN First Trust Dow Jones Internet Index Fund	-\$0.9	-12.1%
20	TFI SPDR Nuveen Bloomberg Barclays Muni Bond	-\$0.8	-17.2%

Source: National Bank of Canada, Bloomberg

January - April 2022 ETF Flows: Tables 11 - 17

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

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,864		\$60.5	1.4%
Broad/Large Cap	\$1,569	31%	\$0.3	0.0%
U.S. Other	\$2,295	45%	\$60.2	2.4%
International Developed	\$536		\$17.7	3.0%
Broad Int'l Dev	\$406	8%	\$13.5	3.0%
Broad Europe	\$47	1%	-\$1.4	-2.5%
Japan	\$21	0%	\$0.0	-0.2%
Canada	\$11	0%	\$1.4	13.9%
Other Developed	\$51	1%	\$4.3	8.0%
Emerging Markets	\$284		\$19.5	6.4%
Broad Cap Weighted	\$192	4%	\$12.1	5.9%
China (A+H)	\$25	0%	\$3.5	12.7%
Other EM	\$67	1%	\$4.0	5.6%
Global/Regional	\$365	7%	\$17.0	4.2%
Total Displayed	\$5,049	100%	\$114.7	2.0%

Source: National Bank of Canada, Bloomberg

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

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$96	11%	\$5.6	5.3%
Consumer Staples	\$30	3%	\$5.4	22.5%
Energy	\$82	10%	\$4.8	8.3%
Materials	\$54	6%	\$4.1	8.2%
Utilities	\$25	3%	\$3.9	18.1%
Technology	\$162	19%	\$2.1	1.0%
Industrials	\$36	4%	-\$0.6	-1.5%
Real Estate	\$91	11%	-\$0.7	-0.7%
Communication Services	\$30	3%	-\$2.6	-6.2%
Financials	\$69	8%	-\$4.9	-5.7%
Consumer Discretionary	\$33	4%	-\$5.9	-11.9%
ESG	\$91	11%	\$4.3	4.2%
Thematic	\$63	7%	\$3.1	4.1%
Total Displayed	\$861	100%	\$18.7	1.9%

*Includes all geographic focus; Source: National Bank of Canada, Bloomberg
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Table 16 - Top Single Long ETF Inflows - Jan-Apr 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	VOO Vanguard S&P 500 ETF	\$14.4	5.2%
2	VTI Vanguard Total Stock Market ETF	\$10.2	3.4%
3	VTV Vanguard Value ETF	\$10.1	10.8%
4	GLD SPDR Gold Shares	\$7.4	12.9%
5	BND Vanguard Total Bond Market ETF	\$5.5	6.6%
6	SCHD Schwab US Dividend Equity ETF	\$5.2	16.8%
7	SHV iShares Short Treasury Bond ETF	\$4.5	34.5%
8	VEA Vanguard FTSE Developed Markets ETF	\$4.3	3.9%
9	SCHR Schwab Intermediate-Term U.S. Treasury ETF	\$4.2	112.9%
10	XLV Health Care Select Sector SPDR Fund	\$4.0	11.3%
11	IEFA iShares Core MSCI EAFE ETF	\$3.6	3.4%
12	RSP Invesco S&P 500 Equal Weight ETF	\$3.5	11.0%
13	SMH VanEck Semiconductor ETF	\$3.4	47.6%
14	JEPI JPMorgan Equity Premium Income ETF	\$3.4	58.5%
15	COWZ Pacer US Cash Cows 100 ETF	\$3.3	258.4%
16	XLP Consumer Staples Select Sector SPDR Fund	\$3.3	24.2%
17	VWO Vanguard FTSE Emerging Markets ETF	\$3.2	4.0%
18	TLT iShares 20+ Year Treasury Bond ETF	\$3.1	15.7%
19	IUSB iShares Core Total USD Bond Market ETF	\$3.0	18.3%
20	STIP iShares 0-5 Year TIPS Bond ETF	\$3.0	33.6%

Source: National Bank of Canada, Bloomberg

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

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$284	24%	\$5.9	1.9%
U.S. Government	\$332	28%	\$26.8	8.2%
U.S. Municipals	\$79	7%	\$6.3	8.1%
U.S. I.G. Corporate	\$207	17%	\$2.4	1.0%
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Sub-investment Grade	\$88	7%	-\$13.5	-12.4%
Convertibles and Preferreds	\$45	4%	-\$3.5	-6.2%
Total Displayed	\$1,199	100%	\$32.0	2.5%

Source: National Bank of Canada, Bloomberg

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

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$620	52%	-\$8.5	-1.2%
Ultra Short Term	\$134	11%	\$19.1	16.5%
Short Term	\$244	20%	\$4.6	1.9%
Mid Term	\$130	11%	\$8.0	5.9%
Long Term	\$45	4%	\$6.7	13.8%
Target Maturity	\$24	2%	\$2.5	11.1%
Rate Hedged	\$3	0%	-\$0.4	-11.9%
Total Displayed	\$1,199	100%	\$32.0	2.5%

Source: National Bank of Canada, Bloomberg

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

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Income	\$333	19%	\$34.5	10.8%
Value	\$388	23%	\$13.4	3.3%
Quality	\$36	2%	\$0.7	1.8%
Small/Mid Cap	\$428	25%	\$0.6	0.1%
Low Vol	\$60	3%	\$0.0	0.1%
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Multi-Factor and Other	\$139	8%	\$9.4	6.5%
Total Displayed	\$1,725	100%	\$54.3	2.9%

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

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

Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY SPDR S&P 500 ETF Trust	-\$28.5	-6.2%
2	HYG iShares iBoxx High Yield Corporate Bond ETF	-\$7.5	-34.4%
3	TIP iShares TIPS Bond ETF	-\$4.5	-11.7%
4	IWM iShares Russell 2000 ETF	-\$3.9	-5.7%
5	BSV Vanguard Short-Term Bond ETF	-\$3.8	-9.0%
6	JNK SPDR Bloomberg Barclays High Yield Bond ETF	-\$2.9	-30.3%
7	VLUE iShares MSCI USA Value Factor ETF	-\$2.7	-17.0%
8	IWD iShares Russell 1000 Value ETF	-\$2.3	-3.8%
9	EFG iShares MSCI EAFE Growth ETF	-\$2.2	-16.2%
10	FDN First Trust Dow Jones Internet Index Fund	-\$2.1	-21.6%
11	XLF Financial Select Sector SPDR Fund	-\$2.1	-4.7%
12	SCHP Schwab US TIPS ETF	-\$2.0	-9.3%
13	HYLB Xtrackers USD High Yield Corporate Bond ETF	-\$1.9	-28.8%
14	MBB iShares MBS ETF	-\$1.8	-7.1%
15	EMB iShares JP Morgan USD Emerging Markets Bond	-\$1.7	-8.8%
16	IWN iShares Russell 2000 Value ETF	-\$1.7	-10.5%
17	XLY Consumer Discretionary Select Sector SPDR	-\$1.6	-7.0%
18	PPF iShares Preferred & Income Securities ETF	-\$1.6	-7.9%
19	IXG iShares Global Financials ETF	-\$1.6	-58.4%
20	IWF iShares Russell 1000 Growth ETF	-\$1.6	-2.0%

Source: National Bank of Canada, Bloomberg

Table 18: ETF Provider Table

Provider	AUM (\$B)	Mkt Shr	April 2022		Jan-Apr 2022	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
1 BlackRock iShares	\$2,203	34%	-\$10.5	-0.4%	\$20.2	0.8%
2 Vanguard	\$1,900	29%	-\$2.8	-0.1%	\$74.7	3.6%
3 State Street SSGA	\$1,006	15%	-\$10.6	-1.0%	\$0.5	0.0%
4 Invesco	\$359	5%	-\$0.8	-0.2%	\$13.3	3.3%
5 Charles Schwab	\$254	4%	\$2.5	0.9%	\$12.2	4.5%
6 First Trust	\$138	2%	\$0.0	0.0%	\$5.0	3.4%
7 JPMorgan	\$77	1%	\$1.5	1.9%	\$9.6	13.3%
8 ProShares	\$62	1%	\$1.0	1.4%	\$8.1	11.3%
9 VanEck	\$61	1%	\$1.8	2.8%	\$5.2	8.3%
10 WisdomTree	\$48	1%	\$1.6	3.3%	\$3.9	8.1%
11 Dimensional Holdings	\$46	1%	\$1.2	2.6%	\$5.7	12.6%
12 Global X	\$41	1%	\$0.9	1.9%	\$3.2	7%
13 Fidelity	\$31	0%	\$0.4	1.1%	\$1.3	4%
14 Goldman Sachs	\$28	0%	\$1.9	6.9%	\$3.3	12.0%
15 PIMCO	\$25	0%	-\$0.4	-1.7%	-\$1.1	-4.0%
16 Direxion	\$23	0%	\$2.3	8.4%	\$6.2	20.8%
17 Northern Trust	\$22	0%	\$0.5	2.3%	\$2.1	10.2%
18 DWS Xtrackers	\$20	0%	-\$0.5	-2.5%	-\$1.8	-7.3%
19 ARK	\$16	0%	\$0.1	0.5%	-\$0.2	-0.5%
20 Pacer Financial	\$13	0%	\$0.9	7.3%	\$3.9	38.2%
Top 20 Total	\$6,372	97%	-\$8.9		\$175.2	
Total ETF	\$6,549	100%	-\$7.3		\$190.1	

Source: NBF ETF Research, Bloomberg. Data as of April 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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