

May 2022: ETF Buying Resumes

- After a short pause in April, investors resumed large-scale ETF buying in May despite stock market turmoil
- S&P 500 index ETFs and defensive factor ETFs dominated equity inflows in May
- Fixed Income ETFs resumed strong inflows into credit categories while the Fed is on course for further tightening
- Gasoline and natural gas ETFs ranked top by performance in May; however, commodity ETFs saw outflows

Summary: In spite of steep market declines throughout most of May, investor appetite for ETFs has returned after a short pause in April. The U.S.-listed ETF market saw a net inflow of \$79.9 billion last month, with strong inflows into income/value ETFs, U.S. broad-based equity ETFs and bond ETFs. Sector ETFs and commodity ETFs had outflows.

Equity ETFs by Geography (Table 4): U.S. equity ETFs recouped the entirety of April's record monthly outflows, then gathered even more assets to more than make up for the prior month. The category amassed \$41.5 billion in new money, with the three largest S&P 500 index ETFs raking in \$16.4 billion in total. International ETF inflows remained muted, a trend that has been in place since the start of the war in Ukraine. Investors preferred domestic ETFs, even though the iShares MSCI EAFE ETF (EFA) performed better than the SPDR S&P 500 ETF (SPY); EFA lost 4.7% since the beginning of March while SPY lost 5.2% in the same period.

Equity Sector ETFs (Table 5): Sector and thematic ETFs had a large \$11.5 billion net outflow in May. Financials, industrials and technology sectors led the outflows while health care, consumer staples and utilities gathered assets. Sector ETFs stepped away from the spotlight this year; year-to-date sector inflows only make up 4% of total equity inflows in 2022 so far, even though the sector performance dispersion is the highest since 2000, according to Bloomberg. Meanwhile, factor ETFs contributed to more than half of total equity inflows this year (Chart 2). Sector dispersion is defined as the spread between the best- and worst-performing sectors, and the last time this measure was high in the U.S. was during the pandemic-induced volatility of 2020; at the time, sector ETFs welcomed heightened activity and took in a third of all equity inflows. The difference? The technology sector was the leader and the energy sector was the laggard in 2020, a narrative that was already embedded in the outlook of many market participants; this time, with the sector dispersion even higher and in reverse, investors may be wondering if long-term forecasts for tech dominance and energy transition are in question or merely on pause.

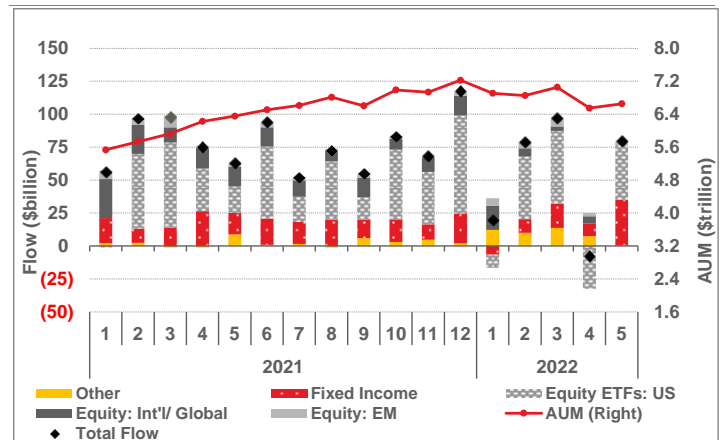
Equity Factor ETFs (Table 8): Factor ETFs gained \$32.7 billion in creations in May. It is worth noting that although a significant portion of May's factor inflow was due to a single mutual-fund-to-ETF conversion (Dimensional U.S. Marketwide Value ETF, DFUV, \$7.7 billion), demand for factor ETFs has been persistently strong this year. Year-to-date, inflow to factor ETFs is \$88.2 billion, equivalent to an impressive 54% of the year-to-date total equity ETF inflow.

Table 1: ETF Flows by Category

	AUM (\$B)	Mkt Shr	May 2022		Jan-May 2022	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
Equity	\$5,121		\$44.8	0.9%	\$159.9	2.8%
U.S. Broad/Large-Cap	\$1,585	24%	\$18.6	1.2%	\$17.5	1.0%
U.S. Other	\$2,337	35%	\$22.9	1.0%	\$84.6	3.3%
Int'l / Global	\$910	14%	\$0.6	0.1%	\$35.6	3.6%
Emerging Markets	\$289	4%	\$2.6	0.9%	\$22.3	7.3%
Fixed Income	\$1,236	19%	\$34.4	2.9%	\$66.5	5.2%
Commodity	\$163	2%	-\$3.6	-2.1%	\$17.6	13.0%
Multi-Asset	\$60	1%	\$2.5	4.2%	\$11.2	20.4%
Levered Long	\$55	1%	\$1.7	3.3%	\$12.1	15.9%
Inverse	\$18	0%	\$0.0	0.0%	\$3.2	26.9%
Crypto-Asset	\$1	0%	\$0.0	1.0%	\$0.0	1.2%
Total	\$6,654	100%	\$79.9	1.2%	\$270.6	3.7%

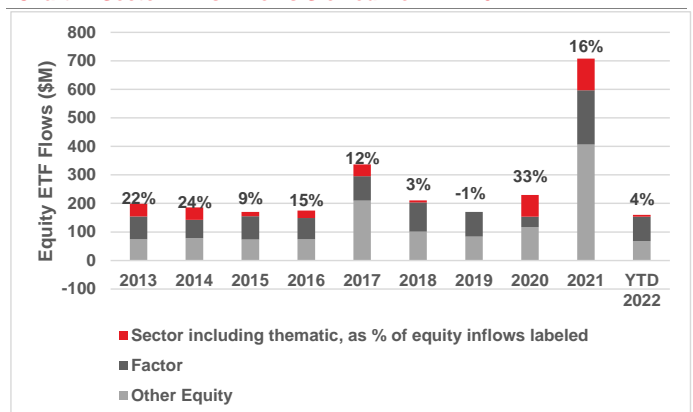
Source: NBF ETF Research, Bloomberg. Data as of May 31, 2022

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



Source: NBF ETF Research, Bloomberg. Data as of May 31, 2022

Chart 2: Sector ETFs Inflows Slowed Down in 2022



Source: NBF ETF Research, Bloomberg. Data as of May 31, 2022

In comparison, in 2021 factor ETFs represented 27% of the total equity ETF demand in terms of flows (Chart 2). In May 2022, most new assets went into defensive factors (value, low volatility, dividend/income), but growth factor products saw large buying interest too, taking in \$5.7 billion. In fact, if we remove the \$7.7 billion contribution from **DFUV**, growth ETFs slightly outsold value ETFs in May, even though the S&P 500 Growth index ended the month underperforming the S&P 500 Value index by 3%.

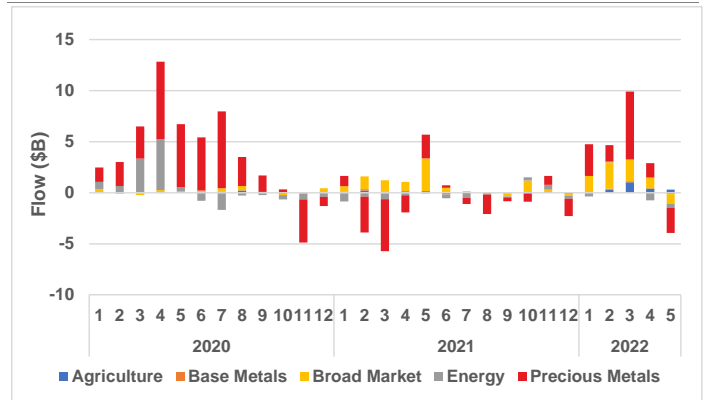
Fixed Income ETFs (Tables 6, 7): The Fed announced a 50 bps rate increase in May as well as the beginning of the quantitative tightening process. The press conference also suggested a year-end rate in the 2.50-2.75% range, which is less aggressive than what the market has priced in. In May, investors poured money back into fixed income ETFs; the fixed income category welcomed \$34.4 billion, more than half of the category's year-to-date inflow. While short-term U.S. government bond ETFs continued to draw most of the assets, we observed significant buying across almost all credit and maturity levels, perhaps reflecting a sense of 'relief' from market participants who were fearing an even more hawkish Fed. Long-term treasury ETF (TLT, \$1.9 billion), investment grade corporate bond ETF (LQD, \$1.9 billion) and high yield corporate bond ETF (HYG, \$2.5 billion) all made their way into the top 20 ETF inflow table in May.

Commodity ETFs: Commodity ETFs' inflow streak ended in May with a net outflow of \$3.6 billion (Chart 3). Precious metal ETFs lost \$2.5 billion in total, primarily from **GLD** (\$1.5 billion) and **SLV** (\$0.4 billion). iShares GSCI Commodity Dynamic (COMT) also had a \$1.4 billion outflow, seemingly from two consecutive block trades. Only agricultural futures-based ETFs remained strongly in demand. Agriculture is the only commodity category in May that received a net inflow (\$0.3 billion).

ESG ETFs (Table 2): After months of resilient inflows amidst difficult market conditions, U.S.-listed ESG ETFs finally saw their first month of redemption since January 2019. In fact, May had the largest monthly redemption in history mostly driven by institutional redemption orders on two broad ESG-score-based ETFs. The largest ESG-focused EM ETF, iShares ESG Aware MSCI EM (**ESGE**), lost about 20% of its AUM this month from several institutional sized withdrawals amounting to \$1.1 billion, and the mammoth-sized U.S. equity ETF iShares ESG Aware MSCI USA ETF (**ESGU**) also shed \$0.5 billion in a single block trade. On the inflow side, Nuveen ESG Large-Cap Value ETF (**NULV**) received \$247 million inflows, which speaks to the popularity of value investing in every ETF category in the context of the modern economic backdrop of lofty valuations.

Top Performing ETFs (Table 3): U.S.-focused oil & gas ETFs rallied in May due to higher energy demand. Reliance on U.S. crude oil is rising, as the EU is reaching consensus on a possible Russian oil embargo. Although the EU has exempted gas from sanctions, the Russian state-owned energy company Gazprom has cut supplies to some EU countries due to their refusal to pay for gas in rubles. This cut in supply (and also warmer weather in the Northern Hemisphere) may drive up relative demand for U.S. natural gas.

Chart 3: Commodity ETF Flow by Category



Source: NBF ETF Research, BlackRock. Data as of May 31, 2022

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

Category	AUM (\$M)	AUM (%)	May 2022		Jan - May 2022	
			Flow (\$M)	Flow/AUM	Flow (\$M)	Flow/AUM
Equity	\$91,027	92%	-\$1,804	-2.0%	\$2,651	2.6%
Broad - U.S.	\$50,680	51%	-\$132	-0.3%	\$1,701	2.9%
Broad - DM	\$8,231	8%	\$4	0.0%	\$740	8.7%
Broad - EM	\$5,296	5%	-\$1,130	-17.6%	-\$250	-3.8%
Broad - Global	\$3,764	4%	\$12	0.3%	\$311	7.7%
Environment	\$6,949	7%	-\$260	-3.6%	\$427	5.5%
Clean Energy	\$13,009	13%	-\$351	-2.8%	-\$923	-5.8%
Social	\$2,256	2%	\$4	0.2%	\$315	13.8%
Other	\$622	1%	\$38	6.6%	\$216	44.8%
Commodities	\$1,579	2%	-\$87	-5.4%	-\$221	-11.8%
Multi-Asset	\$175	0%	\$2	1.3%	\$5	2.5%
Fixed Income	\$6,579	7%	\$55	0.8%	\$1,081	17.7%
Total Displayed	\$99,361	100%	-\$1,834	-1.8%	\$3,516	3.1%

Source: NBF ETF Research, Bloomberg. Data as of May 31, 2022

Table 3: Best Performing ETFs* – May 2022

Ticker	Name	Total Return (%)	AUM (\$M)	Flow (\$M)
1 ECH	iShares MSCI Chile ETF	19.7	448	-21
2 UGA	United States Gasoline Fund LP	19.6	107	31
3 PXE	Invesco Dynamic Energy Exploration & Production	19.3	264	107
4 FCG	First Trust Natural Gas ETF	18.0	729	82
5 IEO	iShares U.S. Oil & Gas Exploration & Production	17.8	820	65
6 XOP	SPDR S&P Oil & Gas Exploration & Production ETF	17.3	5,541	-604
7 RYE	Invesco S&P 500 Equal Weight Energy ETF	16.5	544	70
8 FXN	First Trust Energy AlphaDEX Fund	16.3	1,605	31
9 FTXN	First Trust Nasdaq Oil & Gas ETF	16.2	1,128	7
10 JHME	John Hancock Multifactor Energy ETF	16.1	31	1

*Excluding leveraged/inverse ETFs. Source: NBF ETF Research, Bloomberg. Data as of May 31, 2022

May 2022 ETF Flows: Tables 4 - 10

Table 4 - Equity ETF Flows by Geography - May 2022

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,922		\$41.5	1.1%
Broad/Large Cap	\$1,585	31%	\$18.6	1.2%
U.S. Other	\$2,337	46%	\$22.9	1.0%
International Developed	\$545		\$1.3	0.2%
Broad Int'l Dev	\$414	8%	\$2.2	0.5%
Broad Europe	\$46	1%	-\$1.9	-4.1%
Japan	\$21	0%	\$0.3	1.2%
Canada	\$11	0%	\$0.1	0.6%
Other Developed	\$52	1%	\$0.7	1.4%
Emerging Markets	\$289		\$2.6	0.9%
Broad Cap Weighted	\$194	4%	\$0.7	0.3%
China (A+H)	\$26	1%	\$0.8	3.2%
Other EM	\$69	1%	\$1.2	1.8%
Global/Regional	\$365	7%	-\$0.6	-0.2%
Total Displayed	\$5,121	100%	\$44.8	0.9%

Source: National Bank of Canada, Bloomberg

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

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$97	11%	\$1.6	1.7%
Consumer Staples	\$29	3%	\$0.5	1.6%
Utilities	\$27	3%	\$0.3	1.2%
Communication Services	\$30	3%	\$0.3	0.9%
Real Estate	\$87	10%	\$0.0	0.0%
Energy	\$93	11%	-\$0.8	-1.0%
Consumer Discretionary	\$31	4%	-\$0.9	-2.6%
Materials	\$51	6%	-\$1.4	-2.6%
Technology	\$158	18%	-\$1.7	-1.0%
Industrials	\$34	4%	-\$2.0	-5.5%
Financials	\$66	8%	-\$5.6	-8.1%
ESG	\$90	11%	-\$1.8	-2.0%
Thematic	\$65	8%	\$1.5	2.4%
Total Displayed	\$855	100%	-\$10.0	-1.2%

*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 - May 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	IVV iShares Core S&P 500 ETF	\$8.1	2.8%
2	DFUV Dimensional US Marketwide Value ETF	\$7.7	NA
3	SPY SPDR S&P 500 ETF Trust	\$4.5	1.2%
4	VOO Vanguard S&P 500 ETF	\$3.8	1.5%
5	MUB iShares National Muni Bond ETF	\$3.8	15.2%
6	BSV Vanguard Short-Term Bond ETF	\$3.4	9.3%
7	HDV iShares Core High Dividend ETF	\$3.0	30.8%
8	BIL SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	\$2.7	16.4%
9	HYG iShares iBoxx High Yield Corporate Bond ETF	\$2.5	19.7%
10	SHY iShares 1-3 Year Treasury Bond ETF	\$2.4	10.5%
11	EEMV iShares MSCI Emerging Markets Min Vol Factor ETF	\$2.4	65.1%
12	SHV iShares Short Treasury Bond ETF	\$2.2	12.5%
13	XLV Health Care Select Sector SPDR Fund	\$2.2	6.0%
14	IEF iShares 7-10 Year Treasury Bond ETF	\$2.2	13.4%
15	LQD iShares iBoxx \$ IG Corporate Bond ETF	\$1.9	6.0%
16	TLT iShares 20+ Year Treasury Bond ETF	\$1.9	10.1%
17	JNK SPDR Bloomberg Barclays High Yield Bond ETF	\$1.8	30.4%
18	SPYD SPDR Portfolio S&P 500 High Dividend ETF	\$1.8	27.2%
19	USFR WisdomTree Floating Rate Treasury Fund	\$1.7	42.0%
20	IWF iShares Russell 1000 Growth ETF	\$1.7	2.7%

Source: National Bank of Canada, Bloomberg

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

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$289	23%	\$3.2	1.1%
U.S. Government	\$349	28%	\$17.7	5.3%
U.S. Municipals	\$86	7%	\$6.0	7.6%
U.S. I.G. Corporate	\$212	17%	\$3.2	1.5%
Developed Markets&Global	\$135	11%	\$0.9	0.7%
Emerging Markets	\$29	2%	\$0.4	1.2%
Sub-investment Grade	\$90	7%	\$3.3	3.8%
Convertibles and Preferreds	\$45	4%	-\$0.2	-0.5%
Total Displayed	\$1,236	100%	\$34.4	2.9%

Source: National Bank of Canada, Bloomberg

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

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$632	51%	\$11.0	1.8%
Ultra Short Term	\$140	11%	\$6.9	5.2%
Short Term	\$255	21%	\$10.1	4.1%
Mid Term	\$134	11%	\$3.3	2.6%
Long Term	\$46	4%	\$1.8	4.0%
Target Maturity	\$26	2%	\$1.3	5.2%
Rate Hedged	\$3	0%	\$0.0	-0.6%
Total Displayed	\$1,236	100%	\$34.4	2.9%

Source: National Bank of Canada, Bloomberg

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

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Income	\$354	20%	\$13.3	4.0%
Value	\$410	23%	\$12.1	3.1%
Growth	\$318	18%	\$5.7	1.8%
Low Vol	\$62	4%	\$2.6	4.3%
Momentum	\$22	1%	-\$0.3	-1.4%
Quality	\$35	2%	-\$0.4	-1.1%
Small/Mid Cap	\$425	24%	-\$0.8	-0.2%
Multi-Factor and Other	\$143	8%	\$0.3	0.2%
Total Displayed	\$1,768	100%	\$32.5	1.9%

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

Table 10 - Top Single Long ETF Outflows - May 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	XLFF Financial Select Sector SPDR Fund	-\$3.4	-9.3%
2	VLUE iShares MSCI USA Value Factor ETF	-\$2.0	-16.6%
3	SCHP Schwab US TIPS ETF	-\$1.7	-9.3%
4	IJR iShares Core S&P Small-Cap ETF	-\$1.7	-2.5%
5	GLD SPDR Gold Shares	-\$1.5	-2.3%
6	COMT iShares GSCI Commodity Dynamic	-\$1.4	-34.2%
7	BBEU JPMorgan BetaBuilders Europe ETF	-\$1.1	-12.0%
8	ESGE iShares Inc iShares ESG Aware MSCI EM ETF	-\$1.1	-18.7%
9	VHT Vanguard Health Care ETF	-\$0.9	-5.4%
10	IYE iShares U.S. Energy ETF	-\$0.8	-23.4%
11	IXN iShares Global Tech ETF	-\$0.8	-18.3%
12	VCIT Vanguard Intermediate-Term Corporate Bond ETF	-\$0.7	-1.7%
13	QQQ Invesco QQQ Trust Series 1	-\$0.7	-0.4%
14	SRLN SPDR Blackstone Senior Loan ETF	-\$0.7	-6.6%
15	XLI Industrial Select Sector SPDR Fund	-\$0.7	-4.6%
16	VNQ Vanguard Real Estate ETF	-\$0.7	-1.4%
17	VBR Vanguard Small-Cap Value ETF	-\$0.6	-2.6%
18	VIS Vanguard Industrials ETF	-\$0.6	-14.6%
19	XOP SPDR S&P Oil & Gas Exploration & Production ETF	-\$0.6	-10.9%
20	VB Vanguard Small-Cap ETF	-\$0.6	-1.3%

Source: National Bank of Canada, Bloomberg

January - May 2022 ETF Flows: Tables 11 - 17

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

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$3,922		\$102.1	2.3%
Broad/Large Cap	\$1,585	31%	\$17.5	1.0%
U.S. Other	\$2,337	46%	\$84.6	3.3%
International Developed	\$545		\$19.0	3.2%
Broad Int'l Dev	\$414	8%	\$15.7	3.5%
Broad Europe	\$46	1%	-\$3.4	-5.9%
Japan	\$21	0%	\$0.2	0.9%
Canada	\$11	0%	\$1.5	14.6%
Other Developed	\$52	1%	\$5.0	9.2%
Emerging Markets	\$289		\$22.3	7.3%
Broad Cap Weighted	\$194	4%	\$12.7	6.2%
China (A+H)	\$26	1%	\$4.3	15.5%
Other EM	\$69	1%	\$5.3	7.4%
Global/Regional	\$365	7%	\$16.6	4.1%
Total Displayed	\$5,121	100%	\$159.9	2.8%

Source: National Bank of Canada, Bloomberg

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

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Health Care	\$97	11%	\$7.2	6.8%
Consumer Staples	\$29	3%	\$5.9	24.4%
Utilities	\$27	3%	\$4.2	19.5%
Energy	\$93	11%	\$4.0	6.9%
Materials	\$51	6%	\$2.7	5.4%
Technology	\$158	18%	\$0.4	0.2%
Real Estate	\$87	10%	\$0.7	-0.6%
Communication Services	\$30	3%	-\$2.3	-5.5%
Industrials	\$34	4%	-\$2.6	-6.4%
Consumer Discretionary	\$31	4%	-\$6.7	-13.7%
Financials	\$66	8%	-\$10.5	-12.4%
ESG	\$90	11%	\$2.6	2.5%
Thematic	\$65	8%	\$4.7	6.1%
Total Displayed	\$855	100%	\$8.9	0.9%

*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 16 - Top Single Long ETF Inflows - Jan-May 2022

Ticker	Name	Flow (\$B)	Flow/AUM
1	VOO Vanguard S&P 500 ETF	\$18.3	6.5%
2	VTV Vanguard Value ETF	\$11.5	12.4%
3	VTI Vanguard Total Stock Market ETF	\$10.5	3.5%
4	IVV iShares Core S&P 500 ETF	\$8.0	2.4%
5	DFUV Dimensional US Marketwide Value ETF	\$7.7	NA
6	SHV iShares Short Treasury Bond ETF	\$6.7	51.2%
7	SCHD Schwab US Dividend Equity ETF	\$6.4	20.4%
8	XLV Health Care Select Sector SPDR Fund	\$6.2	17.4%
9	GLD SPDR Gold Shares	\$5.8	10.2%
10	MUB iShares National Muni Bond ETF	\$5.7	22.5%
11	BND Vanguard Total Bond Market ETF	\$5.4	6.4%
12	BIL SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	\$5.4	39.4%
13	SHY iShares 1-3 Year Treasury Bond ETF	\$5.3	25.5%
14	TLT iShares 20+ Year Treasury Bond ETF	\$5.0	25.4%
15	HDV iShares Core High Dividend ETF	\$5.0	66.3%
16	COWZ Pacer US Cash Cows 100 ETF	\$4.7	372.0%
17	JEPI JPMorgan Equity Premium Income ETF	\$4.7	80.3%
18	VEA Vanguard FTSE Developed Markets ETF	\$4.3	3.9%
19	VUG Vanguard Growth ETF	\$4.3	4.7%
20	SCHR Schwab Intermediate-Term U.S. Treasury ETF	\$4.1	111.1%

Source: National Bank of Canada, Bloomberg

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

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$289	23%	\$9.1	3.0%
U.S. Government	\$349	28%	\$44.4	13.5%
U.S. Municipals	\$86	7%	\$12.3	15.7%
U.S. I.G. Corporate	\$212	17%	\$5.5	2.4%
Developed Markets&Global	\$135	11%	\$8.9	6.5%
Emerging Markets	\$29	2%	\$0.1	0.2%
Sub-investment Grade	\$90	7%	-\$10.1	-9.3%
Convertibles and Preferreds	\$45	4%	-\$3.7	-6.7%
Total Displayed	\$1,236	100%	\$66.5	5.2%

Source: National Bank of Canada, Bloomberg

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

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$632	51%	\$2.6	0.4%
Ultra Short Term	\$140	11%	\$26.0	22.5%
Short Term	\$255	21%	\$14.7	5.9%
Mid Term	\$134	11%	\$11.3	8.3%
Long Term	\$46	4%	\$8.5	17.5%
Target Maturity	\$26	2%	\$3.8	16.7%
Rate Hedged	\$3	0%	-\$0.5	-12.4%
Total Displayed	\$1,236	100%	\$66.5	5.2%

Source: National Bank of Canada, Bloomberg

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

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Income	\$354	20%	\$47.8	15.0%
Value	\$410	23%	\$25.6	6.4%
Growth	\$318	18%	\$2.8	0.7%
Low Vol	\$62	4%	\$2.6	4.0%
Quality	\$35	2%	\$0.3	0.8%
Small/Mid Cap	\$425	24%	-\$0.6	-0.1%
Momentum	\$22	1%	-\$1.8	-6.4%
Multi-Factor and Other	\$143	8%	\$9.0	6.1%
Total Displayed	\$1,768	100%	\$85.7	4.5%

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

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

Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY SPDR S&P 500 ETF Trust	-\$23.9	-5.2%
2	XLF Financial Select Sector SPDR Fund	-\$5.5	-12.5%
3	HYG iShares iBoxx High Yield Corporate Bond ETF	-\$5.0	-23.0%
4	VLUE iShares MSCI USA Value Factor ETF	-\$4.7	-29.3%
5	TIP iShares TIPS Bond ETF	-\$4.4	-11.2%
6	SCHP Schwab US TIPS ETF	-\$3.7	-17.2%
7	IWM iShares Russell 2000 ETF	-\$3.6	-5.2%
8	MBB iShares MBS ETF	-\$2.3	-8.9%
9	EFG iShares MSCI EAFE Growth ETF	-\$2.2	-16.2%
10	FDN First Trust Dow Jones Internet Index Fund	-\$2.2	-21.8%
11	IWN iShares Russell 2000 Value ETF	-\$2.0	-12.4%
12	HVLB Xtrackers USD High Yield Corporate Bond ETF	-\$2.0	-29.7%
13	XLY Consumer Discretionary Select Sector SPDR Fund	-\$1.9	-8.3%
14	XLI Industrial Select Sector SPDR Fund	-\$1.9	-11.1%
15	PFF iShares Preferred & Income Securities ETF	-\$1.9	-9.1%
16	IXG iShares Global Financials ETF	-\$1.7	-61.5%
17	MTUM iShares MSCI USA Momentum Factor ETF	-\$1.7	-11.5%
18	IYR iShares U.S. Real Estate ETF	-\$1.7	-22.5%
19	VGK Vanguard FTSE Europe ETF	-\$1.6	-6.9%
20	FALN iShares Fallen Angels USD Bond ETF	-\$1.4	-28.4%

Source: National Bank of Canada, Bloomberg

Table 18: ETF Provider Table

Provider	AUM (\$B)	Mkt Shr	May 2022		Jan-May 2022	
			Flow (\$B)	Flow/ AUM	Flow (\$B)	Flow/ AUM
1 BlackRock iShares	\$2,251	34%	\$35.7	1.6%	\$55.9	2.3%
2 Vanguard	\$1,918	29%	\$12.4	0.7%	\$87.0	4.2%
3 State Street SSGA	\$1,020	15%	\$6.8	0.7%	\$7.5	0.7%
4 Invesco	\$361	5%	\$1.8	0.5%	\$15.2	3.7%
5 Charles Schwab	\$258	4%	\$2.3	0.9%	\$14.6	5.4%
6 First Trust	\$139	2%	\$1.1	0.8%	\$6.0	4.0%
7 JPMorgan	\$80	1%	\$2.7	3.5%	\$12.3	17.0%
8 ProShares	\$61	1%	\$0.4	0.6%	\$8.5	11.9%
9 VanEck	\$59	1%	-\$1.2	-1.9%	\$4.0	6.4%
10 Dimensional Holdings	\$58	1%	\$10.9	23.7%	\$16.7	36.8%
11 WisdomTree	\$50	1%	\$1.4	2.9%	\$5.2	10.9%
12 Global X	\$40	1%	\$0.1	0.3%	\$3.3	8%
13 Fidelity	\$32	0%	\$0.2	0.5%	\$1.5	4%
14 Goldman Sachs	\$26	0%	-\$0.4	-1.7%	\$2.8	10.4%
15 Direxion	\$25	0%	\$0.6	2.7%	\$6.8	22.9%
16 PIMCO	\$24	0%	-\$0.2	-0.8%	-\$1.3	-4.7%
17 Northern Trust	\$23	0%	\$0.5	2.4%	\$2.6	12.9%
18 DWS Xtrackers	\$19	0%	-\$0.5	-2.4%	-\$2.2	-9.3%
19 ARK	\$16	0%	\$0.5	3.1%	\$0.3	1.1%
20 Pacer Financial	\$15	0%	\$1.6	12.6%	\$5.5	54.4%
Top 20 Total	\$6,473	97%	\$76.7		\$252.3	
Total ETF	\$6,654	100%	\$79.9		\$270.6	

Source: NBF ETF Research, Bloomberg. Data as of May 31, 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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