

May 2024: U.S. Listed ETF Assets Pass the \$9 Trillion Milestone

- With inflows of \$90 billion in May coupled with market returns, U.S. ETFs surpassed \$9 trillion in total AUM
- Technology ETFs saw outflows despite the sector's strong performance; growth led factor categories in inflows
- High yield bond ETFs had a strong inflow of \$8.9 billion amid improving credit conditions
- Ethereum experienced a price rally as the SEC approved the listing of spot Ethereum ETFs in May

Summary (Table 1, Chart 1): U.S. AUM crossed the \$9 trillion milestone in May, supported by strong market performance and a solid inflow of \$90 billion. Since the first U.S. ETF was launched in 1993, the industry has exhibited exponential growth in assets year over year (Chart 1) with no plateau in sight. In fact, only five months have passed since the U.S.'s ETF AUM first reached \$8 trillion! Optimism has started to set in as ETF investors became more risk-on, primarily investing in U.S. broad equity, the growth factor, and high yield bonds in May.

Equity ETFs by Geography (Table 3): In May, the S&P 500 climbed by 5%, outperforming other regions due to stronger-than-expected Q1 earnings across various sectors. The U.S. region saw a robust resurgence in ETF inflows, totaling \$44.6 billion, after a brief pause in April. In contrast, Japan and Canada experienced outflows, perhaps as investors pivoted away from the two countries as they project weaker economic growth. Meanwhile, China recorded inflows after two months of outflows, supported by the rebound in the Chinese stock market. Broader emerging markets also saw positive inflows.

Equity Sector ETFs (Table 4, 11): Sector ETF inflows were relatively subdued in May. Utilities ETFs led the sector ETF inflows, after experiencing outflows during the first four months of the year. The S&P 500 Utilities Index rose 9% last month, benefiting from lower interest rates. Technology ETFs saw a rare month of outflows, possibly as investors are taking profits from significant gains earlier this year (the tech sector increased by 10.1% in May and 17.3% year-to-date). Interestingly, while broad technology ETFs like VGT and XLK saw redemptions, semiconductor-themed ETFs such as SOXX and SMH attracted substantial inflows, likely buoyed by NVDA's impressive earnings. Energy ETFs also had outflows in May, as WTI oil prices declined amid easing geopolitical tensions and indications of a slowdown in global demand.

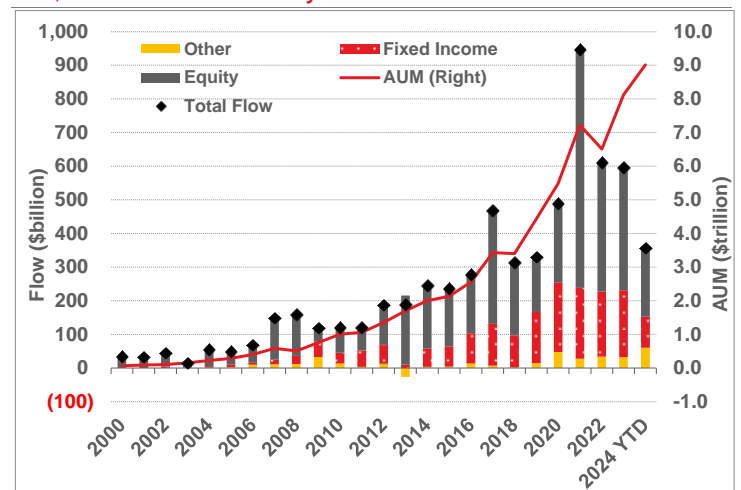
Equity Factor ETFs (Table 7, 14): Perhaps boosted by AI-related optimism, the growth factor had a month of strong performance. For example, the S&P 500 Growth index gained 6.6% in May, outperforming the market benchmark S&P 500 by 1.5%. In terms of flows, growth ETFs led the pack with \$6.7 billion, with value and quality falling in distant second and third places. Vanguard Growth ETF (VUG) and SPDR Portfolio S&P 500 Growth ETF (SPYG) took in \$1.3 billion and \$1.2 billion respectively.

Table 1: ETF Flows by Category

	AUM (\$B)	Mkt Shr	May 2024 Flow (\$B)	May 2024 Flow/AUM	YTD May 2024 Flow (\$B)	YTD May 2024 Flow/AUM
Equity	\$6,953		\$56.6	0.9%	\$204.0	3.3%
U.S. Broad/Large-Cap	\$2,453	27%	\$33.9	1.5%	\$89.0	4.2%
U.S. Other	\$2,999	33%	\$10.7	0.4%	\$68.1	2.5%
Int'l / Global	\$1,181	13%	\$7.5	0.7%	\$38.3	3.6%
Emerging Markets	\$320	4%	\$4.6	1.5%	\$8.7	2.9%
Fixed Income	\$1,586	18%	\$27.4	1.8%	\$92.0	6.0%
Commodity	\$143	2%	-\$0.3	-0.2%	-\$4.9	-3.7%
Multi-Asset	\$164	2%	\$6.1	3.9%	\$25.5	19.1%
Levered Long	\$94	1%	-\$2.9	-3.5%	-\$3.7	-4.7%
Inverse	\$14	0%	\$1.1	7.8%	\$0.6	3.5%
Crypto-Asset	\$60	1%	\$1.9	3.8%	\$42.6	2284.4%
Total	\$9,014	100%	\$89.9	1.0%	\$356.1	4.4%

Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

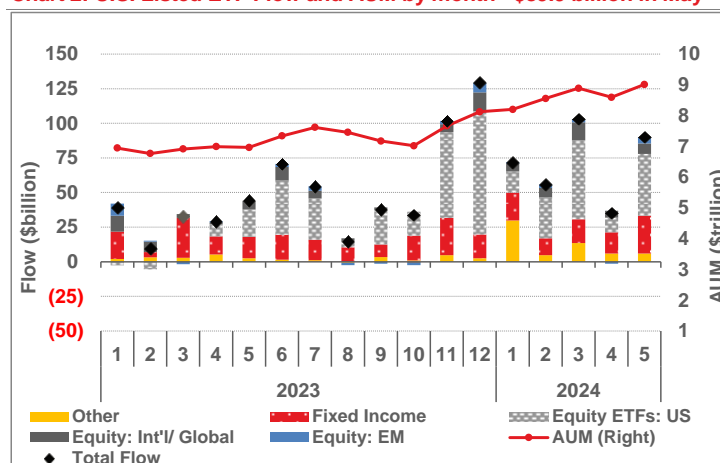
Chart 1: U.S. ETF assets have been growing exponentially, and crossed the \$9 trillion milestone in May



Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

Fixed Income ETFs (Table 5, 6): U.S. listed Fixed income ETFs took in \$27.4 billion in May, the largest print since March 2023. High yield bond ETFs contributed to about a third of the total inflows supported by improving credit conditions. The Markit CDX North American 5-year high yield spread, for instance, narrowed from 527 bps in November 2023, to 336 bps more recently, the lowest level since February 2022. On the economic front, the latest core CPI still hovers above the Fed’s target range, and the labour market still shows resilience, all providing little ground for the Fed to start cutting rates. ETF investors continue to position for a “higher-for-longer” scenario, as ultra-short-term bond ETFs took in another solid \$7 billion in creations. In particular, Janus Henderson AAA CLO ETF (**JAAA**) has demonstrated phenomenon growth, likely benefiting from both the narrowing credit spread and the persistent high-rate environment. With the addition of \$1.4 billion inflows in May, **JAAA** became the sole ultra-short-term ETF to make it into the top 20 YTD inflow table (Table 15).

Chart 2: U.S. Listed ETF Flow and AUM by month - \$89.9 billion in May



Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

ESG ETFs (Table 18): U.S.-listed ESG ETFs broke their outflow streak and enjoyed the first month of inflows (\$769 million) since December 2023. Among the key contributors: Nuveen’s suite of ESG ETFs had several large blocks of creations at the end of May, totaling \$700 million. Moreover, FT NASDAQ Clean Edge Smart Grid Infrastructure Index Fund (**GRID**) had outsized inflows amounting to \$333 million in May. We highlighted this ETF in our [January report](#) because the ETF’s constituents could play a key part in transforming the electricity grid to satisfy the rising demand for electrification, which could be a focus this year as suggested by our ESG analyst Baltej Sidhu in his [2024 ESG outlook piece](#).

Top Performing ETFs (Table 2):

Please note that crypto-assets are extremely risky and speculative.

Ethereum futures ETFs and ether-related equity ETFs have enjoyed a rally in May, boosted by speculation around the approval of the listing of spot ethereum ETFs by the SEC, which was announced on May 23rd.

Hydrogen-related equity ETFs also delivered strong returns in May. However, the ETFs’ prices remain deeply below their peak levels from November 2021.

Considering that hydrogen technology is still at a very

early phase of adoption, stocks related to this niche industry could be speculative and volatile.

Table 2: Best Performing ETFs* – May 2024

Rank	Ticker	Name	Total Return (%)	AUM (\$M)	Flow (\$M)
1	EETH	Proshares Ether Strategy Etf	29.4	98	7
2	ARKZ	ARK 21Shares Active Ethereum Futures Strategy	29.3	14	0
3	AETH	Bitwise Ethereum Strategy Etf	29.2	15	0
4	HYDR	Global X Hydrogen ETF	27.8	51	3
5	MSTY	YieldMax MSTR Option Income Strategy ETF	26.6	163	55
6	HDRO	Defiance Next Gen H2 ETF	25.7	26	1
7	ARKY	ARK 21Shares Active Bitcoin Ethereum Strategy I	24.8	5	0
8	EFUT	Vaneck Ethereum Strategy Etf	22.0	32	-1
9	BTF	Valkyrie Bitcoin and Ether Strategy ETF	22.0	56	-1
10	UNG	United States Natural Gas Fund LP	21.8	685	-339

*Excluding leveraged/inverse ETFs. Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

May 2024 ETF Flows: Tables 3 - 9

Table 3 - Equity ETF Flows by Geography - May 2024

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$5,452		\$44.6	0.9%
Broad/Large Cap	\$2,453	35%	\$33.9	1.5%
U.S. Other	\$2,999	43%	\$10.7	0.4%
International Developed	\$729		\$3.7	0.5%
Broad Int'l Dev	\$569	8%	\$3.6	0.7%
Broad Europe	\$53	1%	\$0.3	0.6%
Japan	\$37	1%	-\$0.1	-0.3%
Canada	\$10	0%	-\$0.2	-1.9%
Other Developed	\$61	1%	\$0.1	0.2%
Emerging Markets	\$320		\$4.6	1.5%
Broad Cap Weighted	\$212	3%	\$1.9	0.9%
China (A+H)	\$21	0%	\$0.9	4.4%
Other EM	\$88	1%	\$1.8	2.1%
Global/Regional	\$451	6%	\$3.7	0.9%
Total Displayed	\$6,953	100%	\$56.6	0.9%

Source: National Bank of Canada, Bloomberg

Table 4 - Equity ETF Flows by Sector and Themes* - May 2024

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Utilities	\$23	2%	\$0.9	4.3%
Industrials	\$46	5%	\$0.9	2.0%
Consumer Staples	\$26	3%	\$0.5	2.1%
Materials	\$48	5%	\$0.4	0.8%
Communication Services	\$39	4%	\$0.3	0.7%
Financials	\$67	7%	\$0.1	0.2%
Consumer Discretionary	\$36	4%	-\$0.3	-0.8%
Technology	\$246	26%	-\$0.7	-0.3%
Health Care	\$95	10%	-\$1.0	-1.0%
Real Estate	\$71	8%	-\$1.0	-1.5%
Energy	\$83	9%	-\$2.2	-2.6%
ESG	\$88	9%	\$0.7	0.8%
Thematic	\$69	7%	-\$0.1	-0.1%
Total Displayed	\$937	100%	-\$1.6	-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 8 - Top Single Long ETF Inflows - May 2024

Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY SPDR S&P 500 ETF Trust	\$9.0	1.8%
2	VOO Vanguard S&P 500 ETF	\$8.4	2.0%
3	IVV iShares Core S&P 500 ETF	\$4.4	1.0%
4	QQQ Invesco QQQ Trust Series 1	\$2.9	1.2%
5	HYG iShares iBoxx \$ High Yield Corporate Bond ETF	\$2.5	17.6%
6	VTI Vanguard Total Stock Market ETF	\$2.1	0.6%
7	QQQM Invesco Nasdaq 100 ETF	\$2.1	9.2%
8	BNDX Vanguard Total International Bond ETF	\$2.1	3.8%
9	SPLG SPDR Portfolio S&P 500 ETF	\$1.9	5.5%
10	BND Vanguard Total Bond Market ETF	\$1.7	1.6%
11	JAAA Janus Henderson AAA CLO ETF	\$1.4	17.0%
12	SGOV iShares 0-3 Month Treasury Bond ETF	\$1.4	6.8%
13	AGG iShares Core U.S. Aggregate Bond ETF	\$1.4	1.3%
14	VUG Vanguard Growth ETF	\$1.3	1.1%
15	USHY iShares Broad USD HY Corporate Bond ETF	\$1.3	11.3%
16	SPYG SPDR Portfolio S&P 500 Growth ETF	\$1.2	5.2%
17	EEM iShares MSCI Emerging Markets ETF	\$1.2	7.0%
18	IBIT iShares Bitcoin Trust	\$1.2	7.1%
19	VGIT Vanguard Intermediate-Term Treasury ETF	\$1.2	4.5%
20	VXUS Vanguard Total International Stock ETF	\$1.2	1.7%

Source: National Bank of Canada, Bloomberg

Table 5 - Fixed Income ETF Flows by Type - May 2024

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$391	25%	\$5.0	1.3%
U.S. Government	\$495	31%	\$6.7	1.4%
U.S. Municipals	\$118	7%	\$0.9	0.8%
U.S. I.G. Corporate	\$238	15%	\$1.0	0.4%
Developed Markets&Global	\$155	10%	\$4.2	2.8%
Emerging Markets	\$29	2%	\$0.7	2.3%
Sub-investment Grade	\$118	7%	\$8.9	8.2%
Convertibles and Preferreds	\$41	3%	\$0.0	0.1%
Total Displayed	\$1,586	100%	\$27.4	1.8%

Source: National Bank of Canada, Bloomberg

Table 6 - Fixed Income ETF Flows by Maturity - May 2024

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$780	49%	\$15.0	2.0%
Ultra Short Term	\$232	15%	\$7.0	3.1%
Short Term	\$224	14%	-\$0.2	-0.1%
Mid Term	\$196	12%	\$2.3	1.2%
Long Term	\$103	7%	\$2.0	2.0%
Target Maturity	\$50	3%	\$1.1	2.3%
Rate Hedged	\$2	0%	\$0.1	6.9%
Total Displayed	\$1,586	100%	\$27.4	1.8%

Source: National Bank of Canada, Bloomberg

Table 7 - Equity ETF Flows by Factor* - May 2024

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Growth	\$529	22%	\$6.7	1.4%
Value	\$533	23%	\$2.6	0.5%
Quality	\$83	3%	\$1.0	1.3%
Income	\$396	17%	\$0.9	0.2%
Small/Mid Cap	\$529	22%	\$0.5	0.1%
Momentum	\$28	1%	\$0.5	1.9%
Low Vol	\$54	2%	-\$0.5	-1.0%
Multi-Factor and Other	\$218	9%	\$1.6	0.8%
Total Displayed	\$2,370	100%	\$13.3	0.6%

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

Table 9 - Top Single Long ETF Outflows - May 2024

Ticker	Name	Flow (\$B)	Flow/AUM
1	AMJ JPMorgan Alerian MLP Index ETN	-\$3.4	-100.0%
2	XLE Energy Select Sector SPDR Fund	-\$0.9	-2.2%
3	IWM iShares Russell 2000 ETF	-\$0.8	-1.4%
4	EWJ iShares MSCI Japan ETF	-\$0.7	-4.4%
5	IYR iShares U.S. Real Estate ETF	-\$0.7	-20.3%
6	IGSB iShares 1-5 Year IG Corporate Bond ETF	-\$0.6	-3.1%
7	GBTC Grayscale Bitcoin Trust BTC	-\$0.6	-3.4%
8	IGV iShares Expanded Tech-Software Sector ETF	-\$0.6	-9.3%
9	VNQ Vanguard Real Estate ETF	-\$0.5	-1.7%
10	XLV Health Care Select Sector SPDR Fund	-\$0.5	-1.3%
11	XLK Technology Select Sector SPDR Fund	-\$0.5	-0.8%
12	GUNR FlexShares Mgtstar Gbl Upstream Nat Resources	-\$0.4	-6.7%
13	MDYG SPDR S&P 400 Mid CapGrowth ETF	-\$0.4	-15.5%
14	VCIT Vanguard Intermediate-Term Corporate Bond ETF	-\$0.4	-0.9%
15	SLV iShares Silver Trust	-\$0.4	-3.3%
16	VGT Vanguard Information Technology ETF	-\$0.4	-0.6%
17	IWN iShares Russell 2000 Value ETF	-\$0.4	-3.2%
18	XLY Consumer Disc Select Sector SPDR Fund	-\$0.4	-1.9%
19	UNG United States Natural Gas Fund LP	-\$0.3	-40.4%
20	GDX VanEck Gold Miners ETF/USA	-\$0.3	-2.3%

Source: National Bank of Canada, Bloomberg

Appendix 1: 2024 January - May ETF Flow Tables

Table 10 - Equity ETF Flows by Geography - YTD May 2024

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S.	\$5,452		\$157.1	3.2%
Broad/Large Cap	\$2,453	35%	\$89.0	4.2%
U.S. Other	\$2,999	43%	\$68.1	2.5%
International Developed	\$729		\$25.1	3.8%
Broad Int'l Dev	\$569	8%	\$18.8	3.7%
Broad Europe	\$53	1%	\$2.8	6.0%
Japan	\$37	1%	\$4.2	14.0%
Canada	\$10	0%	-\$0.4	-3.8%
Other Developed	\$61	1%	-\$0.1	-0.3%
Emerging Markets	\$320		\$8.7	2.9%
Broad Cap Weighted	\$212	3%	\$4.8	2.4%
China (A+H)	\$21	0%	-\$0.9	-4.3%
Other EM	\$88	1%	\$4.7	5.8%
Global/Regional	\$451	6%	\$13.2	3.2%
Total Displayed	\$6,953	100%	\$204.0	3.3%

Source: National Bank of Canada, Bloomberg

Table 11 - Equity ETF Flows by Sector and Themes* - YTD May 2024

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Technology	\$246	26%	\$10.3	4.9%
Industrials	\$46	5%	\$3.2	8.1%
Materials	\$48	5%	\$0.7	1.7%
Real Estate	\$71	8%	\$0.2	0.2%
Consumer Discretionary	\$36	4%	-\$0.2	-0.6%
Communication Services	\$39	4%	-\$0.7	-2.0%
Financials	\$67	7%	-\$1.1	-1.8%
Consumer Staples	\$26	3%	-\$1.5	-5.8%
Utilities	\$23	2%	-\$1.6	-7.1%
Energy	\$83	9%	-\$2.1	-2.7%
Health Care	\$95	10%	-\$3.2	-3.4%
ESG	\$88	9%	-\$4.4	-5.1%
Thematic	\$69	7%	-\$1.1	-1.6%
Total Displayed	\$937	100%	-\$1.5	-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 12 - Fixed Income ETF Flows by Type - YTD May 2024

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$391	25%	\$29.6	8.0%
U.S. Government	\$495	31%	\$17.2	3.5%
U.S. Municipals	\$118	7%	\$2.7	2.3%
U.S. I.G. Corporate	\$238	15%	\$11.5	5.0%
Developed Markets&Global	\$155	10%	\$13.4	9.3%
Emerging Markets	\$29	2%	-\$0.2	-0.7%
Sub-investment Grade	\$118	7%	\$16.9	16.7%
Convertibles and Preferreds	\$41	3%	\$1.0	2.5%
Total Displayed	\$1,586	100%	\$92.0	6.0%

Source: National Bank of Canada, Bloomberg

Table 13 - Fixed Income ETF Flows by Maturity - YTD May 2024

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$780	49%	\$48.1	6.4%
Ultra Short Term	\$232	15%	\$15.3	7.1%
Short Term	\$224	14%	-\$6.3	-2.7%
Mid Term	\$196	12%	\$18.2	10.0%
Long Term	\$103	7%	\$8.2	7.9%
Target Maturity	\$50	3%	\$8.3	19.9%
Rate Hedged	\$2	0%	\$0.3	21.4%
Total Displayed	\$1,586	100%	\$92.0	6.0%

Source: National Bank of Canada, Bloomberg

Table 14 - Equity ETF Flows by Factor* - YTD May 2024

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Growth	\$529	22%	\$24.0	5.3%
Value	\$533	23%	\$17.8	3.7%
Quality	\$83	3%	\$8.8	13.2%
Small/Mid Cap	\$529	22%	\$2.8	0.6%
Momentum	\$28	1%	\$2.8	12.6%
Income	\$396	17%	\$0.0	0.0%
Low Vol	\$54	2%	-\$7.7	-13.0%
Multi-Factor and Other	\$218	9%	\$18.0	9.7%
Total Displayed	\$2,370	100%	\$66.5	3.1%

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

Table 15 - Top Single Long ETF Inflows - YTD May 2024

Ticker	Name	Flow (\$B)	Flow/AUM
1	VOO Vanguard S&P 500 ETF	\$40.0	10.7%
2	IVV iShares Core S&P 500 ETF	\$16.9	4.2%
3	IBIT iShares Bitcoin Trust	\$16.7	NA
4	QQQ Invesco QQQ Trust Series 1	\$13.0	5.6%
5	VTI Vanguard Total Stock Market ETF	\$12.8	3.7%
6	GBTC Grayscale Bitcoin Trust BTC	\$10.7	NA
7	AGG iShares Core U.S. Aggregate Bond ETF	\$9.2	9.1%
8	FBTC Fidelity Wise Origin Bitcoin Fund	\$8.9	NA
9	SPLG SPDR Portfolio S&P 500 ETF	\$8.2	31.7%
10	DYFN BlackRock U.S. Equity Factor Rotation ETF	\$7.5	14907.8%
11	VUG Vanguard Growth ETF	\$6.7	6.4%
12	VGIT Vanguard Intermediate-Term Treasury ETF	\$6.2	28.5%
13	QQQM Invesco Nasdaq 100 ETF	\$5.5	29.8%
14	BND Vanguard Total Bond Market ETF	\$5.2	5.0%
15	IUSB iShares Core Total USD Bond Market ETF	\$5.2	21.7%
16	VXUS Vanguard Total International Stock ETF	\$5.1	8.1%
17	JEPQ JPMorgan Nasdaq Equity Premium Income ETF	\$4.6	54.5%
18	IEFA iShares Core MSCI EAFE ETF	\$4.6	4.3%
19	VEA Vanguard FTSE Developed Markets ETF	\$4.5	3.6%
20	JAAA Janus Henderson AAA CLO ETF	\$4.4	82.7%

Source: National Bank of Canada, Bloomberg

Table 16 - Top Single Long ETF Outflows - YTD May 2024

Ticker	Name	Flow (\$B)	Flow/AUM
1	SPY SPDR S&P 500 ETF Trust	-\$11.2	-2.3%
2	IWM iShares Russell 2000 ETF	-\$9.0	-13.3%
3	USMV iShares MSCI USA Min Vol Factor ETF	-\$4.1	-15.4%
4	TFLO iShares Treasury Floating Rate Bond ETF	-\$3.4	-32.7%
5	AMJ JPMorgan Alerian MLP Index ETN	-\$3.4	-100.0%
6	IWD iShares Russell 1000 Value ETF	-\$3.2	-5.8%
7	GLD SPDR Gold Shares	-\$2.9	-5.0%
8	VGSH Vanguard Short-Term Treasury ETF	-\$2.6	-11.6%
9	LQD iShares iBoxx \$ IG Corporate Bond ETF	-\$2.5	-7.8%
10	SUSA iShares MSCI USA ESG Select ETF	-\$2.2	-40.9%
11	ACWI iShares MSCI ACWI ETF	-\$2.1	-11.1%
12	ESGU iShares ESG Aware MSCI USA ETF	-\$1.9	-14.1%
13	XLU Utilities Select Sector SPDR Fund	-\$1.9	-13.3%
14	IGV iShares Expanded Tech-Software Sector ETF	-\$1.8	-24.5%
15	OEF iShares S&P 100 ETF	-\$1.8	-14.2%
16	EMB iShares J.P. Morgan USD EM Bond ETF	-\$1.7	-10.0%
17	HYG iShares iBoxx \$ High Yield Corporate Bond ETF	-\$1.6	-8.7%
18	ARKK ARK Innovation ETF	-\$1.6	-17.2%
19	FVD First Trust Value Line Dividend Index Fund	-\$1.5	-13.9%
20	VTIP Vanguard Short-Term TIPS ETF	-\$1.4	-11.8%

Source: National Bank of Canada, Bloomberg

Table 17: ETF Provider Table

Provider	AUM (\$B)	Mkt Shr	May 2024		YTD May 2024	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
1 BlackRock iShares	\$2,814	31%	\$22.3	0.8%	\$67.9	2.6%
2 Vanguard	\$2,609	29%	\$21.2	0.9%	\$105.6	4.5%
3 State Street SSGA	\$1,313	15%	\$13.2	1.1%	-\$1.0	-0.1%
4 Invesco	\$530	6%	\$8.8	1.8%	\$34.8	7.6%
5 Charles Schwab	\$346	4%	\$2.4	0.7%	\$8.8	2.7%
6 First Trust	\$167	2%	\$2.6	1.6%	\$7.6	5.0%
7 JPMorgan	\$154	2%	\$0.6	0.4%	\$15.0	11.3%
8 Dimensional Holdings	\$141	2%	\$2.9	2.2%	\$15.4	13.1%
9 VanEck	\$80	1%	\$0.1	0.1%	\$4.4	6.5%
10 WisdomTree	\$79	1%	\$0.9	1.1%	\$2.9	4.0%
11 Fidelity	\$74	1%	\$2.4	3.5%	\$16.3	31.8%
12 ProShares	\$71	1%	\$0.1	0.1%	-\$5.8	-8.4%
13 Global X	\$49	1%	\$1.2	2.7%	\$4.3	10.0%
14 American Century	\$46	1%	\$1.0	2.4%	\$6.4	17.3%
15 Pacer Financial	\$45	0%	\$0.5	1.2%	\$7.7	21.9%
16 Direxion	\$40	0%	-\$2.3	-6.1%	-\$2.1	-5.6%
17 Goldman Sachs	\$34	0%	-\$0.1	-0.3%	-\$0.3	-0.8%
18 Capital Group	\$29	0%	\$2.4	9.5%	\$8.1	43.3%
19 PIMCO	\$27	0%	\$0.4	1.7%	\$3.1	13.0%
20 DWS Xtrackers	\$22	0%	\$0.3	1.5%	\$0.1	0.7%
Top 20 Total	\$8,668	96%	\$80.9		\$299.3	
Total ETF	\$9,014	100%	\$89.9		\$356.0	

Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

Table 18: ESG ETF Flows by Categories

Category	AUM (\$M)	AUM (%)	May 2024		YTD May 2024	
			Flow (\$M)	Flow/AUM	Flow (\$M)	Flow/AUM
Equity	\$90,286	89%	\$688	0.8%	-\$4,261	-4.8%
Broad - U.S.	\$44,424	44%	\$448	1.1%	-\$2,992	-6.9%
Broad - DM	\$10,303	10%	\$16	0.2%	\$16	1.7%
Broad - EM	\$4,670	5%	\$27	0.6%	\$19	0.4%
Broad - Global	\$4,537	4%	-\$5	-0.1%	\$18	0.4%
Environment	\$13,486	13%	-\$191	-1.5%	-\$936	-7.0%
Clean Energy	\$7,394	7%	\$324	5.2%	-\$705	-8.1%
Energy Transition	\$253	0%	\$13	5.5%	-\$14	-6.2%
Social	\$4,015	4%	\$24	0.6%	\$227	6.3%
Other	\$1,205	1%	\$32	2.9%	-\$46	-0.1%
Commodities	\$728	1%	\$1	0.1%	-\$70	-8.3%
Multi-Asset	\$64	0%	\$0	-0.2%	-\$8	-11.1%
Fixed Income	\$9,946	10%	\$80	0.8%	\$320	3.3%
Total Displayed	\$101,024	100%	\$769	0.8%	-\$4,018	-4.0%

Source: NBF ETF Research, Bloomberg. Data as of May 31, 2024.

Appendix 2 - 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 3 - 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/EBITDA, 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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