

### March 2023: A banking crisis in miniature and its impact on U.S.-listed ETFs

- U.S. ETFs received \$81.8 billion year-to-date, which is the lowest quarterly amount since Q1 2020
- U.S. regional bank ETFs had their best month of inflow on record despite facing a nearly 30% drawdown in March
- ESG ETFs had the worst monthly outflow in history, possibly driven by an institutional switch to the quality factor
- Crypto-related and precious metal miner ETFs were the top performers as the price of bitcoin and precious metals rose; demand for gold ETFs made a resurgence

**Summary (Table 1, Chart 1):** March 2023 marks the one-year anniversary of the Fed’s first interest rate increase from 2022, so we took a retrospective look at Q1 2022 to analyze how the ETFs in the U.S. have responded over a year of unprecedentedly fast rate hikes.

The growth of U.S. ETFs has slowed down significantly in 2023 so far. U.S. ETFs received inflows of \$81.8 billion year-to-date; this is a lot of money, but it’s less than half of the net inflows from Q1 2022. Domestic equities lost traction, resulting in outflows for both U.S. broad passive ETFs and other U.S.-focused equity strategies. Although inflation pressures persist, the demand for precious metal ETFs has dissipated, and only money-market-like ultra-short-term treasury ETFs remain popular this year. Interestingly, investors expressed great optimism that the Fed’s hiking path might be peaking; in March of this year (as in 2022), they sought out longer duration fixed income ETFs.

#### Equity ETFs by Geography (Table 3):

In March, demand for equity ETFs dropped to the lowest level since April 2022, with a meager inflow of \$0.7 billion. On a positive note, U.S. broad/large-cap ETFs broke their four-month outflow streak, as new investments poured into Vanguard S&P 500 ETF (VOO) and Nasdaq 100 ETFs (QQQ, QQQM). However, this was negated by outflows from U.S. sector/strategic ETFs, with a substantial \$4.0 billion being withdrawn. There was also a visible decline in the demand for foreign equity ETFs, with Emerging Market ETFs experiencing redemptions. As for International/global ETFs, despite the existence of positive net creations in March, the dollar amount of the net inflows (\$2.5 billion) plummeted by 74% from the average of January and February’s high figures.

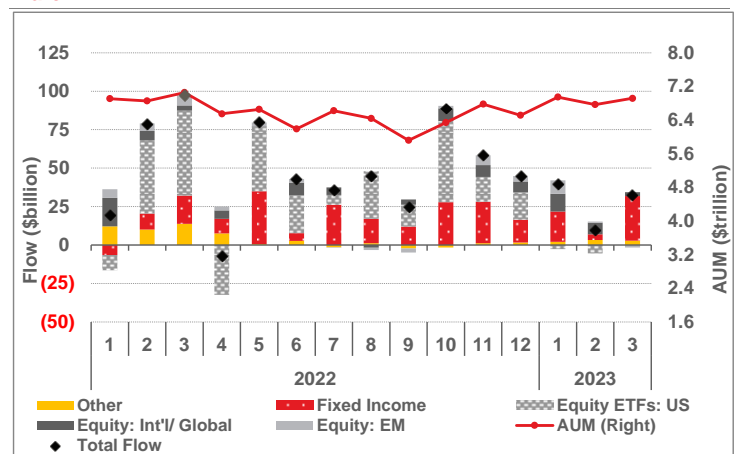
**Equity Sector ETFs (Table 4):** Sector ETFs bled assets again in March, particularly energy, health care, and real estate ETFs. Meanwhile, technology and consumer discretionary ETFs had notable inflows. Performance-wise, despite the ongoing challenges posed by persistent inflation and a slowing economy, the S&P 500 Technology and S&P 500 Consumer Discretionary

**Table 1: ETF Flows by Category**

	AUM (\$B)	Mkt Shr	March 2023 Flow (\$B)	March 2023 Flow/AUM	Jan-Mar 2023 Flow (\$B)	Jan-Mar 2023 Flow/AUM
Equity	\$5,230		\$0.7	0.0%	\$18.6	0.4%
U.S. Broad/Large-Cap	\$1,644	24%	-\$4.0	0.3%	-\$6.5	-0.4%
U.S. Other	\$2,345	34%	-\$4.0	-0.2%	-\$4.1	-0.2%
Int'l / Global	\$959	14%	\$2.5	0.3%	\$21.4	2.5%
Emerging Markets	\$283	4%	-\$1.7	-0.6%	\$7.7	2.9%
Fixed Income	\$1,376	20%	\$29.1	2.2%	\$52.5	4.1%
Commodity	\$137	2%	-\$0.4	-0.3%	-\$0.7	-0.5%
Multi-Asset	\$93	1%	\$1.7	1.9%	\$6.1	7.1%
Levered Long	\$56	1%	\$2.1	4.3%	\$1.3	3.0%
Inverse	\$22	0%	-\$0.6	-2.3%	\$3.9	16.4%
Crypto-Asset	\$1	0%	\$0.0	2.4%	\$0.0	8.3%
<b>Total</b>	<b>\$6,916</b>	<b>100%</b>	<b>\$32.7</b>	<b>0.5%</b>	<b>\$81.8</b>	<b>1.3%</b>

Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

**Chart 1: U.S. Listed ETF Flow and AUM by month - \$32.7 billion in March**



Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

indices both had a strong Q1, up 21.8% and 16.1%, respectively. In contrast, energy, health care, and financials were among the laggards.

**Equity Factor ETFs (Table 7):** We observed a “flight to quality” trend in March, at least in the “factor” sense—this was evidenced by an enormous inflow of \$8.0 billion into quality factor ETFs, or 21% of the category’s March starting AUM. Most of these inflows were attributed to iShares MSCI USA Quality Factor ETF (**QUAL**), which topped the list of single long ETF inflows with an impressive \$7.3 billion. Interestingly, **QUAL**’s inflows seem to be linked to the bulk redemptions from iShares MSCI ESG Aware USA ETF (**ESGU**): **QUAL** raked in \$4.8 billion on March 17 alone, while **ESGU** experienced outflows of \$4.0 billion on the same day (Chart 5). Flows of this size and timing are often the result of top-down switches within a widely followed model portfolio program or something similar.

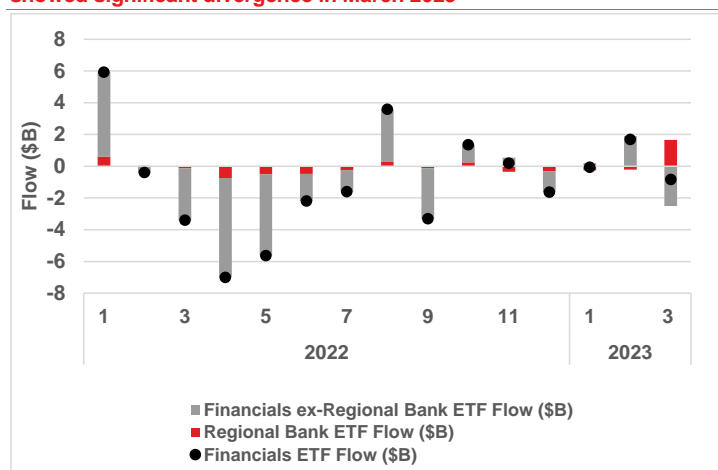
In addition, we also noticed a shift from value to growth in both the U.S. (from **SPYV** and **IVE** to **IWF** and **IWY**) and EAFE (from **EFV** to **EFG**) regions. This trend may have been prompted by investors fleeing from U.S. and European financials, which have significant weighting in U.S. and EAFE value ETFs, and instead seeking out participation in the tech rally. Despite these shifts, demand for dividend/income ETFs remained steady. In fact, if we exclude the institutional-size creation for **QUAL**, dividend/income would be the most popular factor category in 2023 Q1.

**Financials, Bank Deposits, and Money Market Funds/ETFs:**

The recent series of bank collapses has posed challenges to the financial industry. Amid concerns for contagion to the wider financial system and tighter financial conditions, the S&P 500 Financials Index declined by almost 10% in March. As for ETFs, while investors pulled out a net \$0.8 billion from the financial sector category, \$1.7 billion flowed into regional bank ETFs (**KRE**, **IAT**) which fell by almost 30% in March. While there are opportunities from the regional banks’ selloff, they come with potential risks too. We’ve recently published a research note ([How to take a “bank shot” with ETFs](#)) highlighting Canada- and U.S.-listed financial ETFs that investors may use to express their bullish or bearish views on the situation.

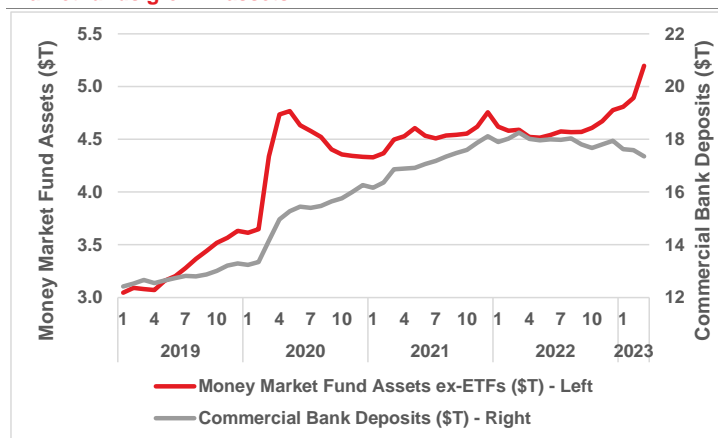
While the bank run in March was sudden, our economists pointed out that the erosion of U.S. commercial banks’ deposits had actually started prior to the debacle of Silicon Valley Bank and other regional banks ([U.S. Watch](#)). As shown in Chart 3, since the Fed’s initial rate hike decision in March 2022, U.S. commercial banks’ deposits have declined by almost \$1 trillion (or a year-over-year drop of 5%). A combination of fear for banks’ financial soundness and demand for higher yields (Chart 4) might have prompted consumers to redeploy their excess savings to cash alternatives. For instance, money market funds enjoyed significant asset growth of 13% over the past year and surpassed \$5 trillion in AUM as of March 2023. In a

**Chart 2: Demand for regional bank ETFs and other financial ETFs showed significant divergence in March 2023**



Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

**Chart 3: U.S. commercial bank deposits shrunk since 2022 while money market funds grew in assets**



Source: NBF ETF Research, ICI, Federal Reserve. Bank deposit data are as of March 22, 2023, not seasonally adjusted. Money Market Fund data are as of March 29, 2023.

similar dynamic among ETFs, ultra-short-term treasury ETFs also had impressive inflows, although their assets are much smaller than traditional money market funds. Ultra-short-term treasury ETFs have received \$36.9 billion since March 2022, which corresponds to a whopping 106% of the category’s beginning AUM.

**Fixed Income ETFs (Table 5, 6):** Despite the recent market turmoil, the Fed went ahead with another 25-bps increase in its policy rate in March. ETF investors seemed to interpret the announcement as dovish, favouring longer duration through mid-term and broad/mixed-term U.S. government bond ETFs, such as IEF and GOVT. Although inflows to ultra-short-term treasury ETFs remained strong, year-to-date fixed income ETF inflows were nearly evenly distributed across ultra-short-term, mid-term, long-term, and broad categories. Investors remained cautious credit-wise as outflows persisted in EM bond ETFs and high yield bond ETFs.

**ESG ETFs (Table 18, Chart 5):**

The flows of ESG ETFs in March and Q1 were heavily influenced by iShares MSCI ESG Aware USA ETF (ESGU), the biggest U.S. ESG equity ETF with prior assets of \$19.3 billion. ESGU tracks an index that uses mathematical optimization to maximize the portfolio’s ESG score while minimizing sector deviations from the parent MSCI USA Index. ESGU suffered a \$5.4 billion outflow in March and \$6.4 billion year-to-date, which accounts for 33% of its assets at the start of the year.

It appears that most of the money withdrawn from ESGU has been transferred to iShares MSCI USA Quality Factor ETF (QUAL). Although the motive behind the switch is not known to us, it is possible that investors were driven by performance divergence. Similar to ESGU, QUAL’s reference index is sector neutral to the MSCI USA Index, yet QUAL has outperformed ESGU and the parent index by 1.9% year-to-date. Such short-term performance deviations should not necessarily discount ESG investing, as ESGU has been closely tracking the benchmark, doing what it was designed to do. Our ESG analyst has commented that the current ESG pushback “is capitalizing on trends such as the current political environment and therefore is more short-term oriented and does not stimulate and demand staying power”, and the notion of ESG is still “inherently sticky” ([Damned If You Do, Damned If You Don’t...](#)).

**Top Performing ETFs (Table 2):**

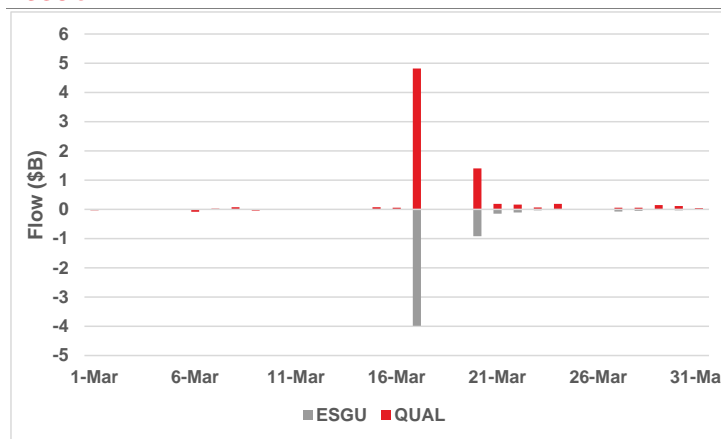
*Note: crypto assets are highly risky and speculative.*

**Chart 4: U.S. cash-like mutual funds/ETFs offer higher rates than traditional banks’ saving accounts**

Name	Rate
Bank Of America	0.38%
Chase	0.58%
Citi	1.06%
Wells Fargo	0.26%
US Bancorp	0.55%
PNC	0.42%
TD Bank	0.83%
Average	0.58%
Marcus by Goldman Sachs Online Savings Account	3.75%
Discover Online Savings	3.60%
Capital One Bank 360 Performance Savings	3.40%
Synchrony Bank High Yield Savings	4.00%
Average Cash-Like ETF	3.30%

Source: NBF ETF Research, U.S. bank websites, Bloomberg. Data as of March 30, 2023.

**Chart 5: QUAL’s March flow pattern appears to be a mirror image of ESGU’s**



Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

In March 2023, crypto-related ETFs and precious metal miner ETFs strictly made up the top 10 performing ETFs in the U.S. The collapse of some U.S. regional banks, as well as the outlook on the Fed's next steps in terms of interest rates, are two factors that might have driven the narrative around increasing prices for bitcoin and gold/precious metals. The banking crisis may have directed some investors' attention to the idea of decentralized finance and digital assets. Besides the renewed interest in bitcoin, gold and other precious metals have also seen an increase in demand, with gold having risen to around 9% since the bank run on March 8<sup>th</sup> that provoked SVB's failure. (It's interesting to note that gold is now flirting with new historic highs around the USD \$2100/Oz. level, while bitcoin is still 60% below its late 2021 high, despite recent gains.) Investors have flocked to precious metals, looking for protection from the volatility and increased risk following the bank collapses. SPDR Gold Shares (**GLD**) welcomed \$855 million, the highest monthly inflow since March 2022.

**Table 2: Best Performing ETFs\* – March 2023**

Ticker	Name	Total Return (%)	AUM (\$M)	Flow (\$M)
1 <b>GDMN</b>	Wisdomtree Gold Plus Gold Miners Strategy	23.0	8	1
2 <b>DEFI</b>	Hashdex Bitcoin Futures ETF	22.4	2	0
3 <b>XBTF</b>	Vaneck Bitcoin Strategy ETF	22.2	40	4
4 <b>BITO</b>	ProShares Bitcoin Strategy ETF	22.0	955	17
5 <b>BTF</b>	Valkyrie Bitcoin Strategy ETF	21.9	29	-1
6 <b>MAXI</b>	Simplify Bitcoin Strategy PLUS Income ETF	21.9	23	0
7 <b>WGMI</b>	Valkyrie Bitcoin Miners ETF	19.3	7	1
8 <b>SLVP</b>	iShares MSCI Global Silver and Metals Miners	19.1	204	-3
9 <b>CRYP</b>	Advisorshares Managed Bitcoin Strategy ETF	17.5	0	0
10 <b>SGDJ</b>	Sprott Junior Gold Miners ETF	19.1	113	0

\*Excluding leveraged/inverse ETFs. Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

Tables continued next page

**March 2023 ETF Flows: Tables 3 - 9**

**Table 3 - Equity ETF Flows by Geography - March 2023**

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
<b>U.S.</b>	\$3,989		\$0.0	0.0%
Broad/Large Cap	\$1,644	31%	\$4.0	0.3%
U.S. Other	\$2,345	45%	-\$4.0	-0.2%
<b>International Developed</b>	\$588		\$2.5	0.4%
Broad Int'l Dev	\$456	9%	\$2.8	0.6%
Broad Europe	\$49	1%	\$0.0	0.1%
Japan	\$21	0%	-\$0.1	-0.3%
Canada	\$10	0%	\$0.0	-0.3%
Other Developed	\$53	1%	-\$0.3	-0.6%
<b>Emerging Markets</b>	\$283		-\$1.7	-0.6%
Broad Cap Weighted	\$189	4%	-\$0.2	-0.1%
China (A+H)	\$28	1%	-\$0.7	-2.5%
Other EM	\$65	1%	-\$0.8	-1.2%
<b>Global/Regional</b>	\$370	7%	\$0.0	0.0%
<b>Total Displayed</b>	<b>\$5,230</b>	<b>100%</b>	<b>\$0.7</b>	<b>0.0%</b>

Source: National Bank of Canada, Bloomberg

**Table 4 - Equity ETF Flows by Sector and Themes\* - March 2023**

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Technology	\$163	20%	\$1.4	0.9%
Consumer Discretionary	\$28	3%	\$1.1	4.3%
Utilities	\$25	3%	\$0.5	2.0%
Consumer Staples	\$31	4%	\$0.0	0.1%
Materials	\$46	6%	-\$0.1	-0.3%
Industrials	\$35	4%	-\$0.2	-0.5%
Communication Services	\$27	3%	-\$0.4	-1.4%
Financials	\$54	7%	-\$0.8	-1.3%
Real Estate	\$69	9%	-\$0.9	-1.3%
Health Care	\$97	12%	-\$1.7	-1.7%
Energy	\$77	10%	-\$2.6	-3.1%
ESG	\$81	10%	-\$3.6	-6.6%
Thematic	\$62	8%	\$0.3	0.5%
<b>Total Displayed</b>	<b>\$795</b>	<b>100%</b>	<b>-\$8.9</b>	<b>-1.1%</b>

\*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 5 - Fixed Income ETF Flows by Type - March 2023**

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$313	23%	\$2.2	0.7%
U.S. Government	\$448	33%	\$27.1	6.6%
U.S. Municipals	\$102	7%	\$0.8	0.8%
U.S. I.G. Corporate	\$223	16%	\$1.1	0.5%
Developed Markets&Global	\$146	11%	\$1.9	1.4%
Emerging Markets	\$28	2%	-\$0.8	-3.0%
Sub-investment Grade	\$79	6%	-\$2.2	-2.7%
Convertibles and Preferreds	\$38	3%	-\$1.0	-2.3%
<b>Total Displayed</b>	<b>\$1,376</b>	<b>100%</b>	<b>\$29.1</b>	<b>2.2%</b>

Source: National Bank of Canada, Bloomberg

**Table 6 - Fixed Income ETF Flows by Maturity - March 2023**

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$661	48%	\$8.9	1.4%
Ultra Short Term	\$182	13%	\$7.5	4.3%
Short Term	\$262	19%	-\$3.0	-1.2%
Mid Term	\$160	12%	\$11.0	7.6%
Long Term	\$72	5%	\$3.2	4.9%
Target Maturity	\$38	3%	\$1.4	4.0%
Rate Hedged	\$1	0%	\$0.0	-2.6%
<b>Total Displayed</b>	<b>\$1,376</b>	<b>100%</b>	<b>\$29.1</b>	<b>2.2%</b>

Source: National Bank of Canada, Bloomberg

**Table 7 - Equity ETF Flows by Factor\* - March 2023**

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Quality	\$48	3%	\$8.0	20.9%
Growth	\$352	19%	\$5.3	1.6%
Income	\$372	20%	\$1.5	0.4%
Low Vol	\$62	3%	-\$1.2	-1.9%
Small/Mid Cap	\$429	23%	-\$1.2	-0.3%
Momentum	\$22	1%	-\$1.5	-6.1%
Value	\$405	22%	-\$5.3	-1.3%
Multi-Factor and Other	\$146	8%	\$0.1	0.1%
<b>Total Displayed</b>	<b>\$1,835</b>	<b>100%</b>	<b>\$5.7</b>	<b>0.3%</b>

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

**Table 8 - Top Single Long ETF Inflows - March 2023**

Ticker	Name	Flow (\$B)	Flow/AUM
1 <b>QUAL</b>	iShares MSCI USA Quality Factor ETF	\$7.3	40.1%
2 <b>IEF</b>	iShares 7-10 Year Treasury Bond ETF	\$6.2	26.9%
3 <b>SCHI</b>	Schwab 5-10 Year Corporate Bond ETF	\$4.6	1336.5%
4 <b>GOVT</b>	iShares US Treasury Bond ETF	\$3.7	17.5%
5 <b>BIL</b>	SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	\$3.6	13.8%
6 <b>TLT</b>	iShares 20+ Year Treasury Bond ETF	\$2.8	9.1%
7 <b>VOO</b>	Vanguard S&P 500 ETF	\$2.5	0.9%
8 <b>SGOV</b>	iShares 0-3 Month Treasury Bond ETF	\$2.2	27.9%
9 <b>SPTI</b>	SPDR Portfolio Intermediate Term Treasury ETF	\$1.8	49.1%
10 <b>USFR</b>	WisdomTree Floating Rate Treasury Fund	\$1.6	11.6%
11 <b>JEPI</b>	JPMorgan Equity Premium Income ETF	\$1.6	7.5%
12 <b>SHY</b>	iShares 1-3 Year Treasury Bond ETF	\$1.4	5.5%
13 <b>KRE</b>	SPDR S&P Regional Banking ETF	\$1.4	58.7%
14 <b>QQQ</b>	Invesco QQQ Trust Series 1	\$1.3	0.8%
15 <b>EFG</b>	iShares MSCI EAFE Growth ETF	\$1.2	11.1%
16 <b>QQQM</b>	Invesco Nasdaq 100 ETF	\$1.2	17.3%
17 <b>LQD</b>	iShares iBoxx \$ IG Corporate Bond ETF	\$1.1	3.4%
18 <b>IUSB</b>	iShares Core Total USD Bond Market ETF	\$1.1	5.5%
19 <b>BND</b>	Vanguard Total Bond Market ETF	\$1.0	1.1%
20 <b>VGSH</b>	Vanguard Short-Term Treasury ETF	\$0.9	4.5%

Source: National Bank of Canada, Bloomberg

**Table 9 - Top Single Long ETF Outflows - March 2023**

Ticker	Name	Flow (\$B)	Flow/AUM
1 <b>ESGU</b>	iShares ESG Aware MSCI USA ETF	-\$5.4	-28.1%
2 <b>VCSH</b>	Vanguard Short-Term Corporate Bond ETF	-\$3.3	-8.1%
3 <b>MTUM</b>	iShares MSCI USA Momentum Factor ETF	-\$1.6	-13.6%
4 <b>SCHP</b>	Schwab US TIPS ETF	-\$1.5	-11.2%
5 <b>SPYV</b>	SPDR Portfolio S&P 500 Value ETF	-\$1.5	-9.3%
6 <b>VCIT</b>	Vanguard Intermediate-Term Corporate Bond ETF	-\$1.4	-3.6%
7 <b>IVV</b>	iShares Core S&P 500 ETF	-\$1.4	-0.5%
8 <b>IWM</b>	iShares Russell 2000 ETF	-\$1.2	-2.2%
9 <b>XLV</b>	Health Care Select Sector SPDR Fund	-\$1.1	-2.7%
10 <b>SHYG</b>	iShares 0-5 Year High Yield Corporate Bond ETF	-\$1.0	-16.2%
11 <b>RSP</b>	Invesco S&P 500 Equal Weight ETF	-\$1.0	-2.7%
12 <b>CWB</b>	SPDR Bloomberg Convertible Securities ETF	-\$1.0	-21.2%
13 <b>EFV</b>	iShares MSCI EAFE Value ETF	-\$0.9	-5.5%
14 <b>FTXN</b>	First Trust Nasdaq Oil & Gas ETF	-\$0.9	-69.9%
15 <b>IVE</b>	iShares S&P 500 Value ETF	-\$0.8	-3.1%
16 <b>FXO</b>	First Trust Financial AlphaDEX Fund	-\$0.8	-34.5%
17 <b>IGSB</b>	iShares 1-5 Year IG Corporate Bond ETF	-\$0.8	-3.1%
18 <b>XLE</b>	Energy Select Sector SPDR Fund	-\$0.7	-1.9%
19 <b>XLK</b>	Technology Select Sector SPDR Fund	-\$0.7	-1.8%
20 <b>MDYV</b>	SPDR S&P 400 Mid Cap Value ETF	-\$0.7	-23.8%

Source: National Bank of Canada, Bloomberg

January - March 2023 ETF Flows: Tables 10 - 16

**Table 10 - Equity ETF Flows by Geography - Jan-Mar 2023**

Geography	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
<b>U.S.</b>	\$3,989		-\$10.5	-0.3%
Broad/Large Cap	\$1,644	31%	-\$6.5	-0.4%
U.S. Other	\$2,345	45%	-\$4.1	-0.2%
<b>International Developed</b>	\$588		\$18.8	3.5%
Broad Int'l Dev	\$456	9%	\$9.7	2.3%
Broad Europe	\$49	1%	\$8.4	23.2%
Japan	\$21	0%	-\$0.1	-0.6%
Canada	\$10	0%	-\$0.2	-2.2%
Other Developed	\$53	1%	\$1.1	2.2%
<b>Emerging Markets</b>	\$283		\$7.7	2.9%
Broad Cap Weighted	\$189	4%	\$7.6	4.3%
China (A+H)	\$28	1%	\$1.0	3.7%
Other EM	\$65	1%	-\$0.9	-1.4%
Global/Regional	\$370	7%	\$2.7	0.8%
<b>Total Displayed</b>	<b>\$5,230</b>	<b>100%</b>	<b>\$18.6</b>	<b>0.4%</b>

Source: National Bank of Canada, Bloomberg

**Table 11 - Equity ETF Flows by Sector and Themes\* - Jan-Mar 2023**

Sector	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Materials	\$46	6%	\$1.0	2.3%
Industrials	\$35	4%	\$0.8	2.5%
Consumer Discretionary	\$28	3%	\$0.8	3.4%
Financials	\$54	7%	\$0.8	1.3%
Utilities	\$25	3%	-\$0.2	-0.9%
Consumer Staples	\$31	4%	-\$0.3	-1.1%
Communication Services	\$27	3%	-\$0.5	-2.2%
Technology	\$163	20%	-\$1.3	-0.9%
Real Estate	\$69	9%	-\$2.3	-3.2%
Health Care	\$97	12%	-\$4.1	-3.9%
Energy	\$77	10%	-\$5.3	-6.2%
ESG	\$81	10%	-\$5.6	-6.8%
Thematic	\$62	8%	\$0.5	0.9%
<b>Total Displayed</b>	<b>\$795</b>	<b>100%</b>	<b>-\$15.7</b>	<b>-2.0%</b>

\*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 - Jan-Mar 2023**

Type	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
U.S. Aggregate	\$313	23%	\$10.5	3.6%
U.S. Government	\$448	33%	\$40.9	10.3%
U.S. Municipals	\$102	7%	\$0.4	0.4%
U.S. I.G. Corporate	\$223	16%	\$5.9	2.8%
Developed Markets&Global	\$146	11%	\$5.8	4.2%
Emerging Markets	\$28	2%	\$0.3	1.1%
Sub-investment Grade	\$79	6%	-\$9.8	-11.3%
Convertibles and Preferreds	\$38	3%	-\$1.5	-3.9%
<b>Total Displayed</b>	<b>\$1,376</b>	<b>100%</b>	<b>\$52.5</b>	<b>4.1%</b>

Source: National Bank of Canada, Bloomberg

**Table 13 - Fixed Income ETF Flows by Maturity - Jan-Mar 2023**

Maturity	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Broad/Mixed	\$661	48%	\$12.6	2.0%
Ultra Short Term	\$182	13%	\$13.7	8.2%
Short Term	\$262	19%	-\$1.9	-0.7%
Mid Term	\$160	12%	\$12.7	8.9%
Long Term	\$72	5%	\$10.3	17.8%
Target Maturity	\$38	3%	\$5.3	16.6%
Rate Hedged	\$1	0%	-\$0.3	-16.9%
<b>Total Displayed</b>	<b>\$1,376</b>	<b>100%</b>	<b>\$52.5</b>	<b>4.1%</b>

Source: National Bank of Canada, Bloomberg

**Table 14 - Equity ETF Flows by Factor\* - Jan-Mar 2023**

Factor	AUM (\$B)	Mkt Shr	Flow (\$B)	Flow/AUM
Quality	\$48	3%	\$9.2	25.5%
Income	\$372	20%	\$5.5	1.5%
Growth	\$352	19%	\$3.2	1.0%
Small/Mid Cap	\$429	23%	\$2.1	0.5%
Momentum	\$22	1%	-\$1.4	-6.0%
Value	\$405	22%	-\$2.6	-0.7%
Low Vol	\$62	3%	-\$6.9	-10.1%
Multi-Factor and Other	\$146	8%	\$4.3	3.2%
<b>Total Displayed</b>	<b>\$1,835</b>	<b>100%</b>	<b>\$13.3</b>	<b>0.8%</b>

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

**Table 15 - Top Single Long ETF Inflows - Jan-Mar 2023**

Ticker	Name	Flow (\$B)	Flow/AUM
1 <b>QUAL</b>	iShares MSCI USA Quality Factor ETF	\$7.3	41.4%
2 <b>IEF</b>	iShares 7-10 Year Treasury Bond ETF	\$6.3	27.5%
3 <b>JEPI</b>	JPMorgan Equity Premium Income ETF	\$5.9	33.8%
4 <b>BBEU</b>	JPMorgan BetaBuilders Europe ETF	\$5.7	181.0%
5 <b>TLT</b>	iShares 20+ Year Treasury Bond ETF	\$5.6	20.8%
6 <b>SCHI</b>	Schwab 5-10 Year Corporate Bond ETF	\$4.6	1410.4%
7 <b>VOO</b>	Vanguard S&P 500 ETF	\$4.6	1.8%
8 <b>IEMG</b>	iShares Core MSCI Emerging Markets ETF	\$3.9	6.2%
9 <b>BND</b>	Vanguard Total Bond Market ETF	\$3.5	4.1%
10 <b>SHV</b>	iShares Short Treasury Bond ETF	\$3.4	16.8%
11 <b>SCHD</b>	Schwab US Dividend Equity ETF	\$3.3	7.5%
12 <b>BIL</b>	SPDR Bloomberg Barclays 1-3 Month T-Bill ETF	\$3.2	12.0%
13 <b>VTV</b>	Vanguard Value ETF	\$3.2	3.2%
14 <b>VTI</b>	Vanguard Total Stock Market ETF	\$3.1	1.2%
15 <b>AGG</b>	iShares Core U.S. Aggregate Bond ETF	\$3.0	3.6%
16 <b>SCHO</b>	Schwab Short-Term U.S. Treasury ETF	\$3.0	29.3%
17 <b>SGOV</b>	iShares 0-3 Month Treasury Bond ETF	\$2.8	38.1%
18 <b>GOVT</b>	iShares US Treasury Bond ETF	\$2.8	12.6%
19 <b>COWZ</b>	Pacer US Cash Cows 100 ETF	\$2.5	24.5%
20 <b>BNDX</b>	Vanguard Total International Bond ETF	\$2.4	NA

Source: National Bank of Canada, Bloomberg

**Table 16 - Top Single Long ETF Outflows - Jan-Mar 2023**

Ticker	Name	Flow (\$B)	Flow/AUM
1 <b>SPY</b>	SPDR S&P 500 ETF Trust	-\$7.8	-2.2%
2 <b>ESGU</b>	iShares ESG Aware MSCI USA ETF	-\$6.4	-32.9%
3 <b>IVV</b>	iShares Core S&P 500 ETF	-\$4.0	-1.4%
4 <b>IWD</b>	iShares Russell 1000 Value ETF	-\$4.0	-7.3%
5 <b>IWF</b>	iShares Russell 1000 Growth ETF	-\$3.8	-6.4%
6 <b>EEMV</b>	iShares MSCI EM Min Vol Factor ETF	-\$3.7	-45.7%
7 <b>VCSH</b>	Vanguard Short-Term Corporate Bond ETF	-\$3.6	-8.9%
8 <b>HYG</b>	iShares iBoxx High Yield Corporate Bond ETF	-\$3.3	-21.0%
9 <b>IWM</b>	iShares Russell 2000 ETF	-\$3.0	-5.8%
10 <b>XLK</b>	Technology Select Sector SPDR Fund	-\$2.4	-6.4%
11 <b>QQQ</b>	Invesco QQQ Trust Series 1	-\$2.2	-1.5%
12 <b>JNK</b>	SPDR Bloomberg Barclays High Yield Bond ETF	-\$2.2	-23.8%
13 <b>SHYG</b>	iShares 0-5 Year High Yield Corporate Bond ETF	-\$2.1	-29.2%
14 <b>SCHP</b>	Schwab US TIPS ETF	-\$1.9	-13.5%
15 <b>HDV</b>	iShares Core High Dividend ETF	-\$1.7	-12.6%
16 <b>XLV</b>	Health Care Select Sector SPDR Fund	-\$1.6	-3.8%
17 <b>MTUM</b>	iShares MSCI USA Momentum Factor ETF	-\$1.5	-12.7%
18 <b>VCIT</b>	Vanguard Intermediate-Term Corporate Bond ETF	-\$1.5	-3.7%
19 <b>DIA</b>	SPDR Dow Jones Industrial Average ETF Trust	-\$1.4	-4.8%
20 <b>USMV</b>	iShares MSCI USA Min Vol Factor ETF	-\$1.4	-4.6%

Source: National Bank of Canada, Bloomberg

**Table 17: ETF Provider Table**

Provider	AUM (\$B)	Mkt Shr	March 2023		Jan-Mar 2023	
			Flow (\$B)	Flow/AUM	Flow (\$B)	Flow/AUM
1 BlackRock iShares	\$2,306	33%	\$12.1	0.5%	-\$1.8	-0.1%
2 Vanguard	\$2,007	29%	\$3.4	0.2%	\$25.1	1.3%
3 State Street SSGA	\$1,014	15%	\$0.3	0.0%	-\$8.3	-0.8%
4 Invesco	\$362	5%	-\$0.7	-0.2%	\$0.4	0.1%
5 Charles Schwab	\$281	4%	\$3.4	1.3%	\$10.4	4.0%
6 First Trust	\$138	2%	-\$0.1	-0.1%	\$1.8	1.3%
7 JPMorgan	\$109	2%	\$3.0	2.9%	\$16.4	18.6%
8 Dimensional Holdings	\$83	1%	\$2.6	3.2%	\$7.3	10.1%
9 ProShares	\$63	1%	\$0.3	0.5%	\$2.7	4.8%
10 WisdomTree	\$61	1%	\$2.0	3.3%	\$4.0	7.2%
11 VanEck	\$57	1%	\$0.7	1.4%	\$0.5	1.1%
12 Global X	\$39	1%	\$0.3	0.7%	\$0.5	1%
13 Fidelity	\$33	0%	-\$0.1	-0.2%	\$0.7	2%
14 Goldman Sachs	\$29	0%	\$0.5	1.9%	\$0.8	3.1%
15 Direxion	\$27	0%	\$1.2	4.8%	\$1.8	8.0%
16 Pacer Financial	\$23	0%	\$0.8	3.4%	\$3.4	17.6%
17 American Century	\$23	0%	\$1.0	4.7%	\$3.0	15.5%
18 PIMCO	\$21	0%	-\$0.4	-1.7%	-\$0.6	-2.9%
19 Northern Trust	\$21	0%	-\$0.1	-0.5%	\$0.0	-0.1%
20 DWS Xtrackers	\$20	0%	-\$0.2	-0.8%	\$0.3	1.5%
<b>Top 20 Total</b>	<b>\$6,716</b>	<b>97%</b>	<b>\$30.2</b>		<b>\$68.5</b>	
<b>Total ETF</b>	<b>\$6,916</b>	<b>100%</b>	<b>\$32.7</b>		<b>\$81.8</b>	

Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

**Table 18: ESG ETF Flows by Categories**

Category	AUM (\$M)	AUM (%)	March 2023		Mar YTD 2023	
			Flow (\$M)	Flow/AUM	Flow (\$M)	Flow/AUM
Equity	\$84,562	90%	-\$5,496	-6.2%	-\$5,521	-6.5%
Broad - U.S.	\$42,831	46%	-\$5,584	-11.8%	-\$6,134	-13.4%
Broad - DM	\$8,657	9%	\$19	0.2%	\$73	0.9%
Broad - EM	\$4,841	5%	\$6	0.1%	\$508	12.2%
Broad - Global	\$4,083	4%	\$10	0.2%	\$134	3.6%
Environment	\$6,382	7%	\$107	0.8%	\$241	1.7%
Clean Energy	\$12,217	13%	-\$146	-4.7%	-\$519	-17.6%
Energy Transition	\$2,025	2%	\$40	2.0%	-\$11	-0.2%
Social	\$2,895	3%	\$35	1.2%	\$149	3.2%
Other	\$621	1%	\$17	2.0%	\$37	1.1%
Commodities	\$1,084	1%	-\$27	-2.4%	\$46	12.0%
Multi-Asset	\$64	0%	\$0	-0.3%	\$7	4.8%
Fixed Income	\$8,183	9%	\$138	1.8%	\$1,117	13.8%
<b>Total Displayed</b>	<b>\$93,893</b>	<b>100%</b>	<b>-\$5,384</b>	<b>-5.5%</b>	<b>-\$4,350</b>	<b>-4.7%</b>

Source: NBF ETF Research, Bloomberg. Data as of March 31, 2023.

## 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/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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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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