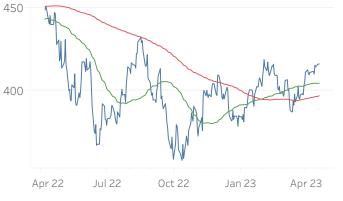
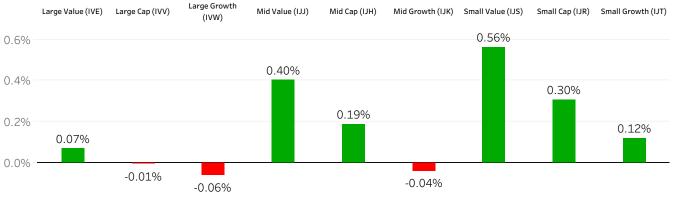


U.S. Size & Style Performance

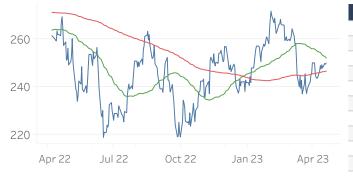
Large Cap Blend (S&P 500) IVV





U.S. Size & Style 1-Day Performance

Mid Cap Blend (S&P 400) IJH



Size & Style 1-Day Performance Leaders

| Fund | |
|---|--|
| First Trust Small Cap Value AlphaDEX Fund | 1.10% |
| Invesco S&P SmallCap Low Volatility ETF | 0.92% |
| iShares US Small Cap Value Factor ETF | 0.85% |
| ProShares S&P MidCap 400 Dividend Aristocrats ETF | 0.80% |
| ProShares Russell 2000 Dividend Growers ETF | 0.77% |
| First Trust Mid Cap Value AlphaDEX Fund | 0.75% |
| First Trust Small Cap Core AlphaDEX Fund | 0.74% |
| Vanguard Russell 2000 Value ETF | 0.66% |
| ETC 6 Meridian Small Cap Equity ETF | 0.63% |
| Invesco S&P MidCap Low Volatility ETF | 0.61% |
| | First Trust Small Cap Value AlphaDEX Fund Invesco S&P SmallCap Low Volatility ETF iShares US Small Cap Value Factor ETF ProShares S&P MidCap 400 Dividend Aristocrats ETF ProShares Russell 2000 Dividend Growers ETF First Trust Mid Cap Value AlphaDEX Fund First Trust Small Cap Core AlphaDEX Fund Vanguard Russell 2000 Value ETF ETC 6 Meridian Small Cap Equity ETF |

Small Cap Blend (S&P 600) IJR



Size & Style 1-Day Performance Laggards

| Ticker | Fund | |
|--------|---|--------|
| FFTY | Innovator IBD 50 ETF | -1.19% |
| WBIG | WBI BullBear Yield 3000 ETF | -0.98% |
| VLUE | iShares MSCI USA Value Factor ETF | -0.88% |
| QMOM | Momentumshares US Quantitative Momementum ETF | -0.83% |
| AIEQ | AI Powered Equity ETF | -0.82% |
| BUZZ | VanEck Social Sentiment ETF | -0.76% |
| QQQN | VictoryShares Nasdaq Next 50 ETF | -0.71% |
| RPG | Invesco S&P 500 Pure Growth ETF | -0.70% |
| SPVU | Invesco S&P 500 Enhanced Value ETF | -0.64% |
| COWZ | Pacer US Cash Cows 100 ETF | -0.63% |
| | | |

200 Day Moving Average

Size & Style Most Overbought

| | Ticker | Fund | |
|---|--------|--|-------|
|) | SPC | CrossingBridge Pre-Merger SPAC ETF | 70.13 |
|) | CGDV | Capital Group Dividend Value ETF | 70.09 |
|) | SIXA | ETC 6 Meridian Mega Cap Equity ETF | 68.32 |
|) | FDLO | Fidelity Low Volatility Factor ETF | 67.56 |
|) | USMC | Principal U.S. Mega-Cap ETF | 67.21 |
|) | XLG | Invesco S&P 500 Top 50 ETF | 66.57 |
|) | OEF | iShares S&P 100 ETF | 66.46 |
|) | JEPQ | J.P. Morgan Nasdaq Equity Premium Income ETF | 66.44 |
|) | FDVV | Fidelity High Dividend ETF | 66.24 |
|) | QDEF | FlexShares Quality Dividend Defensive Index Fund | 66.21 |
| | | | |

Size & Style Most Oversold

| | Ticker | Fund | |
|---|--------|---|-------|
| % | FDM | First Trust Dow Jones Select MicroCap Index Fund | 42.83 |
| % | XSLV | Invesco S&P SmallCap Low Volatility ETF | 43.18 |
| % | AIEQ | Al Powered Equity ETF | 43.79 |
| % | SVAL | iShares US Small Cap Value Factor ETF | 43.90 |
| % | SMLV | SPDR SSGA US Small Cap Low Volatility Index ETF | 44.07 |
| % | SMDV | ProShares Russell 2000 Dividend Growers ETF | 47.22 |
| % | QVMS | Invesco S&P SmallCap 600 QVM Multi-factor ETF | 47.83 |
| 6 | VIOG | Vanguard S&P Small-Cap 600 Growth ETF | 47.90 |
| % | CSF | VictoryShares US Discovery Enhanced Volatility Wt | 48.00 |
| 6 | CSML | IQ Chaikin U.S. Small Cap ETF | 48.11 |
| | | | |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify



U.S. Size & Style Flows

Large-Cap 30-Day Rolling Flows



Mid-Cap 30-Day Rolling Flows



Small-Cap 30-Day Rolling Flows



| | Funds | AUM | 1 Week | 3 Month | 6 Month | 1 Year |
|-------------------------------|-------|----------|-----------|-----------|-----------|-----------|
| Large Cap, Beta, Beta | 25 | \$1,290B | (\$0.62B) | \$0.17B | (\$0.39B) | \$62.14B |
| Large Cap, Beta, Beta: Growth | 10 | \$246B | (\$0.27B) | \$1.74B | \$9.12B | \$22.12B |
| Large Cap, Beta, Beta: Value | 11 | \$222B | (\$0.38B) | (\$3.11B) | (\$3.53B) | \$3.24B |
| Mid Cap, Beta, Beta | 10 | \$185B | \$0.17B | \$1.09B | \$5.27B | \$10.99B |
| Mid Cap, Beta, Beta: Growth | 6 | \$34B | \$0.04B | (\$0.02B) | (\$0.26B) | \$0.99B |
| Mid Cap, Beta, Beta: Value | 6 | \$39B | \$0.08B | (\$0.40B) | (\$0.28B) | \$0.75B |
| Small Cap, Beta, Beta | 13 | \$188B | (\$0.28B) | (\$1.34B) | \$2.68B | \$1.17B |
| Small Cap, Beta, Beta: Growth | 7 | \$32B | \$0.17B | (\$0.24B) | \$0.45B | \$1.44B |
| Small Cap, Beta, Beta: Value | 7 | \$48B | (\$0.11B) | (\$0.51B) | \$0.65B | (\$0.50B) |

U.S. Size & Style Landscape Flows

U.S. Size & Style Flow Leaders

| | Ticker | Fund | 1 Week | 3 Month | 6 Month | 1 Year | AUM |
|------|--------|--|---------|-----------|-----------|----------|-----------|
| 9 | SPLG | SPDR Portfolio S&P 500 ETF | \$0.65B | \$1.00B | \$1.52B | \$3.01B | \$16.80B |
| ١ | 00 | Vanguard S&P 500 ETF | \$0.53B | \$5.89B | \$7.79B | \$33.08B | \$290.85B |
| I | VV | iShares Core S&P 500 ETF | \$0.48B | (\$2.22B) | (\$3.05B) | \$13.04B | \$310.11B |
| (| QUAL | iShares MSCI USA Quality Factor ETF | \$0.39B | \$8.45B | \$8.09B | \$6.22B | \$28.17B |
| . `` | VTI | Vanguard Total Stock Market ETF | \$0.33B | \$2.36B | \$8.20B | \$20.59B | \$285.15B |
| I | JR | iShares Core S&P Small Cap ETF | \$0.14B | \$0.15B | \$1.30B | \$2.27B | \$65.65B |
| 9 | SPLV | Invesco S&P 500 Low Volatility ETF | \$0.13B | (\$0.58B) | (\$0.30B) | \$0.65B | \$10.10B |
| ١ | VOE | Vanguard Mid-Cap Value ETF | \$0.10B | \$0.01B | \$0.25B | \$0.78B | \$16.01B |
| (| OMFL | Invesco Russell 1000 Dynamic Multifactor ETF | \$0.09B | \$0.61B | \$0.76B | \$0.95B | \$3.06B |
| ١ | VBK | Vanguard Small-Cap Growth ETF | \$0.09B | \$0.30B | \$0.44B | \$0.66B | \$13.24B |

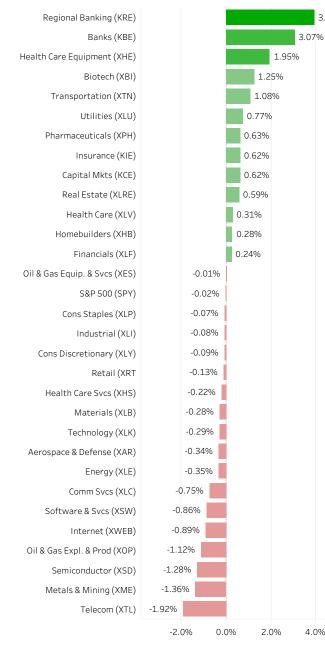
U.S. Size & Style Flow Laggards

| Ticker | Fund | 1 Week | 3 Month | 6 Month | 1 Year | AUM |
|--------|---------------------------------|-----------|-----------|-----------|-----------|-----------|
| QQQ | Invesco QQQ Trust | (\$1.85B) | \$1.41B | (\$2.58B) | \$0.25B | \$170.96B |
| IWD | iShares Russell 1000 Value ETF | (\$0.49B) | (\$2.64B) | (\$3.54B) | (\$2.69B) | \$50.81B |
| IWM | iShares Russell 2000 ETF | (\$0.33B) | (\$2.61B) | (\$1.66B) | (\$2.49B) | \$49.64B |
| IWF | iShares Russell 1000 Growth ETF | (\$0.27B) | (\$2.25B) | (\$1.52B) | \$1.41B | \$63.24B |
| JVAL | JPMorgan U.S. Value Factor ETF | (\$0.19B) | (\$0.05B) | \$0.14B | \$0.12B | \$0.64B |
| DVY | iShares Select Dividend ETF | (\$0.17B) | (\$0.70B) | \$0.16B | \$1.21B | \$21.77B |
| IWN | iShares Russell 2000 Value ETF | (\$0.13B) | (\$0.27B) | (\$0.37B) | (\$0.93B) | \$11.09B |
| ESGU | iShares ESG Aware MSCI USA ETF | (\$0.11B) | (\$6.04B) | (\$8.59B) | (\$8.29B) | \$14.00B |
| IWB | iShares Russell 1000 ETF | (\$0.09B) | (\$0.67B) | (\$0.68B) | \$1.17B | \$28.76B |
| IUSV | iShares Core S&P US Value ETF | (\$0.08B) | (\$0.03B) | \$0.42B | \$1.29B | \$13.29B |

* ETF Landscape represented using the ETF Action classification system **Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day

S&P Sector & Industry 1 Day Performance

3.94%



Select Sector SPDRs Technicals

| Ticker | Fund Name | % From 52W High | % From 52W Low | % Abv/Below 50 SMA | % Abv/Below 200 SMA | RSI (14D) |
|--------|--|--------------------|-------------------|-----------------------|------------------------|-----------|
| XLK | Technology Select Sector SPDR Fund | -1.54% | 28.02% | 4.21% | 10.73% | 59.17 |
| XLI | Industrial Select Sector SPDR Fund | -2.56% | 21.95% | 0.86% | 4.59% | 57.95 |
| XLP | Consumer Staples Select Sector SPDR Fund | -2.92% | 14.05% | 3.27% | 3.47% | 65.82 |
| SPY | SPDR S&P 500 ETF Trust | -3.62% | 16.15% | 2.94% | 4.84% | 63.98 |
| XLV | Health Care Select Sector SPDR Fund | -4.39% | 11.73% | 3.25% | 2.29% | 62.20 |
| XLC | Communication Services Select Sector SPDR Fund | -7.61% | 28.06% | 4.07% | 9.73% | 56.09 |
| XLB | Materials Select Sector SPDR Fund | -7.90% | 21.08% | 1.69% | 4.41% | 58.67 |
| XLE | Energy Select Sector SPDR Fund | -8.33% | 27.78% | 2.54% | 3.24% | 56.96 |
| XLF | Financial Select Sector SPDR Fund | -9.62% | 10.40% | -0.55% | -1.33% | 60.90 |
| XLU | Utilities Select Sector SPDR Fund | -11.11% | 12.87% | 3.42% | -0.37% | 59.60 |
| XLY | Consumer Discretionary Select Sector SPDR Fund | -14.41% | 17.25% | 1.88% | 1.07% | 58.16 |
| XLRE | Real Estate Select Sector SPDR Fund | -19.13% | 11.31% | 0.04% | -3.29% | 55.27 |

Sector & Industry 1 Day Performance Leaders

| Ticker | Fund | |
|--------|---|-------|
| KRE | SPDR S&P Regional Banking ETF | 3.94% |
| IAT | iShares U.S. Regional Banks ETF | 3.15% |
| KBWR | Invesco KBW Regional Banking ETF | 3.09% |
| KBE | SPDR S&P Bank ETF | 3.07% |
| IHI | iShares U.S. Medical Devices ETF | 2.84% |
| QABA | First Trust NASDAQ ABA Community Bank Index F | 2.74% |
| FXO | First Trust Financials AlphaDEX Fund | 2.29% |
| XHE | SPDR S&P Health Care Equipment ETF | 1.95% |
| FTXO | First Trust Nasdaq Bank ETF | 1.93% |
| KBWB | Invesco KBW Bank ETF | 1.69% |

Sector & Industry 1 Day Performance Laggards

| Ticker | Fund | |
|--------|---|--------|
| IGN | iShares North American Tech-Multimedia Networking | -2.90% |
| PTF | Invesco DWA Technology Momentum ETF | -2.47% |
| IHF | iShares U.S. Healthcare Providers ETF | -2.18% |
| XTL | SPDR S&P Telecom ETF | -1.92% |
| PSCT | Invesco S&P SmallCap Information Technology ETF | -1.70% |
| IYZ | iShares U.S. Telecommunications ETF | -1.37% |
| XME | SPDR S&P Metals & Mining ETF | -1.36% |
| FXL | First Trust Technology AlphaDEX Fund | -1.36% |
| RYT | Invesco S&P 500 Equal Weight Technology ETF | -1.32% |
| XSD | SPDR S&P Semiconductor ETF | -1.28% |

Sector & Industry Most Overbought

| Ticker | Fund | |
|--------|--|-------|
| IHI | iShares U.S. Medical Devices ETF | 72.89 |
| ITB | iShares U.S. Home Construction ETF | 70.05 |
| PTH | Invesco DWA Healthcare Momentum ETF | 69.30 |
| VDC | Vanguard Consumer Staples ETF | 66.65 |
| XLP | Consumer Staples Select Sector SPDR Fund | 65.82 |
| PSL | Invesco DWA Consumer Staples Momentum ETF | 65.71 |
| FSTA | FIDELITY COVINGTON TRUST MSCI CONSUMER STAPLES | 65.68 |
| РКВ | Invesco Dynamic Building & Construction ETF | 64.52 |
| XHB | SPDR S&P Homebuilders ETF | 64.45 |
| XHE | SPDR S&P Health Care Equipment ETF | 64.25 |

Sector & Industry Most Oversold

| Ticker | Fund | |
|--------|---|-------|
| XTL | SPDR S&P Telecom ETF | 32.44 |
| IGN | iShares North American Tech-Multimedia Networking ETF | 32.79 |
| PSCT | Invesco S&P SmallCap Information Technology ETF | 38.60 |
| IYZ | iShares U.S. Telecommunications ETF | 40.05 |
| QABA | First Trust NASDAQ ABA Community Bank Index Fund | 41.13 |
| NETL | NETLease Corporate Real Estate ETF | 42.96 |
| KBWY | Invesco KBW Premium Yield Equity REIT ETF | 43.20 |
| PSI | Invesco Dynamic Semiconductors ETF | 43.63 |
| AIRR | First Trust RBA American Industrial Renaissance ETF | 43.84 |
| XSD | SPDR S&P Semiconductor ETF | 44.15 |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify

4.0%

U.S. Sector Landscape

U.S. Sector & Industry 1-Week Flows

\$201M

| Semiconductors | |
|------------------------------------|-----------------------------|
| Retail | \$112M |
| Aerospace & Defense | \$59M |
| Pharmaceuticals | \$53M |
| Biotech | \$49M |
| Metals & Mining | \$29M |
| Homebuilding | \$8M |
| MLPs: C-Corp | \$6M |
| Infrastructure | \$1M |
| Construction & Engineering | \$0M |
| Health Care Providers & Services | \$0M |
| Leisure & Recreation | \$0M |
| Media & Entertainment | \$0M |
| Natural Gas | \$0M |
| Health Care Equipment & Supplies | (\$3M) |
| Transportation | (\$4M) |
| MLPs: Note | (\$6M) |
| Food & Beverage | (\$8M) |
| Oil & Gas Equipment & Services | (\$9M) |
| Mortgage REITs | (\$10M) |
| Insurance | (\$13M) |
| Midstream | (\$13M) |
| Banks: Regional | (\$13M) |
| Software | (\$14M) |
| Banks | (\$18M) |
| BDCs | (\$23M) |
| Oil & Gas Exploration & Production | (\$100M) |
| | -200M -100M 0M 100M 200 |
| | 1 Week (Custom SQL Query22) |

| | Funds | AUM | 1 Week | 3 Month | 6 Month | 1 Year |
|------------------------|-------|--------|----------|------------|------------|------------|
| Communication Services | 7 | \$15B | \$84M | \$1,301M | \$1,239M | \$893M |
| Consumer Discretionary | 12 | \$23B | \$559M | \$1,026M | \$675M | (\$2,166M) |
| Consumer Staples | 10 | \$31B | \$659M | \$570M | \$2,461M | \$5,041M |
| Energy | 32 | \$75B | (\$385M) | (\$3,919M) | (\$4,576M) | (\$8,090M) |
| Financials | 26 | \$56B | \$249M | \$1,915M | \$1,615M | (\$9,751M) |
| Health Care | 23 | \$92B | \$554M | (\$4,576M) | (\$769M) | \$2,185M |
| Industrial | 13 | \$32B | (\$105M) | (\$52M) | \$1,847M | (\$1,423M) |
| Materials | 9 | \$15B | \$138M | \$224M | \$587M | (\$3,166M) |
| Multi-Sector | 19 | \$14B | \$14M | \$259M | \$77M | (\$2,021M) |
| Real Estate | 25 | \$56B | (\$243M) | (\$2,557M) | (\$2,309M) | (\$6,518M) |
| Technology | 23 | \$132B | (\$89M) | \$701M | \$1,459M | (\$431M) |
| Utilities | 9 | \$25B | (\$156M) | (\$134M) | (\$488M) | \$2,614M |

U.S. Sector Landscape

U.S. Sector & Industry Flow Leaders

| Ticker | Fund | 1 Week | 3 Month | 6 Month | 1 Year | AUM |
|--------|--|--------|------------|----------|------------|-----------|
| XLF | Financial Select Sector SPDR Fund | \$540M | \$1,025M | \$2,014M | (\$5,210M) | \$31,829M |
| XLP | Consumer Staples Select Sector SPDR Fund | \$521M | \$522M | \$1,724M | \$2,282M | \$18,292M |
| XLY | Consumer Discretionary Select Sector SPDR Fu | \$472M | \$70M | (\$78M) | (\$751M) | \$14,750M |
| XLV | Health Care Select Sector SPDR Fund | \$462M | (\$1,427M) | \$281M | \$2,240M | \$39,950M |
| SOXX | iShares Semiconductor ETF | \$191M | \$428M | \$387M | (\$234M) | \$7,693M |
| RHS | Invesco S&P 500 Equal Weight Consumer Stapl | \$135M | \$265M | \$359M | \$472M | \$1,030M |
| XLB | Materials Select Sector SPDR Fund | \$135M | \$81M | \$193M | (\$1,192M) | \$6,002M |
| XRT | SPDR S&P Retail ETF | \$112M | \$177M | \$116M | (\$98M) | \$413M |
| XBI | SPDR S&P BIOTECH ETF | \$88M | (\$2,113M) | (\$539M) | \$288M | \$6,537M |
| XLC | Communication Services Select Sector SPDR Fu | \$71M | \$1,249M | \$1,220M | \$1,085M | \$10,999M |

U.S. Sector & Industry Flow Laggards

| | Ticker | Fund | 1 Week | 3 Month | 6 Month | 1 Year | AUM |
|--------|--------|--|----------|------------|------------|------------|-----------|
| | XLE | Energy Select Sector SPDR Fund | (\$270M) | (\$235M) | (\$870M) | (\$1,390M) | \$40,064M |
| | XLK | Technology Select Sector SPDR Fund | (\$246M) | (\$2,036M) | (\$1,966M) | (\$2,061M) | \$43,095M |
| | IYR | iShares U.S. Real Estate ETF | (\$166M) | (\$666M) | (\$294M) | (\$1,213M) | \$2,934M |
| | XLU | Utilities Select Sector SPDR Fund | (\$136M) | \$229M | (\$166M) | \$2,084M | \$16,039M |
| | XLI | Industrial Select Sector SPDR Fund | (\$130M) | (\$847M) | (\$52M) | (\$1,616M) | \$13,458M |
| | XOP | SPDR S&P Oil & Gas Exploration & Production E | (\$95M) | (\$316M) | (\$466M) | (\$1,616M) | \$3,703M |
| | IAI | iShares U.S. Broker-Dealers & Securities Excha | (\$91M) | (\$134M) | \$217M | \$207M | \$692M |
| 300M | VFH | Vanguard Financials ETF | (\$90M) | (\$430M) | (\$561M) | (\$1,949M) | \$7,969M |
| 300101 | VGT | Vanguard Information Technology ETF | (\$47M) | (\$328M) | (\$280M) | (\$936M) | \$46,127M |
| | IBB | iShares Biotechnology ETF | (\$40M) | (\$574M) | \$44M | (\$390M) | \$8,205M |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day



(\$.

U.S. Sector Rolling 30-Day Flows

April 19, 2023



(\$2B) (\$2B) Apr 22 Aug 22 Apr 23 Apr 22 Apr 23 Apr 23 Dec 22 Aug 22 Dec 22 Apr 22 Aug 22 Dec 22 Apr 22 Aug 22 Dec 22 Apr 23



* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day



Global Thematic Performance

April 19, 2023

Global Thematic Segment 1-Day Performance

1.21%

0.72%

0.50%

0.22%

0.08%

0.03%

0.03%

-0.08%

-0.19% -0.30% -0.30%

-0.35% -0.50%

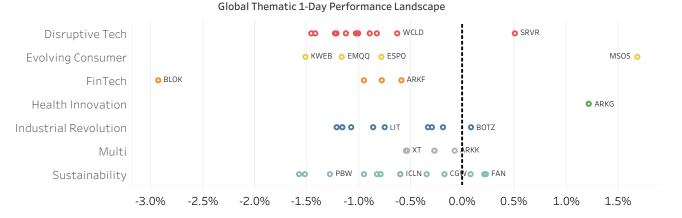
-0.73% -0.78% -0.78% -0.79% -0.86% -0.87% -0.90%

-0.95%

-1.01% -1.07% -1.20% -1.23% -1.28%

0.00%

| | Genomics (ARKG) |
|--------|-------------------------------|
| | Biotech |
| | Digital Infrastructure (SRVR) |
| | Clean Energy: Wind (FAN) |
| | Water (PHO) |
| | Casinos & Gaming (BETZ) |
| | Space (UFO) |
| | Multi-Theme (ARKK) |
| | Industrial Revolution (ARKQ) |
| | Robotics & AI (ROBO) |
| | Cannabis (MJ) |
| | Smart Infrastructure (GRID) |
| | 3D Printing (PRNT) |
| | Online Retail (IBUY) |
| | Digital Payments (IPAY) |
| | eSports & Video Games (ESPO |
| | Clean Energy: Solar (TAN) |
| | Advanced Materials (REMX) |
| | Big Data (AIQ) |
| | Cloud Computing (SKYY) |
| | FinTech (FINX) |
| | Connectivity (FIVG) |
| | NextGen Transportation (DRIV) |
| | Evolving Consumer (SOCL) |
| - | Disruptive Tech (ARKW) |
| - | Clean Energy (PBW) |
| -1 | Cyber Security (HACK) |
| -2.93% | Blockchain (BLOK) |
| -5.00% | |
| | |



Global Thematic 1-Day Performance Leaders

| Ticker | Fund | |
|--------|---|-------|
| MSOS | AdvisorShares Pure US Cannabis ETF | 1.68% |
| BTEC | Principal Healthcare Innovators ETF | 1.44% |
| EDOC | Global X Telemedicine & Digital Health ETF Registered | 1.43% |
| GNOM | Global X Genomics & Biotechnology ETF | 1.37% |
| ARKG | ARK Genomic Revolution ETF | 1.21% |
| HTEC | ROBO Global Healthcare Technology and Innovation ETF | 1.12% |
| GDOC | Goldman Sachs Future Health Care Equity ETF | 1.02% |
| SBIO | ALPS Medical Breakthroughs ETF | 0.72% |
| SRVR | Pacer Data & Infrastructure Real Estate ETF | 0.50% |
| BJK | VanEck Gaming ETF | 0.41% |

Global Thematic 1-Day Performance Laggards

| Ticker | Fund | |
|--------|--|--------|
| вксн | Global X Blockchain ETF | -5.83% |
| BITQ | Bitwise Crypto Industry Innovators ETF | -5.61% |
| BLOK | Amplify Transformational Data Sharing ETF | -2.93% |
| KGRN | KraneShares MSCI China Clean Technology Index ETF | -2.20% |
| FDRV | Fidelity Electric Vehicles and Future Transportation E | -1.66% |
| BLCN | Siren ETF Trust Siren Nasdaq NexGen Economy ETF | -1.65% |
| ERTH | Invesco MSCI Sustainable Future ETF | -1.58% |
| QCLN | First Trust Nasdaq Clean Edge Green Energy Index Fund | -1.52% |
| KWEB | KraneShares CSI China Internet ETF | -1.52% |
| НАСК | ETFMG Prime Cyber Security ETFMG Prime Cyber Secu | -1.46% |
| | | |

Thematic Most Overbought

| Ticker | Fund | |
|--------|---|-------|
| AGNG | Global X Aging Population ETF | 70.99 |
| GDOC | Goldman Sachs Future Health Care Equity ETF | 69.47 |
| BJK | VanEck Gaming ETF | 66.59 |
| SBIO | ALPS Medical Breakthroughs ETF | 65.83 |
| BETZ | Roundhill Sports Betting & iGaming ETF | 62.48 |
| TIME | Clockwise Capital Innovation ETF | 61.85 |
| BTEC | Principal Healthcare Innovators ETF | 61.84 |
| GBUY | Goldman Sachs Future Consumer Equity ETF | 61.28 |
| BITQ | Bitwise Crypto Industry Innovators ETF | 61.25 |
| PAWZ | ProShares Pet Care ETF | 59.86 |

Thematic Most Oversold

| | Ticker | Fund | |
|---|--------|---|-------|
| 6 | MJ | ETFMG Alternative Harvest ETFMG Alternative Harvest | 34.46 |
| ó | MJUS | ETFMG U.S. Alternative Harvest ETF | 36.73 |
| 6 | MSOS | AdvisorShares Pure US Cannabis ETF | 40.90 |
| 6 | HAIL | SPDR S&P Kensho Smart Mobility ETF | 42.03 |
| 6 | PBW | Invesco WilderHill Clean Energy ETF | 42.35 |
| 6 | FIVG | Defiance Next Gen Connectivity ETF | 42.77 |
| 6 | IZRL | ARK Israel Innovative Technology ETF | 44.00 |
| ó | ARKQ | ARK Autonomous Technology & Robotics ETF | 44.70 |
| 6 | ARKX | ARK Space Exploration & Innovation ETF | 44.80 |
| ó | KWEB | KraneShares CSI China Internet ETF | 44.81 |
| | | | |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify



Global Thematic Flows

Thematic 1 Week Flow Leaders

| Ticker | Fund | |
|--------|---|-------|
| ARKK | ARK Innovation ETF | \$96M |
| ARKG | ARK Genomic Revolution ETF | \$21M |
| IRBO | iShares Robotics and Artificial Intelligence Multisector ETF | \$12M |
| GRID | First Trust Nasdaq Clean Edge Smart GRID Infrastructure Index | \$10M |
| ACES | ALPS Clean Energy ETF | \$6M |
| AIQ | Global X Artificial Intelligence & Technology ETF | \$5M |
| KOMP | SPDR S&P Kensho New Economies Composite ETF | \$4M |
| FIW | First Trust Water ETF | \$4M |
| TARK | AXS 2X Innovation ETF | \$3M |
| IBUY | Amplify Online Retail ETF | \$2M |

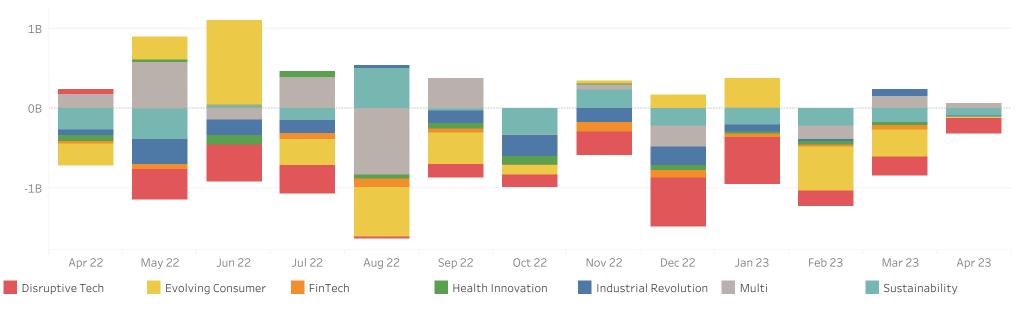
| Segment | Funds | AUM | 1 Week | 3 Month | 6 Month | 1 Year |
|-----------------------|-------|-------|---------|------------|------------|------------|
| Disruptive Tech | 34 | \$15B | (\$17M) | (\$808M) | (\$2,165M) | (\$3,598M) |
| Evolving Consumer | 44 | \$9B | (\$2M) | (\$768M) | (\$416M) | (\$736M) |
| FinTech | 19 | \$3B | (\$1M) | (\$97M) | (\$341M) | (\$663M) |
| Health Innovation | 19 | \$3B | \$21M | (\$96M) | (\$190M) | (\$490M) |
| Industrial Revolution | 31 | \$11B | (\$43M) | \$45M | (\$541M) | (\$1,575M) |
| Multi | 41 | \$15B | \$120M | \$111M | (\$20M) | \$431M |
| Sustainability | 40 | \$17B | (\$45M) | (\$512M) | (\$836M) | (\$1,252M) |
| Grand Total | 228 | \$72B | \$34M | (\$2,126M) | (\$4,509M) | (\$7,883M) |

Thematic Landscape Assets & Flows

Thematic 1 Week Flow Laggards

Ticker Fund ICLN iShares Global Clean Energy ETF (\$20M) (\$19M) Global X Lithium & Battery Tech ETF LIT TAN Invesco Solar ETF (\$18M) BOTZ Global X Robotics & Artificial Intelligence ETF (\$18M) (\$14M) PBW Invesco WilderHill Clean Energy ETF OCLN First Trust Nasdag Clean Edge Green Energy Index Fund (\$12M) HACK ETFMG Prime Cyber Security ETFMG Prime Cyber Security Fund (\$10M) ROBO ROBO Global Robotics & Automation Index ETF (\$8M) (\$7M) KWEB KraneShares CSI China Internet ETF SKYY First Trust Cloud Computing ETF (\$7M)

Thematic Monthly Flows

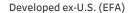


* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day

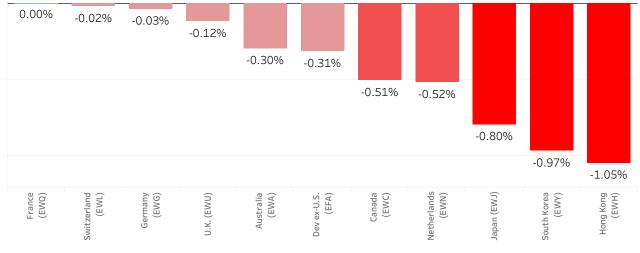


Developed Markets ex-U.S. Performance

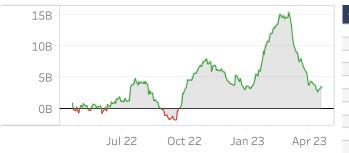
April 19, 2023







Developed ex-U.S. 30-Day Rolling Flows



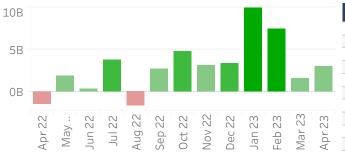
Developed ex-U.S. 1-Day Performance Leaders

| Ticker | Fund | |
|--------|---|-------|
| EWP | iShares MSCI Spain ETF | 0.90% |
| EWS | iShares MSCI Singapore ETF | 0.55% |
| EIRL | iShares MSCI Ireland ETF | 0.47% |
| LVHI | Franklin International Low Volatility High Dividend Index ETF | 0.29% |
| HEZU | iShares Currency Hedged MSCI Eurozone ETF | 0.16% |
| HDEF | Xtrackers MSCI EAFE High Dividend Yield Equity ETF | 0.08% |
| ENZL | iShares MSCI New Zealand ETF | 0.03% |
| EWI | iShares MSCI Italy ETF | 0.00% |
| EWQ | iShares MSCI France ETF | 0.00% |
| EZU | iShares MSCI Eurozone ETF | 0.00% |

| | Ticker | Fund | |
|---|--------|--|-------|
| 5 | EWL | iShares MSCI Switzerland ETF | 74.68 |
| 5 | FLSW | Franklin FTSE Switzerland ETF | 74.55 |
| 5 | EFAV | iShares MSCI EAFE Min Vol Factor ETF | 71.58 |
| 5 | EUDG | WisdomTree Europe Quality Dividend Growth Fund | 71.04 |
| 5 | IMFL | Invesco International Developed Dynamic Multifactor ETF | 70.55 |
| ò | QLVD | FlexShares Developed Markets ex-US Quality Low Volatilit | 69.38 |
| ò | EWQ | iShares MSCI France ETF | 69.25 |
| S | FLEE | Franklin FTSE Europe ETF | 68.82 |
| Ś | HDEF | Xtrackers MSCI EAFE High Dividend Yield Equity ETF | 68.66 |
| ò | BBEU | JPMorgan BetaBuilders Europe ETF | 68.59 |
| | | | |

Developed ex-U.S. Most Overbought

Developed ex-U.S. Monthly Flows



Developed ex-U.S. 1-Day Performance Laggards

| Ticker | Fund | |
|--------|--|--------|
| AIA | iShares Asia 50 ETF | -1.33% |
| NORW | Global X MSCI Norway ETF | -1.30% |
| EDEN | iShares MSCI Denmark ETF | -1.17% |
| SCJ | iShares MSCI Japan Small-Cap ETF | -1.07% |
| GREK | Global X MSCI Greece ETF | -1.05% |
| EWH | iShares MSCI Hong Kong ETF | -1.05% |
| EWY | iShares MSCI South Korea ETF | -0.97% |
| DFJ | WisdomTree Japan SmallCap Dividend Fund | -0.96% |
| MINV | Matthews Asia Innovators Active ETF | -0.92% |
| AAXJ | iShares MSCI All Country Asia ex Japan ETF | -0.91% |
| | | |

Developed ex-U.S. Most Oversold

| | Ticker | Fund | |
|---|--------|--|-------|
| 6 | EIS | iShares MSCI Israel ETF | 39.67 |
| 6 | AIA | iShares Asia 50 ETF | 46.14 |
| 6 | MINV | Matthews Asia Innovators Active ETF | 46.20 |
| 6 | ISRA | VanEck Israel ETF | 46.61 |
| 6 | DFJ | WisdomTree Japan SmallCap Dividend Fund | 49.12 |
| 6 | ENZL | iShares MSCI New Zealand ETF | 49.79 |
| 6 | AAXJ | iShares MSCI All Country Asia ex Japan ETF | 50.60 |
| 6 | EWH | iShares MSCI Hong Kong ETF | 51.05 |
| 6 | NORW | Global X MSCI Norway ETF | 51.72 |
| 6 | SCJ | iShares MSCI Japan Small-Cap ETF | 52.27 |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day

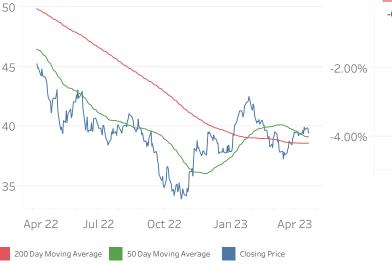
Developed ex-U.S. 1-Day Performance Top 10 Countries

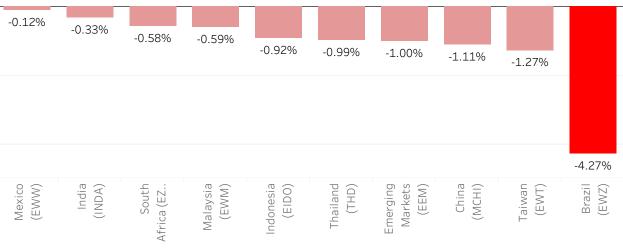


Emerging Markets Performance

April 19, 2023







Ticker Fund

iShares MSCI Poland ETF

iShares MSCI Saudi Arabia ETF

iShares MSCI Peru and Global Exposure ETF

Pacer Emerging Markets Cash Cows 100 ETF

SPDR S&P Emerging Markets Dividend ETF

Dimensional Emerging Markets Value ETF

iShares MSCI India Small Cap ETF

First Trust Emerging Markets AlphaDEX Fund

VictoryShares Emerging Markets Value Momentum E..

iShares MSCI Emerging Markets Min Vol Factor ETF

EPOL

KSA

EPU

ECOW

UEVM

EDIV

EEMV

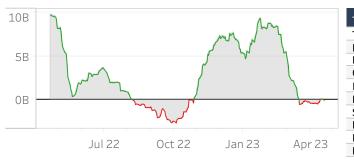
DFEV

SMIN

FEM

Emerging 1-Day Performance Top 10 Countries

Emerging 30-Day Rolling Flows



Emerging Monthly Flows

Oct 22 Nov 22 Dec 22 Jan 23 Feb 23

Aug 22 Sep 22

5B

0B

Apr 22

Jun 22 Jul 22

May 22

Emerging 1-Day Performance Leaders

| Ticker | Fund | |
|--------|----------------------------------|--------|
| TUR | iShares MSCI Turkey ETF | 0.47% |
| PIN | Invesco India ETF | 0.12% |
| KSA | iShares MSCI Saudi Arabia ETF | 0.00% |
| QAT | iShares MSCI Qatar ETF | 0.00% |
| INDY | iShares India 50 ETF | -0.05% |
| EPOL | iShares MSCI Poland ETF | -0.06% |
| SMIN | iShares MSCI India Small Cap ETF | -0.06% |
| EPI | WisdomTree India Earnings Fund | -0.09% |
| EWW | iShares MSCI Mexico ETF | -0.12% |
| FLIN | Franklin FTSE India ETF | -0.25% |

Emerging 1-Day Performance Laggards

| Ticker | Fund | | |
|--------|--|--------|--|
| EWZS | iShares MSCI Brazil Small-Cap ETF | -4.46% | |
| FLBR | Franklin FTSE Brazil ETF | -4.31% | |
| EWZ | iShares MSCI Brazil ETF | -4.27% | |
| ILF | iShares Latin America 40 ETF | -2.88% | |
| FLLA | Franklin FTSE Latin America ETF | -2.75% | |
| PGJ | Invesco Golden Dragon China ETF | -1.68% | |
| DGRE | WisdomTree Emerging Markets Quality Dividend Growt | -1.66% | |
| DVYE | iShares Emerging Markets Dividend ETF | -1.60% | |
| ECH | iShares MSCI Chile ETF | -1.52% | |
| FLN | First Trust Latin America AlphaDEX Fund | -1.44% | |

Emerging Most Oversold

Emerging Most Overbought

| Ticker | Fund | |
|--------|---|-------|
| EPHE | iShares MSCI Philippines ETF | 32.45 |
| QAT | iShares MSCI Qatar ETF | 41.70 |
| EWT | iShares MSCI Taiwan ETF | 42.16 |
| FLTW | Franklin FTSE Taiwan ETF | 42.69 |
| THD | iShares MSCI Thailand ETF | 43.27 |
| VNM | VanEck Vietnam ETF | 43.90 |
| PGJ | Invesco Golden Dragon China ETF | 44.95 |
| EWZS | iShares MSCI Brazil Small-Cap ETF | 45.07 |
| EWM | iShares MSCI Malaysia ETF | 46.36 |
| FM | iShares MSCI Frontier and Select EM ETF | 46.70 |

* ETF Landscape represented using the ETF Action classification system **Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify ***Flows delayed one day

Mar 23

23

Apr

© ETF Action, Inc. 2023

72.45

70.83

67.74

67.02 65.11

63.22

61.72

61.69

60.02

59.53



Fixed Income, Commodities & Currencies

April 19, 2023









Fixed Income Performance

Commodities Performance

Currencies Performance

| Ticker | Name | 1 Day | 1 Month | YTD | Ticker | Name | 1 Day | 1 Month | YTD | Ticker | Name | 1 Day | 1 Month | YTD |
|--------|-------------------------------|---------|-----------|-------------|--------|-----------------------|--------|---------|---------|--------|--------------------------|--------|---------|--------|
| AGG | U.S. Aggregate | -0.15% | -0.36% | 2.71% | DJP | Broad Commodities | -1.41% | 5.67% | -4.39% | | Long Dollar | 0.22% | -1.49% | -0.11% |
| AUU | 0.3. Aggregate | 0.1070 | 0.3070 | 2.7 170 | DBE | Energy | -1.71% | 8.55% | -7.74% | UUP | | | | |
| SHY | 1-3 Year Treasury Bonds | -0.09% | -0.37% | 1.38% | USO | WTI Crude Oil | -2.02% | 18.14% | -1.16% | | | | | |
| | · · | | | | BNO | Brent Crude Oil | -1.95% | 15.21% | -1.98% | | Short Dollar | -0.26% | 2.11% | 2.22% |
| IEF | 7-10 Year Treasury Bonds | -0.21% | -0.83% | 3.20% | UNG | Natural Gas | -4.90% | -10.38% | -50.43% | UDN | | | | |
| | | 0.100/ | 2.220 | 5.050/ | UGA | Gasoline | -3.23% | 8.67% | 0.62% | | | | | |
| TLT | 20+ Year Treasury Bonds | -0.10% | -2.33% | 5.35% | DBP | Precious Metals | -0.25% | 3.37% | 8.28% | | | -0.10% | 2.95% | 2.68% |
| TIP | TIPS Bonds | -0.10% | 0.78% | 2.84% | GLD | Gold | -0.48% | 0.87% | 9.27% | FXE | Euro | | | |
| TIP | TIPS BOIlds | -0.1070 | 0.7870 | 2.0470 | SLV | Silver | 0.35% | 12.60% | 5.50% | | | | | |
| FLOT | Floating Rate Bonds | -0.06% | 1.57% | 1.52% | PPLT | abrdn Physical Platin | 0.88% | 12.10% | 1.72% | | British Pound Sterling | 0.07% | 2.47% | 3.72% |
| | | | | | PALL | abrdn Physical Palla | -0.95% | 14.87% | -9.85% | FXB | | | | |
| LQD | Investment Grade Corporate | -0.50% | 0.80% | 3.93% | DBB | Base Metals | -0.60% | 2.78% | 2.72% | | | | | |
| | | | | | CPER | Copper | -0.64% | 4.80% | 7.80% | | Swiss Franc | -0.10% | 3.08% | 2.82% |
| HYG | High Yield Corporate | -0.40% | 2.45% | 3.21% | LD | Lead | -0.51% | 2.48% | -6.95% | FXF | | | | |
| BKLN | Senior Loan | 0.00% | 2.98% | 4.17% | JJN | Nickel | -0.01% | 8.66% | -14.73% | FAF | | | | |
| DKLIN | Sellior Loan | 0.00% | 2.9070 | 4.1770 | JJU | Aluminum | 0.81% | 7.58% | 1.38% | | | | | |
| PFF | Preferred & Income Securities | 0.27% | 27% 4.68% | 4.66% | JJT | Tin | -1.94% | 20.58% | 8.70% | - | Japanese Yen | -0.55% | -2.19% | -2.83% |
| ••• | | | | | DBA | Agriculture | -0.89% | 6.45% | 4.76% | FXY | | | | |
| MUB | Municipal Bonds | -0.13% | -0.08% | 1.90% | CORN | Corn | -1.26% | 1.57% | -6.57% | | | | | |
| | MBS | | | | SOYB | Soybeans | -0.69% | 0.40% | -4.63% | FXC | Canadian Dollar | 0.000 | 0.0494 | 1.19% |
| MBB | | 0.00% | -0.95% | 2.08% | WEAT | Wheat | -2.53% | -3.08% | -13.16% | | | -0.46% | 2.34% | |
| | | -0.48% | 1.27% | 1.27% 1.61% | CANE | Sugar | -0.28% | 17.90% | 31.64% | | | | | |
| EMB | Dollar Denominated EM Bonds | -0.40% | 1.27% | 1.01% | BAL | Cotton | -1.39% | 7.97% | 0.83% | FXA | | | | -1.09% |
| LEMB | Local Currency EM Bond | -0.43% | 1.61% | 2.77% | NIB | Сосоа | 0.13% | 13.55% | 20.41% | | Australian Dollar -0.13% | -0.13% | 0.52% | |
| LEIVIB | Local currency EM Bollu | 0.1070 | 1.0170 | 2.7770 | JO | Coffee | -1.07% | 14.06% | 21.69% | | | | | |

* ETF Landscape represented using the ETF Action classification system**Leaders/Laggards/Overbought/Oversold ETFs must have \$50 million to qualify

Definitions & Disclosures

Disclaimer of Warranties

Except for the express warranties set forth in the terms of service, all services, including all ETF Action materials, are provided on an "as is," "where is" basis, and ETF Action and its licensors disclaim all representations or warranties, express or implied as to the services. ETF Action and its licensors specifically disclaim all implied warranties of merchantability, fitness for a particular purpose, title and non-infringement, and all warranties arising from course of dealing, usage or trade practice. Without limiting the foregoing, ETF Action and its licensors make no warranty of any kind that the services or ETF Action materials, or any products or results of the use thereof, will meet customer's or any other person's requirements, operate without interruption, achieve any intended result, be compatible or work with any software, system or other services, or be secure, accurate, complete, timely, free of harmful code or error free. All third-party materials are provided "as is" and any representation or warranty of or concerning any third-party materials is strictly between customer and the third-party owner or distributor of the third-party materials.

Additional Disclaimers

The services are not intended and should not be construed as financial or investment advice, a recommendation or promotion. Neither ETF Action nor its licensors shall be responsible for investment decisions, damages, or other losses *resulting from use of the services*. *Past performance* does not guarantee future performance. Neither ETF Action nor its licensors shall be considered an "expert" under the securities act of 1933. Neither ETF Action nor its licensors warrant that the services comply with the requirements of the NASD or any similar organization or with the securities laws of any jurisdiction. Any information contained in in the services should not be acted upon without obtaining specific legal, tax, and investment advice from a licensed professional.

Distribution prohibited without prior permission. Full terms of service, including terms of use, copyrights, and disclaimers are available at https://www.etfaction.com/terms.

© Copyright ETF Action, Inc. All Rights Reserved.

Data Reliability and Definitions

ETF Action, LLC believes the information herein to be accurate (at time of publication) and was obtained from reliable sources, but makes no guarantees with respect to its accuracy. Calculations of fundamental data are based on weighted averages of reported results and consensus estimates of current ETF constituents. Valuation data (price/earnings, price/sales, price/cash flow, price/book value) are calculated using per share data divided by current NAV of corresponding ETF. Performance, risk and technical data (moving averages, relative performance, RSI) calculated for specified periods using ETF market price which may differ from net asset value (NAV). ETF Action Sector Beta Composites represent ETFs that meet stringent criteria surrounding index methodology, liquidity, assets under management, and management fee.

Source Data & ETF Issuer Information ..

ETF Action is an independent technology and research firm focused on helping advisors build better portfolios, create engaging experiences with their clients, and navigate the vast ETF landscape.

Contact us at:

team@etfaction.com www.etfaction.com