

GLOBAL X ETFs RESEARCH

Monthly Thematic ETF Commentary

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The Global X Research Team is pleased to release the April 2023 edition of the Thematic ETF Commentary. The commentary recaps Global X's classification system for disruptive themes and the thematic ETFs that track them. It also provides industry-level analysis of thematic investing ETFs, looking at new launches and closures, changes in assets under management (AUM), and fund flows.

[Click here to download the April 2023 Thematic ETF Commentary](#)

Thematic ETF Landscape – April 2023 Recap¹

At the end of April 2023, thematic ETFs represented 1.1% of the U.S. ETF industry's \$7.0 trillion total AUM². This is lower than the level reached at the end of March 2023.

Digging in, Thematic ETF AUM decreased to \$75.8 billion this month, down -7.0% from March 2023's AUM of \$81.5 billion. The decrease in thematic assets compares negatively to the broader U.S. ETF industry's +1.4% month-over-month (MoM) increase³.

Thematic ETFs saw net outflows during the month amounting to -\$0.96 billion, with market activity of -\$4.75 billion contributing negatively to April's overall AUM decrease.

On a year-over-year basis, Thematic ETF AUM decreased -16.5% from \$94.1 billion at the end of April 2022.

There are 274 thematic ETFs⁴ at the end of April 2023, with three launches and two closures during the month.

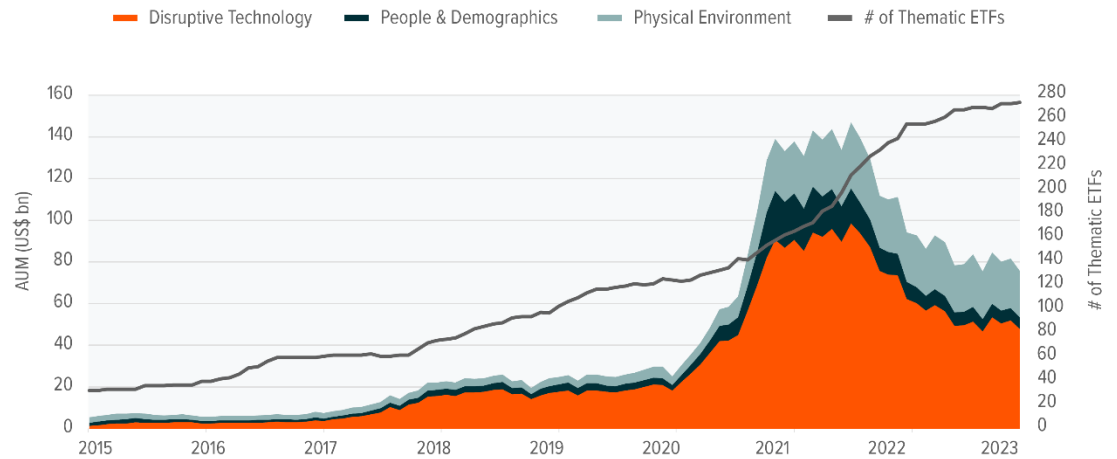
People & Demographics-related themes saw an AUM decrease of -\$0.2 billion, followed by Physical Environment-related themes with a decrease in AUM of -\$1.2 billion, and those related to Disruptive Technology saw a decrease of -\$4.2 billion.

On a thematic level and in terms of percentage, Blockchain had the largest increase in AUM (+3.6%), while CleanTech had the highest decrease in AUM (-14.1%).



THEMATIC ETFS LANDSCAPE

Sources: Global X ETFs with information derived from: Bloomberg, L.P. (n.d.). Information as of April 30, 2023.



Note: AUM includes assets of funds closed until the last month of trading activity. T = Trillions, B = Billions, M = Millions.

Global X's Thematic Classification System

Global X's Research Team established a thematic classification system that provides a consistent framework for identifying disruptive themes and categorizing the thematic ETF space. Often, we have seen conflicting definitions of thematic investing in the media and financial world, which leads to confusion about which ETFs are thematic and what themes they are tracking. With the introduction of this classification system, we hope to provide more clarity around disruptive themes and their related ETFs.

Defining Thematic Investing

Global X defines thematic investing as the process of identifying powerful disruptive macro-level trends and the underlying investments that stand to benefit from the materialization of those trends.

By nature, thematic investing is a long term, growth-oriented strategy, that is typically unconstrained geographically or by traditional sector/industry classifications, has low correlation to other growth strategies, and invests in relatable concepts.

Notably, thematic investing does not consist of ESG, values-based, or policy-driven strategies, unless they otherwise represent a disruptive structural trend (e.g., climate change). Further, funds that adhere to traditional sector or industry classifications, or that are used primarily to gain exposure to cyclical trends (e.g., currencies, valuations, inflation) are not considered thematic. Finally, alternative asset classes, such as listed infrastructure, MLPs, and ubiquitous commodities are not considered thematic.

Classifying Themes

Global X's thematic classification system consists of four layers of classifications: 1) Categories; 2) Mega-Themes; 3) Themes; and 4) Sub-Themes, with each layer becoming sequentially narrower in its focus.



'Categories' is the broadest layer and represents three fundamental drivers of disruption: exponential advancements in technology (Disruptive Technology), changing consumer habits and demographics (People & Demographics), and the evolving physical landscape (Physical Environment).

One layer down is 'Mega-Themes' and these serve as a foundation to multiple transformative forces that are causing substantial changes in a common area. Conceptually, Mega-Themes are a collection of more narrowly targeted Themes. For example, Big Data is a Mega-Theme that consists of Machine / Deep Learning, Cybersecurity, Quantum Computing, and Cloud / Edge Computing.

Further down, we identify 'Themes' as the specific areas of transformational disruption that are driving technology forward, changing consumer demands, or impacting the environment. There are currently 41 themes in the classification system.

'Sub-Themes' are more niche areas, such as specific applications of themes or upstream forces that are driving themes forward.

Thematic ETFs can target a specific category, mega-theme, theme, or sub-theme. Our categorization process seeks to find the best fit for a specific ETF, analyzing its methodology, holdings, and stated objectives. The thematic classification system is reviewed monthly to consider new potential categories, mega-themes, themes, or sub-themes. As a new ETF launches or changes its strategy, its classification is evaluated immediately.

GLOBAL X THEMATIC CLASSIFICATION SYSTEM

Sources: Global X ETFs with information derived from: Bloomberg, L.P. (n.d.). Information as of April 30, 2023.

Category	Mega-Theme	Theme	Sub-Theme
Disruptive Technology			
Big Data	Machine/Deep Learning		
	Cybersecurity		
	Quantum Computing		
	Cloud/Edge Computing, MarTech	Remote Work	
Mobility	Autonomous Vehicles		
	Electric Vehicles, Charging Infrastructure	Lithium Batteries	
Digital Experiences	AR/VR		
	Video Games	E-sports	
	Social Media Streaming		
FinTech	Mobile Payments		
	Peer-to-Peer Lending		
	Crowdfunding		
	Blockchain		
Connectivity	Digital Infrastructure		
	5G/Next Gen Networking		
	Emerging Markets Internet		
	Internet of Things	Smart Devices/ Smart Cities IoT	
	Space/Satellite Communications		
Robotics	AI/Automation		
	3D Printing		
	Drones		
Prop-Tech			
People & Demographics			
New Consumers	Millennials & Gen Z		
	Emerging Market Consumers		
	E-Commerce		
	Education		
	Sharing/Gig Economy		
	Safety and Security		
	Cannabis		
	Sports Betting		
	Professional Sports		
	Urbanization		
Health	Healthcare Innovation		Telemedicine & Digital Health, Genomics, Immunotherapy, Public Health
	Aging Population		Senior Care, Senior Economy
	Health & Wellness		Obesity, Organics
	Emerging Markets Healthcare		
	Alternative Medicine		
Physical Environment			
Climate Change	Cleantech		
	Clean & Renewable Energy	Solar, Wind, Hydrogen	
	Resource Scarcity	Water, Waste/Recycling, Sustainable Food	
	Green Building		
Disruptive Materials			
Infrastructure Development			

Conclusion

In an uncharted era of new technologies disrupting existing paradigms, demographics reshaping the needs of the world's population, shifting consumer behaviors forcing changes to existing business models, and dramatic changes in our physical environment, we find that there is a growing need for a consistent framework to track these themes and the investment vehicles providing access to them.



Footnotes

1. Bloomberg (n.d.). [Data set]. Data as of 04/30/2023 and accessed on May 03, 2023 from Global X Bloomberg Terminal.
2. Morningstar. [Data set]. Data as of 04/30/2023 and accessed on May 03, 2023 from Global X Morningstar Direct License.
3. Morningstar. [Data set]. Data as of 04/30/2023 and accessed on May 03, 2023 from Global X Morningstar Direct License.
4. Global X ETFs based on The Global X Thematic Classification System.

The Global X Thematic Classification System is based on the expertise, views, and opinions of the Global X Thematic Classification Committee and are subject to change.

Global X defines thematic investing as the process of identifying powerful disruptive macro-level trends and the underlying investments that stand to benefit from the materialization of those trends. By nature, thematic investing is a long term, growth-oriented strategy, that is typically unconstrained geographically or by traditional sector/industry classifications, has low correlation to other growth strategies, and invests in relatable concepts.

The process of identifying themes consists of three inexorable principles:

- 1) There must be high conviction that the theme will materialize and have a meaningful impact on segments of the economy or markets. Often this is due to observable structural changes in technology, demographics, consumer behavior, or the physical environment, but can also be influenced by other factors.
- 2) A theme must be investable, meaning there are publicly traded companies that provide exposure to the concept. Ideally, the group of companies is broad, have high liquidity, and attribute a substantial portion of their business operations (revenues, assets, research & development) to the theme.
- 3) A theme must be expected to express itself over a medium to long-term time horizon, generally considered to be five years or longer. A longer-term time horizon makes market timing less of a factor in the success of identifying a theme.

Notably, and taking into consideration the principles above, thematic investing does not consist of ESG, values-based, or policy-driven strategies, unless they otherwise represent a disruptive structural trend (e.g., climate change). Further, funds that adhere to traditional sector or industry classifications, or that are used primarily to gain exposure to cyclical trends (e.g., currencies, valuations, inflation) are not considered thematic. Finally, alternative asset classes, such as listed infrastructure, MLPs, and ubiquitous commodities are not considered thematic. We recognize that these exclusions may differ from other third-party definitions of thematic investing, but it is consistent with, and core to, Global X's thematic classification system and process.

Based on the definition and principles of thematic investing above, Global X has established a thematic classification system that seeks to identify powerful themes and organize them by common traits and drivers. The system consists of four layers of classifications: 1) Categories; 2) Mega-Themes; 3) Themes; and 4) Sub-Themes, with each layer becoming sequentially narrower in its focus.

'Categories' is the broadest layer and represents three fundamental drivers of disruption: exponential advancements in technology (Disruptive Technology), changing consumer habits and demographics (People & Demographics), and the evolving physical landscape (Physical Environment). One layer down is 'Mega-Themes,' which serve as a foundation to multiple transformative forces that are causing substantial changes in a common area. Conceptually, Mega-Themes are a collection of more narrowly targeted Themes. For example, Big Data is a Mega-Theme that consists of Machine/Deep Learning, Cybersecurity, Quantum Computing, and Cloud/Edge Computing. Further down, we identify 'Themes' as the specific areas of transformational disruption that are driving technology forward, changing consumer demands, or impacting the environment. 'Sub-Themes' are more niche areas, such as specific applications of themes or upstream forces that are driving themes forward.

The number and categories, mega-themes, themes, and sub-themes is expected to evolve over time as new drivers of structural changes emerge or fade. Such decisions will be made by the Global X Thematic Classification Committee ("the committee") and take into account internal and external research and data about potential themes.

The ETF industry consists of many funds seeking to provide exposure to categories, mega-themes, themes, or sub-themes identified within the thematic classification system. The Global X Thematic Classification Committee first evaluates the entire universe of US-listed ETFs to identify which qualify as thematic ETFs, based on Global X's definition of thematic investing and the stated objectives, methodology, and holdings of each ETF. Next, the committee identifies the best fit for each thematic ETF within the classification system, by further analyzing a fund's methodology, holdings, and stated objectives. When a new ETF launches or an existing ETF changes its strategy, its classification is evaluated promptly by the committee, and any changes are published in the next monthly Thematic ETF Commentary.



While occasionally an ETF may engage in multiple mega-themes, themes, or sub-themes, its classification is determined based on the definition that most closely describes the true nature of the ETF.

While an ETF may be classified within a certain category, mega-theme, theme, or sub-theme, Global X does not give any assurances that the ETF provides good and accurate exposure to the specific theme it is targeting. For example, an ETF may target a particular theme, but have very broad exposure, including firms that have low relevance or economic exposure to the specified theme.

The thematic classification system is reviewed monthly by the Global X Thematic Classification committee to consider new potential categories, mega-themes, themes, or sub-themes. Changes in the classification will be announced at the time of release of the following monthly Thematic ETF Commentary.

As a new ETF launches or changes its strategy, its classification is evaluated promptly by the committee, and published at the time of release of the Thematic ETF Commentary. In the case of change in an ETF strategy/methodology, holdings, or stated objectives, the thematic classification system will promptly incorporate or drop the ETF in regards into its respective classification, maintaining the history of assets under management (AUM) of the Fund.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. The completeness of the Global X Thematic ETF Commentary is done on a best-efforts basis at the point in time with the data available to Global X as of the time of its publication. The inclusion of a Fund in this framework reflects the view of Global X alone. Global X makes no guarantee that this framework is complete nor inclusive of all ETFs in their view of their respective issuer.

Global X accepts requests for reviews or appeals for any ETFs. Please contact Global X at research@globalxetfs.com, and the appeal will be considered in a timely manner. There are no guarantees that an appeal will result in a change in the ETF's classification.

The Thematic ETF Commentary, including its thematic classification system, fall under the supervision of the Global X Thematic Classification committee. This committee consists of members from Global X's research and product teams who have extensive knowledge and familiarity with thematic investing and the ETF industry. The objective of the committee is to ensure, in a best-efforts basis, a definition, classification, and identification of the universe of thematic ETFs. The committee meets at least monthly to review the classification system, as well as on an ad-hoc basis to review new ETF launches or ETFs that change their strategy.

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