

Global X Thematic Classification System - Methodology
February 2023

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Introduction

Global X established a thematic classification system in an effort to provide a consistent framework for identifying disruptive themes and categorizing exchange-traded funds (ETF) seeking to provide exposure to them. Among financial institutions and the financial media, we often find inconsistent definitions, classifications, and nomenclature for thematic investing. This classification system is a tool designed to help investors better understand, track, and analyze the evolving thematic landscape. The thematic classification system relies on Global X's expertise, views, and opinions of thematic investing and the ETF industry.

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.

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.

Classification

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. There are currently 31 themes in the classification system, as of 02/28/2023.

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

Currently, the classification system is comprised of 3 categories, 11 mega-themes, 31 themes, and 18 sub-themes, as of 02/28/2023. The number of 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.

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Thematic Classification System, as of 02/28/2023

GLOBAL X THEMATIC CLASSIFICATION SYSTEM

Sources: Global X ETFs with information derived from: Bloomberg, L.P. (n.d.). Information as of February 28, 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	
	FinTech	Mobile Payments		
		Peer-to-Peer Lending		
Crowdfunding				
Connectivity	Digital Infrastructure			
	5G/Next Gen Networking			
	Emerging Markets Internet			
	Internet of Things	Smart Devices/ Smart Cities IoT		
Robotics	AI/Automation			
	3D Printing			
		Drones		
People & Demographics	New Consumers	Millennials & Gen Z		
		Emerging Market Consumers		
		E-Commerce		
		Education		
		Sharing/Gig Economy		
		Safety and Security		
	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			

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 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 immediately by the Committee, and any changes are published in the next monthly Thematic ETF Report.

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.

Maintenance

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 Report.

As a new ETF launches or changes its strategy, its classification is evaluated immediately by the Committee, and published at the time of release of the Thematic ETF Report.

In the case of change in an ETF methodology, holdings, or stated objectives, the thematic classification system will immediately incorporate or drop the ETF regarding its respective classification, maintaining the history of assets under management (AUM) of the Fund.

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.

Global X Thematic Classification Committee

The Thematic ETF Report, 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 proper 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.

For more information on Global X, please contact research@globalxetfs.com.

Disclaimers

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 Report 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.

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