

Global X Thematic Classification System - Methodology

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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 are ‘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 40 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.

Currently, the classification system is comprised of 3 categories, 11 mega-themes, 40 themes, and 21 sub-themes. 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.

Thematic Classification System, as of 12/31/2021

Category	Mega-Theme	Theme	Sub-Theme
Disruptive Technology	Big Data	Machine/Deep Learning	
		Cybersecurity	
		Quantum Computing	
	Mobility	Cloud/Edge Computing	Remote Work, MarTech
		Autonomous Vehicles	
		Electric Vehicles	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, IIoT
Space/Satellite Communications			
Robotics	AI/Automation		
	3D Printing		
People & Demographics	New Consumer	Drones	
		Millennials & Gen Z	
		Emerging Market Consumers	
		Urbanization	
		E-commerce	
		Education	
		Sharing/Gig Economy	
		Safety and Security	
		Cannabis	
		Sports Betting	
		Professional Sports	
		Health	Healthcare Innovation
	Aging Population		Senior Care, Senior Economy
	Health & Wellness		Obesity, Organics
	Emerging Markets Healthcare		
	Alternative Medicine		
	CleanTech		
	Physical Environment	Climate Change	Clean & Renewable Energy
Resource Scarcity			Water, Waste/Recycling, Sustainable Food
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 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 immediately by the committee, and any changes are published in the next quarterly 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 quarterly 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 quarterly 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 in regards into 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 quarterly 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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