

GLOBAL X

by Mirae Asset



European Thematic ETFs Report

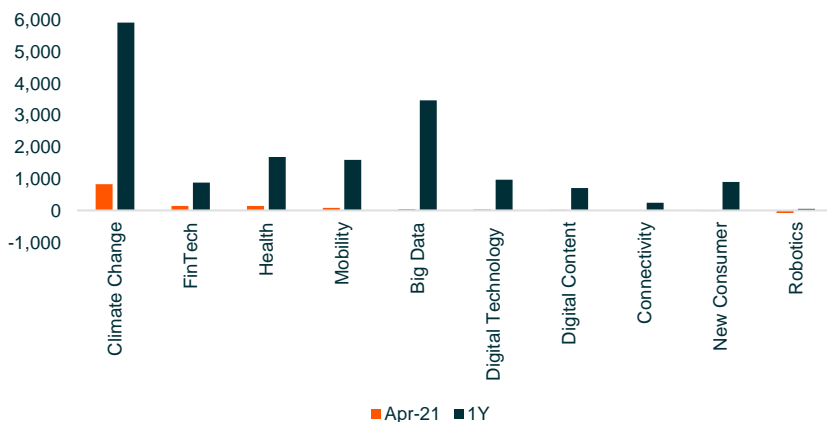
April 2021



European Thematic UCITS ETFs Flow

- In April, UCITS Thematic ETFs saw US\$1.2bn of net inflows.
- Climate change related themes attracted the largest net inflows in April (US\$825m). Most of the net new inflows went into clean and renewable energy thematic ETFs (US\$629m).
- Flows into FinTech reached US\$148m, with most of the net new inflows going into blockchain thematic ETFs. Cryptocurrency exchange Coinbase’s IPO on the Nasdaq on April 14th has likely been a tailwind to blockchain thematic funds. Coinbase is the largest crypto exchange in the US with 56 million users and is the first to go public.
- Health related themes recorded US\$143m of inflows on the month, led by healthcare innovations. Leading genomics companies, such as Illumina and Pacific Biosciences of California, reported strong earning growth in Q1 due to increased COVID-19 surveillance efforts which require next generation sequencing technology. Besides, M&A activities may have also provided a boost to this theme with Microsoft being close to acquiring Nuance Communications.

Top Mega Themes by monthly flows (US\$m)



Top/Bottom 5 UCITS Thematic ETFs by monthly flows

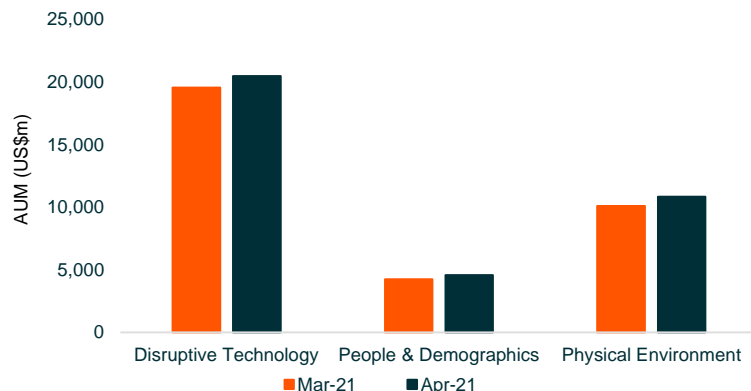
Funds	Apr-2021 (US\$m)
iShares Global Clean Energy UC	494.1
iShares Healthcare Innovation UCITS ETF	132.3
Invesco Elwood Global Blockchain UCITS ETF	127.4
iShares Global Water UCITS ETF	98.2
L&G Hydrogen Economy UCITS ETF	78.0
iShares Automation & Robotics UCITS ETF	-93.6
iShares Digital Security UCITS ETF	-72.6
Xtrackers Future Mobility UCITS ETF	-15.5
Lyxor MSCI Millennials ESG Filtered DR UCITS ETF	-15.5
Amundi Smart Factory UCITS ETF	-6.2

Source: Bloomberg. As of Apr 30, 2021.

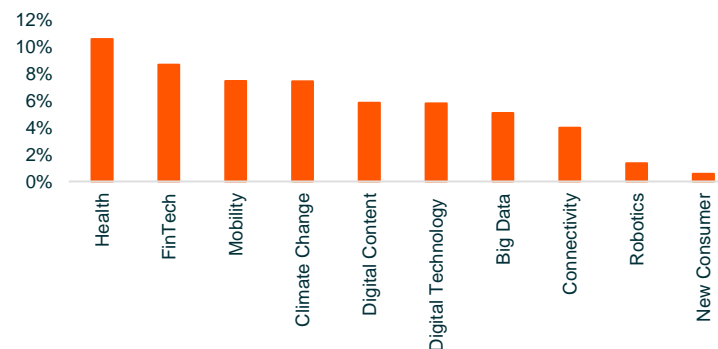


European Thematic UCITS ETFs AUM

Categories



Mega Themes by AUM growth (monthly % chg.)



Top 10 UCITS Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
Invesco Global Clean Energy UCITS ETF	404%
iShares Smart City Infrastruct	43%
Rize Sustainable Future of Food UCITS ETF	40%
First Trust Indxx NextG UCITS ETF	36%
First Trust Nasdaq Cl. Edge Green Energy UCITS ETF	35%
WisdomTree Cybersecurity UCITS ETF	30%
L&G Hydrogen Economy UCITS ETF	24%
First Trust Indxx Innov. Transact.& Process UCITS ETF	20%
L&G Clean Water UCITS ETF	18%
Rize Education Tech & Digital Learning UCITS ETF	15%

Bottom 10 UCITS Thematic ETFs by AUM growth

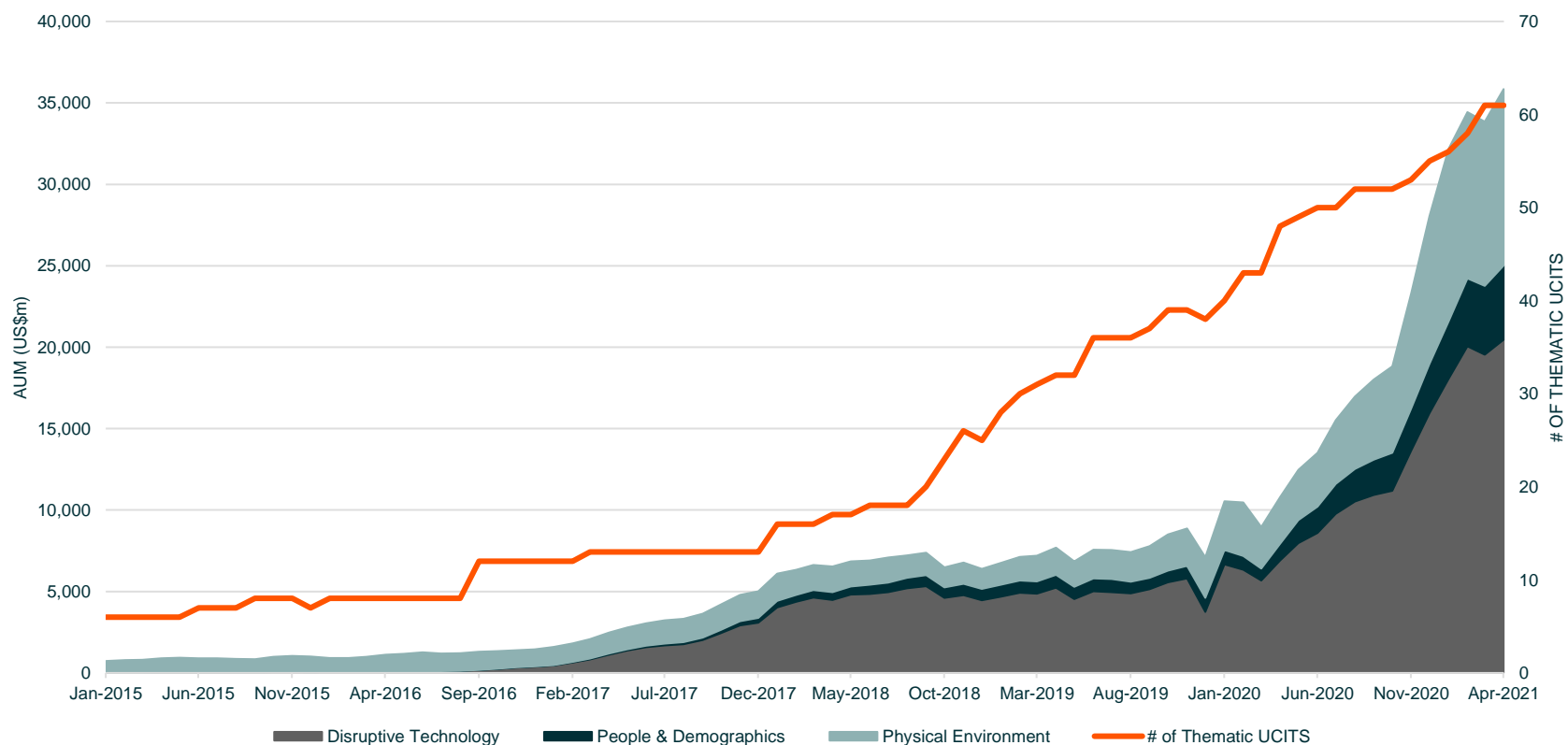
Funds	AUM (monthly % chg.)
Xtrackers Future Mobility UCITS ETF	-8%
Lyxor MSCI Millennials ESG Filtered DR UCITS ETF	-7%
Medical Cannabis & Wellness UCITS ETF	-5%
Amundi Smart Factory UCITS ETF	-4%
Global X Telemedicine & Digma	-4%
Rize Medical Cannabis and Life Sciences UCITS ETF	-2%
HAN-GINS Innovative Technologies UCITS ETF	-1%
iShares Digital Security UCITS ETF	-1%

Source: Bloomberg. As of Apr 30, 2021.



European Thematic UCITS ETFs AUM

At the end of April 2021, there were 61 thematic UCITS ETFs totalling US\$35.9bn in assets under management (AUM), rising by 6% on the month. All categories recorded a monthly increase of AUMs in April: Disruptive Technologies (5%), People & Demographics (8%), and Physical Environment (7%).



Source: Bloomberg. As of Apr 30, 2021.

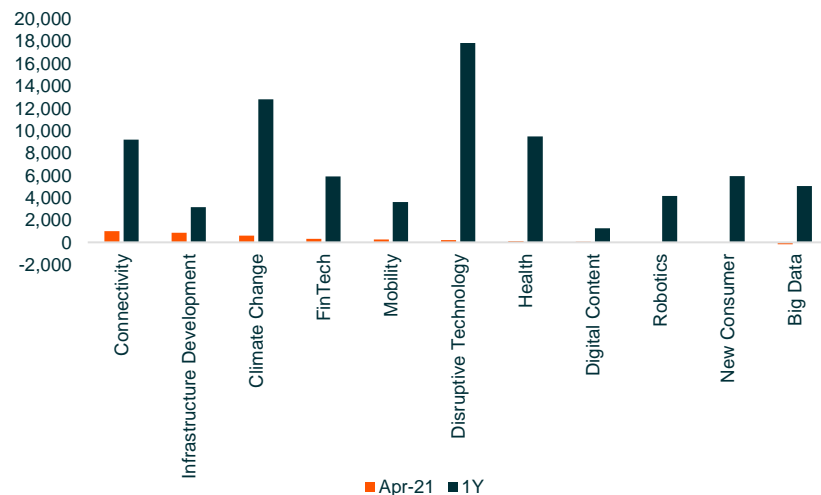
Note: Themes may or may not add up to the Mega-Themes AUM given that some ETFs considered are broad and are only classified by its Mega-Theme.



US Thematic ETFs Flow

- In April, US Thematic ETFs saw US\$3.2bn of net inflows.
- US infrastructure ETFs recorded strong monthly inflows again in April (US\$870m) and the largest AUM increase (34%).
- Like for the UCITS Thematic market, climate change themes attracted large net inflows in April (US\$589m) led by CleanTech (US\$458m).
- Cybersecurity thematic ETFs saw large net outflows in April (US\$198m).
- E-commerce also recorded net outflows of US\$168m last month, amid an acceleration of the vaccines' rollouts in the US and Europe alongside easing social restrictions.

Top Mega Themes by monthly flows (US\$m)



Top/Bottom 5 Thematic ETFs by monthly flows

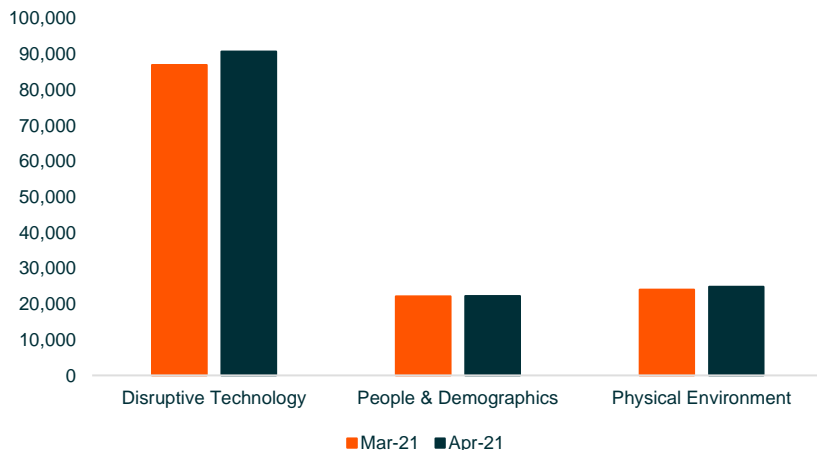
Funds	Apr-2021 (US\$m)
KraneShares CSI China Internet ETF	761.2
Global X U.S. Infrastructure Development ETF	707.3
iShares Global Clean Energy ETF	434.0
Ark Space Exploration	329.1
SPDR Kensho New Economies Composite ETF	186.4
ARK Next Generation Internet ETF	-300.3
Global X Cybersecurity ETF	-221.6
Amplify Online Retail ETF	-166.4
ARK Innovation ETF	-75.8
Invesco WilderHill Clean Energy ETF	-53.5

Source: Bloomberg. As of Apr 30, 2021.

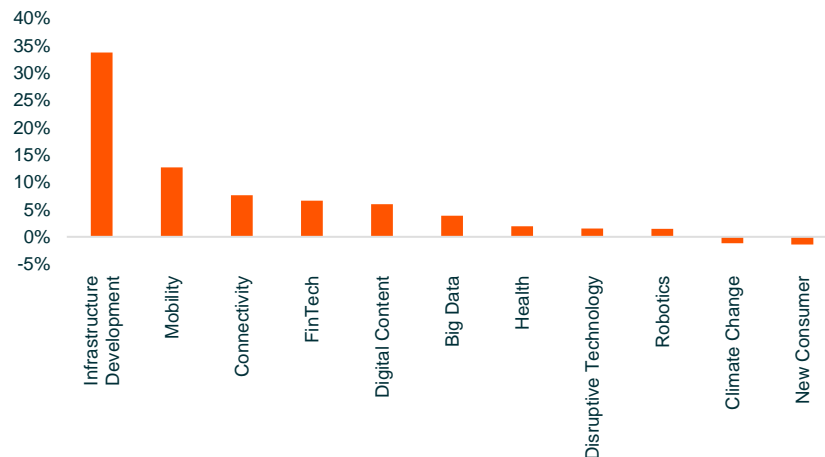


US Thematic ETFs AUM

Categories (AUM, US\$m)



Mega Themes by AUM growth (monthly % chg.)



Top 5 Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
Simplify Volt RoboCar Disruption ETF	103%
Ark Space Exploration	94%
The Pro Sports ETF	50%
Global X Data Center REITs & Digital Infrastr. ETF	50%
Defiance Next Gen H2 ETF	44%

Bottom 5 Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
Pacer BioThreat ETF	-22%
Direxion Moonshot Technologies ETF	-21%
Global X Cybersecurity ETF	-19%
Invesco WilderHill Clean Energy ETF	-13%
ALPS Clean Energy ETF	-10%

Source: Bloomberg. As of Apr 30, 2021.



Disruptive Trends

Category	Description
Disruptive Technology	<ul style="list-style-type: none"> • Connectivity (IoT) drives the digitisation of the economy and enables new disruptive technologies that are profoundly changing the way we live and work • Digitisation is changing business models and empowers companies to modernise in order to meet the new demand • The Digital Economy generated almost half of value added and half of the new employment in G20 economies between 2006 and 2017, according to OECD estimates
People & Demographics	<ul style="list-style-type: none"> • Millennials' increased wealth from peak working years and inheritance makes them targeted consumer demographic • Rising middle-class consumers in Emerging Markets • Urbanisation and on-demand purchasing favour E-commerce retail channels and next generation products and services • Heightened focus on longevity and quality of life, coupled with rising health care costs are driving people to engage in physical activity, healthy eating, and embrace health technologies • Desire for personalised medicine is giving rise to genomics, while efforts to improve convenience, patient outcomes, cost efficiency are driving towards telemedicine and digital health
Physical Environment	<ul style="list-style-type: none"> • 2020 was one of the hottest years on record • Over 75% of warming comes from carbon dioxide emissions (CO2) and humans are responsible for a 47% increase of such emissions since the start of the industrial revolution • In 2020, most of advanced and developing nations have renewed their commitments to transition to a carbon neutral global economy by 2030-2050 • Clean technologies are essential to making carbon neutrality a reality • Falling costs and rising production of lithium-ion batteries catalyses shift to renewable energy and electric vehicles

Risk Information

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 materialisation 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 materialise 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 recognise 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 organise 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. '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.

Thematic ETF Landscape

Global X's classification system establishes a consistent framework for identifying and categorising the growing thematic ETF space.

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

For Informational Purposes Only

GLOBAL X

by Mirae Asset

For more research please visit:

<https://globalxetfs.eu>

—