

GLOBAL X

by Mirae Asset



European Thematic ETFs Report

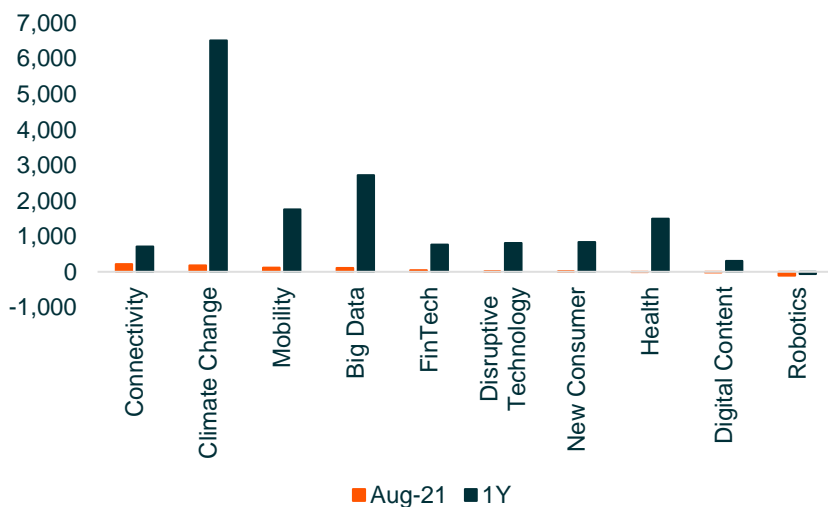
August 2021



European Thematic UCITS ETFs Flow

- In August, UCITS Thematic ETFs recorded US\$559m of net inflows, after attracting US\$795m in July
- Connectivity themes attracted the largest net inflows again this month with US\$216m, with the bulk of net new inflows going into emerging market internet themes (US\$147m) as investors likely see buying opportunities in Asian assets amid regulatory-led selloff
- Climate change related themes also recorded strong net inflows on the month (US\$179m). In August, the US House of Representatives approved the US\$3.5T budget resolution, providing tailwind to themes such U.S. Infrastructure Development, Clean Water, CleanTech, Clean Energy, Autonomous & Electric Vehicles, Hydrogen, and more
- Robotics saw significant net outflows of US\$109m this month, suggesting investors took profits similarly as they did in March this year

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



Source: Bloomberg. As of August 31, 2021.

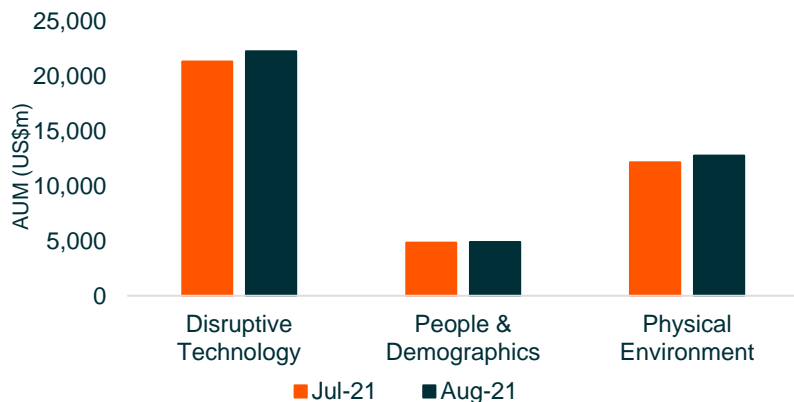
Top/Bottom 5 UCITS Thematic ETFs by monthly flows

Funds	Aug-2021 (US\$m)
KraneShares CSI China Internet UCITS ETF	147.2
Lyxor World Water DR UCITS ETF	84.0
iShares Global Clean Energy UC	76.8
WisdomTree Battery Solutions UCITS ETF	58.7
L&G Artificial Intelligence UCITS ETF	54.6
L&G ROBO Global Robotics and Autom. UCITS ETF	-72.6
iShares Global Water UCITS ETF	-36.0
Lyxor Robotics & AI UCITS ETF	-32.4
WisdomTree Cloud Computing UCITS ETF	-31.5
Vaneck Vectors Video Gaming & eSports UCITS ETF	-18.2

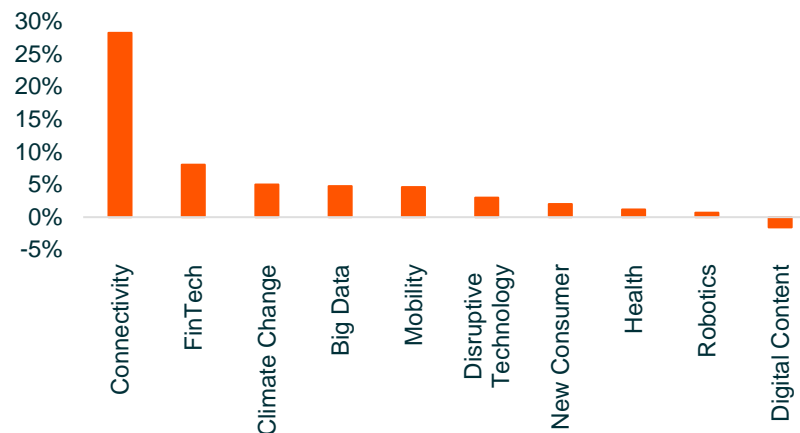


European Thematic UCITS ETFs AUM

Categories



Mega Themes by AUM growth (monthly % chg.)



Top 10 UCITS Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
iClima Distributed Renewable Energy UCITS ETF	52%
KraneShares CSI China Internet UCITS ETF	51%
FinEx Video Gaming & Esports UCITS ETF	51%
Vaneck Vectors Digital Assets	42%
WisdomTree Cybersecurity UCITS ETF	38%
Solar Energy UCITS ETF	31%
Procure Space UCITS ETF	27%
L&G Artificial Intelligence UCITS ETF	23%
iShares Smart City Infrastruct	21%
First Trust Nasdaq CI Edge Green Ener. UCITS ETF	18%

Bottom 10 UCITS Thematic ETFs by AUM growth

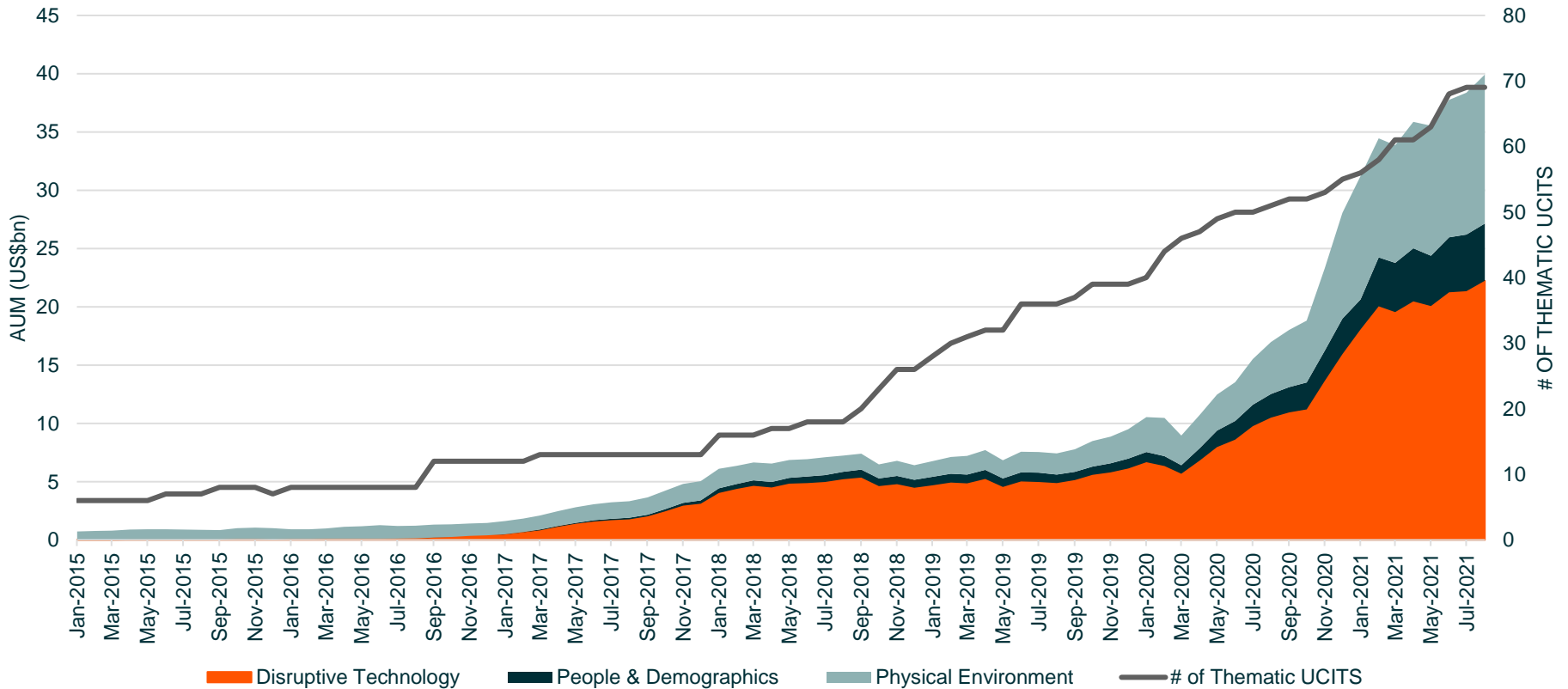
Funds	AUM (monthly % chg.)
Medical Cannabis & Wellness UCITS ETF	-12%
Digital Infrastructure & Connectivity UCITS ETF	-10%
Global X Video Games & Esports UCITS ETF	-8%
Xtrackers Future Mobility UCITS ETF	-7%
Global X Telemedicine & Digital Health UCITS ETF	-7%
HAN-GINS Cloud Technology UCITS ETF	-7%
iShares MSCI Global Semiconductors UCITS ETF	-5%
Lyxor Robotics & AI UCITS ETF	-4%
L&G ROBO Global Robotics and Autom. UCITS ETF	-4%
L&G Ecommerce Logistics UCITS ETF	-2%

Source: Bloomberg. As of August 31, 2021.



European Thematic UCITS ETFs AUM

At the end of August 2021, there were 69 thematic UCITS ETFs totalling US\$40bn in assets under management (AUM), increasing 4.2% on the month. Themes in the physical environment category recorded the largest monthly increase of AUMs again in August (5.3%), followed by disruptive technologies (4.1%), and people & demographics (1.5%) themes.



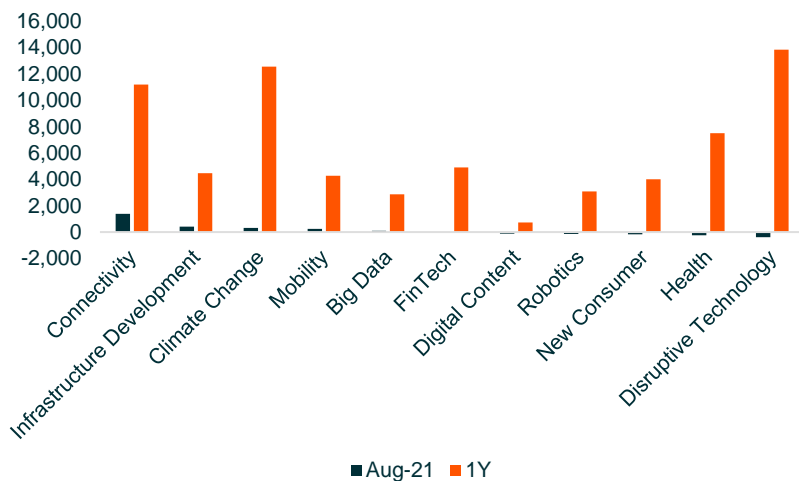
Source: Bloomberg. As of August 31, 2021.



US Thematic ETFs Flow

- In August, US Thematic ETFs recorded US\$1.4bn of net inflows, after US\$1.6bn of net inflows in July
- Like in July, connectivity themes saw the largest net inflows this month, totalling US\$1.4bn, led by emerging market internet themes as investors likely see buying opportunities in Asian assets amid regulatory-led selloff
- US infrastructure development (US\$428m), climate change (US\$310m), and mobility themes (US\$247m), recorded strong net inflows in August, amid progress in the US Congress with regards to the budget resolution and the infrastructure bill that are likely to result in paradigm shifting for investments in these themes
- Broad disruptive technology ETFs saw net outflows on the month (US\$376m), mostly reflecting the significant net outflows from ARK Innovation ETF (US\$537m)
- As the world gradually exits the pandemic, Health related thematic ETFs recorded net outflows of US\$239m in August

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



Top/Bottom 5 Thematic ETFs by monthly flows

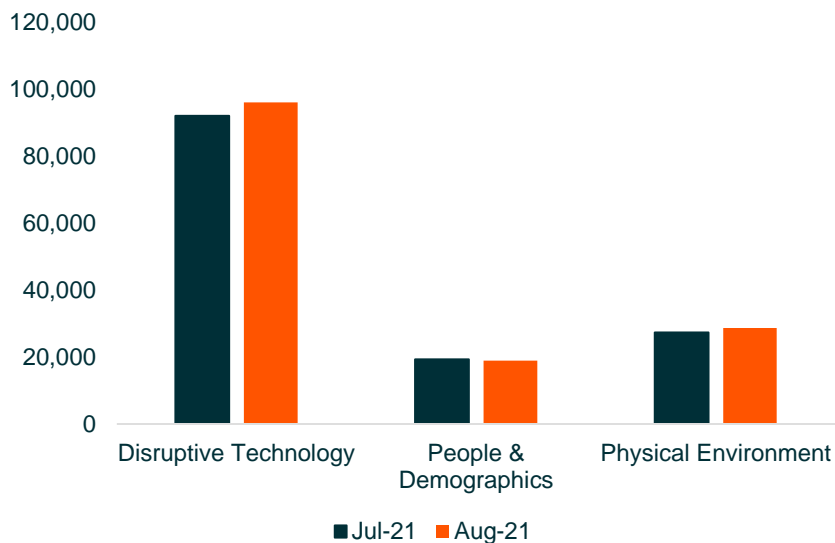
Funds	Jul-2021 (US\$m)
KraneShares CSI China Internet ETF	1,462.5
Global X Lithium & Battery Tech ETF	243.7
First Trust NASDAQ Cybersecurity ETF	170.2
First Trust Nasdaq Clean Edge Smart GRID Infrast. ETF	93.2
SPDR Kensho New Economies Composite ETF	67.0
ARK Innovation ETF	-537.1
Genomic Revolution ETF	-192.8
ARK Next Generation Internet ETF	-160.5
Invesco Solar ETF	-144.2
ARK Autonomous Technology & Robotics ETF	-141.7

Source: Bloomberg. As of August 31, 2021. US Thematic ETFs universe updated as of 19 August 2021.

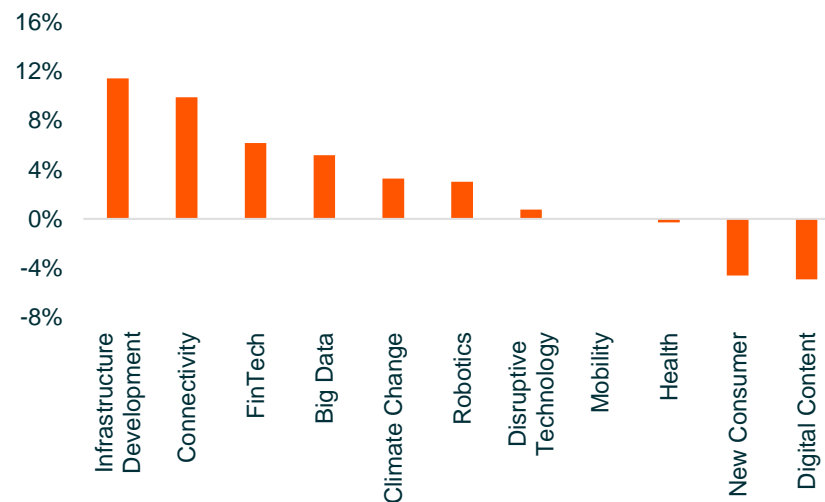


US Thematic ETFs AUM

Categories (AUM, US\$m)



Mega Themes by AUM growth (monthly % chg.)



Top 5 Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
Global X Blockchain ETF	223%
Viridi Cleaner Energy Crypto & Semicond. ETF	170%
AdvisorShares Gerber Kawasaki ETF	99%
Global X Clean Water ETF	89%
Amplify Thematic All-Stars ETF	87%

Bottom 5 Thematic ETFs by AUM growth

Funds	AUM (monthly % chg.)
ETFMG Video Game Tech ETF	-23%
Direxion Connected Consumer ETF	-19%
Global X Education ETF	-17%
SPDR Kensho Future Security ETF	-16%
Global X EM E-commerce & Internet ETF	-15%

Source: Bloomberg. As of August 31, 2021. US Thematic ETFs universe updated as of 19 August 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, MarTech
	Mobility	Autonomous Vehicles	
		Electric Vehicles	Lithium/Batteries
	Digital Content	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		
	Drones		
People & Demographics	New Consumer	Millennials & Gen Z	
		Emerging Market Consumers	
		Urbanisation	
		E-commerce	
		Education	
		Sharing/Gig Economy	
		Safety and Security	
		Cannabis	
		Sports Betting	
		Professional Sports	
	Health	Healthcare Innovation	Telemedicine & Digital Health, Genomics, Immunotherapy, Public Health
		Aging Population	Senior Care, Senior Economy
		Health & Wellness	Obesity, Organics
		Emerging Markets Healthcare	
Physical Environment	Climate Change	CleanTech	
		Clean & Renewable Energy	Solar, Wind, Hydrogen
		Resource Scarcity	Water, Waste/Recycling, Rare Earths, Sustainable Food
	Infrastructure Development		

Source: Global X ETFs As of June 30, 2021.

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For more research please visit:

<https://globalxetfs.eu>

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