

WisdomTree European thematic monthly update

October 2023

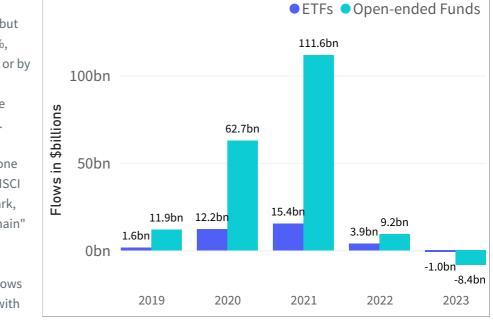
Thematic universe overview

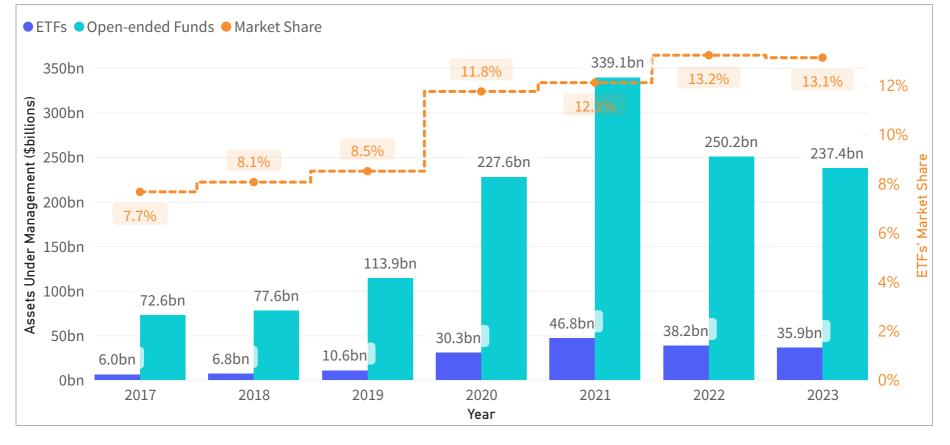
+ AUM in thematic Exchange Traded Funds ("ETFs") and open-ended funds decreased in October to \$273 billion driven mostly by negative performance but also because of outflows. ETFs' market share remained steady at around 13%, with a total AUM of \$36 billion. Year-to-date, AUM is now down by \$15 billion, or by 5%. Performance reversal in the last 3 months across themes was the key contributor to the AUM decrease Year to Date and from the local high over the summer, as the net flows into both wrappers were negative with -\$9.4 billion.

+ Performance in October was negative across almost all themes, with only one theme above flat ("Rise of Tension" and "Blockchain") and one beating the MSCI ACWI. Year-to-date, 7 themes have outperformed the global equity benchmark, most of which are tech-related themes, with "Semiconductors" and "Blockchain" claiming the highest returns.

+ Year-to-date flows are negative across both wrappers, driven by negative flows into themes across all clusters. The strongest cluster is "Geopolitical Shifts" with \$737 million of inflows.

Europe-domiciled thematic AUM evolution and ETFs' market share





Source: WisdomTree, Morningstar, Bloomberg. All data as of <u>31/10/2023</u> and based on WisdomTree's internal classification of thematic funds. Performance is based on monthly returns from Bloomberg and Morningstar More information on the WisdomTree Thematic classification can be found in the Appendix. **Historical performance is not an indication of future performance, and any investments may go down in value.**

Recent yearly flows in Europe

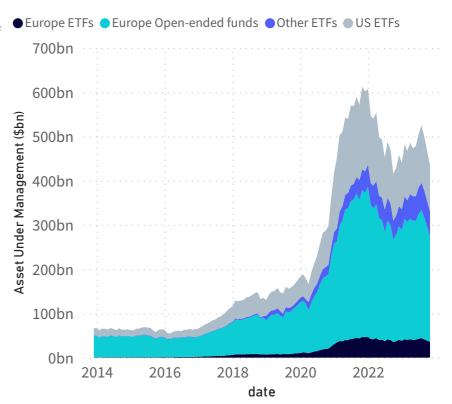
Thematic universe overview (continued)

+ Joint AUM in global thematic ETFs and open-ended funds in Europe dropped in October by 7% to \$435 billion. They are also down \$6 billion compared to the end of last year. This decrease is driven by the performance of equities generally, in particular in the last 3 months and by outflows.

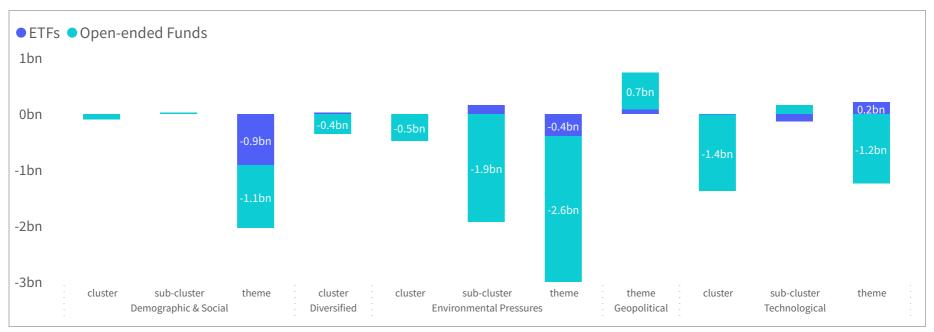
+ Year-to-date, European open-ended funds have gathered the most flows in the "Geopolitical Shifts" cluster, in particular in the "China's Rise" and "Near/Reshoring" themes. ETFs have seen significant outflows out of the "Technological Shifts" cluster over the last three months leading to most clusters being flat or negative for the year.

+ Year to Date outflows in "Environmental Pressures" cluster have been mostly driven by redemptions in open-ended funds at the cluster and sub-cluster level as well as "Sustainable Food" theme. Outflows in "Technological Shifts" have also been mostly driven by redemptions in open-ended funds at the cluster level even if "HealthTech" saw \$858m of outflows across wrappers. Those outflows fully offset the \$1.5 billion that entered into the "Artificial intelligence" space.

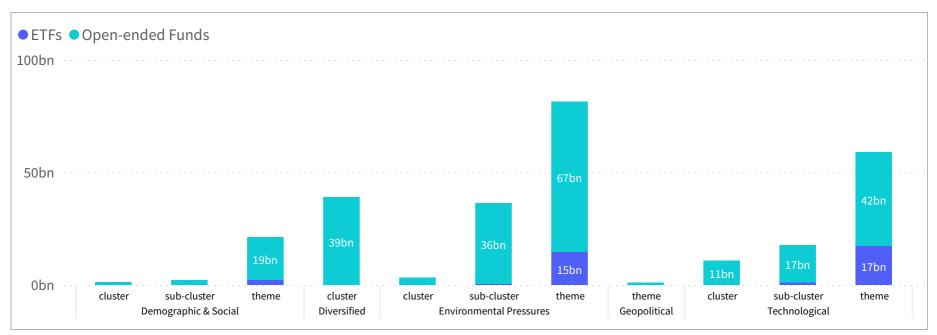
AuM in Thematics by region (Last 10Y)



YTD flows in Europe by wrapper in cluster, sub-cluster and focused themes



AuM in Europe by wrapper in cluster, sub-cluster and focused themes



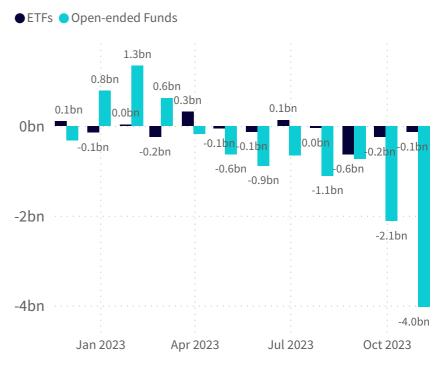
Thematic flows in Europe

+ Flows in October were negative in both wrappers with \$130 million outflows in ETFs and \$4,034 million outflows in open-ended funds. Year-to-date, ETFs have suffered \$981 million of outflows vs. \$8.4 billion of outflows in open-ended funds.

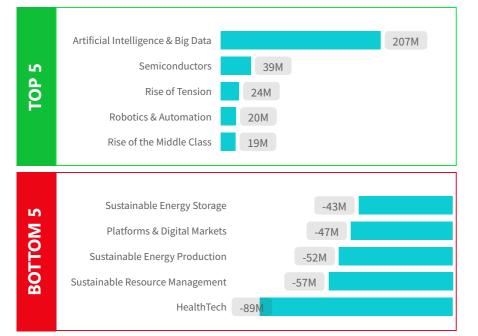
+ In October, "Artificial Intelligence & Big Data" gathered the most assets with \$265 million across both wrappers. "Millennials & Gen Z" follows with \$176 million. "Semiconductors" is third with \$39 million. "Sustainable Resource Management" saw the highest combined outflows with -\$606 million. "Sustainable Energy Production" and "HealthTech" suffered \$458 million and \$390 million of outflows respectively.

+ Year-to-date, three themes: "Artificial Intelligence & Big Data", "Rise of the Middle Class" and "Near/Reshoring" have raised the most flows by far. In contrast, "Sustainable Food" saw outflows of \$1.3 billion, followed by "Equality, Diversity and Inclusion" and "HealthTech" where investors jointly redeemed north of \$2 billion.

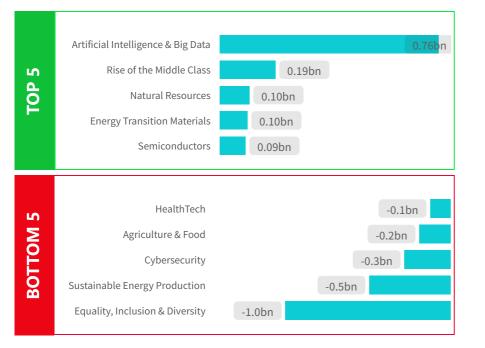
Month-on-month thematic flows



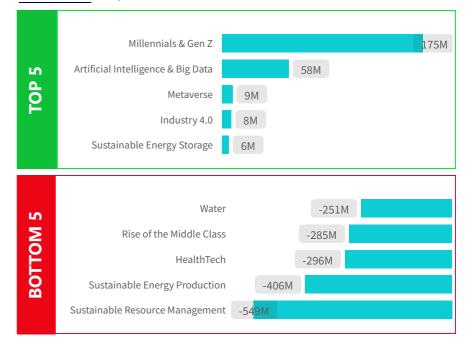
October Top/Bottom flows in Europe ETFs



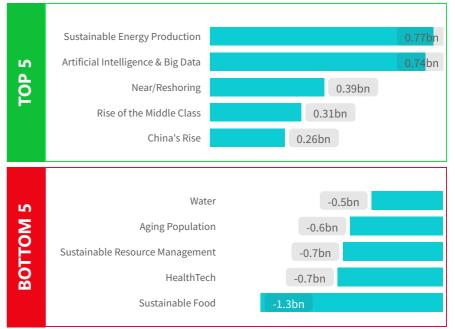
YTD Top/Bottom flows in Europe ETFs



October Top/Bottom flows in Mutual Funds



YTD Top/Bottom flows in Mutual Funds

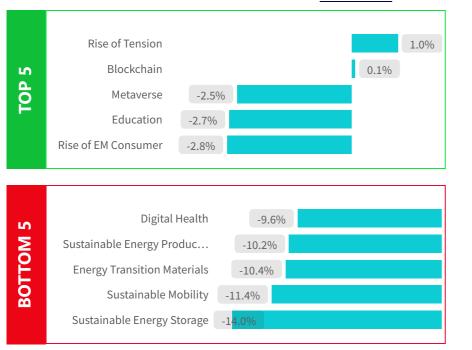


Thematic performance and launches in Europe

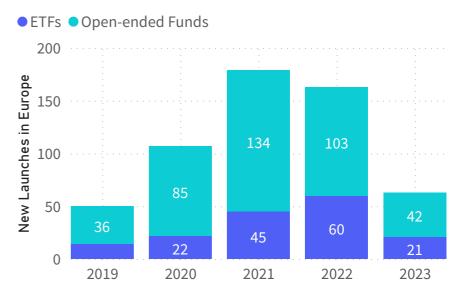
+ Year-to-date, technology-focused thematic strategies are leading the pack performance-wise. "Semiconductors" lead the pack, +34%, benefitting from Alrelated demand in specific semiconductors and the strong performance of NVIDIA. "Blockchain" is benefitting from a rebound in cryptocurrencies and positive news about a Bitcoin ETF in the US, and so is the "Metaverse" theme. "Al & Big Data" and "Cybersecurity" are closing the Top 5 best-performing themes year-to-date. In turn, Chinese equities are suffering this year leading to underperformance for "Sustainable Energy Production", "Sustainable Energy Storage" and "Energy Transition Materials".

+ Notably, all but 2 themes in October finished the month in the red. Only the bestperforming theme beat the MSCI All Country. "Rise of Tensions" was the top theme this month followed by "Blockchain". In turn, "Sustainable Energy Storage" and "Sustainable Mobility" were the laggards and returned -14% and -11.4% respectively.

Top 5/Bottom 5 by performance in October

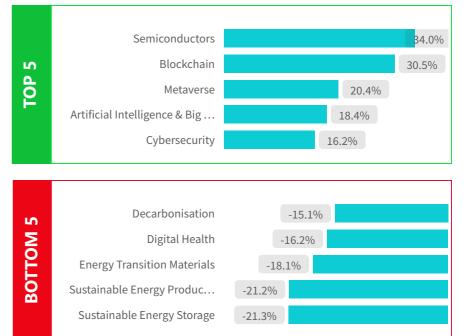


Yearly thematic launches in Europe*

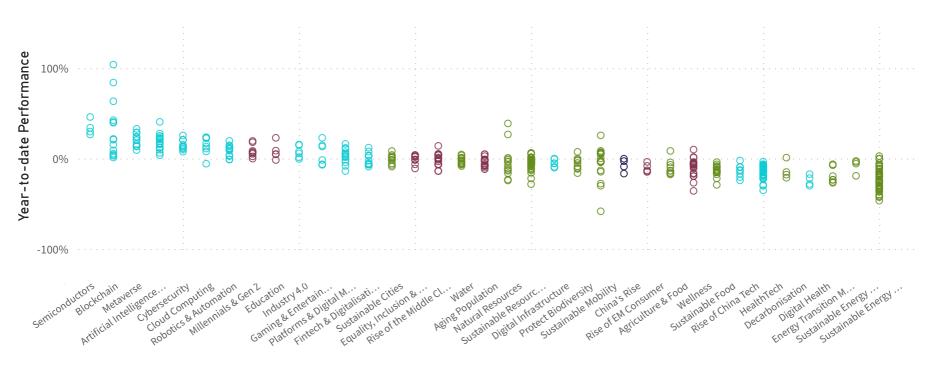


* New launches are updated quarterly

Top 5/Bottom 5 by YTD performance



Dispersion of YTD performance of all ETFs and mutual funds by themes in Europe



AUM per theme in ETFs and open-ended funds domiciled in Europe (\$billions)

Environmental Pressures			Technological Shift	S	
			Other 28.52bn		Robotics & Automati
Other 39.63bn	Sustainable Energy Proc	duction 29.2			
	Sustainable	Sustainab	Artificial Intelligence & Big Dat	a 1 Health	Tech 11.35bn
Water 19.87bn				Industry 4.0 .	Fintech Nex
	Natura Sus	sta Agric	Cybersecurity 5.63bn	Semiconduc	<u>Clou</u> R
Sustainable Resource Management 15.49bn	Sustainabl	Protec	Digital Health 2.45bn		Bloc M
Diversified Thematics			Demographic & S	ocial Shi	fts
			Aging Population 4.92bn		
			Rise of EM Consumer 4.71b		3.46bn Millenni
Other 38.91bn			Rise of the Middle Class 4.0	98bn Wellne	Equalit

Appendix - Multi themes & diversified thematic ETFs and Open-ended funds

Cluster	Sub-Cluster	AuM (\$)	Flows Last Month (\$)	Flows YTD (\$)
Technological Shifts		10,746.43M	-152.64M	-1,374.05M
Technological Shifts	Disruptive Technologies	12,099.19M	-57.42M	30.03M
Technological Shifts	HyperConnectivity & Digitalisation	5,677.77M	-99.73M	-11.03M
Environmental Pressures		3,317.85M	-56.77M	-477.27M
Environmental Pressures	Climate Change & Sustainability	36,303.20M	-714.83M	-1,769.90M
Environmental Pressures	Limited Resources	9.39M	-0.14M	-1.79M
Diversified Thematics		38,914.73M	-416.76M	-335.14M
Demographic & Social Shifts		1,279.85M	-26.81M	-93.56M
Demographic & Social Shifts	Demographic Shifts	2,156.11M	16.19M	25.71M
Demographic & Social Shifts	Social Shifts	24.22M	-1.78M	-1.66M

Appendix - Theme focused ETFs and Open-ended funds

Theme Name	AuM (\$)	Flows Last Month (\$)	Flows YTD (\$)	Performance Last Month	Performance YTD
Aging Population	4,923.80M	-162.95M	-715.20M	-4.6%	-3.4%
Agriculture & Food	1,859.31M	-34.54M	-647.28M	-5.3%	-10.2%
Artificial Intelligence & Big Data	13,423.10M	264.86M	1,497.09M	-4.8%	18.4%
Blockchain	631.66M	-7.68M	-15.43M	0.1%	30.5%
China's Rise	709.83M	-156.47M	254.63M	-4.4%	-7.1%
Cloud Computing	788.42M	4.40M	32.33M	-5.6%	14.3%
Cybersecurity	5,630.17M	-19.82M	-266.55M	-4.1%	16.2%
Decarbonisation	80.19M	0.23M	-10.69M	-9.4%	-15.1%
Digital Health	2,454.23M	-76.10M	-466.81M	-9.6%	-16.2%
Digital Infrastructure	62.42M	-1.15M	-51.84M	-4.2%	-4.9%
Education	344.10M	-7.98M	-92.23M	-2.7%	8.1%
Energy Transition Materials	328.66M	1.68M	123.78M	-10.4%	-18.1%
Equality, Inclusion & Diversity	1,600.45M	-51.80M	-1,198.98M	-4.1%	-0.6%
Fintech & Digitalisation of Finance	1,289.49M	-31.81M	-405.02M	-7.4%	0.4%
Gaming & Entertainment	515.98M	-4.66M	-40.54M	-4.0%	5.3%
Global Logistics	17.54M	0.00M	3.03M	-6.9%	-2.8%
HealthTech	11,351.67M	-384.29M	-852.60M	-8.2%	-13.8%
Industry 4.0	1,609.56M	8.94M	90.69M	-6.0%	2.0%
Internet of Things	115.52M	1.17M	-208.72M	-5.7%	0.8%
Metaverse	330.78M	9.44M	181.52M	-2.5%	20.4%
Millennials & Gen Z	2,845.63M	175.85M	37.02M	-3.0%	8.3%
Natural Resources	2,133.88M	-57.62M	-254.31M	-5.7%	-3.1%
Near/Reshoring	369.65M	4.61M	392.07M	-4.3%	-6.7%
NextGen Communications	926.61M	-21.94M	-218.32M	-4.0%	12.1%
Platforms & Digital Markets	1,402.48M	-56.77M	-99.03M	-5.4%	3.3%
Protect Biodiversity	864.58M	3.63M	172.09M	-5.5%	-5.3%
Rise of China Tech	534.02M	2.29M	20.79M	-4.5%	-14.4%
Rise of EM Consumer	4,707.39M	-150.82M	-217.27M	-2.8%	-8.8%
Rise of Tension	89.40M	23.77M	87.64M	1.0%	15.0%
Rise of the Middle Class	4,078.44M	-265.29M	506.49M	-4.6%	-1.1%
Robotics & Automation	16,445.35M	-11.23M	-331.32M	-6.5%	6.3%
Semiconductors	1,424.89M	39.03M	89.17M	-4.7%	34.0%
Space	41.25M	0.84M	16.96M	-7.8%	-13.6%
Sustainable Cities	1,929.66M	-28.22M	-257.28M	-5.7%	-1.0%
Sustainable Energy Production	29,205.89M	-458.09M	249.88M	-10.2%	-21.2%
Sustainable Energy Storage	1,204.37M	-37.25M	-2.89M	-14.0%	-21.3%
Sustainable Food	4,486.84M	-162.70M	-1,300.93M	-5.8%	-14.0%
Sustainable Mobility	3,961.24M	-91.46M	-8.75M	-11.4%	-6.9%
Sustainable Resource Management	15,485.66M	-606.20M	-613.31M	-5.5%	-4.5%
Water	19,866.39M	-261.54M	-446.29M	-3.3%	-2.0%
Wellness	2,724.49M	-40.96M	-358.81M	-5.6%	-11.0%

Appendix - Definitions

The WisdomTree Thematic classification is built around 4 main thematic clusters

Technological Shifts

This cluster focuses on the different themes that originate from the introduction of new technologies and innovation It incorporates disruptive and emerging technologies as well as their impact on societies and economies, such as the increasing digitalisation and connectivity of the world

Demographic and Social Shifts

This cluster focuses on the themes that originate from changes in population and societies alike For example, it incorporates changes in the world's pyramid of age, the impact of the growing, younger, wealthier populations in emerging markets, as well as changes to societal values and lifestyles

Environmental Pressures

Focusing on the environment and, more importantly, on the impact of human activities on the planet, this cluster incorporates changes driven by sustainability issues, the increasing scarcity of resources and the need to address global warming and climate change

Geopolitical Shifts

This cluster focuses on the themes driven by the globalisation and the changes in the global geopolitical order with the rise of new geopolitical powers like China. It also taps into the increasing polarisation of modern societies as a counterforce to globalisation

All thematic ETFs and open ended funds in the WisdomTree Thematic classification are classified into

- **Diversified thematics**, if they try to harness a large number of megatrends in one go. Those funds tend to have a very diluted focus, which could mean that it might be harder to find sources of potential differentiation against a broad market benchmark.
- A specific cluster, if they try to harness multiple themes across sub-clusters but within one particular cluster. For example, a fund investing in Artificial Intelligence, Robotics, Cloud, and Cybersecurity would be classified as a 'Technological Shifts' fund.
- A particular sub cluster, if a strategy aims to invest in most of the themes within that sub cluster For example, a fund investing in Cloud Computing, Platforms, Cybersecurity, and Fintech would be classified as a 'Hyperconnectivity & Digitalisation' fund.
- A theme, if the investment strategy is focused on a specific, clear theme.

YTD stands for Year to Date

MTD stands for Month to Date

For all of our calculations, we use the WisdomTree Thematic Classification that we have previously introduced here and can be found in the next page.

Performance of a theme. For any given theme, we consider each month all the ETFs and open-ended funds classified in that specific theme that have published a monthly return for that month in Morningstar. We then calculate the average of all those monthly returns to compute the average monthly return for that theme. So, the monthly return for January 2020 for the theme may include 19 funds, while the February 2020 return may comprise 21 funds (if two funds classified in that theme have been launched in the meantime). By collating monthly returns for the theme, we get the theme's average historical performance Therefore, the theme's average historical performance incorporates every ETF, and open-ended fund focused on this theme The theme's average historical performance is not biased towards surviving funds or successful funds Every fund alive in a given month is included irrespective of its future survival or success Investments that try to focus on multiple themes and, therefore, classified either at Cluster or Sub-Cluster Level are not included.

The WisdomTree T	hematic Classification
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			DIVERSIFIED	ED THEMATICS			
TECHNOLOG	TECHNOLOGICAL SHIFTS	DEMOGRAPHI	DEMOGRAPHIC AND SOCIAL SHIFTS	GEOPOI	GEOPOLITICAL SHIFTS	ENVIRONMENT	ENVIRONMENTAL PRESSURES
DISRUPTIVE TECHNOLOGIES	HYPER CONNECTIVITY & DIGITALISATION	DEMOGRAPHIC SHIFTS	SOCIAL SHIFTS	GLOBALISATION	MULTI-POLARITY	CLIMATE CHANGE & SUSTAINABILITY	LIMITED RESOURCES
Artificial Intelligence & Big Data	Cloud Computing	Aging Population	Education	Global Logistics	China's Rise	Decarbonisation	Agriculture & Food
Rise of Cl	Rise of China Tech	Millennials & Gen Z	Equality, Inclusion & Diversity		Political Polarisation	Protect Biodiversity	Natural Resources
Blockchain	Cybersecurity		Rise of the Middle Class		Rise of Tension	Sustainable Mobility	Water
HealthTech	Digital Health		Rise of EM Consumer		Near/Reshoring	Sustainable Energy Production	
Industry 4.0	Digital Infrastructure		Wellness			Sustainable Energy Storage	
Next Gen Communications	Fintech & Digitalisation of Finance					Sustainable Food	
Robotics & Automation	Robotics & Automation Gaming & Entertainment					Sustainable Cities	
Semiconductors	Internet of Things					Sustainable Resource Management	
Smart Materials & Nano Tech	Metaverse					Extreme Events	
Space	Platforms & Digital Markets					Energy Transition Materials	
	Social Media & Media						

Source: WisdomTree, as of 30/06/2023

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