WisdomTree European thematic monthly update

September 2023

Thematic universe overview

+ AUM in thematic Exchange Traded Funds ("ETFs") and open-ended funds in Europe continued to shrink in September dropping by more than 6.5% to $296 billion. The decrease was mostly driven by negative performance across themes. The end of September AUM is around 2.7% higher than at the end of December 2022, mostly due to positive performance across themes as flows continue to be negative at -$4.6 billion year-to-date. ETFs' market share remained steady at around 13%, with a total AUM of $38.9 billion.

+ Performance in September was negative across all themes, with only 7 themes beating the MSCI ACWI. Year-to-date, 11 themes have outperformed the global equity benchmark, with the top 8 being all tech-related and led by "Semiconductors", "Blockchain" and "AI & Big Data".

+ Year-to-date flows are negative across both wrappers, but open-ended funds are responsible for 88% of the total outflows, predominantly within the "Environmental Pressures" and "Demographic & Social Shifts" clusters.

Recent yearly flows in Europe
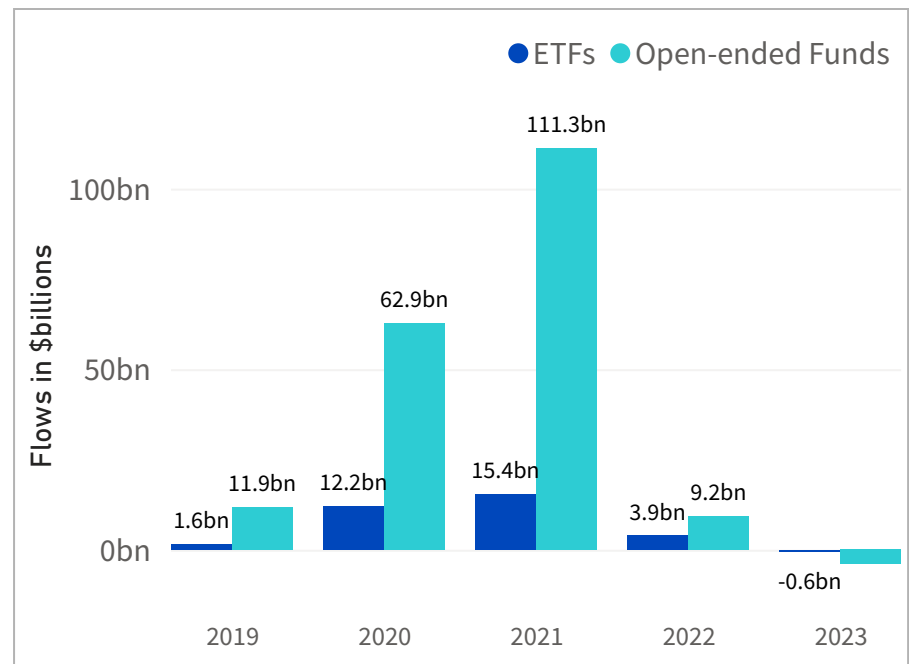
Europe-domiciled thematic AUM evolution and ETFs' market share
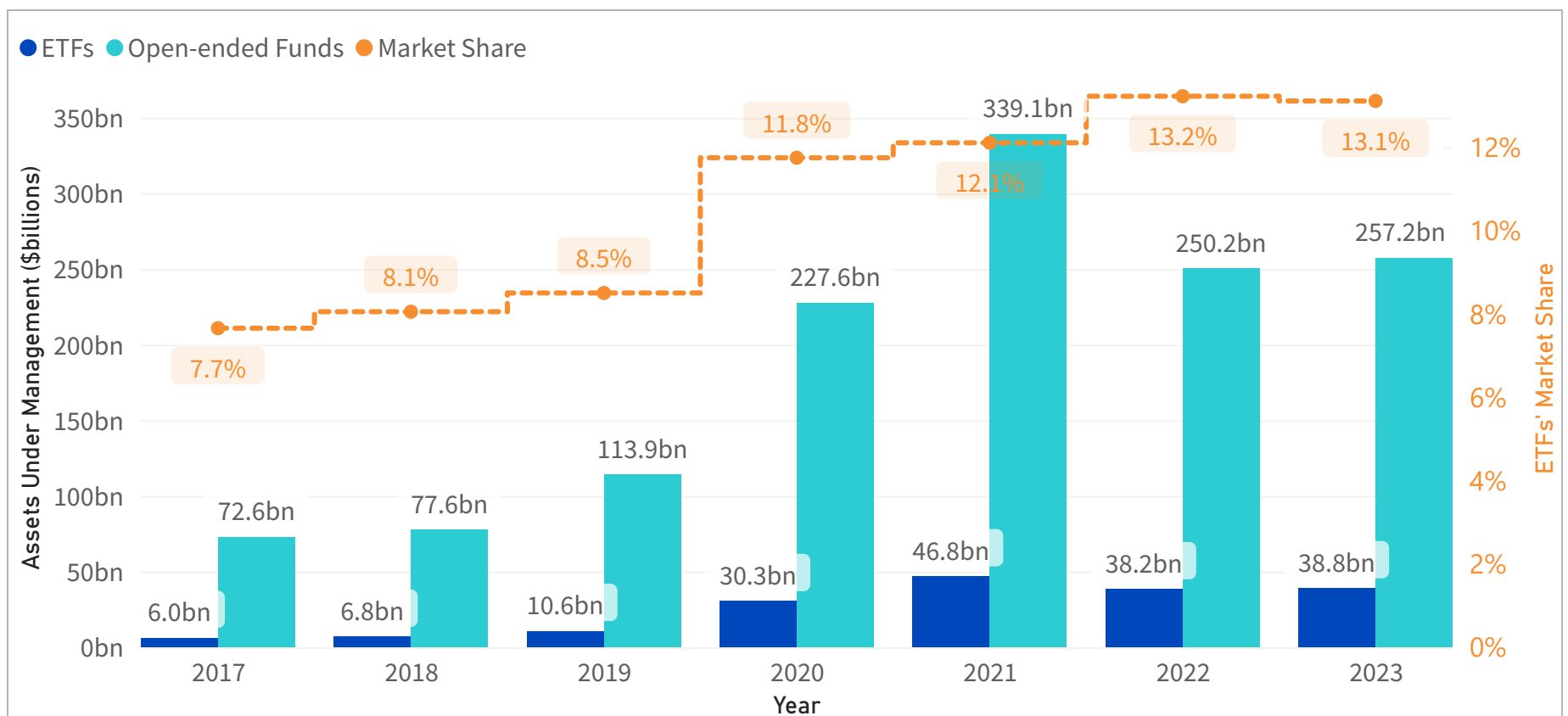
Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 and based on WisdomTree's internal classification of thematic funds. Performance is based on monthly returns from Bloomberg and Morningstar More information on the WisdomTree Thematic classification can be found in the Appendix. **Historical performance is not an indication of future performance, and any investments may go down in value.**

Thematic universe overview (continued)

+ Joint AUM in global thematic ETFs and open-ended funds in Europe have dropped in September by 6% to $468 billion but are still up $28 billion compared to the end of last year. The drop in September was driven by the performance across tech-focused and green themes, while the outflows were mostly concentrated in green and socio-demographic themes.

+ Year-to-date, European open-ended funds continued to gather most flows in the "Geopolitical Shifts" cluster and such themes as "China's Rise" and "Near/Reshoring". In turn, ETFs have seen the most flows in the "Technological Shifts" cluster with $308 year-to-date inflows and strong flows specifically into "AI & Big Data" that outweighed redemptions in "Cybersecurity".

+ Year-to-date outflows in "Environmental Pressures" cluster have been mostly driven by redemptions in open-ended funds at the sub-cluster and theme level dominated by the outflows in food-related themes. Positive flows across the energy transition themes led by "Sustainable Energy Production" did not compensate the outflows. "Equality, Inclusion & Diversity" with -$1.96 billion across both wrappers largely contributed to the outflows in the "Demographic and Social Shifts", while "Rise of the Middle Class", on the contrary, was the second best-gathering theme.
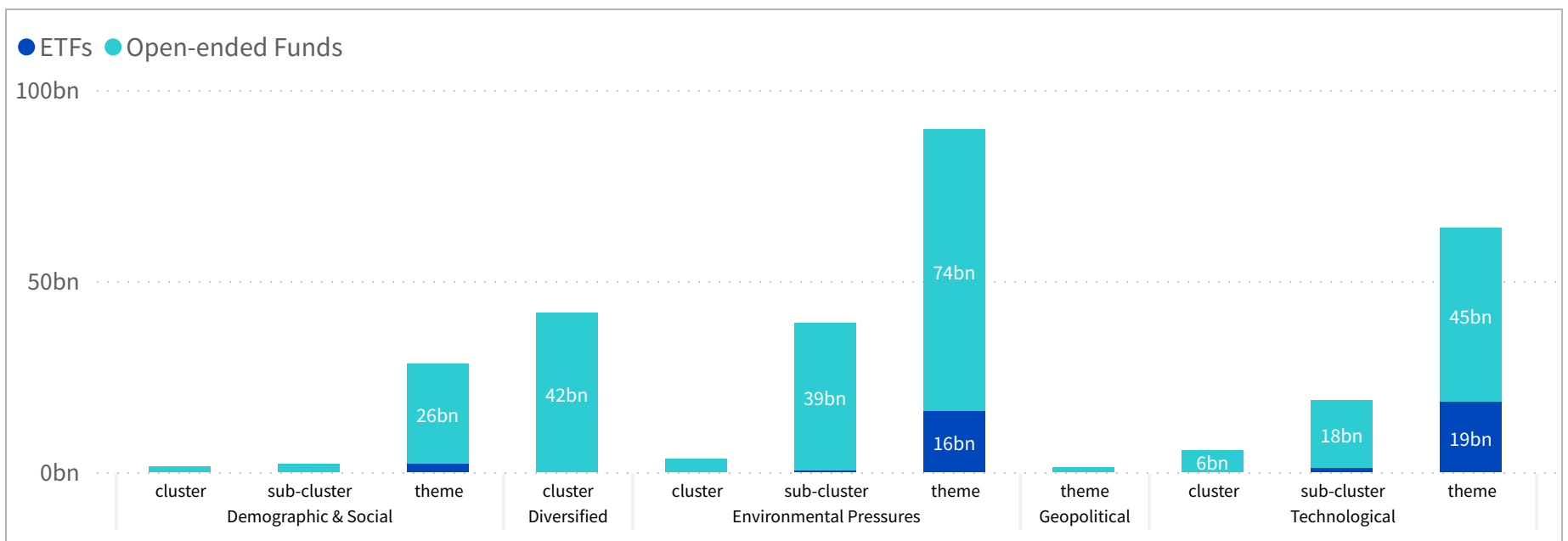
AuM in Thematics by region (Last 10Y)
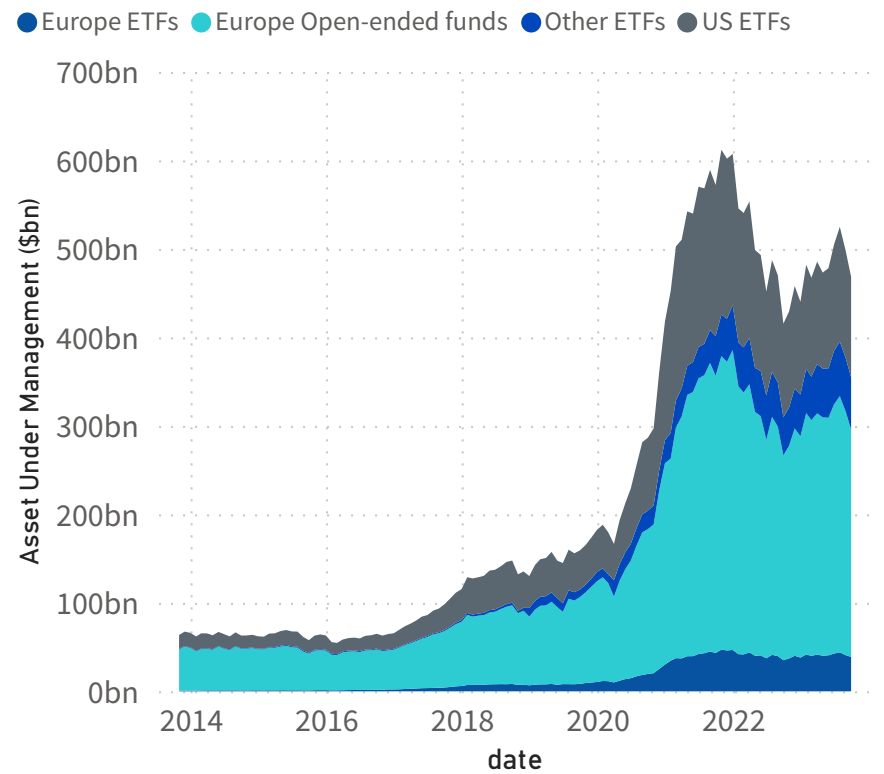
YTD flows in Europe by wrapper in cluster, sub-cluster and focused themes
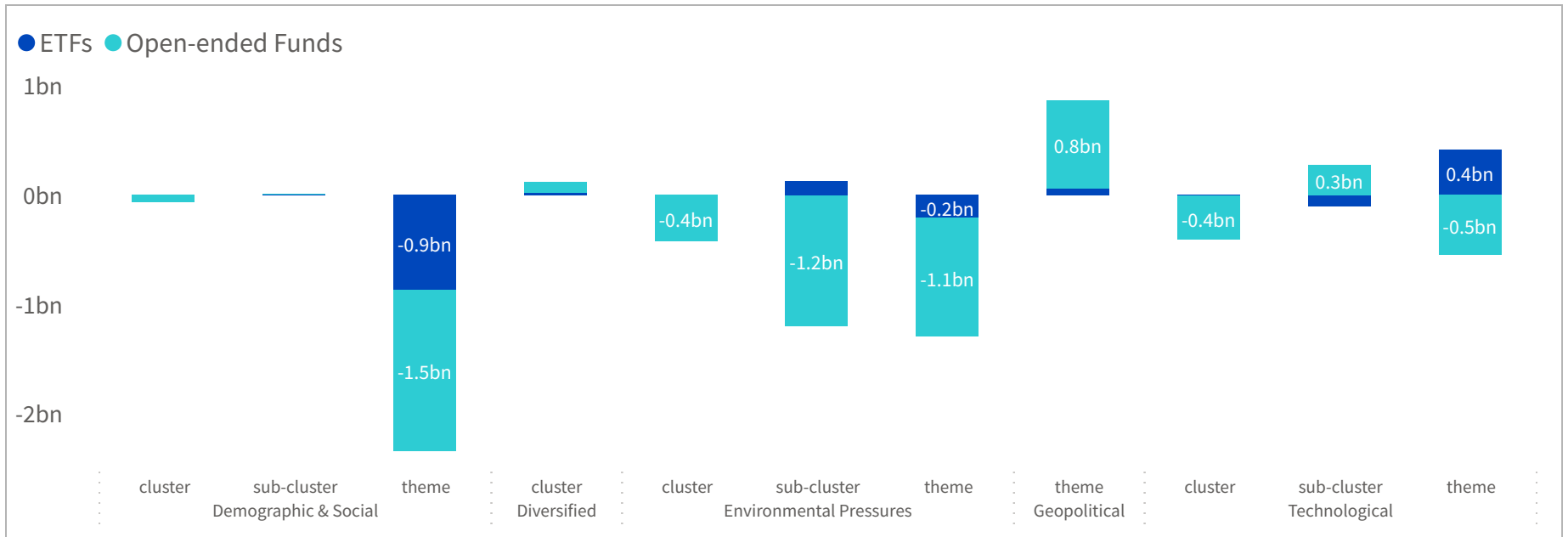
AuM in Europe by wrapper in cluster, sub-cluster and focused themes

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 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.**
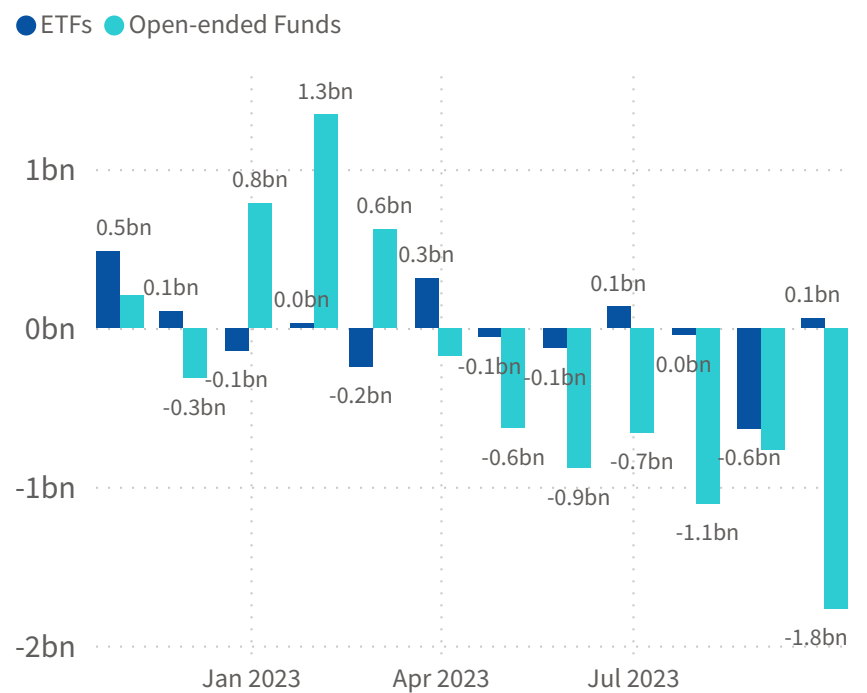
Thematic flows in Europe

+ In 2023, September has been the worst month for flows into open-ended funds with investors redeeming around $1.8 billion. At the same time, September marked fourth month in 2023 of net positive flows for ETFs with around $60 million in. However, year-to-date flows are negative for both wrappers, with around $0.6 billion and $4 billion outflows respectively.
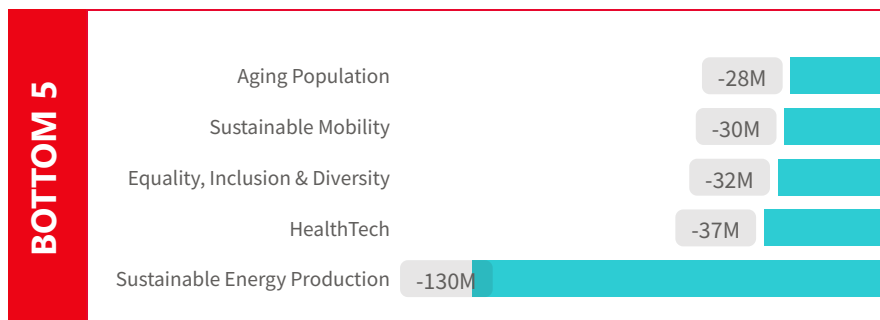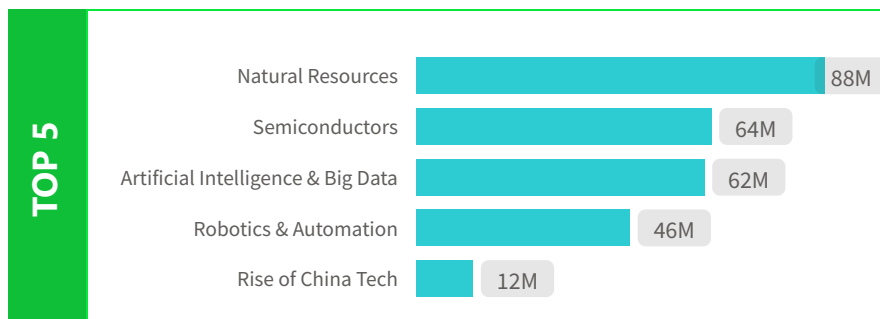
+ In September, "AI & Big Data" gathered most flows with the contribution from both wrappers and $157 million of inflows. "Metaverse" followed with $116 million and inflows from open-ended funds exclusively. Two other themes, "Semiconductors" and "Natural Resources" raised more than $50 million. At the same time, the bottom 5 themes all lost more than $100 million led by outflows in "Sustainable Energy Production"(-$371) and "HealthTech"(-$189m).

+ Year-to-date, "AI & Big Data" has climbed to the top spot having raised $1.4 billion so far. "Rise of the Middle Class" and "Sustainable Energy Production" followed with $0.8 billion and $0.7 billion respectively. On the other end of the spectrum, "Equality, Inclusion & Diversity" and food-related themes are dominating the year-to-date outflows.
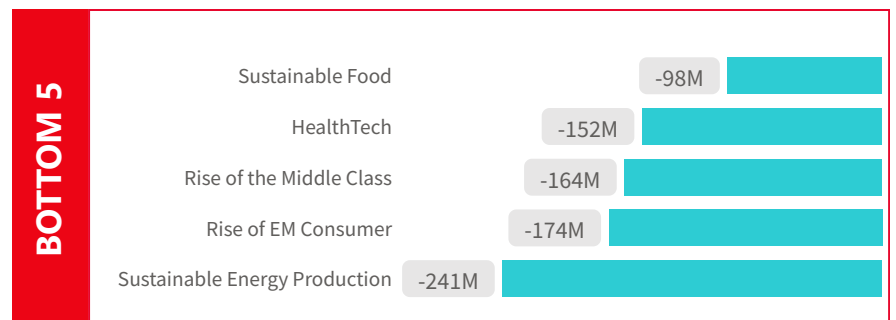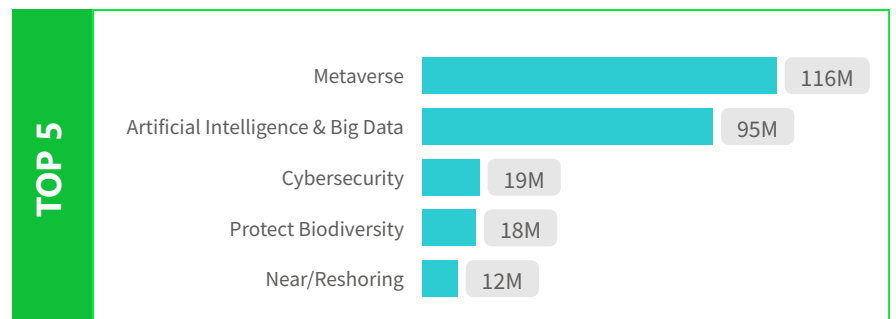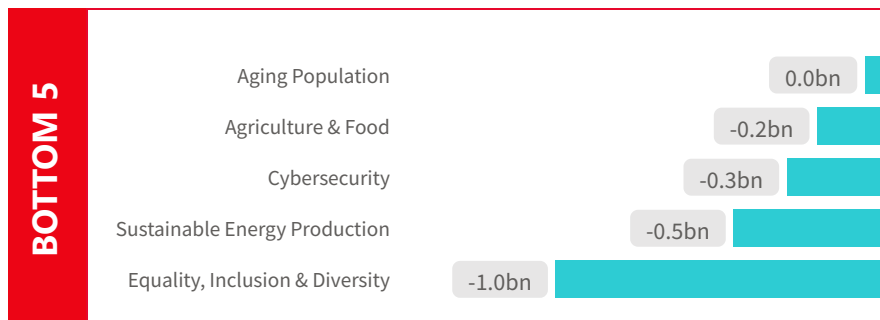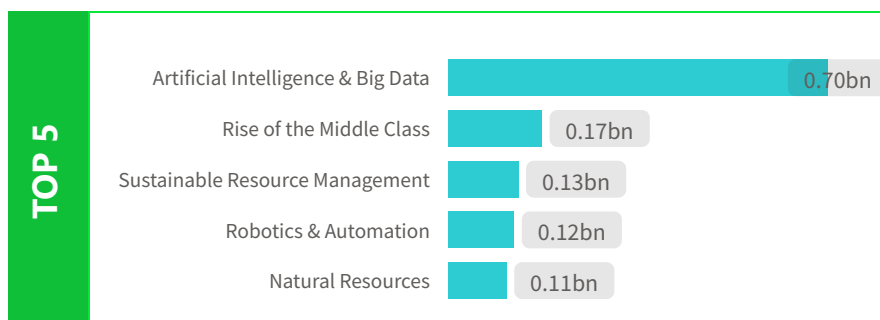
Month-on-month thematic flows

● ETFs ● Open-ended Funds

September Top/Bottom flows in Europe ETFs

TOP 5
Natural Resources	88M
Semiconductors	64M
Artificial Intelligence & Big Data	62M
Robotics & Automation	46M
Rise of China Tech	12M

BOTTOM 5
Aging Population	-28M
Sustainable Mobility	-30M
Equality, Inclusion & Diversity	-32M
HealthTech	-37M
Sustainable Energy Production	-130M

September Top/Bottom flows in Mutual Funds

TOP 5
Metaverse	116M
Artificial Intelligence & Big Data	95M
Cybersecurity	19M
Protect Biodiversity	18M
Near/Reshoring	12M

BOTTOM 5
Sustainable Food	-98M
HealthTech	-152M
Rise of the Middle Class	-164M
Rise of EM Consumer	-174M
Sustainable Energy Production	-241M

YTD Top/Bottom flows in Europe ETFs

TOP 5
Artificial Intelligence & Big Data	0.70bn
Rise of the Middle Class	0.17bn
Sustainable Resource Management	0.13bn
Robotics & Automation	0.12bn
Natural Resources	0.11bn

BOTTOM 5
Aging Population	0.0bn
Agriculture & Food	-0.2bn
Cybersecurity	-0.3bn
Sustainable Energy Production	-0.5bn
Equality, Inclusion & Diversity	-1.0bn

YTD Top/Bottom flows in Mutual Funds

TOP 5
Sustainable Energy Production	1.2bn
Artificial Intelligence & Big Data	0.7bn
Rise of the Middle Class	0.6bn
China's Rise	0.4bn
Near/Reshoring	0.4bn

BOTTOM 5
Agriculture & Food	-0.4bn
HealthTech	-0.4bn
Aging Population	-0.5bn
Equality, Inclusion & Diversity	-0.9bn
Sustainable Food	-1.1bn

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 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.**
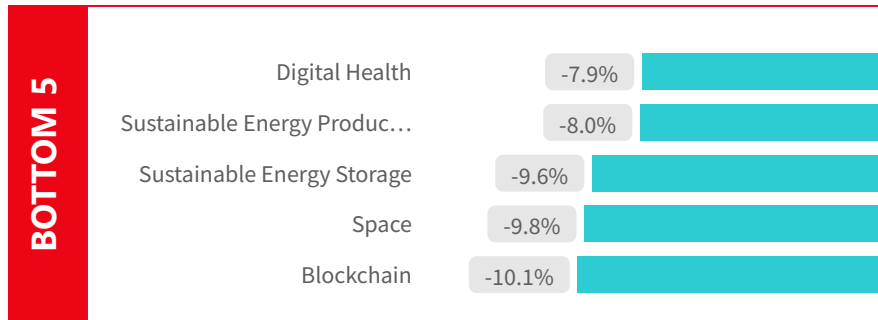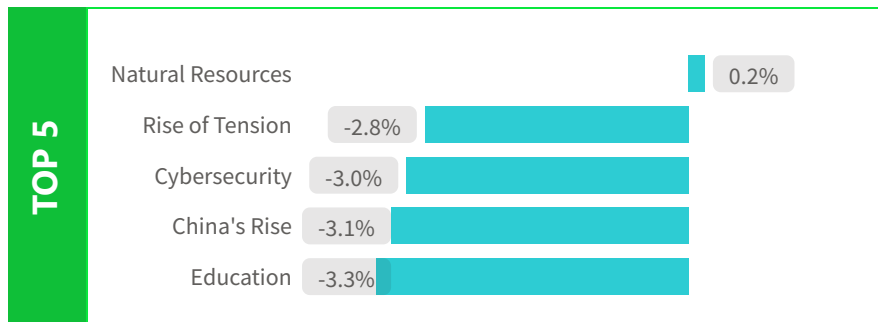
Thematic performance and launches in Europe

+ Year-to-date, technology-focused thematics continue to occupy the top 5 themes by performance. "Semiconductors" together with "AI & Big Data", "Metaverse" and "Cybersecurity" have been propelled by the enthusiasm in generative AI applications. At the same time, "Blockchain" theme has been driven by renewed interest in bitcoin and related bitcoin miners and an expectation that a spot bitcoin ETF could be approved in the US. In turn, Chinese equities and energy transition related themes are dominating the bottom 5 themes. Notably, "Sustainable Energy Production", the worst-performing theme year-to-date, also saw a turn in investor sentiment and topped September outflows across themes.

+ In September, all themes but one posted negative returns. However, 7 themes in total still beat MSCI ACWI. "Cybersecurity" was the only tech theme in the best top 5 where themes came from all four clusters in the WisdomTree Thematic classification. Tech and green themes dominated the bottom 5.

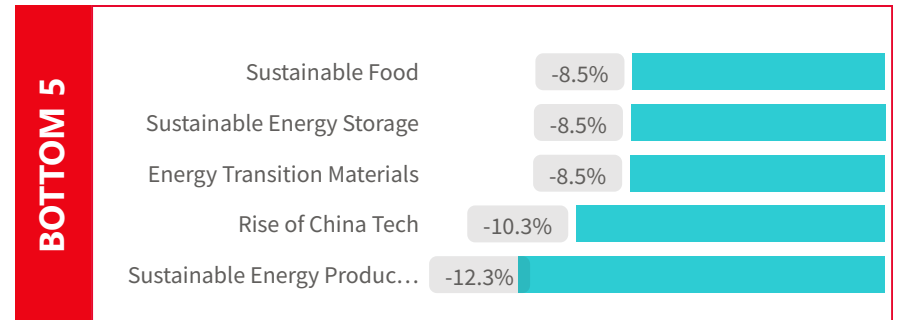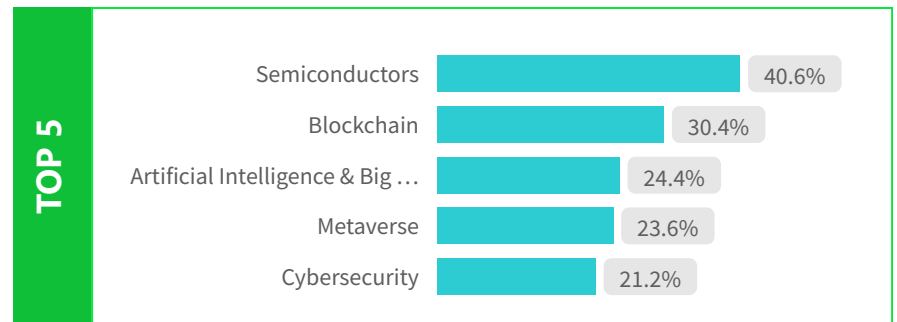+ Year-to-date, thematic launches are by far behind the pace seen in 2022.

Yearly thematic launches in Europe*
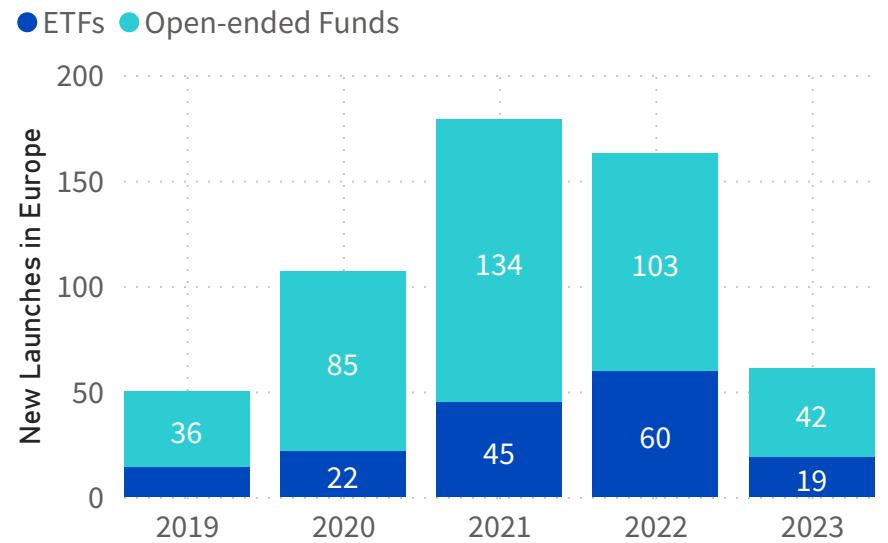
* New launches are updated quarterly

Top 5/Bottom 5 by performance in September
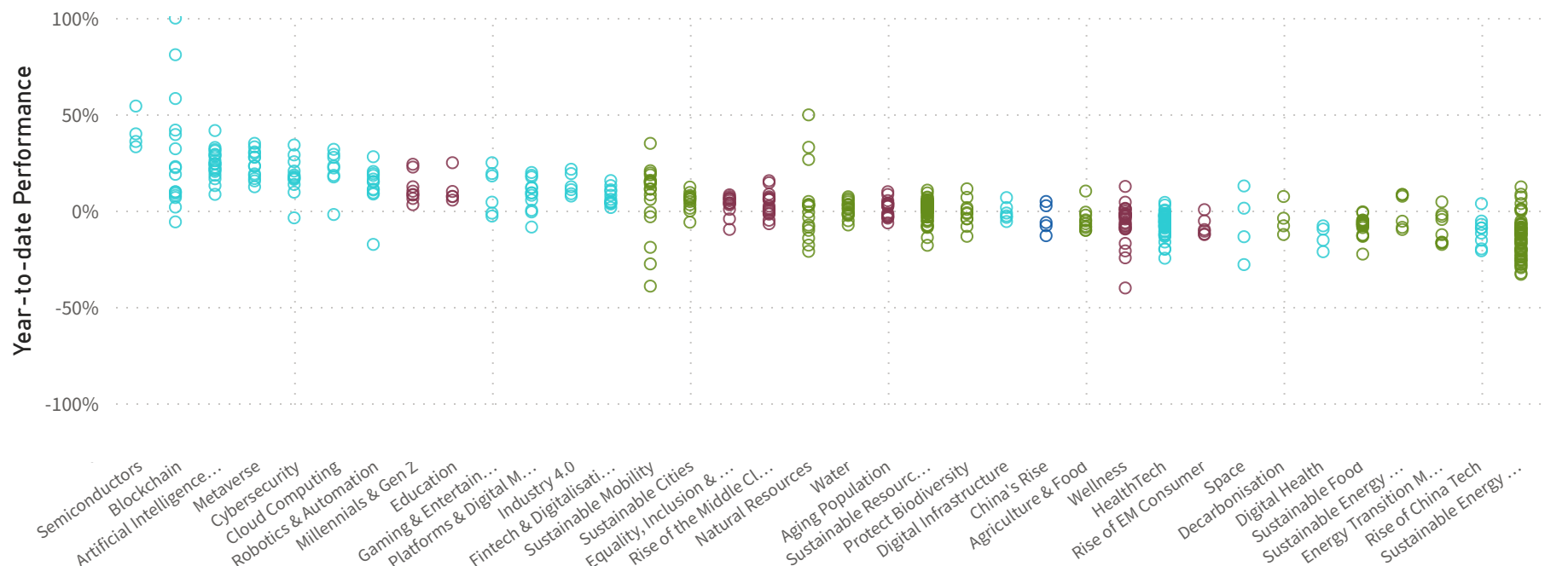

Top 5/Bottom 5 by YTD performance

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

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 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.**

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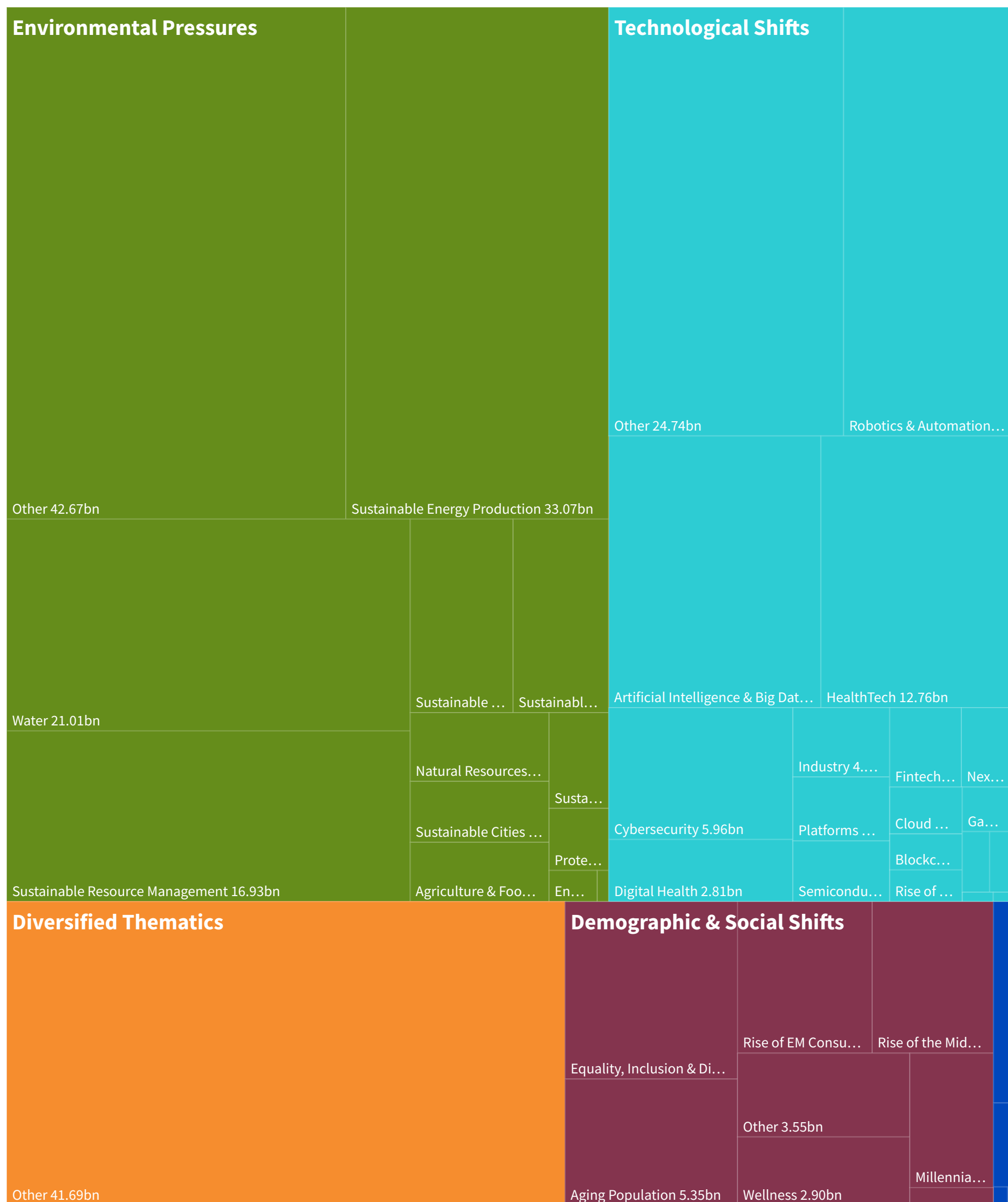
Environmental Pressures

Other 42.67bn

Sustainable Energy Production 33.07bn

Water 21.01bn

Sustainable … Sustainabl…

Natural Resources…

Sustainable Cities …

Susta…

Sustainable Resource Management 16.93bn

Agriculture & Foo…

Prote…

En…

Technological Shifts

Other 24.74bn

Robotics & Automation…

Artificial Intelligence & Big Dat… HealthTech 12.76bn

Industry 4….

Fintech…

Nex…

Cybersecurity 5.96bn

Platforms …

Cloud …

Ga…

Blockc…

Digital Health 2.81bn

Semicondu…

Rise of …

Diversified Thematics

Other 41.69bn

Demographic & Social Shifts

Equality, Inclusion & Di…

Rise of EM Consu… Rise of the Mid…

Other 3.55bn

Aging Population 5.35bn

Wellness 2.90bn

Millennia…

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 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.**

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

Cluster	Sub-Cluster	AuM ($)	Flows Last Month ($)	Flows YTD ($)
Technological Shifts		5,824.75M	-12.30M	-406.64M
Technological Shifts	Disruptive Technologies	12,920.41M	-42.00M	87.45M
Technological Shifts	HyperConnectivity & Digitalisation	5,998.25M	-23.25M	84.51M
Environmental Pressures		3,547.04M	-0.72M	-420.49M
Environmental Pressures	Climate Change & Sustainability	39,115.06M	-434.83M	-1,065.28M
Environmental Pressures	Limited Resources	10.32M	-0.11M	-1.65M
Diversified Thematics		41,691.54M	-78.12M	117.30M
Demographic & Social Shifts		1,337.43M	-11.89M	-66.75M
Demographic & Social Shifts	Demographic Shifts	2,182.13M	1.60M	9.52M
Demographic & Social Shifts	Social Shifts	26.93M	-2.14M	0.12M

Appendix - Theme focused ETFs and Open-ended funds

Theme Name	AuM ($)	Flows Last Month ($)	Flows YTD ($)	Performance Last Month	Performance YTD
Artificial Intelligence & Big Data	14,171.27M	156.96M	1,384.42M	-4.9%	24.4%
Rise of the Middle Class	4,517.19M	-159.43M	771.78M	-7.8%	3.7%
Sustainable Energy Production	33,072.15M	-370.90M	708.42M	-8.0%	-12.3%
China's Rise	914.63M	-9.56M	411.10M	-3.1%	-2.8%
Near/Reshoring	381.06M	11.60M	387.46M	-3.9%	-2.5%
Metaverse	332.48M	115.58M	172.08M	-5.4%	23.6%
Protect Biodiversity	910.52M	17.58M	168.45M	-5.7%	0.2%
Energy Transition Materials	368.86M	-4.26M	122.10M	-4.8%	-8.5%
Internet of Things	406.88M	6.93M	98.92M	-4.9%	6.9%
Sustainable Mobility	4,551.95M	-74.84M	82.71M	-6.9%	5.1%
Industry 4.0	1,648.58M	8.43M	81.75M	-5.1%	8.5%
Rise of Tension	64.82M	4.40M	64.39M	-2.8%	13.8%
Semiconductors	1,443.02M	63.60M	50.15M	-7.3%	40.6%
Sustainable Energy Storage	1,403.93M	7.18M	34.36M	-9.6%	-8.5%
Cloud Computing	834.77M	6.05M	27.93M	-6.0%	21.1%
Rise of China Tech	564.91M	7.98M	18.50M	-5.0%	-10.3%
Space	42.89M	1.72M	16.12M	-9.8%	-6.3%
Global Logistics	18.83M	0.17M	3.02M	-5.6%	4.4%
Sustainable Resource Management	16,931.32M	-58.63M	-6.33M	-6.3%	1.1%
Blockchain	642.35M	-16.91M	-7.76M	-10.1%	30.4%
Decarbonisation	88.01M	-0.38M	-10.92M	-7.0%	-6.3%
Gaming & Entertainment	542.80M	-5.61M	-35.89M	-5.6%	9.7%
Platforms & Digital Markets	1,521.34M	-23.46M	-42.26M	-5.7%	9.2%
Digital Infrastructure	71.28M	-2.64M	-50.69M	-7.6%	-0.7%
Rise of EM Consumer	5,018.99M	-167.72M	-66.45M	-3.8%	-6.2%
Education	364.64M	-6.54M	-84.25M	-3.3%	11.1%
Millennials & Gen Z	2,763.44M	-21.61M	-138.83M	-5.8%	11.7%
Robotics & Automation	17,734.01M	37.77M	-167.90M	-6.1%	13.9%
Water	21,006.72M	-73.10M	-187.89M	-6.5%	1.4%
NextGen Communications	985.55M	-16.38M	-196.38M	-4.7%	16.9%
Natural Resources	2,341.89M	77.22M	-227.78M	0.2%	2.7%
Sustainable Cities	2,079.19M	-5.26M	-229.05M	-5.3%	5.0%
Cybersecurity	5,960.79M	30.19M	-246.21M	-3.0%	21.2%
Wellness	2,895.63M	-40.95M	-309.50M	-5.7%	-5.7%
Fintech & Digitalisation of Finance	1,398.81M	-28.33M	-374.78M	-6.3%	8.4%
Digital Health	2,811.06M	-61.56M	-390.71M	-7.9%	-7.3%
HealthTech	12,756.81M	-189.21M	-462.32M	-5.8%	-6.2%
Aging Population	5,347.91M	-88.31M	-552.24M	-5.5%	1.3%
Agriculture & Food	2,022.09M	-34.04M	-612.74M	-5.2%	-5.1%
Sustainable Food	4,892.31M	-102.65M	-1,138.43M	-6.2%	-8.5%
Equality, Inclusion & Diversity	7,517.94M	-92.77M	-1,961.22M	-4.9%	4.0%

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/09/2023 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.**

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 Thematic Classification

DIVERSIFIED THEMATICS			
TECHNOLOGICAL SHIFTS			
DISRUPTIVE TECHNOLOGIES	HYPER CONNECTIVITY & DIGITALISATION		
Artificial Intelligence & Big Data	Cloud Computing		
Rise of China Tech			
Blockchain	Cybersecurity		
HealthTech	Digital Health		
Industry 4.0	Digital Infrastructure		
Next Gen Communications	Fintech & Digitalisation of Finance		
Robotics & Automation	Gaming & Entertainment		
Semiconductors	Internet of Things		
Smart Materials & Nano Tech	Metaverse		
Space	Platforms & Digital Markets		
	Social Media & Media		

DEMOGRAPHIC AND SOCIAL SHIFTS			
DEMOGRAPHIC SHIFTS	SOCIAL SHIFTS		
Aging Population	Education		
Millennials & Gen Z	Equality, Inclusion & Diversity		
	Rise of the Middle Class		
	Rise of EM Consumer		
	Wellness		

GEOPOLITICAL SHIFTS			
MULTI-POLARITY	GLOBALISATION		
China's Rise	Global Logistics		
Political Polarisation			
Rise of Tension			
Near/Reshoring			

ENVIRONMENTAL PRESSURES			
LIMITED RESOURCES	CLIMATE CHANGE & SUSTAINABILITY		
Agriculture & Food	Decarbonisation		
Natural Resources	Protect Biodiversity		
Water	Sustainable Mobility		
	Sustainable Energy Production		
	Sustainable Energy Storage		
	Sustainable Food		
	Sustainable Cities		
	Sustainable Resource Management		
	Extreme Events		
	Energy Transition Materials		