

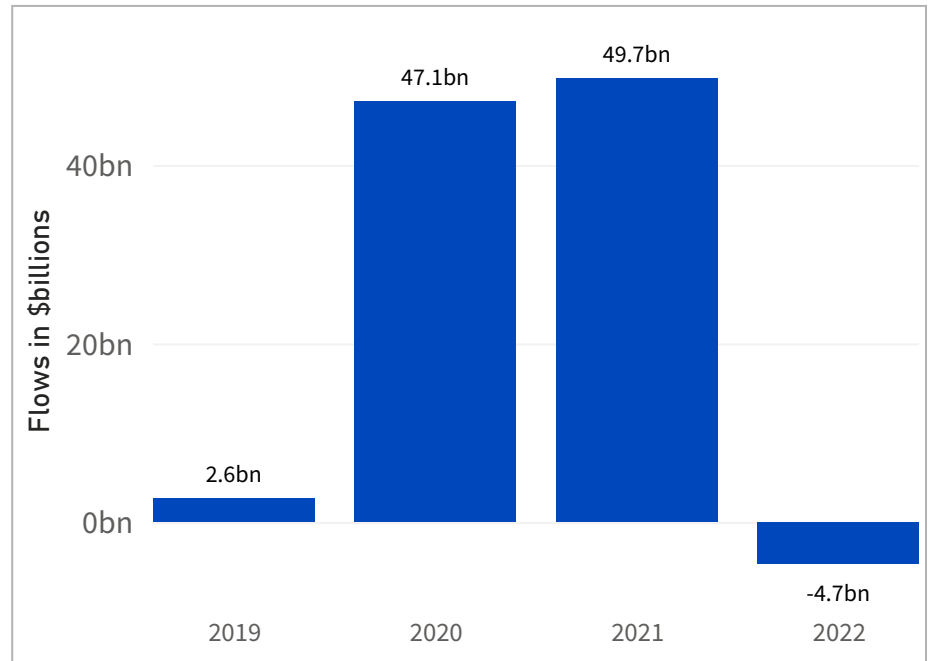
# WisdomTree US thematic quarterly update

January 2023

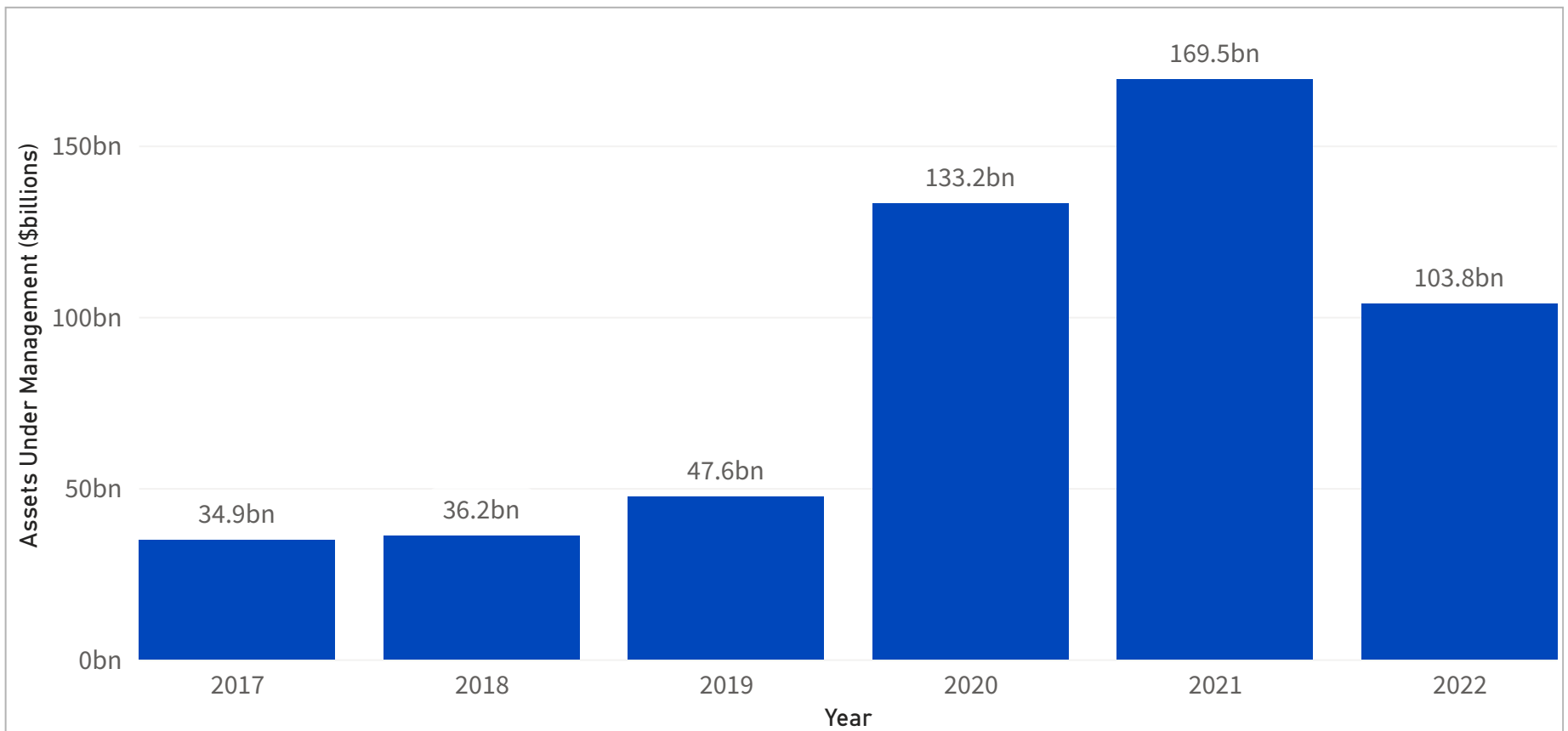
## Thematic universe overview

- + AUM in US-domiciled thematic Exchange Traded Funds (“ETFs”) stands at \$103.8 billion as of the end of December 2022, following the negative performance of the space in 2022.
- + Flows remain negative for Q4 with -\$3 billion of outflows. However, it was the negative performance across many themes that has been the main driver of the \$66 billion decrease in the overall assets under management from their level as of 31 December 2021.
- + Asset raising in US thematic ETFs in 2022 has been negative overall, despite \$4 billion of inflows in Q1.

## Recent yearly flows in US



## US thematic ETFs - AuM evolution



Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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.

## Thematic universe overview (continued)

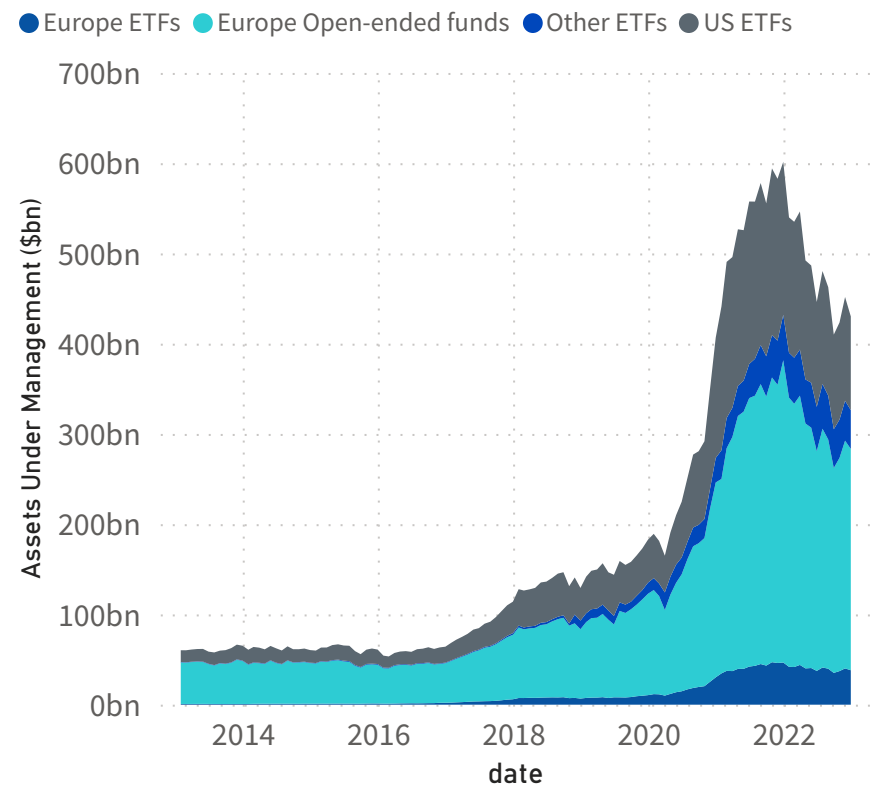
+ Globally, AUM in thematic strategies rebounded in Q4, from \$410 billion in September to \$430 billion at the end of December, helped by an equity rebound in October and November. AUM are still down \$171 billion from their peak on 31 December 2022.

+ Looking at the different market segments, US ETFs have been hit the hardest, with overall AUM dropping -38% in 2022. European ETFs have been the most resistant, with a drop of only -18%.

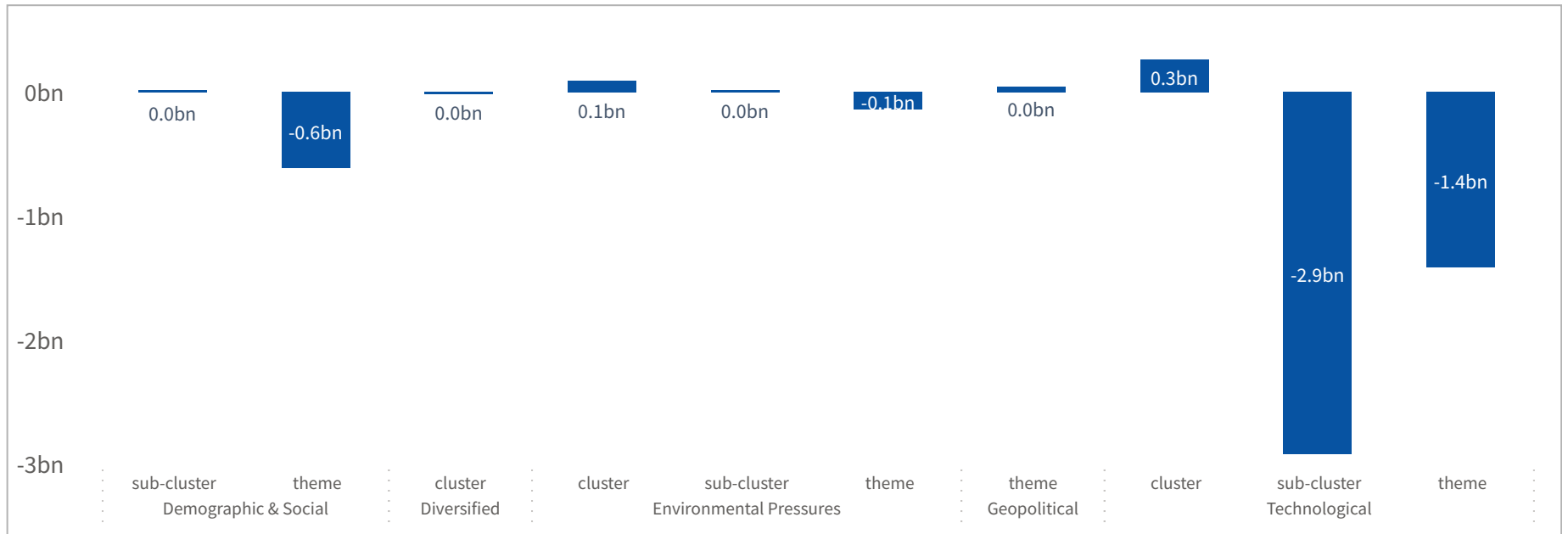
+ In the US, most of the 2022 outflows came from the "Technological Shifts" cluster and in particular from multi thematic ETFs within the "Hyperconnectivity & Digitalisation" sub-cluster and from digitalisation related themes led by outflows in "Cloud Computing". This is in stark contrast with Europe, where Thematics continue to gather inflows, specifically in "Climate Change & Sustainability" products.

+ As of the end of Q3, most of the thematic assets in the US, \$62 billion, remain in the "Technological Shifts" cluster. "Environmental Pressures" hold around 60% of that size, \$36 billion.

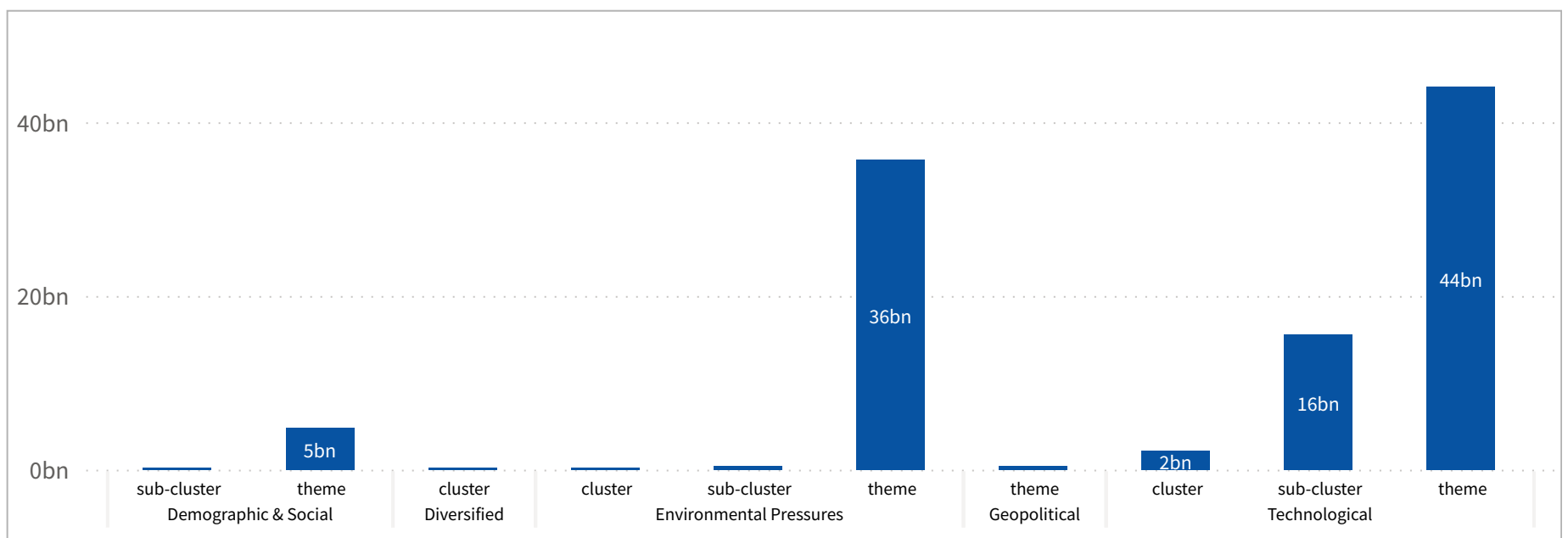
## AuM in Thematics by region (Last 10Y)



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



## AuM in US by wrapper in cluster, sub-cluster and focused themes



Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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.

## Thematic flows in US ETFs

+ Flows have remained negative every month since May 2022. December saw the largest outflows of the year with -\$2.4 billion.

+ In Q4, "China Tech" raised the most assets with \$134 million. "Wellness", "Polarisation", and "Equality, Inclusion & Diversity" were the only themes to raise more than \$50 million. "Cybersecurity", "Rise of the Middle Class", and "Cloud Computing" saw the largest outflows.

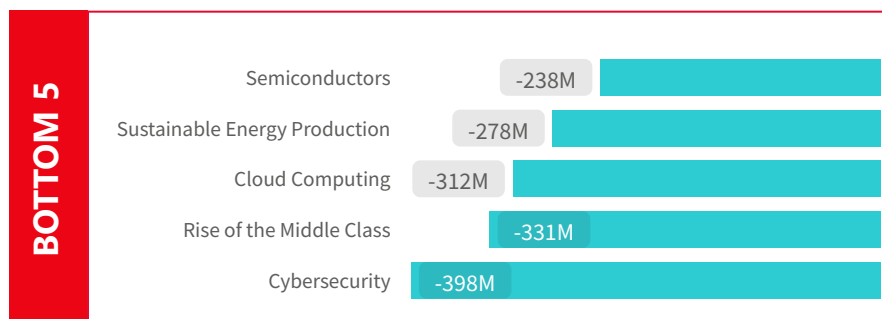
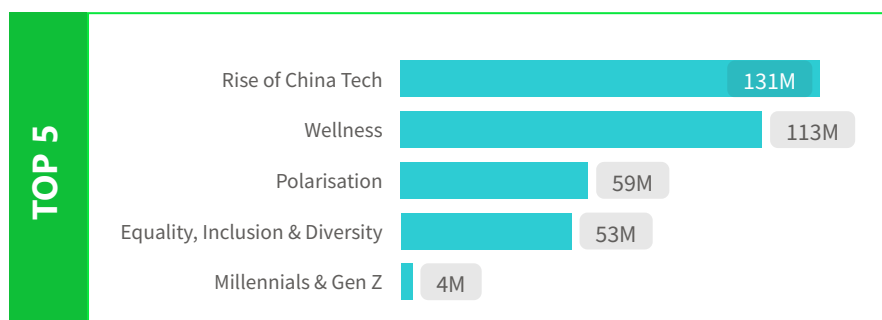
+ "China Tech" ETFs gathered the most inflows in 2022 with \$1.6 billion. "Semiconductors" also raised more than a billion dollars this year. "Agriculture", "Natural Resources", and "Cybersecurity" closed the top 5.

+ "Cloud Computing" and "Rise of the Middle Class" were the only two themes that saw outflows larger than 1 billion. Outflows of \$0.7 billion in "Sustainable Energy Production" are in stark contrast to flows into the theme in Europe, where it was the top gathering category of the year across both ETFs and mutual funds.

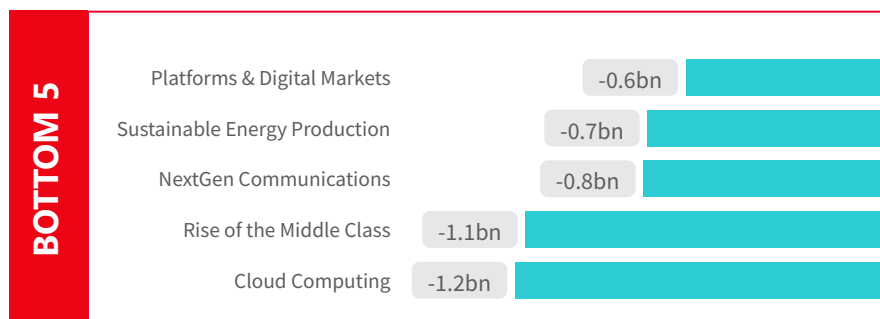
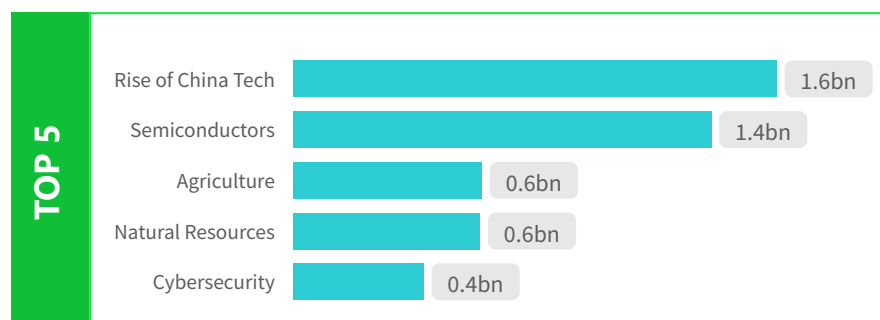
## Month-on-month thematic flows



## QTD Top/Bottom flows in US ETFs



## YTD Top/Bottom flows in US ETFs



## 5 ETFs with largest quarterly inflows (\$/mln)

KraneShares CSI China Internet ETF	137
AdvisorShares Pure US Cannabis ETF	111
FlexShares Global Upstream Natural Resources Index Fund	89
iShares Global Clean Energy ETF	75
iShares Exponential Technologies ETF	43

## 5 ETFs with largest quarterly outflows (\$/mln)

Global X Lithium & Battery Tech ETF	-323
ARK Innovation ETF	-261
First Trust NASDAQ Cybersecurity ETF	-248
First Trust Cloud Computing ETF	-242
Invesco Dynamic Leisure and Entertainment ETF	-176

Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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.

ETFs are sold by prospectus only. See each individual fund's website for their prospectus and other important information. WisdomTree is not affiliated with the non-WisdomTree funds referenced in this list.

## Thematic performance and launches in US

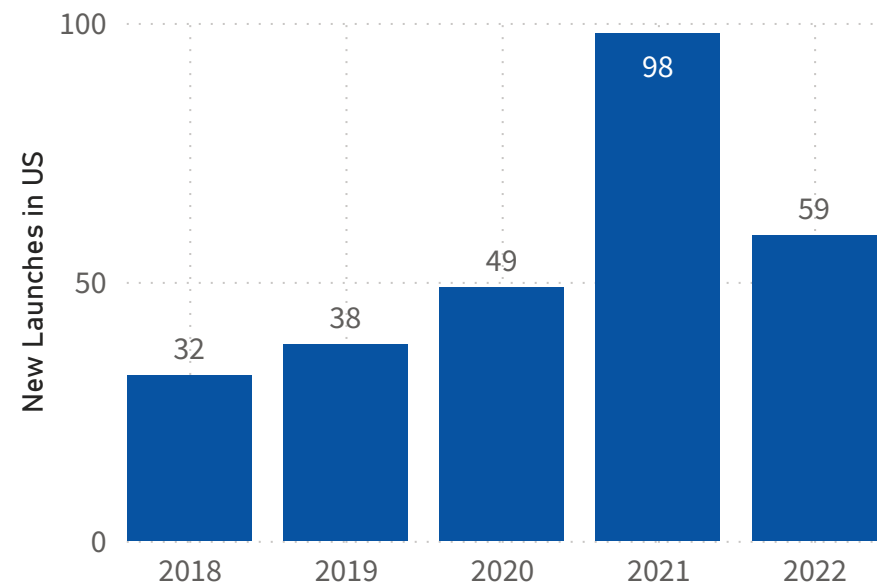
+ In Q4, "Education" performed the best with +20.9%. "Extreme Events", "Internet of Things" and "Global Logistics" also returned more than 15% over the quarter.

+ "Blockchain" dropped the furthest in Q4, with negative return of -29.2%.

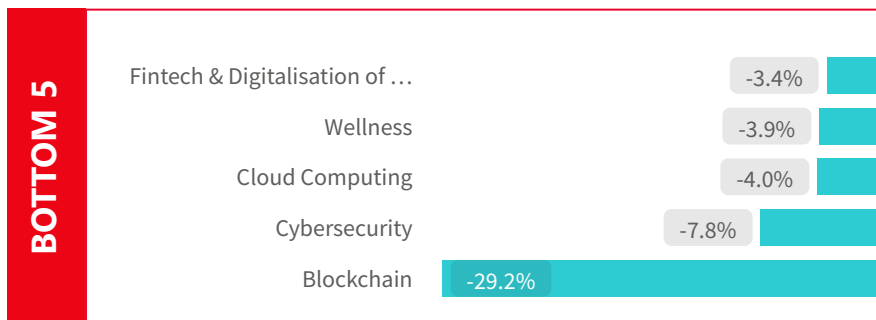
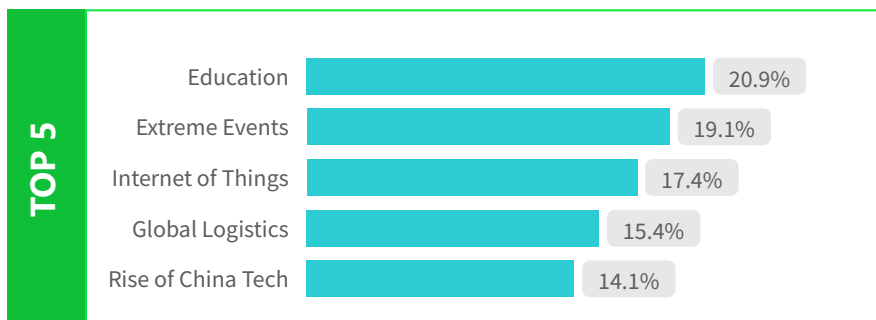
+ In 2022, only a handful of themes beat the market. "Agriculture", "Global Logistics" and "Polarisation" are at the top of that pile.

+ "Technological Shifts" themes suffered the most in 2022 value environment. "Blockchain" posted returns of -72.1% for the year. Trailing it, "Wellness", "Fintech", "Cloud Computing" and "Metaverse" lost between -40% and -50%.

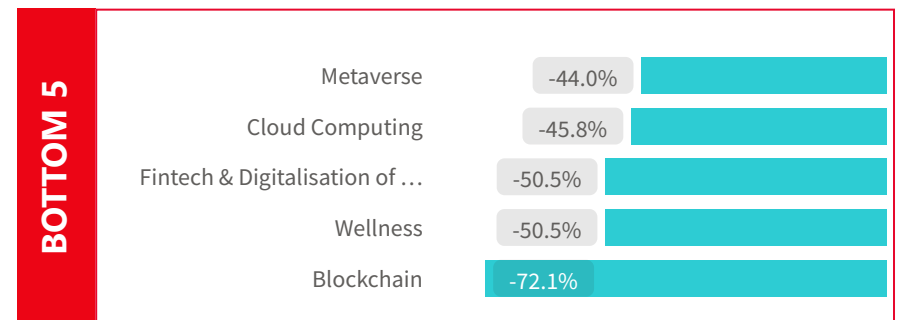
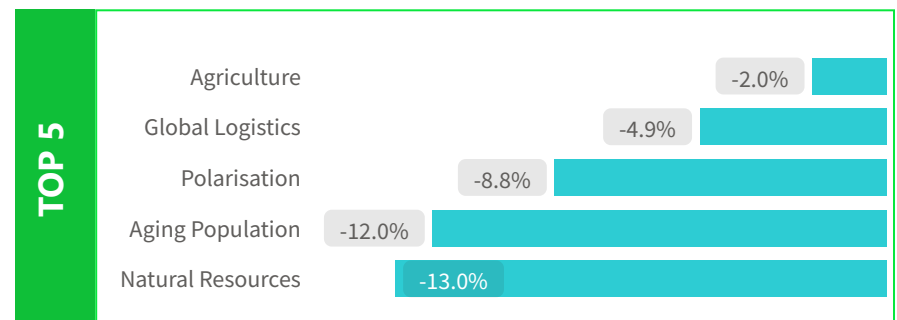
## Yearly thematic launches in US ETFs



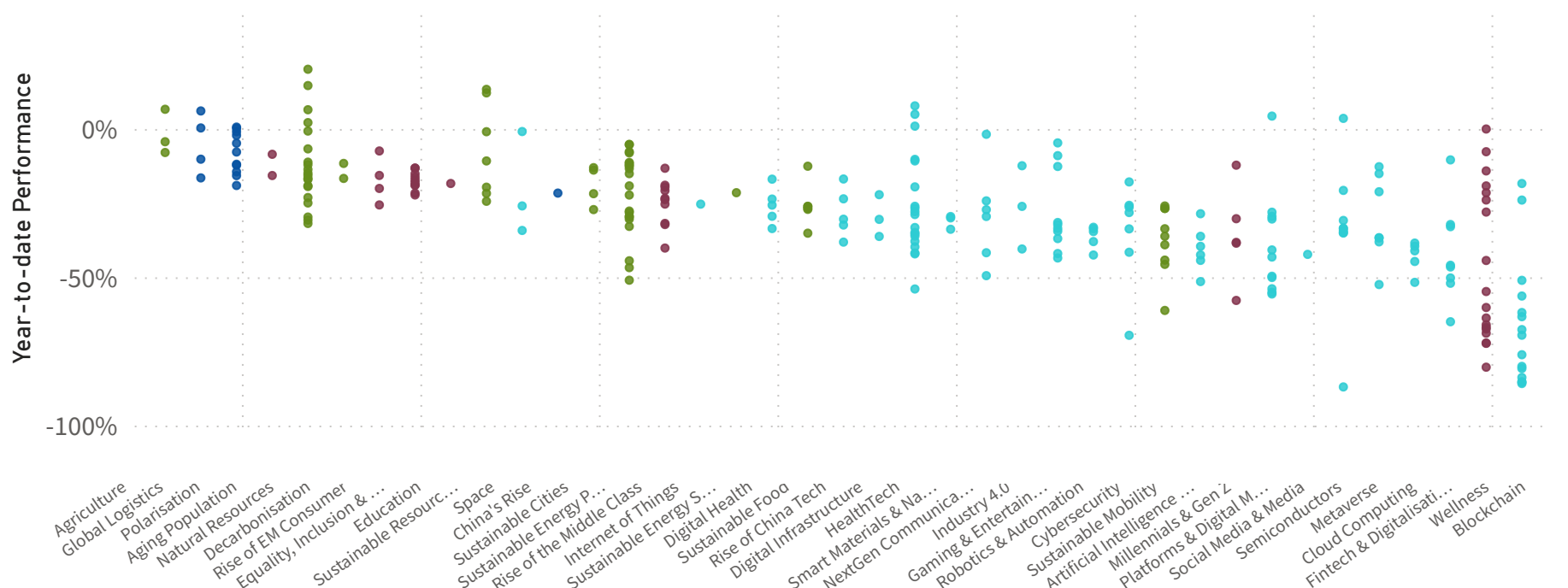
## Top 5/Bottom 5 by QTD performance



## Top 5/Bottom 5 by YTD performance



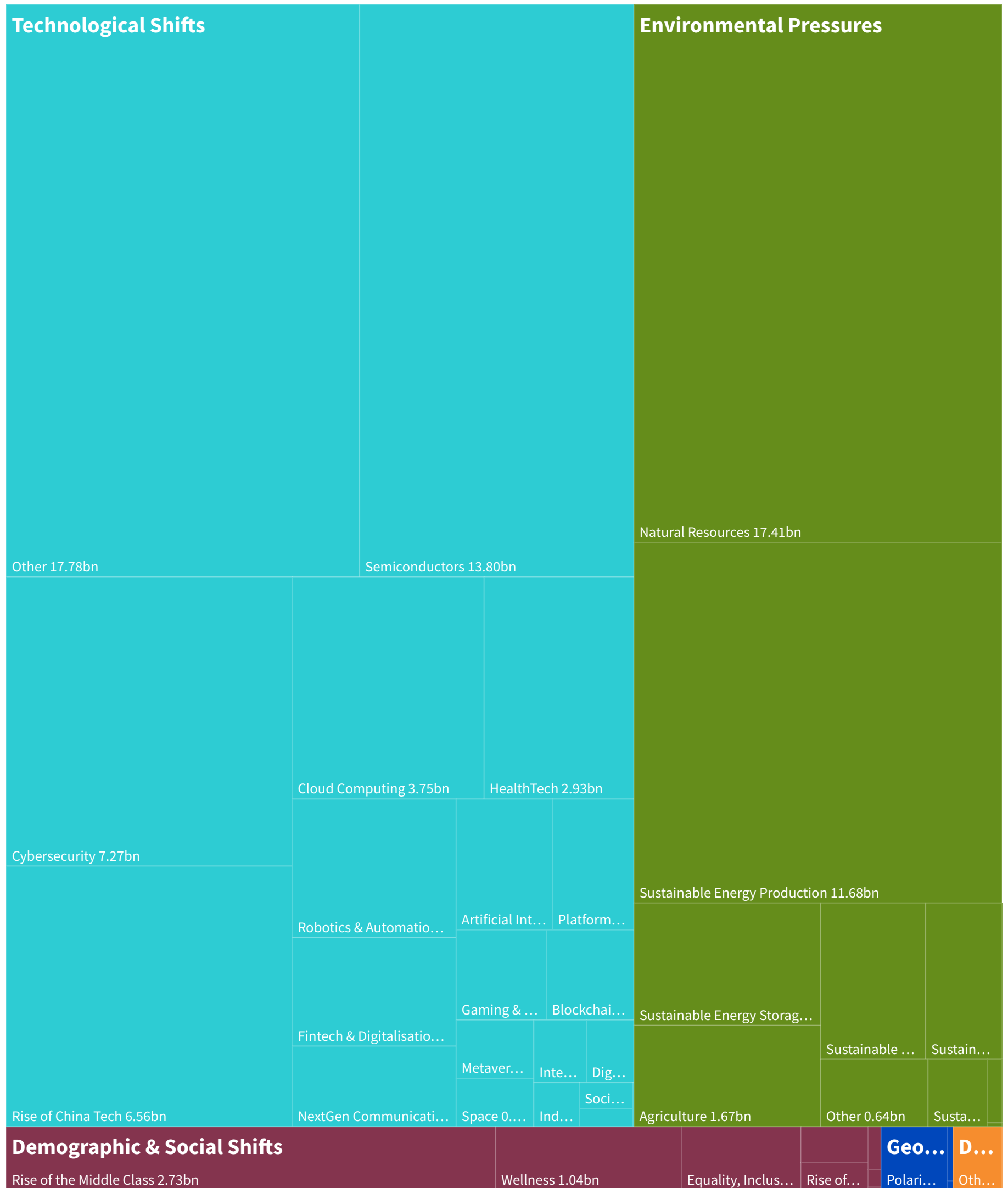
## Dispersion of YTD performance of all US ETFs by themes



Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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 domiciled in US (\$billions)



Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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.

## Appendix - Multi themes & diversified thematic US ETFs

Cluster	Sub-Cluster	AuM (\$)	Flows Last Quarter (\$)	Flows YTD
Environmental Pressures	Climate Change & Sustainability	454.85M	12.20M	14.28M
Demographic & Social Shifts	Social Shifts	19.86M	1.39M	11.63M
Diversified Thematics		273.65M	-2.48M	-6.53M
Environmental Pressures		181.02M	-8.95M	92.31M
Technological Shifts		2,184.98M	-14.17M	260.83M
Technological Shifts	HyperConnectivity & Digitalisation	5,208.53M	-225.26M	-3,466.30M
Technological Shifts	Disruptive Technologies	10,386.70M	-263.82M	553.00M

## Appendix - Theme-focused US ETFs

Theme Name	AuM (\$)	Flows Last Quarter (\$)	Flows YTD (\$)	Performance Last Quarter	Performance YTD
Aging Population	48.43M	-15.07M	-30.37M	10.8%	-12.0%
Agriculture	1,665.60M	-51.87M	642.27M	9.4%	-2.0%
Artificial Intelligence & Big Data	1,107.43M	-63.49M	-208.38M	3.8%	-38.5%
Blockchain	695.22M	-66.73M	62.63M	-29.2%	-72.1%
China's Rise	4.58M	0.00M	-2.49M	6.7%	-21.6%
Cloud Computing	3,748.16M	-311.68M	-1,161.12M	-4.0%	-45.8%
Cybersecurity	7,271.13M	-398.08M	444.21M	-7.8%	-36.7%
Decarbonisation	5.05M	0.62M	3.60M	12.6%	-16.0%
Digital Health	261.38M	-15.84M	-54.55M	8.6%	-27.7%
Digital Infrastructure	84.52M	-2.98M	26.76M	4.7%	-29.7%
Education	3.34M	-0.01M	-1.54M	20.9%	-18.4%
Equality, Inclusion & Diversity	665.97M	53.38M	226.24M	10.0%	-16.8%
Fintech & Digitalisation of Finance	1,566.04M	-150.74M	-563.95M	-3.4%	-50.5%
Gaming & Entertainment	715.74M	-15.55M	-391.88M	11.3%	-34.6%
Global Logistics	27.62M	-0.29M	16.20M	15.4%	-4.9%
HealthTech	2,927.50M	-161.49M	-523.16M	3.0%	-29.8%
Industry 4.0	175.82M	-8.16M	-79.75M	8.5%	-34.2%
Internet of Things	289.84M	-15.30M	-111.12M	17.4%	-25.3%
Metaverse	398.00M	-27.83M	-46.38M	1.9%	-44.0%
Millennials & Gen Z	210.72M	3.68M	-1.46M	3.9%	-40.9%
Natural Resources	17,409.21M	-160.23M	635.87M	8.2%	-13.0%
NextGen Communications	1,161.47M	-152.85M	-753.59M	5.1%	-33.7%
Platforms & Digital Markets	938.59M	-49.11M	-618.35M	0.6%	-41.8%
Polarisation	370.06M	58.58M	29.32M	10.2%	-8.8%
Rise of China Tech	6,555.52M	131.10M	1,644.74M	14.1%	-28.6%
Rise of EM Consumer	165.59M	-14.73M	-82.20M	2.3%	-16.1%
Rise of the Middle Class	2,734.16M	-331.29M	-1,127.95M	6.9%	-24.9%
Robotics & Automation	1,996.42M	-92.70M	-331.45M	9.6%	-36.5%
Semiconductors	13,803.67M	-237.57M	1,422.28M	1.8%	-43.3%
Smart Materials & Nano Tech	4.81M	-0.42M	-3.24M	12.5%	-30.7%
Social Media & Media	122.66M	-13.00M	-77.10M	11.6%	-42.3%
Space	330.45M	-8.55M	-87.75M	9.7%	-21.3%
Sustainable Cities	350.69M	2.47M	-39.55M	10.3%	-22.2%
Sustainable Energy Production	11,676.83M	-277.85M	-740.19M	0.3%	-22.8%
Sustainable Energy Storage	2,010.59M	-157.37M	-401.29M	1.2%	-25.9%
Sustainable Food	83.07M	1.41M	22.45M	6.7%	-28.1%
Sustainable Mobility	1,443.06M	-85.68M	-245.91M	-2.4%	-38.2%
Sustainable Resource Management	1,050.14M	-4.63M	-14.42M	11.4%	-20.0%
Wellness	1,038.48M	112.90M	404.35M	-3.9%	-50.5%

Source: WisdomTree, Morningstar, Bloomberg. All data as of 31<sup>st</sup> December 2022 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.

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## 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 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		DEMOGRAPHIC AND SOCIAL SHIFTS		GEOPOLITICAL SHIFTS		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
Rise of China Tech		Millennials & Gen Z	Equality, Inclusion & Diversity		Polarisation	Protect Biodiversity	Natural Resources
Blockchain	Cybersecurity		Rise of the Middle Class		Rise of Tension	Sustainable Mobility	
HealthTech	Digital Health		Rise of EM Consumer			Sustainable Energy Production	
Industry 4.0	Digital Infrastructure		Wellness			Sustainable Energy Storage	
Next Gen Communications	Fintech & Digitalisation of Finance					Sustainable Food	
Robotics & Automation	Gaming & Entertainment					Sustainable Cities	
Semiconductors	Internet of Things					Sustainable Resource Management	
Smart Materials & Nano Tech	Metaverse					Extreme Events	
Space	Platforms & Digital Markets						
	Social Media & Media						



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