

WisdomTree European thematic monthly update

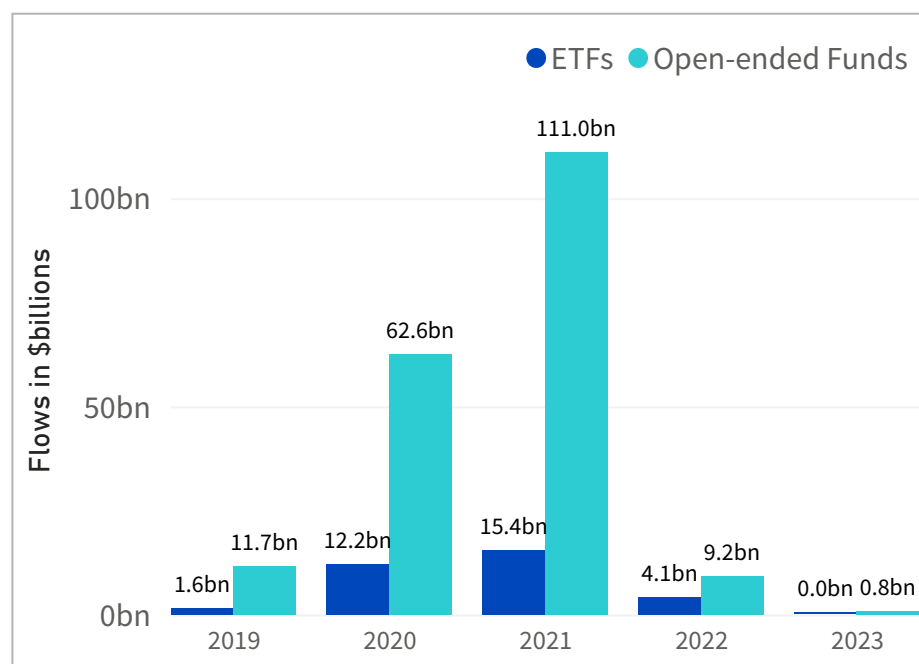
April 2023

Thematic universe overview

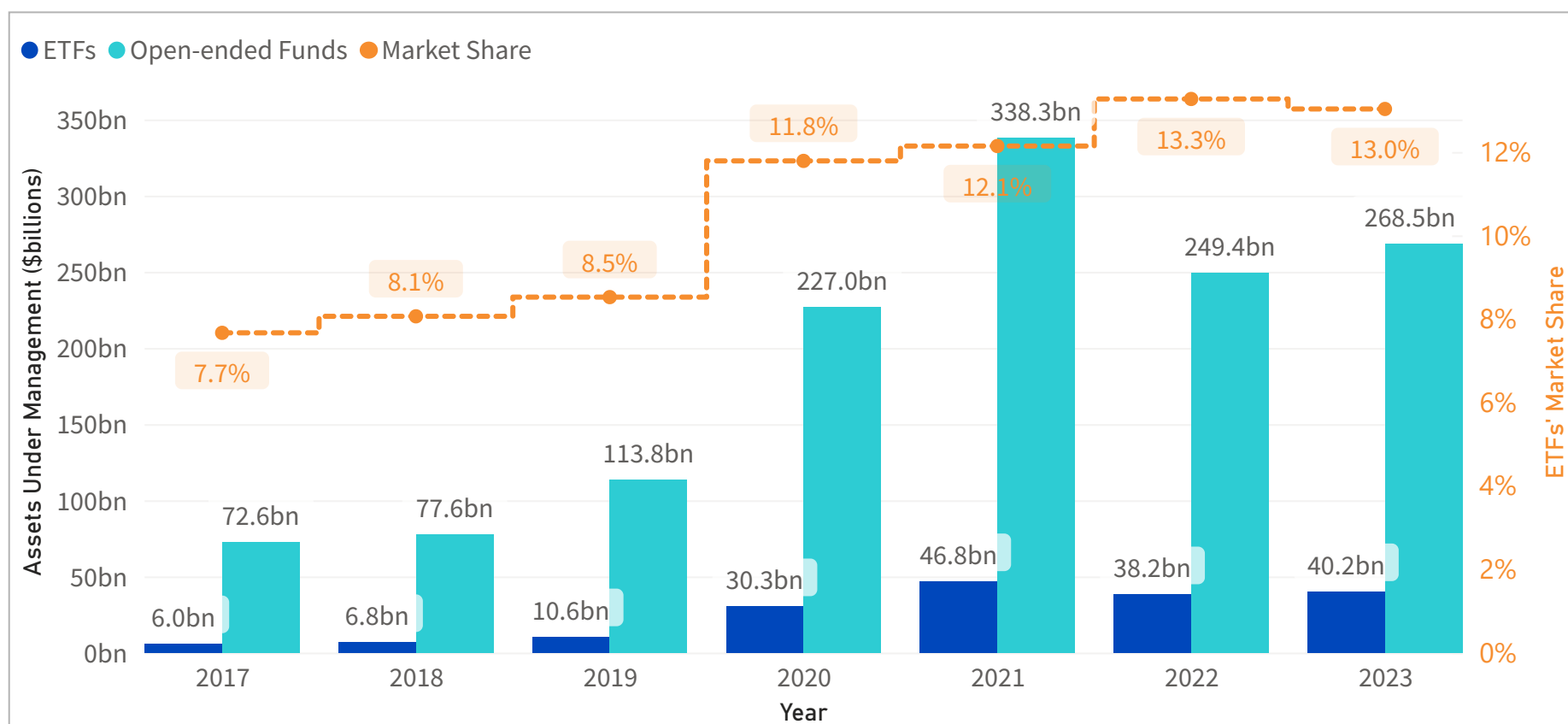
+ AUM in thematic Exchange Traded Funds (“ETFs”) and open-ended funds reduced slightly in April to \$309 billion. ETFs’ market share remains quite stable at 13%, with a total AUM of \$40.2 billion. With volatility remaining high, the performance across many themes turned slightly negative in April, leading to a decrease in overall assets under management on top of negative flow activity. AUM is up \$21.1 billion year-to-date but down \$4.5 billion in April.

+ Overall flows remain timid but positive in 2023, with \$0.8 billion across ETFs and open-ended funds. In April, \$949 million left European thematic strategies. In the US, the trend is similar with \$1.5 billion of outflows in US domiciled ETFs. Despite some rebound in performance and increased interest in themes like Artificial Intelligence, investors remain cautious in a highly uncertain and volatile market.

Recent yearly flows in Europe



Europe-domiciled thematic AUM evolution and ETFs’ market share



Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/04/2023 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.**

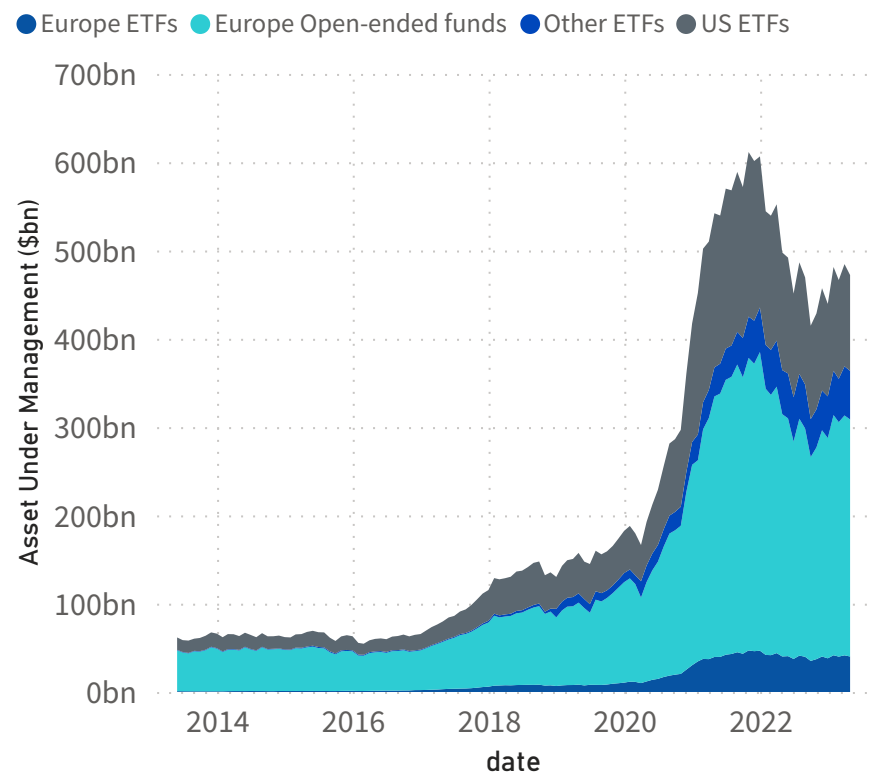
Thematic universe overview (continued)

+ Globally, AUM in thematic strategies decreased by \$12.4 billion in April to \$472 billion, but is still up \$32.6 billion compared to the end of last year. This increase was driven by performance of equities generally and growth equities specifically, in particular in Q1. AUM decrease in April is linked to the negative performance of themes over the month amid increased economic uncertainty. Year-to-date, ETFs in Asia have seen the largest increase in AUM, with a growth of 17%, followed by open-ended funds in Europe.

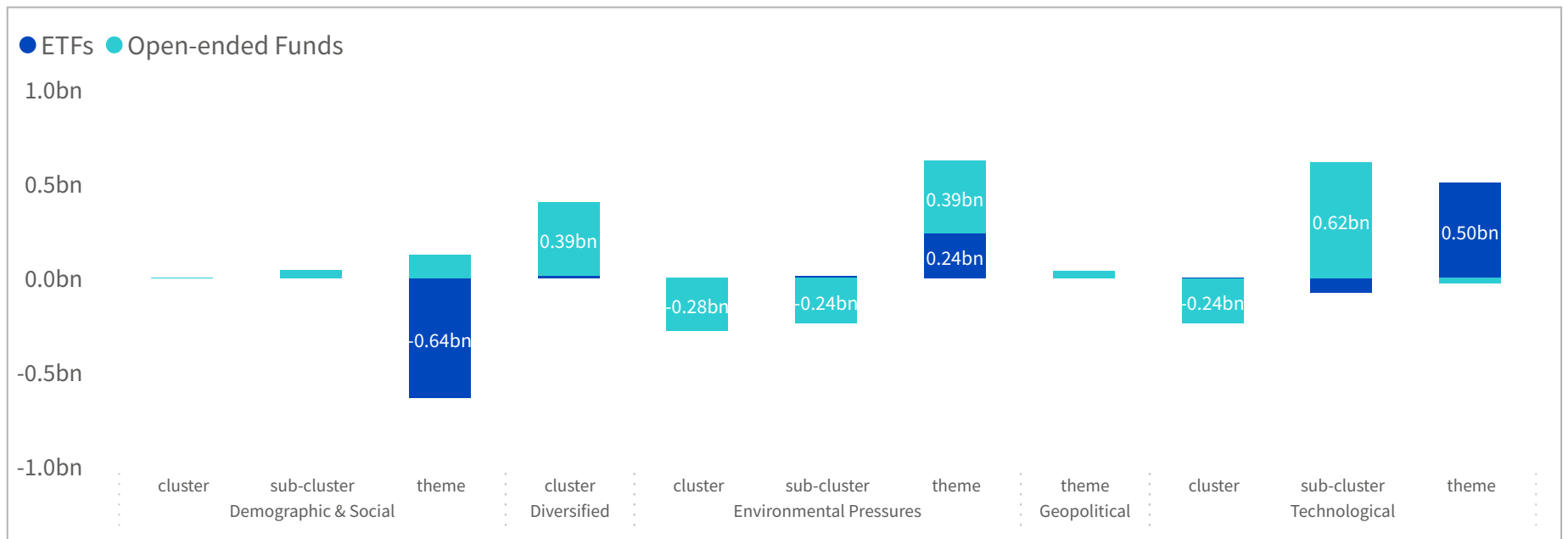
+ Year-to-date, European open-ended funds and ETFs have gathered the most flows in the "Technological Shifts" cluster, following markets' expectations of a Federal Reserve pivot. However, across theme-specific strategies, "Environmental Pressures" have gathered most flows. While most of the year-to-date flows are going into theme-focused strategies in both clusters, the sub-clusters "Disruptive Technologies" and "HyperConnectivity & Digitalisation" are seeing significant interest and have raised around \$300m in open-ended funds each.

+ In the "Demographic and Social Shifts" cluster, we observe that the "Equality, Inclusion & Diversity" theme suffered large outflows year-to-date, masking strong flows of \$905 million going into the "Rise of the Middle Class" theme.

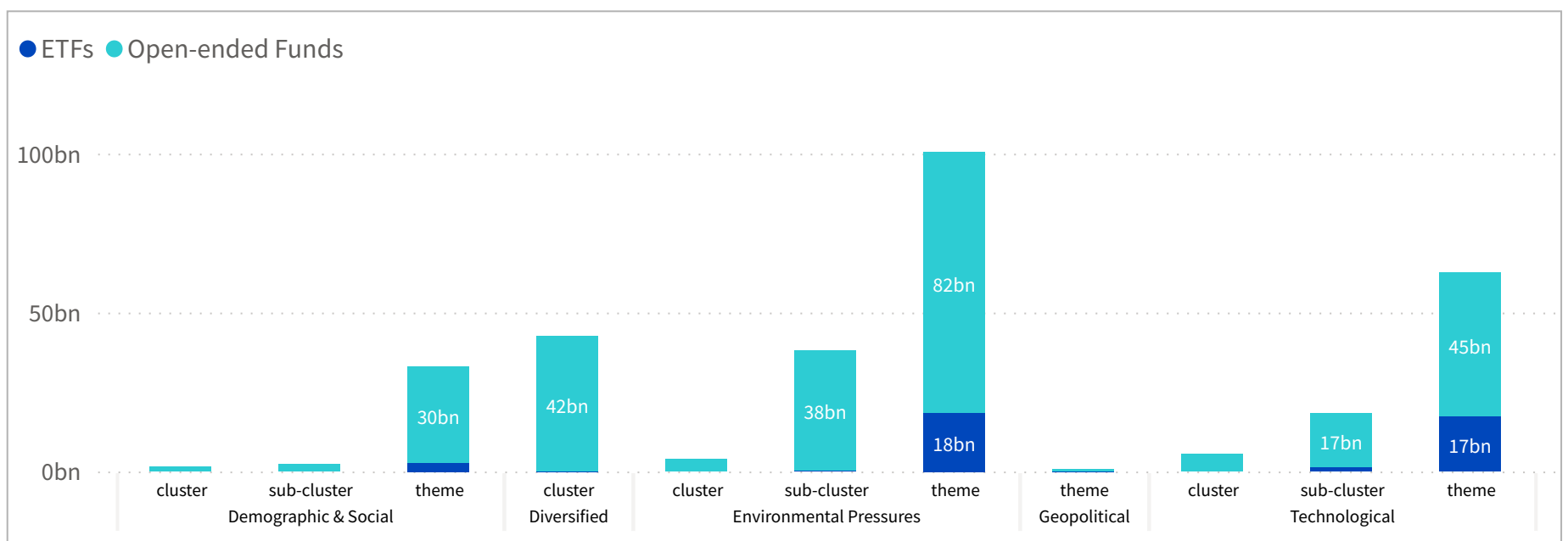
AuM in Thematics by region (Last 10Y)



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 30/04/2023 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.**

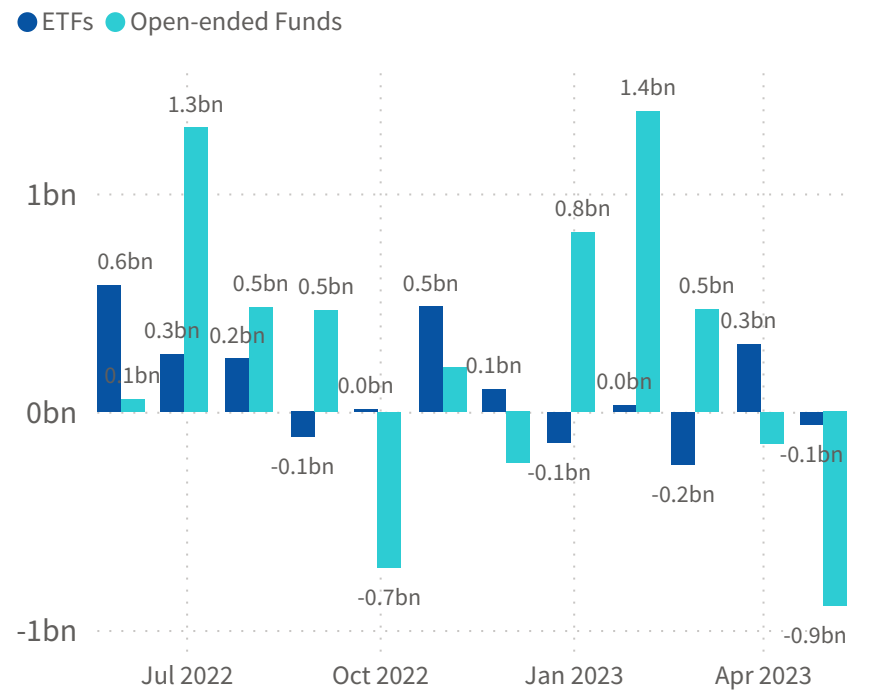
Thematic flows in Europe

+ Flows in April turned negative, with \$58 million outflows in ETFs and \$890 million outflows in open-ended funds. Overall, year-to-date, open-ended funds have gathered \$810 million vs. \$41 million raised by ETFs.

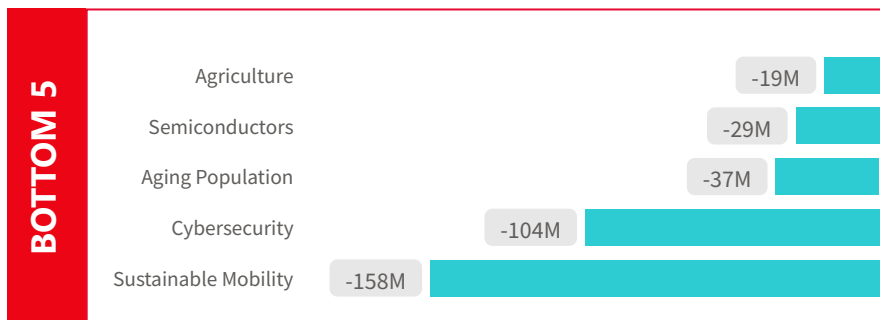
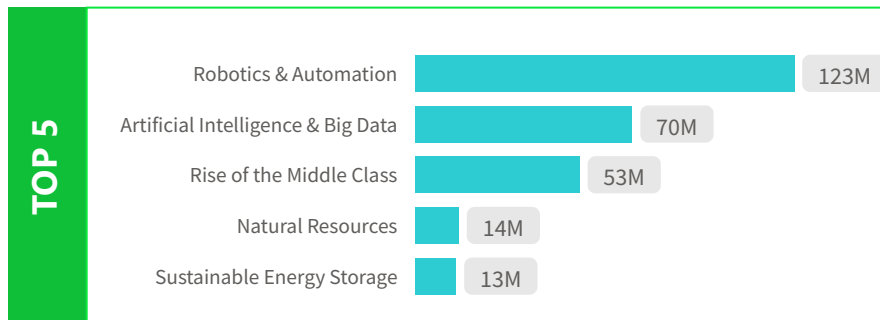
+ In April, outflows in open-ended funds were led by the "Technological Shifts". In contrast, in ETFs the continued interest around ChatGPT led to further inflows into "Artificial Intelligence & Big Data" and "Robotics & Automation", while "Environmental Pressures" cluster saw outflows led by "Sustainable Mobility". In open-ended funds, "Sustainable Energy Production" raised the most assets with \$243 million of inflows. Notably, "Rise of the Middle Class" was the only other theme that gathered at least \$100 million in April across both wrappers.

+ Year-to-date, "Sustainable Energy Production" continues to be the top gathering theme with \$1.1 billion of inflows. "Rise of the Middle Class" is just behind with \$905 million followed by "HealthTech" and "AI & Big Data". On the outflows side, "Equality, Inclusion & Diversity" is by far leading with -\$1.2 billion of net flows, followed by "Aging Population" with -\$413 million.

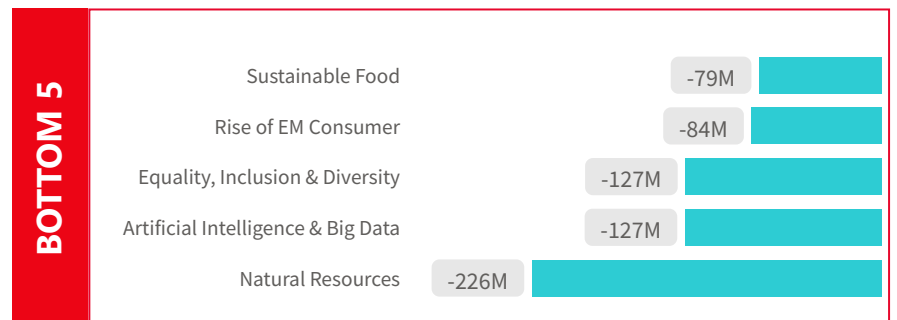
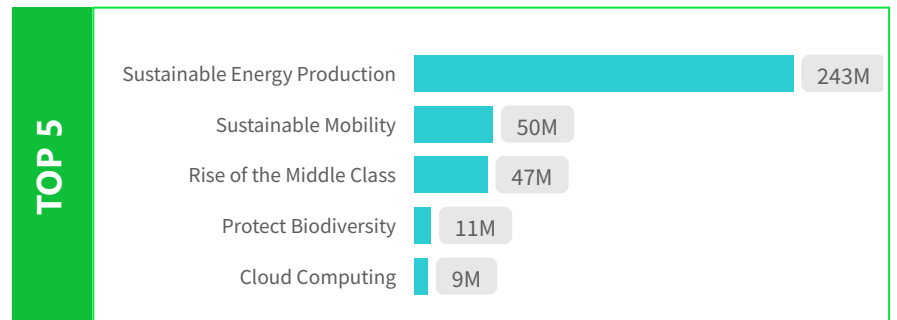
Month-on-month thematic flows



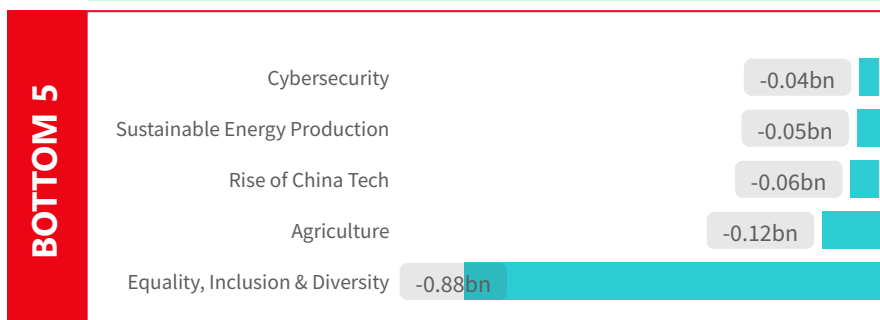
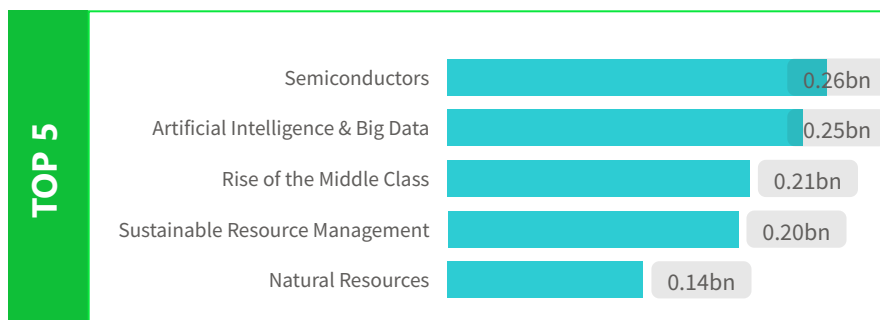
April Top/Bottom flows in Europe ETFs



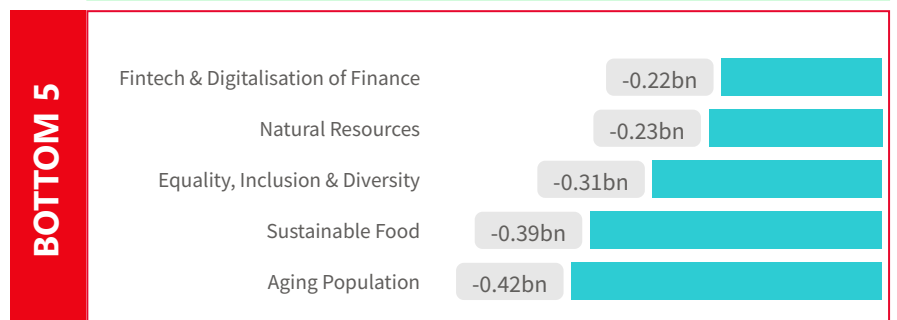
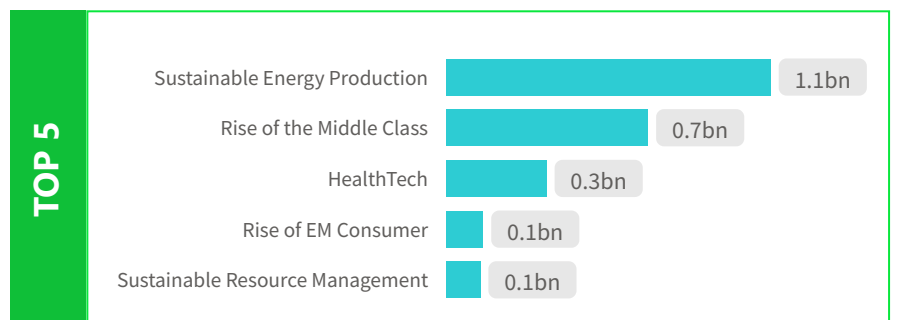
April Top/Bottom flows in Mutual Funds



YTD Top/Bottom flows in Europe ETFs



YTD Top/Bottom flows in Mutual Funds



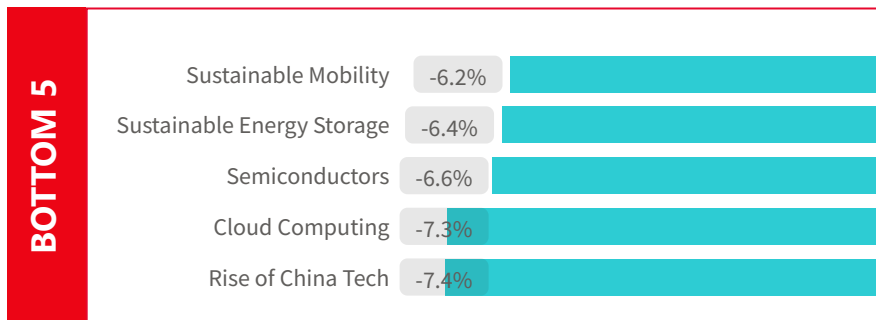
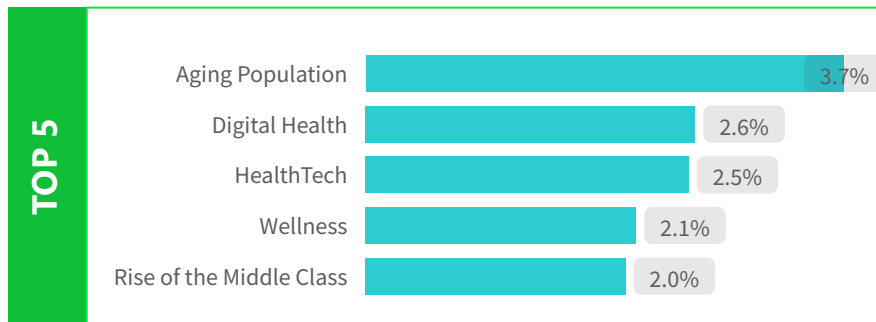
Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/04/2023 and based on WisdomTree's internal classification of thematic funds. Performance is based on monthly returns from Bloomberg and Morningstar. More information on the WisdomTree Thematic classification can be found in the Appendix. **Historical performance is not an indication of future performance, and any investments may go down in value.**

Thematic performance and launches in Europe

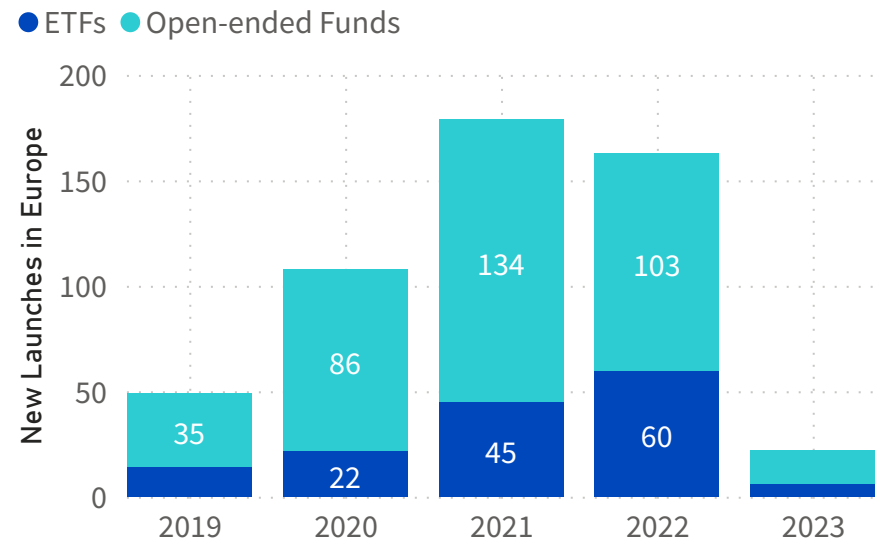
+ Year-to-date, technology-focused thematic strategies are leading the pack, with "Semiconductors" and "Blockchain" posting the biggest gains across the themes. "Metaverse" also benefitted from the news frenzy unleashed by ChatGPT as well as the expectations of a Federal Reserve pivot. "Rise of the Middle Class" and "Millennials & Gen Z" have also performed strongly, with 14% year to date. Overall, all but 2 themes posted positive returns with "Rise of the EM Consumer" and "Rise of China Tech" being the only laggards.

+ The top 5 best-performing themes changed in April vs. March with the "Demographic and Social Shifts" themes claiming 3 out of 5 spots. Notably, health-related themes were a standout in comparison to their poor performance in Q1. The bottom 5 themes by performance had a mix of tech themes hurt by increasing economic uncertainty as well as green themes. China tech was the worst performing theme in April potentially on the back of investors' cautiousness amidst the country's worsening relations with the United States.

Top 5/Bottom 5 by performance in April

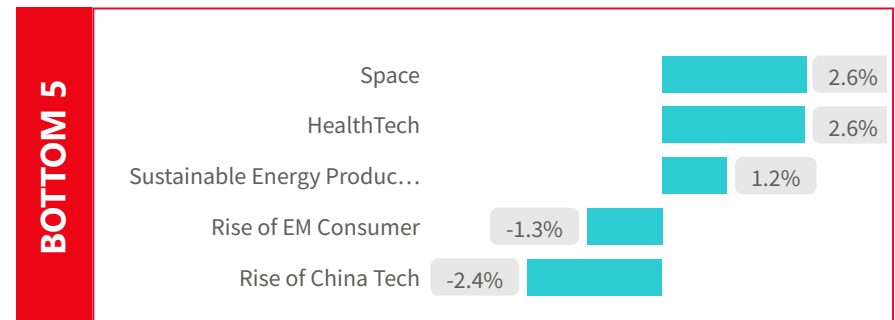
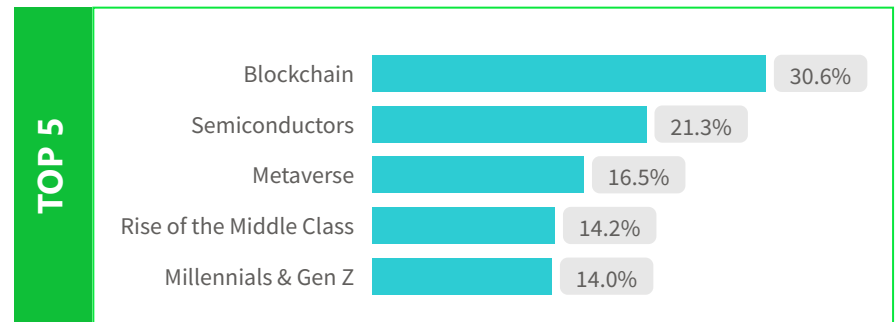


Yearly thematic launches in Europe*

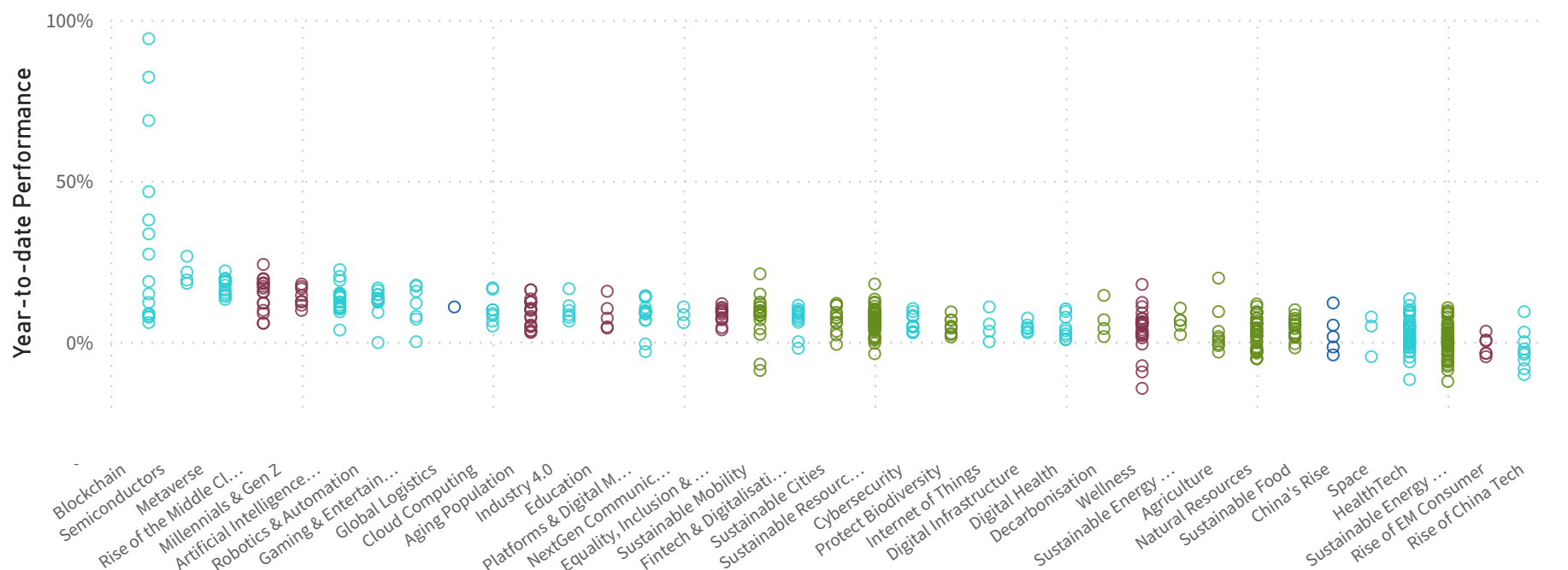


* New launches are updated quarterly

Top 5/Bottom 5 by YTD performance

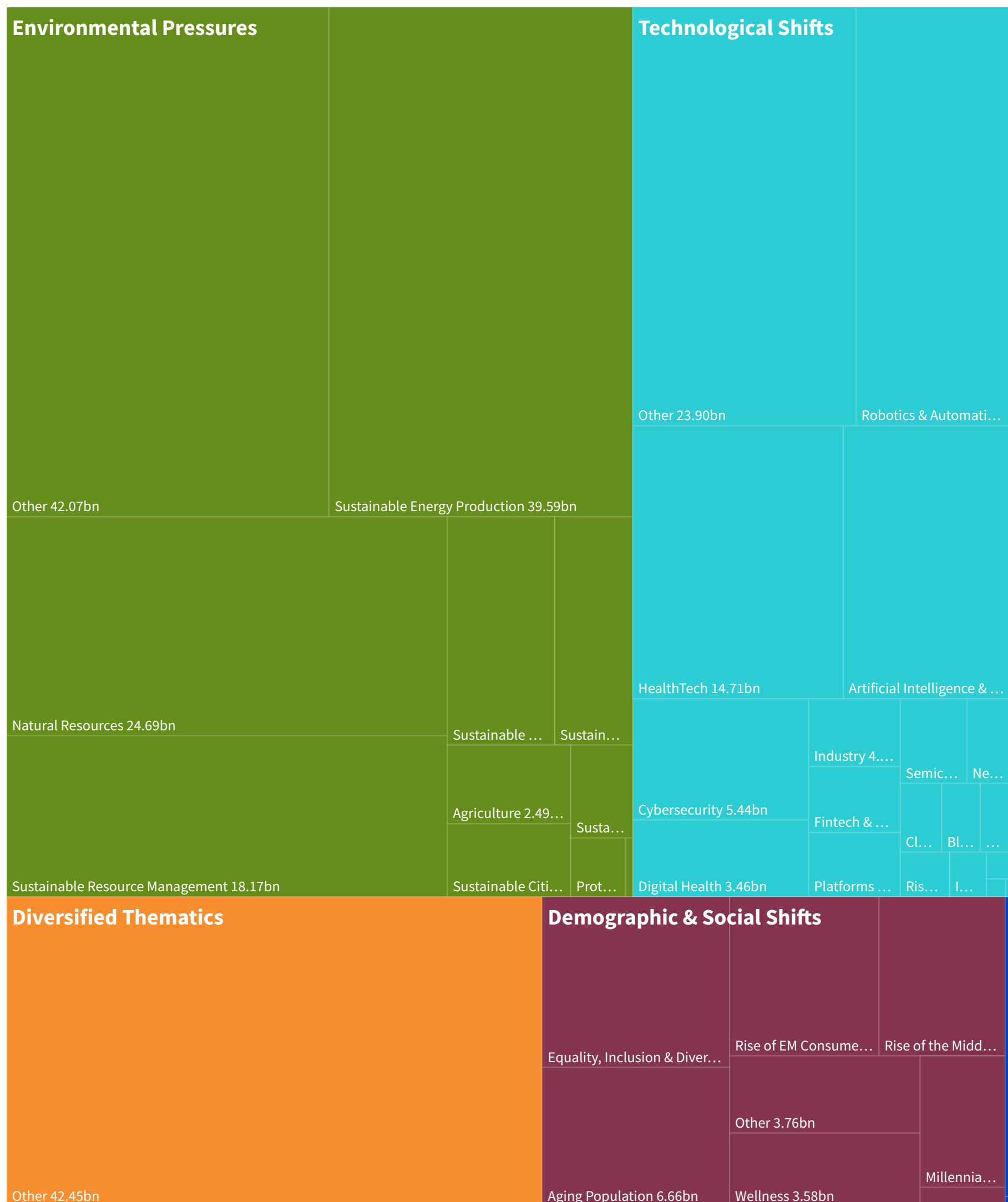


Dispersion of YTD performance of all ETFs and mutual funds by themes in Europe



Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/04/2023 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)



Source: WisdomTree, Morningstar, Bloomberg. All data as of [30/04/2023](#) 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 | | 5,614.81M | -171.75M | -238.48M |
| Technological Shifts | Disruptive Technologies | 12,610.43M | -39.48M | 321.40M |
| Technological Shifts | HyperConnectivity & Digitalisation | 5,677.86M | -11.41M | 214.78M |
| Environmental Pressures | | 3,868.54M | -64.82M | -280.66M |
| Environmental Pressures | Climate Change & Sustainability | 38,191.55M | -70.90M | -231.75M |
| Environmental Pressures | Limited Resources | 11.54M | -0.03M | -1.04M |
| Diversified Thematics | | 42,452.74M | 66.01M | 401.08M |
| Demographic & Social Shifts | | 1,478.62M | 17.47M | 4.09M |
| Demographic & Social Shifts | Demographic Shifts | 2,253.96M | 2.79M | 41.89M |
| Demographic & Social Shifts | Social Shifts | 27.12M | -0.08M | -0.34M |

Appendix - Theme focused ETFs and Open-ended funds

| Theme Name | AuM (\$) | Flows Last Month (\$) | Flows YTD (\$) | Performance Last Month | Performance YTD |
|-------------------------------------|------------|-----------------------|----------------|------------------------|-----------------|
| Aging Population | 6,662.02M | -34.81M | -412.58M | 3.7% | 8.9% |
| Agriculture | 2,485.19M | -81.49M | -333.61M | 1.0% | 3.2% |
| Artificial Intelligence & Big Data | 11,810.85M | -57.20M | 332.52M | -3.6% | 13.4% |
| Blockchain | 678.81M | -0.39M | 10.58M | 1.3% | 30.6% |
| China's Rise | 558.61M | 0.52M | 36.43M | -2.6% | 2.6% |
| Cloud Computing | 729.32M | 12.52M | 32.90M | -7.3% | 10.2% |
| Cybersecurity | 5,443.74M | -145.07M | -88.66M | -5.8% | 5.9% |
| Decarbonisation | 109.36M | -0.20M | 2.28M | -2.0% | 4.5% |
| Digital Health | 3,456.79M | -24.91M | -154.91M | 2.6% | 4.6% |
| Digital Infrastructure | 86.01M | -12.96M | -42.83M | 0.2% | 4.6% |
| Education | 415.67M | -10.10M | -35.02M | 0.2% | 8.5% |
| Equality, Inclusion & Diversity | 8,176.38M | -125.76M | -1,190.33M | 1.6% | 8.3% |
| Fintech & Digitalisation of Finance | 1,546.93M | -37.43M | -218.11M | 0.5% | 7.7% |
| Gaming & Entertainment | 567.36M | 1.37M | -6.82M | -1.1% | 10.9% |
| Global Logistics | 18.55M | 0.52M | 1.57M | 0.7% | 10.8% |
| HealthTech | 14,705.98M | -24.86M | 357.97M | 2.5% | 2.6% |
| Industry 4.0 | 1,589.27M | 7.76M | 40.44M | -2.8% | 8.5% |
| Internet of Things | 420.81M | 6.81M | 63.50M | -2.5% | 5.0% |
| Metaverse | 178.08M | 3.54M | 29.68M | -2.2% | 16.5% |
| Millennials & Gen Z | 2,862.89M | -16.14M | -45.20M | 1.6% | 14.0% |
| Natural Resources | 24,685.25M | -212.29M | -97.99M | 0.4% | 3.2% |
| NextGen Communications | 986.10M | -11.61M | -91.73M | -4.5% | 8.4% |
| Platforms & Digital Markets | 1,505.43M | -2.72M | -17.49M | -2.4% | 8.4% |
| Protect Biodiversity | 824.81M | 10.73M | 39.30M | 0.3% | 5.2% |
| Rise of China Tech | 563.80M | 0.00M | 1.55M | -7.4% | -2.4% |
| Rise of EM Consumer | 6,080.41M | -78.23M | 151.70M | -3.7% | -1.3% |
| Rise of the Middle Class | 5,134.46M | 99.98M | 904.73M | 2.0% | 14.2% |
| Robotics & Automation | 16,770.97M | 78.42M | -40.61M | -3.7% | 12.9% |
| Semiconductors | 1,439.25M | -29.49M | 263.51M | -6.6% | 21.3% |
| Space | 31.50M | 0.29M | 2.47M | -2.6% | 2.6% |
| Sustainable Cities | 2,306.27M | -34.74M | -32.50M | 0.3% | 7.0% |
| Sustainable Energy Production | 39,590.19M | 244.31M | 1,069.32M | -3.8% | 1.2% |
| Sustainable Energy Storage | 1,473.98M | 13.99M | 11.73M | -6.4% | 3.5% |
| Sustainable Food | 6,267.23M | -80.06M | -401.85M | 0.6% | 2.6% |
| Sustainable Mobility | 4,561.52M | -107.78M | 45.92M | -6.2% | 7.8% |
| Sustainable Resource Management | 18,170.71M | -13.74M | 319.54M | -0.3% | 6.6% |
| Wellness | 3,579.26M | -15.12M | 113.02M | 2.1% | 3.7% |

Source: WisdomTree, Morningstar, Bloomberg. All data as of 30/04/2023 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 | | 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 | | | | | | |

Source: WisdomTree, as of 31/12/2022

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