

GLOBAL LONG-TERM UNCONSTRAINED



MAY 2024

For Professional and wholesale investors only

SEISMIC THEMATIC SHIFTS BRINGING OPPORTUNITIES AND DISRUPTIONS

Eight medium-term thematic opportunities catching three
seismic shifts



In the below report, we highlight three seismic shifts that capture eight medium-term thematic opportunities. We believe these can offer attractive investment returns, as part of our mega-trends assessment, and proprietary thematic analytical framework.



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Lead Senior Portfolio Manager

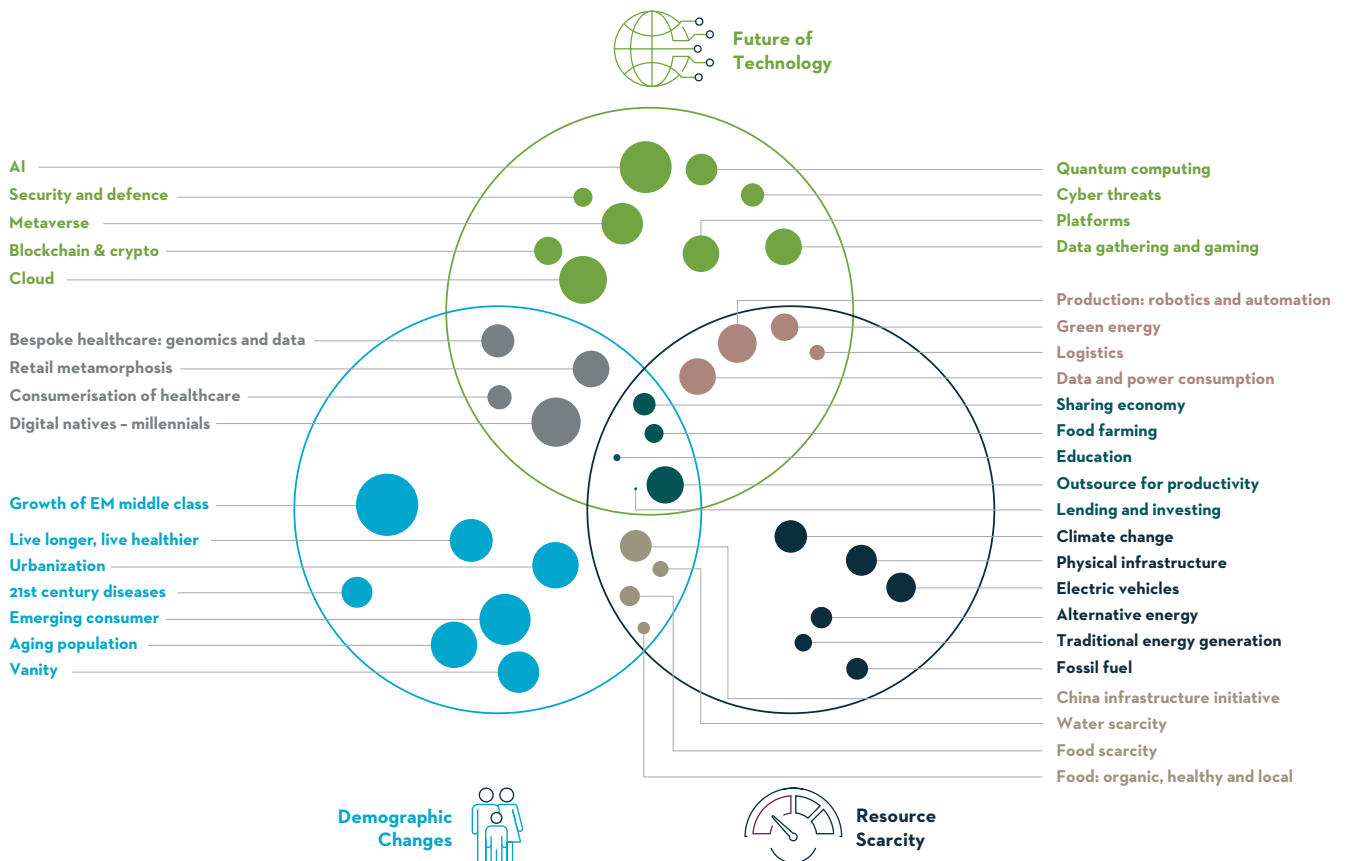
We believe these shifts will continue to shape economic and market trends, and will provide the structural tailwinds to both important thematic areas, and to the companies that are well positioned within them.

They capture three important areas of long-term structural growth, which are experiencing seismic shifts and are fuelled by substantial investment needs. These are the broad themes related to Energy Transition, Ageing Population and Artificial Intelligence (AI). Our strategies have significant exposure to these themes, which are comprised within three multi-decade long mega-trends of **Demographic Changes**, **Future of Technology** and **Resource Scarcity**.

Three mega-trends capturing all potential business and economic exposures

Our well-established thematic framework, highlights three mega-trends: **Demographic Changes**, **Future of Technology**, and **Resource Scarcity**, which capture all potential business and economic exposures.

The trends will be present across economies and will affect businesses on a multiple decade horizon basis. They also have overlapping exposures to each other, with a confluent area where Demographic Changes influence Resource Scarcity. These feed into areas of Future of Technology that help harness the opportunities, but also tackle the challenges brought by some dynamics within them.

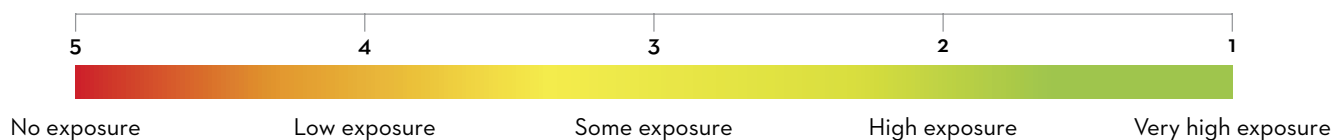


Source: Martin Currie and FactSet as at 31 March 2024. Data presented is for the Martin Currie Global Long-Term Unconstrained representative account.

Thematic opportunities within each of the three mega-trends

Various themes are present within each of these mega-trends with some themes belonging to more than one megatrend appearing in some of the areas of intersections.

This analysis is based on a qualitative assessment on each of the stocks held in our strategies exposure to the themes, which we rate from 1-5.



We use this analysis in three ways:



To assess more accurately how much exposure our strategies have to each of the mega-trends, and to each theme we list. These can be seen clearly through the size of the circles that each theme is attached to.



To efficiently manage diversification through our strategies, given that the analysis gives us a more precise assessment of all themes running through them. The reader can easily see visually that we have a well-diversified strategy across the three mega-trends.



To point our research pipeline direction towards any of the themes - whether it is a theme that we have low exposure to, and want to assess whether there are valuation opportunities to increase exposure, or whether it is a theme that we have not assessed previously, which would be quite apparent through this analytical framework.

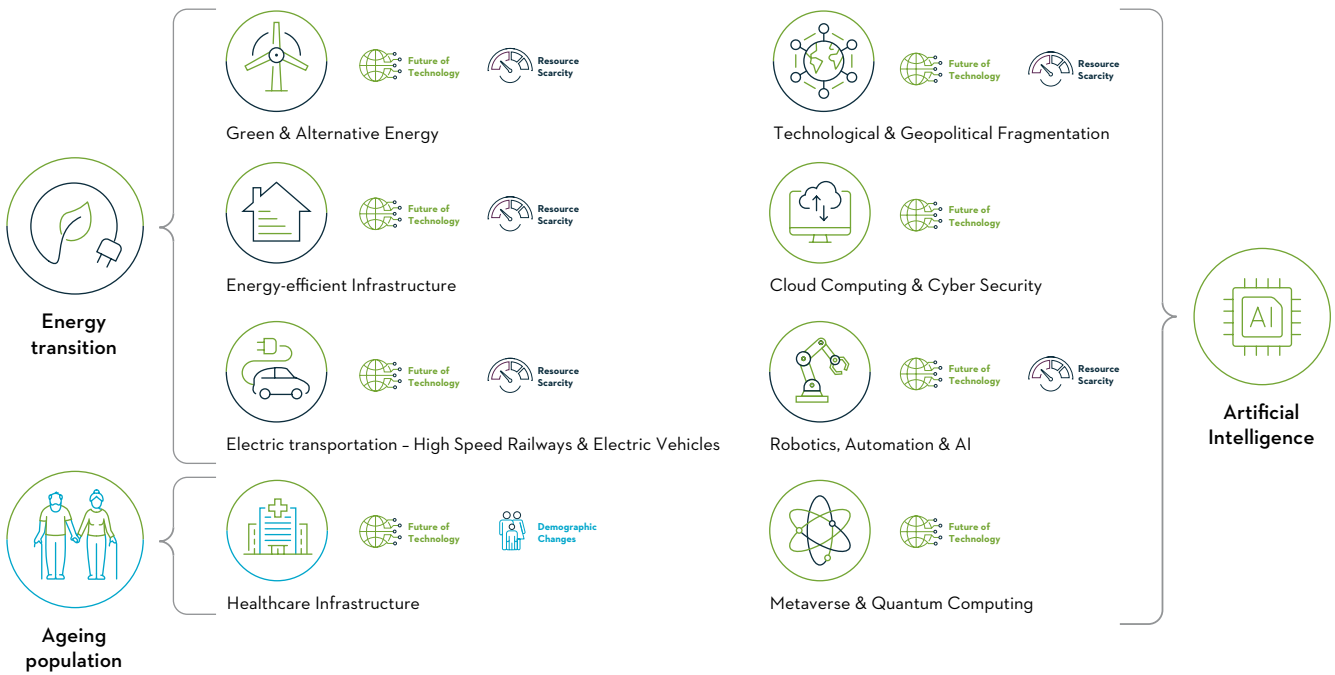
Importantly, this framework permits us to put our strategies, and therefore our clients' exposures, onto themes that have supportive long term structural growth opportunities.

As part of that, valuation discipline remains paramount, and is a sempiternal focus for us. Themes can at times be overinflated by speculative top-down pressures, leading to bubbles, hence the importance of valuation discipline. In other words, as a result of our consistent and disciplined valuation approach, we do not invest in attractive themes, but rather invest in attractive themes that are attractively priced. We have detailed our disciplined valuation approach [here](#).

“ This framework permits us to put our strategies, and therefore our clients' exposures, onto themes that have supportive long term structural growth opportunities. ”

Three seismic shifts capturing our eight medium-term thematic opportunities

We have been highlighting for the past five years eight medium-term thematic opportunities of particular interest to us, as long-term investors. Which we group into three seismic shifts that are likely to continue to shape economies, businesses and markets over the next decade and beyond, these are (1) Energy Transition, (2) Ageing Population, and (3) Artificial Intelligence.



Energy transition

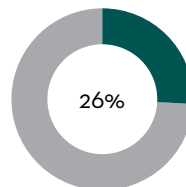
Energy transition captures three themes: (1) green and alternative energy, (2) energy efficient infrastructure, and (3) electric transportation.

With most countries focusing on decarbonisation, the need to increase infrastructure spending in related areas is significant. For example, proportion of green energy sources has to shift from c.25% to over 90%, solar photovoltaic capacity has to more than triple, and wind energy capacity has to more than double.

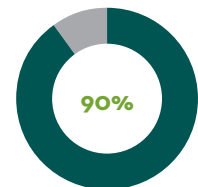
The investment increase to reach 1.5°C is colossal



2018 - 2021



2050



Investments needed in:

Renewable energy	0.3 US\$ trillion/year	1.0 US\$ trillion/year
Energy efficiency	0.3 US\$ trillion/year	1.5 US\$ trillion/year
Electric vehicle charging infrastructure	2.0 US\$ billion/year	131 US\$ billion/year

Source: Statista and IRENA, World Energy Transitions Outlook 2022. March 2022.

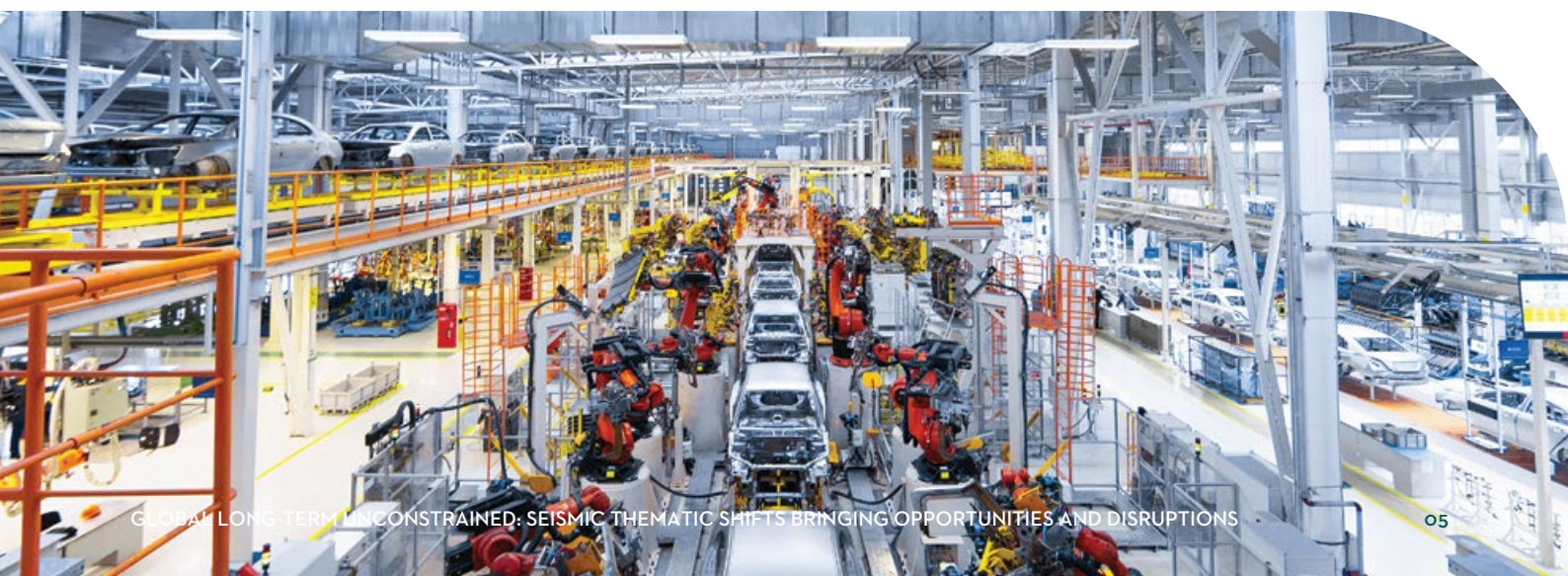
All of these highlight the significant increase in infrastructure investing needed to tackle climate change, and to deliver on the net zero target. For long term investors, it means that these significant increases in investment requirements bring major structural tailwinds and opportunities for those that gain exposure to these trends. Harnessing that thematic opportunity for us means being invested in companies such as:

Company	Industry	Opportunities
 Atlas Copco	Industrial Equipment	Production of air compressors, known as the 'fifth utility' are critical in powering certain industries, which will allow it to maintain a high market share and a pricing premium.
 Hexagon	Industrial Automation	Robotics and automation solutions can help minimise resource usage to improve sustainability and reduce carbon footprints.
 Kingspan	Building Materials	Leader in panel insulation globally is well positioned to harness the trends towards more building insulation, given the extent of carbon emissions by buildings (over 20% of carbon emissions globally are generated by buildings, related to the need to heat them in winter months, and cool them in summer months). Offering software to increase efficiency of building and infrastructure projects. Well, positioned to benefit from big construction projects, with increasingly more stringent regulation requiring the use of software for project management, which avoids overruns, which are both costly financially and in terms of carbon footprint.
 Nemetschek	Application Software	As per Nemetschek, this US firm offers software to increase efficiency of building and infrastructure projects. Autodesk offers a comprehensive range of design software on a single, unified platform.
 Autodesk	Application Software	

All in all, we have c.20% of our strategies exposed to the Energy Transition opportunity.*

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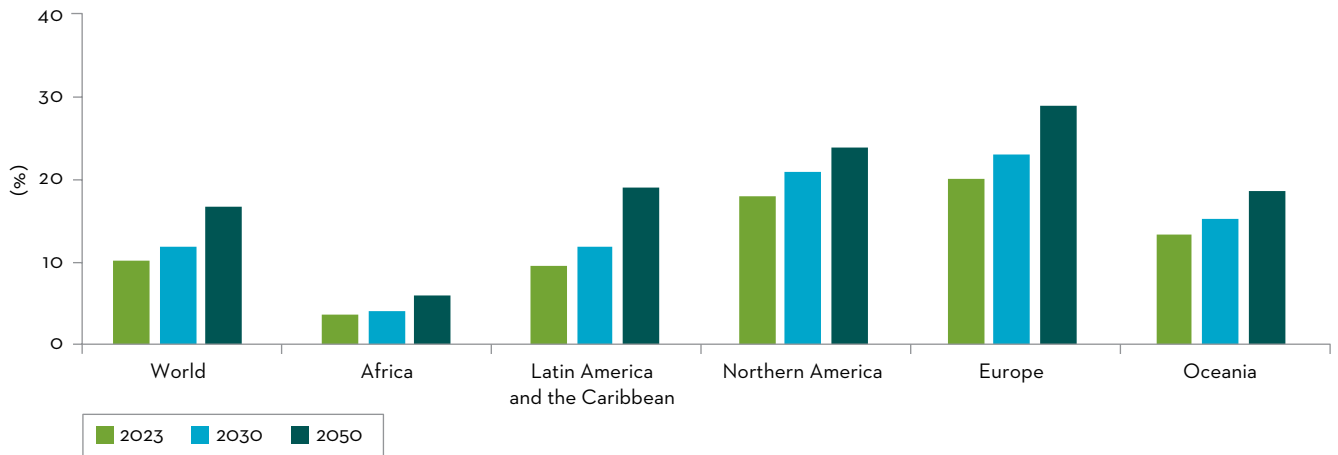
*Representative Martin Currie European, International and Global strategies shown.



Ageing population

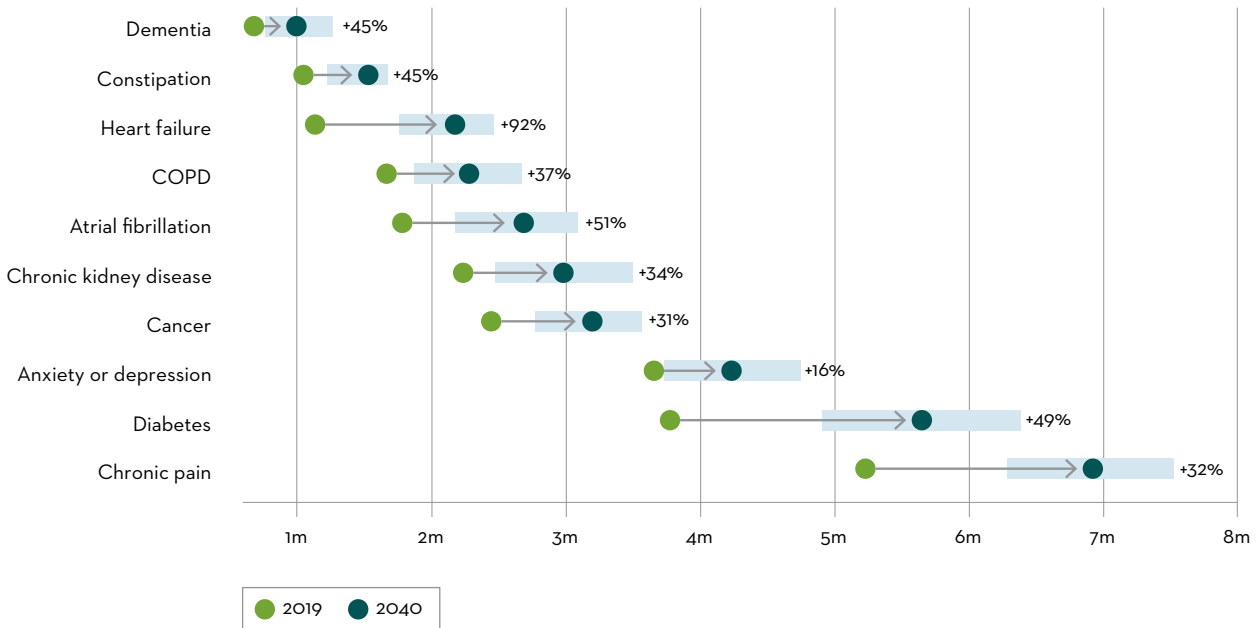
The ageing population trend globally is an important and structural phenomenon. By 2050, 16% of the world population will be over the age of 65.

Population over 65 (%) across regions



Source: UN DESA as at July 2022.

A trend towards an ageing population leads to an increased incidence of diseases. One of the themes that this fuels is what we have labelled the 21st Century diseases, which are Diabetes, Obesity and Cancers. These are to some extent co-morbidities, related to either lifestyle and/or simple ageing.





Note: blue shaded bars represent uncertainty intervals. COPD is chronic obstructive pulmonary disease.

Source: Analysis of linked health care records and mortality data conducted by the REAL Centre and the University of Liverpool.

“ The ageing population trend globally is an important and structural phenomenon. By 2050, 16% of the world population will be over the age of 65. ”

Such rapid rise in disease incidence requires an increase in healthcare infrastructure in general, which we define in the broad sense of the term, i.e. comprising both physical healthcare infrastructure, such as hospitals, but also more investment in drug development and production, as well as more demand for medical technology in general.

Company	Industry	Opportunities
 Sartorius Stedim	Life Science & Diagnostics	Benefits from the growing trend towards outsourcing by pharmaceutical companies of their drug development and production, is therefore very well placed.
 Mettler-Toledo	Life Science & Diagnostics	Provides precision instruments for clinical labs, stands to benefit from the growing need for more healthcare infrastructure.
 Illumina	Life Science & Diagnostics	Leader in provision of products and services that serve the genome sequencing, genotyping and gene expression markets for genomic research centers, pharmaceuticals companies, academic institutions and biotech companies. Stands to benefit from the increase in targeted therapies, and the drug development trends.
 Oxford Nanopore	Life Science & Diagnostics	Leader in the liquid biopsy market segment, providing technologies that are used in DNA sequencing, diagnostics, drug development, biomolecular interaction, ion channel screening. Stands to benefit from the increase in targeted therapies, and drug development trends.
 Dassault Systèmes	Application Software	Exposure to healthcare through its acquisition of Medidata means it is well positioned in the space of software targeted to the healthcare industry, to tackle efficiency improvements in hospitals.
 Veeva Systems	Healthcare Technology	Cloud-based software provider tackling efficiency improvements in hospitals.

All in all, we have c.19% of our strategies exposed to the theme of ageing population, and the growing need for healthcare infrastructure related to that*

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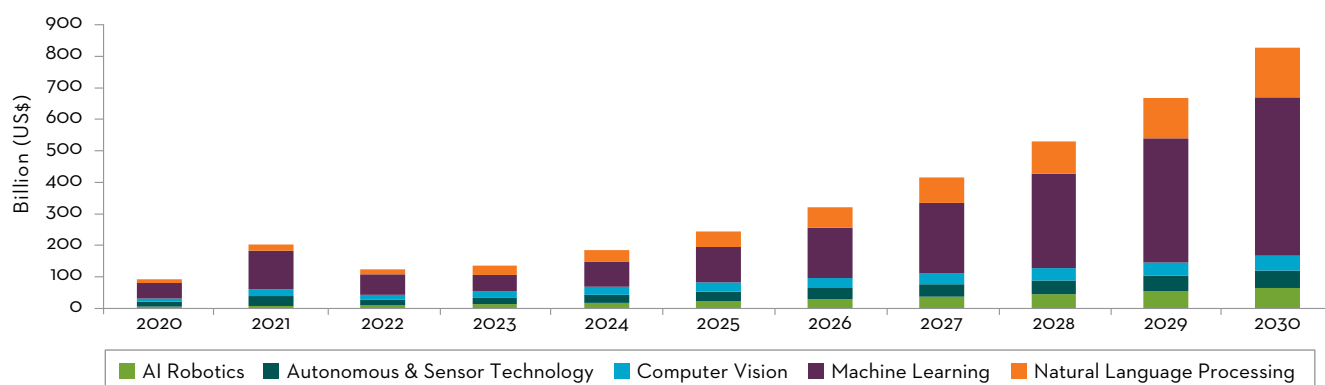
*Representative Martin Currie European, International and Global strategies shown.

Artificial Intelligence

AI has become a major focal point for investors, since the emergence of the ChatGPT app in early 2023, which reached 100m users faster than any other apps from launch. We believe that it is a seismic shift for all areas of the economy with a lot of potential areas of disruption fuelled by rapid innovation. This is an important strategic and regulatory angle that needs to also be taken into consideration.

AI as a broad theme captures four of our medium-term thematic opportunities, flagged above: (1) technological and geopolitical fragmentation, (2) cloud computing and cyber security, (3) robotics, automation and AI, and (4) metaverse and quantum computing. Each of these themes is likely to see an acceleration in structural growth trend, with the advent of AI.

Projected market size of Robotics & Automation from 2023-2030 US\$ billion



Source: Statista as at March 2024.

Technological and geopolitical fragmentation

The rising tensions between China and US, Europe, Taiwan are leading to a trend towards technological fragmentation and geopolitical fragmentation. Technologically, the US, Japan, and Europe are taking steps to reduce their dependence on the Taiwanese semiconductor production sites (accounting for >90% of leading edge semiconductors production), by subsidising plants to be built on their own soil. This is leading to diseconomies of scale within the industry, even if the plants are heavily subsidised.

This should in our view benefit companies like ASML, who will be shifting semiconductor manufacturing tools to multiple sites, once they come on stream. Against that, we believe that TSMC, who is building the various leading edge plants across the different geographies, will be operating a more complex production flow, with potential diseconomies of scale, even if the new plants are heavily subsidised.

The technological and geopolitical fragmentation is further amplified by the US taking steps to stop China from accessing leading edge semiconductor technology, leading to China needing to develop its own industry on its own soil - an endeavour that will likely take more than a decade to do so, but that will further exacerbate the fragmentation.

Cloud computing and cyber security

Structural growth trend in cloud computing is likely to accelerate, as companies continue to migrate more of their presence online. As a result, the need for increased spend on cyber security is critical. AI is further accelerating the cloud trend, as providers are racing each other to upgrade their infrastructure, to make it AI-ready, with rapid investment in faster computing power, i.e. GPUs, from which Nvidia is benefiting significantly.

Robotics, Automation and AI

Robotics and automation have been trends that have already been facing an attractive structural growth. That trend has been accelerating post-pandemic, as more companies have been shifting their production lines on-shore or near-shore, leading to an increase in investment in robotics and automation, to tackle the higher wage costs. AI, as an extension of automation, is further boosting that structural growth trend in our view, and likely to continue to do so going forward. We believe that robotics and automation trends will also need to accelerate as a result of an ageing population trend, with a lower number of working age population ultimately requiring more robotics and more automation of production bases.







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Metaverse and quantum computing

Metaverse and quantum computing are nascent trends, but are rapidly growing, given the sizeable amount of investment by some of the big tech companies. There is an AI dimension related to this, as AI is both likely to facilitate further progress in both metaverse and quantum, and is likely to also be boosted by quantum computing (quantum computing is likely to lead to a significant acceleration in breakthroughs, which will be easier to be harness with the advent in AI, whilst at the same time, AI will benefit from this acceleration in breakthroughs in our view.

These four themes related to AI are important for investors, as they are likely to see accelerating trends. The geopolitical dimension of AI is also bringing an important risk to investors, that will need to be taken into consideration in our view, and will certainly need constant monitoring.

Our strategies have significant exposure to the AI broad theme that we describe above, through companies such as Nvidia, ASML, BE Semiconductors, Cadence Designs, Microsoft, Atlas Copco, Infineon Technologies. Our European, International and Global strategies have between 24-29%* exposure to the AI theme through various combinations and weights in these companies.

Company	Industry	Opportunities
 Nvidia	Semiconductors	Nvidia enjoys a dominant position in the AI ecosystem. Continuous innovation and rapid increase in the performance of its Graphic Processing Units (GPUs) over the last decade have led to significant advancement in AI.
 ASML	Semiconductor Manufacturing	At the leading edge of producing semiconductor manufacturing equipment. ASML is enabling the production of faster, more advanced chips and benefiting from the 'on-shoring' of semiconductor manufacturing.
 BE Semiconductors	Semiconductor Manufacturing	Produces integrated semiconductor assembly equipment, and designs, develops, manufactures and services machines that manufacture semiconductor packages, which provide the connection between microchips and other electronic components. Stands to benefit from the ongoing drive towards more miniaturisation, with its hybrid bonding technology.
 Microsoft	Software	A key player in IT infrastructure and Enterprise Software, Microsoft is also leader in developing Generative AI models (through its stake in Open AI).
 Atlas Copco	Industrial Equipment	The air compressor and vacuum manufacturer is using AI to utilise 'smart manufacturing. Its vacuum technology is also used in clean rooms in semiconductors manufacturing. Increasing connectivity in the production process to improve efficiency and reduce costs.
 Cadence	Application Software	As computation simulation software firm, AI can deliver a secular shift in productivity and design capabilities, and is exposed to microchip design.

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*Representative Martin Currie European, International and Global strategies shown.

An ever more disruptive decade continues to affirm itself through the seismic shift that AI is likely to bring

All in all, we believe that an ever more disruptive decade is continuing to affirm itself, with the seismic shift that AI brings likely further acceleration innovation, and therefore disruption risk for some companies, but also bringing opportunities for companies that can harness it appropriately, monetise it, and that can stay at the forefront of their industries.



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- Smaller companies may be riskier and their shares may be less liquid than larger companies, meaning that their share price may be more volatile.
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