BARNETT WADDINGHAM
beyond the expected

Megatrends

Using long-term trends to build a sustainable portfolio

Introduction

Megatrends are long-term trends that we expect to drive the trajectory of the global economy over the next few decades. Many investors are, by necessity, focused on short-term information, but those wishing to be long-term investors need to be aware of these megatrends, as they may allow you to benefit from opportunities that those with only a short-term focus may miss.

In 2021 we produced a note that covered the five megatrends that we expected to impact every investor's portfolio. In the years since, our thinking has continued to evolve and in this note we set out our latest thinking, covering what has stayed the same, what has changed and looking in more depth at four key trends for 2024 and beyond.

> Megatrends do not play out smoothly over time. They can go through rough patches or can reach the end of their natural life. We have decided not to include two trends (**the rise of China** and **rising debt burdens**) in this note, as while both trends still exist, events since the first note mean that they are likely to be less influential in the near future or harder to access.

The three pillars of the global economy

There are three pillars that set the backdrop for the global economy.

Demographics - The people that make up the economy.

Technology - An increasingly important determinant of productivity.

Planetary Boundaries - Environmental and biological limits that we must remain within, or return to, for the global economy to remain sustainable. This is a pillar that investors have paid little attention to before now.

These pillars are continually evolving, changing the parameters for investors as they do. For each megatrend, we now identify which of these pillars it draws on so that, at a portfolio level, we can see how different megatrends are linked and might work together, or in opposition.

In this note we discuss four megatrends that each draw upon two or more of the three structural pillars:

- Natural capital
- Green transition
- Labour dynamics
- Artificial intelligence

Long-term investible opportunities for each of these four megatrends are highlighted throughout this report. Your Barnett Waddingham investment consultant would be delighted to discuss the role these megatrends could play in your investment strategy as you look to achieve your long-term objectives.

Introducing our three pillars

Demographics

In the last two centuries the global population has exploded from less than 1 billion to more than 8 billion, and is still growing. By 2060 the UN estimates the global population will have risen to around 10 billion people.

However, this masks important regional differences. Almost all population growth is set to take place in less developed economies - mainly in Africa - while the population of more developed economies may have already peaked. Developed world populations are rapidly aging, leading the working age population to shrink, while birth rates are below replacement level (2.1 children on average per woman) and falling.

Technology

Technology is set to play an even larger role in global growth through its impact on productivity. The average output per person in England is more than 27 times higher than four hundred years ago due to technological change in agriculture, industry and trade. That said, technological change also brings huge disruption to existing industries as it develops.

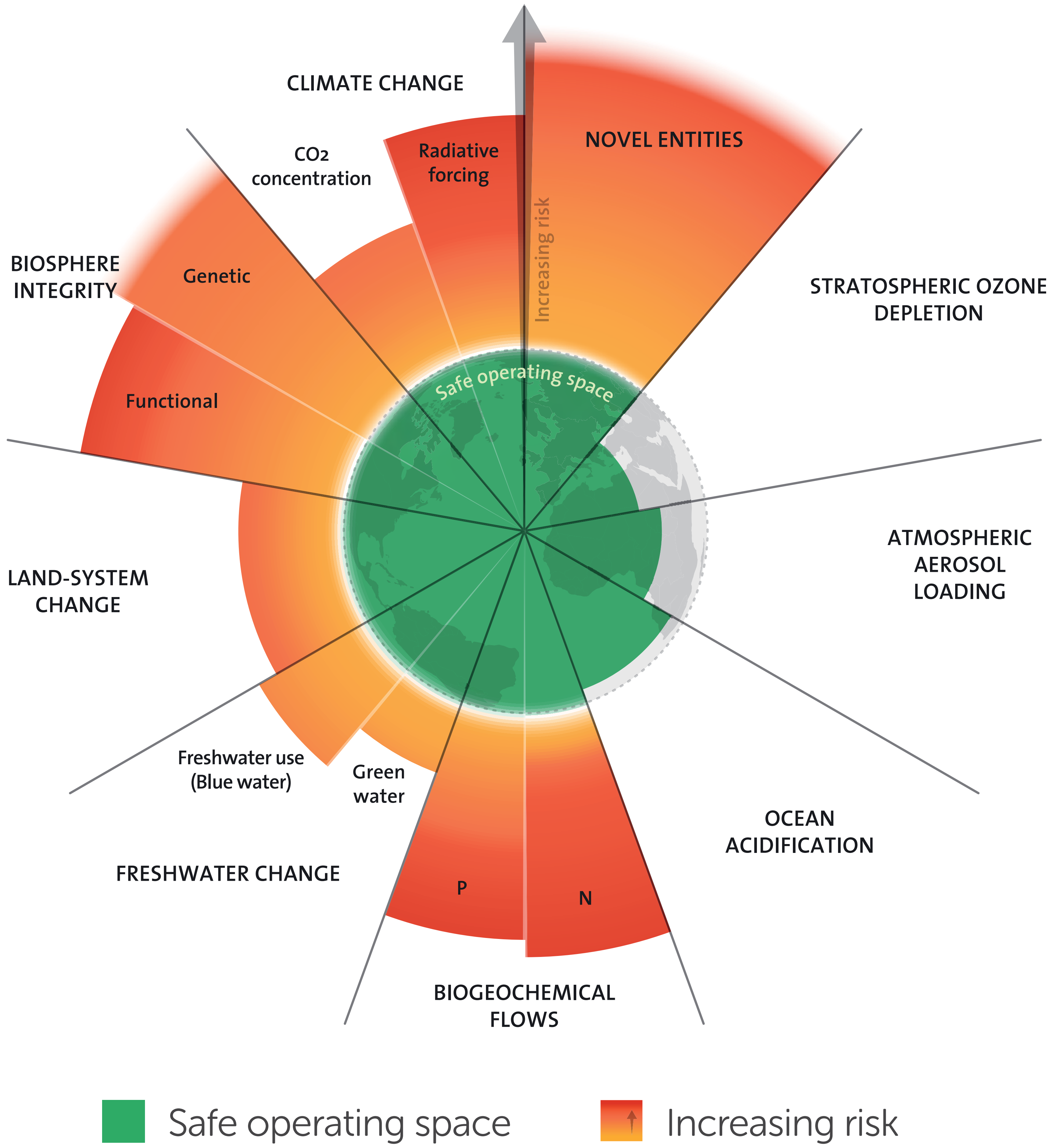
In recent years development has largely been focused on information and communication technologies and we expect this to continue, with trends such as artificial intelligence (AI) likely to have a huge impact on the global economy.

Introducing our three pillars

Planetary boundaries

The growth in global population combined with increased productivity means that we are running into constraints determined by the limits of the Earth. This includes natural limits - such as the known deposits of rare minerals or water availability within a region - and limits that must be set to maintain environmental and biological systems in sustainable condition. Of these factors, climate change and carbon emissions are the most widely publicised, but issues such as biodiversity and pollutants remain just as important. Stockholm University note nine planetary boundaries - shown in the chart on the right - that we must remain within, or return to, for the global economy to remain sustainable. At the moment, only three of the nine metrics sit within the green "safe operating space".

The rest of this note sets out four megatrends that span across these pillars, and how they are leading to investment opportunities.



Source: Stockholm Resilience Centre, Stockholm University

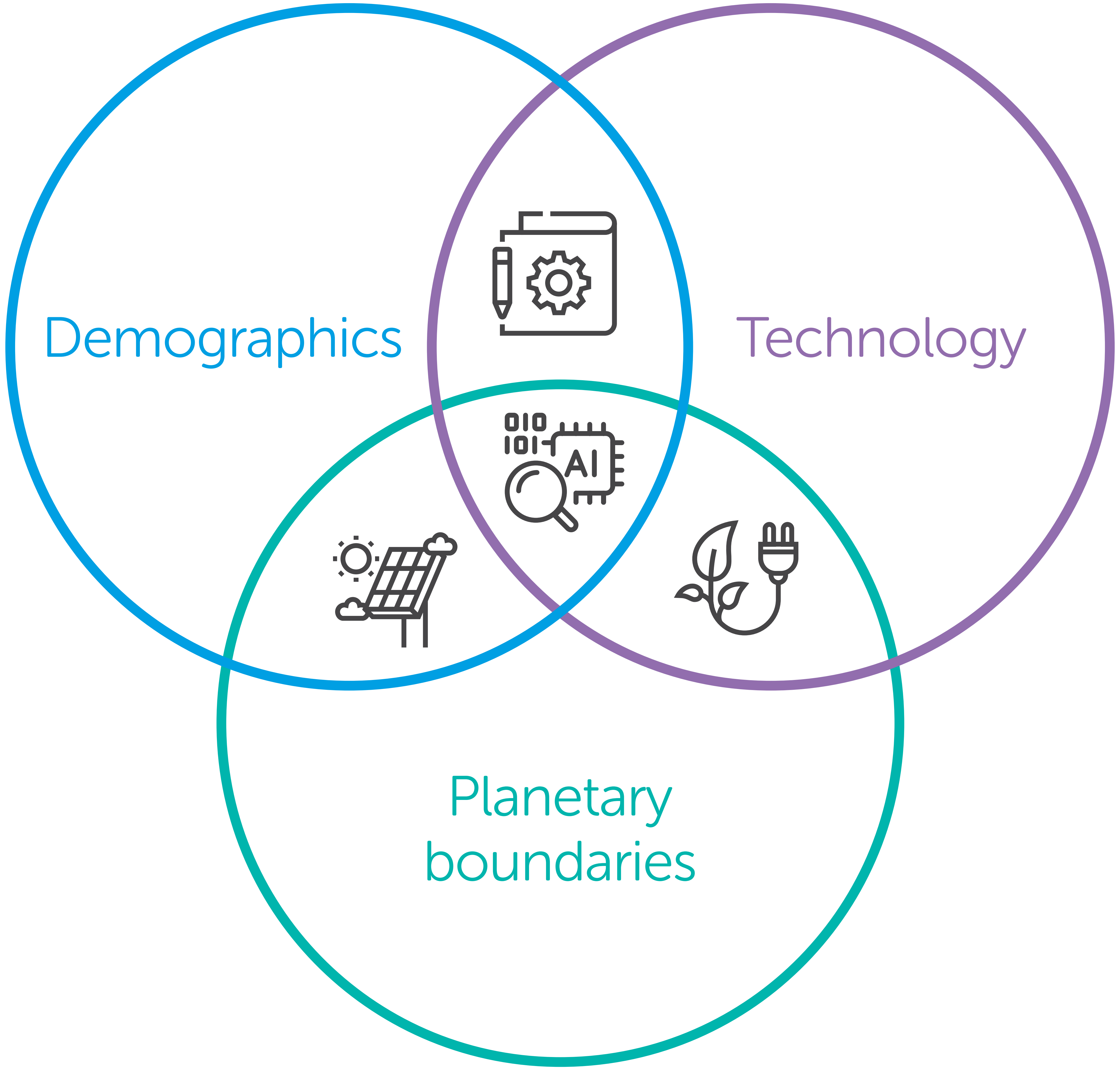
Click on a megatrend to find out more

Natural capital

Green transition

Labour dynamics

Artificial intelligence



The term 'natural capital' covers mineral deposits and other traditional commodities, but also global ecosystems and "ecosystem services" (such as water supply, flood mitigation and climate regulation). The fast-growing global population, combined with the constraints imposed by the planetary boundaries, increases the value of proper management of this natural capital.

This offers opportunities for investors in the form of conservation or management of existing resources, or through the development of alternatives to the minerals and commodities.

Click to open pop-up

Carbon credits +

Investment opportunity #1

Forestry | Forestry and agricultural land are growing investment opportunities that address one of the most finite and contested resources on the planet: productive land.

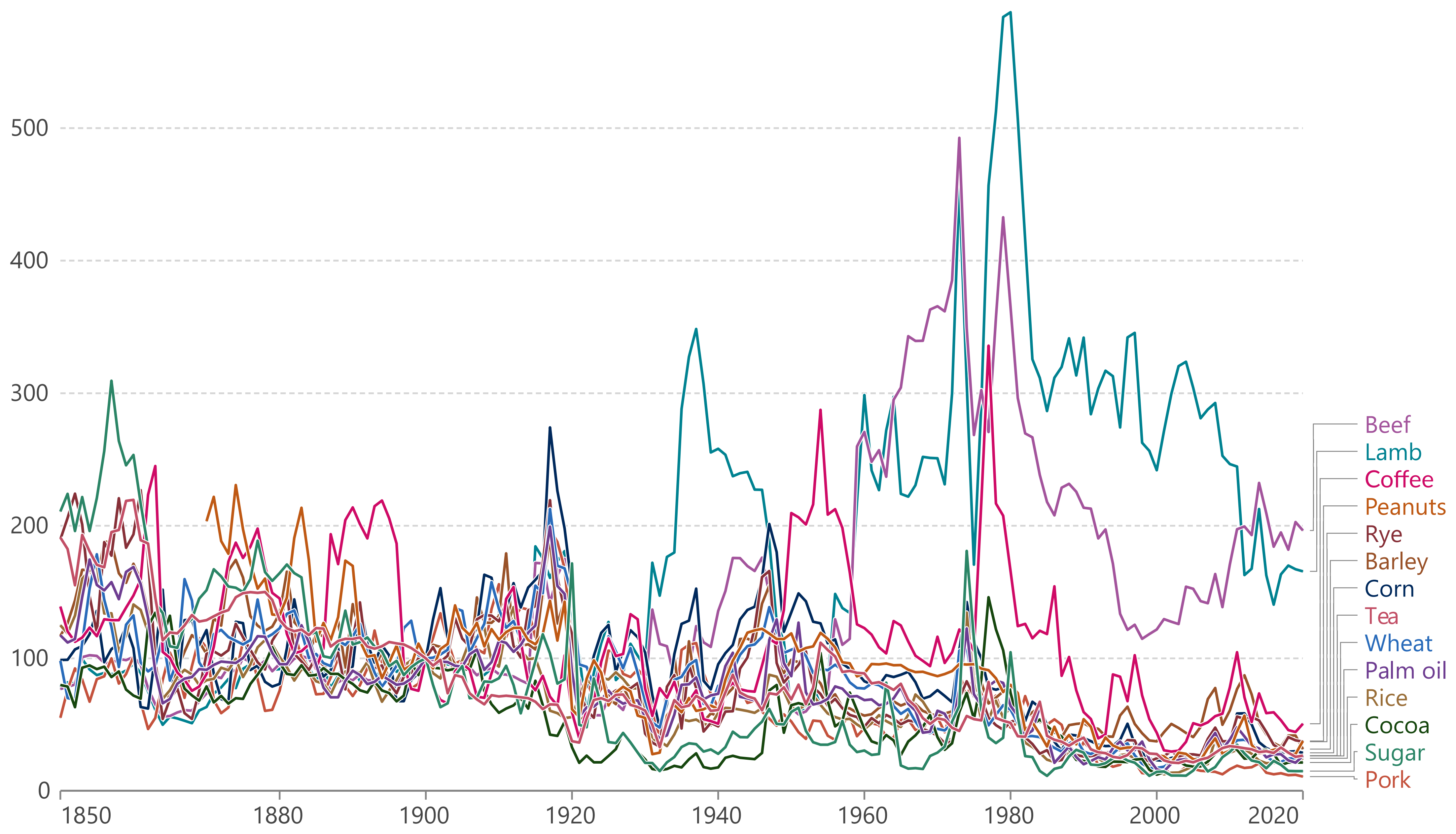
There is increasing demand for timber in industries such as construction, as restrictions of carbon emissions make timber an attractive alternative material. Whilst forestry may offer additional returns through carbon credits, the potential returns and non-financial impact of carbon credits as an investible idea is debated. We prefer funds that offer the return needed without the reliance on carbon credits (noting that the jurisdiction of an asset will heavily influence the confidence that can be placed on the calculation and impact of the credit). Such as an approach would also hold true for those investors looking to hold this as part of the "philanthropic" part of a portfolio, as it is "cancelling" (rather than trading) these credits that has the most impact.

Agricultural land | Sought after as demand for food continues, agriculture is also an industry open to innovation - in the last two centuries, the global population and the average income of each person have both risen by more than 8 times and yet the real price of most food commodities is lower now than it was in the 19th century. Now, with agriculture facing pressure to innovate again to reduce its impact on the environment, this opens further opportunity for investment in areas like precision farming technology.

Minerals and mining | New battery technology needed for the green transition requires a change in the focus of mining, offering opportunities for mining companies that are forward-looking and ahead of the curve. However, innovation could significantly change the level of demand for certain commodities, adding a layer of risk to this investment.

Long-term global prices of food commodities

Prices are measured relative to real prices in 1900 (where prices in 1900 are equal to 100).



Source: Jacks (2019) - processed by Our World in Data

Following the Paris Agreement of 2015, 194 countries have set themselves the target of achieving emission reductions to limit the increase in global temperatures to 1.5°C above pre-industrial levels. However, current policies are not sufficient to limit warming to this level; legislation and regulation will need to expand and much more investment will be needed in sustainable energy sources.

We expect government intervention - for example, legislation on carbon markets and carbon pricing - to have a financially material impact. A current example of this is the EU's Carbon Border Adjustment Mechanism, which is a tariff on carbon intensive imports. This comes into effect in 2026 and is leading to Natural Capital funds arguing that the sale of carbon credits is a viable investment strategy and a cornerstone of their funds. But as we previously outlined, we are sceptical of this.

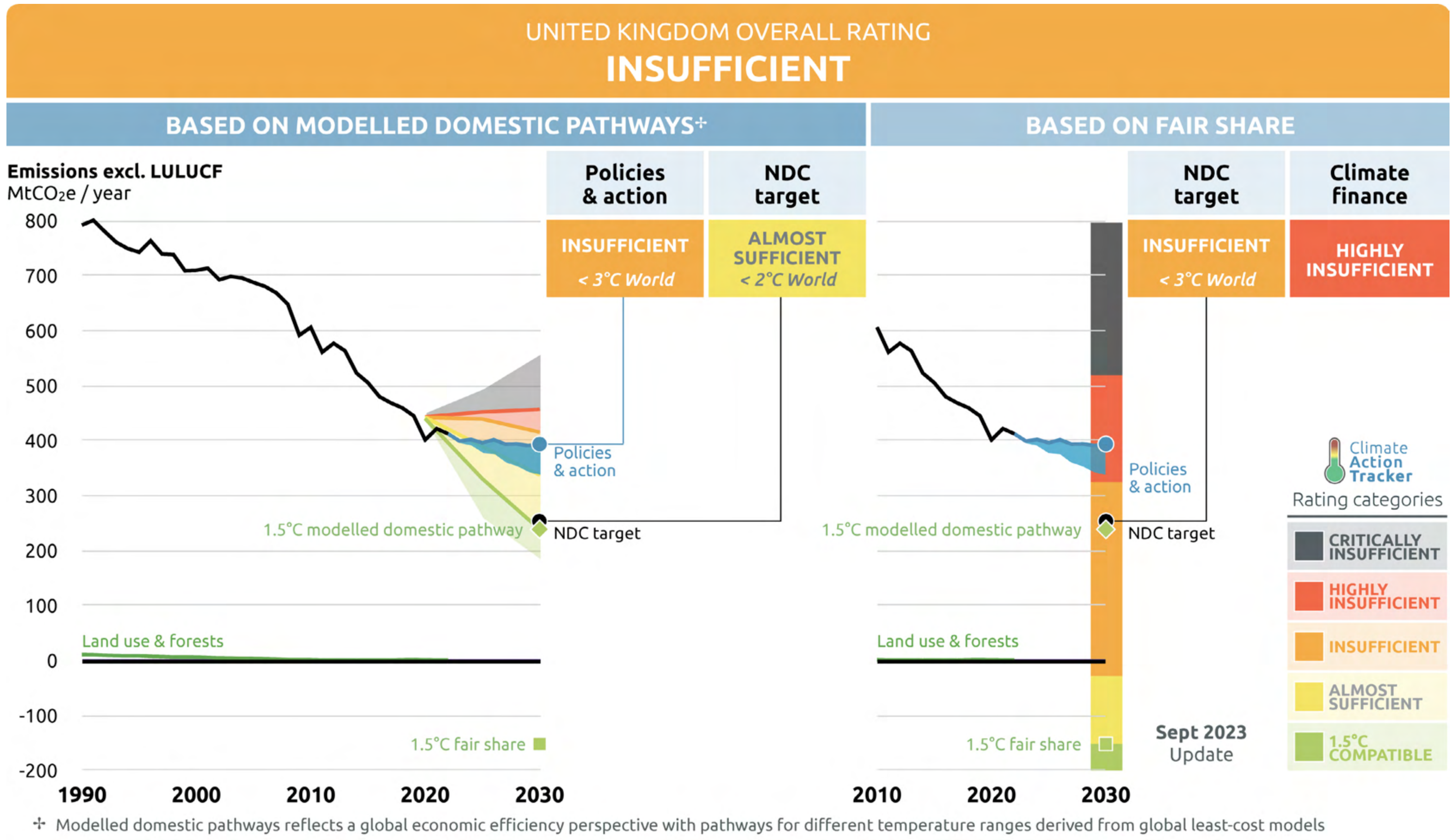
Whilst a long-running story already, as is the nature of megatrends, significant further investment in the energy transition is required. This not only covers how we generate energy but also how we use it.

Investment opportunity #2

Green infrastructure | The opportunity in this space lies within infrastructure funds that can access the broad range of initiatives that need to be put in place in order to affect the transition to sustainable energy use. This includes generation capacity, wind farms and solar power plants, but also supporting infrastructure such as battery storage and inter-country electric connectors.

Sensible risk management | Whilst not an opportunity, we guide our clients to consider the risks associated with their exposure to carbon emissions within existing equity and bond portfolios. We know that regulation and consumer habits will continue to impact this area, and despite being heavily debated, the 'Exclusions-vs-Engagement' dispute remains unresolved. We believe that engaging to encourage a science-based transition pathway for the heavy emitters, with exclusion used where such a pathway is not forthcoming, remains the most appropriate route for investors. Furthermore, while it is hard for individual investors to see the benefits of carrying out stewardship, collaboration between investors to engage with companies, asset managers and policymakers is essential given the systemic nature of climate risk.

Exclusion-vs-Engagement +

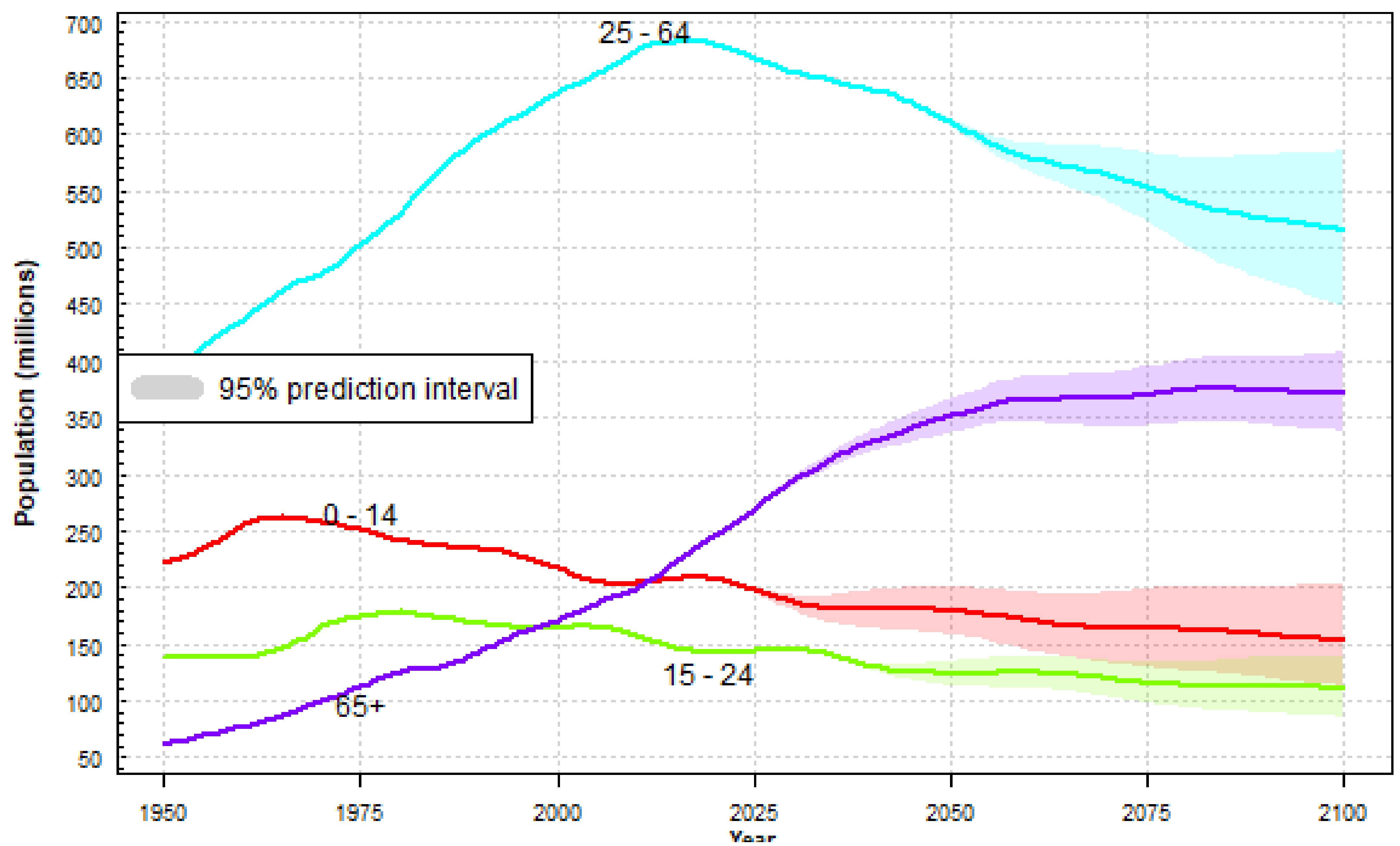


Source: Climate Action Tracker

In the developed world, both the proportion of the population that is of working age and their total number have already peaked. This is a result of falling birth rates and longer life expectancy. To alleviate this issue, developed economies must increase the rate of immigration, increase employment rates for those above retirement age or increase productivity. The first two options are politically difficult, while the third is difficult for governments to influence.

Therefore, some combination of the three is likely, with a preference for productivity growth, if possible. Increasing productivity will require a greater focus on automation of tasks by utilising machines which can replace labour in some cases and supplement productivity growth in others.

Population by broad age groups



Source: UN

China, Japan and South Korea, which have restricted immigration to a far greater extent than Europe or the United States, face the most acute form of this problem. As a result, they have already embraced robotics - for every 10,000 manufacturing workers, South Korea employs 1,000 robots (in contrast France employs only 163 for every 10,000 workers).

We tend to think of robots as being able to perform hard manual labour. However, robots are increasingly used in environments that are less strictly regimented than a production line – for example, in 2019 around 10% of Japanese elderly care institutions made use of care robots. And the development of AI will only increase the speed of progress in this area.

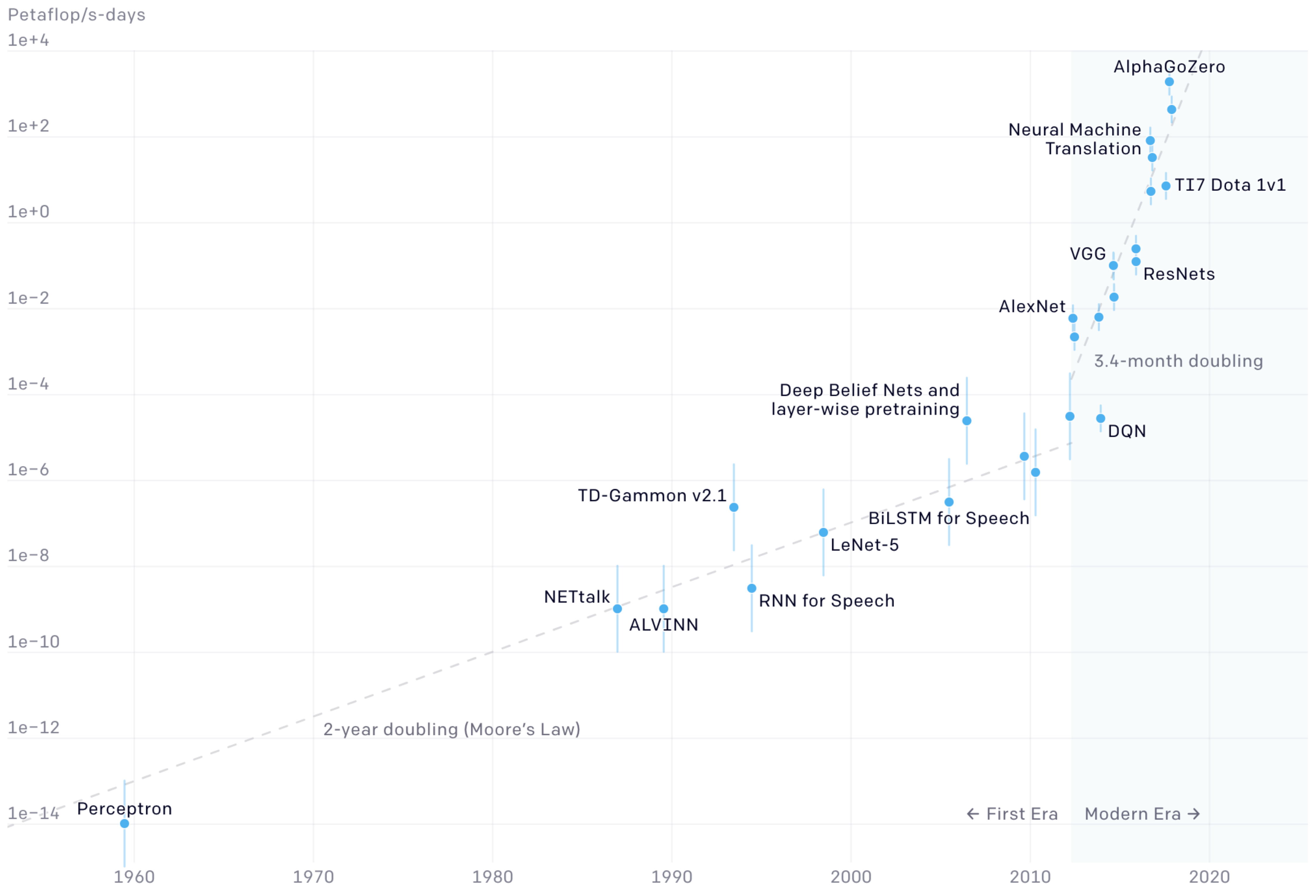
Investment opportunity #3

Robotics | There are multiple investment funds that allow investment in the trend of robotics and automation. We would prefer this trend to be implemented using either a specialist equity manager as a satellite holding to a broader equity mandate, or via a tilt towards the wider technology sector.

Artificial intelligence has made huge advancements in the last couple of years, with recent AI models having reduced their heavy reliance on human inputs to help them learn. GPT-1 (the original version of the model on which ChatGPT is based from 2018) was able to learn from a training database equivalent to around a few thousand books. Now AI researchers expect AI models to run out of human-generated text on which to train by around 2026.

As these models, and AI more broadly, continue to develop, the range of tasks AI will be able to perform will broaden. As a result, almost all industries face a combination of enormous risks and opportunities that will challenge current business models.

Two distinct eras of computer usage in training AI systems



Source: OpenAI

Investment opportunity #4

AI infrastructure | AI is already everywhere. Investors looking to benefit directly from AI providers are likely already heavily invested in the market-leading companies. Microsoft (which also has a significant minority stake in OpenAI, the developer of ChatGPT), Alphabet, Amazon and Meta are among those companies with AI programmes which already make up a large share of global equity indices. They have all proven themselves to be willing to acquire start-up companies that could provide competition, including in AI such as Alphabet's acquisition of DeepMind.

A tilt towards these huge technology companies would give an investor more direct exposure to AI, but such a strategy is not without risk. These companies have AI programmes but most of their current revenue is still derived from their success in previous waves of technological change, such as smartphones or social media, so they are far from a pure exposure to AI trends.

Investors may be better off focusing new investment in line with the infrastructure needed for widespread AI usage. For example, microchip makers and designers like TSMC and Nvidia, their supply chain, and companies involved in providing data centres are likely to benefit as much as providers or users of AI. A wide variety of equity funds are now available for investors which focus on AI and its related issues that investors can make use of. As with robotics, we would expect a specialist equity manager as a satellite holding to be sensible for investors looking to participate.

However, like the internet, AI may offer benefits to companies across all sectors and regions. This means gains may not be limited to the companies mentioned so far but may be far broader across equity portfolios.

Using megatrends to build a portfolio

Having tackled the question of why it is important to be aware of megatrends and set out what the key investible ideas are, we'll now focus on how you, as investors, can use this knowledge when building your investment portfolio.

Megatrend investing and you

Before anything else, investors must be clear on their investment aims, beliefs and constraints:

AIMS

What are you trying to achieve, and what is your time horizon? If you are not able to wait until a megatrend has had a chance to play out, then you might not reap the benefits of following a megatrend. Do you have the patience and conviction to remain invested?

BELIEFS

Do you have a strong conviction in one or more megatrends? Take some time to work out your own beliefs and the beliefs of other key decision makers. How likely do you think a trend is to play out? How significant will the opportunity be for asset markets? Does it conflict with other high-conviction trends? Be prepared to take some time for education about the trend and to challenge your beliefs before investing.

CONSTRAINTS

What level of governance are you willing to devote to the trend? How much of your governance budget are you willing to devote to monitoring your investment? Are there cashflow or liquidity requirements that prevent you being comfortable with short-term volatility?

Only once you understand your own position can you then look into the methods of investment listed on the next page.

Three ways to reflect megatrends in your portfolio

Through asset allocation decisions

Asset allocation and security selection decisions can be used to take advantage of opportunities presented by megatrends. It is important to understand what exposures to these trends you already have within your portfolio - for example, many investors in global equity markets already have exposure to AI, especially through large US technology companies. Where more exposure to megatrends is desired, investors should look to back strategies that can capitalise on these trends and, crucially, avoid those likely to fall by the wayside.

Through fund manager selection and stewardship decisions

Select fund managers that take a long-term view and reflect megatrends in their allocations, alongside making stewardship decisions that align with the trend.

Staying the course

Being able to accept short-term volatility is important. This has to be weighed against the possibility the trend was wrong or has run its course. Monitoring the trend over time, your implementation of the trend (by way of an asset manager or otherwise) and the impact on your investment strategy, is essential.

Conclusion

Megatrends will continue to shape the future of the world, as they have throughout history. As they do, there will be investment opportunities available to those that are alert to the trends and have the patience, conviction and time horizon to see them play out. In this paper, we have provided some examples of ways to take advantage of four megatrends that will be particularly impactful. Your usual Barnett Waddingham consultant can help you to understand how they interact and fit in with your own aims, beliefs and constraints. Finally, it is important to know that every investor will have exposure to the trends in their portfolio – whether actively or passively – and should be willing to recognise the opportunities and risks that they offer.

Chris Pritchard
Senior Investment Consultant
chris.pritchard@barnett-waddingham.co.uk

Hugo Gravell
Senior Investment Consultant
hugo.gravell@barnett-waddingham.co.uk

BARNETT WADDINGHAM
beyond the expected

Please contact your Barnett Waddingham consultant if you would like to discuss any of the above topics in more detail. Alternatively get in touch via the following:

employers@barnett-waddingham.co.uk
0333 11 11 222

www.barnett-waddingham.co.uk