AMPERSAND

AI EVOLUTION | SUSTAINABILITY: INTERCONNECTED CHALLENGES | BOND VIGILANTES COMIC | JAPAN

AMPERSAND

Introducing Ampersand: a collection of investment insights

Welcome to Ampersand, the new client magazine from M&G Investments. In an era defined by complex macro conditions and ever-evolving opportunities in the global markets, Ampersand embodies the essence of M&G's values: thorough research, a patient, long-term investment horizon and a relentless pursuit of innovation.

While the news cycle moves markets 24/7, we have produced this print and digital publication to provide space to step back from the noise and take in the big picture. We focus on the elements you expect from a long term investment partner – in-depth analysis, wide-ranging expert opinions and thought-provoking, curated content designed to inspire and inform.

In this inaugural edition, we delve into a range of topical investment themes. Artificial Intelligence (AI) has dominated headlines this year and we investigate the potential opportunities this technology may bring. Keeping with the theme of innovation, we look at technological advances in healthcare and bond markets. Our 'Big Picture' feature considers the ways in which investment can create positive change and tackle the world's biggest challenges.

After years in the wilderness, inflation has returned to spook markets in the last two years: here we consider what this shift might mean for multi-asset investors and the forces likely to drive prices going forward as rate hike cycles approach their peaks. Inflation is generally bad for bonds, so who better to quiz than Jim Leaviss, our CIO of Public Fixed Income? We are also pleased to introduce Jim and the Bond Vigilantes blog team as you have never seen them before: featuring in their very own comic strip which takes us on a tour of the history of sovereign debt.

With articles on the increased accessibility of private markets, real estate and emerging markets growth, we hope you find plenty of insights within these pages. Ampersand is designed to illuminate the world of investments and we hope you enjoy the magazine.

Joseph Pinto
CEO, M&G Asset Management

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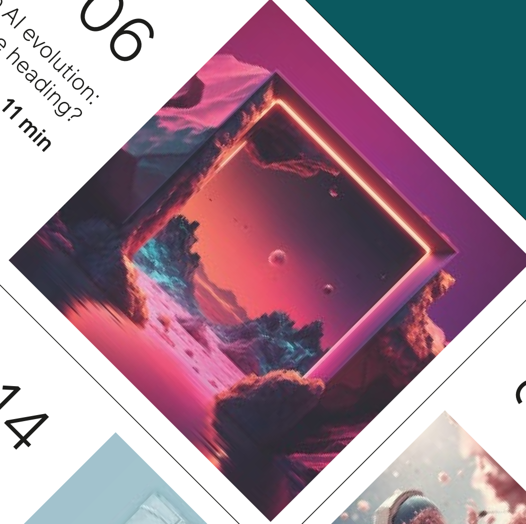
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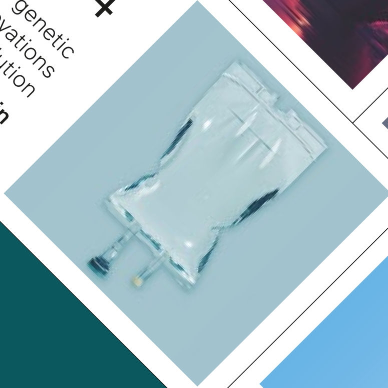
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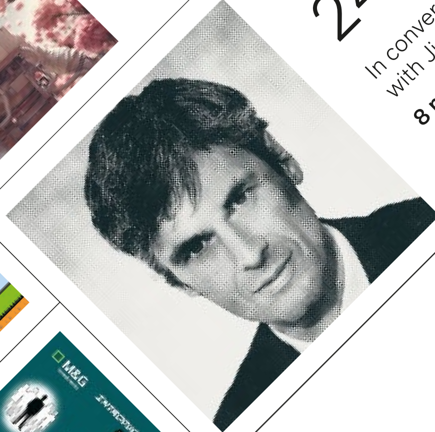

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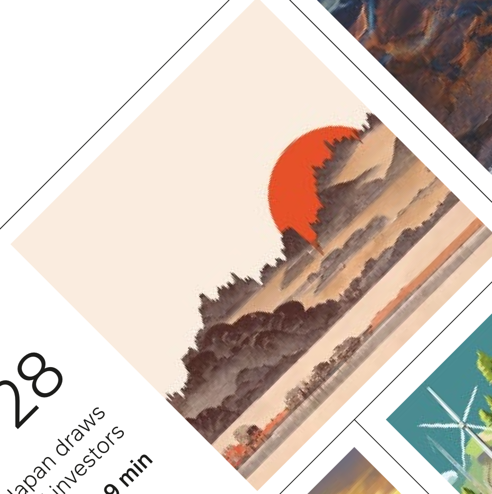
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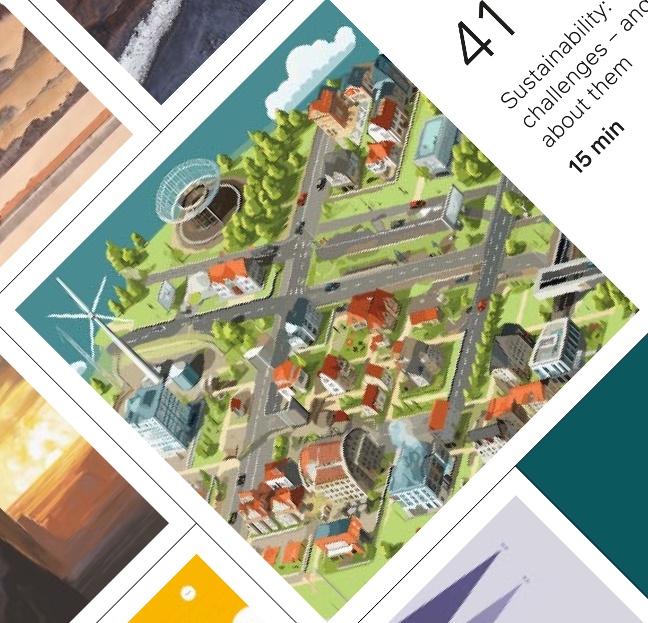
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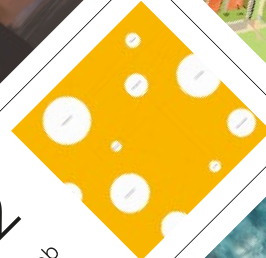
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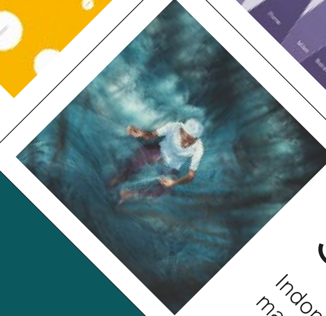
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ARTIFICIAL INTELLIGENCE 2.0

The AI evolution: WHERE ARE WE HEADING?

Artificial Intelligence (AI) has dominated headlines this year and sparked a rally in technology stocks. Jeffrey Lin and Thomas Lee, Fund Managers, Global Artificial Intelligence (Thematic Technology), tell Dominic Howell why they believe that generative AI represents a significant technological advancement, with potential benefits extending across a broad range of industries. So, how is this disruptive technology translating into exciting new investment opportunities?

2023 could be billed as the year that AI went mainstream. Over the past few years, AI has become increasingly prevalent in everyday life, used in voice assistants such as Amazon's Alexa and Apple's Siri; customer service chatbots; personalised online recommendations for shopping or viewing choices, and much more. However, this year, there has been a dramatic surge in interest in AI and its capabilities thanks largely to ChatGPT.

OpenAI's large-language model (LLM) chatbot, ChatGPT, was made freely available in November 2022 and became one of the fastest-growing applications ever, reaching 100 million users in just two months[1]. LLMs are advanced AI programs that are trained on large amounts of text data to understand human language and produce meaningful, natural responses. The technology is designed to make communication between humans and computers more like human-to-human conversations.

ChatGPT sparked a wave of excitement around AI because it enabled anyone with access to the internet to experience generative AI's enormous potential. In its response to simple prompts and questions, it has been a powerful demonstration of how generative AI can enable computers to 'think more like humans' and create original text, images, video, music and code.

Tech companies have been working on AI projects for years, but OpenAI opened the floodgates with the release of ChatGPT. It has been swiftly followed by a host of other open-source generative AI tools, including Google's Bard, Meta's Llama and Baidu's Ernie Bot, as large tech companies seek to capture a core share of the market.

The hunger for data

LLMs rely on vast amounts of data to be able to produce new content, which is leading to growing competition for datasets. "Data has already been hailed as the new oil," notes Jasmeet Chadha, Global Technology Analyst in M&G's Equities team. "Generative AI might as well be the internal combustion engine of our age that helps unleash its value."

Businesses that own proprietary datasets could become increasingly valuable, especially since those datasets are required to create the generative models. For example, Adobe, a creative software company, has used its database of hundreds of millions of photos to create Firefly, a product that generates AI-powered content with a simple prompt. Sources of news and images are also being approached by AI companies to incorporate datasets into their models.

In the future, we are likely to see a growing number of businesses training models on their own proprietary data to create bespoke AI applications. Given that many firms' datasets are located across different systems and may not necessarily be in the best format, this could require the help of IT services companies who can advise firms how best to implement AI effectively, and achieve efficiencies in their operations while ensuring data security.

[1]Reuters, 'ChatGPT sets record for fastest-growing user base – analyst note', Reuters.com, February 2023.

ARTIFICIAL INTELLIGENCE 2.0

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Expl(AI)ned

Generative AI

Generative artificial intelligence refers to a type of AI that has the capability to create new content or data, such as text, images, audio or video. Unlike other AI systems that are primarily designed for specific tasks, generative AI models can generate new information by understanding patterns in existing data. This ability makes them valuable in various creative applications like text generation, image synthesis and music composition, as well as posing new challenges in terms of ethics and potential misuse.

Large Language Model (LLM)

A large language model is an advanced artificial intelligence program that can understand and generate human language. It uses complex algorithms and neural networks to analyse vast amounts of text data, learning patterns and context to provide meaningful responses. These models are highly versatile, capable of performing tasks such as language translation, content creation and answering questions. The larger the model, the better its language comprehension and generation abilities, making it a significant breakthrough in natural-language processing technology.

Source: ChatGPT.

A disruptive technology

We believe AI is now entering the next phase of its evolution driven by generative AI and LLMs. In our view, the capabilities and applications that AI now offers has huge potential to transform businesses, disrupt entire industries and even alter human lives.

Using computers to enhance human decision-making and perform repetitive tasks could help businesses improve efficiency and productivity. Research by consultants McKinsey estimates productivity improvements from generative AI and automation could add between $2.6 trillion and $4.4 trillion annually to the global economy[2].

And the benefits of generative AI are not confined to the tech industry. We believe a broad range of industries have the potential to be transformed by AI. For instance, to improve crop yields in the agricultural industry, self-driving tractors are using image recognition to identify weeds and spray herbicides on unwanted plants.

In healthcare, drug discovery is an area where generative AI could be extremely beneficial. Companies are seeing significant increases in the speed and efficiency of drug development, thanks to AI's ability to analyse enormous datasets and recognise patterns. In an era of generative AI, pharmaceutical companies have the potential to make new medical discoveries and healthcare advancements that were previously unimaginable. Increasingly, utility companies are embracing AI to help improve electricity infrastructure by enabling the development of 'smart grids' to help optimise electricity distribution and consumption.

In the financial services industry, McKinsey suggests that banking is one of the industries that could see the greatest value from the technology[3], particularly in the areas of risk assessment and fraud detection. The provision of services such as client reporting, customer service and back-office operations could also become significantly more efficient with the use of generative AI.

10 billion datapoints… and growing

At M&G, we are embracing technology and developing bespoke AI solutions to process data related to our own operations and investments.

The use of technology in the investment industry has grown exponentially over the past decade, in line with the rapid growth and evolution of data. There are a number of factors at play which are prompting a need for more data collection, and the subsequent adoption of tech-enabled solutions to process the data and make sense of it.

The changing regulatory backdrop means that we've seen an explosion in the volume of data related to our own operations and investments, whether it is Diversity and Inclusion (D&I) and climate data on our operations, or broader Environmental, Social and Governance (ESG) data on our investments. Asset managers have been realigning resources to comply with new regulations and disclosure requirements – both at a corporate and a product level – acquiring and analysing data and feeding this information into company-level and investment management systems and processes.

Meanwhile, in an increasingly competitive industry, the effective collection and use of data can make a real difference to the soundness of the investment process, as well as to generate comprehensive client reporting. Tech-enabled solutions can provide a richer array of inputs for investment analysis to enable differentiated insights and, ultimately, create better outcomes for our clients. It can also improve efficiencies and provide additional flexibility for our investment teams.

'Research by consultants McKinsey estimates productivity improvements from generative AI and automation could add between $2.6 trillion and $4.4 trillion annually to the global economy.'

As active managers at M&G, the human element in the investment process will always be critical to our success. However, technology plays a pivotal role in helping us create innovative solutions and also scale up existing processes for greater efficiency. In essence, technology exists to serve a particular purpose – helping us translate data into actionable insights, more efficiently.

In our machine learning-based investment strategy, we employ AI with human oversight. We have developed algorithms which form the core recommendation engine, and we overlay its conclusions with oversight from our fundamental equity team. The aim is to leverage the best of human and machine intelligence in the stock selection process. And in the same way as human knowledge grows, also the data size and computational power have increased over time – just more exponentially. As an example, when we first started employing this strategy in 2018, the underlying dataset comprised one billion datapoints covering 10 years of history. This is now over 10 billion datapoints covering more than 25 years of history, and growing every day.

Spectrum of AI opportunities

We believe natural language processing (NLP), whereby computers learn to understand and interpret human language, is just emerging as a powerful force in the global economy and the use cases will increase in line with improvements in processing power.

In our view, AI is a multi-year investment theme that has the potential to become a mainstream technology in the real economy. When we assess the spectrum of AI-related investment opportunities, we see three distinct categories: **enablers**, **providers** and **beneficiaries**.

[2,3]McKinsey, "The economic potential of generative AI: The next productivity frontier", mckinsey.com, June 2023.

ARTIFICIAL INTELLIGENCE 2.0

'In the past 10 years, Nvidia has increased AI performance a million-fold.'

AI enablers

Generative AI relies on a large amount of computational power, both to 'train' the LLMs and to recognise patterns in the datasets, then to run the application and generate the responses.

Enablers are the companies that supply the key technology underlying AI advancements, such as computational power, data, high speed data communications, and sensors. These include semiconductor firms that produce the processors and chips used to perform high-speed data processing; systems companies that supply networking equipment; and telecoms firms providing bandwidth to the network edge from the data centre and vice versa.

In our view, Nvidia is the most prominent enabler. The company provides most of the processors used to build neural networks for AI models – this helps explain why Nvidia's share price has soared more than 200% this year, pushing its market capitalisation over $1tn[4].

Arguably, AI would not be at the scale it is today without Nvidia – in the past 10 years, the company has increased AI performance by a million-fold. In our view, Nvidia remains central to the future of AI as its CUDA[5] programming language is the de facto standard for using Nvidia's processors for AI. Demand for Nvidia's chips is robust as tech firms across the world are seeking to build their own LLMs.

The company has a long-term vision and is constantly looking for new AI applications for its technology. In our view, the technology will only get better, driving further demand for Nvidia's processors. As long as the company can continue to provide more capabilities, we expect Nvidia to continue growing at a rapid rate.

Computational resources

Given the increased computational power required to run LLMs, we believe the explosion of AI applications will translate into rising data centre demand. Companies are queuing to get access to more computational resources and increasing demand could lead to both higher revenue growth and better pricing power for data centre operators, in our view.

The scale and pace of demand has also spurred cutting-edge research into ways to increase the speed and capacity of data transmission and storage. Faster data speeds are critical for AI performance as data needs to move quickly from the edge of the network to centralised data centres for processing and then the answer is sent back again. Amazon's Alexa and Apple's Siri are examples of how NLP is moved from the edge to the data centre and back out to the edge.

[4]Financial Times, 'Enthusiastic Nvidia investors may need a reality check', ft.com, July 2023.
[5]CUDA® is a parallel computing platform and programming model developed by NVIDIA for general computing on graphical processing units (GPUs). With CUDA, developers are able to dramatically speed up computing applications by harnessing the power of GPUs.

‘We believe that generative AI and its applications have the potential to be long-term growth drivers, boosting productivity in a range of tasks and transforming industries.’

Optical connections can deliver data faster than electronic networks and are likely to be required to keep up with demand for ever-greater speed of transmission. A number of companies have been investing in ‘photonics’ technology based on the use of light waves. Photonics is the science and technology of generating, controlling, and detecting photons for various applications such as telecommunications, medical imaging, and manufacturing, using lasers and optical components.

With data creation and transmission increasing exponentially, particularly with the wider adoption of AI, companies at the forefront of this new technology could be well-positioned to capture the demand growth.

AI providers

Another potential source of investment opportunities is the providers of AI services and products to end users. These companies typically, but not exclusively, belong to the software industry, which are enhancing their products with AI.

A notable provider, in our view, is Microsoft. The technology firm is a significant investor in OpenAI and is rapidly supplementing its software products with AI features such as Microsoft 365 Copilot. With a dominant market share in office productivity software, Microsoft has the opportunity to increase the power of its software and charge more for AI-integrated products. Other examples include human resources solutions firm Workday and creative software provider Adobe, discussed above.

AI beneficiaries

Our third category is AI beneficiaries – firms that are increasing efficiencies by using AI in their operations. These are typically found outside the IT sector and range from consumer to healthcare to automotive and industrial businesses.

US food and beverage firm PepsiCo is, in our view, a good example. The company is using AI in multiple areas to help grow its business, as well as improve operational efficiency. In manufacturing, PepsiCo is employing AI to maintain food standards. The company is also using AI in product development, to gauge the potential success of new products; and to optimise sales, it uses AI to determine shelf locations for its products.

Over time, we anticipate that AI will be adopted by more and more companies, in every sector, as they seek to become more efficient and improve productivity. As AI becomes more pervasive within the real economy, we would expect to see greater investment opportunities among the AI beneficiaries category in the future.

As investors, we focus on identifying the intersection between technological innovation and its implementation in business processes. In our view, growing free cash flow (FCF), the money that is left after subtracting capital expenditures, is the most important factor in driving investment returns.

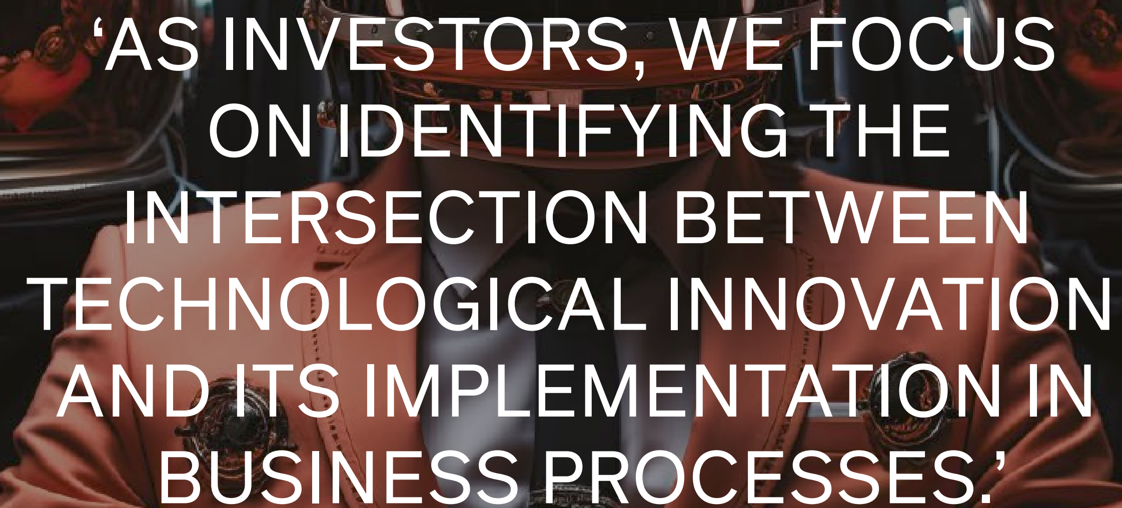
We believe that companies providing AI and/or using AI to improve growth and profit margins are likely to have strong FCF growth over the long term, which could provide a powerful boost to their investment performance.

Thriving and surviving

We have highlighted just a few examples of the impact that generative AI could have on different sectors. There are plenty of other use cases, such as in education, manufacturing, and autonomous vehicles, and there will undoubtedly be many more as the technology continues to develop at pace.

Over the coming years, we believe that generative AI and its applications have the potential to be long-term growth drivers, boosting productivity in a range of tasks and transforming industries. We think this is an exciting time for innovation and competition – these are early days for the new technology, and it will be interesting to see how it develops, how firms harness it successfully, as well as observing the regulatory and security developments.

As ever, a new disruptive market force will create winners and losers. We see plenty of attractive AI-related investment opportunities, but some companies may find themselves not being able to keep up with more AI-savvy competitors or may end up seeing the markets they operate in fall victim to AI’s many applications. On a multi-year basis, we believe that the implementation of AI, and generative AI in particular, will be but one determinant of those winners and losers. ◻



FROM 'SMART CHEMO' TO GENETIC SEQUENCING: THE INNOVATIONS DRIVING REVOLUTION

From the invention of the stethoscope to the discovery of penicillin, many healthcare innovations have supported better health and well-being outcomes. Jasveet Brar, Darshan Rughani and Philip Kemp explore a selection of innovative technologies on the cusp of inflection, with the potential to revolutionise the pharmaceutical and medical-device industries.

HEALTHCARE

Cancer is a leading cause of death world wide, killing 10 million people annually, according to Cancer Research UK. Whilst no simple universal cure is in sight, new drug therapies are helping to extend life by destroying cancer cells and minimising the damage to healthy normal cells.

Antibody Drug Conjugates (ADCs) are an example of a biotechnology product expected to replace traditional chemotherapy over time. ADC drugs are built from two components linked together: an antibody molecule, which can be used to find and bind with cancer cells, and a cytotoxic drug agent (similar to those used in traditional chemotherapy), responsible for destroying the cancer cell. After binding, the ADC releases the cytotoxic drug into the cell, killing it by damaging its DNA or preventing it from replicating.

Akin to honing in on cancer like a biological missile, the targeted nature of ADCs offers a number of advantages over traditional chemotherapy. It limits the significant side effects, such as hair loss and fatigue, caused by the damage of healthy cells during traditional chemotherapy. The enhanced precision also means that more potent and larger doses of medication can be administered to patients, leading to increased efficacy.

Enabling precision medicine

Inside every cell in our bodies, DNA contains our unique genetic code, while proteins do the physical 'work' to carry out most cellular functions. Genomics and proteomics involve studying genes and proteins respectively, with huge implications for, among other things, improving our understanding of the drivers of disease.

> 'Akin to honing in on cancer like a biological missile, the **targeted nature of ADCs offers a number of advantages over traditional chemotherapy.'**

Turning first to genomics, one of the most exciting applications is genetic sequencing, where an organism's entire genetic code is read. This technology has a wide range of health and well-being use cases. For example, it was used to read the genetic code of the COVID-19 virus, which allowed scientists around the world to develop testing kits and vaccines without coming into contact with the virus.

It is also used to aid the diagnosis of rare diseases, by comparing a patient's genome with a reference genome. Uncommon symptoms and limited awareness mean that rare disease patients are often passed from one specialist to another, and children typically wait an average of 6-8 years for an accurate diagnosis.

Elsewhere, genomics can be used to discover which specific genetic mutations led to a patient's cancer, helping to inform more specific and effective treatment. Another emerging field is pharmacogenomics, where researchers study how genetics influence our responses to different medicines, therefore helping to tailor the types and amounts of medication used in treatment.

Proteomics is the study of the proteins in cells, their 3D structure and function, and how they interact with each other. It allows us to understand how cells function and how they are altered by diseases, with the potential to revolutionise biological research, drug discovery and disease treatments.

Progress in proteomics is far behind genomics, due to several challenges. Unlike DNA, proteins have a huge variety of biophysical characteristics (such as size, charge and hydrophobicity), which makes them more difficult to read. The amount of proteins found in any given sample can also vary greatly, from hundreds of millions to just a few.

This means that no existing technology is currently able to measure the full human proteome (the entire collection of proteins in our cells). However, new technologies are being developed to overcome these issues and help bring researchers' fundamental understanding of previously 'fuzzy' biological concepts into high resolution. One company is developing a system that will capture billions of individual protein molecules from a cell, which are chemically 'probed' in a non-destructive way, over and over again, to decode their identity. The results are then digitised and analysed by machine learning software to give a clear picture.

HEALTHCARE

‘With a single injection, patients can potentially be cured of lifelong ailments, not only **improving their quality of life**, but also **saving huge amounts of time and money** otherwise spent on recurring treatments.’

Gene therapies

Enabled by the advances in genomics, gene therapies are an area of innovation in the pharmaceutical industry with potential for the treatment of disease at its source (rather than managing downstream symptoms). They aim to treat, cure or prevent disease by correcting the underlying genetic cause – usually by introducing a new gene to help fight the disease, or a non-faulty replacement copy of the gene causing the issue. The new genetic information is transferred into the cell through a carrier, such as a deactivated virus or a tiny nanoparticle structure.

Gene therapies are often unique to a small group, or an individual patient and their genome. For this reason, they are incredibly expensive. The Institute for Clinical and Economic Review puts the average cost of a gene therapy between $1-2 million, but a recent FDA-approved gene therapy for haemophilia B, a rare blood disorder, comes with an eye-watering $3.5 million price tag.

While the costs are significant, the results can be truly life changing. With a single injection, patients can potentially be cured of lifelong ailments, not only improving their quality of life, but also saving huge amounts of time and money otherwise spent on recurring treatments. We also expect the cost of individual treatments to fall over time, as more trials are completed and production becomes commercialised.

Remote testing and monitoring

The World Health Organization (WHO) estimates that there will be a global shortage of 10 million healthcare workers by 2030. However, technological advances have the potential to help with healthcare worker shortages and support decision-making.

For example, the testing, monitoring and treatment of conditions at home or in a more local setting, such as a high street pharmacy, can reduce the need for regular visits to a hospital or laboratory. This is easier for patients, and frees up valuable, stretched healthcare resources.

US company Masimo developed a more accurate technology for pulse oximetry – the measurement of blood oxygen levels, usually from the fingertip. Its technology is proven to generate fewer false alarms and fewer true misses compared to peers. Continuing to evolve, the company has also launched a remote patient monitoring system. Capturing over 60 parameters, the system uses machine learning to establish a personalised baseline for a patient, to more accurately escalate patient distress with fewer false alarms, therefore aiding healthcare worker productivity.

Continuous glucose monitoring (CGM) and insulin pumps are two important advances in diabetes technology in recent years. CGM devices measure blood glucose levels in real time, providing patients with a more comprehensive view of their glucose levels than traditional fingerstick testing. Insulin pumps deliver insulin automatically, based on the patient’s glucose levels. Together, these devices have been shown to improve glycaemic control in people with diabetes significantly. Alongside improved medical outcomes, these devices also provide patients, and in particular the parents of children with diabetes, with peace of mind.

Tech innovations in surgery

Minimally invasive surgery (MIS) involves making small incisions in the body, through which surgeons insert cameras and other tools to carry out a surgical procedure. The benefits over open surgery include fewer complications, shorter hospital stays and faster recovery. Despite this, 40 years on from the development of the first MIS techniques, an estimated 60% of surgeries are still performed as open procedures.

‘Robotic arms with wristed joints provide surgeons with a **range of motion and dexterity similar to the human hand.**’

With limited visibility and range of motion within the patient’s body, MIS requires extensive practice and experience – a potential reason that it isn’t used more widely. However, advances in medical imaging and robotic-assisted surgery are playing a key role in growing the numbers of minimally invasive surgeries.

One of the key innovators in the field is Intuitive Surgical. The company has developed robotic arms with wristed joints, providing surgeons with a range of motion and dexterity similar to the human hand. Its surgeon console includes a 3D, high-definition screen, giving surgeons an immersive view inside the body while they operate. Intuitive has also developed virtual reality training courses for dozens of exercises and procedures, allowing surgeons to hone their skills in a virtual setting.

Better health and outcomes

Ageing populations and increasingly sedentary modern lifestyles are driving higher demand for healthcare solutions across the globe, at a time when resources are ever-more stretched. This extra demand must be met with greater efficiency and innovation, to create better health and well-being outcomes for all. However, the good news is that with an industry focused on enhancing patient care and clinical outcomes, there remains huge potential for innovation to drive improvement in the diagnosis and treatment of disease. □

This article was authored by Jasveet Brar, Public Equity Impact Fund Manager, Darshan Rughani, Impact Equity Analyst and Philip Kemp, Investment Writer.

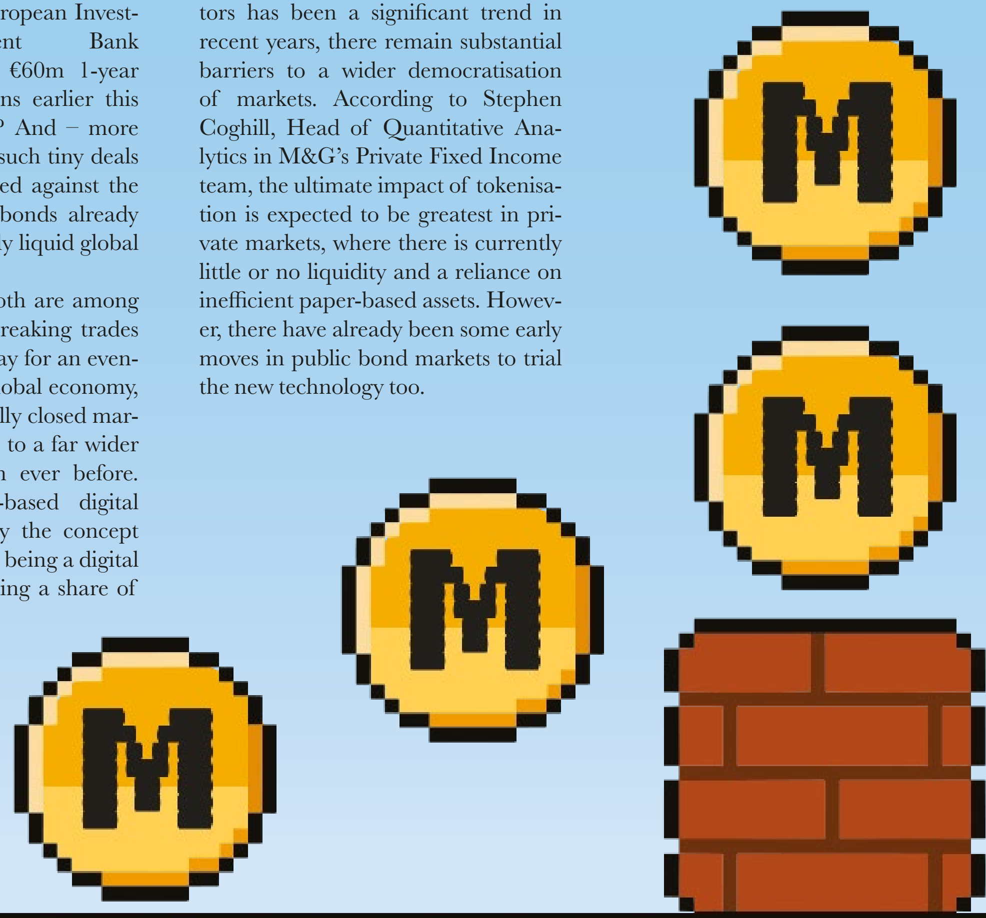
THE NEXT FRONTIER FOR INVESTING?

Kathryn Cowell investigates advances in the bond markets and examines what impact tokenisation and digital currencies might have on investing in the future.

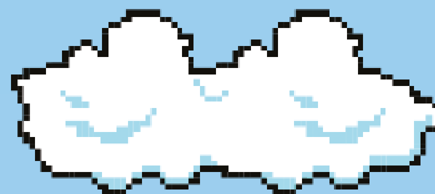
What do a €100m 2-year eNote issued by the European Investment Bank (EIB) in 2021 and a €60m 1-year bond issued by Siemens earlier this year have in common? And – more to the point – why are such tiny deals noteworthy when viewed against the trillions of dollars of bonds already in existence in the highly liquid global public bond markets?

The answer is that both are among a handful of ground-breaking trades said to be paving the way for an eventual revolution in the global economy, one in which traditionally closed markets may be opened up to a far wider pool of investors than ever before. Both are blockchain-based digital bonds, underpinned by the concept of tokenisation: a token being a digital unit of value representing a share of an asset.

While a blurring of lines between private and public markets and between institutional and retail investors has been a significant trend in recent years, there remain substantial barriers to a wider democratisation of markets. According to Stephen Coghill, Head of Quantitative Analytics in M&G's Private Fixed Income team, the ultimate impact of tokenisation is expected to be greatest in private markets, where there is currently little or no liquidity and a reliance on inefficient paper-based assets. However, there have already been some early moves in public bond markets to trial the new technology too.



'Once created, tokens can be traded near instantly between parties at any time of the day or night.'



Digital pioneers

The EIB has been leading the way among supranationals. Its €100m eNote – its first blockchain-based bond – was issued under a French law that facilitated the registration of digital securities.

Meanwhile, Siemens' announcement that it was to issue a short-dated, small-sized blockchain-based digital bond felt appropriate for a company that prides itself on its pioneering spirit since its foundation in 1847. The company, one of Europe's largest and possibly oldest industrial manufacturers, issued its bond on a public blockchain, or digital ledger platform, called Polygon that had been set up by a group of engineers in Mumbai in 2017.

Software coding creates a series of smart (automated) contract capabilities to handle secure and decentralised transactions. It facilitates direct bond offerings to investors without the need for a traditional financial ('Trad-Fi') institution or central clearing.

The absence of a 'digital euro' means that investment in Siemens' new bond, and coupon payments, involves classic bank transfers for now – the transaction is not fully digital yet. The bond has a mechanism for peer-to-peer trades on Polygon. If the digital ledger is not operational for any reason, Siemens can switch the entire bond to another digital ledger, or replace the digital bond with a traditional ('analogue') bond, or call the digital bond without bondholder consent.

Unlimited potential

One of the main reasons why the finance industry has started to take proper notice is that any asset can effectively be tokenised – from more readily traded funds, bonds, stocks, real estate and commodities, through to assets such as fine art and intellectual property.

This ability to create fractional amounts of assets that can be traded with ease opens up historically tricky assets to a wider investor base than has been the case previously.

Tokenisation creates an immutable, digital record of ownership on a blockchain. Furthermore, tokens can be customised through smart contracts to better reflect the underlying assets. For example, in the case of a real-life bond, there would be a smart contract between the bond and the token that includes information about the underlying bond: if the bond can't be traded for two days ahead of a coupon payment, this would be built into the digital asset. This means that the full life cycle of the bond is reflected through its tokenisation.

Once created, tokens can be traded near instantly between parties at any time of the day or night. It allows faster settlement and lower costs of trading. The result is that significant operational efficiencies can be achieved for issuers by eliminating manual processes and certain intermediaries.

In future, once central banks have fully launched digital currencies, payments can be automatically paid through to an investor's digital wallet, cutting out intermediaries such as brokerages, custodians, clearing houses and potentially the banking system itself, although this remains some years away at present.

Steaming ahead

It is still too early to tell who will be the winners and losers from this revolution, although traditional intermediaries clearly see the direction of travel and are among those trialling new technologies. Nevertheless, the industry overall has only taken baby steps so far, with individual players carrying out their own pilots across a range of different technologies and approaches.

A good analogy here is the early development of steam engines and railways in the UK in the 19th century. During this period competing engineers developed their own lines with little thought about how a network of interconnected lines would eventually come together.

From a technological and regulatory perspective, Singapore is probably the most advanced market to date through its development of its ADDX platform. This is a private markets investment platform that lets individuals invest from as little as $10,000 in unicorns, pre-IPO companies, hedge funds, and other opportunities that traditionally require minimum investments of millions of dollars. ADDX is regulated by the Monetary Authority of Singapore (MAS) and is open to all non-US individual accredited, corporate accredited, and institutional investors.

In Europe, a number of countries including Germany, France, Switzerland and Sweden have been making progress in developing legislation that will determine how tokens reflect the underlying currency. As well as its €100m 2-year eNote, the EIB has sold a number of other issues denominated in Swedish krona, sterling and euros. The inherently reduced liquidity of these issues means they only work as a buy-and-hold strategy and have so far largely been sold to local investment managers.

The UK and US, which have both been more focused on cryptocurrencies to date, are currently lagging behind. However, the Bank of England and the Treasury are currently exploring the possibility of a 'digital pound', and this is likely to change in the coming months as the revolution gathers pace. □

This article is based on a blog published on Bond Vigilantes by Miriam Hehir, Director of Credit Research. For more insights, visit www.bondvigilantes.com

NAVIGATING NEW & ALTERNATIVE WORLDS

Traditionally access to private markets has been almost exclusive to institutional and ultra-high-net-worth investors, and they've reaped the rewards of the diversification and higher potential returns these investments bring to portfolios. Karen Lam, Aramide Ogunlana and Alex Rolandi look at opening routes of accessibility into private markets for investors and borrowers seeking flexible, long-term and patient capital.

As private markets continue to evolve, improved accessibility is opening the doors to potentially unique opportunities across the private credit spectrum through different fund structures that can meet diverse needs. Semi-liquid funds are evolving driven by regulation, and new acronyms such as ELTIF (European Long-Term Investment Fund) and LTAF (Long-Term Asset Fund) are starting to emerge. These are regulated funds which are allowed to hold private assets and have broad distribution capabilities, as well as the ability to balance liquidity provision with stable, longer-term investments.

Private credit – historically seen as a niche asset class – is growing exponentially. Indeed, total assets under management allocated to private debt are expected to hit $2.3 trillion by the end of 2027, increasing at a faster rate than alternatives overall, according to forecasts by Preqin[1].

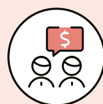
As investors seek to gain access to diversification benefits and reliable streams of income, demand for private credit assets has surged in recent times. The asset class is known for its resilience and adaptability, as its performance through the current cyclical downturn has shown.

'Total assets under management allocated to private debt are expected to hit **$2.3 trillion** by the end of 2027.'

As banks retreated from lending in the aftermath of the Global Financial Crisis, private credit rose in prominence as a key source of tailored lending. Most large traditional institutional investors have a dedicated private debt allocation, but this investor base is broadening, and capital is increasingly coming from alternative sources – including smaller institutions and individual investors – as accessibility to private credit improves.

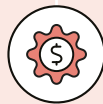
[1]Preqin, 'Global report 2023: Private debt', (preqin.com), January 2023.

Barriers to entry: Potential closed-end fund barriers



High capital commitments

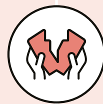
Minimum capital commitments can be prohibitively high



Operational

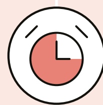
Investors need to be operationally sophisticated to receive and process capital calls

Investors must actively re-allocate generated cash flows as these cannot be reinvested in these funds



Potential LP (investors) default

LPs may not be able to honour their commitments and default on making promised payments. This can lead to missed investment opportunities or other investors having to fund the gap.



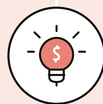
Delayed drawdowns

Most funds aim to deploy in <2 years

Challenged demand and supply dynamics may lead to longer deployment rates

No liquidity

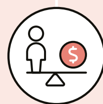
Capital is locked in over a fixed term (8yrs+) and often with the potential of extension



Opportunity cost

Investors typically have 1-2 weeks to fund capital calls

Uncalled capital is often allocated to low yielding liquid assets in the interim



Financing leverage

Funds may employ short-term financing between capital calls to not miss out on deals which introduces artificial leverage

Source: M&G, for illustrative purposes only.

Balancing risks

By their nature, private markets are opaque and can seem difficult to access – especially given the liquidity restraints and information barriers entailed when investing in the space. Private assets can be more difficult to invest in, while the large number of different asset types available within private credit alone adds to this complexity. Expertise is crucial, as private credit requires meticulous risk evaluation and management.

With interest rate rises and ongoing volatility defining the new normal, private credit may be seen as an attractive source of diversified, stable income and uncorrelated returns.

But these potentially superior yields can come with a price some investor types are unable to pay.

For smaller institutions, the inherent illiquidity of private credit can be a barrier to entry as closed-end and illiquid fund structures may not always meet the regulatory or portfolio requirements for different types of investors. Managers often demand hefty minimum capital commitments for illiquid private credit assets, which can also impact portfolio diversification for smaller investors.

Gaining entry to the private credit universe needn't be a challenge. As private markets develop, improved accessibility is helping redefine alternatives, opening the doors to unique opportunities across the private credit spectrum through various fund structures that provide easy and clear access to the asset class's expansive toolkit.

Gaining access to private credit

These different fund structures can be used to help address different investor needs. As well as offering flexible exposure to alternative and differentiated types of income-bearing assets across the cycle, they provide diversifying benefits and potentially help investors meet their long- and near -term goals.

For example, an open-ended fund structure with a multi credit approach can provide simple access to the broad range of options within the universe – from private corporate lending to consumer finance, real assets lending and structured credit, which have very different underlying risks and performance drivers.

However, investors needn't reach for the riskiest of segments in their quest for real income. An actively managed portfolio can tap into the benefits of both liquid and illiquid assets, while offsetting some illiquidity risk for smaller institutions. Open-ended funds can help clients manage their capital flows as there will be no capital calls, while specifically tailored strategies may help investors avoid exposure to leverage and increased risk in their portfolios.

However, it is still important to consider which areas within private credit are adequately developed, provide diversification to an asset owner's unique risk factors, and can generate a healthy yield pick-up relative to public market assets.

Through active management, an experienced private credit investor well-versed in analysing the varying complexities of the asset class may capitalise on periods of market dislocation while also providing additional protection through more stabilised cash flows. This flexibility bolsters the resilience of private credit portfolios, potentially enabling them to thrive in all kinds of environments, providing opportunities for investors seeking secure income – whether in challenging conditions or a bull run. □

Karen Lam is the Head of Investment Specialists for Private Credit, Aramide Ogunlana is an Investment Specialist Director for Private Credit and Alex Rolandi is an Institutional Marketing Manager.

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Capital at risk

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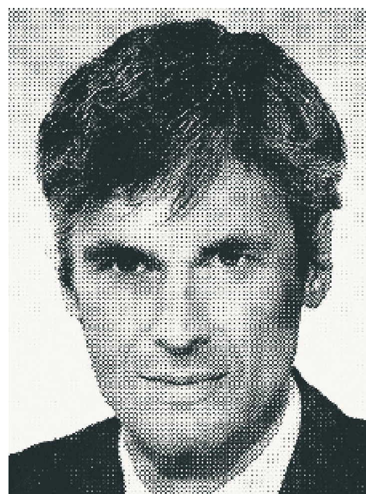
JIM LEAVISS



M&G's CIO for Public Fixed Income, Jim Leaviss, has spent more than a quarter of a century doing the job he loves. During this time, he has had to navigate booms and busts, crisis and euphoria alike, bear and bull markets – and still manages to keep a fresh perspective through it all, as Antonia Oprita recently discovered.

What are the most important qualities of a good fund manager?

Being a fund manager, especially in fixed income, is the most interesting job that you could possibly have. It allows you to think about anything you want to. You have free rein to indulge your curiosity in all areas. Whatever you are interested in will have a relevance. There are of course lots of economists working as fund managers in fixed income, but there are also people with a background in history, geography, arts, whatever. Curiosity is the most important characteristic of a good fund manager, in my view.

The other one is probably resilience. All fund managers who have been in markets for a reasonable amount of time will experience things going well and things going badly. If you're beating the market 55% of the time, that's a good outcome, which will deliver very strong long-term outperformance. But obviously, this means that you'll be underperforming or getting things wrong 45% of the time. In my experience of over 25 years, the fund managers who are dancing round the desk, waving their arms, cheering and celebrating in the good times, will also be the fund managers who can't cope with the bad times.

You just need to accept that when things go well, it doesn't prove that you're a genius, and when things go badly, that doesn't prove that you're a disaster. The worst thing about being a fund manager is that you do spend all night and all weekend thinking about it. You're always on. Being able to handle that, being resilient in bad times and not getting too exuberant in the good times is often a sign that someone's going to make a decent fund manager.

> "Curiosity is the most important characteristic of a good fund manager."

What are your favourite sources of information?

Of course, you have to read all the financial papers, like the FT and the Economist. But the more interesting thing, which I think will make you successful in fixed income, especially when looking at macro fixed income markets, is reading the New Scientist. It helps you to get to grips with developments in ageing or longevity, which are very important for a bond investor. One of the biggest drivers of bond yields and bond prices is the demand for bonds from pension funds, insurance companies, and individuals. As human beings live longer, their demand for assets like bonds that produce an income to help them through their retirement will increase. For example, for my grandfather's generation, the average life expectancy in retirement was likely to be six years, so the amount of savings needed for that retirement was relatively low, compared to where we are now, when most people reading this magazine should expect to live into their 90s. Many of them will live into their hundreds, and that might mean a retirement period of 30-40 years. So the savings needed to fund their retirement will be much higher.

In another example, if you read the New Scientist, you learn about the new drug that helps defeat obesity. In turn, that will reduce diabetes, which will add to longevity, and this will have some impact on demand for fixed income. It's not just longevity that the New Scientist is interesting for; the big topic of conversation at the moment is all about artificial intelligence (AI) and what it will do to productivity. We don't know the answer yet, but it is helpful to understand the next developments in computing power and quantum computing.

Understanding history is also important. Read the BBC History magazine and you will find out what happened, for example, after the Black Death in Italy and what that meant for the wages of farm workers and the distribution of wealth and the creation of super-wealthy families that enabled them to grow dynamically, and the inflation that was generated. All of these have parallels with things that are happening today or might happen again in future.

> "When things go well, it doesn't prove you're a genius; when things go badly, it doesn't prove you're a disaster."

Do you have a favourite economic indicator?

It changes, depending on what influences the markets. When I started out, people cared about things like the money supply. At the Bank of England, my very first job was measuring the money supply. But even within a couple of years, while I was at the Bank, I could see the focus moving towards things like government borrowing, which became much more important than money supply. Fast forward, and obviously inflation is incredibly important and always has been, but the most-watched economic statistic every month is the non-farm payrolls number in the United States, which is an employment measure.

However, while we're all watching that, suddenly people are pointing out that the money supply numbers are behaving in a way that might imply that we're going to get a bout of deflation again. Therefore, it's important that we don't throw away the 'old' numbers. Different economic statistics will become more fashionable and more interesting at certain phases. But then suddenly things will happen and people will say: 'Oh! While we're all looking here, actually the real action was happening over there.'

How does your team generate investment ideas?

A lot of what we do here at M&G is about collaboratively chatting around the desk; this is where we synthesise our ideas. We challenge each other, we test our ideas with our peers, with colleagues, we talk to our credit analysts, our dealing desk, our team in the United States, in Singapore, or elsewhere. We challenge each other until the best ideas come out. But it's also important to have conviction in your own ideas.

To me, the worst environment for idea generation is when you have an investment meeting where everyone sits around the desk and the head of the team will dictate, in a way, what everybody in the team does; or, worse than that, they'll have a vote on whether they think bonds are going up or down. You don't get good ideas by consensus, and you don't get ideas by the most senior, most grey-haired person in the room dictating everything.

It's important that we have a diversity, a plurality of ideas, and that the most junior to the most senior people can test out those ideas within this kind of around-the-desk collegial atmosphere.

> "We challenge each other until the best ideas come out."

What about 'lightbulb moments'? When do they happen?

That's why I like to travel, either on holiday or on business. We're lucky enough to have offices in different parts of the world, whether it's in South Africa, Chicago, New York, Singapore, or somewhere else. And when we're visiting these offices we get to meet economists or visit companies from different parts of the world, and hear from clients directly. This enables us to build funds directly for those clients, which satisfy their needs.

Japan is a place where I love going every couple of years or so, and I always come back with new ideas. It's a very interesting economy. A lot of people reading this will probably think "Japan? It's really expensive. I'm not going to go there on holiday ever." But actually it's one of the cheapest places to go. The yen is really very undervalued, in my view. That's just a very trivial example of the advantages of travelling, meeting people, hearing what their issues are. Your experience of it being a cheap currency can go into a portfolio somewhere. Of course, it won't be the only reason to include it, but it's certainly a factor.

The narrative on Japan is suddenly changing in 2023, and I think that's one of the most interesting things happening. That may be more of

an equity story, and we're seeing the equity markets in Japan rally. But having been at zero for years and years, maybe Japanese interest rates will start to go up, and that has some consequences for bond markets as well. So I think we might be at a turning point in Japan.

What is your biggest worry about the current economic environment?

We've had so many interest rate hikes now, whether it's the Bank of England, the Federal Reserve or the European Central Bank. In many cases, 5 percentage points' worth of rate hikes over one year; this is one of the fastest rate-hiking cycles we've seen in history. We also know that when interest rates go up aggressively, historically, something breaks, and that can often be a banking crisis of some sort. We saw recently in the United States three very big banks get into difficulty as a result of rising interest rates… or it could be something like LTCM (Long-Term Capital Management), the hedge fund that went bust a couple of decades ago. When the era of cheap borrowing comes to an end, companies, banks, individuals start to struggle; as a result of that, in my opinion, economic growth will undoubtedly start to weaken at some point.

So for government bond investors, I think it's likely we're near the end of the rate-hiking cycle. Inflation has already started to come down, and actually government bond yields will probably come down. That might be an opportunity, but I think the flipside of that is that it could lead to some accidents in the global economy, whether that's another bank getting in difficulty or a section of the economy getting into difficulty. It might be house builders or mortgage lenders or it might be something completely out of the blue and unexpected. You just don't quite know.

And one thing that gives you hope?

This is going to be the most forecast and expected recession in history. People have been saying that bad things are going to happen for a year and a half now. And I think most of the columnists are quite sceptical about the idea that we could have what's called a soft landing – where economic growth just comes down, is a bit lower for a while, and then picks up again. But you can't rule it out, because the optimistic people would say unemployment is almost at record low levels in the UK, the EU, the US and elsewhere. That's a really positive thing.

The Goldilocks scenario would be that we have some levels of growth, but we don't end up with unemployment rising. I fear that that's going to be very difficult to engineer for governments and central banks, but if you want to look on the optimistic side of things, we've had a lot of interest rate hikes so far and we haven't seen a major rise in unemployment. ◻

M&G Investments

INTRODUCING The Bond Vigilantes BLOG TEAM

FIFTEEN YEARS AFTER WE STARTED, THE WORLD LOOKS VERY DIFFERENT, SO WE THOUGHT A DIFFERENT KIND OF STORY WAS NEEDED.

BEN
FUND MANAGER
HEROES: RON BURGUNDY, PG WODEHOUSE

JIM
THE FIXED INCOME CIO
HEROES: BRIAN CLOUGH, MORRISSEY

MATT
FUND MANAGER
HEROES: JOHN NASH, ARI GOLD

CLAUDIA
EMERGING MARKETS
HEROES: RAOUL WALLENBERG, GANDHI

STEFAN
DEPUTY CIO
HEROES: BILL SHANKLY, THEODORE HERZL

EVA
FUND MANAGER
HEROES: SIR DAVID ATTENBOROUGH, SIMONE BILES

JAMES
FUND MANAGER
HEROES: HORATIO NELSON, LORD PALMERSTON

RICHARD
FUND MANAGER
HEROES: MUHAMMAD ALI, WINSTON CHURCHILL

CAN GOVERNMENTS GO BUST?

EDITION 01

SOVEREIGN DEBT WAS A BIG PART OF 13TH CENTURY ITALIAN LIFE, WITH MONEY RAISED BY FEUDING CITIES TO FIGHT EACH OTHER. TODAY WE TALK ABOUT CORPORATES RAISING MONEY FOR THEIR WAR CHESTS, BUT ONCE THIS WAS LITERALLY WHAT IT WAS FOR.

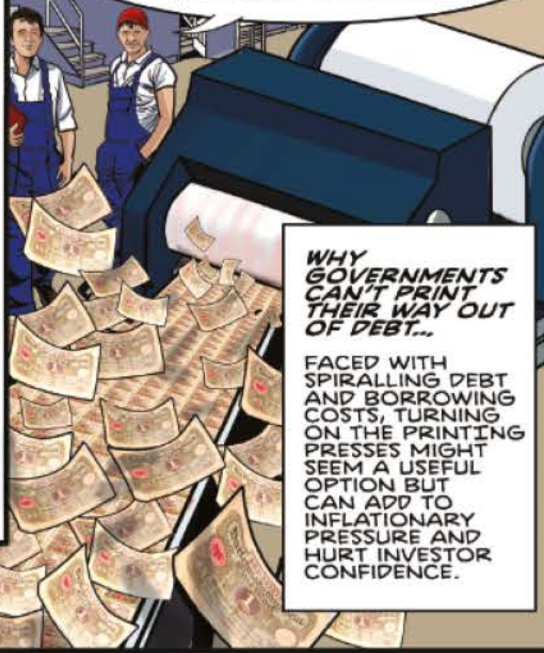
1294, WAR BETWEEN ENGLAND AND FRANCE HITS MARKETS, EDWARD I RUNS OUT OF MONEY AND FINANCIAL FRIENDS, LEADING TO MASSIVE TAXATION. BUT WE HAD TO WAIT UNTIL 1694 FOR ***TRADEABLE DEBT*** TO ARRIVE, ALONG WITH THE BANK OF ENGLAND, LEADING TO MASSIVE INCREASES IN GOVERNMENT DEBT OVER THE COMING DECADES.

THERE HAVE BEEN SOME NOTABLE DEFAULTS, ARGENTINA IN 2001, GREECE IN 2012, BUT THE MOTHER OF ALL SOVEREIGN DEFAULTS HAPPENED IN 1918. RUSSIA, SEEN AS A SAFE INVESTMENT, TURNED INTO A POST-BOLSHEVIK ***BOND-FIRE*** THAT BURNT PRIVATE INVESTORS IN ***FRANCE*** AND ***BRITAIN.***

GLOBAL DEBT LEVELS WERE HUGE FOLLOWING WORLD WAR II BUT STRONG GROWTH, COMBINED WITH HIGH INFLATION, MASSIVELY REDUCED THE DEBT BURDEN. THE SO-CALLED ***GOLDEN YEARS OF CAPITALISM*** RAN UP TO THE 1970S BUT GOVERNMENTS' EXPANSION INTO SOCIAL PROVISION, PLUS AN AGEING POPULATION, HAVE CHANGED THE NARRATIVE ON SPENDING WITH MORE DEBT CREATED BY HEALTHCARE, EDUCATION AND PENSIONS.

15TH SEPTEMBER 2008

FEARS OVER THE SOLVENCY OF BANKS SWITCH TO THE SOLVENCY OF GOVERNMENTS. INVESTORS DEMAND MUCH HIGHER YIELDS IN RETURN FOR LENDING TO CERTAIN COUNTRIES. ENTER ECB PRESIDENT ***MARIO DRAGHI*** AND THE POWER OF REASSURANCE. CONFIDENCE AND STABILITY GRADUALLY RETURNED, WITH ONE NOTABLE EXCEPTION...

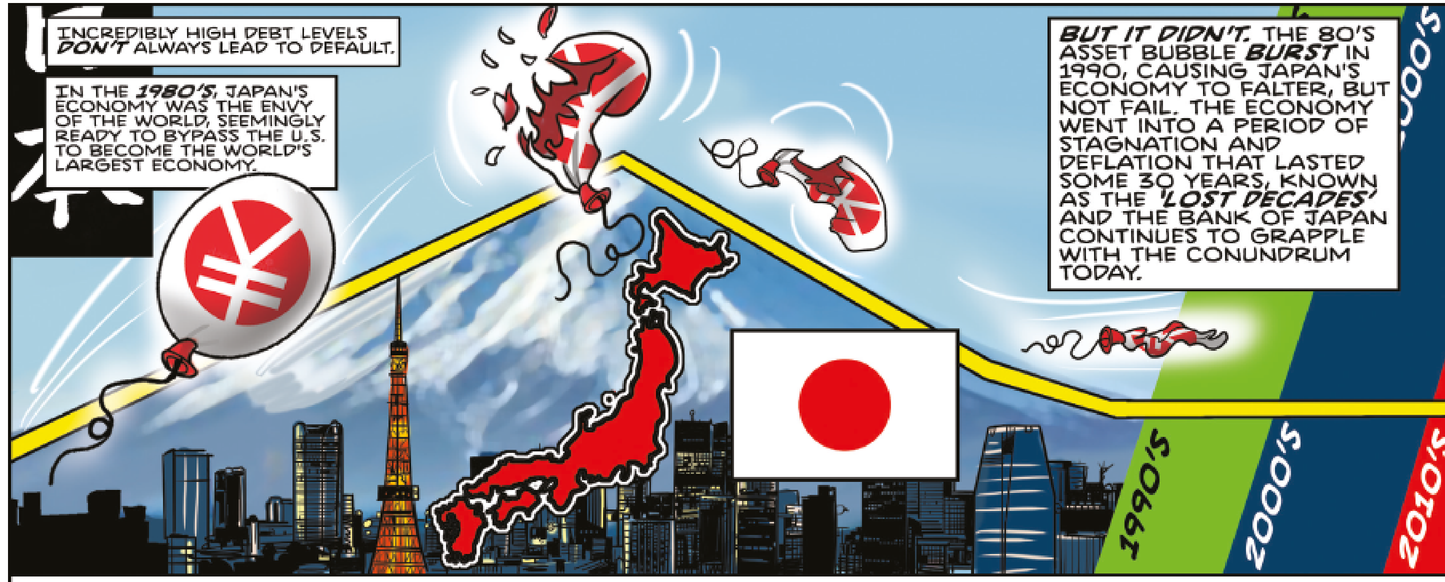


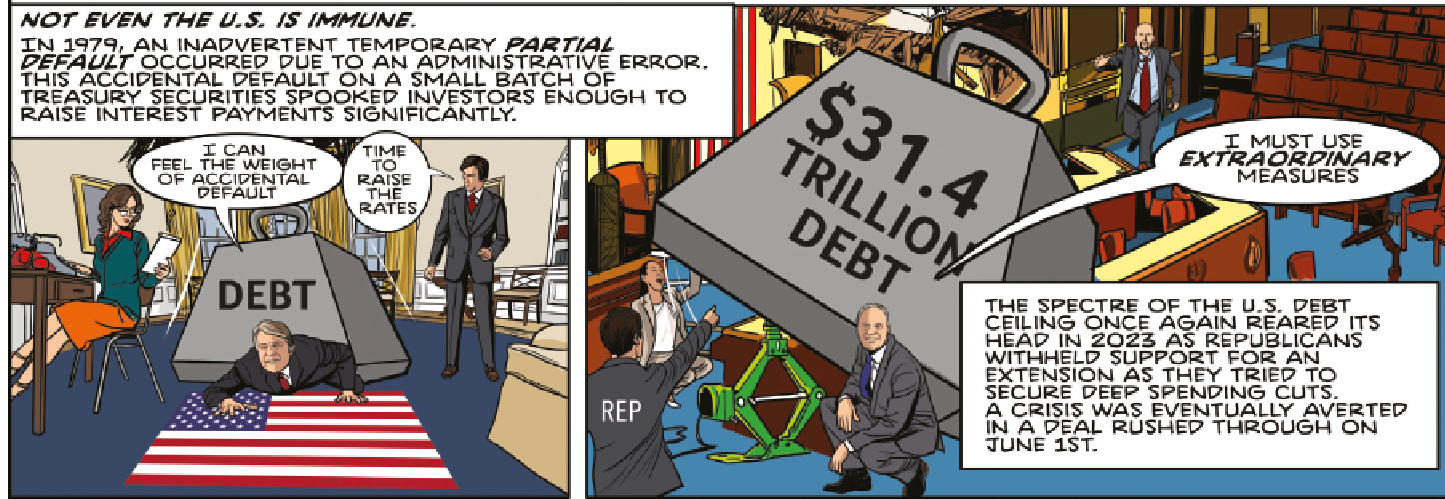
WHY GOVERNMENTS CAN'T PRINT THEIR WAY OUT OF DEBT...

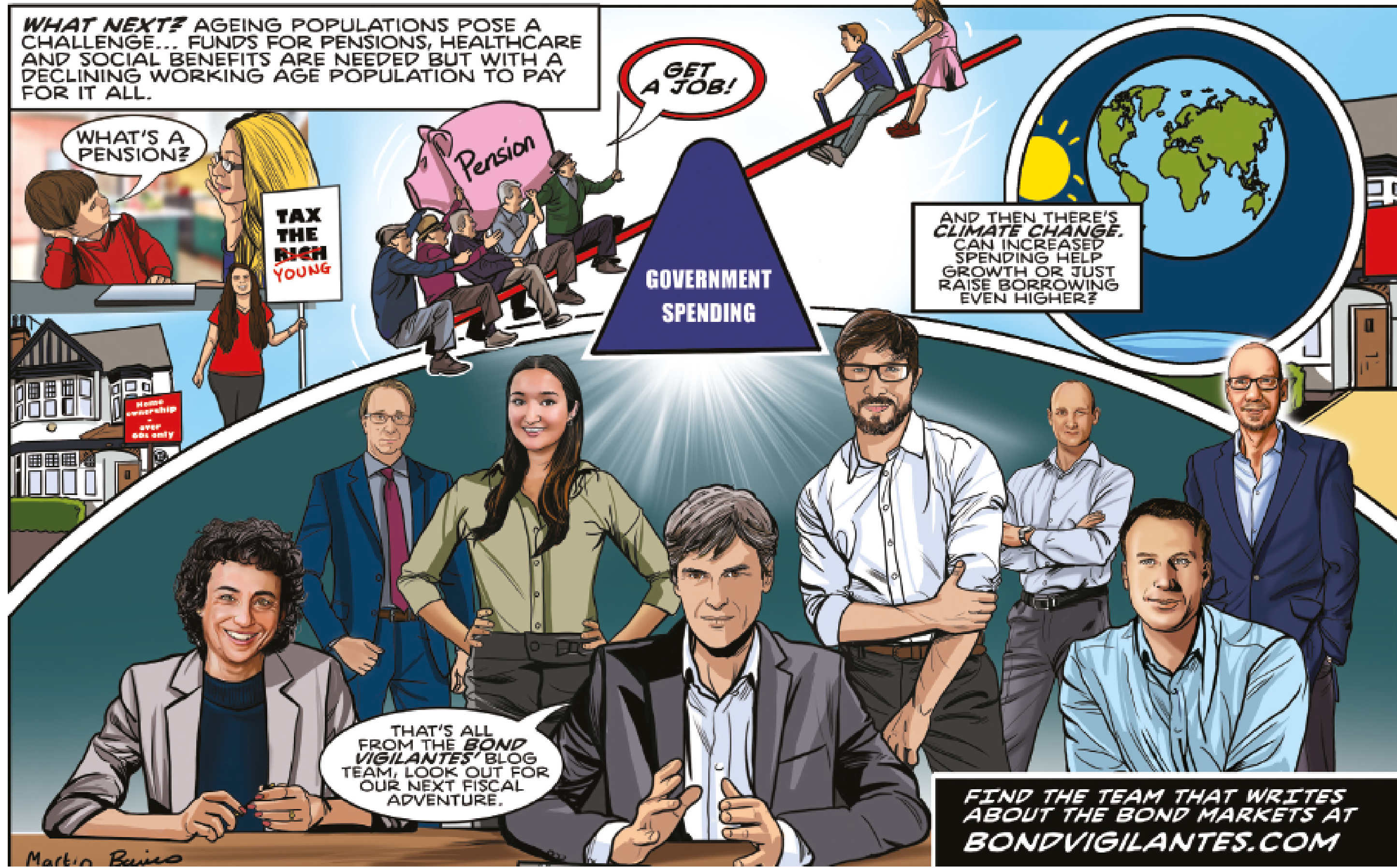
FACED WITH SPIRALLING DEBT AND BORROWING COSTS, TURNING ON THE PRINTING PRESSES MIGHT SEEM A USEFUL OPTION BUT CAN ADD TO INFLATIONARY PRESSURE AND HURT INVESTOR CONFIDENCE.

SOVEREIGN DEFAULTS ARE RARE BUT THE REASONS FOR THEM ARE OFTEN SIMILAR. FOR EMERGING MARKETS, ECONOMIC STAGNATION, POLITICAL INSTABILITY AND THE SIMPLE WEIGHT OF DEBT VERSUS GDP ARE COMMON TRIGGERS. INVESTOR CONFIDENCE ***ERODES,*** REFINANCING IS MORE COSTLY AND THE RISK OF DEFAULT INCREASES.

WHEN ***COVID*** STRUCK, GLOBAL DEBT LEVELS WERE ALREADY HIGH BUT ECONOMIC SUPPORT THROUGH FURLOUGHS AND OTHER SUPPORT SCHEMES STABILISED MARKETS AND EASED LIQUIDITY FEARS. BUT THIS MEANT DEBT CONTINUED TO RISE, PLACING PRESSURE ON FUTURE SPENDING.







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Once again Japan draws the gaze of global investors

Japan is back on investors' radar. Thirty years after the country experienced a dramatic economic and stockmarket crash, Japanese equities are once again attracting the attention of global investors. Carl Vine, Co-Head of Asia Pacific Equity Investments, speaks to Dominic Howell about what's sparked renewed interest in the asset class – and why he believes Japan offers a compelling long-term investment opportunity.

In 2023, overseas investors, for the first time in a decade, started to pay attention to Japanese equities. Steady inflows of foreign capital into Japan's stockmarket helped propel the broad Topix index to the highest level since the stockmarket bubble burst in 1990.

The new-found enthusiasm for Japan is perhaps best exemplified by Warren Buffett, who visited Tokyo in April and said his investment company, Berkshire Hathaway, may increase its investments in Japanese stocks.

The current buzz about Japan arguably reflects a number of factors: signs that the country could finally be escaping years of deflation; robust economic growth as the country recovers after the COVID-19 pandemic; and, possibly most powerfully, incredible self-help stories facilitated by improving corporate governance. These developments have helped fuel a sense among investors that after many false dawns, Japan could at last be changing for the better and a new era might be beginning.

The bursting of Japan's asset price bubble 30-odd years ago has cast a long shadow over Japan's economy and financial markets. The years of stagnation and deflation that followed are often referred to as Japan's 'lost decades'. It also had a lasting and negative impact on investor sentiment towards the country's stockmarket.

Despite a collective sense of optimism following the announcement of 'Abenomics' ten years ago, investors have been disappointed by the pace of change. But with confidence growing once more and the stockmarket trading close to 1990 levels, many investors are starting to ask will this time be different for Japan?

As a long-time Japan investor, Vine believes the buzz is justified. After years of steady changes in the corporate landscape, we have reached a generational moment in terms of corporate reform. As a result of the significant improvements in corporate behaviour and changes in the institutional framework, we believe Japanese equities now represent a compelling long-term opportunity for active, engaged investors with a track record of investing in Japan.

Corporate reform story

One of the main reasons behind investors' interest in Japan this year is growing evidence of improving corporate governance. The topic of corporate reform in Japan is not new. For many years, improvements in corporate behaviour and the prospect of greater shareholder returns have been highlighted as potential catalysts for Japanese equities. However, this does not mean it is not the right reason to be looking at Japan now.

A state-sponsored campaign to reshape the corporate landscape

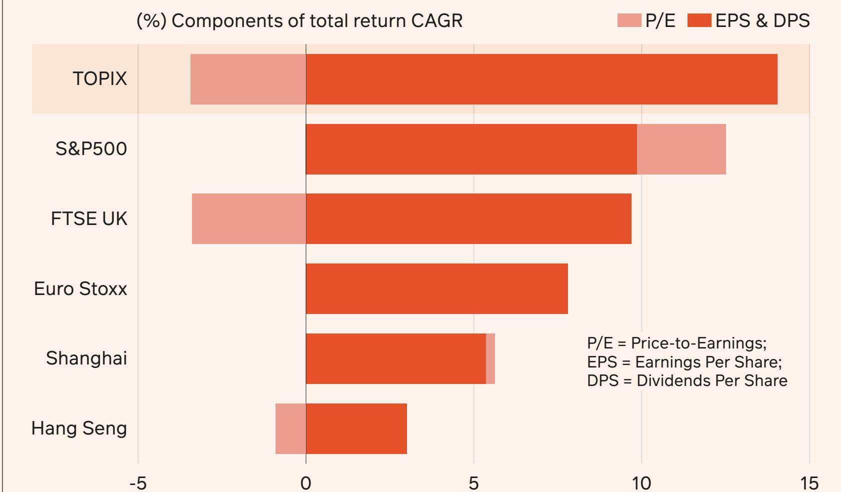
Abenomics, the comprehensive reform package launched by Prime Minister Shinzo Abe a decade ago, was the start of an enormous long-term project. Since then, there has been a state-sponsored campaign to construct a framework that could support improvements in corporate behaviour. We highlight some of the main reforms and Topix index performance below.

Source: Refinitiv Datastream, August 2023.

Delivering the results

As a result of the reform agenda and deliberate efforts to improve, Japanese companies have delivered impressive profit growth over the past ten years.

Past performance is not a guide to future performance.



Source: M&G, Bloomberg, Period 10 years to January, 2023.

‘Going from a top-down, post-war, industrial-policy-driven economy to one driven by the profit motive was never going to be an overnight process.’

Historically, Japanese companies might have lacked a focus on profitability, allocated capital poorly and notably paid little attention to shareholder interests. However, over the past decade, deliberate ‘self-help’ efforts by the corporate sector to improve, to become more effective and more competitive have translated into impressive profit growth. More recently, Japanese firms have become increasingly focused on shareholder interests by paying higher dividends, buying back shares and even listening to investor suggestions about company strategies and leadership.

Until now, these developments went largely unnoticed by investors – but the opportunity was hiding in plain sight. The present excitement about Japan suggests that investors are starting to understand what is happening, but we suspect that the full extent of the changes that have taken place and the potential growth that could be achieved in the coming years are not widely appreciated.

In light of a meaningful change in mindset and priorities among Japanese companies, there is a powerful, structural earnings growth story in Japan, which has good potential to extend many years into the future. In the coming years, we believe there is a good case for Japanese equities delivering double-digit compound returns though a combination of earnings growth, dividends and share buy backs.

Corporate culture transformation

A decade ago, Abenomics created a tremendous buzz, prompting foreign investors to embark on a quarter-of-a-trillion US dollar buying spree on Japanese equities. After the early excitement, however, enthusiasm gave way to a sense of disappointment with the subsequent speed of change. Indeed, this bolus of foreign buying took almost eight years to unwind.

Whilst there was a perception Abenomics was taking too long for some investors, the pace of change has not been unreasonable. Going from a top-down, post-war, industrial-policy-driven economy to one driven by the profit motive was never going to be an overnight process.

It is somewhat ironic that investors became the most disenchanted just at the point when hard evidence of change has begun to accelerate. Over the past ten years, the Japanese market has recorded a compound annual growth rate (CAGR) in earnings of ~10% (in local currency terms). This is entirely respectable compared to other markets, even the S&P 500. With profit margins in Japan still well below those in the US, there is no reason to believe that this impressive growth will stop here, in our opinion.

Continuing change

A decade on, we believe there are more positive developments to come. The current prime minister, Fumio Kishida, is committed to building on Abe’s success, with an economic strategy he calls the ‘new form of capitalism’. Kishida’s pro-market stance and plans to drive wage growth in the economy through improved labour productivity are promising. Indeed, we are already seeing a level of wage rise that surpassed many expectations. His ambition to encourage a major shift in household asset allocation toward equities would be hugely favourable for the Japanese stockmarket. We could see the result of that next year when a tax-exempt investment scheme is expanded.

Top-down encouragement for companies to continue this journey of improvements is arguably no longer needed as the convoy system in Japan is propelling companies to participate in this great march toward profitability. However, the prime minister’s policies clearly show that the profitability of Japanese companies is not only vital for their competitiveness on the world stage, but also important for the wealth of the nation, as ordinary savers are encouraged more and more to move their money from under their mattresses, or bank deposits, into the local stockmarket.

The Tokyo Stock Exchange (TSE) is also playing its part in forcing firms to improve. In April this year, the TSE challenged companies that are trading below book value (the value of their assets) to use capital more efficiently or face consequences. This represents around half of the companies on the Japanese stockmarket. With many Japanese firms holding large amounts of cash, this dramatic move is designed to encourage companies to allocate capital more efficiently and think about shareholder returns, strategies that could see their stock valuations improve.

These efforts are not happening in isolation – they are part of a state-sponsored multi-pronged approach to reinvigorate the Japanese economy and stock market.

Self-help opportunities

In addition to the introduction of supportive policies, we think ongoing self-help will continue to drive strong compound growth in earnings in the coming years. In terms of potential levers for companies to pull to increase economic returns, we still see an abundance of ‘low-hanging fruit’ to be picked.

For a start, Japanese balance sheets remain overcapitalised with excess assets in the form of working capital, real estate, and cash. This excess capital is gradually being returned to shareholders or re-invested to generate potentially higher returns. There is also scope to improve income statements. Many firms are examining their commercial strategies through a new lens and we believe that profit margins can increase significantly.

Industry structure is another important and changing element of corporate Japan. The country’s industry is highly fragmented which is arguably a contributing factor to Japan’s low labour productivity. There are too many small companies in Japan, resulting in duplicated costs riddled throughout the corporate sector. In our view, industry consolidation, something that has government support, could lead to productivity improvement and higher margins.

As companies embark on these strategies to become better versions of themselves, supported by the improved institutional framework and the political leadership, we think it is highly plausible that the corporate sector could continue to deliver high single-digit compound earnings growth in the coming years.

Changing attitudes to prices

Besides companies’ own efforts, there have been some notable changes in the macroeconomic environment this year which could also support equity markets. The first is rising wages. For many years, wages in Japan have stagnated but this year workers have received sizeable pay increases. In the ‘shunto’ pay-bargaining round, Japanese firms agreed the largest wage increases in decades (in the region of 3-4%). Some companies have even raised pay by up to 40%.

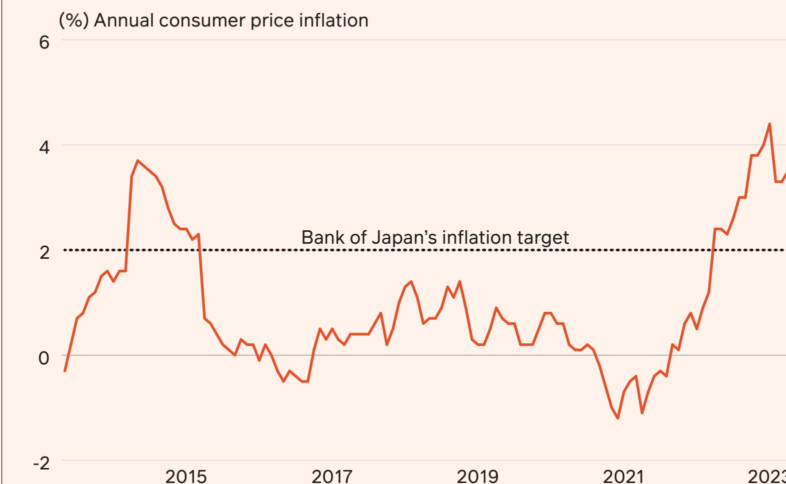
This development can partly be attributed to Prime Minister Kishida, who has made wage growth one of his priorities to try and reinvigorate the economy. Higher wages could be beneficial as they could boost domestic consumption and help generate sustainable economic growth. From the point of view of corporate margins, pay growth won’t necessarily cause profits to fall. Improvements in productivity could enable firms to raise wages and margins. This is indeed at the core of PM Kishida’s drive for wage growth, a sustainable increase that does not detract from margins.

In addition to a shift in attitude towards wage growth, we are also seeing a new approach to prices. After years of deflation, prices have been rising this year. The return of inflation appears to have prompted a structural change in behaviour. Among corporates, firms are reviewing their product prices for the first time in decades. Companies are raising prices to defend their profit margins, with customers accepting the increases.

This change in attitude is significant as a large part of the Japanese corporate sector is export driven, and Japanese products are now increasingly cheap compared to global peers, especially with a cheaper currency.

In this regard, it appears that an element of macro tailwind has at last returned to the Japanese economy.

The return of inflation



Source: Refinitiv Datastream, September 2023.

The return of inflation after years of deflation is a sign of stronger fundamentals that could translate into better prospects for nominal GDP growth, which is ultimately what matters for corporate earnings. In our view, an improving growth environment and a positive mutually reinforcing wage-price dynamic could be beneficial for the stock market.

A ‘shareholder of choice’

Despite the renewed interest in Japanese companies this year, there are still plenty of attractive opportunities, in our view, for active investors such as ourselves. For a start, the Japanese equity market is poorly covered by the investment community. This means there is a bizarre situation where the powerful structural trends that we are observing and excited about are not receiving the appropriate recognition. This creates a rich source of opportunities for stockpickers.

Another factor that favours stockpickers is that the market is not very good at pricing corporate change. Investors tend to be slow to recognise the positive benefit of improvement measures or alternatively they overreact. This inefficiency is great for the stockpickers who have a long history of speaking with these companies.

Compelling long-term opportunity

Japan is back on the radar for investors, but it remains to be seen whether they will grasp the potential on offer. The transformation of corporate culture over the last decade has been profound and Japanese companies have delivered impressive earnings growth. Now that the institutional framework is arguably fit for purpose, the pace of change seems destined to accelerate and this could drive further earnings growth and shareholder returns.

There are few other developed markets that are experiencing this level of self-help driven opportunities across the market. And for active stockpickers, who truly understand companies and engage with them to unlock their true potential, we believe Japan currently represents a compelling long-term opportunity. □

‘The pace of change seems destined to accelerate and this could drive further earnings growth and shareholder returns.’

The importance of diversification and dynamic allocation

The Long-Term Investment Strategy team is part of the M&G Treasury and Investment Office, a team of in-house investment strategists and 'managers of managers' for the Prudential Assurance Company (PAC), a subsidiary of M&G plc. The Long-Term Investment Strategy team sets the strategic asset allocation for investment funds, as well as providing various economic scenarios and modelling for M&G plc. As part of this, we regularly review our asset class views and their sensitivity to economic and capital-market developments.

We are currently experiencing a new economic regime, ushered in by inflation and higher interest rates, says Parit Jakhria, Director of Long-Term Investment Strategy in M&G's Investment Office. In this article discussing asset class interactions and diversification, Parit explains to Dominic Howell what this change in the investment landscape might mean for multi-asset investors.

In a potentially more uncertain backdrop, there is value in pursuing a diversified portfolio across different asset classes and risk factors, according to Parit. Furthermore, in his view, evolving markets increase the importance of a dynamic allocation strategy.

'Axiomatic' equity-bond correlation

For every rolling 12-month period this century, and in fact since the Bank of England's independence in 1997, bond and equity returns for multi-asset investors have exhibited a certain pattern, which is neatly illustrated in the first chart. It was almost axiomatic that any downswing in equity markets would have been at least partially offset by positive returns from fixed income, and vice versa.

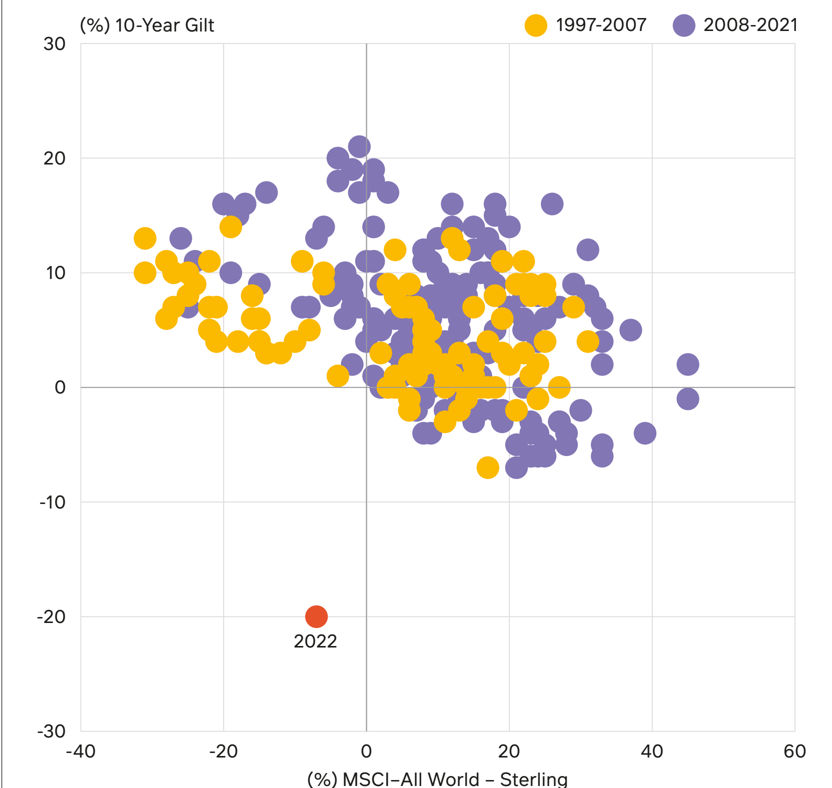
This, in turn, spawned a large number of multi-asset investment firms who sought to invest cheaply and in scale in developed market fixed income and equity mandates, with the view that equities and bonds were suitably diversifying. This led to a large number of similar funds, with the only market differentiator being fund fees, which in turn were being driven increasingly lower as a result of the competition.

Certainly, these funds performed fine in the recent decade of quantitative easing and low rates (the 'lower for longer' environment). Increasingly lower bond yields boosted fixed income returns (bond yields and prices are inversely related: when yields fall, prices rise and vice versa) and the equity-bond relationship remained well-behaved. That is until 2022 when soaring inflation and central banks' efforts to control it resulted in steep declines in both equities and bond markets.

> 'It was almost axiomatic that any downswing in equity markets would have been at least partially offset by positive returns from fixed income, and vice versa.'

Equity – bond correlation on 12-month rolling return

Past performance is not a guide to future performance.



Source: M&G, Refinitiv Datastream, 31 December 2022. Returns in sterling.

Where to hide?

A major headache for multi-asset investors globally has been where to invest in years like 2022 when developed market bonds and equities both disappoint. This has led to a commonly used phrase by asset managers of 'nowhere to hide'.

Fortunately, there is a wide array of other asset classes and geographies available to investors willing to invest the time and effort to look further afield. And last year, when equities and bonds struggled, several other asset classes, such as infrastructure and property, delivered positive returns.

Inflation and regime change?

Regime change denotes the replacement of one structure with another. It can indicate a shift in the interactions of various parts of the economy. However, unlike a political regime change, a shift in economic regime is often difficult to identify at the onset. While a market anomaly does not necessarily mean a regime shift, it prompts us to revisit the structural forces of an economy that are aligned to a regime to establish what may be changing and why.

On reflection, it is increasingly clear that we are now in a regime where central banks and markets worry about inflation shocks at least as much as economic growth shocks, which is in direct contrast to the investment environment over the last two decades.

Encouragingly, inflation has eased from the 40-year highs we experienced last year, although annual inflation rates in most major economies remain above target levels. Energy and food price spikes arguably played an important role in taking inflation prints significantly higher, especially in the UK and Europe.

> 'We are in a regime where central banks and markets worry about inflation shocks at least as much as economic growth shocks.'

As we look ahead, the boost to headline inflation from factors such as food, energy and supply chain disruptions looks set to fade. With base effects from last year's price spikes also gradually dropping out of the year-on-year calculations, this should push annual inflation figures onto a downward trajectory this year.

However, policymakers are likely to be wary that there are still signs that core inflation remains 'sticky', particularly given tight labour markets, and will only respond to easing headline pressures with a lag.

Although the headline inflation rate has come down significantly – in the US at least – the battle against inflation may not be won yet. Inflation could come in waves, particularly if energy prices rebound or wages keeping rising.

This naturally leads to the question of where inflation will ultimately settle over the next 12-18 months. Our main fear is the risk that higher inflation expectations will become entrenched, requiring central banks to continue tightening monetary policy and potentially dampening economic growth prospects.

Shorter economic cycles?

Another feature of recent events suggests the policy landscape is shifting away from the era of the 'central bank put': an environment of central bank policy where markets could rely on central banks to act gradually to tighten policy as economic expansions progressed but ease aggressively at the first sign of weakness. That environment provided a useful backstop to equity markets, whilst also establishing the role of government bonds as a source of portfolio 'insurance'.

If softening activity trends turn into a more pronounced downturn, markets may not be able to rely on central bank support to the same degree as previously, if and when inflation readings remain stubbornly high.

This 'symmetry' where central banks are worried about policy errors in both directions will be a material change to the period post central-bank independence. In our view, it will result in much shorter economic cycles compared to what the markets were getting accustomed to in the 21st century (eg, the 12 years between the Global Financial Crisis (GFC) and the COVID-19 shock), and hence more day-to-day uncertainty.

There is potentially a small silver lining though: shorter economic cycles should, in theory, result in a much smaller build-up of excesses. On the flipside, multi-asset allocation may need to evolve more dynamically to keep up with the economic cycles.

Diversified and dynamic allocation

Investors now need to contend with an interest-rate environment in which mainstream investments offer less diversification. Although the positive correlations of returns between equities and bonds have eased from the highs seen in 2022, they remain at elevated levels, as the chart of equity-bond correlations shows.

As we highlight above, the shift to positive correlations between equities and bonds is a marked departure from the norms of the past 20 years, in which correlations were persistently negative. In our view, this dynamic poses challenges for multi-asset portfolios that are a simple mix of equities and bonds.

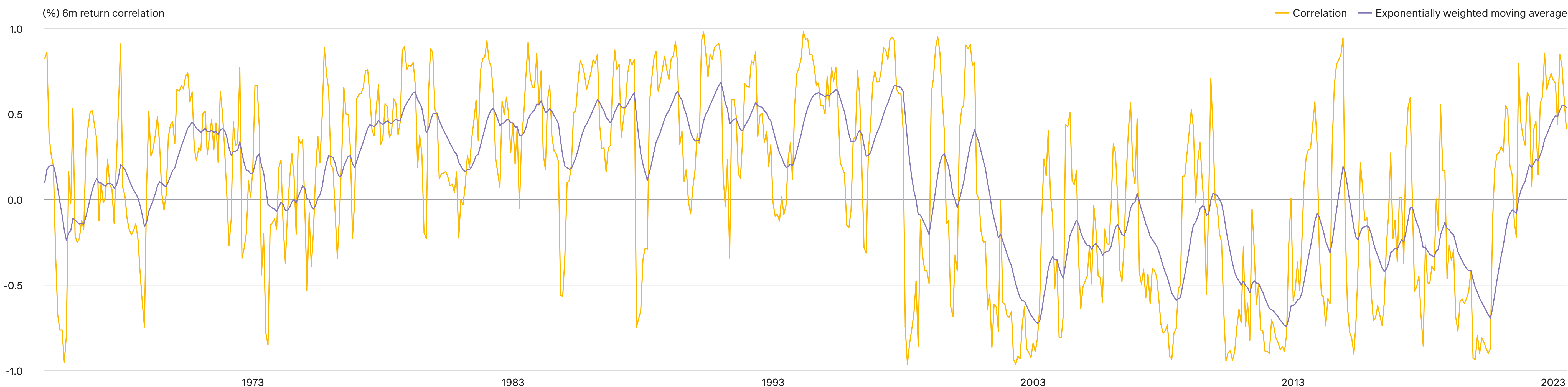
In this environment, we continue to see value in pursuing a portfolio that is well-diversified across different asset classes – beyond traditional mainstream assets – with positive exposure to risk factors such as inflation risk, and tilted toward the solutions to the problems of the coming decade, such as shifting patterns in global trade and the necessary climate transition.

We also maintain our long-held belief of seeking to harvest risk premia (the expected return above that of risk-free assets such as government bonds) across asset classes, where the compensation is especially attractive relative to the inherent risks. While a shift higher in the interest rate regime affects all asset classes to some degree, those with high starting risk premia potentially offer some buffer against valuation losses imposed by rising rates.

With shorter and more variable economic cycles, we believe a dynamic allocation strategy to match the evolving capital markets will be essential, and over time increasingly valued by investors battered and bruised by market volatility. Additionally, higher inflation and interest rates significantly increase the opportunity cost for investors, who may well be driven towards higher cash holdings, and for their invested assets choosing higher quality, diversified, multi-asset strategies with proven track records in the prevailing economic environment. □

A version of this article first appeared in the 2023 Mid-Year Investment Perspectives.

Equity-bond correlations remain elevated



Source: M&G, Refinitiv Datastream, July 2023.

DEFLATIONARY FORCES

DEFEATED THEY ARE?

Global inflation continues to gradually cool, helped by lower energy prices and the impact of tighter monetary conditions. However, getting inflation back to 2% on a sustained basis could prove more difficult and depend on whether longer-term deflationary forces are able to re-assert themselves, writes Philip Hague.

While proving more persistent than many were expecting, global inflation finally appears to be on a downward trend and – barring some unforeseen events – should continue to ease over the next 12 months or so.

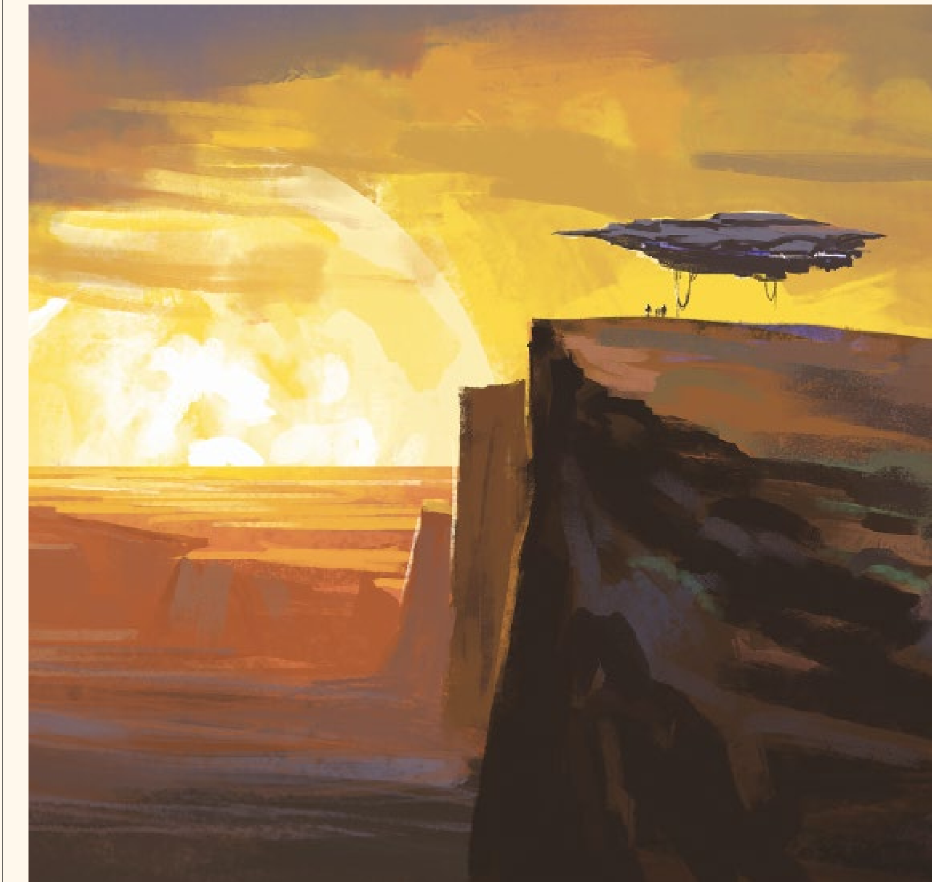
However, the longer-term outlook is much less certain and is likely to once again be dictated by a number of structural forces. While we would expect technology to continue to act as a powerful deflationary force, we think the impact of globalisation could start to recede over the coming years as countries adapt to the new world order. Longer-term demographic changes will also be a key factor to consider as the global economy contends with an ageing population and tighter labour markets.

Inflation has been the dominant theme in financial markets, leading to a seismic shift in central bank policy and a significant re-pricing across financial assets. Between March 2022 and May 2023, the Federal Reserve (Fed) announced 10 consecutive rate hikes as it sought to rein in surging prices. The world's other major central banks largely followed the same path, bringing the era of ultra-low interest rates to an abrupt end.

While inflation has perhaps proved stickier than many were expecting, things do now finally appear to be on the right path. This is certainly the case in the US, where the annual change in the Consumer Price Index (CPI) has fallen from a peak of 9.1% in June 2022 to just 3% by June 2023. Furthermore, it is no longer just a few items that are pushing overall inflation lower, but a broader trend as evidenced by the recent fall in median CPI.

A large part of the recent dip in headline CPI has been driven by lower energy and freight costs, as well as so-called 'base effects', whereby earlier price spikes start to fall out of the year-on-year inflation calculation. While the labour market remains tight, so far we are seeing little sign of any wage-price spiral. The deceleration in rents is another encouraging sign given that this represents the biggest component of US inflation.

Looking ahead, we would point to the sharp drop in US money supply – falling money supply is typically associated with lower inflation over the subsequent 18 months, as the chart shows. Recent money supply trends suggest that US inflation could continue its recent downward trend over the next year or so. While it's probably too soon to be declaring victory just yet – and of course one can never discount completely unforeseen events – as things stand it does look like the current US interest rate hiking cycle could be reaching its conclusion.



'While inflation has perhaps proved stickier than many were expecting, things do now finally appear to be on the right path.'

Structural forces

While easing inflation should take some pressure off central banks and be good news for bond investors, getting inflation back to the Fed's 2% target could prove more difficult, at least on a sustained basis. In the near-term, a tight labour market and rapid wage growth is likely to provide an ongoing source of inflationary pressure, which could largely offset the impact of lower goods and commodity prices.

However, looking beyond the next couple of years, the path of inflation is likely once again to be driven by a number of longer-term structural forces. Until the recent blip, inflation had been on a sustained downward trend for a number of decades. There were several factors at play here, although we would highlight three as being particularly significant: globalisation, technological advancement and demographic change.

Inflation returned with a vengeance in the second half of 2021 as

the post-pandemic re-opening of the global economy created epic supply-chain disruptions. This was perhaps best symbolised by images of the container ship stuck in the Suez canal for six days in 2021. If this wasn't enough, the global economy then had to contend with the spike in energy prices following the Russian invasion of Ukraine at the start of 2022. By the middle of the year, headline inflation in the Euro area and the UK had reached double-digit levels, a phenomenon not seen since the early 1980s.

Peak globalisation?

The key question investors need to consider now is the extent to which the longer-term deflationary forces highlighted above will reassert themselves, or if their impact will start to diminish and the recent surge in prices prove to be longer lasting.

Globalisation – the rapid increase in global trade over the past three decades has been a major factor that has helped drive inflation down. Through the opening up of global markets, consumers and businesses have been able to enjoy cheap imports from countries with lower production costs. Outsourcing and offshoring has been another important factor, allowing companies to move their operations to countries with lower labour or production costs.

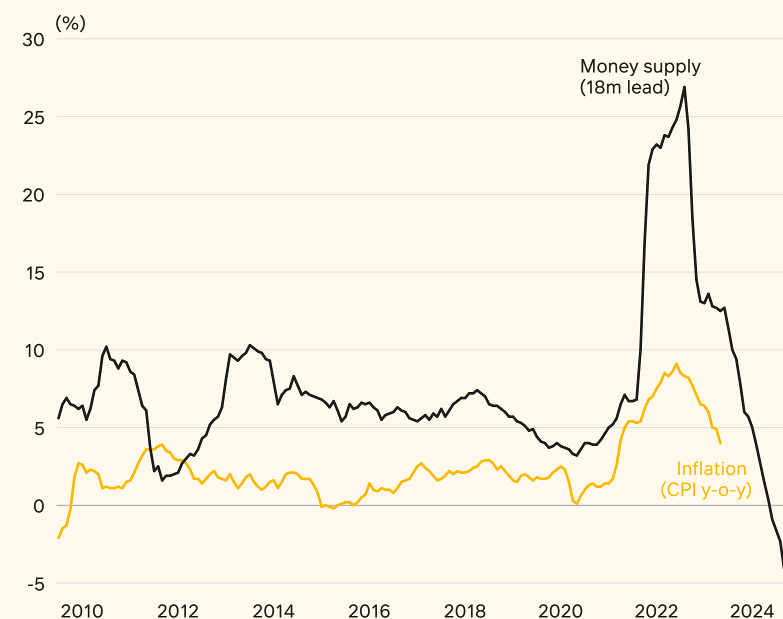
Of the three deflationary forces highlighted here, globalisation is perhaps the one that could recede the most in importance going forward. The past couple of years have seen an increasing number of companies looking to onshore their production in order to reduce the risk of supply chain disruptions – this will inevitably lead to higher costs.

We are also seeing the increased use of tariffs and other restrictive trade measures, amid rising trade tensions between the US and China and through issues such as Brexit. While globalisation will probably continue to be a deflationary force overall, its impact is likely to be less powerful than it has been over the past few decades.

Technological advancement – through increased efficiency and a raft of productivity improvements, technology has also played a key role

US inflation is on a downward trajectory

The sharp deceleration in money supply could push inflation lower



Source: M&G, Bloomberg, 31 July 2023.

in keeping inflation low. Automation, robotics and digitalisation have helped create more efficient production processes, enabling firms to produce goods and services at much lower costs. Alongside, this, we would also highlight the impact of e-commerce and online marketplaces, which have fostered greater price discovery for consumers, as well as increased competition between firms.

In our view, technology will continue to play an important role in keeping inflation low. Rapid advancements in Artificial Intelligence (AI), in particular, are likely to be an important deflationary force for the foreseeable future, helping firms to further optimise their processes and streamline their operations. The pace of technological advancement shows little sign of slowing and this should be good news for long-term inflation trends.

Demographic change – demographics can also have a significant impact on inflation, with changes in the make-up of the population heavily influencing both the supply and demand of labour, goods and services. Ageing populations, in particular, can lead to labour shortages as the number of working-age workers declines relative to the elderly. This, in turn, should leave workers in a better position to push for higher wages, which could lead to upward pressure on inflation. At the same time, an increase in the elderly population could lead to a higher demand for health and social care, potentially pushing up costs in those areas.

Long-term influencers

While proving more persistent than many were expecting, global inflation finally appears to be on a downward trend and – barring some unforeseen events – should continue to ease over the next 12 months or so.

However, the longer-term outlook is much less certain and is likely to once again be dictated by a number of structural forces. While we would expect technology to continue to act as a powerful deflationary force, we think the impact of globalisation could start to recede over the coming years as countries adapt to the new world order. Longer-term demographic changes will also be a key factor to consider as the global economy contends with an ageing population and tighter labour markets. □

'WHILE WE WOULD EXPECT TECHNOLOGY TO CONTINUE TO ACT AS A POWERFUL DEFLATIONARY FORCE, THE IMPACT OF GLOBALISATION COULD START TO RECEDE'

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Sustainability:

The interconnected challenges – and what we're doing about them

Sustainable and impact investors can use the power of investment to help create positive change and tackle the world's biggest challenges. This could be by investing in companies and projects driving the transformation towards a more sustainable world, or those innovating in their fields to create better outcomes for people and the planet. In this special report, Michael Rae, Rana Modarres and Philip Kemp zero in on the inextricably intertwined challenges of our times and potential solutions across four interconnected areas, namely: halting climate change, improving efficiency, embracing a circular economy and promoting greater social inclusion.

United Nations Secretary-General António Guterres described climate change as 'the biggest threat modern humans have ever faced'. Rising temperatures increase the likelihood of a host of climate risks, such as more frequent and extreme heatwaves, heavy precipitation, droughts, tropical cyclones and reductions in Arctic sea ice. These, in turn, pose a huge range of societal risks, from the destruction of businesses to the displacement of communities.

According to the Intergovernmental Panel on Climate Change (IPCC), the United Nations' official body on climate change, human activities have already caused more than 1°C of global warming above pre-industrial levels, and this is set to continue over the coming decades if immediate action is averted[1]. In fact, recent research from the World Meteorological Association suggests that we are likely to breach 1.5°C of global warming, at least temporarily, before 2027[2].

> 'Fossil fuel energy production accounts for **40% of global emissions**.'

Emission reductions are essential

The concentration of greenhouse gases (GHGs) in the earth's atmosphere is directly linked to global temperatures. The most abundant greenhouse gas is carbon dioxide (CO_2), comprising approximately two thirds of GHGs[3]. GHG levels have been rising in tandem with global temperatures since the industrial revolution, due to unsustainable resource use, lifestyles and patterns of consumption and production.

The best chance of halting global warming is through deep, rapid and sustained GHG emission reductions. Encouragingly, the IPCC concluded that reaching net-zero CO_2 emissions would halt global warming over a multi-decade timescale, although a net-negative emissions approach may then be required to prevent any further warming over the longer term, considering the cumulative GHGs which are already present in the atmosphere.

Successful global emission reductions will require coordinated efforts from governments, industry bodies, companies and individuals across the world. We believe the three areas below have the potential to be particularly impactful for climate efforts: clean energy, carbon capture solutions, and science-based emission reduction targets.

The role of clean energy

Fossil fuel energy production accounts for 40% of global emissions[4], so the transition to a clean energy system will be essential for any successful attempts to halt climate change, especially as global energy consumption continues to rise. The share of renewable energy in the wider mix has grown steadily in recent years, but progress has been set back by geopolitical disruption to global energy systems, as many countries ramped up highly pollutive fossil fuel power generation to limit price increases and 'keep the lights on'.

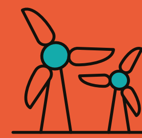
Encouragingly, investment in clean energy technologies also reached $1.1 trillion last year, matching fossil fuels for the first time. There was also positive progress within the regulatory landscape. Massive infrastructure packages from the US and EU have earmarked billions of dollars of investment in clean energy, while regions have also increased their near-term targets for renewable energy capacity.

Many companies are making positive contributions towards the transformation of the global energy economy. One such company is Ørsted, a company M&G invests in, which primarily focuses on wind energy production. With 15.1 gigawatts (GW) of installed renewable energy capacity, the company estimates that its contribution to the global energy mix helped to avoid 18.2 million tonnes of CO_2 emissions in 2022.

Alongside increasing its renewable energy capacity (Ørsted aims to reach 50GW capacity by 2030), the company is also encouraging its transport and manufacturing partners to switch to renewables, and investing in innovative solutions such as floating offshore wind farms. These will bring renewable energy production to locations that were previously unsuitable due to deep waters.

[1]Intergovernmental Panel on Climate Change (IPCC), 'AR6 Synthesis Report: Climate Change 2023', (ipcc.ch), March 2023.
[2]World Meteorological Organisation (WMO), 'WMO Global Annual to Decadal Climate Update (Target years: 2023-2027)', (wmo.int), May 2023.
[3]IPCC, 'AR5 Climate Change 2014: Mitigation of Climate Change', (ipcc.ch), February 2015.

40%
Proportion of global emissions from fossil fuel energy production[5]



28.7%
Renewables' share of the global energy mix in 2021[6]

$1.1 trillion
Investment in clean energy technology in 2022[7]

[4,5,6]International Energy Agency (IEA), 'Global energy-related CO_2 emissions by sector', (iea.org), July 2020.
[7]BloombergNEF, 'Global Low-Carbon Energy Technology Investment Surges Past $1 Trillion for the First Time', (bnef.com), January 2023.
[8]IPCC, 'AR6 Synthesis Report: Climate Change 2023', (ipcc.ch), March 2023.
[9]IEA, 'Energy Efficiency 2022', (iea.org), December 2022.

Climate technology solutions

Carbon capture is a novel solution for industries where emissions are currently hard to abate, such as steel and cement. It involves capturing CO_2 from the air or at source, and storing it in a way that will not contribute towards global warming, such as by injecting it into underground rock formations where it becomes mineralised. With this technology, CO_2 removal can be monitored, measured and audited, which poses advantages over other methods of sequestering carbon, such as planting trees.

The IPCC states that emission reductions must be accompanied by carbon dioxide removal in order to reach a net-zero emissions scenario[8]. While the technology is currently available, the next challenge is to scale up to the required capacity.

One company working to scale up carbon capture technology is M&G Catalyst investee company, Climeworks, which specialises in direct air-capture, where CO_2 is captured from ambient air before being stored underground. Climeworks launched the world's first commercial direct air capture plant in Switzerland in 2017, followed in 2021 by the launch of its Orca facility, which runs on geothermal energy and can store up to 4,000 tonnes of CO_2 per year. The company is currently developing a larger facility which will capture up to 36,000 tonnes of CO_2, with ambitions to scale up to millions of tonnes by 2030.

Science-based targets

Successful climate change mitigation will require steep emission reductions from companies across all industries. Science-based targets can play a vital role in these efforts, by providing companies with a framework to measure their ambitions (and actual reductions) against what is required.

Science-based targets are emission reduction targets that are consistent with the pace recommended by climate scientists to achieve the goals of the Paris Agreement, thereby limiting the worst effects of climate change. In other words, they are in line with the reductions required to keep temperature increases below 1.5°C compared to pre-industrial times.

M&G manages a range of investment funds which aim to invest in companies contributing towards the goals of the Paris Agreement on climate change – either by taking steps to reduce their own emissions, or by providing solutions that enable others to do so. Science-based targets have been the subject of numerous company engagements within these investment funds in recent years, and we encourage investee companies to implement targets, regardless of the carbon intensity of their operations.

Improving efficiency

Emission reduction efforts go hand in hand with improved efficiency – another area where we see significant potential for sustainable and impact investors to encourage transformation and innovation. Over the coming decades, greater efficiency will be needed to reduce energy usage (and the associated emissions), to make the most of dwindling natural resources, and to support future livelihoods as the global population continues to grow.

Keeping the lights on… efficiently

Energy efficiency was a key theme of 2022, in the face of rising energy costs and continued geopolitical disruption to global energy systems. Investment aimed at improving the energy-efficiency of buildings, transport and industry reached more than $560 billion in 2022, a 16% increase on the previous year, according to the IEA. Under current policies, this figure is expected to increase to around $840 billion per year between 2026-2030 – an encouraging increase, but still less than half of the level currently needed to reach a net-zero scenario[9].

First time went above 0°C

Last time went below 0°C

1890 1900 1910 1920 1930 1940 1950 1960 1970 1980 1990 2000 2010 2020

Global surface temperatures have been rising steadily in recent decades. Looking at data spanning 1880-2022, we can see how much warmer or cooler each year was relative to the average temperature between 1951-1980, with blue indicating cooler temperatures and red showing warmer years.

Global mean land-ocean temperature index

-0.49°C 1.01°C

Global mean land-ocean temperature deviations, relative to corresponding 1951-1980 temperature mean.
Source: NASA, GISTEMP Global Land-Ocean Temperature Index, May 2023.

Managing what you measure

Buildings are responsible for around 40% of global energy consumption[10], and are therefore a logical target for efficiency improvements. Encouragingly, a range of companies offer innovative solutions to make new and existing buildings more efficient, both in the commercial and residential spheres.

One such company is Schneider Electric, which specialises in energy management and automation systems, and is held in several M&G funds. The company's flagship EcoStruxure platform enables the control, monitoring and management of buildings. It is used in homes, commercial buildings, data centres, infrastructure and industry. Integrating with Schneider's vast array of sensors, controllers and other electrical components, the software connects with subsystems such as electrics, lighting, security, fire and power, bringing real-time data streams together in a single platform. With this knowledge, energy use can be monitored, optimised and ultimately reduced.

Another example is M&G's Catalyst investment, Greencore Homes, which targets improved efficiency in the construction and running of residential buildings.

'Engineering simulation… enables engineers to virtually test operational performance and predict how product designs will behave in real-world environments, without the need for physical prototypes.'

Efficient engineering

There are also efficiency gains to be made during the design and development of products. Across all industries, making this stage more efficient can help to minimise the use of natural resources, reduce product carbon footprints, speed up the time to market and ultimately reduce costs.

One option in this area is engineering simulation. This is the application of physics-based software solutions across the product lifecycle, from idea stage to design, manufacturing and operation. It enables engineers to virtually test operational performance and predict how product designs will behave in real-world environments, without the need for physical prototypes.

A pioneering company in the field is Ansys, an investee of several M&G funds. The company's powerful simulation software integrates various branches of physics, such as thermodynamics, electromagnetism, quantum, optics and atomic, allowing customers to test products against thousands of real-world scenarios in the time it took to build one physical prototype previously.

Embracing a circular economy

The shift to a circular economy is inextricably linked to improving efficiency, and can play an important role in efforts to halt climate change and limit biodiversity loss. In short, it is the decoupling of economic activity from the use of finite resources, by eliminating waste and reusing or recycling products and materials.

Currently, unsustainable production patterns have seen us overshoot five of the nine 'planetary boundaries', which measure environmental health across land, sea and air. Furthermore, the global economy is only 7.2% circular, meaning that materials cycled back into the global economy at the end of their life form just 7.2% of all material inputs. Alarmingly, this figure has decreased steadily over the past several years due to increases in material extraction[11].

However, the good news is that there are companies providing innovative solutions to reduce waste and re-use materials across a host of industries. Here are some examples in two high-profile areas: plastic packaging and food waste.

[10]World Economic Forum, 'Why buildings are the foundation of an energy-efficient future', (weforum.org), February 2021.
[11]Circularity Gap Reporting Initiative, 'The Circularity Gap Report 2022', (circularity-gap.world), June 2023.

SPOTLIGHT

Greencore Homes

- Builds climate-positive homes, which lock up more carbon than is emitted during their construction and over their lifetimes
- Formed of closed-panel timber frames, sourced from sustainable forests
- Use less cement and steel, both of which are emissions-intensive
- Fully airtight and watertight, with energy-efficient insulation formed of natural materials

The plastic problem

9.5 billion

Cumulative total global plastic production in tonnes[12]

8-10 million

tonnes of plastic enters the ocean every year[13]

10%

Share of plastic waste that is recycled[14]

[12]Our World in Data, 'Cumulative global production of plastics', (ourworldindata.org), July 2023.
[13, 14]Unesco, 'Ocean plastic pollution an overview: data and statistics', (oceanliteracy.unesco.org), May 2022.

The plastic waste problem is one of the most high-profile consequences of our linear consumption model, and #BeatPlasticPollution was the focus of World Environment Day on 5 June 2023. As a versatile and particularly enduring material, plastic is used widely across most areas of our day-to-day lives. But these properties also create problems when it comes to disposal, with mismanaged plastic waste contaminating land and oceans worldwide.

However, there are impactful companies helping to address the plastic problem by facilitating the collection and recycling of plastic waste. One example is Tomra, an M&G investee company that supplies reverse-vending machines and waste-sorting machines. Tomra's 80,000 reverse-vending machines can be found in supermarkets across Europe and elsewhere, allowing consumers to conveniently return beverage containers, after which they can be sorted and recycled. With deposit-return schemes expected to cover all of the European Union by January 2029, these machines will become increasingly important for recycling efforts.

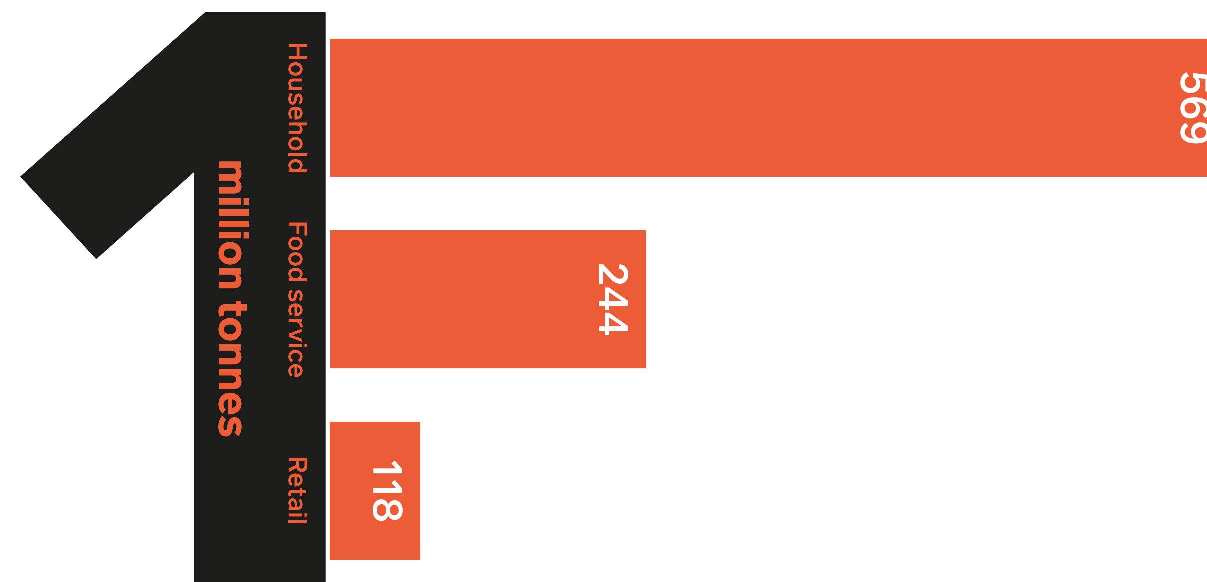
Once plastic packaging is collected, Tomra's innovative waste-sorting machines can also play a valuable role. As waste travels along a conveyor belt, advanced sensors scan for characteristics such as different materials, colours, shapes, and the presence of contaminants, while blasts of air are used to remove offending items.

Another company in this area is M&G Catalyst investee, UBQ Materials. The company collects mixed solid waste, ranging from plastics to food residues, which would otherwise have been incinerated or sent to landfill. Through a chemical process, the organic matter in the waste is broken down into its component parts, which combine with residual plastics to form a composite thermoplastic material. This material can be substituted for oil-based resins in the manufacturing of a huge range of plastic products, such as clothes hangers, shipping pallets, rigid packaging and office furniture. Therefore, the company not only helps to prevent plastic waste going to landfill, but also reduces the reliance on fossil fuels for new plastic materials.

Feeding landfills

Food waste's environmental and human toll

93



'Decomposing food waste is responsible for 8-10% of global greenhouse gas emissions.'

Reusing food waste

A second high-profile example of the pitfalls of our linear consumption model is that of food waste. More than 930 million tonnes of food is wasted every year, 61% of which is thrown out by households[15]. The negative social and economic impacts are clear, especially when we consider that nearly 10% of people globally are undernourished[16]. However, there are also climate ramifications, as food waste releases methane and other greenhouse gases when it decomposes in landfill. In fact, it is responsible for 8-10% of global greenhouse gas emissions[17].

While there is a clear need to throw away less food in the first place, we must also increasingly look to 'close the loop' by using food waste for other purposes. Food waste is commonly recycled to produce compost or biogas, but one M&G public equity impact investee company, Darling Ingredients, takes this a step further with a host of innovative solutions.

The company collects a broad range of animal by-products from slaughterhouses, grocery stores and butchers of all sizes. Darling Ingredients also collects food waste from commercial bakeries producing the likes of bread and cereal, and used cooking oil from approximately 120,000 restaurants and other food outlets. These materials are used to produce an even-broader range of products, including pet food, non-food grade oils, organic fertilisers, and collagen, which is used in nutritional supplements, sweets, and even skincare products. Darling Ingredients also recycles rendered animal fats and used cooking oils to create renewable diesel, which is interchangeable with regular diesel but releases up to 85% fewer emissions.

'Food waste, animal by-products and used cooking oils are used to produce pet food, non-food grade oils, organic fertilisers, collagen and renewable diesel.'

[15]UNEP, 'UNEP Food Waste Index Report 2021', (unep.org), June 2023.
[16]Action Against Hunger, 'World Hunger Facts & Statistics', (actionagainsthunger.org), June 2023.
[17]UNEP, 'UNEP Food Waste Index Report 2021', (unep.org), June 2023.

Levelling the playing field

While there have been encouraging developments in many areas of inclusion in recent years, a lot more still needs to be done. Globally, 22% of adolescent girls are not in education, employment or training, compared to 12% of boys.

In the adult population, 72% of men participate in the labour force, but only 47% of women. Furthermore, only 30-50% of people with disabilities are likely to be employed in developed countries, dropping to 10-20% in emerging countries.

Furthermore, COVID-19 and the subsequent cost-of-living crisis have reversed the recent progress across many facets of social equality and inclusion, having disproportionately affected the most vulnerable communities. According to The World Bank, income losses from the pandemic were twice as high in the world's poorest countries than the richest, pushing more than 70 million additional people into extreme poverty and widening global income inequality for the first time in decades. The poorest communities also faced large setbacks in health and education, including premature mortality and disrupted learning[18].

However, against this backdrop there are opportunities for investors and companies to contribute towards greater inclusion for underserved groups. On the next page, we highlight a number of solutions across three areas – improving female workforce participation, enabling digital communication in remote areas, and bringing banking to the unbanked.

'Income losses from the pandemic were twice as high in the world's poorest countries than the richest, widening global income inequality for the first time in decades.'

[18]The World Bank, 'Poverty and Shared Prosperity Report 2022', (worldbank.org), October 2022.

22%
Proportion of adolescent girls who are not in education

47%
Share of women participating in the global labour force

55%
Share of the global population with access to mobile internet

Enabling workforce participation

Businesses from all industries can help to promote more inclusive workplaces for females and other underserved groups by setting clear targets and policies in areas such as minimum gender representation, flexible working and adequate parental leave, while reporting on their progress regularly. However, certain companies are also providing impactful solutions to actively empower women in the global workforce.

One such company is M&G investee Progyny, which specialises in high-quality fertility benefit schemes for the employees of its corporate clients. Progyny's solutions help to increase the likelihood of women successfully having children later in life, meaning that those who wish to pursue their career goals aren't disadvantaged. With fewer women sacrificing their professional ambitions to have children, there is greater potential for increased female representation in leadership roles, which are often male-dominated. Furthermore, Progyny contributes to greater equality for non-traditional family units (such as single parents and LGBTQ+ couples), by providing alternative options on the road to parenthood.

Another example is Bright Horizons, which primarily provides childcare facilities for corporate clients and local communities. With their children cared for, parents have the option to continue working and progressing their careers, rather than exiting the workforce when their children are born.

Connecting remote areas

Mobile telecommunication is becoming increasingly important to our day-to-day lives, and is often a prerequisite for access to other essential services such as healthcare, banking and education. Despite strong advances in recent years, just 55% of the global population currently has access to mobile internet connectivity[19], and coverage is much lower in developing nations. The provision of reliable mobile connectivity is therefore a powerful tool in improving inclusion for underserved groups, especially within remote areas.

One company providing a solution to address this challenge is Helios Towers, an M&G investee company that builds, acquires and operates telecommunications towers in Africa. These towers are capable of accommodating and powering the needs of multiple mobile network operators who, in turn, provide wireless voice and data services to end-consumers and businesses. The company uses a geographical information systems tool to find locations that maximise the transmission signal and improve coverage for operators, helping to bring connectivity to the greatest number of potential users.

'Just 55% of the global population currently has access to mobile internet connectivity, and coverage is much lower in developing nations.'

Bringing banking to the unbanked

More than 1.4 billion people are currently without access to a bank account. They are more commonly women, poorer, less educated, and living in rural areas[20]. This prevents them not only from sending and receiving money, but also hinders their ability to access other financial services, such as credit and insurance, and even start a business.

We have identified several companies focusing on providing banking services to underserved populations. One investee company is Bank Rakyat Indonesia, one of the largest Indonesian commercial banks. The bank specialises in microlending, where it provides small loans and financing for entrepreneurs who are often at the lower end of the income spectrum, or considered to be at or below the poverty line. The company has also invested heavily in its digital offering, and maintains a large network of branches across the country (including the world's first sea-floating banking service), helping to reach people in remote areas and across the islands of the archipelago.

Another example is Bank of Georgia, a large national financial institution providing banking services to customers that were previously grossly underserved, with little banking infrastructure left after the end of communism in Georgia. Alongside retail and business banking services, the company also provides mortgages in an economy which has among the highest number of people per household in Europe, where young people have tended to live at home far into adulthood given financial constraints.

Driving transformation

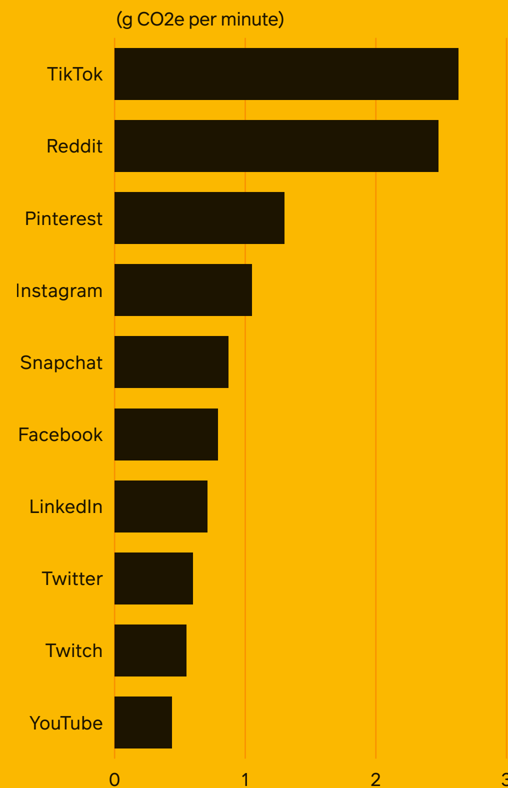
The world continues to face a host of environmental and social challenges, yet progress across a host of areas has stalled or even reversed in recent years. However, as this report highlights, investors and companies alike are well poised to create a positive virtuous circle to address the challenges of our times, and help drive a transformation towards a more sustainable world that delivers positive outcomes. □

Michael Rae is a Public Equity Impact Fund Manager, Rana Modarres is an Impact Director and Philip Kemp is an Investment Writer.

[19]GSMA Association, 'The State of Mobile Internet Connectivity Report 2022', (gsma.com), October 2022.
[20]The World Bank, 'COVID-19 Boosted the Adoption of Digital Financial Services', (worldbank.org), July 2022.

DIGITAL FOOTPRINT

From thumb to emissions:
The environmental impact of scrolling

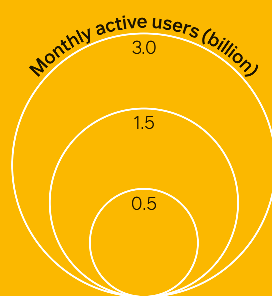


Time escapes in the social-verse

4.5 billion people use social media with an average daily use of 2 hours and 24 minutes

Platforms with 100 million+ monthly active users

TikTok, QQ, Tumblr, Picsart, Threads, Facebook, Tieba, Teams, Skype, Telegram, X (Twitter), Quora, Viber, LinkedIn, Discord, YouTube, Likee, Reddit, Stack Exchange, Twitch, Kuaishou, Instagram, WhatsApp, Messenger, Snapchat, Line, Douyin, Xiaohongshu, WeChat, Weibo, Pinterest



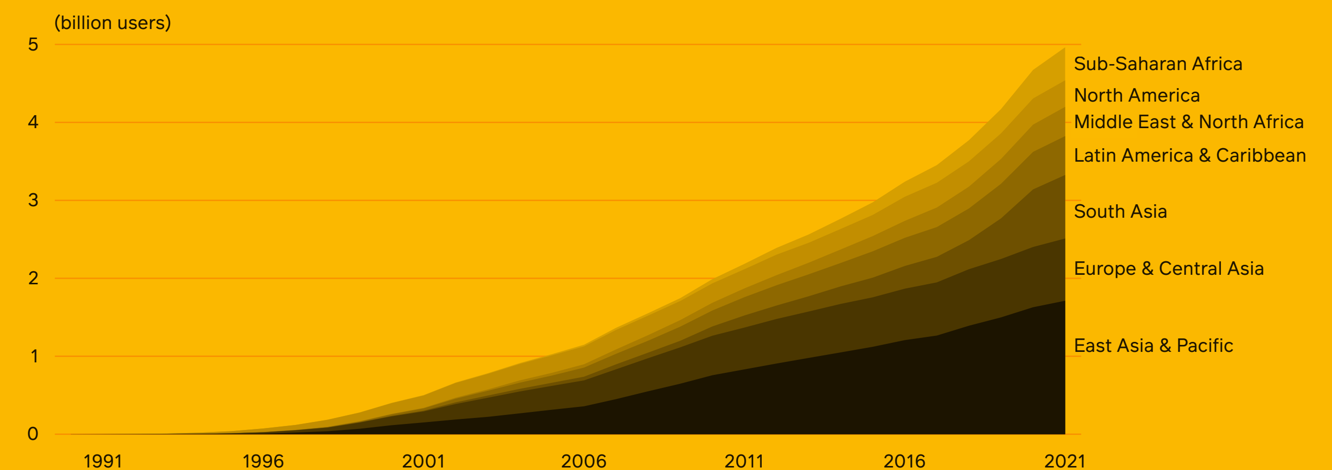
ENTANGLED IN THE **INVISIBLE WEB**

Whether at home or work, much of our day-to-day lives is spent interacting with digital devices. Our online activities create vast amounts of unseen data, which is usually sent, stored remotely and retrieved when needed. Significantly, all of the devices and infrastructure along the chain also generate carbon emissions.

More than 4.5 billion people use social media, each producing up to 400g of CO_2 emissions from an average day's scrolling[1]. Sending a long email on a laptop generates roughly the same amount of emissions as making a single cup of black coffee[2], while an hour of ultra-high definition Netflix streaming has the same impact as driving a car for half a mile[3].

While these aren't huge amounts in isolation, they add up over the 5 billion – and rising – internet users around the world. And with a growing number of internet-connected devices, from smart-watches to video doorbells, we can only expect the environmental impact of our digital lives to increase. ☐

The online population explosion



This is a visual representation of some of the most used and best known internet platforms as we understand.

Sources: From thumb to emissions: Statista, 'Carbon (CO_2) emissions of leading social media apps in 2021', (statista.com), July 2022.
Time escapes in the social-verse: statista.com, linkedin.com, cnbc.com, mashable.com, PR Newswire via finance.yahoo.com, twitch.tv, picsart.com, techcrunch.com
The online population explosion: The World Bank, 'World Development Indicators', (worldbank.org), March 2023.

[1]Statista, 'Carbon (CO_2) emissions of leading social media apps in 2021', (statista.com), July 2022. [2]MyWaste, 'What's the carbon footprint of a cup of tea or coffee?', (mywaste.ie), June 2019. NimbleFins, 'Average CO_2 Emissions per Car in the UK', (nimblefins.co.uk), April 2022. [3]International Energy Agency (IEA), 'The carbon footprint of streaming video: fact-checking the headlines', (iea.org), December 2020.

THE GENERATION GAME:

RECALIBRATING REAL ESTATE IN A MODERN WORLD

If you have ever witnessed a pre-schooler navigate an iPad, you will be in no doubt of the digital and cultural evolution at play, writes Lauren Hemmings. The prospects and needs of younger generations are intrinsically linked to future real estate requirements. These are the tenants and workers of tomorrow that asset managers and owners need to channel – especially as senior employees retire from the workplace.

Young adults today are likely to be at a financial disadvantage compared to Baby Boomers or Generation X, who benefited from substantial house-price growth and in some cases, a favourable economic environment. Generation Z (broadly speaking, people born between 1997-2012) tends to graduate with more student debt, and faces difficulty buying a home without financial support from parents. People often rent for longer, and may turn to affordable housing schemes to get on the housing ladder.

The digital revolution also means the way Gen Z shop, connect, and potentially make a living, might be different. An explosion of social media influencers epitomises this; typically entrepreneurial in nature and highly mobile. This shift coincides with growing focus on well-being and work/life balance – trends that are supported by the ability to work flexibly.

Evolving living solutions

Cities and all they offer continue to attract young people, whose priorities tend to orbit work and social life. Yet house prices remain prohibitively high in major employment hubs globally, underpinned by a long-term housing supply and demand imbalance.

A decade ago, the most viable option for a graduate may have been to rent a room in a private house-share within reach of work. That's when 'landlord lottery' kicked in. If a landlord was substandard, renting could be a painful experience. However, the expansion of Build to Rent housing has provided access to professionally managed, energy-efficient, often amenitised apartments in well-connected locations, at an affordable cost. The sector continues to evolve in line with tenants' needs, placing increased focus on dedicated work zones and access to outside spaces since the pandemic, for example.

Tackling the affordability challenge

As people settle down and start a family, more space, access to good schools and creating equity typically move up the priority list. Many people seek to get on the housing ladder, however large deposit requirements can make this challenging.

Housing tenures such as Shared Ownership are growing in the UK as an affordable route for first-time buyers. The part-buy-part-rent model provides the ability to access a secure home with a professional landlord through a reduced deposit, while rent paid to the landlord on the unsold equity is subsidised[1].

Venturing further afield

Relocating to more affordable locations could also be part of the solution to the affordability challenge. This is a well-worn path for young families, albeit accelerated by the ability to work from home more often post-pandemic.

Venturing into 90- to 120-minute commute cities could become more realistic in places like Spain or France, for example, where high speed, relatively affordable rail infrastructure offers easy access to major employment hubs for work two or three days per week. The expansion of urban areas as a result, is likely to increase the need for private rented homes as well as subsidised rented housing types like Shared Ownership in well-connected suburban locations.

The new working world

Hybrid working appears to be here to stay, reinforced by the rise of digitally connected younger generations. However, for people at the start of their career particularly, there is no virtual substitute for networking and learning from senior colleagues by osmosis.

The benefits that working in an office brings is gaining real recognition among both employers and employees as the return to offices continues. But with the ability to work productively from home, the role of the office has changed. Offices are a place for collaboration and relationship building over focused, desk-based work. Best-in-class offices therefore need to provide an optimum working environment, with the ability to attract and inspire talent.

The changing face of offices

On a practical level, modern office specifications might include more phone booths and meeting rooms, and even podcast studios. Technology solutions such as room booking systems and in-office collaboration tools are also a fundamental element in the hybrid working landscape.

Tenants are increasingly focused on buildings that meet high ESG standards – reflected by rental premiums of up to 20%[2] for green-certified buildings in certain markets in Asia Pacific. Features such as sensors and LED lighting that can enhance buildings' operational efficiency are therefore essential.

Equally, employees' health and well-being is a key focus for businesses, helping to boost productivity and create a thriving workplace. M&G's development of 40 Leadenhall in London's financial district is targeting WELL Platinum certification in mark of its people-first design. Workers will have access to amenities including a Peloton fitness studio; gym and spa; multiple terraces and a boutique cinema, as well as a publicly available changing-places facility to support people with disabilities.

Recalibrating space requirements

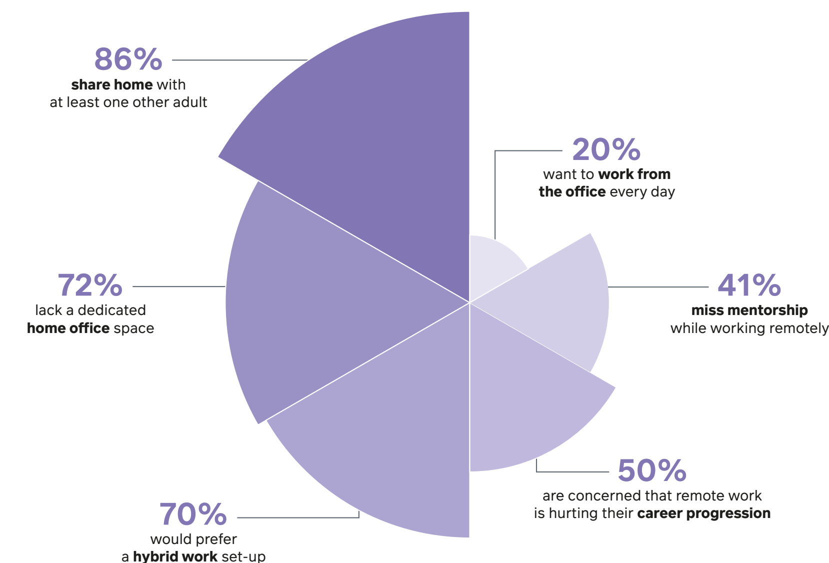
With the rise of the ultra-prime office, some tenants are likely to rationalise their space requirements, while committing to an increased cost per square metre. In Manhattan last year, double the amount of high-end office space was signed by tenants relative to 2021[3], with amenities including childcare, pet sitting and dry cleaning.

As revaluations play out across real estate markets as a consequence of high interest rates, offices that fall short of modern occupier requirements could offer an opportunity for conversion to other uses, including residential, student accommodation or hotels. This is likely to be a gradual and selective process, however.

Playing the long game

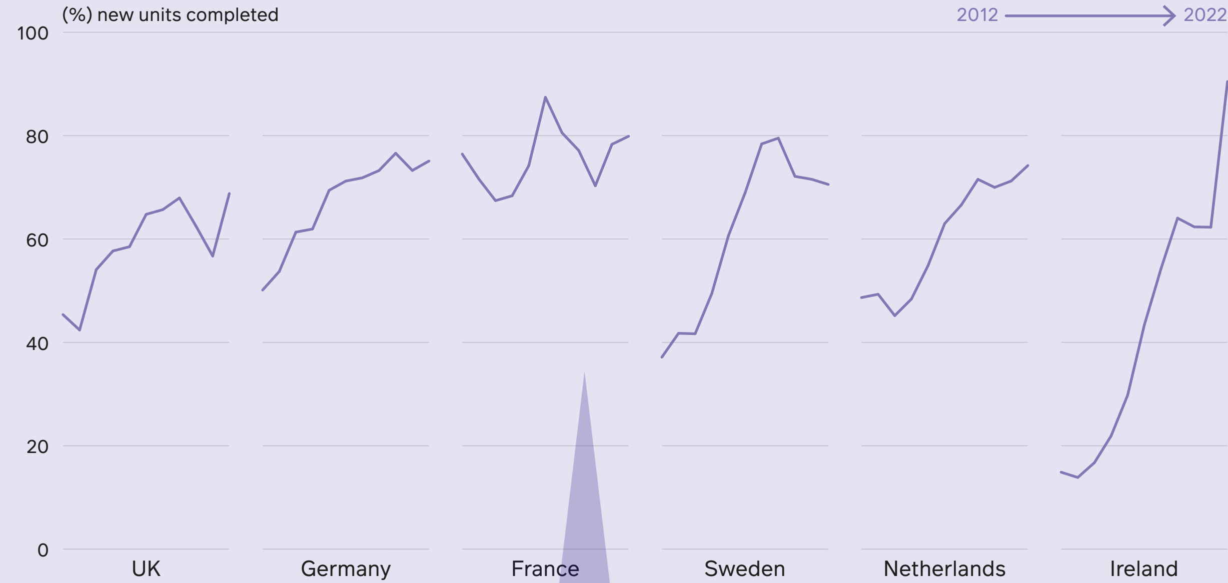
Real estate is a long-term business, shaped by tenant needs, and meeting these evolving needs requires a granular approach, which embraces new living and working patterns. In doing so, asset managers and owners can create high-quality, energy efficient homes and offices that are fit for the future.

Young professionals favour office working – just not full time



[1]Set at 2.75% of the market value of the unsold equity with annual uplifts that should not exceed a maximum of RPI plus 0.5% per annum. Capital Funding Guide, Homes England.
[2]Statista, Office real estate trends report, February 2023.
[3]Economist, 'The rise of the uber-luxurious office', economist.com, January 2023.

Lack of new supply has put pressure on Europe's housing stock



Note: Benchmark housing target is latest announced forward-looking policy or identified future housing need; previous targets may have been lower or higher. New builds only, excludes conversions. Estimates for 2022 delivery for Germany and France.

Source: Eurostat, June 2023.

SUPPLY STRUGGLE, AFFORDABILITY SPIKES

House price affordability constraints remain well above long-term averages in cities

House prices remain prohibitively high in major cities globally, underpinned by a long-term housing supply and demand imbalance. Wages have risen in nominal terms – driven by tight labour markets and inflation-linked pay increases – but the impact of higher living costs means these wage increases are not always meaningful.

While some cities have seen falling house prices in recent months, reducing house-price-to-earnings ratios from their peak, house price affordability constraints remain well above long-term averages. Underlying issues are also worsening, with a slowdown in construction adding to the supply shortage in a few years' time. The acute need for housing is likely to sustain upwards pressure on house prices in the long term.

For many young people, getting on the housing ladder remains out of reach, with large deposits required to buy a house. Borrowing rates have also soared across European countries. This means first-time buyers are now hamstrung by upfront and ongoing costs that are hard to meet. More people are turning to renting, and renting for longer, as a result. □

House price earning ratio

Where house price to earnings ratios are high, housing is least affordable

Copenhagen 6.2
Helsinki 8.1
Lyon 7.7
Paris 12.0
Berlin 6.2
Frankfurt 6.6
Hamburg 7.7
Dublin 8.8
Munich 8.6
Rome 7.5
Milan 8.7
Rotterdam 7.5
Amsterdam 9.8
Barcelona 10.2
Madrid 7.4
Birmingham 4.3
Stockholm 6.9
Manchester 5.4
Bristol 7.3
London 8.9
Edinburgh 7.3

Indonesia: A blueprint for emerging markets and global growth?

The motivation to engage and participate in the emerging markets growth story stems, in large part, from the size and dynamic characteristics of the economies that comprise almost half the global population – and the higher growth rates compared to their advanced peers, write Gregory Smith and Nat Mankelow.

There is good news. The IMF forecasts that the global economy will grow this year, and over the next few years – even if a couple of advanced economies slip into recession. Best in class are emerging markets, with their GDP growth differential (versus advanced economies) forecast to pick-up in 2023 and 2024 to around 2.5 percentage points per year[1].

The biggest boost from emerging markets to global growth tends to come from the very large countries, although not all are pulling their weight.

'Standards of living have improved in Indonesia with a growth engine that has relied extensively on its services and manufacturing sectors.'

Emerging market giants

The world has seven giant countries with populations of over 200 million[2] people. Leaving the US aside, the remaining six are emerging markets, which together make up 47% of the global population. This assumes Nigeria's population is actually that big (it's currently just over 213 million, but it is worth noting this year's census will be the first in recent times).

India and China are the giants with the largest populations (according to the United Nations, India's is estimated to be slightly larger than China's[3]) and have growing economies that are driving the emerging markets growth differential. Indonesia's robust economic growth also makes an impressive contribution. Conversely, the remaining three giants – Pakistan, Brazil and Nigeria – are struggling to grow at a decent clip. And with that growth struggle comes challenges with stabilising public debt.

Brazil saw some robust economic growth for a decade before the global financial crisis, fuelled in part by the export of commodities, but it has since fallen from grace. An average GDP growth rate of 0.6% over the past decade leaves it outpaced by advanced economies. While its income level per person was far higher than China's in 2010, it has since fallen a long way behind.

Meanwhile, the most disappointing performance is observed in Pakistan and Nigeria, where their starting point (that is lower-income levels) and population growth should be supportive of income levels catching up.

Indonesia's growth engine

Standards of living have improved in Indonesia with a growth engine that has relied extensively on its services and manufacturing sectors. Resource exports have played a crucial role, but have not dominated the development. Indonesia's GDP per capita was the same as Nigeria's in the early 1980s. Today, after the period of rapid growth known as the 'Asian miracle', Nigeria's income per capita is just 36% of Indonesia's. Meanwhile, Pakistan's income per capita is 29% of Indonesia's[4].

Indonesia's green bond market

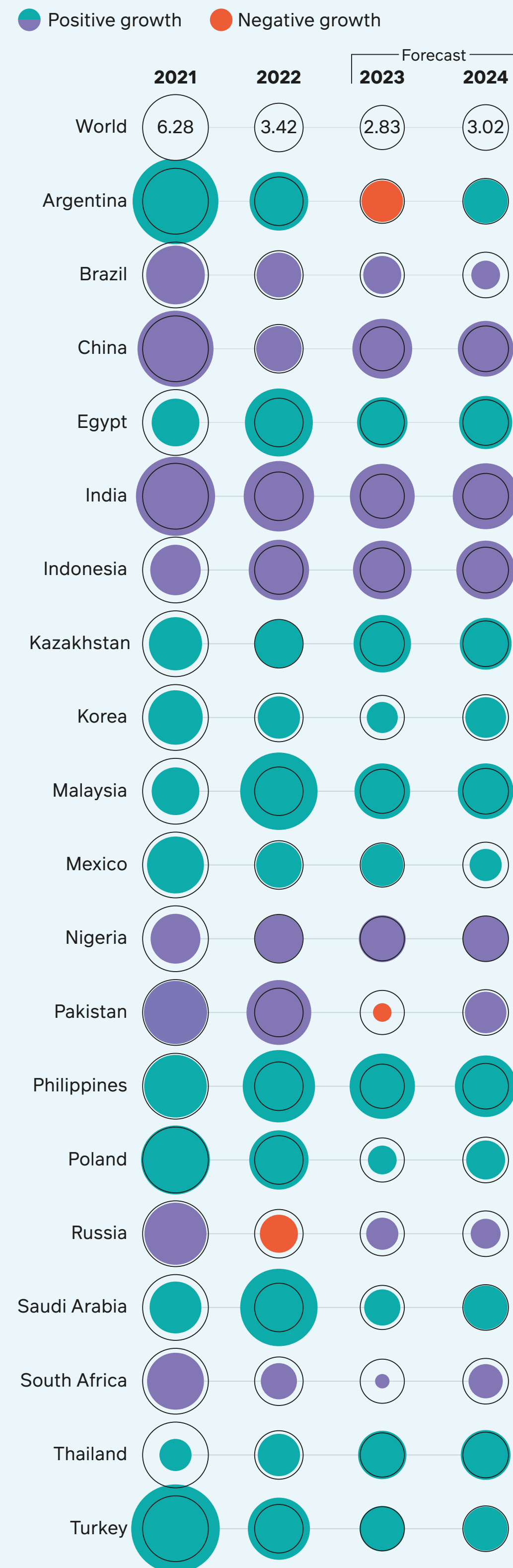
Indonesia has a well-established bond market, comprised mainly of government bonds issued in the local currency (Indonesian rupiah) and a smaller, but growing, corporate bond market. There is also a relatively new area – that of 'green' bonds. These are debt instruments whose proceeds are used for the financing of environmental or climate-related projects. Currently, most of these green bonds are issued in hard currency (US dollars), with more than $6 billion of issuance estimated to be targeting infrastructure projects including renewable energy, low carbon transportation, sustainable waste management, and sustainable water infrastructure such as flood control infrastructure[5].

[1]IMF World Economic Outlook, July 2023.
[2]World Bank, 2021 figures.
[3]Reuters, 'India's population to overtake China by mid-2023, UN estimates', reuters.com, April 2023.
[4]World Bank national accounts data, and OECD National Accounts data files, 2021.
[5]Climate Bonds Initiative - Green Infrastructure Investment Opportunity (GIIO) Indonesia: Green Recovery 2022 Report.

Investing in emerging markets involves a greater risk of loss due to greater political, tax, economic, foreign exchange, liquidity and regulatory risks, among other factors. There may be difficulties in buying, selling, safekeeping or valuing investments in such countries.

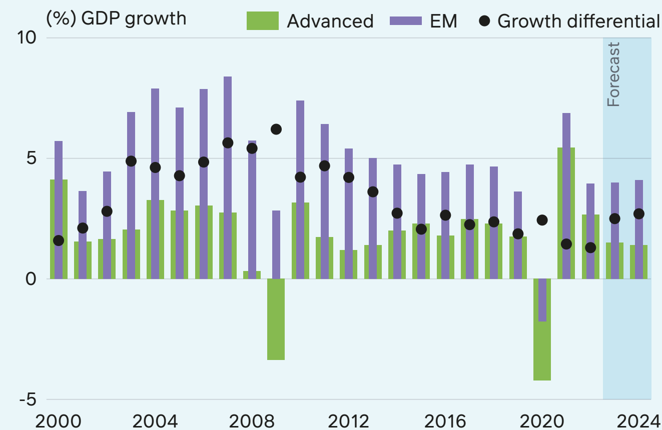
Emerging markets (EM) growth rates – best in class?

Selected EM economies real GDP growth

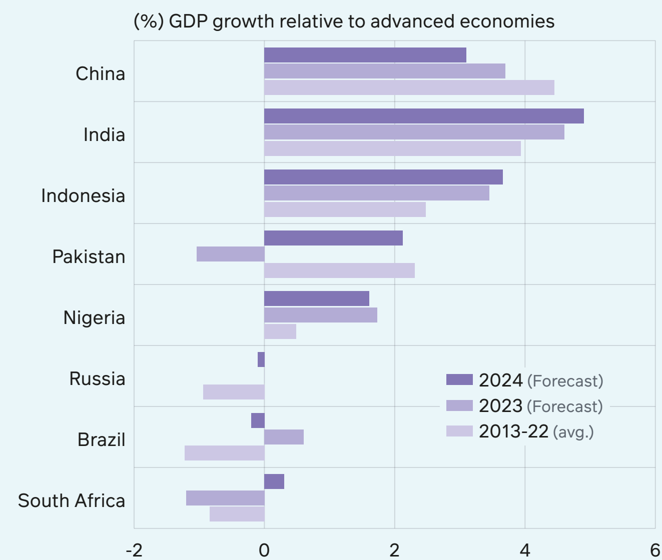


Sources: IMF World Economic Outlook.

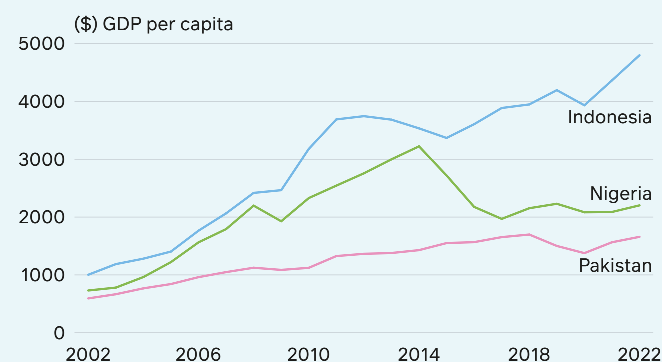
The EM growth differential compared to advanced economies is projected to increase



Not all EM are pulling their weight in driving the differential



Indonesia's standard-of-living gains have beaten those in the largest frontier economies



Ushering in reform

President Bola Tinubu was elected as Nigeria's head of state in February this year and inaugurated at the end of May. We think he will need to get going with much-needed reform. The bar is low following little progress over the past two political terms, but implementing policy in Africa's largest economy is no easy task. Nigeria produces oil, but not much when measured per person, leaving the country oil dependent rather than resource rich.

The recent oil price increase did little for Nigeria as production declined and fuel subsidies soared. So new policies are needed for economic growth to pick-up from an average of 1.4% per year (less than population growth) that Nigeria recorded between 2015 and 2022.

Potentially supportive measures include some macroeconomic stability via tighter monetary policy to tame inflation; a revamp of the exchange rate policy; and a reduction in subsidies to ease fiscal pressures – in his inauguration speech President Tinubu announced that the subsidy on petrol would be scrapped immediately.

Beyond these, efforts to boost competitiveness and diversify the economy away from oil remain essential, but have long been elusive.

Pakistan's pivot

It has already been an eventful year in Pakistani politics, with the arrest and jailing of former Prime Minister Imran Khan on corruption charges, leading to public protests and even suggestions 2024's election could be delayed. In addition, economic activity has slumped after two years of post-pandemic rebound growth. The foreign exchange shortages and inflationary pressures have motivated import controls while investor confidence has evaporated. The country is also still enduring the impacts of devastating floods in 2022.

A debt crisis could push growth further from potential if Pakistan is unable to rekindle its IMF programme and find the foreign financing it needs to meet its trade and debt refinancing needs. Whoever is in power in the coming 18 months or so will need to embark on a series of reforms if they want to improve standards of living.

'A World Bank report highlights how Pakistan's talent needs to be leveraged by investing in education and increasing female participation in the labour market.'

To pivot to better progress, the World Bank suggests productivity improvements (mainly a lack of competitiveness in its export sector), while identifying macroeconomic instability as a culprit for lacklustre investment. It also highlights how talent needs to be leveraged by investing in education and increasing female participation in the labour market (which is lower than in peers)[6].

Recalibrating courses

Indonesia has been able to push through many reforms. No story is perfect, and there are blemishes, but there are plenty of lessons from Indonesia's success. If a better progress path can be found in large countries like Brazil, Nigeria, and Pakistan, then we believe the emerging market engine for global growth can get stronger and get the differential back to the elevated levels of the early 2000s. ◻

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[6]World Bank, Pakistan – Country Economic Memorandum 2.0 report.

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