AMPERSAND

DEBT DISRUPTED | TECH WARS | A NEW DIVIDEND PLAYBOOK | BOND VIGILANTES COMIC

THE DISRUPTION EDITION

M&G Investments

For Investment Professionals only.

Welcome to the fourth issue of Ampersand

Welcome to the Disruption Edition of Ampersand – a reflection of a transformative year in investment markets. From unexpected interest rate changes and geopolitical tensions to breakthrough technological advancements and global economic uncertainties, 2025 has already been defined by disruption. These upheavals have forced investors to reevaluate their approach to portfolios.

In this issue, our design approach pays homage to the great disruptors of past and present: visionaries who challenged norms, redefined industries, and paved the way for bold new directions. Ampersand's fluid, ever-evolving aesthetic mirrors their approach, breaking conventions and charting new paths.

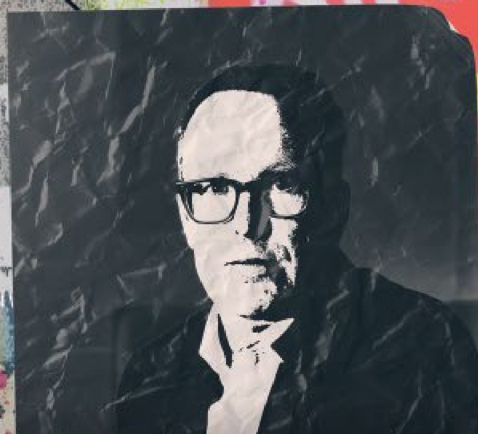
We delve into critical themes shaping the investment world today:

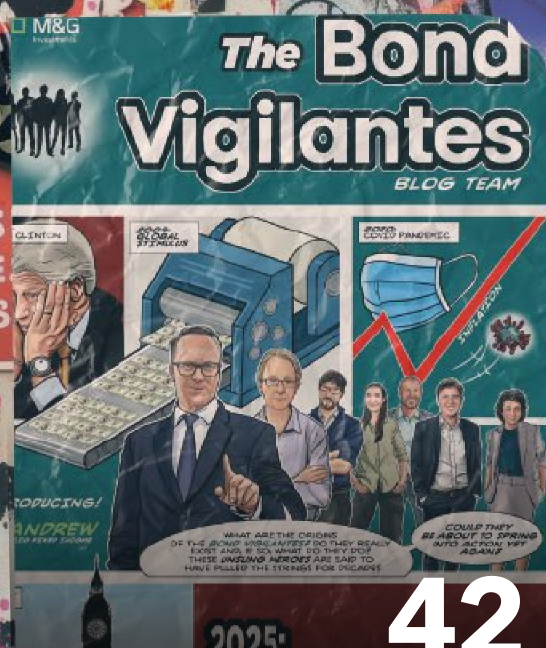
- Sovereign debt transformation: How soaring debt levels in 'stable' countries and fiscal consolidation in 'risky' nations are shaking up fixed income markets.
- The AI arms race: Geopolitics and innovation collide, spurring a technological rivalry between China and the West that's creating unique opportunities for active investors.
- The dividends playbook: Tech giants and Asian companies are rewriting the rules of equity income.

This edition also brings fresh insights from Andrew Chorlton, our new CIO for Fixed Income. We explore the growing significance of private markets, key technologies driving industrial decarbonisation, Europe's value renaissance and changing perceptions in real estate investment.

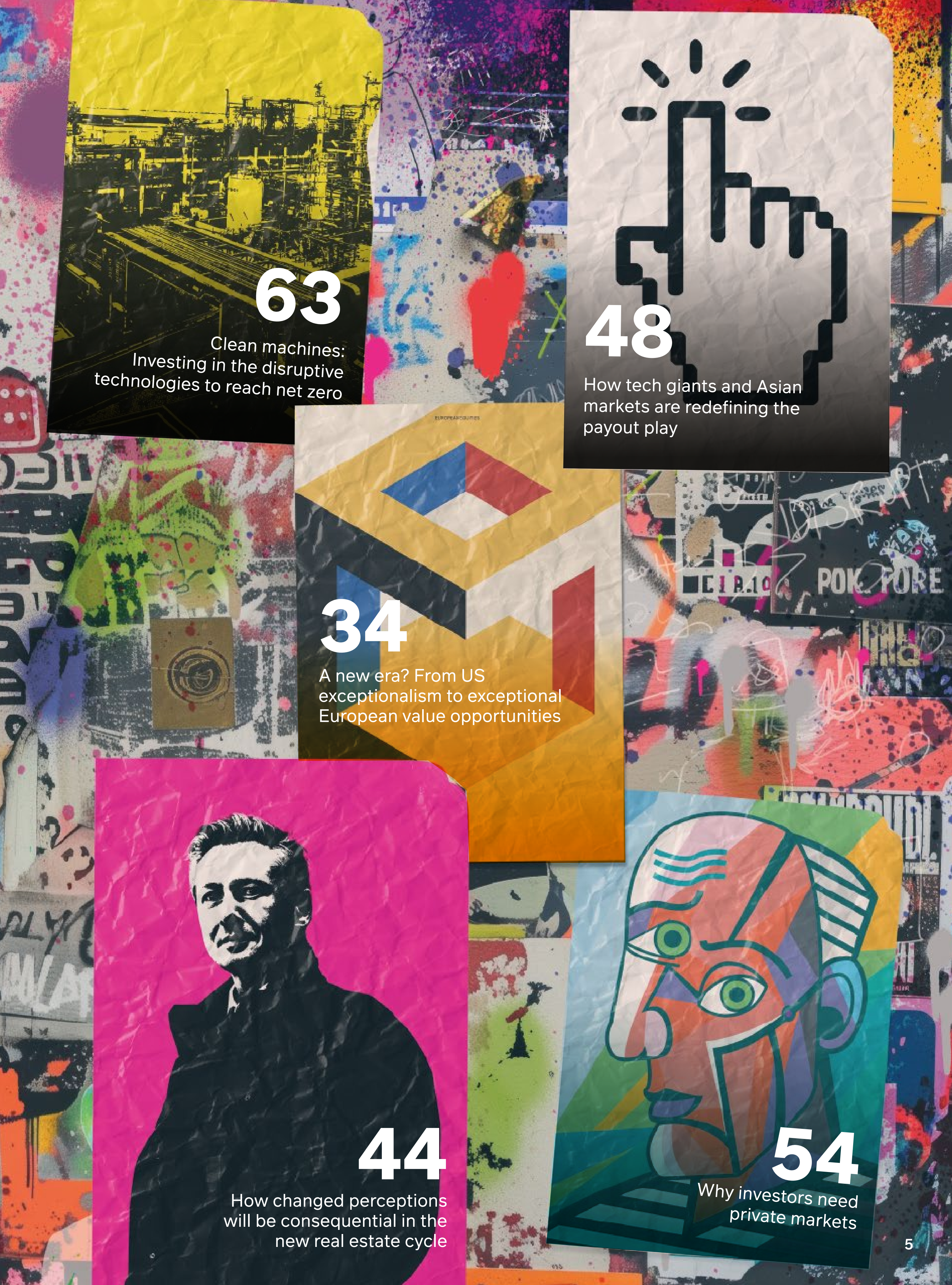
In a world where the status quo is constantly shifting, we invite you on a journey to uncover hidden treasures in an increasingly disrupted environment. Ampersand serves as a platform for celebrating the thinkers and doers who dare to reshape our world.

Joseph Pinto
CEO, M&G Asset Management





M&G
The Bond Vigilantes
BLOG TEAM
2025:
THE BOND VIGILANTES
RISE AGAIN?



DEBT DIVERGENCE: INVESTORS STAND AT THE CROSSROADS

The world is facing a US$250 trillion problem. Global debt continues to swell, showing no sign of abating – and investors are beginning to ask just how long governments can sustain such levels. Harriet Habergham explores how we got here, the road ahead and what this means for bond investors.

In a museum located on the lower floor of the Bank of Scotland in Edinburgh, there is £1 million laid out in £5 notes of non-legal tender. It is a sight to behold, a unique perspective demonstrating money's worth – once upon a time the sum of this pile could have helped pay a country's dues. Now, when discussing government expenditure and debt, we have become accustomed to talking in billions and trillions. So to see £1 million of non-legal tender laid out in front of you, knowing that global debt stood at $250 trillion in 2023[1], brings to life the enormity of the problem the world faces – levels of government borrowing have been soaring exponentially. Just ten years ago, in 2015, global debt amounted to under $60 trillion. This year, the figure is expected to rise once again.

At this year's World Economic Forum held in Davos in January, the International Monetary Fund's (IMF) Gita Gopinath said the situation is "worse than you think[2]."

Such elevated debt levels have wide ranging consequences, with economic, political and social implications. While we have become accustomed to living with large quantities of debt, levels are now so stretched that investors are waking up to the possibility that the road – at least in some parts of the world – is running out. As Robert Burrows, manager of the M&G Global Macro Bond Strategy notes, "debt doesn't matter, until it does."

However, this is not a universal trend – various countries around the world now find themselves in a stronger fiscal situation, benefiting from a lower base level of debt compared to many of their 'first world' counterparts. The global economy finds itself at a crossroads: so how did we get here, why does it matter and what does it mean for investors?

A matter of life and debt

While debt has many negative connotations, government debt is an important tool for economic development, catalysing growth and fuelling key projects such as infrastructure, education and health. It also acts as an important response mechanism to stimulate economies in times of recession.

As the first US Treasury Secretary, Alexander Hamilton, said: "The necessity for borrowing in particular emergencies cannot be doubted, so on the other hand, it is equally evident that to be able to borrow upon good terms, it is

[1] International Monetary Fund, '2024 Global Debt Monitor', (imf.org), October 2024.
[2] World Economic Forum, 'Public debt levels are deeply troubling: Experts at Davos 2025', (wef.org), January 2025.

essential that the credit of the nation should be well established[3].”

In order for governments to issue debt and attract capital at a reasonable price, it is essential that they maintain their credibility and creditworthiness.

However, over the last few decades, global debt levels – particularly in the Western world – have risen dramatically, especially following the 2008/09 Global Financial Crisis (GFC) and in response to the COVID-19 pandemic in 2020. At the end of 2023, the aggregate government debt-to-GDP ratio in the Organisation for Economic Cooperation and Development (OECD) was approximately 83%, an increase of 30 percentage points compared to 2008, even though higher inflation has contributed to a decrease in this ratio of more than 10 percentage points over the past two years[4].

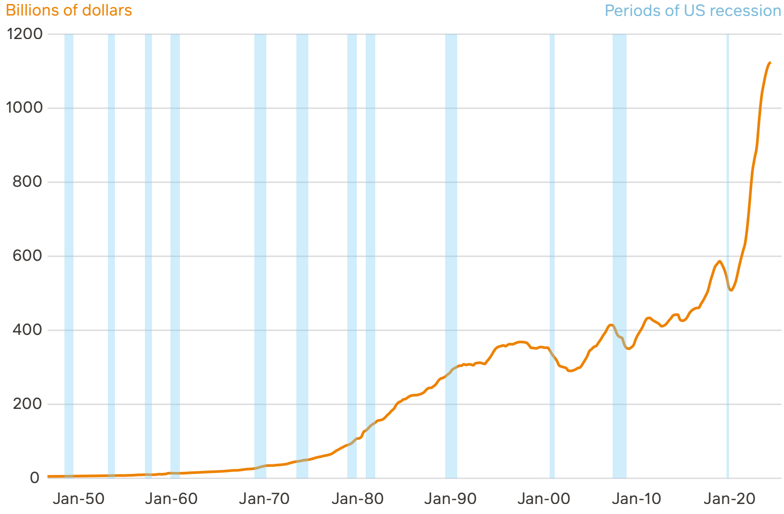
Much of this increase in debt was largely taken on during the period of low interest rates and loose monetary conditions that followed the GFC. Burrows remarks that “debt can continue at higher levels as long as interest rates remain very low.” However, he elaborates, now interest rates are higher, they are becoming a problem and bond yields are causing problems for governments because they are starting to crowd out investment.”

“If you are having to pay much more on servicing your interest, that money is not available to pay your nurses, your firemen or investing in new infrastructure and that really starts to hamper growth going forward and if you don’t have growth, you don’t have the revenue to pay down the debt and it becomes a bit of a vicious cycle,” he adds.

Interest rates in the US have been substantially higher as a result of the sharp spike in inflation following the pandemic. The US federal funds rate stood at 5.5% for over a year, between July 2023 and August 2024[5]. As a result of this sharp increase, as well as the ever-increasing debt burden, US interest payments on government debt topped $1 trillion for the first time in 2023[6].

Ben Lord, manager of the M&G Global Corporate Bond Strategy, points out that the most important thing to consider is not the level of debt itself but whether the country can afford it. For example, Lord highlights that in the US, 10-year Treasury yields (the

US interest payments on government debt tops $1 trillion



Source: US Bureau of Economic Analysis, FRED, as of October 2024.

interest demanded by investors to buy a government bond) are at 4.5%. Meanwhile inflation is between 2-2.5% and real GDP growth is above 2%, meaning current debt levels in the US are manageable. However, should GDP stop growing and inflation linger at 2%, investors would begin to grow more nervous about the affordability of the 10-year borrowing rate.

The road ahead

The supply of government debt is unlikely to diminish soon, with demographics, deglobalisation and decarbonisation likely to increase the burden on government spending. Lord highlights that “the Western world built these systems for baby boomers, baby boomers wanted them, and now the baby boomers are really starting to draw on these benefits.”

We can see this in the US, which has a large demand from its demographics, with social care and Medicaid – provided they aren’t drastically cut – likely to be an increasing cost in the coming years.

The deficit for 2024 totalled $1.8 trillion and is predicted to rise to $1.9 trillion in 2025[7]. According to the Congressional Budget Office (CBO), since the Great Depression, deficits have exceeded this level only during and shortly after World War II, the GFC and the COVID pandemic. On a far longer-term basis, the CBO predicts public debt to reach 166% of GDP by 2054[8].

[3] US Treasury, ‘What is the national debt?’, (fiscaldata.treasury.gov), February 2025.
[4] OECD, ‘Global Debt Report 2024’, (oecd.org), March 2024.
[5] Trading Economics, ‘United States Fed Funds Interest Rate’, (tradingeconomics.com), February 2025.
[6] CNBC, ‘Interest payments on the national debt top$1 trillion as deficit swells’, (CNBC.com), September 2024.
[7] Congressional Budget Office, ‘The budget and economic outlook: 2025 to 2035, (cbo.gov), January 2025.
[8] Congressional Budget Office, ‘The long-term budget outlook: 2024 to 2054’, (cbo.gov), March 2024.

PROJECTIONS FOR 2025

Budget deficit:
$1.9 TRILLION

Debt held by the public:
100% OF GDP

Outlays:
$7.0 TRILLION

Revenues:
$5.2 TRILLION

Source: Congressional Budget Office, 'The budget and economic outlook: 2025 to 2035, (cbo.gov), January 2025.

"DEBT DOESN'T MATTER...

The rise of populist politics has added more pressure on the debt burden. We saw this around the world in 2024 as more than 50 countries headed to the polls[9], with parties across the political spectrum in the US, UK and elsewhere campaigning on expansionary, vote-winning fiscal policies. In the US, for example, both Republicans and Democrats campaigned on policies that would ultimately expand the deficit.

Will there be an inflection point?

It's common to assume that the US, because of its exceptional position as the world's reserve currency, can continue to increase its deficit without punishment from bond markets. However, there may be a point where investors say 'enough is enough'.

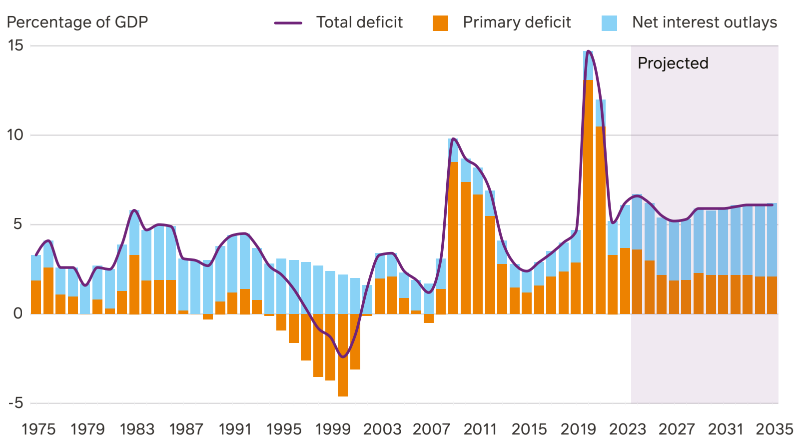
"Debt definitely does matter, we just don't know where that biting point is. We have to be closer to that point than we were two years ago simply by the fact that we have more debt," Burrows notes. Investors are becoming more cognisant of the fact that even the most developed governments may run out of room for manoeuvre. As a result, "governments are becoming increasingly protectionist and capital is becoming a lot more flighty", Burrows concludes.

According to Lord, once the bond market worries that an economy can't afford the level of borrowing at the ongoing market rate, it will move aggressively and effectively. Then, it is a matter of finding a clearing level, where bond markets feel adequately compensated for the risks of buying government bonds. "In such an environment, I would be much more nervous about long-dated bonds than about shorter-dated ones," he contemplates.

We have begun to see this: during the fourth quarter of 2024, estimates of the term premium edged up, indicating that investors demanded greater risk compensation for holding long-term US government debt. Meanwhile, Treasury auctions at the end of 2024 also underscore this concern, with some monthly auctions clearing at a higher yield than expected since 2022, reflecting investors' unwillingness to absorb the ever-swelling supply of government debt[10].

[9] World Economic Forum, '2024 is a record year for elections', (weforum.org), December 2023.
[10] Bank for International Settlements, 'BIS quarterly review', (bis.org), December 2024.

Deficits have exceeded this level only during and shortly after World War II, the GFC and the COVID pandemic



Source: Congressional Budget Office, January 2025.

Andrew Chorlton, CIO Fixed Income, highlights that "developed market governments have bonds to sell and if you have bonds to sell you have to find a buyer for them – it's the basic rule of demand and supply."

We have seen this increased nervousness and volatility demonstrated particularly in the UK.

The UK has only recorded budget surpluses five times since 1970, with the most recent occurrence in 2000/01[11]. It also faces several challenges, including low economic growth and productivity, an aging population, high government debt and high borrowing costs[12].

Furthermore, real interest rates are currently higher than the real GDP growth rate, making it difficult to reduce the debt-to-GPD ratio without limiting public spending.

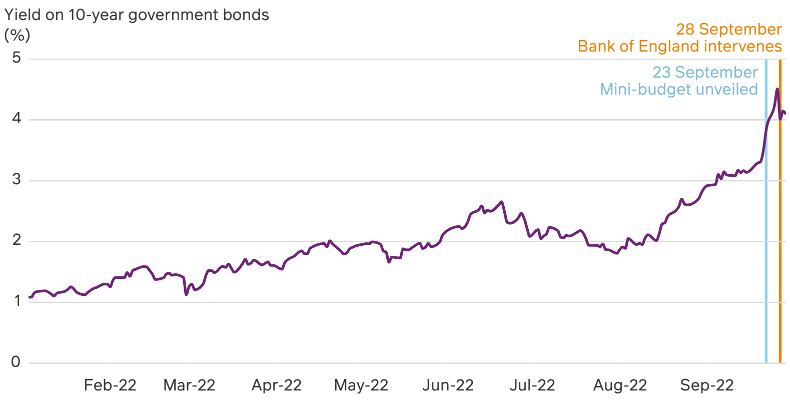
As a result, markets are alert to the sustainability of UK government debt. This was demonstrated during the 2022 Gilt crisis when the then-Chancellor Kwasi Kwarteng set out a range of tax cuts and a reduction in national insurance in the new government's 'mini-budget'. Later dubbed 'Trussonomics', the budget also included an increase in government spending in the form of an energy price cap. The implication of this decrease in revenue and simultaneous increase in spending was an expansion of the deficit. As a result, gilt yields spiked, rising from 3.5% to 4.3% as investors rushed to sell UK government debt[13]. "The market had reached its limit," points out Chorlton.

According to Burrows, the 2022 Liz Truss episode demonstrated "how fleeting confidence can be." He added, "once the bond vigilantes decide that they don't want anything to do with a particular market, pricing can adjust quickly."

There is "very little fiscal headroom" for the UK, Lord notes. As result, markets are alert to any perceived sense of fiscal profligacy. For example, markets wobbled following the most recent budget under the Labour government, which contained a tax grab from the private sector that could have negative consequences for growth. It is estimated that the budget is likely to push UK government bond issuance towards £300 billion[14], further testing appetite. The bond market has already proven impatient, with 10-year gilt yields climbing to levels not seen since the 2008/09 financial crisis in January 2025[15].

[11] The Guardian, 'Reeves's radical change to fiscal rules could go further', (theguardian.com), October 2024.
[12] Economics Observatory, 'Bond markets and the UK's public finances', (economicsobservatory.com), February 2025.
[13] T he Guardian, 'How Kwasi Kwarteng's mini-budget hit UK economy', (theguardian.com), September 2022.
[14] Reuters, 'UK budget to push gilt issuance towards 300 billion pounds, dealers say', (reuters.com), October 2024.
[15] Reuters, 'Sterling and UK gilt prices tumble', (reuters.com), January 2025.

UK gilt yields spiked in response to the mini-budget



Source: Bloomberg, as of December 2022, data accessed March 2025.

...UNTIL IT DOES."

“POTENTIAL”

However, for Chorlton this may not be as damning as it sounds. In part, this phenomenon is due to the end of the quantitative easing (QE) programme that ran for over a decade after the GFC, where the Bank of England was a buyer of gilts, artificially suppressing prices. Now, "there are a lot of bonds for people to digest and the price has to correct. The credit quality of the UK government hasn't changed dramatically in the last few months. It's just that the price reflects a clean balance of risk and reward, without the distortion of QE," the CIO outlines.

"You've got to persuade people to buy [UK government bonds] and that is the clearing price – it's healthy but the government has to be very alert to it."

Diverging paths in the debt landscape

The impact of government debt levels can acutely be seen in Europe where, because of the common currency and common central bank, there is a clear pricing of the credit risk of different countries.

We can see this in the divergence between France and Greece. While France was formerly considered a stable economy, it is now hampered by a large debt pile, low growth and an uncooperative electorate.

In fact, in November 2024, France's government bonds (OATs) briefly yielded more than Greek government bonds[16], often associated with its struggles during the eurozone debt crisis.

Meanwhile, since its restructuring, Greece has been able to run primary budget surpluses, and was even able to repay some of its debts from a 2010 bailout programme because its upgrade to investment grade status has allowed more access to cheaper financing[17]. This demonstrates the importance of maintaining credibility and debt sustainability among investors. There exists a positive feedback loop where those countries with a sustainable debt level have better access to credit and are therefore better able to service their debt and invest in their country.

In turn, this has an impact on growth: between the eve of the COVID crisis in 2019 and 2024, GDP per head grew more than 11% in Greece, while France has grown less than 2% in the period[18].

An alternative route

Given these dynamics, where can investors turn?

Burrows argues: "It's a simple investment thesis that if economies are running into financial difficulties, you are better positioned elsewhere."

Ultimately for Burrows, the increased flightiness of capital brings about investment opportunities to exploit. However, he is wary that change in the market can be "ruthless and brutal." While we may not know the trigger, changes in dynamics such as political upheaval can spark "very swift and sharp changes in valuations."

"All we can do is be alive to those risks as best we can and position one's portfolio in places we deem as much safer and prevent any loss of capital," he adds.

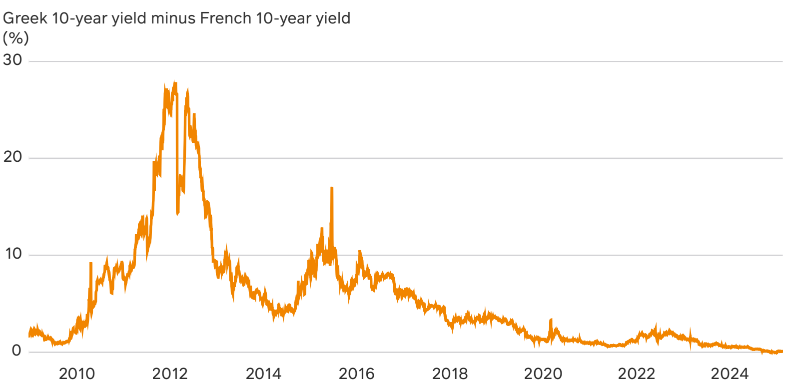
Lord agrees, arguing that in times of fiscal crisis, "the most important thing is to avoid them, and to have a fund that has the ability to invest in different parts of the world."

Both Lord and Burrows are turning to countries with a more sustainable debt level, such as New Zealand. According to IMF data, New Zealand has a debt-to-GDP ratio of 48.6%[19]. Its government has committed to returning to a surplus and reducing its debt-to-GDP.

The country underwent its own fiscal crisis in the 1980s with high inflation, soaring unemployment and mounting debts. However, it subsequently adjusted its fiscal rules to include a target stipulating that its net worth should remain at a level sufficient to act as a buffer to economic shocks and that total operating expenses in each financial year are less than total operating revenues in the same financial year[20].

[16] Bloomberg, 'French 10-year borrowing costs match Greece's for first time', (Bloomberg.com), November 2024.
[17] Financial Times, 'The astonishing success of eurozone bailouts', (ft.com), December 2024.
[18] Financial Times, 'The astonishing success of eurozone bailouts', (ft.com), December 2024.
[19] International Monetary Fund, 'General government gross debt', (imf.org), February 2025.
[20] New Zealand Treasury, 'Fiscal strategy', (treasury.govt.nz), February 2025.

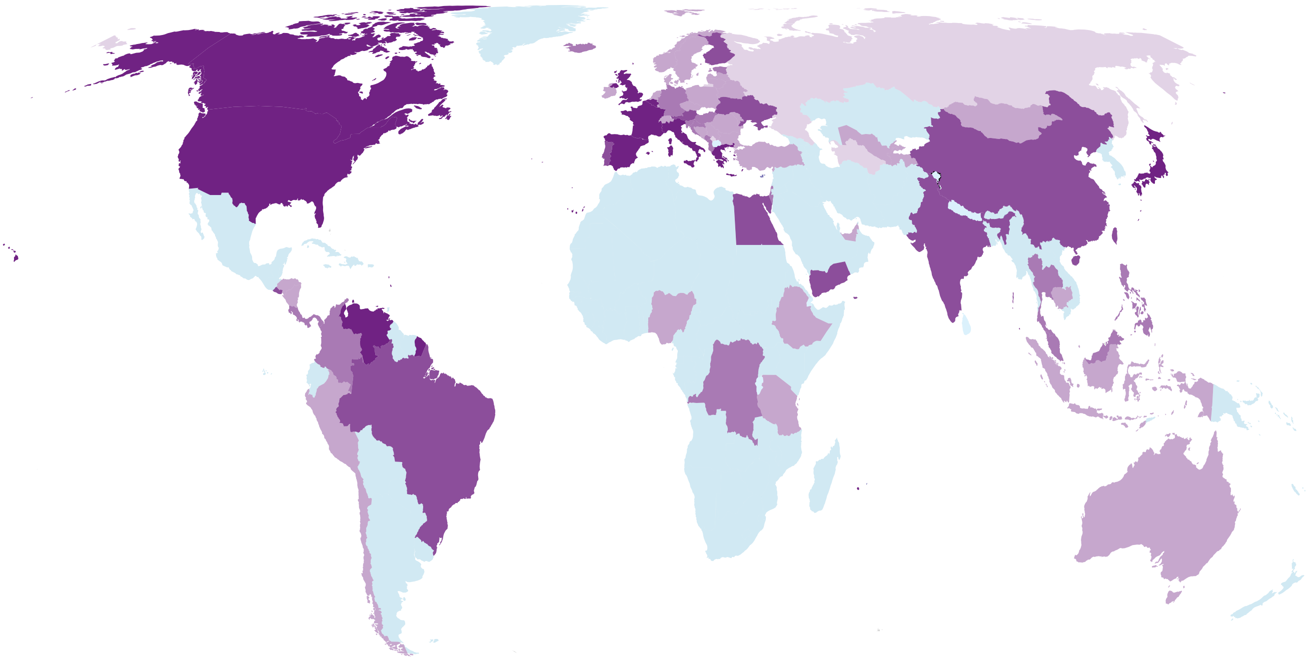
French government bond yields match Greek debt for the first time



Source: Bloomberg, as of 7 March 2025.

Diverging global debt levels

100% or more | 75-100% | 50-75% | 25-50% | Less than 25% | No data



Source: IMF data, January 2025.

The fixed income fund managers highlight Australia, Norway and the United Arab Emirates as other countries with strong fundamentals compared to their developed market counterparts, which also have low debt-to-GDP ratios.

What does this mean for corporate bonds?

Sovereign bonds and corporate bonds are intrinsically linked. Corporate bonds are made up of two components: the relevant underlying government bond yield and the credit spread (or risk premium) for lending to a company. Given the current dynamic within sovereign bond markets, how does this feed through into the corporate universe?

Considering the deteriorating fiscal situation for many developed markets, there may even be a point where investors decide that a high quality corporate is better than a sovereign bond, Chorlton argues.

Meanwhile, for Lord, there is a key consideration at play: if you have the choice between US Treasuries, which are rated AA+, being paid 4.5% or you get paid 30 bps more for Microsoft which is AAA rated, is there a case that Microsoft is a stronger credit than the US government?

"In a fiscal crisis, you would have to say yes because Microsoft is not over borrowed or committing an unaffordable amount of benefits to their retired employees. It is taking in more money than it is spending, so you could argue it is a stronger credit," he explains.

However, this tends to correct quickly, Lord notes. In the case of a fiscal crisis, the government is going to respond by cutting spending and increasing tax take from wherever they can get it, which would typically be the wealthiest companies or individuals. In this scenario, that would damage the growth prospects of the corporate bond while enhancing the case for the sovereign bonds – "this is less of a long-term fundamental trade as the government typically has room to act."

Furthermore, while currently corporate bonds are trading at all time tights, there is a case that credit might be crowded out by government bonds. If there is such a supply of government bonds coming to the market and there is not enough pick up in yield to buy corporates, the spread (ie the differ-

"YOU'VE GOT TO PERSUADE PEOPLE TO BUY [UK GOVERNMENT BONDS] AND THAT IS THE CLEARING PRICE – IT'S HEALTHY BUT THE GOVERNMENT HAS TO BE VERY ALERT TO IT."

ence between the government bond yield and the corporate bond yield) will become so compressed that investors may decide they are not adequately paid for the risk.

A detour through emerging markets

Similarly to the Western world, we have seen a dichotomy within emerging markets (EM) where fiscal reforms have been led by what were previously considered the most fragile economies. Meanwhile, several middle-income EM sovereigns have increased spending substantially.

As Claudia Calich, Fund Manager, Emerging Market Debt, explains, EMs as a whole tend to have lower debt levels. However, because many of them borrow from international markets in hard currencies (an external currency typically seen as more stable, such as the dollar or euro), the threshold for market tolerance of debt levels is lower. They would rarely be able to carry such high debt levels as developed markets do. Additionally, fiscal revenues, a key element for a sovereign's ability to service debt, are normally lower in emerging markets given the structure of their economies and income levels.

Nevertheless, there are certain countries which are making substantial fiscal reforms and thus attracting more capital. "Those countries where fiscal adjustment is perceived to be tenable and long lasting, the markets absolutely would reward those countries," Calich states.

Argentina is one of the most prominent examples of this. A country that has long been buffeted by financial woes before the election of President Javier Milei in 2023. The term 'chainsaw economics' entered the lexicon, coined following Milei's bold action to turn around the Argentine economy – a result of his symbolic wielding of a chainsaw during the election campaign. Since coming to power, Milei has halted public works, slashed pension expenditures and public salaries, reduced energy and transport subsidies and axed more than 30,000 government jobs[21].

As a result, Argentina achieved a fiscal surplus for the first time in over a decade. The country posted a surplus equivalent to 1.8% of GDP, and 0.3% after accounting for interest payments in 2024[22]. This was reflected in its bond market returns, with Argentina being one of the best performers in 2024.

Similarly, countries such as Egypt and Turkey which have undergone periods of economic uncertainty and are now targeting primary surpluses, with Egypt looking to have a primary surplus of 5% in the fiscal year ending June 2027, while Turkey is planning to achieve a surplus of 0.5% of GDP in 2025[23].

While these countries are looking to improve their fiscal position, others which have previously been considered to have more stable macroeconomic fundamentals, such as Brazil and Mexico, are adopting looser fiscal policies. Mexico's fiscal deficit is expected to surge to 6% of gross domestic product in 2024, the highest in two decades. This is due to increased public spending on large infrastructure projects and growing current expenditures, according to the Official Monetary and Financial Institutions Forum thinktank[24].

[21] CNN, 'Argentina's Milei counts Trump and Musk as fans', (edition.cnn.com), December 2024.
[22] Bloomberg, 'Milei's budget cuts nets Argentina first surplus in over a decade', (bloomberg.com), January 2025.
[23] IMF, 'Emerging markets' two-way traffic', (imf.org), December 2024.
[24] OMFIF, 'Forget US election, Mexico's real economic challenge lies at home', (omfif.org), October 2024.

Meanwhile, Brazil is facing fiscal concerns with the Lula administration adopting a fiscal strategy of letting the deficit rise to accommodate higher social spending. The country saw higher interest rates of 13.25% in January 2025, which will likely contribute to an increasing debt-to-GDP ratio, reaching 85% by 2026, from 77.3% in 2024[25].

This trend of diverging fiscal situations was also reflected in credit spreads (the difference in yield between EM bonds and US Treasuries) in 2024, where those of countries that are fragile but improving have narrowed disproportionately. As a result, the high yield segment of EM sovereigns outperformed in 2024[26].

Emerging markets as a whole not only tend to have lower debt ratios but they benefit from the policy anchor given in the form of the International Monetary Fund (IMF). Research from Morgan Stanley found that a total of 29 countries in the Emerging Market Bond Index Global Diversified, representing 27% of the index in weight terms, are in an IMF programme – the highest number since 2010[27].

As Calich notes, "countries with limited financing options often engage with an IMF programme that is designed to provide the country with short-term financing, providing breathing space and allowing the country to improve its fiscal framework, which is often the source of the problem."

In emerging markets, as elsewhere, investors are reassessing the risk level of individual sovereigns as we have seen that from a fiscal perspective the road is diverging, with some sovereigns focusing on stability, while others face a deteriorating fiscal reality, which is likely to test bond market appetite. "There are always worries about EM debt. For emerging markets, it has always been a matter of analysing idiosyncratic country factors," Calich highlights.

We believe active managers are well placed to manage risk while also taking advantage of the opportunities such divergence offers as global debt levels continue to grow. □

[25] Fitch Ratings, 'Brazil's fiscal, monetary tensions create negative feedback loop', (fitchratings.com), December 2024.
[26] Bond Vigilantes, 'Emerging markets high yield post-mortem', (bondvigilantes.com), January 2025.
[27] Bond Vigilantes, 'Emerging markets high yield post-mortem', (bondvigilantes.com), January 2025.

“END”

WHEN GEOPOLITICS MEETS INNOVATION

CHINA'S DEEPSEEK RAISES STAKES IN AI ARMS RACE

Artificial Intelligence (AI) is increasingly being seen as a critical ingredient for a nation's future economic success. Until recently, it seemed that the US was winning the AI race – but the release of a new Chinese AI model in January revealed that China is not far behind. Dominic Howell assesses the latest developments in the world of AI and considers the potential implications for investors of the US-China technological rivalry.

Just as 2025 got underway, a free AI model from an obscure Chinese startup firm called DeepSeek overtook OpenAI's ChatGPT as the most downloaded application on Apple's US App store.

The large language model (LLM), known as R1, appears to perform as well as the leading offerings from OpenAI and other US tech giants such as Google and Meta Platforms.

DeepSeek's arrival on the AI scene in late January stunned investors and prompted a dramatic reassessment of the perceived dominance of US technology stocks in the AI race.

US tech stocks fell sharply. Nvidia, the US chipmaker that has been at the centre of the AI boom in the past couple of years, saw its share price drop around 17% in one day, wiping out approximately US$600 billion in market cap value, the biggest single day loss in US history[1].

The catalyst for the sell-off was the fact the Chinese firm said it cost considerably less to train and run R1 than its US counterparts. For the past two years, big US firms have spent billions of dollars building and training increasingly large and sophisticated models. In contrast, it is reported that DeepSeek's model only cost $5.6 million to train and used 2,000 specialised Nvidia chips compared to more than 10,000 in leading Western models[2].

The development of a comparable model that is apparently more efficient and available at a fraction of the cost of its competitors has disrupted the prevailing narrative about the future of AI. By challenging the view that bigger is better when it comes to AI, this episode has fuelled doubts about the valuations of US tech giants, their growth prospects and planned investments in AI.

According to Jeffrey Lin, M&G Investments' Head of Thematic Technology Equities, the implication of DeepSeek, and the reason Nvidia bore the brunt of the sell-off, is that AI models in future might require less computational power.

"Investors anticipated the efficiency gains would mean companies won't need to commit as much investment as previously announced to integrate AI into their products or processes," he says.

"The figure for DeepSeek's spending may turn out to be too low, however, as they may have used some prior work before building their model. While there is a lack of clarity around the exact cost, in terms of performance DeepSeek appears to have been validated."

AI arms race

DeepSeek's cutting-edge capabilities were also surprising as it was widely assumed that US tech firms were ahead of their Chinese counterparts in the AI race. President Trump described the DeepSeek development as a "wake-up call" for US companies in an area where the US is determined to be the global leader.

Emphasising that AI is likely to be a priority for his administration, the president announced a $500 billion investment in AI infrastructure, the Stargate Project, which he said was "the largest AI infrastructure project by far in history"[3].

Being at the forefront of this nascent technology is now a worldwide issue. At the AI Action Summit in Paris in February, the European Union (EU) set out its ambition to compete in the AI race, pledging €200 billion to accelerate innovation in the space[4]. French President Emmanuel Macron also unveiled €109 billion of investments, directed towards developing AI technology in France, including the construction of data centres[5]. France-based Mistral AI has developed high-performing open source AI models and is seen as one of Europe's best chances of keeping up with the US and China.

"DeepSeek's arrival on the AI scene in late January stunned investors and prompted a dramatic reassessment of the perceived dominance of US technology stocks in the AI race."

[1] Investing.com, 'Nvidia investors largest one-day loss in history – Here's what to do now', (investing.com), January 2025.
[2] Al Jazeera, 'China's DeepSeek faces questions over claims after shaking up global tech', (Aljazeera.com), January 2025.
[3] US News, 'What Is the Trump-Backed Stargate AI Project and Why Is It Controversial?', (usnews.com), January 2025.
[4] Hyperight, 'EU's Historic €200B Investment: What It Means for Europe's AI Future', (hyperight.com), February 2025.
[5] Verdict, 'France unveils €109bn investment pledges to boost AI', (verdict.co.uk), February 2025.

DeepSeek's challenge to US dominance of the AI landscape
Number of notable machine learning models (2023)

Source: Artificial Intelligence Index Report 2024, Stanford University.


HAVE A NICE DAY!

> "AI is increasingly regarded as a critical factor for national success across many global economies in the coming years."

AI is a core element of the so-called "fourth industrial revolution" due to the transformative impact it could have on the way we live and work. It is increasingly regarded as a critical factor for national success across many global economies in the coming years. AI leadership could provide substantial economic benefits through productivity gains as well as creating new markets. It could also result in improvements in healthcare and education and other aspects of society.

Another powerful reason why countries are so keen to be an AI leader is the potential advantages for national security through intelligence and weapons. In an increasingly unstable world, and with more technological warfare, cutting-edge military capabilities are becoming more critical.

Given the wide-ranging and significant advantages that AI could bring, it is not surprising that there is a global competition to be at the front of the pack in this field.

Despite the rivalry, there is a recognition that this powerful emerging technology could have negative consequences as well as being a force for good. The loss of jobs through automation, the possibility of bias and discrimination, and security concerns are often cited as risks that could flow from the development of AI.

As a result, there have been efforts, such as Europe's AI Action Summit, as well as the AI Safety Summit in the UK in 2023, to encourage collaboration and establish international norms to harness the benefits and mitigate the risks of this technology.

While this international approach is encouraging, it appears that the Trump administration is taking a different stance. At the Paris summit Vice President JD Vance explained that the US favours less regulation of AI and will "make every effort to encourage pro-growth AI policies." One of Trump's first acts in office was to revoke President Biden's order that required firms to focus on AI safety.

This desire to push ahead arguably illustrates that the world's two largest economies are in a race to be the AI leader, which can be regarded as an extension of their broader struggle for economic and strategic dominance on the world stage.

Innovation in China

It is hard to say at this stage who will eventually become the dominant player in AI but the US has tried to slow China's progress. It has prevented Nvidia exporting its most up-to-date chips to China, and restrictions have been placed on chip-making equipment reaching China.

The fact that a Chinese company was able to produce a cutting-edge model, despite being denied access to the latest US hardware, was one of the biggest surprises about the DeepSeek episode. However, this shouldn't come as such as shock. "China has many talented computer scientists and the fact they have been able to develop this product with much less computational power demonstrates their capabilities," explains Lin. "The attention has been on US firms, but DeepSeek arguably validates China as a major force in AI globally."

DeepSeek's initial success highlights how China's economy has changed in recent years, with a new emphasis on innovation-led development. The 'Made In China 2025' policy was launched in 2015 with the aim of transforming the Asian superpower's manufacturing sector and shifting towards high-tech industries.

This was followed in 2023 when President Xi Jinping introduced the concept of "new quality productive forces". The Chinese government's new focus on driving economic growth through innovation and technological advancement, rather than the traditional model of property and infrastructure, has become increasingly evident over the years.

As a result of these policies, China today is a highly innovative economy that is at the forefront of many industries. The country may have a reputation as a manufacturer of low-quality goods but 'Made in China' is also now synonymous with technologically advanced products.

Last year, China filed the largest number of patents in the world: 1.7 million compared to 600,000 in the US. There are also more than 6,000 PhDs in STEM (science, technology, engineering and maths) coming out of China's universities each month, double the figure for the US[6].

This tech-focused environment is helping China become a market leader in areas ranging from electric vehicles (EVs) to solar panels and battery technology. At the end of last year, Chinese car maker BYD overtook Tesla to become the world's largest producer of electric vehicles[7].

Is AI fuelling optimism?

As DeepSeek demonstrates, US efforts to slow China's progress appear to have inadvertently driven technological developments and innovation. Chinese firms have thrived without advanced US chips and software. Phone maker Huawei has produced a competitive smartphone with an advanced domestically-produced processor, for example. It has also developed its own operating system, as it was cut off from Google's Android.

China is home to a myriad of technologically advanced companies including several tech giants such as Alibaba, Baidu and Tencent that are comparable to the Magnificent 7 in the US. Many of these have well-established and competitive AI models.

"China is one of the most digitally advanced economies globally, whether measured by high internet and smartphone penetration rates or world-leading digitally integrated supply chains," remarks David Perrett, Co-Head of Asia Pacific Equities. "This technological advancement offers a real competitive edge to companies, many of which, in our view, trade at attractive levels of valuation."

One consequence of DeepSeek's emergence is that investors have started to reassess Chinese AI-related investments. Technology stocks including Alibaba and Baidu rallied after the breakthrough amid growing optimism about the development of AI in the country.

Alibaba's share price gained when Apple selected the firm as its partner for its AI services in China and BYD's share price received a boost when it announced it was teaming up with DeepSeek to incorporate AI into its vehicles.

For the past couple of years, concerns about China's economic outlook, including its troubled property sector and domestic consumption, have led investors to steer clear of China's stock market. But growing appreciation of the country's AI capabilities and the prospect of widespread AI adoption appears to have helped restore some confidence in the country's equity market. Given how well US tech stocks performed during the AI buzz of the past two years, could Chinese AI and tech stocks be able to experience a similar rally?

"Despite the malaise in the Chinese stock market in recent years, we have remained excited about the technological advances we have seen coming from the country," says Perrett.

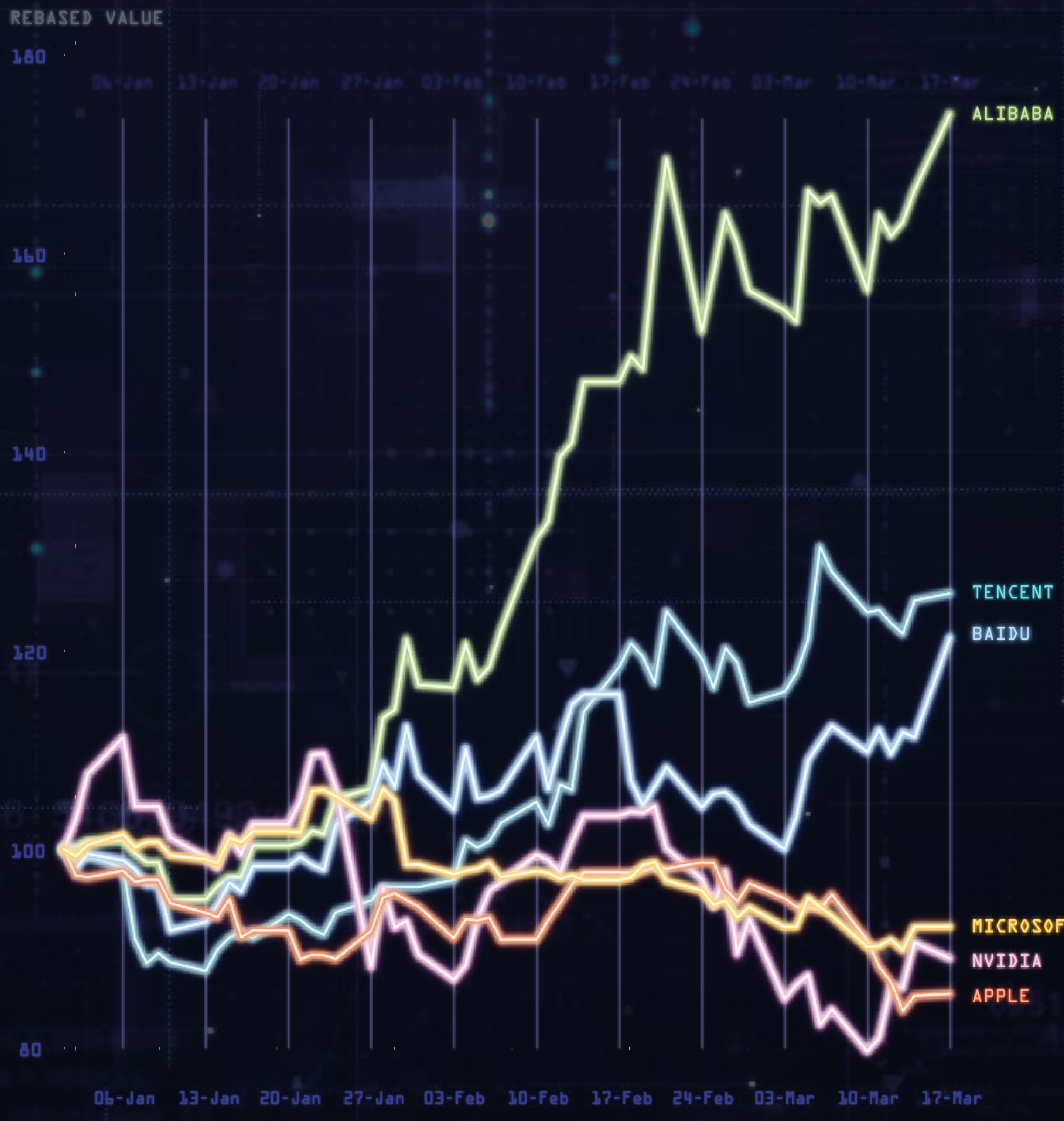
One clear lesson from DeepSeek is that China's investment in the future of technology is bearing fruit. Could it also help revive the country's stock market and economy? Perrett is optimistic: "We believe with our disciplined approach to bottom-up research, we can find differentiated ideas from across various sectors, which can help drive returns for our clients."

"US efforts to slow China's progress appear to have inadvertently driven technological developments and innovation."

[6] BBC, 'UK will not be able to resist China's tech dominance', January 2025.
[7] South China Morning Post, 'BYD's fourth-quarter output surpasses Tesla as world's largest maker of pure electric cars', January 2025.

"One consequence of DeepSeek's emergence is that investors have started to reassess China's AI-related investments."

DeepSeek has sparked a reappraisal of Chinese tech stocks



Source: LSEG Datastream, 17 March 2025. Returns in local currencies. Past performance is not a guide to future performance.

A multi-decade opportunity

While the rivalry between the US and China will likely have far-reaching consequences for the global economy, trade and geopolitics, in the near-term DeepSeek could have some significant implications for the evolution of AI.

Investors' initial panic suggests that it undermined the optimistic case for big tech's growth and their investments. An alternative view is that a cheaper, more efficient AI technology could actually represent a catalyst for wider adoption and deployment of AI. Companies that might have been cautious about the costs associated with implementing AI may be relieved that it is available more cheaply.

Lin is optimistic that DeepSeek could have a positive effect. "In the history of computing, whenever computers become more powerful and new applications for computing emerge, the addressable market increases," he observes.

"For companies that want to incorporate AI into their products, particularly enterprise software companies, it's becoming less capital intensive and it's moving faster. They can add these enhancements to software more quickly so the end market actually grows as well," he says.

Despite the concerns that DeepSeek's efficiency gains might mean reduced demand for Nvidia's chips, Lin believes that the increasing pace of innovation and growing addressable market will ensure that demand remains robust.

There may be a shift in focus from training foundational models towards applications and services, but overall demand for AI technology is likely to continue growing. Big US tech firms certainly remain committed to spending on data centres and chips, with Alphabet (parent company of Google), Amazon, Meta and Microsoft forecast to invest $320 billion on AI this year[8].

Lin sees AI as a multi-decade opportunity that is still in its infancy. "It began with image recognition and predictive analytics and now generative AI is the current big use case," he explains. "Beyond this there are other AI opportunities such as agentic AI, where computers start to be able to reason like humans do. There's also robotics – industrial robots and maybe even personal robots in the future – as well as self-driving cars."

In his view, the evolution of AI is creating different investment opportunities. "To begin with you have the enablers, the companies that provide foundational technology for AI, such as semiconductor firms like Nvidia. Then there are the providers: companies, particularly in the enterprise software area, which can use the technology to offer AI-enhanced products and services, and importantly charge extra for them. Finally, there are what we call the beneficiaries, which can use AI internally to grow their business or just become much more operationally efficient."

In the two and a half years since ChatGPT created the buzz around generative AI, most of the focus has been on the enablers, notably Nvidia. The fact that AI has yet to become a feature of everyday life for many people prompted concerns that it might have been overhyped. However, there are signs that the technology is now moving towards the providers. If DeepSeek provides a further boost to adoption, this progress could gather momentum in the near future.

The dawn of a new era

The age of AI is arguably just beginning and the landscape is evolving fast. DeepSeek disrupted the prevailing narrative about AI and, in Lin's view, may become one of the important milestones in the evolution of the technology. "Ultimately, we think it's a sign of acceleration of the development for AI. We can potentially get to new AI applications sooner rather than later," he suggests.

The US and China appear to be leading the AI arms race but other countries are determined to compete to ensure that they can benefit from the significant advantages associated with the technology. The race may prove to be more of a marathon than a sprint but for Lin there will be plenty of long-term investment opportunities as the pace of innovation and deployment accelerates in the years ahead. □

"A cheaper, more efficient AI technology could actually represent a catalyst for wider adoption and deployment of AI."

[8] FT, 'Big Tech lines up over $300bn in AI spending for 2025', February 2025.

IN CONVERSATION WITH…

ANDREW CHORLTON

From Yorkshire to university in Birmingham via Valladolid, Spain and eventually, a career in bond markets that took him from London to California, New York and back to London, Andrew Chorlton is now CIO for Fixed Income at M&G Investments. He caught up with Romil Patel on why income is back in fixed income, the evolving dynamics of the asset class as a return diversifier, how to turn an investment philosophy into a superpower – and why his favourite place is somewhere he hasn't been…yet.

Andrew, you've recently joined as CIO for fixed income at M&G Investments. How are you finding life here so far and what are you most excited about?

My first impressions are that there's lots of energy, talent and genuinely lovely people here. The performance is good and the quality of the people that we've got is exceptional, so the most exciting bit for me is focusing on growth, getting broader reach and sharing our products and the capabilities with more clients in more places.

Tell us about the early days of your career – how you started in the investment industry, your first post and what motivated you to pursue fixed income as the asset class of choice?

I was studying abroad in Spain and people around me were applying for summer internships. I had nothing else to do so I thought I'd apply for a summer internship. I was always broadly interested in finance but didn't really understand 'The City', if I'm honest. Then after a summer internship at Citi that led to a job on the graduate programme, and my eyes were opened.

The reason for fixed income, like a lot of people, it was the opportunity. There was an opportunity to move off rotation and onto a 'proper job' on a global fixed income team. They had a model where every senior portfolio manager was partnered with an up-and-comer, so it felt like a really good opportunity to learn and I was given my own markets to focus on. My career has encompassed a bank-owned asset manager, an insurance asset manager, a boutique, and independent including over a decade in the US and I finally got to work at M&G, which I believe is the premier fixed income firm in Europe.

Which market episode has been the hardest challenge to navigate in your career – and what did it teach you?

I've managed through a few different crises but I'd say the global financial crisis – COVID to a lesser extent – when I was working for a very small firm.

I left London and moved to California. I started there in July 2007 and the financial crisis was beginning to rumble. It was quite scary how quickly things were moving in the market but how slow the reaction was from governments and regulators.

We had quite a clean, well-defined investment philosophy and process and we knew if stuck with it then we'd get through the crisis in one piece, with our client relationships solidified. When you're at a small firm where every single dollar you manage is for external clients, it can be quite a vulnerable feeling if you don't get it right. You're being tested every single day to justify why you're with those clients – and we were up against the biggest firms in the world.

That discipline around investment philosophy held us in good stead, not necessarily every single quarter, but over the cycle. When COVID hit, the government response was a little bit quicker, but again – I was managing money in those days – sticking to the investment philosophy and the process that clients expected of you gives you an anchor in a difficult market.

Ensuring that our clients understand the philosophy of the investment teams provides a strong foundation as the market ebbs and flows. There are always things going on but if you've got an investment philosophy that can look through different market scenarios and guide you through it, it's a bit of a superpower.

Strong fundamental research – whether that's corporate credit, structured credit or sovereign analysis in both developed and emerging markets – is the common foundation that supports every team here. Portfolio managers are making relative value judgements all the time within their investment universe, but the thing they can all rely on is the quality of a strong research capability – because there's an independent perspective giving them the confidence to invest.

Why is fixed income interesting as an asset class right now – and how do you see demand for it evolving?

I think the demand for fixed income will be driven by the underlying demand for income in retirement as demographics result in ageing populations.

That's why I believe it's such an interesting time in the market – because income is back in fixed income. It's there not because of short-term moves, but because the rise in yields that started with inflation fears has recently been driven by an increase in real yields. I believe that rise in real yields is driven partly by uncertainty but more fundamentally by the increase of the supply of government bonds around the world and the need to find the right price for investors to digest all those bonds.

I'm very fortunate to be head of fixed income at a firm that has such a heritage in the asset class at a time when structurally, the money should be coming in our direction.

Amid elevated geopolitical risks, policy and economic volatility in recent years, what role can actively managed fixed income strategies play in modern portfolios and do you think we've seen the end of 60/40?

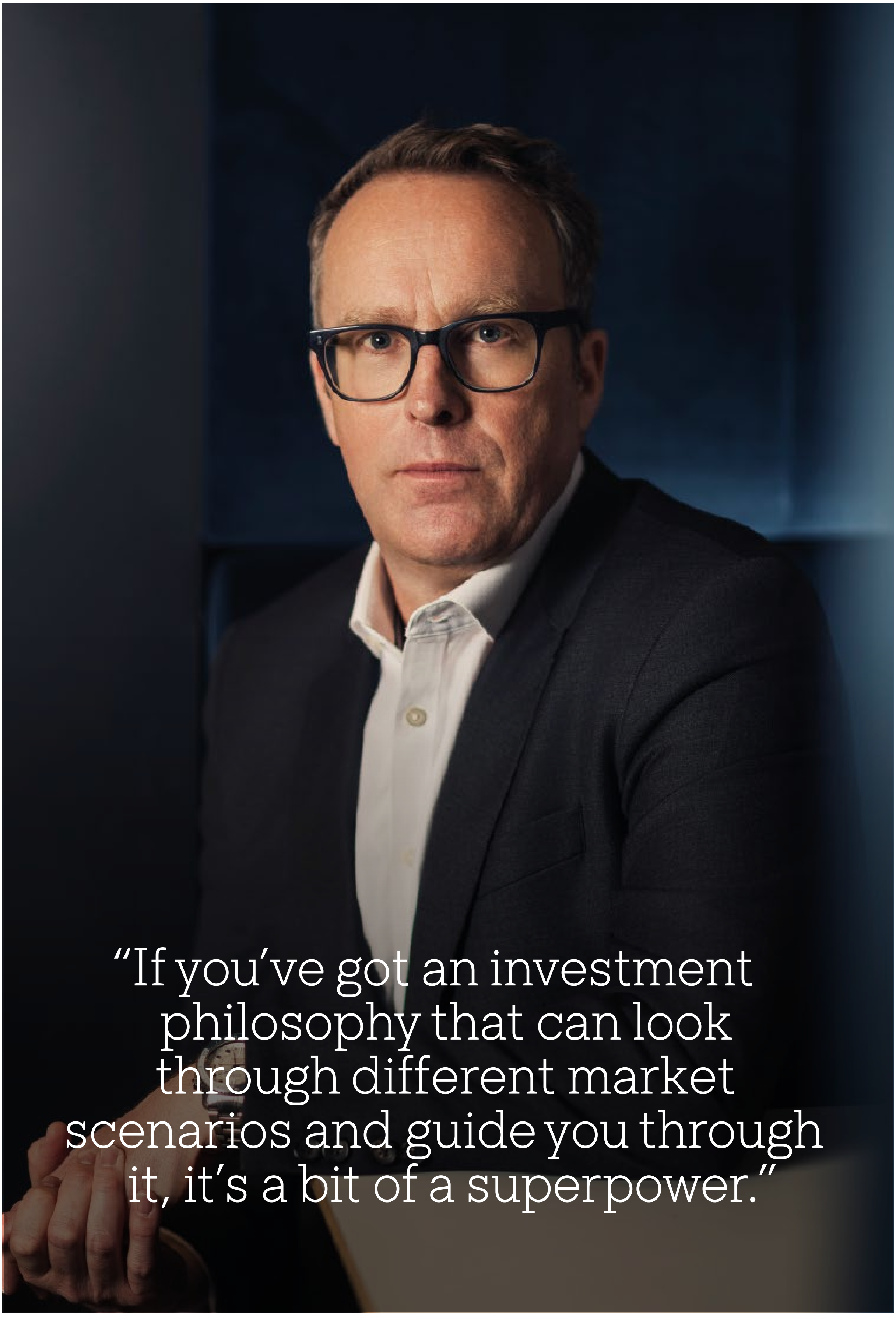
The role of fixed income is less of a risk diversifier and more a contributor to returns. The absence of quantitative easing results in normalised yields, where the price of bonds more truly reflects the balance between risk and reward. I expect bonds will be seen as more of a return diversifier, particularly as equity portfolios are seemingly getting more concentrated by the success of the US market.

As fixed income allocations have grown – we think they're growing across all client segments because of the rise in real yields – people will need to consider diversification in their fixed income in the same way they used to in their equity portfolio.

So, whilst perhaps your fixed income allocation is much smaller, you might just have a domestic allocation to US, or Euro or UK bonds, I think people will increasingly look at emerging markets, which has been an unloved asset class in recent years and say: 'If I'm going back to a 60/40 – I don't think many people have been at 40 – but if I'm going to go back to those levels, I don't want it all in the UK corporate bond market. Maybe I should have a mix of domestic government bond risk, corporate credit risk and international or emerging market risk' – in the same way you have a diversified equity portfolio.

Do you have a favourite economic indicator or market signal?

My 'favourite' indicator is US payrolls because there's such focus on a single number that is nearly always forgotten within 24 hours. I find it amazing that every single month without fail there's a build-up to it, an almost always instant reaction – and quite a violent one – and then within a couple of days it's forgotten about, or there'll be another data point that's completely contradictory. It's like the reality TV version of an economic indicator – instant gratification because everyone's talking about it, but a single number that in itself is meaningless.


"If you've got an investment philosophy that can look through different market scenarios and guide you through it, it's a bit of a superpower."

“Income is back in fixed income.”

Your career has taken you to London, New York and California. What are some of your favourite food spots, and dare I ask, which city takes the food gong?

It depends. California for Mexican food, New York for Korean and London for home comforts. I had six years in Santa Barbara and six years in New York. Everyone expects you to say: ‘Oh, I miss California’, but if you work in markets you have to be in the office before 5:00am and go to bed at the same time as the kids!

New York’s an extremely cosmopolitan city, you meet people from all over who have been all over. I lived in Brooklyn and worked in Midtown Manhattan and it was great. I was introduced to Korean food and Korean fried chicken coupled with karaoke is hard to get. But home is home, and hard to beat.

Where did you go to school and what did you study at university?

I went to Hymers College in Hull, then went to Birmingham for university and studied economics and Spanish. I always wanted to do economics because of the finance angle, but I also realised there would be lots of people with economics degrees so the combination with a language would improve my chances of finding a job. The year in Spain remains the best year of my life and I was very lucky from there to get an internship then got a graduate job after. Once you get your foot in the door, it’s up to you.

Tell us something that most people don’t know about you.

I used to be a DJ – not a real one – during my year abroad. I was a DJ on a Thursday night in a bar in Valladolid, but don’t ask me about music now!

What’s your favourite town, city or country?

Beverley in East Yorkshire’s my favourite because it’s home. A lot of my friends are still in Beverley and we are still very close even though I haven’t lived there since I was 18.

In the last year I’ve been to both Vietnam and China for the first time. I find that every time I discover somewhere new, it instantly becomes my favourite place, until I discover the next place! There are so many places I want to go that I almost never want to go back to the same place twice.

I guess my dream destination is wherever I’m going to next, which is Oman!

What do you like to do when you’re out of the office?

I’ve got two daughters so I spend a lot of time ferrying them around for their activities. Aside from the girls, I spend time and money on rugby, travel and food, ideally combining them all together. When we came back from New York I moved to Hertfordshire and Saracens are the nearest team. Some of the players live locally and it always makes me smile to be in the queue at the coffee shop behind an England player.

What piece of advice has helped you – and do you have any for those in the early days of their career?

Once you’re in a role, there are three stakeholders involved in your career development: you, your manager and the wider company. It has to start with you as an individual because only you really know what you enjoy doing, what you’re good at and how hard you are willing to commit to your ambition. It has to start with you.

Your manager has to be the catalyst for making sure they’re alert to opportunities that allow you to further your career and be willing to let you grow and even move to a different area.

The third one is the company or more specifically, the leadership, because it’s the growth of the firm that will create those opportunities.

However, it always comes back to the individual. A lot of people look to delegate their career development to their manager but they can only do so much – you have to define your career development and other people can help you on your journey. ☐


INTELLIGENCE CONNECTED
M&G Investments
YOU CAN'T LEAD IF YOU FOLLOW.
CONNECTING THE DOTS TO FIND OPPORTUNITIES IN FIXED INCOME.
A pioneer in fixed income investments, we've built a reputation for uncovering opportunities. Today, with one of the industry's largest credit research teams, we look beyond trends. Sharing local perspectives with each other. Connecting our fixed income expertise globally.

A NEW ERA?

FROM US EXCEPTIONALISM TO EXCEPTIONAL EUROPEAN VALUE OPPORTUNITIES

In recent years, US equities have consistently outperformed other markets, fostering the notion of American exceptionalism. However, in 2025, US stocks have faltered whereas European equities, which have been unexceptional for years, have risen dramatically. Dominic Howell explores what has reignited investors' interest in Europe and whether this signals the beginning of a new era for the continent.

Financial markets are inherently unpredictable. Asset prices rise and fall and trends come and go. However, for the past five years, one trend has enjoyed powerful momentum: the seemingly unstoppable rise of the US stock market. The S&P 500 Index has consistently reached record highs, overshadowing other markets and fuelling the narrative of US exceptionalism.

There are undoubtedly good reasons why US equities have performed so strongly lately: labour productivity in the US has increased since the global financial crisis of 2008/09; and, significantly, corporate profitability in the US is structurally higher than elsewhere.

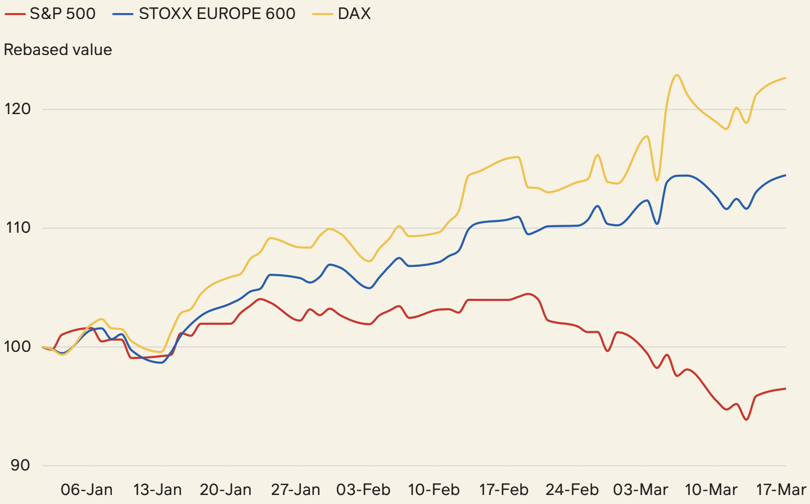
The US is also home to extremely innovative companies and excitement around artificial intelligence (AI) has been a major driver of the market's recent rally – the so-called Magnificent Seven (Mag 7) group of mega-cap technology stocks have contributed a large part of the returns[1].

With the US economy also growing more strongly than others, it was not that surprising that investors were drawn to US stocks. At the start of 2025, with President Trump back in the White House and expected to enact policies to support economic activity such as tax cuts and deregulation, the outlook for US equities was upbeat.

However, US equities have failed to live up to expectations so far this year. In March, the S&P 500 experienced a 10% drop from its peak amid concerns that President Trump's trade tariffs might cause an economic slowdown.

As confidence in US exceptionalism has seemingly waned, investors have discovered alternative stock markets. European equities, and German stocks especially, have proved to be rather exceptional this year, outperforming their US counterparts by a healthy margin.

Investors have rediscovered European equities this year



Source: LSEG Datastream, 17 March 2025. Returns in US dollars.
Past performance is not a guide to future performance.

[1] The Mag 7 group of mega-cap US stocks is Alphabet, Amazon, Apple, Meta Platforms, Microsoft, Nvidia and Tesla.

"European equities, and German stocks especially, have proved to be rather exceptional this year, outperforming their US counterparts by a healthy margin."

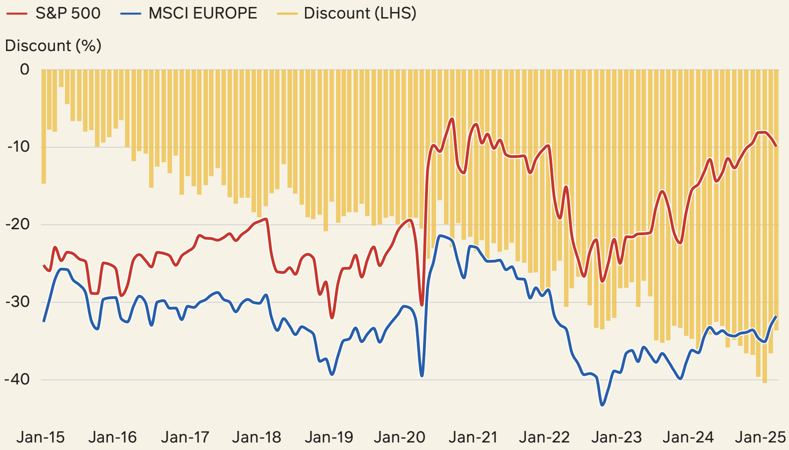
Rediscovering Europe

One of the risks of a trend with powerful momentum such as the long-run rally in US equities is that it can induce FOMO (fear of missing out). As investors join the party to participate in the potential gains, they can in fact be ignoring the promising opportunities that lie elsewhere.

The European stock market has certainly been overlooked by investors in recent years. In contrast to the idea of US exceptionalism, there has been considerable pessimism about Europe's prospects lately – the ongoing Ukraine war, higher energy prices, government fiscal constraints and the economic slowdown in China have all contributed to a tougher backdrop.

European discount: Valuation of MSCI Europe vs S&P 500

12m forward price-to-earnings ratios



Source: LSEG Datastream, as at 28 February 2025.

"Europe has no shortage of well-run and strongly moated companies, from global champions to dominant niche players and local structural growers."

"European stocks currently trade at a significant discount to their US counterparts."

Economic growth in the eurozone has also been relatively lacklustre post-COVID – in the fourth quarter of 2024, the euro area grew 0.9% year-on-year, compared to the US which expanded 2.5% in the same period[2].

With few globally-leading tech companies, Europe's markets have not participated in the AI-driven excitement since ChatGPT launched in 2022.

Despite not having many big AI-related companies, Europe has no shortage of well-run and strongly moated companies, from global champions to dominant niche players and local structural growers, observes John William Olsen, manager of the M&G European Sustain Paris Aligned strategy.

"There is unique luxury brand heritage to be found in Europe, but also big global food brands, regionally defined spirits brands and world-leading industrial brands, a great design tradition in Northern Europe, as well as successful innovation hubs such as Oxford University and the ecosystem around Novo Nordisk in Denmark," he explains.

"Most of the European winners are truly global and will benefit from economic growth outside of their own country or region".

There are notable differences between Europe's leading companies and their counterparts in the US. Europe's biggest companies are much more diverse than the tech-focused Mag 7, encompassing luxury goods, pharmaceuticals and consumer staples.

While the US is an incredibly vast and deep market, investors tend to focus on the Mag 7, which are all linked to a similar new economy theme. They have also become a large and dominant part of the S&P 500. At the start of 2025, the Mag 7 represented about 33% of the index and their performance can influence the overall returns of the market[3].

For investors concerned about the concentration risk in the US market, Europe could be seen as offering a broad range of potential opportunities, across diverse sectors and markets.

Europe's valuation discount

However, the main distinction between US and European markets currently, and the one that has arguably encouraged investors to shift their focus to Europe, is valuations.

European stocks currently trade at a significant discount to their US counterparts. While the valuations of US equities have risen significantly in the past couple of years, Europe's market has barely moved and looks attractively valued relative to its history.

Investors have historically paid higher valuations for US stocks than their European counterparts for some of the reasons discussed above, higher profitability and a supportive economic backdrop. However, this discount has been widening recently and perhaps investors are asking whether it has become too stretched.

The fact that European stocks trade at a discount to their US peers in every sector is an encouraging backdrop for investors, according to Richard Halle, manager of the M&G European Strategic Value strategy.

"Although the US is home to high-flying technology firms that are driving the AI revolution and companies also benefit from lower energy costs than their European counterparts, it is questionable whether the environment is that much better than in Europe," says Halle. The outlook for Europe is not as bad as feared and, in Halle's view, the discount is not warranted.

The diverging fortunes of US and European equities this year suggests that investors might be starting to agree with Halle. Europe's renaissance is still nascent and it remains to be seen whether the trend gains momentum. However, there are arguably some significant political and macroeconomic developments taking place that could support a more optimistic long-term investment outlook for the continent.

[2] Eurostat, 'GDP and Employment flash estimates for the 4th quarter of 2024', February 2024.
[3] Opening Bell Daily, 'The S&P 500 barely moves without the Magnificent 7', January 2025.

Trump forces Europe to act

A notable, and rather unexpected, catalyst behind the revival of Europe this year is US President Donald Trump. Since returning to the White House, Trump has disrupted the economic landscape with a series of proposed tariffs on imports. He has also upended the geopolitical landscape by indicating that the US might reduce its commitment to European defence.

In response to Trump's 'America First' agenda and Europe's apparent need to stand on its own two feet, European policymakers have announced policies that could not only deliver security but also provide a long-term economic boost to the region.

Most significantly, Germany's chancellor-in-waiting[4], Friedrich Merz, announced a huge investment in infrastructure and defence, saying that Germany would do whatever it takes to secure freedom and peace. The decision to reform the so-called "debt brake", which has limited the country's budget deficit to 0.35% of GDP, to enable greater spending is arguably evidence of the seismic shift under way.

Combined with the European Union's plan to increase defence spending by €800 billion over the next four years, Germany's fiscal largesse could significantly invigorate economic activity in Europe.

From an investment perspective, defence companies clearly stand to benefit significantly from Europe's military build-up and their share prices have been among the best performers this year.

But the spending could permeate down to all parts of the European industrial complex. Companies in the steel and cement industries, which have struggled from subdued demand in recent years, could benefit from the effective reindustrialisation in Europe. If economic growth picks up as a result of this investment, interest rates may have to stay higher for longer, which could be helpful for Europe's banks. A more buoyant economic environment could also feed through to consumer spending.

A favourable environment for value

While Europe's economy could be vulnerable to a protracted trade war with the US, as well as any wider slowdown in the global economy, the proposed stimulus measures potentially provide a very positive backdrop for investment in the region.

Halle is optimistic about the outlook for European equities currently, and especially for cheap, unloved value stocks. "There is a perception that value investing is old news, but in Europe the value style has been thriving," he points out.

Having been out of favour for so long, it's taking time for investors to recognise that value investing works but he believes the case for European value is compelling right now. Halle highlights the wide spread in valuations between the cheapest and the most expensive stocks as creating a favourable environment for value investors.

With value opportunities on offer right across the market rather than being confined to a few sectors or regions, Halle says European value investors can construct diverse portfolios of attractively valued, well-managed, decent companies. Importantly, there is no need currently to invest in distressed or restructuring companies. "Value investors today can find attractive opportunities without sacrificing very much quality or growth. It is a very exciting time," says Halle.

New times, new playbook?

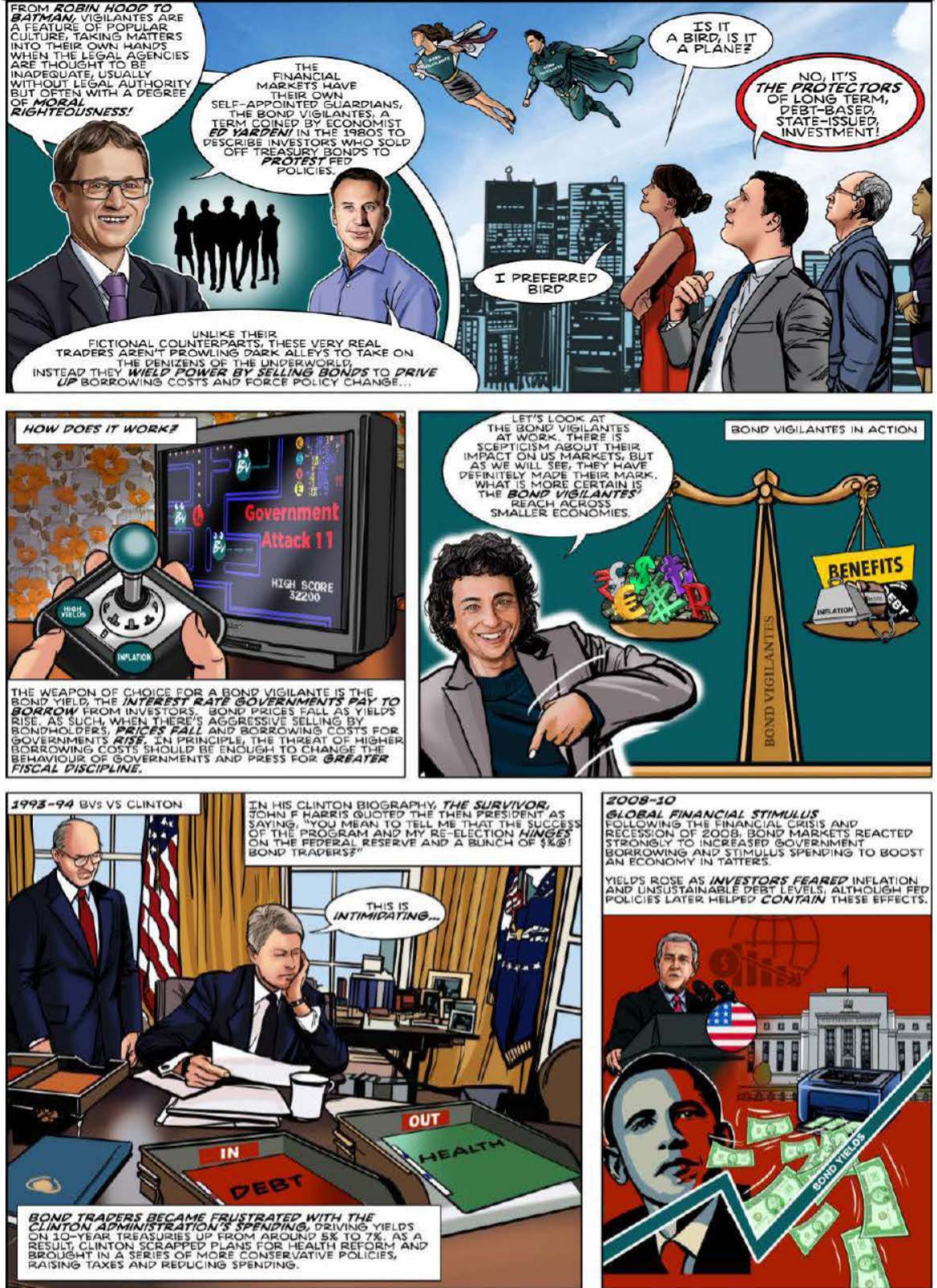
The investment landscape is undeniably uncertain. President Trump's policies look set to challenge the economic norms and geopolitical arrangements that have prevailed in recent years. Investors may need a new playbook for this new environment. While the narrative of US exceptionalism may be starting to crack, the outlook for Europe today is arguably increasingly promising and it could be an exciting alternative investment destination.

As the US seeks to rein in fiscal spending, Europe is embarking on stimulus measures that could provide a strong injection for the European economy. For investors seeking to capitalise on this potentially dynamic new era in Europe and diversify beyond the US, European value stocks could prove to be a particularly rewarding long-term strategy.

[4] At the time of writing.

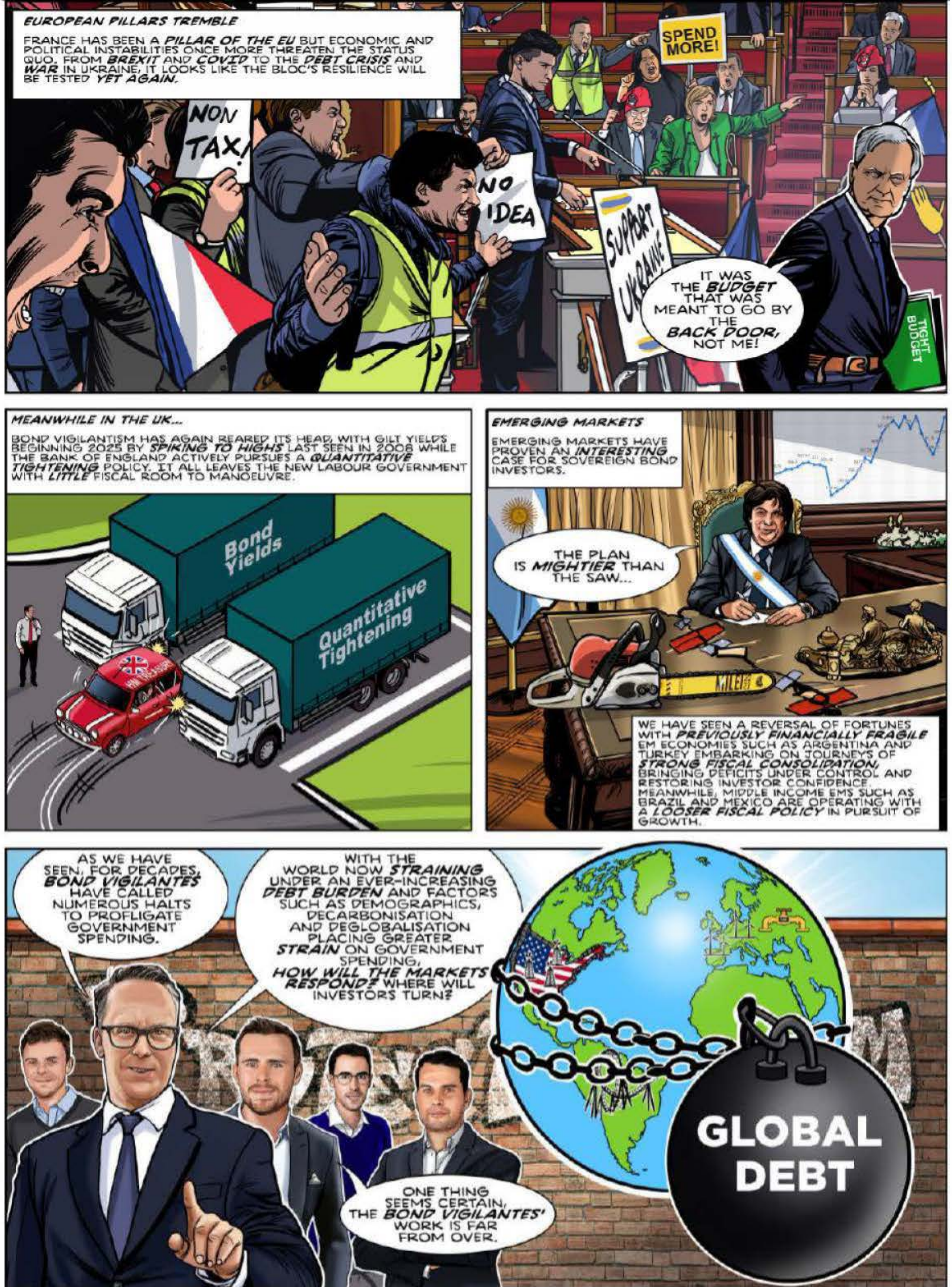
"There is unique luxury brand heritage to be found in Europe, but also big global food brands, regionally defined spirits brands and world-leading industrial brands."


M&G Investments
The Bond Vigilantes
BLOG TEAM
1990: BVs VS CLINTON
2009: GLOBAL STIMULUS
2020: COVID PANDEMIC
INFLATION
INTRODUCING!
ANDREW
CIO FIXED INCOME
WHAT ARE THE ORIGINS OF THE BOND VIGILANTES? DO THEY REALLY EXIST AND, IF SO, WHAT DO THEY DO? THESE UNSUNG HEROES ARE SAID TO HAVE PULLED THE STRINGS FOR DECADES
COULD THEY BE ABOUT TO SPRING INTO ACTION YET AGAIN?
2022: TRUSS
UK BUDGET
2025: THE BOND VIGILANTES RISE AGAIN?
EDITION 4



FROM ROBIN HOOD TO BATMAN, VIGILANTES ARE A FEATURE OF POPULAR CULTURE, TAKING MATTERS INTO THEIR OWN HANDS WHEN THE LEGAL AGENCIES ARE THOUGHT TO BE INADEQUATE, USUALLY WITHOUT LEGAL AUTHORITY BUT OFTEN WITH A DEGREE OF MORAL RIGHTEOUSNESS!
THE FINANCIAL MARKETS HAVE THEIR OWN SELF-APPOINTED GUARDIANS, THE BOND VIGILANTES, A TERM COINED BY ECONOMIST ED YARDENI IN THE 1980S TO DESCRIBE INVESTORS WHO SOLD OFF TREASURY BONDS TO PROTEST FED POLICIES.
IS IT A BIRD, IS IT A PLANE?
NO, IT'S THE PROTECTORS OF LONG TERM, DEBT-BASED, STATE-ISSUED, INVESTMENT!
I PREFERRED BIRD
UNLIKE THEIR FICTIONAL COUNTERPARTS, THESE VERY REAL TRADERS AREN'T PROWLING DARK ALLEYS TO TAKE ON THE DENIZENS OF THE UNDERWORLD, INSTEAD THEY WIELD POWER BY SELLING BONDS TO DRIVE UP BORROWING COSTS AND FORCE POLICY CHANGE...
HOW DOES IT WORK?
Government Attack 11
HIGH SCORE 32200
HIGH YIELDS
INFLATION
THE WEAPON OF CHOICE FOR A BOND VIGILANTE IS THE BOND YIELD, THE INTEREST RATE GOVERNMENTS PAY TO BORROW FROM INVESTORS. BOND PRICES FALL AS YIELDS RISE. AS SUCH, WHEN THERE'S AGGRESSIVE SELLING BY BONDHOLDERS, PRICES FALL AND BORROWING COSTS FOR GOVERNMENTS RISE. IN PRINCIPLE, THE THREAT OF HIGHER BORROWING COSTS SHOULD BE ENOUGH TO CHANGE THE BEHAVIOUR OF GOVERNMENTS AND PRESS FOR GREATER FISCAL DISCIPLINE.
BOND VIGILANTES IN ACTION
LET'S LOOK AT THE BOND VIGILANTES AT WORK. THERE IS SCEPTICISM ABOUT THEIR IMPACT ON US MARKETS, BUT AS WE WILL SEE, THEY HAVE DEFINITELY MADE THEIR MARK. WHAT IS MORE CERTAIN IS THE BOND VIGILANTES' REACH ACROSS SMALLER ECONOMIES.
BENEFITS
INFLATION
DEBT
BOND VIGILANTES
1993-94 BVS VS CLINTON
IN HIS CLINTON BIOGRAPHY, THE SURVIVOR, JOHN F HARRIS QUOTED THE THEN PRESIDENT AS SAYING, "YOU MEAN TO TELL ME THAT THE SUCCESS OF THE PROGRAM AND MY RE-ELECTION HINGES ON THE FEDERAL RESERVE AND A BUNCH OF $%@! BOND TRADERS?"
THIS IS INTIMIDATING...
IN
DEBT
OUT
HEALTH
BOND TRADERS BECAME FRUSTRATED WITH THE CLINTON ADMINISTRATION'S SPENDING, DRIVING YIELDS ON 10-YEAR TREASURIES UP FROM AROUND 5% TO 7%. AS A RESULT, CLINTON SCRAPPED PLANS FOR HEALTH REFORM AND BROUGHT IN A SERIES OF MORE CONSERVATIVE POLICIES, RAISING TAXES AND REDUCING SPENDING.
2008-10
GLOBAL FINANCIAL STIMULUS
FOLLOWING THE FINANCIAL CRISIS AND RECESSION OF 2008, BOND MARKETS REACTED STRONGLY TO INCREASED GOVERNMENT BORROWING AND STIMULUS SPENDING TO BOOST AN ECONOMY IN TATTERS.
YIELDS ROSE AS INVESTORS FEARED INFLATION AND UNSUSTAINABLE DEBT LEVELS, ALTHOUGH FED POLICIES LATER HELPED CONTAIN THESE EFFECTS.
BOND YIELDS


2011: EUROPEAN SOVEREIGN DEBT CRISIS
THE 2008 FINANCIAL CRISIS LED TO A EUROPEAN DEBT CRISIS. PORTUGAL, ITALY, IRELAND, GREECE AND SPAIN ALL SAW YIELDS EXPLODE. WAS THIS THE WORK OF THE BOND VIGILANTES? ULTIMATELY, POLICIES CHANGED, IMF SUPPORT CAME IN AND THOSE BOND YIELDS CAME DOWN.
THE BOND VIGILANTES WILL COME TO THE RESCUE!
2020-2021 (PANDEMIC SPENDING)
AFTER A DECADE OF LOW INTEREST RATES AND QUANTITATIVE EASING, THE MASSIVE STIMULUS IN RESPONSE TO THE PANDEMIC LED TO A SPIKE IN BOND YIELDS IN EARLY 2021.
BOND YIELDS
THE 2021 SPIKE ULTIMATELY MARKED THE BEGINNING OF A NEW ERA, INFLATION ROCKETED AND CENTRAL BANKS HIKED INTEREST RATES. ALL OF A SUDDEN DEBT WAS NO LONGER CHEAP.
SEPTEMBER 2022 UK MINI BUDGET
ONE OF THE MORE DRAMATIC EPISODES OF BOND VIGILANTISM RESULTED IN THE RESIGNATION OF UK PM LIZ TRUSS AFTER 50 DAYS IN OFFICE. THE BUDGET CONTAINED £45 BILLION OF TAX CUTS. THE MARKETS REACTED, BOND YIELDS SOARED AND THE POUND PLUMMETED, TRIGGERING ONE OF THE MOST DRAMATIC SELL-OFFS IN RECENT HISTORY.
HOW MUCH FOR THAT LETTUCE?
£30 BILLION
POUND PLUMMETS, INTEREST RATES SOAR
THE INDEPENDENT RESOLUTION FOUNDATION CALCULATES THAT THE TRUSS GOVERNMENT WAS RESPONSIBLE FOR ABOUT £30 BILLION OF THE FISCAL HOLE WHICH THE TREASURY PUTS AT £60 BILLION.
THE BOND VIGILANTES RETURN
MANY ARE SPECULATING THAT THE BOND VIGILANTES COULD RETURN IN A BIG WAY IN 2025. GOVERNMENT DEBT RATIOS ARE AT RECORD LEVELS IN EVERY COUNTRY APART FROM GERMANY. GLOBAL DEBT AMOUNTED TO $250 TRILLION IN 2023, THAT IS 237% OF GDP. HOW WILL THIS DEBT BE SERVICED?
BV
THE US
THE US DEFICIT HAS BALLOONED OVER RECENT YEARS, WITH PANDEMIC SPENDING AND LOOSE FISCAL POLICIES SUCH AS THE INFLATION REDUCTION ACT. NOW, THE TRUMP PRESIDENCY PROMISES TAX CUTS COSTING AS MUCH AS $400 BILLION A YEAR.
DEBT CEILING
INFLATION
TARIFF
AID
TAX CUT
DEBT
I WANT... SOME STABILITY!
SPENDING
BOND MARKETS ARE WAITING TO SEE THE IMPACT OF TRUMP'S POLICIES. WRANGLING OVER THE US DEBT CEILING, DOWNGRADES TO THE US CREDIT RATING OR A FALL IN FOREIGN DEMAND FOR US TREASURIES COULD MAKE MATTERS WORSE.


EUROPEAN PILLARS TREMBLE
FRANCE HAS BEEN A PILLAR OF THE EU BUT ECONOMIC AND POLITICAL INSTABILITIES ONCE MORE THREATEN THE STATUS QUO. FROM BREXIT AND COVID TO THE DEBT CRISIS AND WAR IN UKRAINE, IT LOOKS LIKE THE BLOC'S RESILIENCE WILL BE TESTED YET AGAIN.
NON TAX!
NO IDEA
SPEND MORE!
SUPPORT UKRAINE
IT WAS THE BUDGET THAT WAS MEANT TO GO BY THE BACK DOOR, NOT ME!
TIGHT BUDGET
MEANWHILE IN THE UK...
BOND VIGILANTISM HAS AGAIN REARED ITS HEAD, WITH GILT YIELDS BEGINNING 2025 BY SPIKING TO HIGHS LAST SEEN IN 2008 WHILE THE BANK OF ENGLAND ACTIVELY PURSUES A QUANTITATIVE TIGHTENING POLICY. IT ALL LEAVES THE NEW LABOUR GOVERNMENT WITH LITTLE FISCAL ROOM TO MANOEUVRE.
Bond Yields
Quantitative Tightening
HM TREASURY
EMERGING MARKETS
EMERGING MARKETS HAVE PROVEN AN INTERESTING CASE FOR SOVEREIGN BOND INVESTORS.
THE PLAN IS MIGHTIER THAN THE SAW...
MILEI
WE HAVE SEEN A REVERSAL OF FORTUNES WITH PREVIOUSLY FINANCIALLY FRAGILE EM ECONOMIES SUCH AS ARGENTINA AND TURKEY EMBARKING ON JOURNEYS OF STRONG FISCAL CONSOLIDATION, BRINGING DEFICITS UNDER CONTROL AND RESTORING INVESTOR CONFIDENCE. MEANWHILE, MIDDLE INCOME EMS SUCH AS BRAZIL AND MEXICO ARE OPERATING WITH A LOOSER FISCAL POLICY IN PURSUIT OF GROWTH.
AS WE HAVE SEEN, FOR DECADES, BOND VIGILANTES HAVE CALLED NUMEROUS HALTS TO PROFLIGATE GOVERNMENT SPENDING.
WITH THE WORLD NOW STRAINING UNDER AN EVER-INCREASING DEBT BURDEN AND FACTORS SUCH AS DEMOGRAPHICS, DECARBONISATION AND DEGLOBALISATION PLACING GREATER STRAIN ON GOVERNMENT SPENDING, HOW WILL THE MARKETS RESPOND? WHERE WILL INVESTORS TURN?
GLOBAL DEBT
ONE THING SEEMS CERTAIN, THE BOND VIGILANTES' WORK IS FAR FROM OVER.

THE NEW REAL ESTATE CYCLE

How changed perceptions will be consequential

There have been some fundamental shifts in real estate markets since this point in the last cycle; some well-documented – like global disruption to office and retail sectors – others more subtle, such as a change in perceptions around real estate investing.

One of the key faces of change I've observed in the last 20 years relates to the way investors think. For a long time, real estate investors focused on investing in logistics, offices and retail property – and the specification of those buildings didn't deviate a great deal. That worked in a market with consistent structural drivers. The phenomenon that shook this up was ecommerce, along with remote working technology – both accelerated by the pandemic. This changed the amount of space that was needed, but also the nature of the space and where it had to be. Now with AI gathering pace, demand for different types of real estate, such as data centres, brings a further dimension and an ever broader set of investment opportunities.

This extent of change in a relatively short period of time has caused real estate investors to really stop and think about what drives investment performance. That's why, today, investors are much more tuned in to structural trends as a way to target income growth, seeking investment strategies that can tap into these drivers. Understanding how these dynamics apply to individual real estate markets remains a prerequisite, with opportunities often nuanced by country or city.

Martin Towns
Deputy Global Head of Real Estate

Shifting perceptions

More broadly, perception around the role of real estate investing appears to be shifting. Linked closely to the real economy as a real asset, a simplistic depiction of real estate investing positions landlords as beneficiaries of economic growth through rent increases. However, there is growing recognition of the fact that real estate is an integral part of the economy. This is visible through the high-quality rented housing private capital is helping to deliver, as well as the multitude of other buildings that economies need to function well. Our UK logistics platform, Active Growth Logistics Partnership (AGLP), houses 630 small and medium size businesses, for example, serving communities across the country.

In reality, the asset class can be an effective enabler of economic growth, as well as a beneficiary. This can be evidenced through the multiplier effect of large scale, development-led regeneration projects. According to a study by the Urban Regeneration Alliance, for every £1 invested in regeneration, an average of £4.23 is generated in the wider economy[1]. This comes in the form of job creation, increased local spending and business growth.

Governments particularly are recognising the renewed importance of private capital as a catalyst for and enabler of growth. Many mature Western economies are facing significant pressure to stimulate economic growth, particularly when viewed in comparison to President Donald Trump's pro-growth agenda.

Investing in the built environment and infrastructure is a tried and tested way to drive economic growth, often funded by government borrowing. However, many governments lack the fiscal headroom to respond, exacerbated by today's higher cost of capital. As a result, there is now more urgency to partner with long-term private capital to stimulate growth.

For real estate investors, this subtext is likely to be consequential as we step into a new cycle, creating new, scalable opportunities to invest in the homes and buildings our society needs.

[1] Track Capital, 'The Role of Regeneration in Boosting UK Property Investments | Track Capital', (trackcapital.co.uk), 2023.

Reimagining city centres

Real estate markets have reached a place of stability, with growing investor activity, following a period of disruption in markets globally. With changes to the way we live and work, the use of our cities – particularly our city centres – is changing. At the same time, renewed urbanisation – especially the growth of capital cities – brings increased dynamism and competing demands for space.

This creates a historic opportunity to reimagine city centres, to create urban environments that meet demand today and in the future. The investment opportunity ranges from developing new buildings to repurposing and upgrading older ones, as well as more ambitious regeneration projects. Private capital has a major part to play in funding this change, with the potential to make a material difference to local economies.

M&G's funding of the Rochdale Riverside development in Greater Manchester, for example, through a 35-year inflation-linked lease to Rochdale Borough Council, has helped to reverse a long-term downward spiral of reduced footfall and consumer spending in the town centre. Following its completion in April 2020, the council has estimated that the development will bring in an extra 2.1 million visitors and £150 million in retail expenditure each year. Overall, the development has created 1,450 local jobs and an estimated net additional £22 million gross value added over a five-year period for the local economy. Furthermore, around 40% of construction labour was sourced from the local borough.

Equal to the role of private capital, is the importance of the right public policy framework to support investment decisions. This can be seen in the UK, where the government has signaled its intention to reduce red tape around planning consents, which should help to bring forward more housing and other significant development projects, sooner. In Australia, new tax incentives have been introduced to encourage Build to Rent developments, acknowledging real estate investing as a solution to the societal and political challenge of housing a growing population.

Meeting occupiers' needs

Redesigning the built environment to make cities more pedestrian and bike-friendly, and to include more residential and leisure space, is an integral part of cities' transition. Providing office space that meets modern occupiers' needs is another cornerstone element.

Though office markets generally have faced challenging conditions in the last few years, particularly in the US, occupier demand has remained robust in many cities for best-in-class offices with a focus on quality and scope of amenities, as well as collaborative space.

High specification prime office assets like our landmark Centropolis office tower in Seoul have continued to perform strongly, supported by high office attendance rates in Asia Pacific markets. The Leadership in Energy and Environmental Design Gold certified building provides various amenities that promote health and wellbeing, including separate wellness areas for men and women, a nursing room and access to shared roof space, as well as electric car charging points and a shared car service. The building also adds to its local environment by helping to preserve the city's heritage, displaying the remains of 16th and 17th century houses that were uncovered during the building's construction in a public museum at basement level.

With increasing occupier demand supported by a rising wave of mandates for minimum office days in many markets, repurposing well-located older city centre office buildings offers a significant opportunity to create value. In other cases, converting older offices to new homes or other productive uses can provide the best solution for people's needs – and the best potential return for those investors with the capability to reimagine and repurpose assets. In Paris, the restructuring of an under-occupied office building, following a successful change-of-use building permit by BauMont Real Estate – in which M&G acquired a majority stake in November – allowed for the building's refurbishment into a dedicated specialist educational space. The entire building was subsequently leased and sold to a leading educational group, delivering strong returns for investors.

"FOLLOWING SIGNIFICANT DISRUPTION IN REAL ESTATE MARKETS, THERE ARE SOME INTERESTING DEVELOPMENTS UNFOLDING IN THE ASSET CLASS, CREATING AN ATTRACTIVE SET OF OPPORTUNITIES FOR INVESTORS."

The shape of cities' transition also incorporates facilities to support our growing demand for ever-faster deliveries. Exponential growth in this area is already visible through delivery robots on the streets of Milton Keynes, and now drone delivery testing in Darlington, North East England. Takeaway deliveries alone require a network of 'dark kitchens', close to residential areas. However, parcel delivery companies are struggling to find suitable accommodation close to city centres, given swathes of industrial property have been redeveloped for residential use. As cities evolve, the opportunity to provide solutions – and thereby leverage these underlying trends – will be a key focus for investors.

Tapping into the opportunity set

When we look at the market today, we see a number of opportunity areas underpinned by structural trends. Providing more housing, in all forms, remains a key priority for private capital, underpinned by chronic supply and demand imbalances in markets globally. Lifestyle trends, such as a rise in international students seeking English-taught higher education programmes, are also driving growth in particular subsectors such as purpose built student accommodation, particularly in Europe, driving scope for increased private investment. Leveraging local market knowledge, as ever, remains vital in order to execute these opportunities.

Following significant disruption in real estate markets, there are some interesting developments unfolding in the asset class, creating an attractive set of opportunities for investors. Starting at this point in the market, investors could therefore stand to generate some potentially compelling returns while also playing a big part in driving economic growth and providing solutions to broader society. □

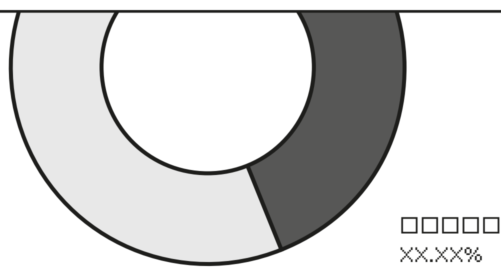
File Edit View Special

FABLE

THE NEW DIVIDEND PLAYBOOK:

HOW TECH GIANTS AND ASIAN MARKETS ARE REDEFINING THE PAYOUT PLAY

Tech giants adopting dividend policies, alongside Asia's heightened focus on shareholder returns, are challenging traditional dividend investing norms. This evolution blends growth with income, expanding the appeal of dividend-focused strategies across sectors and regions. Dominic Howell and Noura Tan map out how these shifts are shaping a new dividend playbook.



Dividend investing is as old as the stock market itself, dating back to the 17th century when the Dutch East India Company first distributed profits to its shareholders. The beauty lies in its simplicity: invest in established companies, receive dividends and either pocket the cash or reinvest it to accumulate more shares. Investing in companies that consistently grow their dividends can be particularly appealing, as the compounding effect of reinvested dividends can significantly enable wealth growth over time. This practice quickly became a cornerstone of investing, offering a tangible return and attracting those in pursuit of steady income.

Traditionally, the strategy has been dominated by blue-chip companies — market stalwarts in sectors such as utilities, consumer goods and finance. These firms, known for their robust balance sheets and consistent earnings, have weathered economic fluctuations and reliably rewarded shareholders with regular payouts. In contrast, smaller and rapidly growing companies tended to eschew dividend payouts, opting to reinvest capital into their business instead. This arguably fanned the erroneous belief that income and capital growth were mutually exclusive strategies.

But is it still the same old play?

> "When it comes to dividend investing, a low yield is not necessarily a sign of a poor investment. The critical factor lies in the trajectory of dividend growth over time."

OPEN TRADE

Tech stocks pay up

The advent of dividend payouts among major technology firms marks a significant departure from historical norms. Microsoft led the way in 2003, followed by others, with Alphabet (Google's parent company) and Facebook owner, Meta Platforms, joining the ranks as recently as 2024. Once synonymous with high growth and reinvestment of profits, these tech giants are now adopting a more shareholder-friendly approach. Flush with cash they are able to embrace dividend policies, as well as continue to invest, blending growth potential with income generation. This development challenges the traditional perception of tech stocks as solely capital appreciation vehicles, introducing a new dimension to the dividend investing narrative.

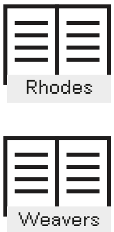
With the latest inclusions, five of the Magnificent Seven (Mag 7)[1] are now officially dividend distributors, leaving Amazon and Tesla as the outliers. Big tech's entry offers greater opportunities for investors, expanding the spectrum of high-quality companies within dividend-focused portfolios. Nevertheless, the rising prominence of the Mag 7 in dividend indexes prompts questions about the viability or sustainability of this trend.

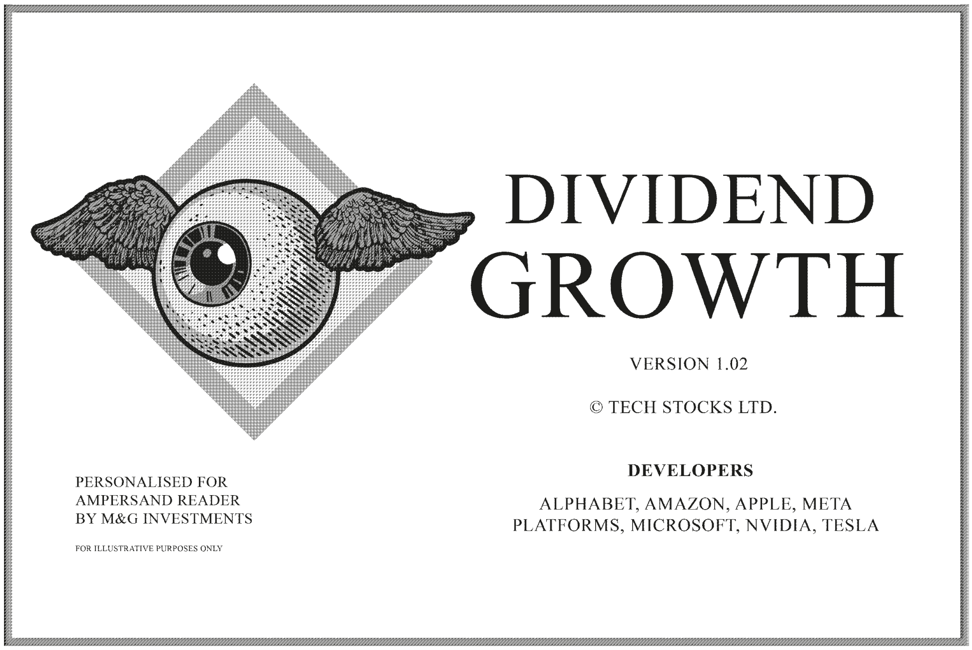
Despite the traditionally low yields in the tech sector, which cast doubt on their potential suitability for dividend strategies, the growth rate of dividends from tech companies has consistently outpaced the broader market for several years. Tech firms within the S&P 1500 have more than doubled their dividend payouts by 2023 compared to their levels in 2013[2]. This growth rate ranks as the fourth highest among all sectors, significantly surpassing the 7.2% dividend increase observed for the S&P Composite 1500 over the same period[3].

When it comes to dividend investing, a low yield is not necessarily a sign of a poor investment. The critical factor lies in the trajectory of dividend growth over time. For Stuart Rhodes, Manager of the M&G Global Dividend Strategy, dividend growth serves as his 'North Star'. For 17 years, this guiding principle has guided him through myriad crises and market regimes. "When companies consistently increase their dividends annually, capital appreciation inevitably follows, culminating in robust total returns (the combination of income and capital growth)," he explains. In Rhodes' perspective, dividends and share prices are inextricably linked.

From an investment standpoint dividend growth can be seen to be a winning strategy. At the end of 2024, the S&P 500 Dividend Aristocrats, featuring firms with at least 25 years of consecutive dividend increases, achieved an annualised total return of 10.1% (in US dollars) over 25 years, outperforming the S&P 500's 7.7% return over the same period. This highlights the effectiveness of dividend growth, notwithstanding the episodic volatility in alpha[4].

[1] The Magnificent Seven (Mag 7) are a group of mega-cap technology companies in the US, including Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA and Tesla.
[2, 3] ProShares, 'Technology Stocks: An Unexpected Source of Dividend Growth', (proshares.com), September 2024.
[4] As of 29 November 2024.





Rhodes recalls the 1990s when many believed that if a tech company paid a dividend, it was an indication that its growth phase was over. "In the last decade, that sentiment has changed. Tech companies now generate enough cash flow to reinvest, buy back shares and pay dividends. The stigma around tech dividends has diminished," he observes. Today, many tech firms pay dividends, not as a sign of slowing growth, but as evidence of robust business models, says Rhodes. He notes that these companies can grow without exhausting their capital, positioning them as potentially exceptional investments.

At the same time, John Weavers, Manager of the M&G North American Dividend Strategy, highlights the importance of ensuring that rising dividend payouts are driven by genuine business growth, and not merely payout ratio increases. "We aim to invest in companies that will increase their dividends through earnings growth. This approach applies to all sectors, including tech, where we seek businesses with strong reinvestment opportunities," he explains.

Citing Visa and Mastercard as prime examples, Weavers underscores their long-term earnings and dividend growth, despite low initial yields. Since its 2006 Initial Public Offering, Mastercard, for example, has never yielded more than 1%, yet its dividend has grown annually at a compound rate of 31%, paralleling strong share-price performance with an average annual growth rate of 31%. With the ongoing transition from cash to digital transactions, Weavers believes Mastercard's growth trajectory remains promising.

Weavers highlights that a key challenge with the growing influence of the Mag 7 in dividend indexes is ensuring that dividend growth strategies effectively diversify portfolios in relation to the broader market. He cautions that while high-performing individual shares can be tempting, it is crucial to maintain discipline to avoid the pitfalls of short-termism.

By prioritising sustainable dividend increases, investors may capitalise on the long-term tailwinds that have historically benefitted dividend growth portfolios. Focusing on consistent dividend growth helps preserve long-term benefits and diversification potential, reinforcing the strategy's ability to weather market fluctuations and deliver steady returns, according to Weavers.

The pivot towards tech companies issuing dividends has also introduced new considerations about the future of traditional dividend-paying sectors like financials and utilities. Historically, these sectors have anchored dividend-focused portfolios, offering reliable income streams. With more tech giants now entering the dividend space, there is speculation about whether these traditional sectors will lose their appeal or adapt to maintain their relevance.

Weavers addresses this shift, noting that, "historically, about 70% of companies in the US market pay dividends, which aligns with long-term trends."

"The anomaly was during COVID-19, when some businesses cut dividends and new entrants didn't pay. But now, we're back to the long-term range where many view income as a way to return cash to shareholders and demonstrate cash flow strength," he adds.

This suggests traditional sectors like financials and utilities will continue to play a significant role in dividend growth strategies.

"The inclusion of tech giants in dividend indexes does not fundamentally alter the investment thesis. Investors should continue to seek the strongest businesses with the best growth and valuations," outlines Weavers. "If utilities, consumer staples or any other sector offer the most attractive valuations and growth, that's where we should invest."

As Weavers asserts, the market has essentially reverted to its historical norm, where income is key to shareholder returns.

On this, Rhodes notes, "history shows that dividends act as a major driver of equity returns over the long-term. Over the past 25 years, nearly half of the total return from global US equities has been derived from reinvested dividends, leveraging the power of long-term compounding." The S&P 500 has delivered an annualised total return of 7.7% (in US dollars), with 55.9% attributed to income and 44.1% to capital appreciation[5].

An often overlooked yet compelling aspect of dividend investing is its inherent ability to serve as an effective inflation hedge. Investing in companies that consistently raise their dividends offers much-needed inflation protection. Dividend investing is an established strategy with a powerful tailwind. Over time, the disciplined pursuit of a rising income stream is underpinned by these favourable dynamics. By prioritising sustainable dividend growth and strategic diversification, dividend growth can potentially help investors navigate market fluctuations and secure consistent, long-term returns.

Asia's dividend age

While the emergence of tech dividend-payers is disrupting the investment universe, simultaneously, the dividend landscape in Asia is experiencing a transformative shift, driven by strategic policy initiatives and market reforms in key markets. As tech giants in the West adopt dividend payouts, Asian markets are keeping pace, with local companies increasingly focusing on returning capital to shareholders during a challenging economic outlook.

In recent years, China and Japan have introduced policy measures to boost the attractiveness of local firms to investors. Last year, Chinese firms distributed a record 2.4 trillion yuan (US$330.9 billion) in dividends, with share buybacks climbing to 147.6 billion yuan ($20.3 billion)[6]. In the two months leading up to this Lunar New Year in February, over 310 companies issued dividends totalling more than 340 billion yuan ($46.9 billion), marking nearly an eight-fold increase compared to the same period the previous year[7].

Driving this trend are a series of directives from Beijing, including an adjustment by regulators to evaluate state-owned companies based on return-on-equity (ROE), restrictions on share sales by controlling shareholders of low-dividend firms, a 300-billion-yuan ($41.4 billion) share buyback financing programme and calls for companies to pay dividends multiple times a year. These measures have heightened the focus on high-yield firms, with the dividend yield of the CSI 300 reaching 3% (in yuan) in January[8], the highest in nearly a decade.

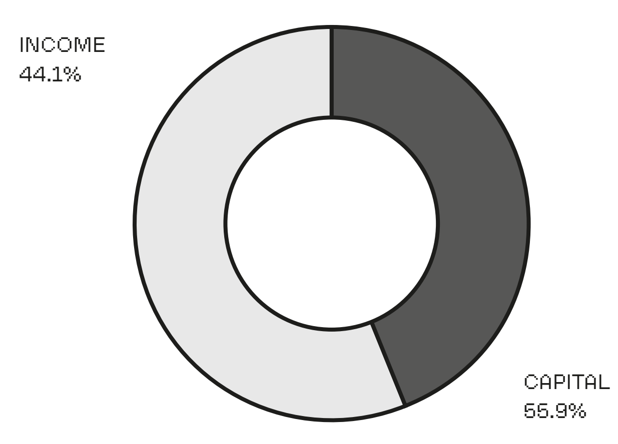
Japan is also another key market to watch in this domain. Rhodes highlights the transformative impact of Abenomics over the past 13 years, with significant effects becoming evident in the last five. "Data shows that shareholder priorities have risen and attitudes towards dividends have improved, indicating a clear shift," he observes.

A key move was the Tokyo Stock Exchange's (TSE) 2022 restructuring, aimed at simplifying market segments and enhancing global competitiveness. This reclassification incentivised companies to improve operations and shareholder value, thereby attracting more capital to the Japanese market.

The average dividend payout ratio for the fiscal year ending March 2025 was up 3 percentage points from the previous year, standing at 36%[9]. This marks its highest level in four years and closely aligns with the US component of the S&P 500, which stands at 34%[10].

Dividends significantly drive long-term equity returns

S&P 500 Index: breakdown of total return over 25 years



Source: Bloomberg, 31 December 2024.

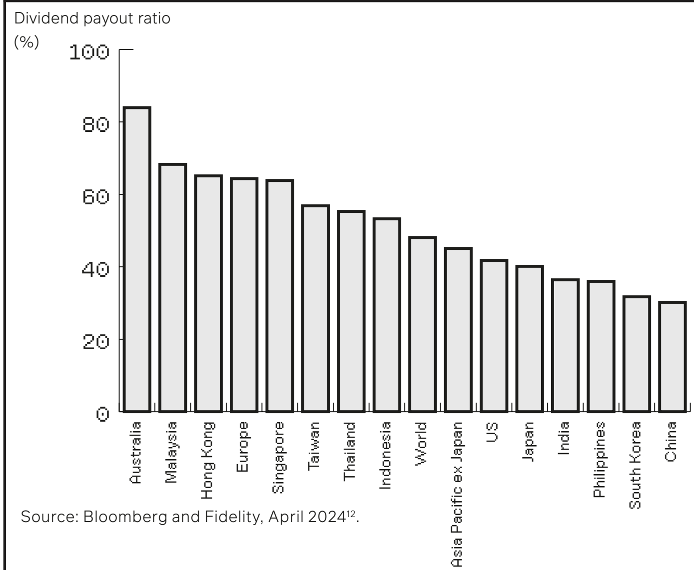
[5] As of 31 December 2024.
[6, 7, 8] State Council Information Office, 'It's about the stock market! The five departments have spoken out and these contents have been clarified', (gov.cn), January 2025.
[9, 10] THE NIKKEI via scoutAsia, 'Record high of 40% listed companies increasing dividends, 3.6 trillion yen to households as a tailwind for asset building', (market-news-insights-jpx.com), June 2024.

Firms are also now compelled to submit ROE enhancement plans to the TSE, driving a surge in share buybacks and dividend distributions. In 2023, Japanese corporations executed stock buybacks amounting to approximately ¥960 billion ($6.3 billion), setting a record high for the fourth consecutive fiscal year[11].

The US dominates the global equity market and is a major focus for dividend investors, but Rhodes points out that opportunities abound in various regions. "The US market stands out for its scale and the number of investable companies, offering liquidity and a vast selection for dividend investments. In Europe, many companies have strong dividend track records. Australia is notable for its tax advantages, encouraging even growth companies to pay dividends, making it a standout region," he highlights.

Despite these advancements, China and Japan still lag behind their global peers in average dividend payouts. However, with ongoing reforms and an increasing focus on shareholder returns, there remains significant room for growth in both markets.

China and Japan trail in dividends but demonstrate growth potential



Source: Bloomberg and Fidelity, April 2024[12].

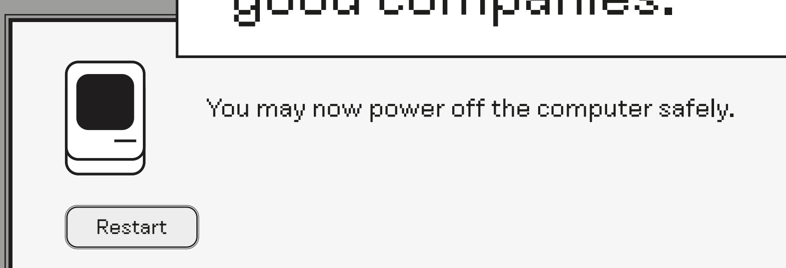
The expanding dividend playbook

As we navigate an era of declining interest rates, dividend investing remains a steadfast strategy for generating reliable income. The landscape, however, has evolved, with the entry of tech giants into dividend portfolios offering an opportunity to leverage significant growth prospects and enhance diversification.

At the same time, initiatives in China and Japan are creating a more shareholder-friendly environment, with increasing dividend payouts and share buybacks. These changes signal a promising future for dividend growth in the region, aligning with global trends and enhancing the attractiveness of Asian markets for income-focused investors.

"Initially, tech was the hardest sector to find opportunities and Japan was the toughest market," Rhodes notes, reflecting on the evolution of the dividend universe during his 17-year tenure. Over the years, the universe of opportunities for dividend investors has increased. Rhodes sees no shortage of potential investments today but not overpaying is critical for long-term success: "We look for good investments, not just good companies. The ability to capitalise on unexpected opportunities in dividend investing remains crucial." ◻

"We look for good investments, not just good companies."



[11] Grace Su and Jean Yu, 'Governance Reforms Power Japan Forward', (clearbridge.com), September 2024.

Why investors need private markets

Private markets have been firmly embraced by investors over recent years, their role in potentially enhancing investment returns now well understood. But perhaps they have an additional and equally important role. Portfolio diversification is a key objective in portfolio management. Simon Sharp examines whether private markets are set to disrupt traditional approaches to diversification and further boost the appeal of this growing asset class.

Historically building a balanced investment portfolio has rested on a central principle. In order to manage volatility, a portfolio needed to be diversified, comprising a mix of both equities and bonds. The rationale has been as equities and bonds historically are negatively correlated ie move in the opposite direction to each other, allocating to both can manage return volatility within a portfolio. This is typically referred to as a '60/40' portfolio where 60% of a portfolio is broadly invested in equities, 40% in fixed income.

A new era?

Investment portfolios, particularly pension funds, often require a stable return profile due to their role in providing retirement income. For the last 20-30-years, equities have been relatively volatile (upwards and downwards). By contrast, bonds have consistently delivered reliable but modest positive returns[1]. The less volatile behaviour of bonds lowers overall portfolio volatility and risk. 2022 was a rare exception with both equities and bonds falling together due to global supply shocks resulting from Ukraine and COVID-19.

But 2022 is a useful case study as it highlights the central role inflation plays in driving the correlation between equities and bonds. Both asset classes fell in tandem in 2022 as global supply problems caused a sharp spike in inflation. Central banks responded by hiking interest rates. And higher interest rates can be negative for both equities and bonds.

If inflation is so important in determining the correlation between bonds and equities, which inflationary scenarios would be expected to lead to equities and bonds either moving in tandem with each other, or moving in opposite directions?

[1] Schroders, 'Allocating to private markets', 2024.

> **'Higher interest rates can be negative for both equities and bonds.'**

Negative correlation

If inflation is under control, focus moves more towards growth expectations for economies. Any GDP growth surprises, positive or negative, would impact corporate earnings. For example, if GDP surprised on the upside, equities would be expected to rise as earnings expectations would be higher. However, bond prices would likely fall as stronger GDP growth could result in higher inflation and subsequent higher interest rates. Higher rates hurt bond prices due to a higher discount rate. In this 'growth-led' scenario', the correlation between bonds and equities would be negative.

Positive correlation

In contrast to the above, when inflation is either or both high and volatile (ie 2022), the driver for asset class correlation shifts decisively away from GDP growth and firmly towards inflation expectations. High inflation is negative for bonds as both their principal and coupons are quoted in nominal terms. At the same time, as seen in 2022, high inflation prompts higher interest rates which is not good news for equity prices, increasing corporate borrowing costs and disincentivising new investment. In this 'inflation-led' scenario, the bond/equity correlation would be positive.

There has now been a sustained period of volatile and high inflation, prompting the question, if the traditional negative correlation between equities and bonds can no longer be relied upon, are there other allocations within a portfolio that can be made to address this lack of portfolio diversification?

Private markets to the rescue

Private markets have been a favoured destination for institutional investors for several years, now accounting for c.12% of allocations (Aviva Private Markets Study, 2024). Private and wholesale investors are far behind with only 5% of their investments held in private markets (Bain, 2023), limited so far by accessibility and liquidity concerns.

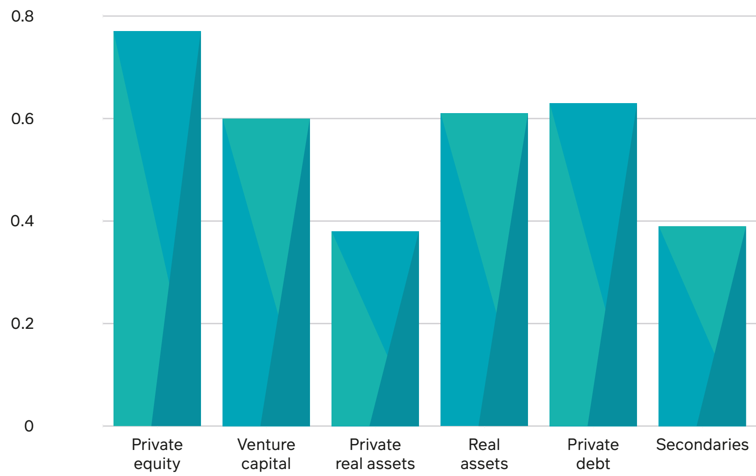
However, the private markets universe has now become too large for any investor to ignore. Public equity and debt markets are valued at US$152 trillion (JP Morgan, 2023). Whilst far smaller at $14.3 trillion (UBS, 2025), private market investment is expanding more rapidly than either public equity or fixed income. Indeed, Preqin forecast private markets are likely to more than double in size to $30 trillion by 2033.

The relevance of private markets to portfolio construction, and specifically its role in delivering portfolio diversification benefits, lies in the fact private market performance typically moves independently from either equities or bonds. The charts illustrate its low or negative correlation with both of these asset classes (US Treasuries taken as a proxy for bonds).

‘Private market performance typically moves independently from either equities or bonds.’

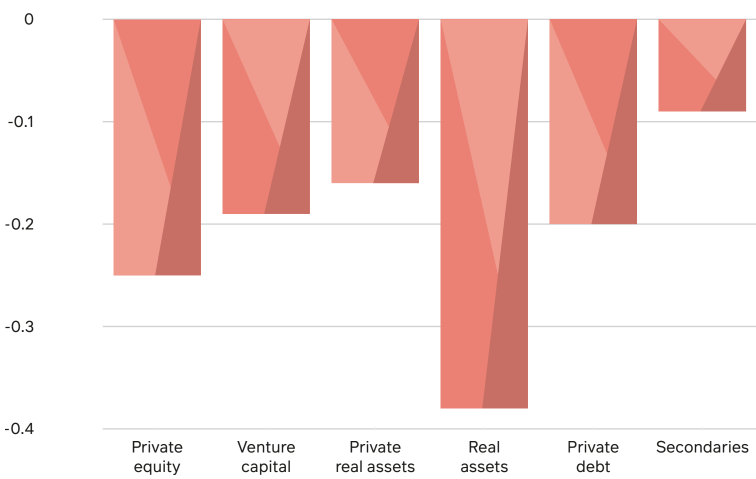
Private market correlation to global equities

Correlation coefficient



Private market correlation to US treasuries

Correlation coefficient

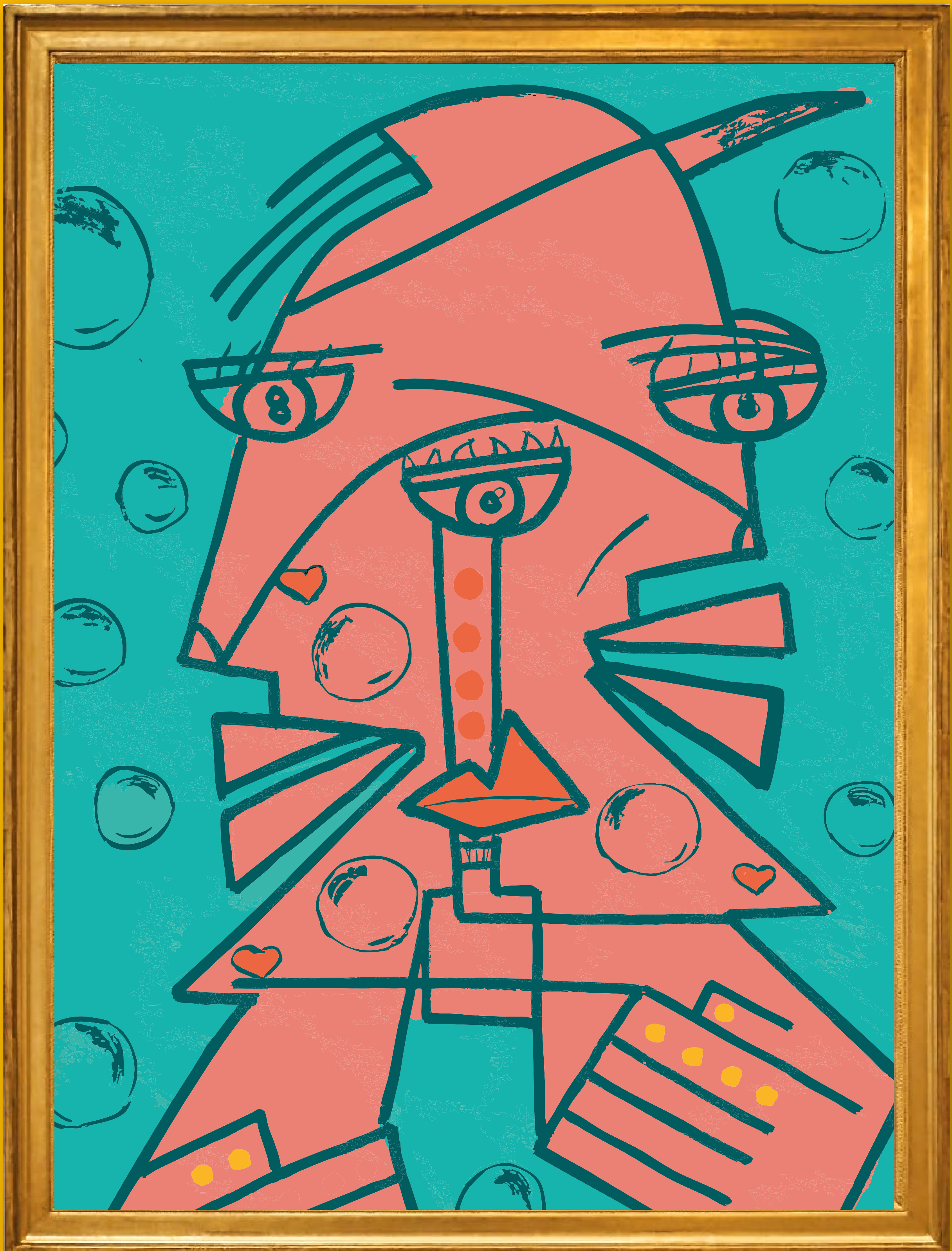


Source: Morningstar, Pitchbook, March 2024.

A positive correlation of +1.0 indicates different assets will perform in tandem, whilst a negative correlation of -1.0 indicates assets will move independently of each other. For global equities, the chart shows a positive, but still relatively low correlation between different private markets and global equities. However, the relevant question is whether making an allocation to private markets would provide greater diversification to public equities compared to public bonds. The data suggests this would not in fact be the case: the correlation between public equities and public bonds (US Treasuries), at -0.04, is considerably lower than global equities’ correlation with any private market.

This however would not hold true relative to bonds. As the chart illustrates, in every instance, each private market has a negative correlation to public bonds far in excess of the -0.04 public equities/bonds correlation. This suggests reducing part of an existing public bond allocation, adding some private markets exposure, would likely enhance diversification within an existing equity/bond portfolio.

There is an important caveat. A large part of the low/negative correlation from private markets to either bonds or equities will likely have been driven by disruptive market events, or periods of weak economic growth/recessions. If there was a sustained period where economic growth was strong, these correlations may be less pronounced.



'Private capital is able to access the broader economy.'

Diversification within private markets

Compounding the diversification benefits from having low/negative correlations with the two main asset classes is the further discovery that private markets, in no way a homogeneous set of markets, are in fact lowly correlated to each other:

Examples of different private market correlations:

Private equity/private real estate	0.51
Private debt/secondaries	0.29
Real assets/private debt	0.56
Venture capital/real assets	0.37
Private equity/private debt	0.65

Source: Morningstar, Pitchbook. March 2024.

This table shows that whilst positive, the size of the correlation between different private markets is low, adding further to the risk mitigation benefits from making an allocation to private markets within a balanced portfolio.

This conclusion should not come as a surprise given private markets comprise a diverse array of strategies, sensitive to different market and economic dynamics and events. It should be expected that they will likely perform differently to each other at different times.

In addition to lowering overall portfolio risk, the precise blend of different private markets within a portfolio will likely be driven by the portfolios' investment objectives. As the asset class includes forms of equity, credit, real estate, infrastructure etc, weightings between different private markets will be led by whether an investor is prioritising growth or income:

Added return potential

As well as the diversification benefits of including private assets within a balanced portfolio, can the asset class tempt investors with further attractions? Fortunately, the answer may well be 'yes', specifically due to the economic and corporate exposures it can access.

The wider the investible universe, the greater the opportunity to identify mispriced opportunities and enhance portfolio return. Within the US, 87% of companies with a turnover in excess of $100 million are privately owned and not listed on public exchanges (Capital IQ, 2023). Private capital is therefore able to access the broader economy, unlike public listed investment which will be restricted to a far smaller opportunity set.

In addition, the return potential of private markets is supported by key global growth trends within which private markets occupy prime position. These are multi-year/decade-long growth trends which align with the extended investment horizons many portfolios, particularly pension funds, will have.

There are several key global trends within which private markets are likely to be principal beneficiaries; infrastructure renewal, digital revolution, energy transition, bank de-risking, and real estate transformation.

With many governments constrained by historically unprecedented levels of national debt, it is almost inevitable that essential infrastructure investment will need to be 'outsourced' to the private sector, with private capital taking a lead role. The technological revolution is also set to accelerate with AI at the forefront, but also a deeper digitisation of society with smaller, more innovative (and private) companies likely to be at the forefront.

While many investors may focus on the ability of private markets to diversify and lower overall risk within their portfolios, the ability of private markets to meaningfully enhance returns cannot be overlooked. The long-term nature of many private market investments, such as private equity and real assets, make their potentially enhanced return profile even more appealing to pension funds. Additionally, as private market investments are unlisted, short term 'mark-to-market' valuation volatility within a portfolio, likely at certain times with listed investments, need not be a concern.

Important considerations

Despite the benefits shown to exist by incorporating private markets into a balanced portfolio, there are some unique characteristics of the asset class which investors need to be aware of:

Liquidity

Private markets, by definition, are private – they are not listed on public exchanges. However, this does not mean they are entirely illiquid, requiring investor lock-ins lasting several years. Indeed, some parts of private markets can be traded on a daily basis. For institutional investors who require the ability to liquidate holdings to meet redemption requests, for example, liquidity considerations will be a factor. This however can likely be managed through efficient portfolio management ensuring sufficient portfolio-level liquidity exists via either the equity/bond portion of the portfolio, or the mix of private market investments.

For private and wholesale investors, it is more complex with these investors having less options. The emergence of ELTIFs and LTAFs in Europe and the UK is welcome with these vehicles offering partial liquidity via periodic trading windows.

Accessibility

For institutional investors, such as large pension funds, the meteoric growth of private markets has made them an increasingly viable option. The larger the overall size of the private market universe, the easier it is to make the size of investment required.

While institutions have been the dominant private market investor, this is not an area completely unknown to private investors: high/ultra high net worth investors have invested in the space for many years. However, for other private and wholesale investors the situation is more complex with these investors largely relying on the aforementioned ELTIF/LTAF vehicles to achieve a degree of access.

Due diligence

The nature of private market investing requires a deeper degree of due diligence on possible investments than would be expected with public investments. A large amount of required financial information will not be in the public domain, and close and continuing engagement with investee management teams is often essential. Research and analysis of prospective investments can therefore be complex and time consuming.

Finally, private markets manager selection is crucial to success given there is a high dispersion in fund performance between managers. This is perhaps inevitable given the difficulty of comparing manager performance across different investment vintages. The lack of benchmarks in private markets also makes manager comparisons difficult.

A disruptive force

Private markets, now widely embraced by many institutional investors, have proven to be a disruptive force challenging the conventional 60/40 approach to balanced portfolio construction. However, this has not been without good reason. With portfolio managers anxious about a recent breakdown of the traditional negative correlation between equities and bonds, private markets have emerged as a credible saviour.

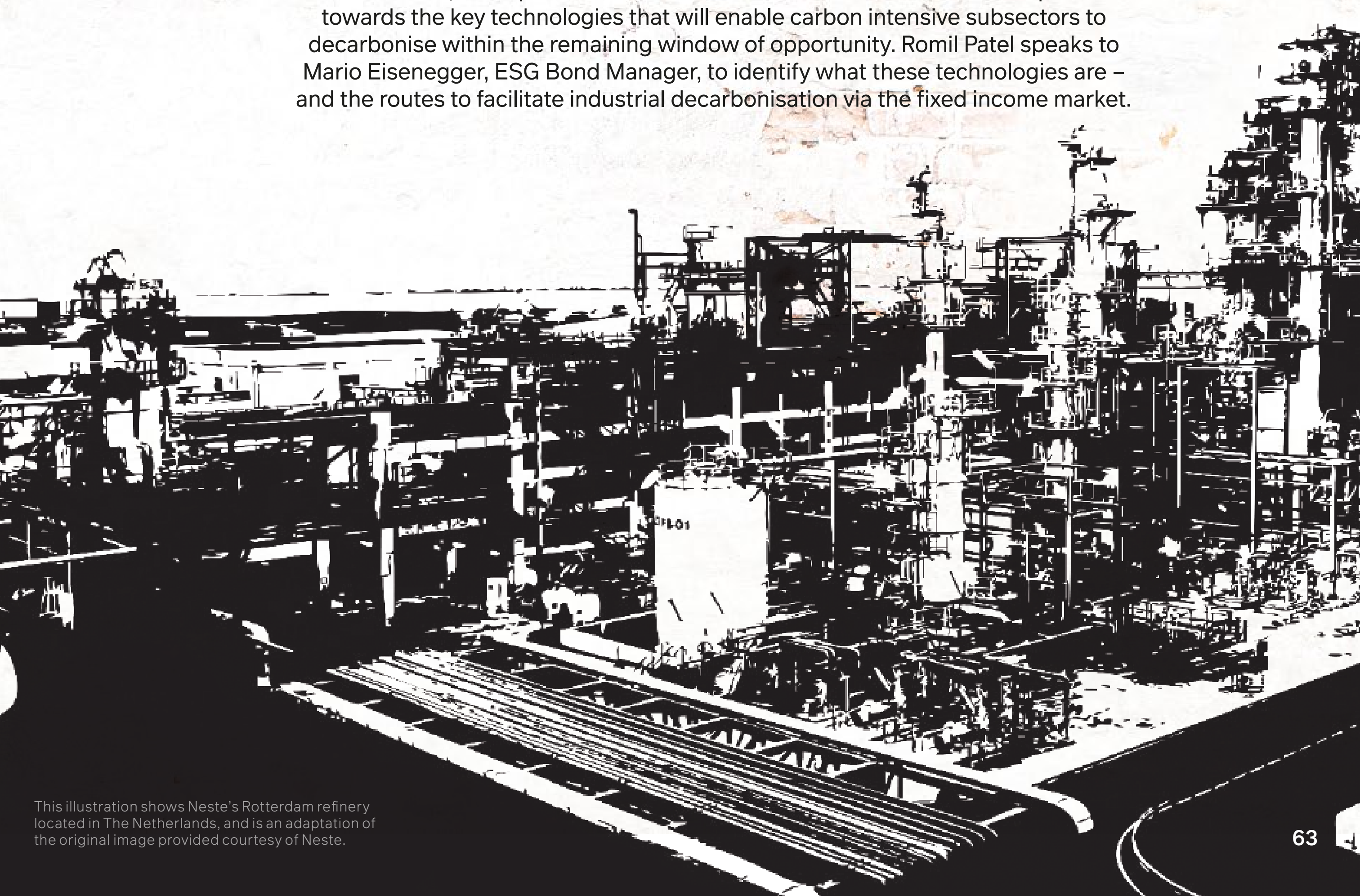
Whether looking at their low correlation with equities and bonds, the alignment with longer term investment horizons, or leverage to high growth global secular themes, private markets have certainly proven their worth. With an increased focus on securing genuine portfolio diversification coupled to the continued expansion of the asset class, it appears certain private markets are set to become a larger and more permanent component within many investors' portfolios. □

ELTIFs are illiquid in nature because their investments are long-term. For investors, this is an investment that has low liquidity. ELTIFs may not be suitable for investors that are unable to sustain such a long-term and illiquid commitment. Only a small part of a portfolio should be invested in an ELTIF.

CLEAN MACHINES:

Investing in the disruptive technologies to reach net zero

To limit the increase in global temperatures to well below 2°C above pre-industrial levels, disruption is needed on an industrial scale in a world where history, the wealth effect and population growth all point towards increased energy demand. With energy accounting for nearly three-quarters of global greenhouse gas emissions, it's imperative that investors understand and mobilise capital towards the key technologies that will enable carbon intensive subsectors to decarbonise within the remaining window of opportunity. Romil Patel speaks to Mario Eisenegger, ESG Bond Manager, to identify what these technologies are – and the routes to facilitate industrial decarbonisation via the fixed income market.



This illustration shows Neste's Rotterdam refinery located in The Netherlands, and is an adaptation of the original image provided courtesy of Neste.

Time is of the essence – 2014 to 2023 was estimated to be the warmest 10-year period on record at around 1.2°C above the average between 1850 and 1900[1]. Last year was the hottest recorded and the first where surface temperatures exceeded 1.5°C above pre-industrial levels[2], but last year was also a different age.

If 2024 was the year of democracy as billions of people around the world cast their ballot, then 2025 – and beyond – is where we see seismic shifts in policies from new administrations, as well as the implications that cascade onto the domestic as well as the global stage.

Within hours of his inauguration, a promise to "drill, baby, drill" and a swipe of a Sharpie, US President Donald Trump signed a flurry of executive orders, from pulling the country out of the Paris Agreement – again – to declaring a "national energy emergency" to ramp up oil and gas output at a time when the US had "produced more crude oil than any nation at any time, for the past six years in a row[3]." Meanwhile on the West Coast, more than 300 wildfires were devastating California, burning more than 57,500 acres and destroying more than 16,000 structures[4] at the time of writing.

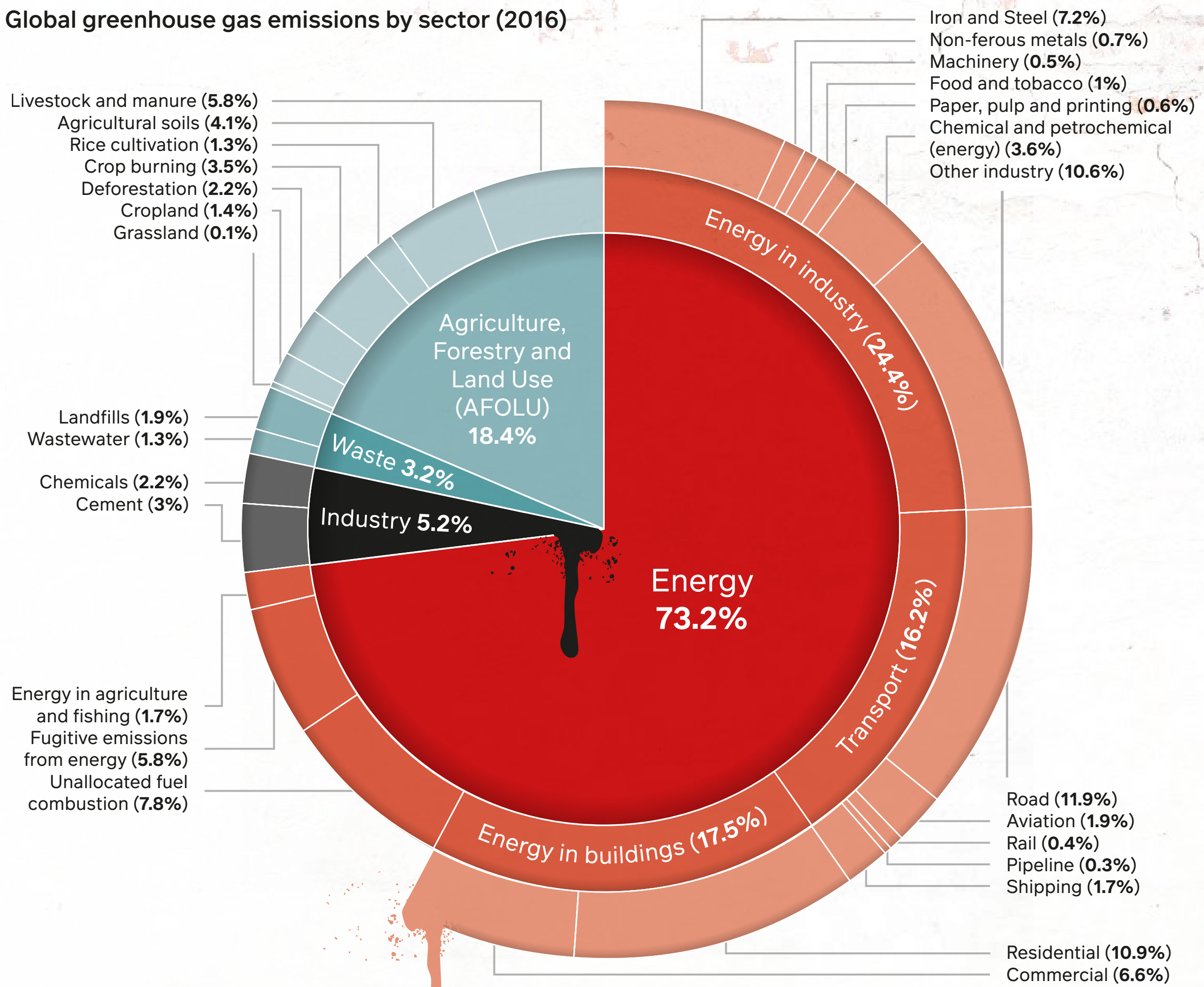
As a sector, energy accounts for 73.2% of global greenhouse gas (GHG) emissions. This comprises energy use in industry (24.2%) to produce anything from iron and steel to chemicals, transport (16.2%) and energy use in buildings (17.5%).

Despite its potentially larger production of fossil fuels, the US is still grappling with the risk of a power shortage across vast parts of the country amid a proliferation of data centres and a booming power-hungry artificial intelligence (AI) industry. From a cost perspective, renewables are at a point where they can compete with fossil fuels – and look set to continue their advance globally as the fastest growing energy sources, albeit with resistance.

For example, in February 2025 Swiss citizens overwhelmingly refused a proposal to bring the country's economy in line with the planetary boundaries, which are nine critical thresholds essential for maintaining Earth's stability. Nearly 70% of voters rejected the environmental proposal.

[1] World Meteorological Organization (WMO), 'Climate change indicators reached record levels in 2023: WMO', (WMO.int), March 2024.
[2] Associated Press (AP), 'Earth breaks yearly heat record and lurches past dangerous warming threshold', (apnews.com), January 2025.
[3] US Energy Information Administration (EIA), 'United States produces more crude oil than any country, ever', (eia.gov), March 2024.
[4] California Department of Forestry and Fire Protection, 'Current emergency incidents', (fire.ca.gov), as of February 2025.

Global greenhouse gas emissions by sector (2016)



Source: Climate Watch, The World Resources Institute (2020) via Our World in Data, Hannah Ritchie, 'Sector by sector: where do global greenhouse gas emissions come from?', (published online and retrieved from ourworldindata.org [online resource]), September 2020.

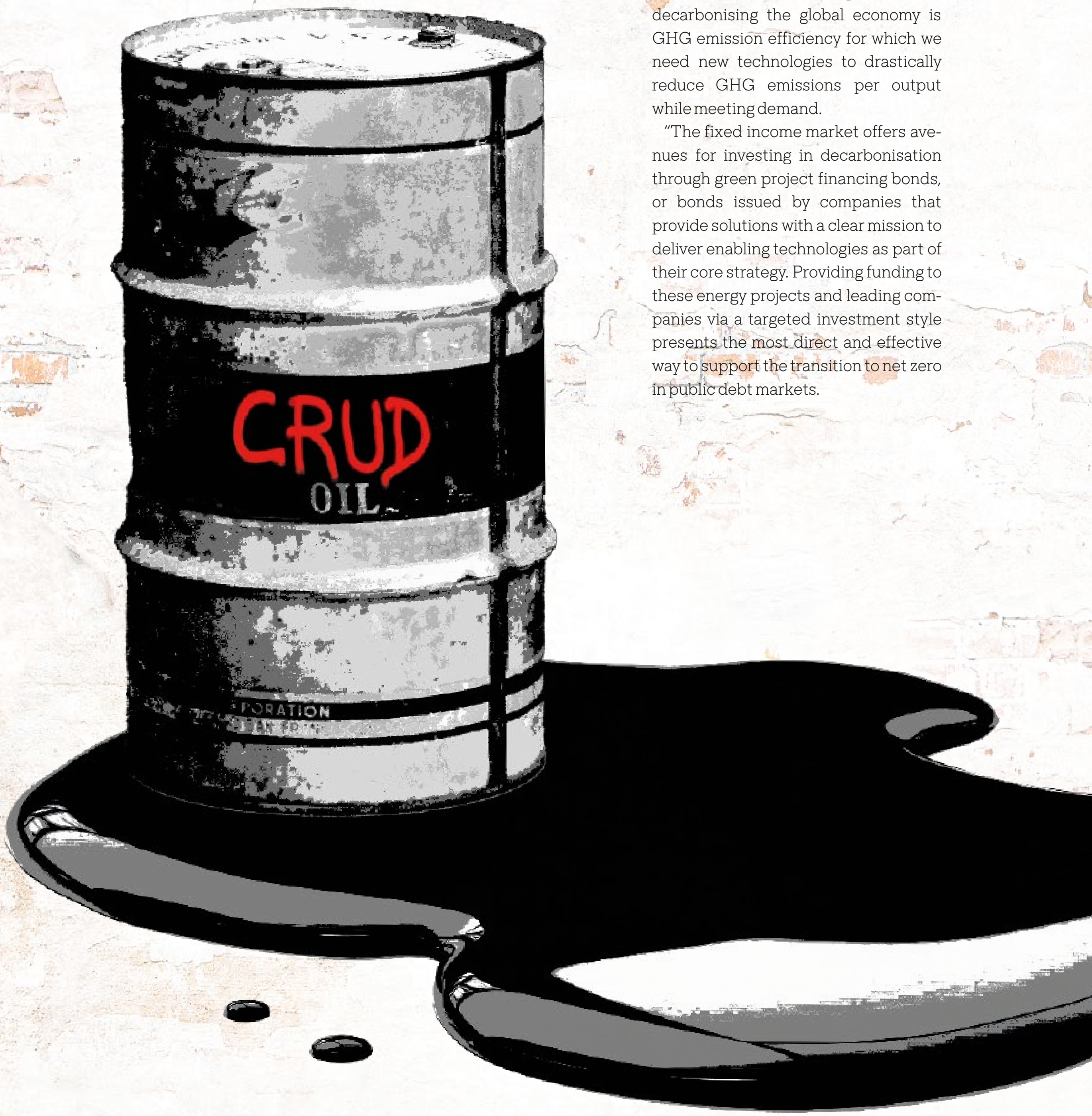
Power

‘AS A SECTOR, ENERGY ACCOUNTS FOR 73.2% OF GLOBAL GREENHOUSE GAS EMISSIONS.’

"This demonstrates how difficult it is to fight climate change in real terms by forcing societies to reduce consumption and make other radical changes to their lives," observes Mario Eisenegger, Manager of the Sustainable Solutions Bond Strategy, who was born and raised in Switzerland.

"As consumption is expected to grow as a result of population growth and the wealth effect, the key variable in decarbonising the global economy is GHG emission efficiency for which we need new technologies to drastically reduce GHG emissions per output while meeting demand.

"The fixed income market offers avenues for investing in decarbonisation through green project financing bonds, or bonds issued by companies that provide solutions with a clear mission to deliver enabling technologies as part of their core strategy. Providing funding to these energy projects and leading companies via a targeted investment style presents the most direct and effective way to support the transition to net zero in public debt markets.



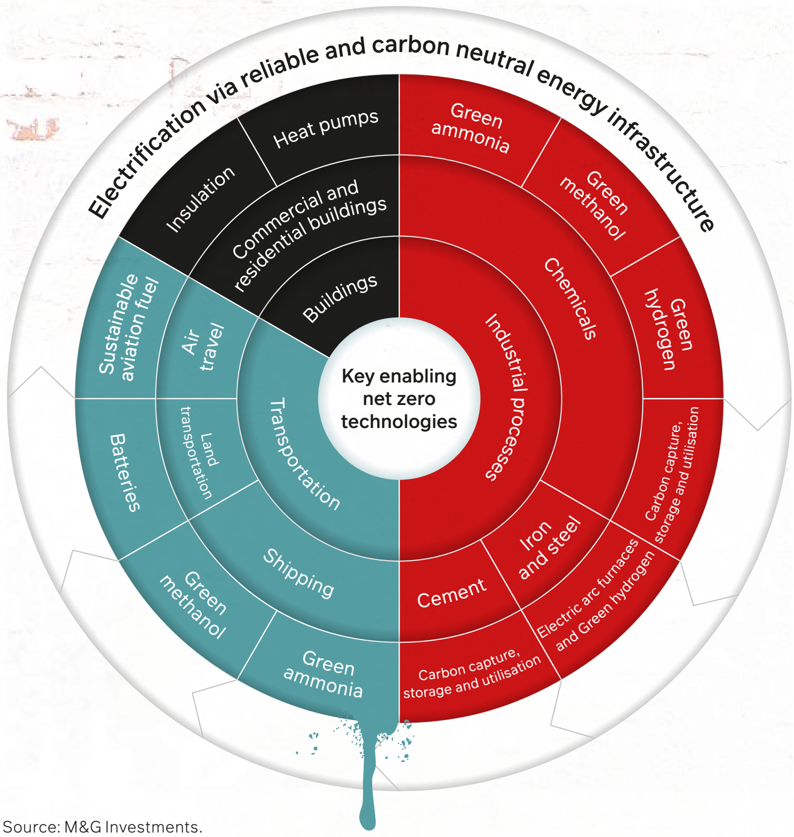
"THE FIXED INCOME MARKET OFFERS AVENUES FOR INVESTING IN DECARBONISATION THROUGH GREEN PROJECT FINANCING BONDS, OR BONDS ISSUED BY COMPANIES THAT PROVIDE SOLUTIONS WITH A CLEAR MISSION TO DELIVER ENABLING TECHNOLOGIES AS PART OF THEIR CORE STRATEGY."

"Given the existence of these enabling technologies, we are now in a crucial phase of catalysing and directing private capital towards investments that facilitate a low-carbon economy in order to limit the rise in global temperatures," adds Eisenegger.

"As active bond investors, understanding industry dynamics with the help of our in-house research teams allows us to comprehend the key technologies that enable sectors to achieve net zero emissions and ensure that our clients' assets are allocated effectively," notes Eisenegger.

Indeed, as the International Energy Agency (IEA) states, "the key actions to bend the emissions curve sharply downwards by 2030 are well understood – we have the technologies and measures available today[5]." So, what are they – and how can investors play a critical role in catalysing decarbonisation?

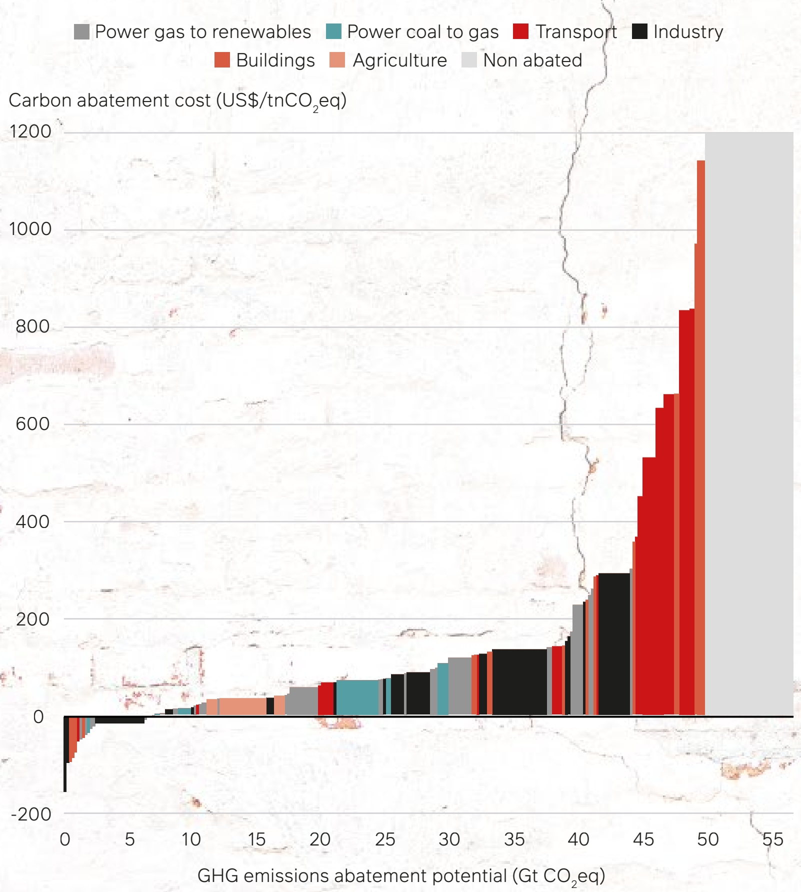
Spinning out enabling net zero tech solutions



Source: M&G Investments.

[5] International Energy Agency (IEA), 'The evolution of energy efficiency policy to support clean energy transitions', (iea.org), December 2023.

Cost curve of decarbonisation for human-induced GHG emissions ($GtCO_2eq$)



Source: Goldman Sachs, 'Carbonomics: The GS net zero carbon scenarios – a reality check', [report], October 2024.

Cementing carbon capture

At present, there aren't any widespread low-carbon substitutes for cement in construction[6]. The industry must, therefore, develop and deploy a range of new emissions reduction technologies to produce the same or greater volumes of cement while aiming for carbon neutrality by 2050.

In the short-term, efficiency measures, circularity measures, clinker substitution with supplementary cementitious materials (SCMs) and decarbonising the kiln heating process (energy-related cement emissions arise from fossil fuel used in kiln heating) may contribute to a 25% emissions reduction, according to the World Economic Forum's[7] (WEF) net zero industry tracker report. Therefore, carbon capture, utilisation and storage (CCUS) technologies could be instrumental to achieve net zero emissions in the cement sector by 2050.

Indeed, "scaling in-plant CCUS from less than 1% to 90% by the 2040s to capture the CO_2 emitted during the clinker production process is critical to achieve near-zero-emissions", the WEF report states.

According to the IEA, "the net zero emissions scenario envisages an increase in the capacity of CCS (carbon capture and storage) to 170 million tons in 2030[8]." Despite this, there is still a long way to go – CCUS continually makes up less than 0.5% of global investment in clean energy and efficient technologies, the IEA notes[9].

The first industrial-scale CCUS projects are being launched across the cement industry. In 2024, Heidelberg Materials constructed the world's first industrial-scale CCS facility – the Brevik cement plant in Norway, which is capable of capturing 400 kilotons of CO_2 emissions per year.

"Heidelberg's Brevik plant will deliver the world's first carbon-captured net zero cement and concrete, with management expecting to be able to sell this product in the first half of this year," says Eisenegger.

"We participated in the latest green bond deal to support the company's build out of carbon capture technologies which directly mitigate climate change. While we expect some cyclical headwinds and negative price/cost spread to reduce future earnings, we expect the balance sheet to remain strong (net leverage 1.2x)," he adds. "Credit risk is currently very similar within the sector, while Heidelberg bonds have traded marginally wider. Therefore, we continue to see Heidelberg bonds compensating us relatively well for the underlying risk."

Driving down transport emissions

Road transport is at the beginning of its most significant technological transformation in a century, with electrification, autonomous driving, clean hydrogen, and bioenergy at the forefront of the decarbonisation challenge.

In contrast to power generation, the transportation sector largely occupies the 'high-cost' area of the decarbonisation cost curve, responsible for approximately 20% global anthropogenic CO_2 emissions, according to a Goldman Sachs report[10].

The velocity of decarbonisation is not uniform across various forms of transportation ie electrification is far more prevalent across rail and light-duty vehicles due to the rising prominence of batteries. In contrast, aviation and shipping are trailing in terms of decarbonisation due to an underdevelopment or their early-stage nature as viable alternatives at present, such as sustainable aviation fuels (SAFs), clean hydrogen and ammonia. Wider implementation of these substitutes is only expected after 2030.

[6] Barclays, 'Decarbonising cement series – part one', [report], November 2024.
[7] World Economic Forum (WEF), 'Net-zero industry tracker 2023 edition', (weforum.org), November 2023.
[8] IEA, 'Energy system: Tracking cement', (IEA.org), July 2023.
[9] IEA, 'Energy technology perspectives 2020 – special report on carbon capture, utilisation and storage ', (IEA.org), 2020.
[10] Goldman Sachs, 'Carbonomics: The GS net zero carbon scenarios – a reality check', [report], October 2024.

Aviation: A new runway

Aviation's share in anthropogenic global warming weighs in at approximately 4% to date[11]. The International Air Transport Association (IATA) envisions SAF contributing up to 65% of industry decarbonisation by 2050[12].

"THE EU NOW REQUIRES 2% OF ALL FUEL UPLIFTED AT EU AIRPORTS TO BE SAF. THIS WILL INCREASE TO 6% BY 2030, 20% BY 2035 AND 70% BY 2050."

This importance of this technology is being recognised – and global authorities have it firmly in their regulatory sights as a vital enabler in decarbonising the aviation industry. As of 1 January 2025, the European Union's (EU) SAF initiative (ReFuelEU Aviation) requires 2% of all fuel uplifted at EU airports to be SAF. This will increase to 6% by 2030, 20% by 2035 and 70% by 2050[13].

According to energy pioneer Neste, the company's production capability of approximately 1.5 million tons of SAF per annum could meet the entire mandate between now and 2029 – but "all available SAF volumes will be needed for the industry to reduce its emissions to reach the industry's net-zero target[14]."

Meanwhile, the UK's SAF Mandate also took effect in 2025 at 2% of total UK jet fuel demand, rising in line to 10% in 2030 and 22% in 2040, with the government underlining its vital role in decarbonising the aviation industry. "The SAF Mandate could deliver up to 6.3 megatons of carbon savings per year by 2040[15]," the UK government's website states.

While the market is growing, challenges remain. A paper published last year analysing SAFs reported that "the feasibility of SAF production still depends on feedstock availability, cost-effectiveness, and route selection. Overall, technological advancements and gradual cost reductions, coupled with policy drivers, will be key factors in promoting the widespread application and commercialisation of SAF[16]." While SAF plays a crucial role as a key enabling technology, it is likely that SAF on its own can only achieve limited fuel substitution and other alternatives are needed to decarbonise aviation to a larger extent, eg electrification of short haul flights.

"In the case of Neste, fixed income investors can use green bonds as a financing instrument to support the capacity expansion of SAF, while staying clear from their oil and gas activity," says Eisenegger. "This is thanks to the predefined project eligibility criteria which states how the proceeds of green bonds can be deployed by the issuer.

"The Rotterdam refinery expansion is expected to expand renewable product capacity by 1.3 million tonnes per annum (mtpa) by 2026 while the Singapore refinery expansion will have an optionality to produce up to 1mtpa of SAF," he adds. "As bond valuations started to price in risks of a credit rating downgrade due to cyclical margins pressure, we have taken the opportunity to build a position in Neste via green bonds to benefit from an increasingly attractive financial risk-reward."

Despite the promise of SAF, there is clearly still a long runway ahead to fall in line with the net zero emissions scenario, according to the IEA, which notes that "the use of SAF would need to increase more than twice as fast as in the NZE[17] scenario, reaching about 4 exajoules (EJ) by 2030 and accounting for about 25% of the aviation fuel market[18]."

[11] IOP Publishing, M Klöwer, M R Allen, D S Lee, S R Proud, L Gallagher and A Skowron, 'Quantifying aviation's contribution to global warming', (iopscience.iop.org), November 2021.
[12] International Air Transport Association (IATA), 'Net zero 2050: Sustainable aviation fuels', (iata.org), December 2024.
[13] US International Trade Administration, 'European Union aerospace and defense sustainable aviation fuel regulation', (trade.gov), August 2024.
[14] Neste, 'ReFuelEU: What is it and how will it impact the aviation industry?', (neste.com), January 2025.
[15] UK Government, 'Sustainable aviation fuel (SAF) Mandate', (gov.uk), December 2024.
[16] Bofan Wang, Zhao Jia Ting, Ming Zhao, 'Sustainable aviation fuels: Key opportunities and challenges in lowering carbon emissions for aviation industry,' Carbon Capture Science & Technology, Volume 13, (sciencedirect.com) 2024.
[17] Net Zero Emissions by 2050 scenario.
[18] IEA, 'Net zero roadmap: A global pathway to keep the 1.5°C goal in reach (revised version), November 2024 update', (IEA.org), November 2024.

"THE NET ZERO EMISSIONS SCENARIO ENVISAGES AN INCREASE IN THE CAPACITY OF CCS (CARBON CAPTURE AND STORAGE) TO 170 MILLION TONS IN 2030."

According to the IEA

Decarbonising buildings

Direct carbon emissions from buildings, both residential and commercial, account for a significant portion of total global CO_2 emissions, primarily due to the use of fossil fuels for space and water heating.

Buildings operations account for "30% of global final energy consumption and 26% of global energy-related emissions (8% being direct emissions in buildings and 18% indirect emissions from the production of electricity and heat used in buildings)[19]", according to the IEA.

Over the next three decades, the global building floor area is expected to skyrocket by 75% with emerging markets accounting for approximately 80% of the demand, the IEA stated. A transformative energy shift away from fossil fuels to cleaner alternatives is therefore essential for buildings, whose operations contribute heavily to global emissions.

Transferring energy

Heat pumps (HPs) are critical for achieving net zero targets. Unlike conventional heating systems that generate heat by burning fossil fuels or through electric resistance, a heat pump "extracts heat from a source, such as the surrounding air, geothermal energy stored in the ground, or nearby sources of water or waste heat from a factory. It then amplifies and transfers the heat to where it is needed. Because most of the heat is transferred rather than generated, heat pumps are far more efficient than conventional heating technologies such as boilers or electric heaters and can be cheaper to run[20]," the IEA notes.

Additionally, this source is produced at a much higher rate of efficiency – to the tune of 300% to 400%[21]. This means that HPs – which run on electricity from the grid – produce three to four times as much energy in the form of heat in comparison to what they're consuming in electricity.

So far, policy plans by governments around the world indicate an increased use in heat pumps, which will have a clear impact on the use of oil, gas and coal for heating. According to the IEA, HPs can potentially remove at least 500 million tons of global carbon dioxide emissions in 2030[22].

"Johnson Controls International (JCI) offers one of the largest portfolios of heating, ventilation and air condition (HVAC) equipment and controls in the world, and we believe that the company has favourable structural end-market exposure and reliable financial policies that include both a firm investment grade commitment and a disciplined capital allocation policy amongst other attributes," says Eisenegger.

"We own green bonds of JCI. The financing provided via these green bonds has helped avoid 1,200,000 metric tons of CO_2e[23] through eco-efficient and/or circular economy adapted projects, production technologies and processes such as the installation of heat pumps."

Retro challenges

Invented in the 1850s and used in homes from the mid-20th century onwards, heat pumps are not a new invention, and their wider adoption still rests on overcoming hurdles. These range from high installation costs to potentially huge retrofits to larger buildings requiring better insulation and heating distribution.

Despite the benefits that HPs offer to help limit the rise in global temperatures, they also face a significant challenge in terms of electricity supply with concerns that they could face a surge in demand for electricity, particularly in colder climates.

"In the long-term, the decarbonisation of heat through electrification needs to be coupled with the successful decarbonisation of the electricity grid, which makes it more challenging," a study by researchers in the Energy and Power Group at the University of Oxford's Department of Engineering Science notes[24]. "Depending on the heating technologies deployed and the degree of consumer behavioural change, a significant increase in peak power demand might be observed."

According to Claire Halloran, co-author of the report[25], "if just 10% of British households switched to heat pumps it could increase peak electricity demand by 4% to 5%. This increase is nearly twice the power capacity of Hornsea 2, the largest offshore wind farm in Britain."

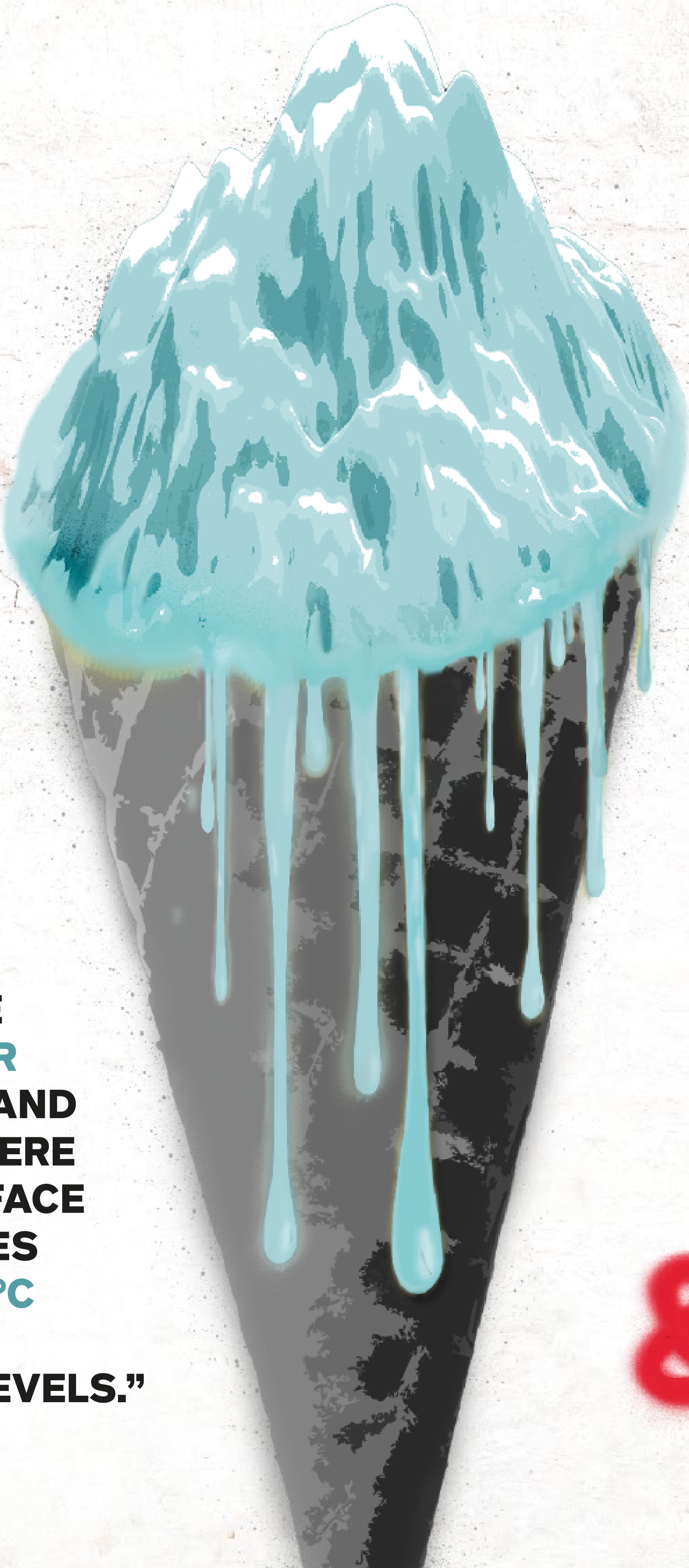
Electrifying success

As with heat pumps, many enabling technologies are reliant on modernising and expanding the grid system, and when it comes to the success of net zero technologies, most roads lead back to electrification.

The widespread adoption of electrification is widely recognised as a crucial element in the energy transition. This is primarily due to the significant energy efficiency gains that can be achieved through electrification of economic activities. When generating electricity directly from renewable sources, efficiency can be two to three times higher compared to using fossil fuels. This is because the thermal conversion process of fossil fuels wastes the majority of the energy contained in hydrocarbons.

"Electrification is an inevitability," says Eisenegger. "Electrification through reliable and carbon-neutral power infrastructure, with a smart power grid system serving as the backbone for its widespread adoption, is perhaps the crucially enabling role to limit the increase in global temperatures to well below 2°C above pre-industrial levels." □

[19] IEA, 'Tracking buildings', (IEA.org), July 2023.
[20] IEA, 'How a heat pump works', (IEA.org), December 2022.
[21] MIT Technology Review, 'Everything you need to know about the wild world of heat pumps', (technologyreview.com), February 2023.
[22] IEA, 'The future of heat pumps', (IEA.org), December 2022.
[23] Johnson Controls, '2021 Green bond report', (johnsoncontrols.com), September 2021.
[24] Jesus Lizana, Claire E. Halloran, Scot Wheeler, Nabil Amghar, Renaldi Renaldi, Markus Killendahl, Luis A. Perez-Maqueda, Malcolm McCulloch, Ricardo Chacartegui, 'A national data-based energy modelling to identify optimal heat storage capacity to support heating electrification', Energy, Volume 262, Part A, (sciencedirect.com), 2023.
[25] Department of Engineering Science, University of Oxford, 'How heat pumps can keep homes warm without frying the power grid', (eng.ox.ac.uk), February 2023.



"2024 WAS THE HOTTEST YEAR ON RECORD – AND THE FIRST WHERE EARTH'S SURFACE TEMPERATURES EXCEEDED 1.5°C ABOVE PRE-INDUSTRIAL LEVELS."

Written, curated and designed in-house by M&G Investments.

M&G Investments