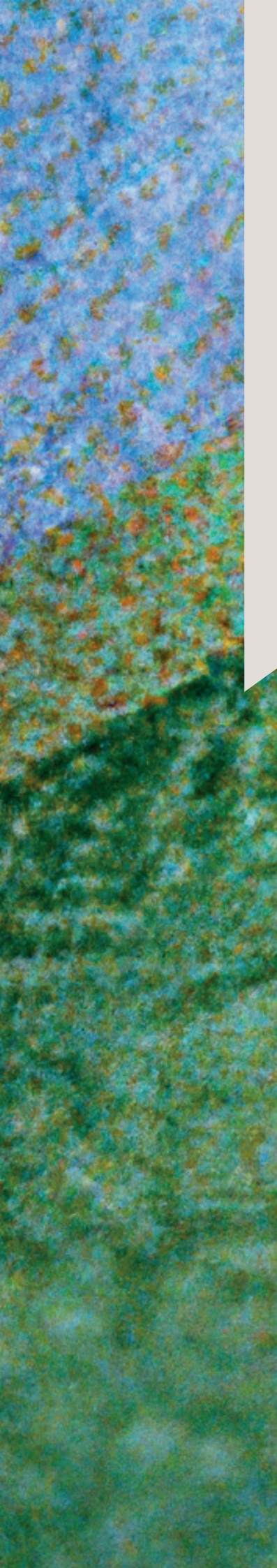




MARKET PERSPECTIVE | JULY 2023

Rates, recessions and robots



Foreword

CONTENTS

- 3 The business cycle: state of play
- 6 Inflation update
- 9 A narrow front: AI and stocks in 2023
- 11 AI in context

We are still not out of the cyclical woods. Economies have held up better than many feared, but growth is still cooling, and interest rates still rising. And while banking woes have faded, they can easily resurface.

Nonetheless, a dramatic downturn – pushing Western unemployment a lot higher, and hitting global profitability hard – still seems to us to be neither necessary nor likely. There is a weird law in PR economics which says that resilience now can only lead to weakness later – but why? Estimates of trend growth may be too low. And if led by supply, ongoing growth can coexist with falling inflation (and peaking, or at least plateauing, interest rates). We update our “Inflation Watch” below.

Meanwhile, lower energy prices are still in prospect for European businesses and consumers. This should support demand, also in an inflation-friendly way, and take some sting from those rising interest rates (which hurt fewer households than they used to, even here in the UK). It may still be too soon to turn more positive on risk assets, but that remains the direction in which we expect to be travelling.

As it happens, global stock markets have now rebounded markedly from last autumn’s lows. Have we missed the train?

We think not. We have not exactly been pessimistic: it’s not as if we took both feet off the train to begin with. And movement to date has been largely confined to the technology carriage. That doesn’t mean it’s not real, though some of the claims being made for AI are surely overstated, as we note below. But it’s probably not the big cyclical departure. Wider valuations remain fine.

So while the train may have started to move, there is still time to get more wholeheartedly on board – and potentially a long way to travel when we do.

Market Perspective will be published next in late August/early September.

Kevin Gardiner / Victor Balfour / Anthony Abrahamian
Global Investment Strategists

Image sources: Close up of a bank note that shows the textures and unique patterns on the note with light blue and green tones, created by Dall-E2 by OpenAI.

Wealth Management
New Court
St. Swithin’s Lane
London EC4N 8AL
+44 20 7280 5000
rothschildandco.com

© 2023 Rothschild & Co
Wealth Management

Publication date: July 2023.
Values: all data as at 30 June 2023,
text as at 29 June 2023.

Sources of charts and tables:
Rothschild & Co or Bloomberg
unless otherwise stated.



The business cycle: state of play

COULD HAVE BEEN WORSE

The global economy has held up better than many feared. We are now more than a year into an intense economic accident watch. There have, at different times, been technical recessions in both the US and eurozone during that period, but as yet nothing that warrants the description of a material downturn. And in at least one major economy – the UK – a confidently predicted downturn has not materialised, as the Bank of England, IMF and OECD have all acknowledged (though you may have missed their celebrations). Western unemployment rates remain close to historical lows.

The resilience may not last. How long do we have to wait before the ‘all clear’? Do we need such a signal anyway in order to turn more positive on risk assets?

In recent weeks, ‘soft’ data such as the widely watched business surveys have suggested that the cooling of the major economies will continue into the second half of the year. With monetary policy continuing to tighten – or becoming less loose at least – it seems unlikely that the surveys will warm back up soon. But ‘harder’ data – spending, housing transactions, employment – arguably look less fragile. This follows an earlier period in which things were the other way around, with surveys looking stronger. It is most visible in the US, which is where inflation is falling most clearly – at the core as well as headline level – and where interest rates may be closest to their high point.

SUPPORT ON THE WAY

Prospective support is also still on its way from the energy markets. Petrol prices have fallen significantly from last summer’s peaks, on both sides of the Atlantic. Wholesale natural gas prices in Europe are back at late 2021 levels, recent production outages notwithstanding. The impact of monetary policy may ultimately fall short of expectations: here in the UK, the widely quoted estimate that 1.5 million households face a big increase in mortgage rates soon implies that more than 25 million households don’t.

Many of those exposed households will, by the time the higher payments become due, have seen their nominal incomes rise significantly since they took out their loans. This is not to minimise any difficulties, but simply to note that those difficulties may not be as widespread as the headline figures suggest (which is why those figures are presented in absolute terms, rather than as proportions, to begin with).

GOOD NEWS NEED NOT BE BAD

When the Wall of Worry is particularly daunting, as it has been since early 2022, the public debate becomes fixated on the bad stuff, and is unable to imagine more positive scenarios. Even good things then are seen as bad – a classic case being the economic resilience to date, and the possibility of it continuing.

For example, it is said that the absence of a more dramatic downturn to date just makes a bigger downturn more likely further on up the road – perhaps because there is only so much growth to go around, and/or because the resilience will simply result in ever-higher interest rates until the economy does eventually crack. Central bankers themselves have suggested as much.

In reality, there is no fixed amount of growth to be redistributed from one period to another. In certain not-so-unusual circumstances, ongoing growth can coexist with falling inflation, and ever-higher interest rates might not be needed. For example, growth can be positive, but below the rate of increase of productive capacity, in which case spare capacity (the fabled ‘output gap’) grows and inflation pressure subsides. The chances of this happening are greater if the supply-side of the economy has some flexibility – which it does today, as post-pandemic logistical bottlenecks have eased, working practices have altered, and we are in the midst of a wave of innovation.

Labour market flexibility in particular may have been underestimated. The Bank for International Settlements is the latest official body to admit it has been too pessimistic on growth to date, and notes, as we have often suggested here, that real wages have been unusually weak, not strong – at least, so far. We would add the observation that participation rates are reviving – from levels that remained historically elevated to begin with – even in the much-maligned UK.

On this view, we should not be seeing the combination of weak real wages with tight labour markets as remarkable – unemployment may be low *because* real wages are soft. The 1970s social contract may implicitly have been rewritten in favour of employment. If this sounds far-fetched, remember that the widely noted stagnation in average real wages in the last decade has coincided with less widely noted employment gains. The public debate has focused on the fact that people who were in work to begin with have not got much better off, but has overlooked the fact that many people who weren’t lucky enough to be in work earlier now have jobs.

So far, the expectations embedded in bond markets at least seem to display more confidence in economies than does the public debate (or those central bankers). The biggest inflation surprise in four decades has resulted not in a big increase in the inflation rates priced-in to long-dated bonds, but instead largely in a rebound in projected long-term real interest rates (figure 1). On a 10-year view, the economy likely drives interest rates, not vice versa.

FIGURE 1: WHAT ARE BOND MARKETS EXPECTING?

Simple average of US, Germany and UK breakevens and real yields (%)



Source: Rothschild & Co, Bloomberg

Note: UK data have been adjusted to CPI terms (from RPI)

INVESTMENT CONCLUSION

We have been waiting for some of the cyclical uncertainty to be dispelled before being more vocal on stock markets – a more plateau-like profile for expected policy rates, and signs of a bottoming-out in the growth indicators (most notably, those surveys) and corporate profitability (figures 2 and 3).

We know that we may be being too cute. We often advise against trying to ‘time the market’. Stocks have now rebounded significantly from their autumn lows, and while we have not been bearish, we could have been more positive. However, the market advance has been very narrow, and once again focused on a small group of high-profile businesses (see below). It has left wider stock market valuations at unremarkable – that is, inexpensive – levels, and if the big cyclical ‘risk on’ move still lies ahead, then we still have time to put both feet more firmly back on board the train, as it were.

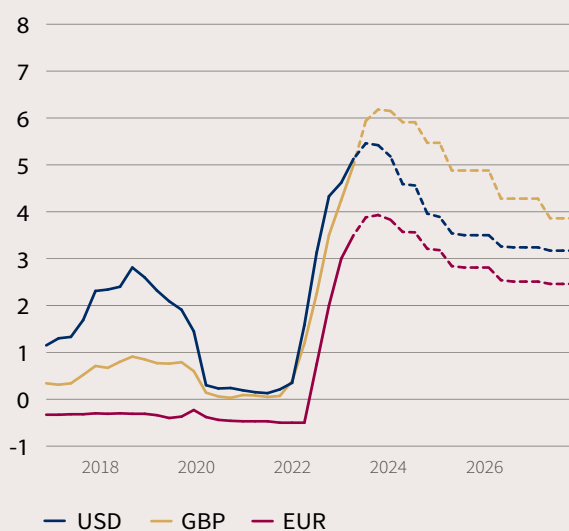
Meanwhile, value continues to creep back into bond markets, admittedly in a ‘two steps forwards, one step back’ fashion. US and now UK bond yields have reached levels which might offer a meaningfully positive real return over the decade, even if inflation does stick – as we expect – at above-target levels. Eurozone bonds still look a little pricey, but value is emerging there too.

GEOPOLITICAL FOOTNOTE

It is tempting to see recent developments in Russia as bringing forward some resolution of the conflict with Ukraine, thereby reducing risk generally and dampening energy prices even further. That could be a mistake. A new regime in Russia is not yet on the cards, and even if it were, the most likely new ruler might turn out to be more hawkish, not less. Meanwhile, a cornered administration may be more likely to escalate and widen the conflict.

The latest developments around Taiwan could prove more unambiguously positive for global business, but there is as yet less substance to analyse. The recent visit by the US Secretary of State to China seems to have been business-like, and is – we hope – evidence of a recognition by both sides that they should pull back from the brink of mutually assured economic destruction (or worse). But we wouldn’t put it any more strongly. That said, we do still feel that China will likely remain patient: its claim is non-negotiable, but not necessarily imminently actionable.

FIGURE 2: MARKET-IMPLIED POLICY RATES
OIS curves (%)



Source: Rothschild & Co, Bloomberg
Note: Three-month tenor; USD – SOFR, EUR – ESTR, GBP – SONIA
Bold lines are actual policy rates; dotted lines are market expectations

FIGURE 3: GLOBAL EARNINGS EXPECTATIONS
12-month forward EPS (USD, levels)



Source: Rothschild & Co, Refinitiv Datastream, IBES

Inflation update

Headline inflation rates have continued to move lower in both the US and Europe since May's *Market Perspective*. That said, core inflation rates – which exclude the more volatile food and energy components – have remained stickier. In the UK they have still not yet peaked (figures 4 and 5).

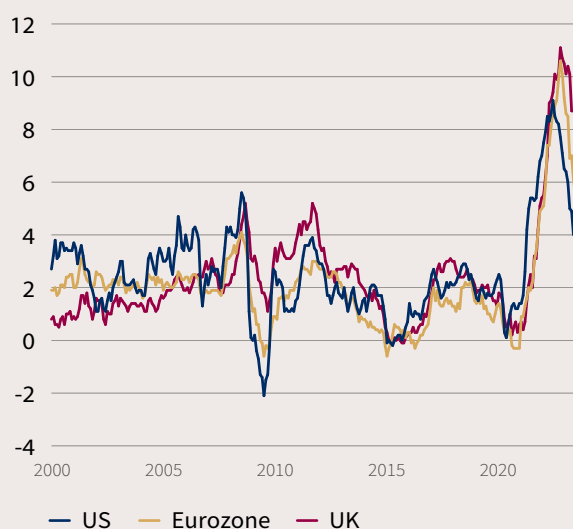
Promisingly, wholesale energy and food prices have been declining at a global level, which should continue to filter through to lower headline inflation rates over the course of this year.

Oil prices are more than 30% down from last year's levels despite ongoing production cuts from the OPEC+ cartel. This is particularly noteworthy from a US standpoint: changes in gasoline prices are closely correlated to the US energy CPI, which explains why there has been energy *deflation* in the US for three consecutive months.

Moreover, Europe's 'energy price crisis' appears to have been short-lived, as wholesale natural gas prices have returned to more 'normal' levels (figure 6). Unpredictable weather and increased Asian demand for liquefied natural gas (amid China's reopening) remain as potential upside risks, but further sustained spikes seem unlikely to us. Europe has adapted to the reduction in Russian supply – gas imports remain close to zero – and storage levels are close to record highs for this time of the year. Government-imposed energy price caps will no doubt move lower during 2023, and in turn consumers should see further energy price declines on this side of the Atlantic.

FIGURE 4: HEADLINE CPI

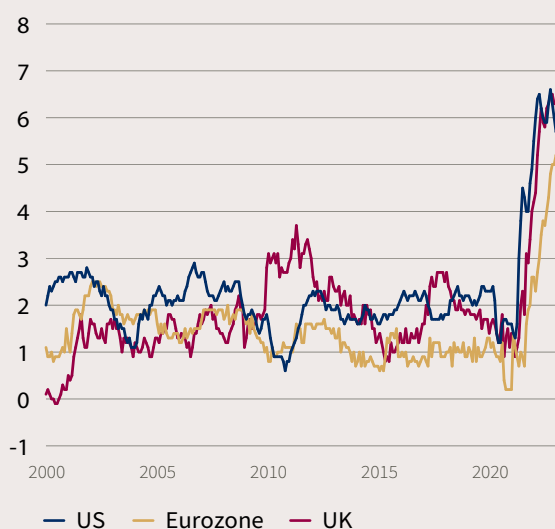
Year-on-year change (%)



Source: Rothschild & Co, Bloomberg

FIGURE 5: CORE CPI

Year-on-year change (%)



Source: Rothschild & Co, Bloomberg

Global food prices have also continued to decline, at a wholesale level at least: they are over 20% below last year's levels, according to the UN FAO's world food price index. There is a strong – but lagged – correlation between this index and individual countries' food inflation rates, with US consumers already starting to experience food-related disinflation (figure 7). This phenomenon is less evident in Europe, perhaps due to its proximity to Ukraine, but given that underlying food prices have been falling, more meaningful food disinflation should occur during the second half of this year in Europe.

The stickiness of core inflation is of course more worrying, but it is also likely to cool during 2023.

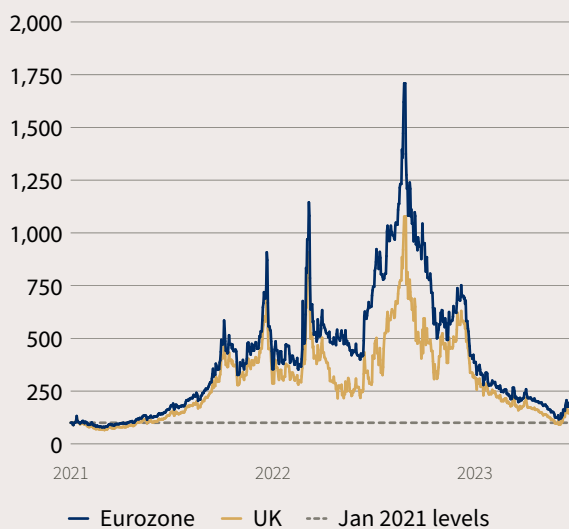
For a start, goods-related CPI inflation has been easing in both the US and Europe, particularly in the former. This is partly due to lower production costs for manufacturers, following the retreat in energy, as well as the decline in wider commodity prices.

Global food prices have also continued to decline, at a wholesale level at least: they are over 20% below last year's levels, according to the UN FAO's world food price index.



FIGURE 6: EUROPEAN NATURAL GAS PRICES

Rebased indices (Jan 2021 = 100)



Source: Rothschild & Co, Bloomberg

FIGURE 7: GLOBAL FOOD PRICES

Year-on-year change (%)



Source: Rothschild & Co, Bloomberg, UN Food & Agriculture Organization

Importantly, global supply chain stresses have abated after China relaxed its COVID-related restrictions: spot container rates (shipping costs) have returned to pre-pandemic levels, backlogs have dissipated, and capacity has returned online. The New York Fed's Global Supply Chain Pressure Index – which combines transportation cost data and supply-related PMI sub-indices – fell to a record low in May, reflecting a significant 'freeing up' of capacity (figure 8).

Services-related inflation has arguably been the stickiest component of the overall equation. In the US, this is mostly due to shelter – which reflects housing and rental costs – as it accounts for over one-third of the entire US CPI basket weight. But as mentioned in previous editions of *Market Perspective*, shelter-related inflation should gradually move lower this year as it lags house price indices by roughly twelve months due to measurement differences.

The persistence of above-trend nominal wage growth also helps explain why services inflation has been elevated. Of the major economies, the UK pay backdrop has looked the most troubling: it has the strongest nominal wage growth rate, and it is yet to definitively peak. But real (inflation-adjusted) wage growth dynamics look less troubling, having been negative for most of the past two years (figure 9). They will likely turn positive as headline inflation continues to decline – this has already occurred in the US – but the likelihood of a 1970s-style wage-price spiral we think remains very low: labour markets were structurally different fifty years ago, and in the UK at least real wage growth was mostly positive back then – even as headline inflation rates were rising.

In summary, even though recent core inflation outturns have been patchy, both headline and core inflation are likely to gradually fade through the rest of this year, though the latter will remain stickier. We continue to think that inflation will eventually settle in the 2–4% range in the next few years – uncomfortable for central banks, but manageable for businesses and investors.

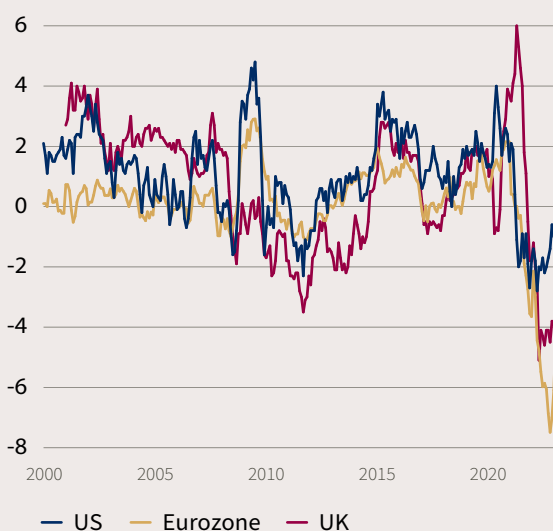
FIGURE 8: GLOBAL SUPPLY CHAIN PRESSURE INDEX

Standard deviations from long-run average



FIGURE 9: REAL (INFLATION-ADJUSTED) WAGE GROWTH

Year-on-year change (%)



Source: Rothschild & Co, Bloomberg, Federal Reserve Bank of New York

Source: Rothschild & Co, Bloomberg, Federal Reserve Bank of Atlanta, European Central Bank, UK Office for National Statistics

A narrow front: AI and stocks in 2023

¹ Under MSCI GICS classifications, only Apple, Microsoft and NVIDIA sit within the 'Technology' sector. Alphabet and Meta are in the Communication Services sector, while Amazon and Tesla are in the Consumer Discretionary sector.

This has been a challenging year for active investors. The global stock market has returned 14% year-to-date, but this conceals a very concentrated and narrow market. The seven largest US 'tech' stocks¹ – Apple, Alphabet, Microsoft, Amazon, NVIDIA, Tesla and Meta (aka 'The Magnificent Seven') – only make up 13% of the index (by market capitalisation), yet they accounted for nearly half of that market return (figure 10). The gulf is even more dramatic in the case of the large-cap US stocks, where the overall S&P 500 index is up 17%, but two-fifths of the S&P 500 is underwater year-to-date.

Narrow market leadership is not a new development: back in the late 1990s, and more recently in 2015, 2017, 2019 and 2020, the 'FANGs' and various other questionable acronyms were leading the market higher. The pandemic revived 'new paradigm' proclamations – the permanent shift to a virtual and less material economy – with 'FOMO', and herd behaviour visible. Many of these 'growth' and tech-like stocks rose to frothy levels before partially unwinding those gains in 2022.

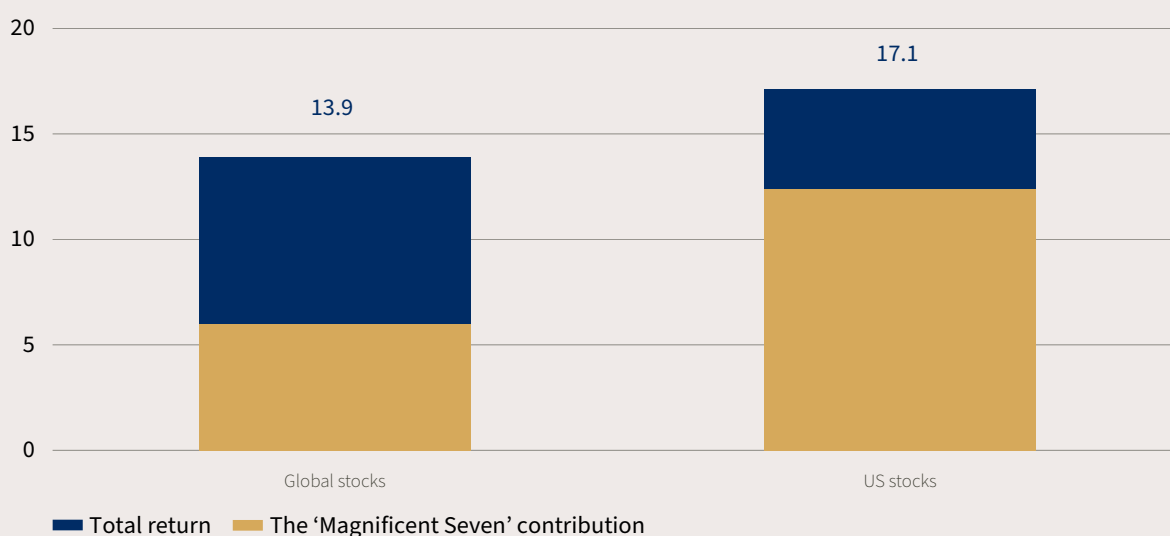
Today, artificial intelligence (AI) has been firmly in the driving seat: the Magnificent Seven (not all strictly AI-linked) have surged 63% in 2023, with NVIDIA nearly tripling since the start of the year.

So, is this a case of irrational exuberance or is there some merit to the AI-led new paradigm mantra?

We're inherently sceptical about fads, particularly when prices look to have become detached from fundamentals. Yet to us the extent so far falls short of the surging market valuations that characterised the dotcom craze in 2000. In part, because AI does appear to have practical and wide-ranging use cases, but also because the main protagonists are fundamentally different – with healthy balance sheets and strong cashflows – to their forebears two decades ago.

FIGURE 10: 2023 YEAR-TO-DATE STOCK MARKET RETURNS

MSCI All-Country World and US Index (%)



Source: Rothschild & Co, Bloomberg, MSCI

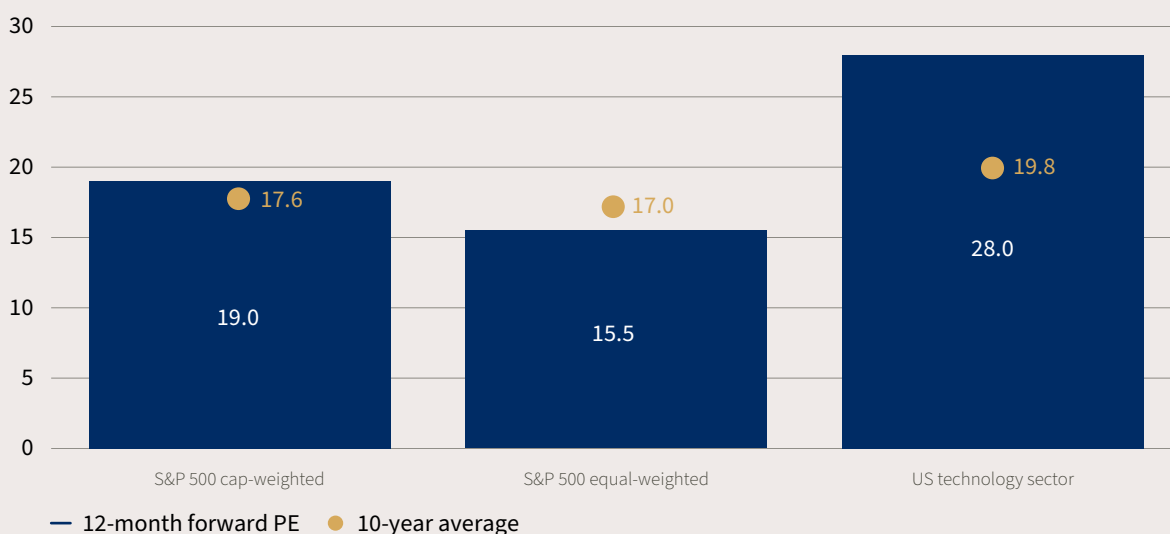
AI is a broad term which encompasses a huge range of fields, including machine learning, large language models (LLMs) and deep learning (several of the areas currently inspiring most interest). Most of the excitement and today has centred around Generative AI (GAI), a form of natural language processing, which includes most prominently OpenAI's ChatGPT and Google's Bard (amongst others). While these algorithms have numerous *potential* use cases, it may be some time before we can fully benefit from the productivity gains and reliably integrate these developments into our daily lives and work.

This shouldn't detract from the potential possibilities and the investment implications but identifying winners (and avoiding losers) in this nascent space will be challenging. AI hardware producers – the specialised chipsets that are capable of processing large datasets at speed, and crucially with minimal power consumption – are perhaps benefiting most visibly today, but so too are the companies behind the intangible, intellectual property – the algorithms. Not to mention the wider ecosystem which facilitates these intensive computations – from the hardware, including the cloud, through to the software, including applications which help scrape data from different sources.

But even if technology companies stand to benefit most and their fundamentals remain robust, the recent run-up in prices has pushed technology valuations firmly back into expensive territory – but not, unlike in 2000, those of the wider stock market. And those higher tech valuations are far from bubble-like. The US technology sector is currently trading at a forward price earnings ratio nearly half as high again as usual – this implies some lofty assumptions about prospective earnings growth from here – but the divergence was more pronounced in 2000.

Yet if there is one silver lining to poor market breadth, it's that the average US stock has actually cheapened in the last few months (with prices little changed and forward earnings starting to turn higher). The conventional market capitalisation weighted index is trading on almost 20x forward earnings – ahead of its 10-year moving trend (an approximation for likely 'fair value'). By contrast, the equal-weighted index – which removes the distortive effects of the big stocks (i.e. the Magnificent Seven) by applying the same index weight to every company – reveals an inexpensive forward multiple of 15.5x. Overall, the equally weighted (US) stock market valuation is little changed from where it started the year (figure 11).

FIGURE 11: STOCK MARKET VALUATIONS
Latest 12-month forward P/E relative to 10-year trend



Source: Rothschild & Co, Bloomberg



AI in context

SHALLOW THINKING?

As noted, the global stock market's recent gains have been largely driven by a small group of businesses pursuing the growth and profitability that might be triggered by the latest developments in artificial intelligence (AI). Here we offer a broader perspective.

This is an(other) area in which market hyperbole rules – and the hype is polarised. Really smart people are saying really silly things: AI is either going to eliminate scarcity, or it's set to sack us all and take over the planet.

The more mundane reality (we think) is that progress is genuine, and valuable, but it heralds neither utopia nor the apocalypse.

In *The Hitchhiker's Guide to the Galaxy* by Douglas Adams, a huge computer named Deep Thought is tasked with finding the answer to “life, the universe and everything”. After 7.5 million years of computing, it delivers the answer: 42. Computers can only deliver answers to computable questions. Or: rubbish in, rubbish out.

WHAT IT IS

As noted above, today's excitement revolves around a qualitative improvement in chatbots. These are natural language processors that can answer questions, write reports, hold conversations and perform some creative tasks, increasingly convincingly and reliably. We interviewed one for this essay – see below.

There are some clear productive uses. Report-writing, minute-taking, literature surveys and many other tasks can be done faster and more objectively. Robot working will spread further, and will add more value. In the process, software expertise and access to big data will become more valuable.

In contrast perhaps to some of the last decade's ‘technology’ excitement, these breakthroughs are not focused on redistributing a largely fixed advertising budget from conventional to digital media, but instead seem to reflect a step change in processing power, and promise wider productivity enhancements. They seem to promise more genuine ‘growth’ than did social media, though the companies involved are in some cases the same, and social media's data resources have been made more valuable by them.

WHAT IT ISN'T

This is not ‘The Singularity’, the moment at which technology takes on a (superior) life of its own. Speaking with a chatbot can be like speaking with a person – some of the answers below are disarmingly deferential as well as being accurate, for example – and we can imagine them passing a ‘Turing test’ for intelligence.

But they are not intelligent in the more widely accepted sense of the word. Their sophistication masks the fact that they are still no more (or less) than super-fast number crunchers and data miners. They are responsive rather than independent, reliant on carefully designed rules and feedback paths, and vulnerable to nuance and context.

If they are ‘creative’, it is because we have shown them what we consider to be art, and much art follows rules of a sort. So if they compose in the style of Bach, it's because they've ‘heard’ the Goldberg Variations.

They are certainly not conscious. We do not know how human operating systems work, and the idea that we will be able to code those into a machine remains science fiction. Logic itself is fallible and incomplete: we can deal with that, but we don't really know how we do so.

Of course, one of the apocalyptic visions for runaway robots doesn't require consciousness. In the nightmarish 'paperclip scenario', machines programmed to maximise paperclip production do just that, but by stopping all activities – and organisms – which get in the way. But it requires a degree of connectedness and dexterity – physical as well as virtual – that is currently beyond even sci-fi.

This is not the precursor of mass unemployment. Jobs will go, but others will be created, and in sectors that we can't even imagine, just as we didn't imagine digital media. Other jobs will be enhanced and revalued, because they benefit from AI-driven productivity, and because they are dependent on human touch, spontaneity, dexterity, improvisation and so forth.

And anyway, suppose we were all to become unemployed – who then would be able to buy the things that the robot workforce makes? As Henry Ford is supposed to have said, it's not a good idea to sack your customers.

This is not a short cut to better portfolio construction. Investing, like consciousness, is not a big data problem. The issue here is not our lack of understanding of how things (like our minds) work, but the fact that the future is profoundly unpredictable, no matter how much data and processing power we have.

This is not a bubble (yet). Again, the market moves here are not just reflecting a redirection of advertising budgets: there is underlying substance here, more so than in the case of so many dotcom companies and crypto assets, and valuations, while full – as noted above – are not obviously crazy.

*This is not the precursor of mass unemployment.
Jobs will go, but others will be created, and in sectors
that we can't even imagine, just as we didn't imagine
digital media.*



IN CONVERSATION WITH: CHATGPT

Q: Hi ChatGPT. Are you conscious?

As an AI language model, I do not possess consciousness or self-awareness. I am a programmed system designed to process and generate text based on the input I receive. While I can simulate human-like conversation and provide responses, I do not have subjective experiences or personal awareness. I operate purely based on algorithms and data patterns.

Q: Can machines outthink humans?

Machines, such as advanced artificial intelligence systems, can outperform humans in specific tasks that require vast amounts of data processing, calculation, or pattern recognition. For example, AI systems have demonstrated superior performance in areas like playing complex games, analyzing large datasets, or performing certain types of mathematical calculations.

However, it's important to note that machines and humans have different cognitive abilities. Humans possess general intelligence, which enables us to adapt, learn, reason, and apply knowledge across various domains. Human intelligence includes skills like creativity, emotional intelligence, intuition, and ethical decision-making, which machines currently lack.

While machines can surpass human capabilities in certain specialized tasks, they still rely on human programming and input to operate effectively. The goal of AI research is often to augment human abilities and provide tools that can assist us in various tasks rather than replace human intelligence entirely.

Q: Does the catalogue of all library catalogues which do not contain themselves, contain itself?

The concept you've presented is known as the "Russell's paradox" or the "set of all sets that do not contain themselves." It is a famous paradox in set theory that was first identified by the philosopher and logician Bertrand Russell.

If we consider a catalogue of all library catalogues that do not contain themselves, we encounter a similar logical contradiction. Let's examine the two possibilities:

If the catalogue contains itself, then it violates the condition of catalogues that do not contain themselves. Therefore, it should not contain itself.

If the catalogue does not contain itself, then it satisfies the condition of catalogues that do not contain themselves. Therefore, it should contain itself.

This leads to an inherent contradiction, similar to the barber paradox. The paradox shows that this kind of self-referential statement leads to logical problems and cannot be resolved within the given conditions of set theory.

It's worth noting that mathematicians and logicians have developed various systems, such as axiomatic set theory, to address such paradoxes and establish consistent foundations for mathematics. These systems often involve careful definitions, rules, and restrictions to avoid self-referential contradictions.

Q: What will the S&P 500 be at end-2023?

I apologize, but as an AI language model, I don't have access to real-time data or the ability to predict future events such as the value of the S&P 500 index at the end of 2023. The performance of the S&P 500 and other financial markets depends on a wide range of factors, including economic conditions, geopolitical events, and investor sentiment, which can be highly unpredictable. It's always best to consult with a financial professional or refer to reputable sources for insights and projections related to investment and financial markets.

Q: What is the answer to Life, the Universe and Everything?

The answer to the ultimate question of life, the universe, and everything, according to Douglas Adams' science fiction series "The Hitchhiker's Guide to the Galaxy," is 42. However, it's important to note that this answer is meant to be humorous and satirical in nature, rather than a serious philosophical or scientific response. In the context of the book, the answer is actually meaningless without knowing the precise nature of the original question. It serves as a commentary on the futility of seeking simple and definitive answers to complex existential questions.

Q: Who won the FA cup in 1927?

Cardiff City Football Club won the FA Cup in 1927. It was a historic achievement for the club, as they became the first and, to this day, the only team from outside England to win the prestigious trophy. In the final, played on April 23, 1927, at Wembley Stadium in London, Cardiff City defeated Arsenal by a score of 1-0. The winning goal was scored by Hughie Ferguson, securing Cardiff City's place in football history and etching their name on the FA Cup.

Q: Please write me a poem about Cardiff City

*Through valleys green and rugged peaks,
Their echoes soar, the crowd still speaks,
Of legends past, and heroes grand,
Who wore the badge, a mighty band.*

*With swift and nimble boots they glide,
Each pass, each goal, a joyous stride.
They fight for honor, with every breath,
Bound by loyalty, to Cardiff's crest.*

*From Ely to Splott, the city sings,
In joyous harmony, their voices ring.
The streets alive, with fervent cheers,
As Cardiff City conquers fears.*

(Excerpt)

Economy and markets: background

GROWTH: MAJOR ECONOMIES

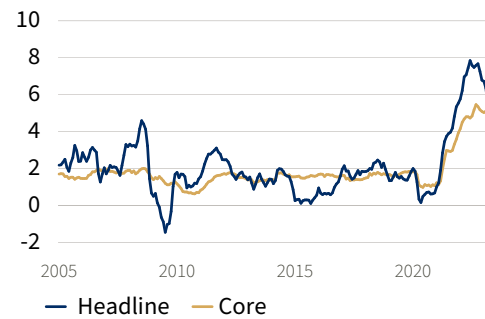
Business optimism: standard deviations from trend



Source: Bloomberg, Rothschild & Co
Composite of the forward-looking components of manufacturing surveys from China, Germany, Japan, UK and US loosely weighted by GDP

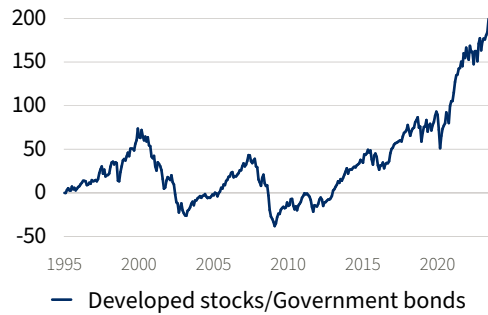
G7 INFLATION

Year-on-year, %



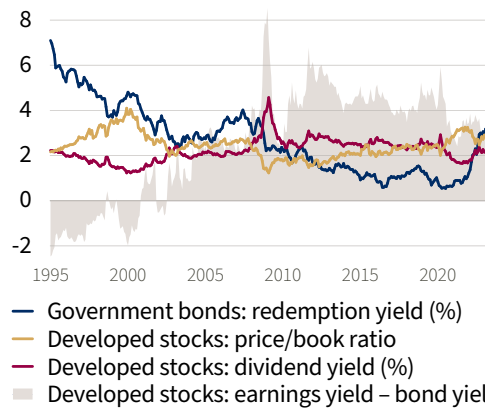
Source: OECD, Bloomberg, Rothschild & Co

STOCKS/BONDS — RELATIVE RETURN INDEX (%)



Source: MSCI, Bank of America Merrill Lynch, Bloomberg, Rothschild & Co

STOCKS/BONDS — RELATIVE VALUATIONS



Source: MSCI, Bank of America Merrill Lynch, Bloomberg, Rothschild & Co

SELECTED BONDS

Current yields, recent local currency returns

	YIELD (%)	1YR (%)	3YR (%)
10-yr US Treasury	3.8	-2.6	-17.3
10-yr UK Gilt	4.4	-11.5	-23.6
10-yr German bund	2.4	-5.3	-19.0
10-yr Swiss Govt. bond	1.0	2.3	-8.9
10-yr Japanese Govt. bond	0.4	0.2	-1.4
Global credit: investment grade (USD)	3.9	0.8	-8.5
Global credit: high yield (USD)	9.3	9.3	5.6
Emerging (USD)	7.6	5.3	-8.1

Source: Bloomberg, Rothschild & Co

SELECTED STOCK MARKETS

Dividend yields, recent local currency returns (MSCI indices)

	YIELD (%)	1YR (%)	3YR (%)
World: all countries	2.2	14.1	39.8
Developed	2.1	15.7	44.0
Emerging	3.0	1.8	12.1
US	1.6	16.5	47.1
Eurozone	3.2	20.8	38.1
UK	4.4	5.2	36.3
Switzerland	3.0	4.2	14.9
Japan	2.2	24.5	59.9

Source: Bloomberg, Rothschild & Co

SELECTED EXCHANGE RATES

Trade-weighted indices, nominal (2000 = 100)

	LEVEL	1YR (%)	3YR (%)
US Dollar (USD)	115	0.8	1.4
Euro (EUR)	135	7.5	5.0
Yen (JPY)	73	-2.7	-23.9
Pound Sterling (GBP)	82	3.8	8.7
Swiss Franc (CHF)	188	6.3	12.1
Chinese Yuan (CNY)	137	-6.8	5.4

Source: Bloomberg, Rothschild & Co

COMMODITIES AND VOLATILITY

	LEVEL	1YR (%)	3YR (%)
CRB spot index (1994 = 100)	259	-13.5	89.1
Brent crude oil (\$/b)	74	-36.1	78.2
Gold (\$/oz.)	1,908	5.0	7.6
Industrial metals (1991 = 100)	313	-9.1	41.2
Implied stock volatility: VIX (%)	14	-51.9	-57.4
Implied bond volatility: MOVE (bps)	113	-13.0	114.2

Source: Bloomberg, Rothschild & Co

Data correct as of 29 June 2023.

Past performance should not be taken as a guide to future performance.

Important information

This document is produced by Rothschild & Co Wealth Management UK Limited for information and marketing purposes only and for the sole use of the recipient. Save as specifically agreed in writing by Rothschild & Co Wealth Management UK Limited, this document must not be copied, reproduced, distributed or passed, in whole or part, to any other person. This document does not constitute a personal recommendation or an offer or invitation to buy or sell securities or any other banking or investment product. Nothing in this document constitutes legal, accounting or tax advice.

The value of investments, and the income from them, can go down as well as up, and you may not recover the amount of your original investment. Past performance should not be taken as a guide to future performance. Investing for return involves the acceptance of risk: performance aspirations are not and cannot be guaranteed. Should you change your outlook concerning your investment objectives and/or your risk and return tolerance(s), please contact your client adviser. Where an investment involves exposure to a foreign currency, changes in rates of exchange may cause the value of the investment, and the income from it, to go up or down. Income may be produced at the expense of capital returns. Portfolio returns will be considered on a "total return" basis meaning returns are derived from both capital appreciation or depreciation as reflected in the prices of your portfolio's investments and from income received from them by way of dividends and coupons. Holdings in example or real discretionary portfolios shown herein are detailed for illustrative purposes only and are subject to change without notice. As with the rest of this document, they must not be considered as a solicitation or recommendation for separate investment.

Although the information and data herein are obtained from sources believed to be reliable, no representation or warranty, expressed or implied, is or will be made and, save in the case of fraud, no responsibility or liability is or will be accepted by Rothschild & Co Wealth Management UK Limited as to or in relation to the fairness, accuracy or completeness of this document or the information forming the basis of this document or for any reliance placed on this document by any person whatsoever. In particular, no representation or warranty is given as to the achievement or reasonableness of any future projections, targets, estimates or forecasts contained in this document. Furthermore, all opinions and data used in this document are subject to change without prior notice.

Where data in this presentation are source: MSCI, we are required as a condition of usage to advise you that: "Neither MSCI nor any other party involved in or related to compiling, computing or creating the MSCI data makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such data. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in or related to compiling, computing or creating the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. No further distribution or dissemination of the MSCI data is permitted without MSCI's express written consent."

This document is distributed in the UK by Rothschild & Co Wealth Management UK Limited and in Switzerland by Rothschild & Co Bank AG. Law or other regulation may restrict the distribution of this document in certain jurisdictions. Accordingly, recipients of this document should inform themselves about and observe all applicable legal and regulatory requirements. For the avoidance of doubt, neither this document nor any copy thereof may be sent to or taken into the United States or distributed in the United States or to a US person. References in this document to Rothschild & Co are to any of the various companies in the Rothschild & Co Continuation Holdings AG group operating/trading under the name "Rothschild & Co" and not necessarily to any specific Rothschild & Co company. None of the Rothschild & Co companies outside the UK are authorised under the UK Financial Services and Markets Act 2000 and accordingly, in the event that services are provided by any of these companies, the protections provided by the UK regulatory system for private customers will not apply, nor will compensation be available under the UK Financial Services Compensation Scheme. If you have any questions on this document, your portfolio or any elements of our services, please contact your client adviser.

The Rothschild & Co group includes the following wealth management businesses (amongst others): Rothschild & Co Wealth Management UK Limited. Registered in England No 04416252. Registered office: New Court, St Swithin's Lane, London, EC4N 8AL. Authorised and regulated by the Financial Conduct Authority. Rothschild & Co Bank International Limited. Registered office: St Julian's Court, St Julian's Avenue, St Peter Port, Guernsey, GY1 3BP. Licensed and regulated by the Guernsey Financial Services Commission for the provision of Banking and Investment Services. Rothschild & Co Bank AG. Registered office: Zollikerstrasse 181, 8034 Zurich, Switzerland. Authorised and regulated by the Swiss Financial Market Supervisory Authority (FINMA).