LIONTRUST
COURAGE · POWER · PRIDE

THE FUTURE STRATEGIST

GLOBAL EQUITIES | NEWSLETTER | Q2 2024

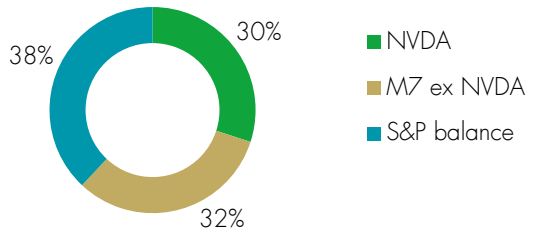
IN THIS ISSUE

H1 2024 COMMENT

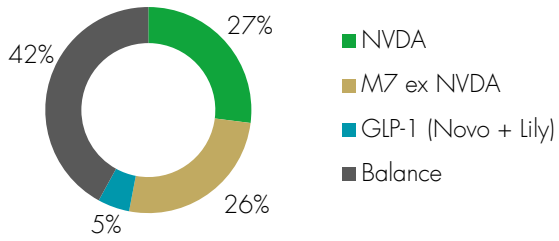
MARK HAWTIN

The first half of 2024 was marked by continued mega cap momentum with the AI hardware (semiconductor-centric) bandwagon maintaining full speed. The S&P 500 index was up 15.3% in the first half of 2024 and the MSCI World All Country index rose by +11.6%. The Magnificent 7 names led by Nvidia contributed over 50% of performance for both of these leading indices. Nvidia led the way with a stunning 150% gain over the period. All members of the Magnificent 7 made significant contributions apart from Tesla, which was in fact the worst contributor to both indices. Tesla fell 20% in the first half as concerns mounted over competitive pressures in the electric vehicle (EV) world.

S&P 500 H1 return



MSCI All Country H1 return



Source: Bloomberg. Past performance does not predict future returns.

The driving force behind almost all the index performance was AI as a theme. This can be broken into two parts – infrastructure and inference use cases. The infrastructure build for LLMs (Large Language Models) is dominated in headline and stock price performance by Nvidia but many other semiconductor companies and supporting data centre build beneficiaries also registered strong returns.

Outside this theme, the rest of the market was dominated by macro and geopolitical news flow. Expectations of lower interest rates later in the year seem to be well recognised now and the trajectory of growth is set to be the dominant macro. As a result, and with the consumer coming under increasing pressure, consumer plays struggled. In more granular industry segments of the S&P, the bottom 10 segments, mainly consumer related, fell

between 15% (Auto Manufacture) and 54% (Drug Retail – a Walgreens profit warning). There were plenty of consumer-based concerns and we would expect this to continue into the second half of the year. Sentiment is running in the polar opposite direction from AI! Lululemon saw earnings upgrades during the quarter but it couldn't escape a savage -42% move in the first half.

These two broad themes will continue to dominate the landscape in the second half – the surge in AI and the macro backdrop; long disruption versus short the consumer seems set to continue.

The AI conundrum – build and they will come….maybe?

MARK HAWTIN

In December 2001, Michael J Cooper published an article entitled *A Rose by Any Other Name* in the University of Utah Journal of Finance that showed a strong correlation between companies that added the .com or .net ending to their corporate name or added the word internet! They found that on average these companies added 53% to their share price for the first five days post announcement. Manias and bubbles are not new, nor are the efforts that are often made by companies to ensure they are seen in the brightest light as a new, exciting technology emerges.

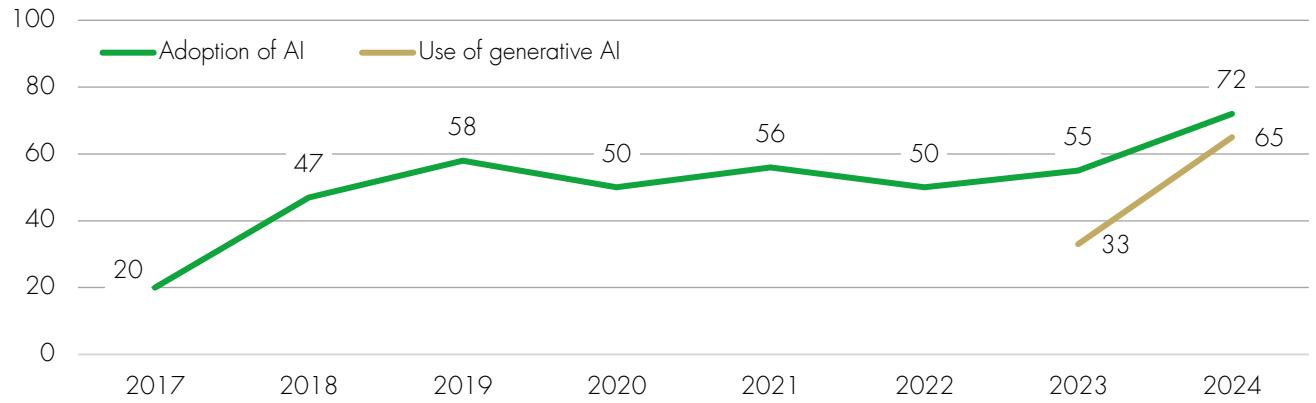
Since the third quarter of 2022 and the launch of ChatGPT, AI has been the exciting new technology lighting the touchpaper on a new wave of disruptive excitement. If corporate earnings calls are anything to go by, then AI is in full-on hype mode. According to FactSet, almost half of all S&P 500 companies mentioned AI on their first quarter 2024 earnings calls, well up from the 10-year average of 50. The biggest spenders on AI hardware have become evangelical – Meta mentioned AI 95 times on their call, Nvidia 86 times and Microsoft 74 times.

What has really changed? In 2017, Accenture published a report on AI saying that it would add $14 trillion to economic activity. A 2015 research paper by PNAS showed that it took only 200 likes for Facebook to know you better than you know yourself on certain criteria – that is 10 years ago.

Use of AI is not new but what seems to have changed is the perception. There is a perception that it will dramatically change our lives in untold ways and at speed. General AI tools like ChatGPT and DALL-E 3 make the vision clear for everyone in a way that was not clear pre the GPT public launch although many developers will say they had been using these tools for years already. Being able to create human-like text, images from text and even music evokes excitement and emotion. The chart below from McKinsey shows the sharp increase in adoption caused by the GPT launch after years of little progress.

AI adoption worldwide has increased dramatically in the past year, after years of little meaningful change

Organisations that have adopted AI in at least one business function,[1] % of respondents



Source: McKinsey Global Survey on AI, 1,363 participants at all levels of the organization, 22 February – 5 March 2024.
1. In 2017, the definition for AI adoption was using AI in a core part of the organization's business or at scale. In 2018 and 2019, the definition was embedding at least one AI capability in business processes or products. Since 2020, the definition has been that the organisation has adopted AI in at least one function.

However, revenue generating use cases are more steady to build. ChatGPT was forecast to have 77.2 million subscribers in June 2024 and 3.9 million paid users (a US market forecast by BackLinko). At $20 per user per month this is just $1 billion in recurring revenue.

Compare the revenue from use cases to the investment in AI infrastructure and the equation just does not balance up. IDC forecasts that infrastructure investment was $154 billion in 2023 and that it will rise to $300 billion in 2026. Much of this is spent on data centre chipsets and Nvidia GPUs in particular. Jensen Huang, Nvidia's ebullient CEO, forecasts a total $1 trillion data centre investment wave in short order. Could this be a re-run of the fibre overbuild in 1999/2000 that left many operators facing bankruptcy or is it really a case of 'This time it's different' (incidentally, quoted by John Templeton as the four most dangerous words in investing)? We just don't know but it is highly likely that the current trajectory in investment is unsustainable. Over 50% of Nvidia chipsets are being purchased by hyper-scalers, companies with huge cash piles that can afford to take the risk. However, this is making them look more like capital intensive smoke stack factory operators than the more traditional capex-lite software models that investors are used to.

Capex/Sales	2015	2024 Estimated
Meta	14.0%	23%
Microsoft	6.4%	18%
Amazon	5.0%	10%
Alphabet	13.3%	16%
Nvidia	1.7%	1%
US Steel	4.0%	11%
Exxon Mobil	11.2%	7%

Source: Bloomberg; Company data. Past performance does not predict future returns.

The table above shows the capital expenditure to sales ratios in 2015 and 2024 expected. Meta in particular has driven capital intensity higher, spending an estimated 23% of sales for 2024, which is more than either US Steel or Exxon Mobil by a factor of two to three times!! All the mega-scalers have increased their capital intensity substantially over the last 10 years, and the question will soon be asked: can they generate a sensible return on the additional invested capital?

The irony of this relationship is that mega-scalers are spending huge amounts on Nvidia chipsets – cash that earns Nvidia over-sized profits which is then multiplied many times in the eyes of investors when valuing Nvidia's shares. $1 billion spent by a mega-scaler with Nvidia becomes at the margin (70%), and at a 45x PE multiple, $31.5 billion of added market value to Nvidia's capitalisation. This monopoly has to come under pressure at some point – the buyers are working hard on alternatives, writing code to try and break the CUDA dominance and extending the life of the chipsets to reach a place where spend could fall meaningfully.

Hardware spending is not like recurring revenue streams. It is cyclical and at some point the insatiable demand for chipsets will abate. Already ChatGPT is seeing a waning of user interest – April 2024 saw two billion visits/month; this has fallen to 600 million most recently. Time will tell but we would rather find the big inference winners using the technology to permanently increase productivity or garner additional revenues than those continuing to pump out the bricks that build the factories.

AI's use in lie detection and sentiment analysis on earnings calls

DAVID GOODMAN

While it is well-recognised that earnings calls are a crucial way for companies to communicate financial performance and outlook to investors and analysts, it is equally acknowledged that the details provided are not always accurate. From trying to hide bad news and exaggerating the good to avoiding answering difficult questions, executives all too often obfuscate the truth, making it difficult for investors and analysts to get to the reality of a company's financial status. How can this be rectified?

One possible answer is the use of AI. By using techniques such as natural language processing (NLP) and sentiment analysis to scrutinise human language and behaviour, AI can uncover subliminal indications of confidence, or a lack of confidence, in a company's future performance.

What are NLP and sentiment analysis?

NLP uses complex algorithms to analyse human language to extract meaning, context and intent from text or speech. It performs tasks such as translation, summarisation, classification and natural language generation.

Sentiment analysis is a specific application of NLP that measures the positivity or negativity of text or prose to understand the hidden emotions behind the words. It can also detect other aspects of sentiment, such as polarity, intensity, subjectivity and tone.

By using a combination of NLP and sentiment analysis technologies, investors are analysing earnings calls via text or audio at scale to detect a variety of elements which may suggest the following.

NLP analysis:

- Indirect answers to questions = evasion or uncertainty.
- Exuberant words = overconfidence or exaggeration.
- The use of fillers such as "um" or "uh" = hesitation or nervousness.
- Qualifying statements such as "to the best of my knowledge" or "as far as I know" = doubt or lack of commitment.

Sentiment analysis:

- By analysing different speakers, such as the CEO and the CFO, the software can identify discrepancies or inconsistencies.
- Assessing the same speaker over time to identify changes or trends.

By using these techniques, it is possible for investors to gain a better insight into the true state of a company, helping them make more informed decisions.

An invaluable tool

One of the more notable players in the market so far is LiarLiar.ai, which employs a variety of techniques to detect lies, combining advanced AI with psychological insights. These include:

Micro Facial Expressions: The system analyses real-time video feeds to detect micro facial expressions that are often subconscious and can indicate deception.

Heart Rate Fluctuations: Using Remote Photoplethysmography, it monitors subtle colour changes in the face that correspond with heart rate fluctuations.

Body Language: It observes body language, including micromovements and gestures that may suggest dishonesty.

Voice Analysis: Monitors the voice for sudden shifts in tone and pitch, which can betray an individual's composure or reveal underlying stress.

Eye Movement Patterns: The tool monitors eye movements, such as decreased blinking or erratic gaze, which can be associated with lying.

Emotional Reader: Beyond detecting lies, it has an integrated feature that helps to understand the emotions the subject is trying to conceal.

There is no doubt LiarLiar.ai has the potential to be a valuable tool for investors by helping to verify statements and projections from management team earnings calls. By spotting inconsistencies, contradictions or signs of stress, LiarLiar can question the credibility of executives and help avoid costly mistakes.

Several companies and platforms have already been using AI for lie detection and sentiment analysis on earnings calls and have reported interesting findings and results. For example:

- In 2023, a leading research and advisory firm, Gartner, published a report that examined how investors used NLP and sentiment analysis to detect possible cases of deception on earnings calls. The report also provided guidance for finance leaders on how to adjust their investor messaging and earnings call delivery to effectively communicate corporate performance and avoid any negative consequences.

- A speech-to-text API provider, AssemblyAI, made a web app that provides sentiment analysis of earnings calls of companies that use their technology. It allows users to upload or stream audio files of earnings calls and generates a transcript with sentiment annotations for each sentence. It also provides a summary of the overall sentiment and the key topics discussed on the call.

As AI becomes more prevalent and sophisticated, companies are also becoming more aware and are preparing for the impact these technologies may have on their earnings calls. In a bid to brush up their act and not be caught off guard, companies are taking a number of approaches prior to earnings calls, including:

- Hiring consultants or coaches to help them improve their communication skills and delivery.

- Practicing their scripts and rehearsing their answers to potential questions.

- Using tools or software to analyse their own transcripts and audio files and identify areas of improvement or risk.

- Being more transparent and honest about their performance and outlook and providing clear and consistent explanations and evidence.

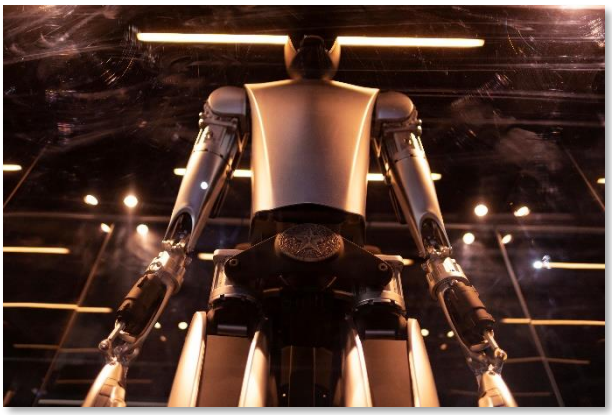
Going forward

AI is unquestionably changing the way we analyse financial information and will only become more sophisticated over time. The hope is that companies do more than try to outwit AI, and embrace the opportunity to enhance their credibility and trustworthiness by making better, more honest earnings calls. This in turn would enable analysts to make better recommendations for their clients and everyone else.

But one thing is for certain, AI is here to stay and we need to be ready for it.

Humanoid Robotics: The next leap forward?

KEVIN KRUCZYNSKI

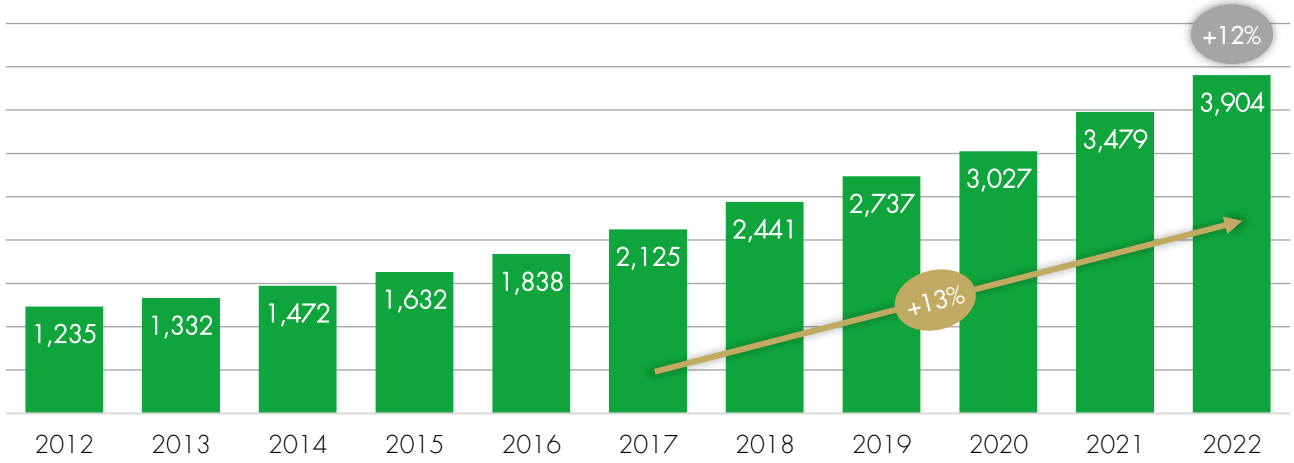


With the recent unveiling of Tesla's Optimus Gen 2, a prototype humanoid robot, the world of robotics has been thrust into the limelight yet again. But what does this mean for the future of robotics?

An overview of the Robotics market

Over the past decade, robotics has experienced remarkable growth across various sectors. Industrial robots, including six-axis robots used in car manufacturing, logistics robots in warehouses and specialized surgical robots in healthcare have become increasingly prevalent. The development of collaborative robots that can work safely alongside humans and advancements in AI have expanded the range of potential applications. Additionally, labour shortages and the reshoring of production have contributed to a surge in demand for robotic solutions.

Operational stock of industrial robots (World, 1,000 units)



Source: International Federation of Robotics.

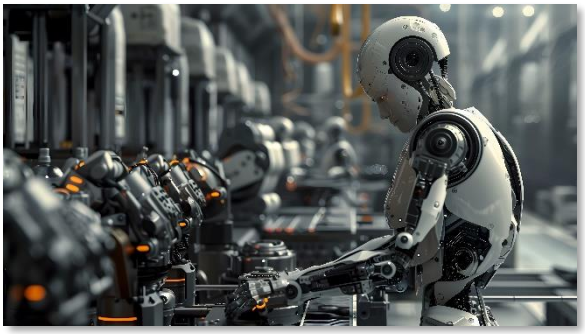
On the consumer front, we've witnessed the emergence of autonomous vacuum cleaners, lawnmowers and pool cleaners. These innovations share a common goal: automating repetitive tasks within stable environments.

Humanoid Robotics: the next frontier?

Moving beyond the existing applications, the next frontier in robotics centres around humanoid robots. While the concept has fascinated science fiction enthusiasts for years, their practical implementation and deployment have faced significant hurdles. Overcoming these challenges remains essential for realizing the full potential of humanoid robotics.

Challenges and opportunities

The development of humanoid robots still requires advancements across multiple fields, including AI, materials science and human-robot interaction. To mimic human mobility and interaction, sophisticated control systems, sensors and AI decision-making capabilities are needed. Energy efficiency, safety, ethical considerations and autonomy also present issues that need to be addressed. Despite challenges related to cost and scalability, ongoing research and improved production processes may eventually make humanoid robots more accessible.



Compared to industrial robots, humanoid robots offer distinct advantages. Their human-like design allows them to operate in human-built environments, use tools and interact naturally with people. Their versatility will make them significantly more useful than their industrial counterparts.

Applications for humanoid robots span various domains. In industry, they could work alongside humans on assembly lines, handle delicate objects or navigate tight spaces. In construction, agriculture and caregiving, their dexterity will be revolutionary. They could greet customers, answer queries, perform dangerous tasks, assist in education and even contribute to space missions in extreme environments. The potential addressable market is vast, and understandably there is a wide range of estimates of how far and how fast this can grow. To illustrate this disparity, Goldman Sachs estimates the market could be worth $38 billion by 2035, while Elon Musk sees this as a multi-trillion-dollar opportunity for Tesla.

What are the risks?

While humanoid robots hold significant promise, they also come with inherent risks. These include the potential for physical harm resulting from malfunction or misuse, job displacement leading to unemployment, ethical dilemmas in fields like healthcare or warfare, psychological discomfort due to their human-like appearance and privacy breaches resulting from hacking. Responsible development and thoughtful use can help manage and mitigate these risks.

Tesla's Optimus: a step forward

Despite these challenges, progress is being made, as seen with recent developments at Tesla. Although still in its initial stages, the Optimus Gen 2 represents a significant leap forward from the earlier prototype unveiled at Tesla's AI Day in September 2022. Equipped with advanced AI and autonomous systems, the Optimus can now learn and adapt to its environment, navigate through complex settings, handle delicate objects and even learn from and replicate human movements. The goal is to make each unit cost less than a family car, potentially below $20,000, and thus increasing accessibility. While widespread adoption is not immediate, and it is far too soon to try and quantify and factor in the multi-trillion-dollar addressable market being discussed, given the recent progress, envisioning the Optimus being refined and perfected on Tesla's production lines is not so far-fetched.

Overcoming the challenges and unlocking the opportunities related to humanoid robots may take decades, but their potential to revolutionize industries and enhance human lives is immense. Continued collaboration among robotics engineers, AI experts, material scientists and human-robot interaction specialists will bring us closer to an exciting future where robots seamlessly integrate into and enhance our daily lives.

Smartwatch: Your personal doctor on your wrist?

PIERAN MARU

The smartwatch industry has transformed significantly from its early days. Once used as an extension to your smartphone by providing notifications, basic activity tracking or to make a fashion statement, they have now pivoted heavily towards health fitness and wellness. This strategy has paid off well for Apple – not only has the Apple Watch become the bestselling smartwatch with estimates of a 60% smartwatch market share, but it has also achieved the feat of selling more watches annually than the entire traditional Swiss watch industry combined.

Today's smartwatches are equipped with an array of sensors and powerful chips that can collect and analyse large amounts of data to provide deeper insights. Some key features include:

Heart rate monitoring

Uses an optical heart sensor to routinely check for unusually high or low heart rates when the user is inactive for a certain period. It also monitors the variability in heartbeat intervals while at rest to detect any irregular rhythms. Furthermore, the optical heart rate sensor can estimate cardio fitness (VO_2 Max) in conjunction with the GPS, accelerometer, gyroscope and barometer. Algorithms measure the user's heart rate response to physical activity to estimate VO_2 Max.

Electrocardiogram (ECG app)

A single lead ECG that records the strength and timing of the heart's electrical signals when placing your finger on the watch crown to form a closed circuit. Although the smartwatch cannot make medical diagnoses, the results can assist in identifying potential anomalies, such as atrial fibrillation. This can serve as an early warning system, prompting users to seek medical attention for further analysis.

Fall detection and crash detection

Utilises an accelerometer and gyroscope to measure the change in body speed and orientation. If the user stays still following an event, the smartwatch will call emergency services and notify their emergency contacts. However, during its initial release, the crash detection feature experienced a higher than expected number of false positives, especially during activities like rollercoasters. Since then, the algorithms have been adjusted and are constantly being improved with more data.

Sleep quality

Harnesses accelerometer signals to identify the different stages of sleep: Deep, Core and Rapid Eye Movement (REM). This data helps the user understand and improve their sleep quality by analysing the lifestyle and environmental factors that affect it.

One innovative way smartwatches are being utilised is within the health and life insurance sector. For example, one firm lets customers collect points by tracking workout activity, which can be used towards discounts or rewards. This encourages their customers to have an active lifestyle, while also benefiting the insurance providers, who can learn more about their customers' health and lifestyle patterns to adjust risk levels and insurance premiums accordingly. Another area smartwatches have also been used is to assist in conducting medical research – reaching a wider audience in a more cost-effective way by using reliable user-owned devices. For instance, the pulse wave data of participants was used to develop and fine-tune algorithms to detect irregular heart rhythms. The study concluded that the chance of getting an irregular pulse notification was low, although users who did receive a notification had a high probability of being consistent with an irregular heart rhythm.

However, with all this technology comes Intellectual property rights. The US International Trade Commission (ITC) imposed an import ban at the end of last year on the Apple Watch series 9 and Ultra 2 due to a patent dispute with Masimo, a medical device maker. Masimo claimed that Apple infringed on its pulse oximetry sensor, which measures the blood oxygen level using an optical system with light emitters and sensors. Apple froze sales before the ban took effect, although a day later, a federal appeals court lifted the sales and import ban. Since the start of the year, Apple's latest watches on sale have omitted the blood oxygen feature – though patent litigation will likely take several years to settle.

Today's smartwatches cater to a growing demand for health-oriented wearables which can transform and improve the lives of their users by providing valuable data to help monitor and track their health while possibly detecting potential issues. Longer term, future versions are expected to even potentially offer a non-invasive approach to blood glucose monitoring. Whether users want to participate in the latest research study or simply be reminded to stand up and move, the smartwatch has them covered.

Disclaimer: Please note that smartwatches are generally not considered a medical device. The data and insights provided by smartwatches should not be used as a substitute for professional medical advice, diagnostic or care.

OUTLOOK

Markets have continued to grind higher as the path of least resistance remains up.

Equity investment flows remain geared to the passive flows and to the mega cap names making the rally more and more narrow. While the S&P 500 index was up 15.1% in the first half of 2024, the equal weighted S&P rose just 4.1%. The Russell 2000 rose an even smaller 1.7%. Outside mega caps, the contribution to performance is paltry. Globally, the picture is no different. The MSCI All Country index rose 11.6% in the first half with 80% of returns coming from the US - no wonder US investors, in particular, struggle to care a great deal about markets outside this geography.

With this in mind, we believe that risks have increased significantly for this very narrow part of the market. We see two possible outcomes in the second half of the year, both of which would likely see mega cap underperform. The first would be a retained Goldilocks scenario with interest rates starting to decline, inflation remaining in check, economies softening slightly but growth remaining – in this scenario, markets might well continue to move higher but like 2023, with a much broader participation. The second is that the landing is a lot more bumpy than feared and this leads to a growth slowdown not only at the macro level but also at the corporate level. This could lead to a significant pull back later in the year.

We weight each of these outcomes equally and believe positioning should be for a broader participation whether that be as markets continue to grind higher or because they pull back and the passive flows drive underperformance in the crowded, large cap names. There is a lot of value below the surface in markets and this will likely surface as either scenario plays out.

THE LIONTRUST GLOBAL EQUITIES TEAM

MARK HAWTIN

DAVID GOODMAN

KEVIN KRUCZYNSKI

PIERAN MARU

www.liontrust.co.uk/fund-managers/global-equities

For a comprehensive list of common financial words and terms, see our glossary at:
https://www.liontrust.co.uk/benefits-of-investing/guide-financial-words-terms

Key Risks

Past performance does not predict future returns. You may get back less than you originally invested.

We recommend any fund is held long term (minimum period of 5 years). We recommend that you hold funds as part of a diversified portfolio of investments.

All Liontrust Funds carry some degree of risk which may have an adverse effect on the future value of your investment. Therefore, before making an investment decision, you should familiarise yourself with the different types of specific risks associated with the investment portfolio of each of our Funds. There is no certainty the investment objectives of the portfolios or strategies mentioned in this document will actually be achieved and no warranty or representation is given, whether express or implied, to this effect.

The issue of units/shares in Liontrust Funds may be subject to an initial charge, which will have an impact on the realisable value of the investment, particularly in the short term. Investments should always be considered as long term.

Disclaimer

Non-UK individuals: This document is issued by Liontrust Europe S.A., a Luxembourg public limited company (société anonyme) incorporated on 14 October 2019 and authorised by and regulated as an investment firm in Luxembourg by the Commission de Surveillance du Secteur Financier ("CSSF") having its registered office at 18, Val Sainte Croix, L-1370 Luxembourg, Grand Duchy of Luxembourg and registered with the Luxembourg trade and companies register under number B.238295.

UK individuals: This document is issued by Liontrust Fund Partners LLP (2 Savoy Court, London WC2R 0EZ), authorised and regulated in the UK by the Financial Conduct Authority (FRN 518165) to undertake regulated investment business.

This is a marketing communication. This document is issued by Liontrust Fund Partners LLP (2 Savoy Court, London WC2R 0EZ), authorised and regulated in the UK by the Financial Conduct Authority (FRN 518165) to undertake regulated investment business.

It should not be construed as advice for investment in any product or security mentioned, an offer to buy or sell units/shares of any Funds or services mentioned, or a solicitation to purchase securities in any company or investment product. Examples of stocks are provided for general information only to demonstrate our investment philosophy.

The document contains information and analysis that is believed to be accurate at the time of publication, but is subject to change without notice. Whilst care has been taken in compiling the content of this document, no representation or warranty is given, whether express or implied, by Liontrust as to its accuracy or completeness, including for external sources (which may have been used) which have not been verified.

Information for Swiss Investors.

This is an advertising document. This is marketing information. Investment in investment funds is subject to market risks. Past performance results are no indication of future results. Especially performance results referring to a period of less than twelve months are no reliable indicator for future results due to the short comparison period. Issuance and redemption commissions are not included in the performance figures. The domicile of the Fund is Ireland. For interested parties, the Statues, the Prospectus, the Key Investor Information Document as well as the Annual Reports and, if applicable, the Semi-Annual Reports may be obtained free of charge from the Swiss Representative: ACOLIN Fund Services AG, Leutschenbachstrasse 50, CH-8050 Zurich, Switzerland and the Paying Agent: Banque Cantonale Vaudoise, Place St-François 14, CH-1003 Lausanne, Switzerland.

For Investors in Belgium

FOR PROFESSIONAL INVESTOR USE ONLY. NOT FOR USE WITH RETAIL INVESTORS

This Report is highly confidential and is only intended for qualified investors in the meaning of EU Regulation 2017/1129 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market. This Report has not been approved by the Belgian regulator, the Financial Services and Markets Authority (Autorité des Services et Marchés Financiers / Autoriteit voor Financiële Diensten en Markten).