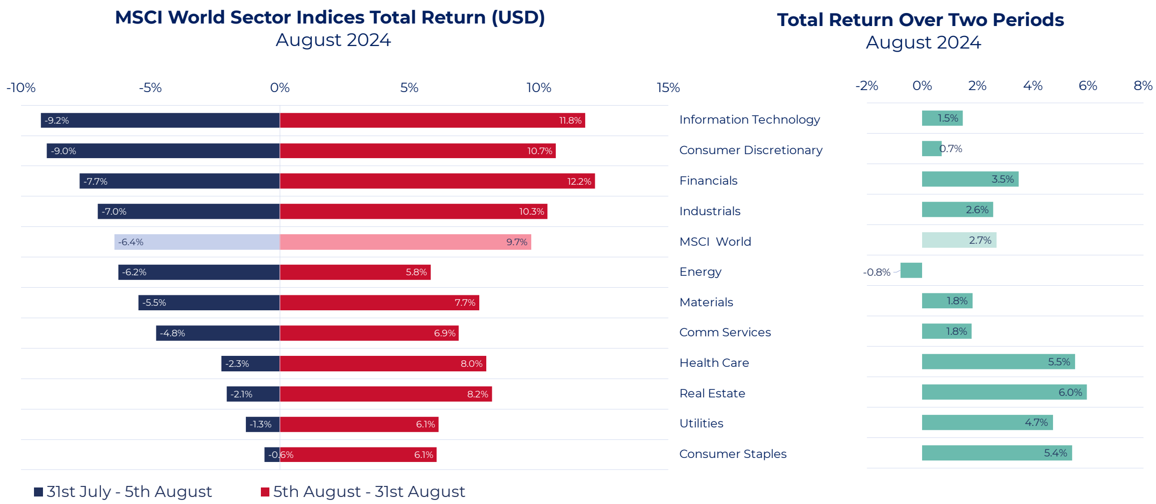
Guinness Atkinson
Global Innovators Fund
Managers Update – September 2024

Market Commentary

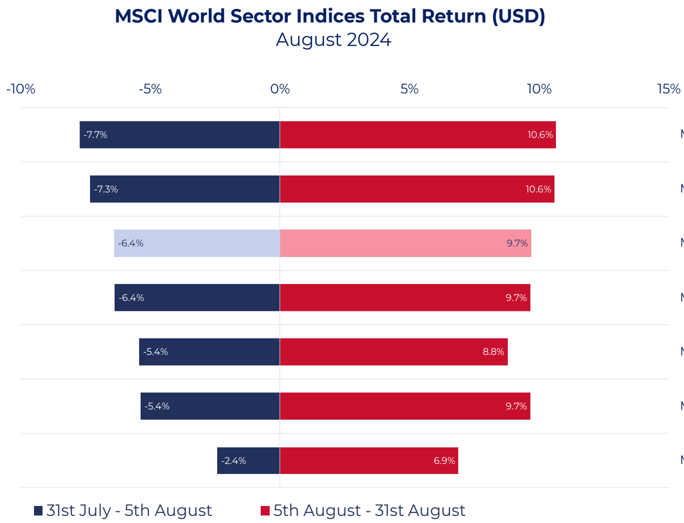
Equity Performance Over August

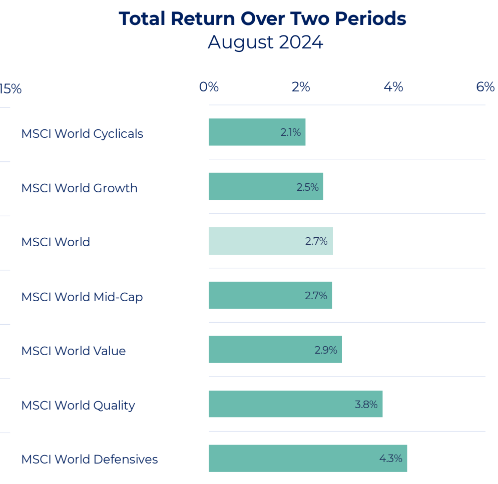
August was a volatile month for equity investors, with multiple market indices (including the MSCI World and the S&P 500) delivering both the best and worst days of 2024-to-date. The MSCI World fell 5.9% in the first three trading days, before regaining the entirety of these losses over the remainder of the month as markets regained confidence over the economic outlook. The sectors that led the sell-off (Information Technology, Consumer Discretionary, Financials and Industrials) were the sectors that subsequently performed best over the remainder of the month – although the rally was far more broad than the sell-off.



Source: Guinness Atkinson Asset Management, MSCI

From a factor perspective, 'Cyclicals' fell the hardest and gained the fastest over the two respective periods, with the reverse being true for 'Defensives'. As market concerns grew over the state of the economy, 'risk-off' sentiment drove a rotation towards less economically sensitive sectors, with the likes of Consumer Staples, Utilities and Health Care falling just low-single digits, compared to the more cyclically orientated sectors of IT and Consumer Discretionary, which both fell ~9%. The 'defensive' sectors also performed relatively well in the subsequent cyclically led rally, enough to ensure their outperformance vs the broader MSCI World index over the month of August as a whole. Following the volatility in the early stages of the month, investors were seemingly still nervous about rushing back into 'risk-on' sensitive assets, despite economic concerns appeasing somewhat. 'Quality' stocks performed well over both periods.



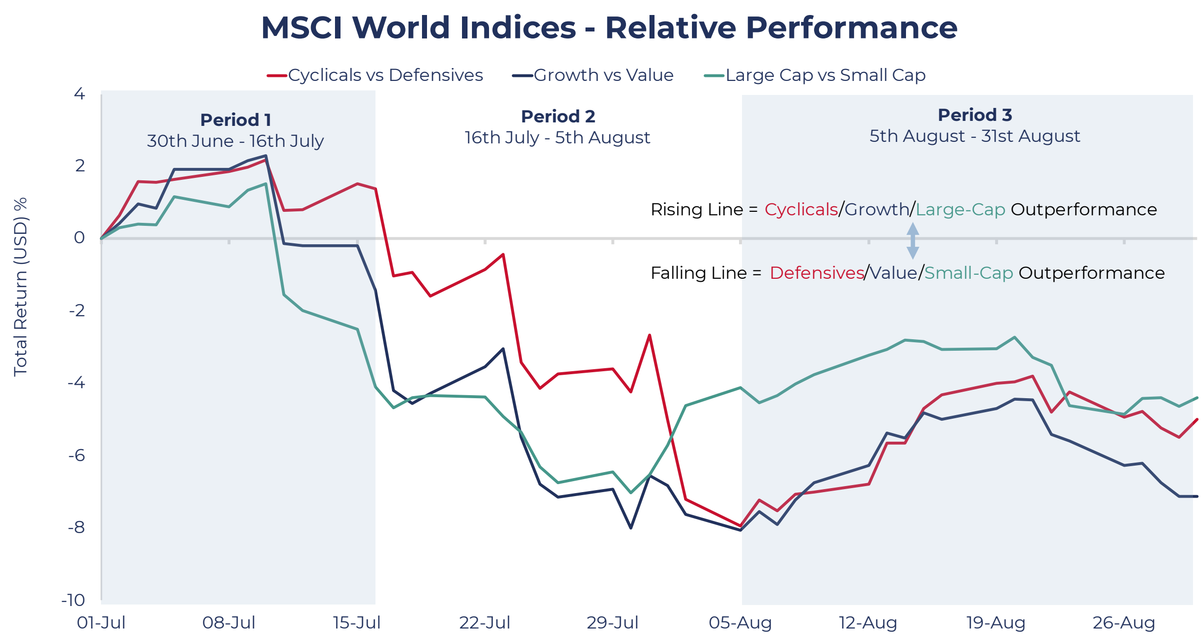


Source: Guinness Atkinson Asset Management, MSCI

Equity weakness had already emerged prior to the sell-off in August…

Taking a view over a slightly longer time horizon, the sell-off in early August was not in isolation, with equity weakness emerging mid-way through the month prior. Equity performance over Q3-to-date can be broken into three periods. Observing through the lens of 'factor leadership' – the second of the two graphs below – can help us explain why equities performed as they did over these periods.

Source: Guinness Atkinson Asset Management, MSCI



Source: Guinness Atkinson Asset Management, MSCI

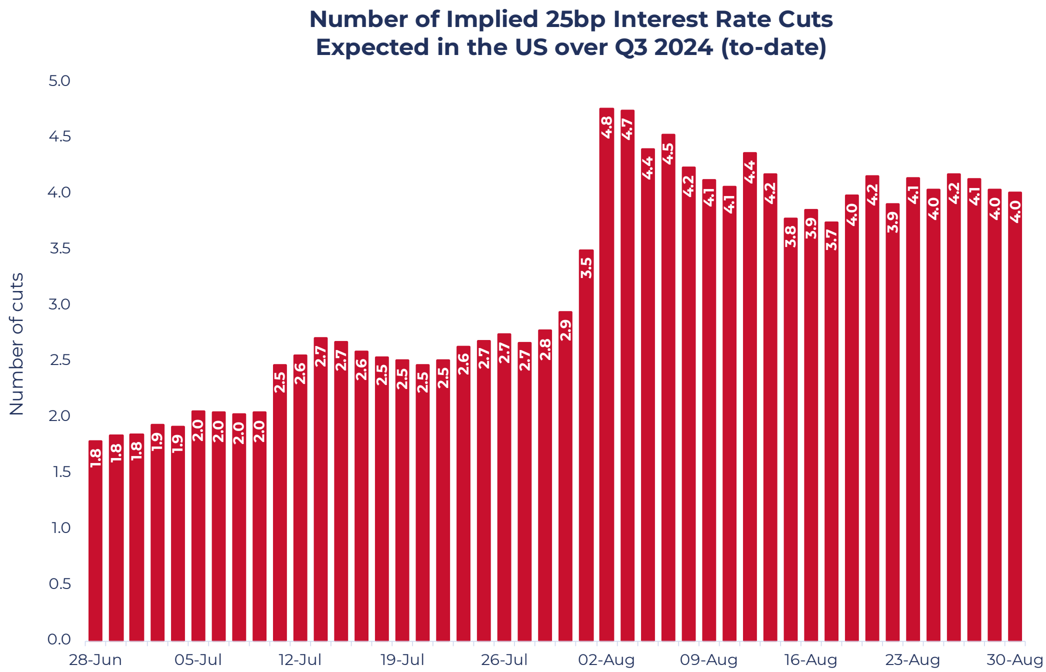
Period 1 (June 30th – July 16th) – Positive equity performance, with a Small-Cap Rotation

Equities carried positive momentum into the early weeks of Q3. Markets were initially led by the Magnificent Six (Magnificent Seven ex Tesla), which had driven the outperformance of 'growth' since the beginning of May. But large-cap stocks (led by the Magnificent Six) soon faltered (~July 11th) as attention shifted towards small-cap stocks. This rotation coincided with a cool inflation report, in which June's core CPI index (on a monthly basis, annualized) came in at below 1%. Small Cap equities subsequently surged, with the Russell 2000 index (US small cap stocks) outperforming the S&P 500 by 10% from July 10th to July 17th - a reflection of 'risk-on' sentiment as future rate cut expectations grew stronger. Small-caps often carry greater debt and are therefore more sensitive to interest rate changes, hence the perceived increasing probability of interest rate cuts in September allowed small-caps to outperform. On the other hand, mega-cap tech names sold off, with Nvidia falling 6% on the day, and the remaining Magnificent Six all falling by 2% or more. Investors were not only capitalizing on the largest valuation gap between the Large and Small Cap indices in 15 years, but there was also evidence that small companies profits were now seemingly improving while mega-cap tech earnings growth expectations were slowing.

Period 2 (July 16th – August 5th) – Equity weakness emerges as investors move towards more 'defensive' areas of the market.

Positive equity momentum faltered on the 17th of July, as the semiconductor industry sold off by ~7%. This was sparked by fears over future policy actions from both sides of the aisle. On the Republican side, presidential-nominee Donald Trump stated that Taiwan should pay for its own defense, bringing about fears of global chip security. These fears were deepened by rumors that the Biden-Harris administration could employ stricter trade restrictions on non-US semiconductor firms such as AMSL and Tokyo Electron - if these firms continued to give Chinese firms access to advanced semiconductor technology. With semiconductor stocks falling, this drove the underperformance of both 'Growth' and 'Cyclical' orientated stocks in particular – alongside continued weakness in large-caps. A similar magnitude of underperformance could be observed just a week later, as some 'Big-Tech' earnings releases underwhelmed investors. Tesla fell ~12% after announcing profits well short of expectations, and bringing into question the state of the consumer. Concerns over Alphabet's level of AI investment caused a 5% slide in the share-price despite a very robust set of results - an indication that anything less than 'perfection' was not enough to please investors, following a strong run of stellar earnings releases from big-tech in prior quarters. In the context of already fragile sentiment towards large-cap stocks (and the Magnificent Seven in particular), negative read-across was felt by the remaining Magnificent Seven who were set to report in the weeks after. In fact, the Bloomberg Magnificent Seven index entered correction territory, with a fall of 10% from its recent peak. Together, this drove the continued outperformance of 'value', 'defensive' and 'small-cap' names into August.

The broadest and most pronounced sell-off during 'period 2' came in the first three trading days of August, as weak economic data suggested that tight monetary policy may not be able to cool inflation without harming the economy. On the first two days of the month, the ISM Manufacturing Index slid further into contractionary territory (the fourth consecutive month, to 46.8) and US jobs data disappointed as initial jobless claims were higher than expected and there was a sharp slowdown in US hiring (the smallest payrolls increase in three years). Paired with weakness in a number of high-profile earnings releases (Intel and Amazon), these reports brought into question the strength of the US economy, which had until now been assumed to be moving towards a soft-landing. Since the Fed had announced on the final day of July that rates would be held at current levels - and did not make a firm commitment to cut in September - concerns arose that the Fed may have overtightened. Rate cut expectations subsequently shot upwards. The global sell-off deepened on August 5th, as Japan's TOPIX fell 12.4% (after a 5.8% fall the prior day) after the strengthening of the Yen and the shock rate-hike from the Bank of Japan prompted an unwinding of the yen-dollar carry trade. Global volatility spiked as the VIX reached its highest level since 2020, and investors sharply moved away from risk assets, as defensives outperformed, and to a lesser extent large-caps (which are seen to be less risky).



Source: Guinness Atkinson Asset Management, Bloomberg

Period 3 (August 5th– August 31st)– Economic concerns are somewhat appeased

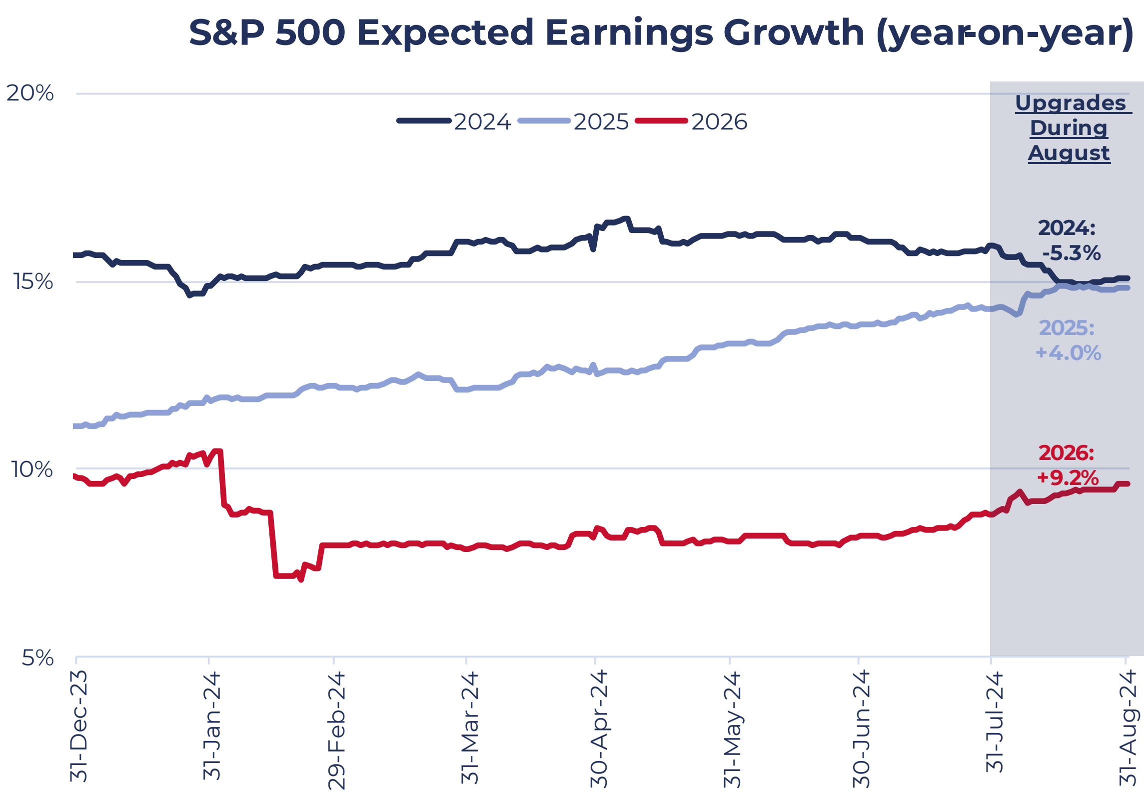
There are two key points to remember during market corrections. Firstly, corrections are not uncommon – in fact, they have happened in nearly every year but two (to the S&P 500) since the early 1980s. Secondly, equity markets typically bounce back swiftly from corrections. The rebound following 'Period 2' was no different. In the remaining days of August, the MSCI World managed to recover the entirety of losses made in the prior drawdown (the S&P 500 did not quite manage the same). Many market participants mused that the equity market drawdown looked like a dramatic overreaction, and the Japanese TOPIX's index 9% bounce the day following the 12% drop was certainly evidence of this. In the US, signs of a healthier than expected US labor market (unemployment claims fell faster than expected) and a significant acceleration in retail sales (1% year-on-year vs 0.3% expected) paired with robust results from Walmart boosted confidence that the US consumer remained in good shape, and reducing fears of a recession. After a few high-profile disappointments in 'period 2', earnings season generally proved to be a positive for equities (discussed later). The prospect of lower rates also proved to be a boon to equities, following commentary from Fed chair Jay Powell at Jackson Hole – the loudest signal yet that rate cuts are on the near-term horizon. As a result, the S&P 500 broke a four-week losing streak, closing out its strongest week in 9 months.

As discussed in the above paragraphs, the sectors that led the sell-off (Information Technology, Consumer Discretionary, Financials and Industrials) were the sectors that subsequently performed best over the remainder of August – although the rally was far more broad than the sell-off, and the outperformance to the index was less extreme. While the rally was led by Cyclicals and Growth, the gains seen by these factors were not enough to offset their underperformance seen over the prior period, with investors seemingly reluctant to return fully to a 'risk-on' sentiment. In fact, both 'cyclicals' and 'growth' were once again underperforming by the end of the period.

A short note on Earnings

As at the time of writing, 493 companies of the S&P 500 have reported Q2 results. The average sales surprise of +0.8% is meaningfully below the +2.0% average (5 year), and the average earnings surprise of +5.2% was far lower than the +8.6% average. However, the year-on-year *growth* figures have been very strong, with 5.2% average sales growth the highest since Q4 2022 (following post-pandemic weakness) and EPS growth of 11.9% the highest in over 2 years, and a significant acceleration from the +7.8% last quarter – admittedly from a lower base. All in all, this highlights the high demands that markets are currently placing on earnings season, with many companies needing near perfection in order to obtain a positive share price reaction.

Looking at analyst estimates gives a good indication of how the market is currently thinking. Over the month of August, we saw 2024 earnings growth estimates fall -5.3%, from 16.0% to 15.1%. This is still a strong growth outcome, but reflects near term weakness. On the other hand, over the same period both 2025 and 2026 saw growth 'upgrades' of +4.0% and +9.2% respectively. While the 2025 estimate was in part due to downgrades for 2024, 2026 was a result of improved EPS expectations. Short-term expectations may have fallen slightly, but the longer-term outlook (particularly for 2026) continues to improve.



Source: Guinness Atkinson Asset Management, Bloomberg

Changes to the Portfolio

At the beginning of August, we made one switch to the portfolio.

NETFLIX

Buy - Netflix. The streaming giant is a high-quality, fast-growing business with a solid growth runway that is being leveraged by a competent and well-run management team. Netflix transitioned to streaming well before competitors and are now the dominant streaming player. Their first mover advantage allowed them to accrue a vast content library (when capital was cheap and investors patient) and they have built on this moat given continued investment into their own original content. This includes a growing non-English catalog, which has opened up international markets and allowed continued subscriber base growth, which now stands at 270m. Going forward, monetizing their ad-tier subscribers, expanding penetration in developing markets, and incremental average revenue per unit (ARPU) increases will drive the growth outlook - while Gaming / Sports remain a potential growth avenue for the future. While the valuation is not overly cheap in the absolute (~34x 1yr fwd PE), the stock has historically traded in a wide range (40x+ in the pre COVID growth era and troughing at ~12X in late 2021 over growth fears), although we feel the currently quality-growth attributes of the firm justify this premium to the market. At present, the business (and the narrative) has turned a corner following concerns over profitability, but management actions have driven both subscriber numbers and profits meaningfully in the past years, and investors look forward to the encouraging growth – and most importantly *profitable-growth* – runway that lies ahead. Even as management shift investor focus away from pure subscriber adds to user engagement, the growth story still has legs with double digit topline forecast, ~25%+ on the bottom line and a strong improvement in margins and FCF all pointing to an encouraging outlook.

On this note, we were very encouraged to see strong performance from Netflix over the month of August, as the stock ended the period as the Fund's top stock contributor. The stock returned 11.6% over the month (vs the MSCI World's +2.7%), pushing the firm's share price to record highs – levels last seen in 2021. Momentum following the market reversal was lifted further by news that Disney would hike prices for their ad-free service to $16, slightly above that of Netflix ($15.50), and leaving Netflix as one of the cheaper main-stream providers (Amazon Prime remains at $12). Netflix already offered one of the best 'value-for-money' options when considering Price-per-Viewing-Hour, and this only improved their claim to this title. Later in the month, the firm disclosed a +150% increase in upfront ad sales commitments compared to 2023, with investors enthused by managements success at improving profitability – a combination of both strong revenue generation and cost control. All in all, these events provided further evidence over the reasons why we brought the stock in the first place.

NIKE®

Sell – Nike. We first purchased Nike is November 2016, delivering a total return of ~60% (in USD terms) over the holding period (vs MSCI World +147%). The first 5 years of the holding period saw strong outperformance, particularly during the pandemic when the benefits of global lockdowns amplified the success from the firms decision to focus on Direct-To-Consumer (DTC) and 'Online' - while moving away from wholesale partners. Since then, however, it appears that these pandemic-era benefits served to mask deeper underlying issues with the strategy – in particular a declining level of competitiveness, despite the benefits to profitability. Results in July brought to the forefront many of these concerns. After seeing no growth in FY24 and guidance for negative growth in FY25, the reacceleration of revenues investors had patiently been holding out for seemed to have once again been pushed further out. The slowdown had previously been attributed to a weak economic backdrop and thus a weak consumer – this argument carries weight, but not only do these headwinds appear deeper than expected, there are now questions around competitiveness, in light of inroads made by the likes of Adidas, Lululemon and On Running, and the multi-year decline in share for Nike. In all likelihood, these firms gained share as a direct result of Nike cancelling relationships with wholesalers and opening up shelf-space for challenger brands. A marked slowdown in the 'Lifestyle' portfolio (i.e. non-performance-wear, about 60% of sales) has spurred a rethink in strategy, with a complete refresh of the portfolio set to be completed by the end of FY25 (May 2025), with significant SKU (stock keeping unit) cutting underway. This quarter appeared to be a hard reset for Nike – a recognition that the current portfolio is not going to deliver the required growth, and a refresh and refocus towards innovation is their plan to do it (alongside greater brand and marketing investment).

The foundations for Nike remain strong: they retain #1 market share across major markets, their brand equity is undoubtedly strong (even if diminished), the firm have a robust supply and distribution network with strong retailer relationships and broad category exposure – all while retaining a very strong balance sheet. Not only this, but Nike have proved over their history their ability to drive sales growth through innovation. While we do not doubt they will be able to do this again, we see increased risk to the near-to-mid term outlook. Management commentary appears to suggest that the reinvigoration of growth is not on a near-term horizon, and macro trends in the meantime are not favorable. Consumer trends change often, and Nike have often repositioned to capture these trends, but relying on 'innovation' for growth appears to be a difficult sell when there is no guarantee this will flow through to real earnings. We view the firm's problems are more than a weakening consumer environment, but a diminished ability to compete with peers, and a misstep in strategy. This could be a 'multi-year' reset for the firm, with no quick rebound in earnings. To summarize, while we do not rule-out success in Nike's new strategy, we have lost confidence that the stock will be able to reinvigorate growth back into the product portfolio in a desired time frame, and see the stock as far higher risk than before following management missteps.

Individual Stock Performance over the month

LSEG

London Stock Exchange Group (11.1% USD)

London Stock Exchange Group ended the month as the Fund's second top performer, outperforming the MSCI World by +8.4%. LSEG, owner of the London Stock Exchange, provides both data solutions and infrastructure for global financial markets. The firm is vertically integrated 'across the financial market value chain', with a presence across the trade lifecycle – from pre-trading data and analytics to post-trade clearing and reporting. Until 2007, the firms' sole operations were running the London Stock Exchange, but have since used acquisitions to shift the core of the business away from exchanges and towards data and analytics.

We first purchased the stock back in April, on the basis of the firms high-quality business model, generating around 70% recurring revenues with a about 95% retention rate. Since the acquisition of

Refinitiv, the business has turned from a relatively low growth business that was exposed almost entirely to market trading cycles and listing revenues, to a high-quality, recurring-revenue cash machine with strong retention - paired with a number of promising growth drivers. Growth is underpinned by a number of levers across a diverse set of segments, including growth in Annual Subscription Value, significant spend on innovation and product improvements to drive market share growth, and a strategic-partnership with Microsoft to name a few. The firm is also exposed to a number of secular growth drivers (shift from active to passive benefiting the index business, regulation demanding greater disclosure, shift from over-the-counter to on-exchange). The firm's high recurring revenue stream makes it relatively resilient across all market conditions, while trading fees will improve during market volatility, offering some sort of 'hedge' to any market downturn, and thus outperforming when others may not.

LSEG's first-half results were well received with the stock rising 2.2% on the day, despite the market sell-off beginning the same day (August 1st). The headline was an improvement in Annual Subscription Value (ASV) for 2Q23, which accelerated to 6.4% (vs 6.0% the quarter prior), just 120bps below the firm's peak ASV growth in 1Q23. This compares to close peer Factset, who have seen organic ASV growth continually fall, 410bps in total (from 9.1% to 5.0%) over the same period. With LSEG continuing to drive pricing while maintaining further client wins and improved retention metrics, this not only points to a growing market share, but is a strong indicator of the success LSEG have had at investing to improve the competitiveness of their product offerings. News that the firm were also nearing the roll-out of their first tranche of products developed through their partnership with Microsoft (signed in 2022) – including a generative AI offering – created enthusiasm of a further top-line improvement over H2. Cost and Capex discipline was also on display with a +50bps year-on-year margin improvement, and management commentary stating that consensus expectations for a 100bps margin expansion over each of the next couple of years drove further confidence on future profitability. One area that was pleasing to see over the period was the outperformance of the stock over the period of significant market volatility. While the earnings release 'muddied the waters' with respect to what was driving performance on the first day of the sell-off, the stock continued to outperform the market during the subsequent two days (and ticked up nicely during the rebound too) - highlighting the defensive attributes and hedging properties that the stock offers – a key element of the thesis discussed above.

Lam Research (-10.9%) and Applied Materials (-6.9%)

Lam Research and Applied Materials ended August as the Fund's two bottom performing stocks. Semiconductor stocks entered August already with negative equity momentum, ending July as the bottom performing industry following indications of stricter US trade restrictions in China. Lam Research (42% China 2024 sales) and Applied Materials (27%) both have significant exposure to the region, and hence suffered some of the largest declines. Neither of these firms were able to shake this negative momentum over August, as further news emerged that the US was considering additional unilateral restrictions. The focus would be on China's access to the chips required to run AI accelerators, High Bandwidth Memory (HBM) chips, and the tools required to make them. Lam Research have 100% market share in tools for etch/plating for HBM, as well as a greater exposure to the Chinese region than peers. Applied Materials also has meaningful exposure, but a more diverse product focus and regional exposures meant the equity impact was not as significant. Both firms reported solid Q4 results during the month (both delivered sales and earnings 'beats') although this did little to appease negative sentiment towards both stocks. Lam Research reiterated their FY 2024 Wafer Fab Equipment (WFE) market outlook, shared optimism on a rebound to NAND (NOT AND logic gate), and delivered guidance in-line with expectations - although a slight slowdown in China and softness in the outlook for gross margins were slight detractors. In the case of Applied Materials, the firm gave an optimistic outlook for leading-edge logic and advanced packaging, as well as steady growth in their Services business. While a slowdown of sequential Chinese sales acted as a headwind to margins, management suggested this was a more 'normalized' level of sales to the region, and also served to derisk the firm from the region. While both Lam Research and Applied Materials suffered valuation contraction as a result of concerns relating to incremental export restrictions, our final Semiconductor Equipment manufacturer, KLA, did not. While KLA also holds significant Chinese exposure (+43% FY24 sales), the firm's niche focus on process control meant they were relatively insulated from the worst of these industry pressures. All in all, we see recent news on export controls as incremental to the risk profiles of these firms – but our long-term growth thesis for each of these stocks remains in place, and we will continue to monitor the situation closely.

We thank you for your continued support.

Portfolio Managers

Matthew Page, CFA   Dr Ian Mortimer, CFA

Summary Performance

In August 2024, global equities ended the month slightly above where they began, but experienced considerable volatility along the way. Early on, weak economic data fueled concerns about the health of the US economy, as US payrolls revealed fewer than expected new jobs and manufacturing PMIs moved further into contractionary territory. Market nervousness was then exacerbated by a one-day sell-off of 12% of the Japanese TOPIX index, as the USD/Yen 'carry-trade' unwound dramatically following the shock news of a Japanese interest rate hike. Market volatility spiked, and sharp stock declines followed globally – particularly in stocks perceived to be more 'cyclically' orientated – as 'risk-off' sentiment dominated. An increasing view that the Federal Reserve may have left it too late to cut interest rates meant a 'hard-landing' seemed firmly back on the table, causing rate cut expectations to move markedly higher. Despite these initial market jitters, concerns were soon quelled as positive retail sales data, up 1% in July, along with resilient corporate earnings helped to ease recession fears. The Fed's Jackson Hole symposium was also well received, as Federal Reserve Chair Jerome Powell remarked that rate cuts were imminent, and even left the door open for a 50bp cut. Sector performance was mixed, with defensives outperforming during the sell-off, and cyclicals outperforming during a much broader market rally that followed, leaving 'Defensives' to outperform as a whole. August may have closed on a less volatile note, but the underlying nervousness over the state of the economic outlook is clear.

During the month, relative performance of the Fund was driven by the following:

- While the Fund felt a slight headwind from an allocation perspective, this was offset by positive stock selection such that the Fund performed in-line with the benchmark. While the Fund underperformed in the first few days of the month during the market sell-off, the Fund's tilt towards cyclical sectors drove outperformance in the subsequent market rally.

- All of our five holdings within Financial Services outperformed the broader industry, with London Stock Exchange (+11.1% in USD terms) and PayPal (+10.1%) the standout performers. Stock selection within Media & Entertainment offered a similarly strong effect, driven by new position Netflix (+11.6%) and Meta (+9.8%).
- The Fund's overweight position to the Semiconductor industry was the largest detractor to Fund performance from an allocation perspective, as the benchmark's worst performing industry. Weakness from bottom performing stocks Lam Research (-10.9% USD) and Applied Materials (-6.9%) acted as an additional headwind from a stock selection perspective.
- The Fund's zero allocation to the defensive Consumer Staples sector acted as a headwind to performance, offset by a zero-allocation to the weak performing energy sector.

as of 08.31.2024 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	27.88%	5.94%	17.21%	12.19%
Global Innovators, Institutional Class[2]	28.19%	6.20%	17.50%	12.44%
MSCI World Index NR	24.43%	6.89%	13.09%	9.56%

as of 06.30.2024 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	30.68%	7.20%	16.75%	12.30%
Global Innovators, Institutional Class[2]	31.02%	7.48%	17.04%	12.54%
MSCI World Index NR	20.19%	6.86%	11.76%	9.16%

All returns after 1 year annualized.

[1] Investor class (IWIRX) Inception 12.15.1998 Expense ratio* 1.24% (net); 1.28% (gross)
[2] Institutional class (GINNX) Inception 12.31.2015 Expense ratio* 0.99% (net); 1.13% (gross)

[2] Performance data shown for Global Innovators, Institutional Class (GINNX), prior to its launch date on 12/31/15, uses performance data from the Global Innovators, Investor Class (IWIRX).

Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be lower or higher than the performance quoted. For most recent month-end and quarter-end performance, https://www.gafunds.com/our-funds/global-innovators-fund/#fund_performance or call (800) 915-6566.

*The Advisor has contractually agreed to reimburse expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.24% for the Investor class and 0.99% for the Institutional class through June 30, 2027. To the extent that the Advisor absorbs expenses to satisfy this cap, it may recoup a portion or all of such amounts absorbed at any time within three fiscal years after the fiscal year in which such amounts were absorbed, subject to the expense cap in place at the time recoupment is sought, which cannot exceed the expense cap at the time of waiver. The expense limitation agreement may be terminated by the Board of the Fund at any time without penalty upon 60 days' notice.

Mutual fund investing involves risk and loss of principal is possible. Investments in foreign securities involve greater volatility, political, economic and currency risks and differences in accounting methods. These risks are greater for emerging markets countries. The Fund also invests in medium and smaller companies, which will involve additional risks such as limited liquidity and greater volatility. The Fund's focus on the technology, internet and communications sectors are extremely competitive and subject to rapid rates of change.

Securities mentioned are not recommendations to buy or sell any security.

Current and future portfolio holdings are subject to risk.

Top 10 holdings for Global Innovators Fund, as of 8/31/2024:

1.	London Stock Exchange Group PL	3.64%
2.	NVIDIA Corp	3.60%
3.	Netflix Inc	3.59%
4.	Intercontinental Exchange Inc	3.59%
5.	Mastercard Inc	3.56%
6	Medtronic PLC	3.55%
7.	PayPal Holdings Inc	3.55%
8.	Meta Platforms Inc. - Class A	3.54%
9.	ANTA Sports Products Ltd	3.51%
10.	Siemens Healthineers AG	3.51%

For a complete list of holdings for the Global Innovators Fund, please visit: https://www.gafunds.com/our-funds/global-innovators-fund/

The Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory and summary prospectuses contain this and other important information and can be obtained by calling 800- 915-6565 or visiting www.gafunds.com. Read and consider it carefully before investing.

Earnings growth is not representative of the Fund's future performance.

MSCI World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

MSCI World Value Index captures large and mid-cap securities exhibiting overall value style characteristics across 23 Developed Markets countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price and dividend yield.

MSCI World Growth Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of large and mid-cap securities exhibiting overall growth style characteristics across developed markets.

The MSCI World Equal Weighted Index represents an alternative weighting scheme to its market cap weighted parent index, the MSCI World Index. The index includes the same constituents as its parent. However, at each quarterly rebalance date, all index constituents are weighted equally, effectively removing the influence of each constituent's current price (high or low).

The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. Indexes are available for the U.S. and various geographic areas.

The Core Consumer Price Index (CPI) measures the changes in the price of goods and services, excluding food and energy.

The Russell 2000 Index is a stock market index that measures the performance of the 2,000 smaller companies included in the Russell 3000 Index. The Russell 2000 is managed by London's FTSE Russell Group, widely regarded as a bellwether of the U.S. economy because of its focus on smaller companies in the U.S. market.

The Purchasing Managers' Index (PMI) is an index of the prevailing direction of economic trends in the manufacturing and service sectors.

The ISM manufacturing index, also known as the purchasing managers' index (PMI), is a monthly indicator of U.S. economic activity based on a survey of purchasing managers at manufacturing firms nationwide.

One basis point (bp) is equal to 1/100th of 1%, or 0.01%, or 0.0001, and is used to denote the percentage change in a financial instrument. The relationship between percentage changes and basis points can be summarized as follows: 1% change = 100 basis points and 0.01% = 1 basis point.

The Federal Open Market Committee (FOMC) consists of twelve members--the seven members of the Board of Governors of the Federal Reserve System; the president of the Federal Reserve Bank of New York; and four of the remaining eleven Reserve Bank presidents, who serve one-year terms on a rotating basis.

Standard deviation is a statistic that measures the dispersion of a dataset relative to its mean and is calculated as the square root of the variance. If the data points are further from the mean, there is a higher deviation within the data set. A volatile stock has a high standard deviation, while the deviation of a stable blue-chip stock is usually rather low.

The Nasdaq-100 (NDX) is a large-cap growth index. It includes 100 of the largest domestic and international non-financial companies listed on the Nasdaq Stock Market based on market capitalization.

The MSCI Cyclical and Defensive Sectors Indexes are designed to track the performance of the opportunity set of global cyclical and defensive companies across various Global Industry Classification Standard (GICS®) sectors. Cyclical sectors include Communication Services, Consumer Discretionary, Financials, Industrials, Information Technology, Materials, Real Estate. Defensive sectors include Consumer Staples, Energy, Healthcare, Utilities.

The Bloomberg Magnificent 7 Index is an equal-dollar weighted equity benchmark consisting of a fixed basket of 7 companies classified in the United States and representing the Communications, Consumer Discretionary and Technology sectors as defined by the Bloomberg Industry Classification System (BICS). The mega-cap leaders dubbed the "Magnificent Seven" are tech-focused US companies—Alphabet, Amazon, Apple, Meta Platforms, Microsoft, NVIDIA and Tesla.

The MSCI China Index captures large and mid cap representation across China A shares, H shares, B shares, Red chips, P chips and foreign listings (e.g. ADRs). With 717 constituents, the index covers about 85% of this China equity universe. Currently, the index includes Large Cap A and Mid Cap A shares represented at 20% of their free float adjusted market capitalization.

The Dow Jones Industrial Average is a list or index of 30 companies considered indicators of the stock market's overall strength. It is a benchmark index of 30 blue-chip companies listed on U.S. stock exchanges.

The Tokyo Price Index—commonly referred to as TOPIX—is a metric for stock prices on the Tokyo Stock Exchange (TSE). TOPIX is a capitalization-weighted index that lists all firms in the "first section" of the TSE, a section that organizes all large firms on the exchange into one group. The second section of the TSE pools all of the smaller remaining companies.

Japan's Nikkei 225 Stock Average, the leading and most-respected index of Japanese stocks. It is a price-weighted index composed of Japan's top 225 blue-chip companies traded on the Tokyo Stock Exchange.

The CBOE Volatility Index (VIX) is a real-time index that represents the market's expectations for the relative strength of near-term price changes of the S&P 500 Index (SPX). Because it is derived from the prices of SPX index options with near-term expiration dates, it generates a 30-day forward projection of volatility. Volatility, or how fast prices change, is often seen as a way to gauge market sentiment, and in particular the degree of fear among market participants.

NAND flash memory is a type of non-volatile storage technology that does not require power to retain data, such as in digital cameras and USB flash drives. NAND flash saves data as blocks and relies on electric circuits to store data. When power is detached from NAND flash memory, a metal-oxide semiconductor will provide an extra charge to the memory cell, keeping the data.

Beta is a measure of a stock's volatility in relation to the overall market.

R-squared (R^2) explains to what extent the variance of one variable explains the variance of the second variable. R-squared is a statistical measure that represents the proportion of the variance for a dependent variable that's explained by an independent variable or variables in a regression model.

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period.

Earnings per share (*EPS*) is calculated as a company's profit divided by the outstanding shares of its common stock.

Price-Earnings (P/E) ratio is a valuation ratio of a company's current share price compared to its per-share earnings. Forward earnings differ from trailing earnings, which is the figure quoted more often, as they are a projection and not a fact.

Forward price-to-earnings (forward P/E) is a version of the ratio of price-to-earnings (P/E) that use forecasted earnings for the P/E calculation. While the earnings used in this formula are just an estimate and not as reliable as current or historical earnings data, there are still benefits to estimated P/E analysis

Cash Flow is the total amount of money, in cash, being transferred into and out of a business.

The multiples approach is a valuation theory based on the idea that similar assets sell at similar prices. It assumes that the type of ratio used in comparing firms, such as operating margins or cash flows, is the same across similar firms.

Multiple expansion is when a stocks valuation multiple (for example, their Price to Earnings ratio, or EV to EBITDA ratio) increases, meaning that the stock is now more expensive than before.

The MSCI World Information Technology Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of large and mid-cap equities across 23 developed markets, all classified within the Information Technology sector.

The S&P 500 Index features 500 leading U.S. publicly traded companies, with a primary emphasis on market capitalization.

Capital expenditures (CapEx) are funds used by a company to acquire, upgrade, and maintain physical assets such as property, technology, or equipment. CapEx is often used to undertake new projects or investments by a company.

EBITDA, or earnings before interest, taxes, depreciation, and amortization, is an alternate measure of profitability to net income

The MSCI World Semiconductors and Semiconductor Equipment Index is composed of large and mid-cap stocks across 23 Developed Markets (DM) countries*. All securities in the index are classified in the Semiconductors and Semiconductor Equipment Industry Group (within the Information Technology sector)

The MSCI World Quality Index is based on MSCI World, its parent index, which includes large and mid cap stocks across 23 Developed Market (DM) countries. The index aims to capture the performance of quality growth stocks by identifying stocks with high quality scores based on three main fundamental variables: high return on equity (ROE), stable year-over-year earnings growth and low financial leverage.

The MSCI USA Index is designed to measure the performance of the large and mid cap segments of the US market. With 625 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the US.

The MSCI World Consumer Discretionary Index is designed to capture the large and mid cap segments across 23 Developed Markets (DM) around the world. All securities in the index are classified in the Consumer Discretionary sector as per the Global Industry Classification Standard (GICS®).

Free cash flow (FCF) is the cash left over after a company pays for its operating expenses (OpEx) and capital expenditures (CapEx).

Forex (FX) refers to the global electronic marketplace for trading international currencies and currency derivatives. Most of the trading is done through banks, brokers, and financial institutions.

Year-over-year (YoY) sometimes referred to as year-on-year, is a frequently used financial comparison for looking at two or more measurable events on an annualized basis

One cannot invest directly in an index.

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