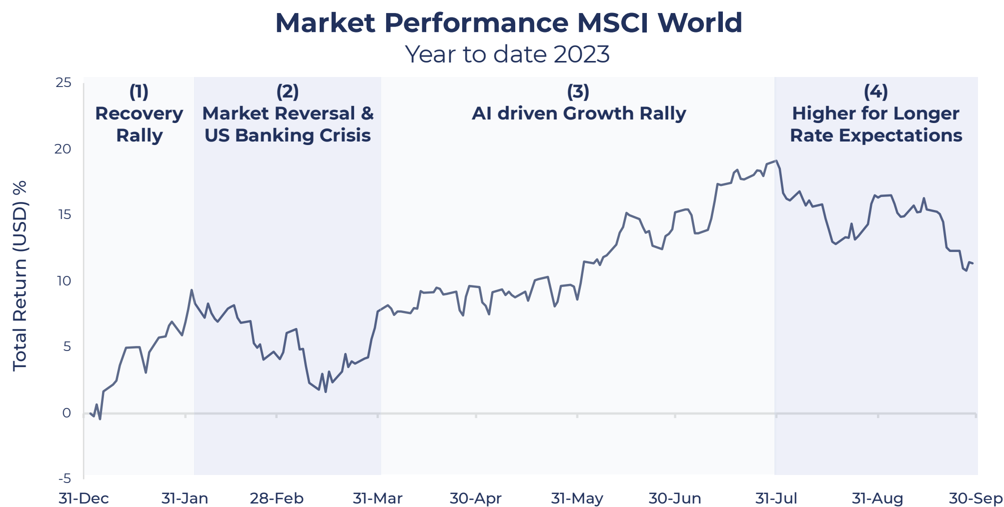
Guinness Atkinson
Global Innovators Fund
Managers Update – Q3 2023

GUINNESS ATKINSON FUNDS

Quarter in review:

Four distinct performance periods

Following a strong first half for global equity markets, the 'growth' driven rally stalled at the end of July. Year-to-date, 2023 can be split into a number of distinct performance periods, each with different drivers and leaders from both a style and sector perspective.



Source: MSCI, Guinness Atkinson Asset Management, Bloomberg, as of September 30th 2023

(1) – Recovery Rally

Many of the key market concerns from 2022 abated (inflation, China's Covid policy, recessionary risks and an energy crisis) during the period, with renewed hope of a soft-landing. As risk-on sentiment returned, the more cyclically orientated sectors that underperformed in 2022 outperformed in January. Paired with a market view of an earlier pivot towards looser monetary policy, this drove the outperformance of 'growth' during the period.

(2) – Market Reversal and Banking Crises

The market reversed course in early February. Employment and inflation data came in surprisingly 'hot' in both the US and Europe, and Fed Chair Jay Powell followed with hawkish rhetoric over the future path of interest rates, driving expectations of a higher and later peak rate. The collapse of Silicon Valley Bank in early March initially spurred a sharp sell-off, as fears of financial contagion grew. A strong policy response from regulators restored a level of calm back into equity markets, which rebounded over the subsequent weeks. The crises drove a tightening of credit conditions, typically a headwind for economic growth, driving a rotation towards higher quality companies with strong balance sheets and margins. However, tighter credit conditions were also expected to play a part in reducing inflation, also supporting growth stocks as expectations of an earlier 'pivot' surfaced once again.

(3) Growth/AI Outperformance

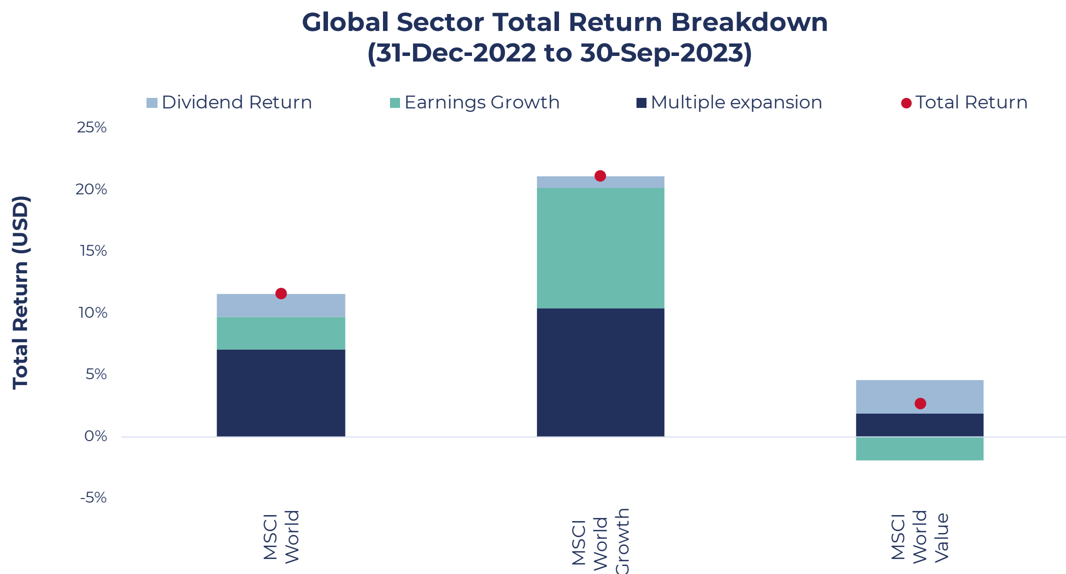
Despite rising interest rate expectations, growth outperformed during the period as narrow selection stocks exposed to Artificial Intelligence led the index higher. Renewed enthusiasm over AI was driven by the launch of Chat GPT earlier in the year, which had captured the imagination of consumers and businesses alike, and catalyzed businesses across sectors to investigate the best way to incorporate the technology into their revenue streams, business models and operations. Investment into Artificial Intelligence was not just evident in company earnings calls, but in company fundamentals too. Nvidia added $184bn to their market cap on the day following their quarterly earnings, as the firm guided for revenues over 50% higher than the $7bn estimated by analysts. Soaring demand for chips required for generative AI purposes was clearly much greater than the market expected, creating a tailwind for AI-exposed stocks in particular. While the market rally broadened to other areas of the market in the first month of Q3, momentum in equity markets continued on the improved prospects of a 'soft landing'.

(4) – Higher for longer rate expectations

The strong equity performance seen in the prior periods faltered over the latter two months of Q3, with consecutive months of equity declines (in USD terms). Over the period, the 10 year US treasury yield rose to 4.6%, levels not seen since 2007, as markets priced in 'higher-for-longer' interest rate expectations. Equity market performance was weak in August, albeit mixed, but we then witnessed a more pronounced and broad-based sell off in September with 'higher duration' equities – both the high dividend yield sectors such as Utilities, and companies with valuation linked to higher future growth in the Information Technology sector – generally seeing the largest declines.

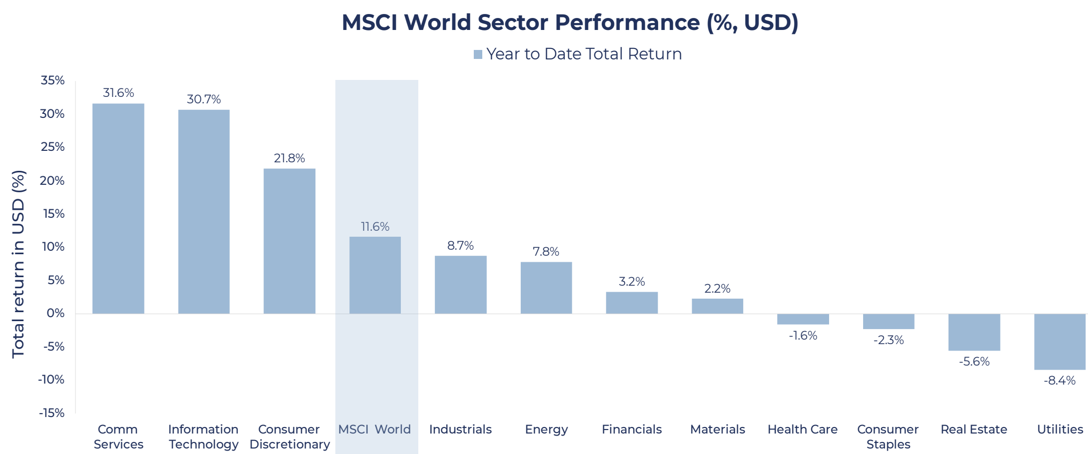
Market drivers have looked quite different in Q3

Looking at 2023 year-to-date, returns have been mixed across the market. Growth stocks have benefited from a number of tailwinds, driving not only strong multiple expansion but significant earnings growth expectations. Value stocks, on the other hand, have only delivered a positive total return as a result of their exposure to dividends, with negative earnings growth expectations fully offsetting multiple expansion.



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

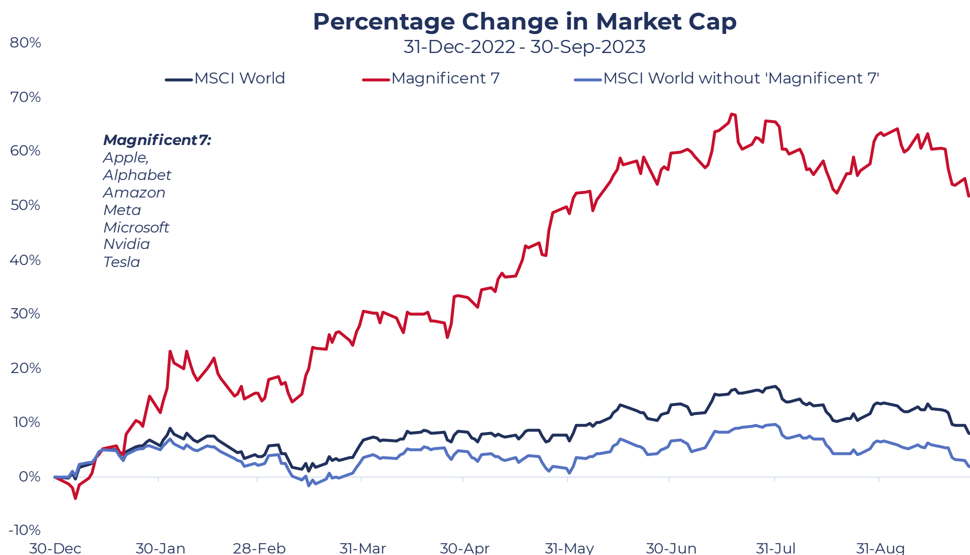
Market leadership over 2023 has not just been narrow from a factor perspective however, but also at the sector level. Only three of the eleven GICS (Global Industry Classification Standard) sectors have outperformed the MSCI World year-to-date.



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

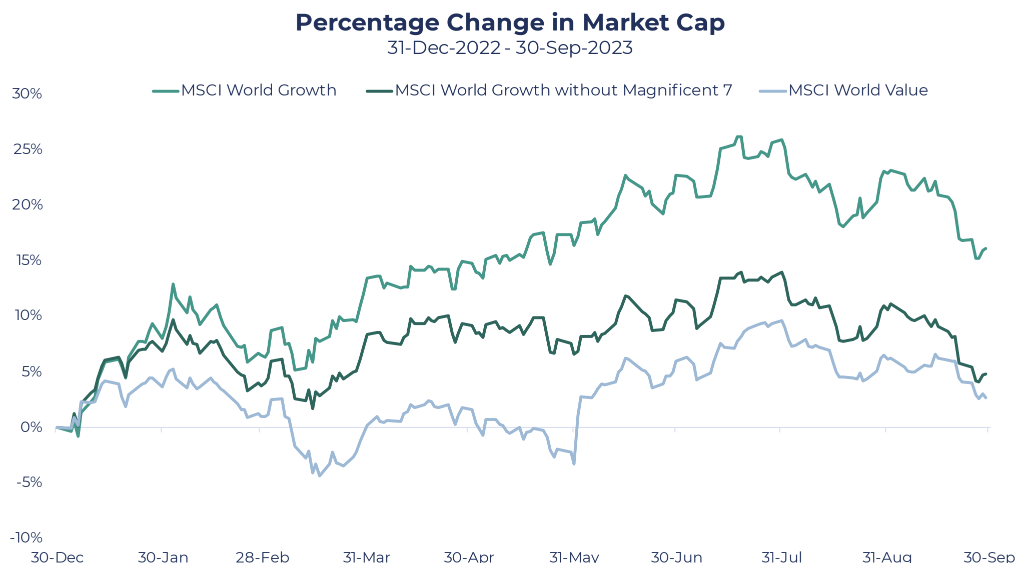
This narrowness is even more stark when looking at the largest U.S. companies based on market cap. The 'Magnificent 7' – Apple, Microsoft, Amazon, Google, Nvidia, Tesla and Meta – have driven the majority of benchmark returns year-to-date. The Magnificent 7 have seen their combined market cap increase over 50% USD, year to date. Over the same period, the MSCI World's market cap increased by 8%. Removing these seven stocks from the MSCI World, and the index would have risen just 2%. Therefore, the majority of benchmark

performance over 2023 can be attributed to the 'Magnificent 7', a selection of stocks that accounted for just 12% of the benchmark at the beginning of the year.



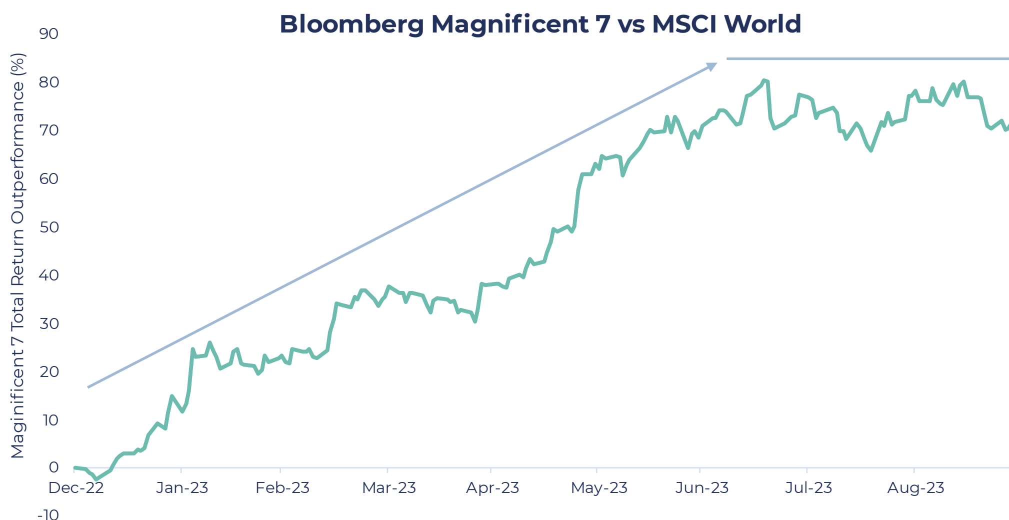
Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

In fact, without the Magnificent 7, the market cap of the MSCI World Growth Index would have risen in-line with that of the MSCI World Value Index up until the end of Q3 – and that excludes the impact of dividends to returns.



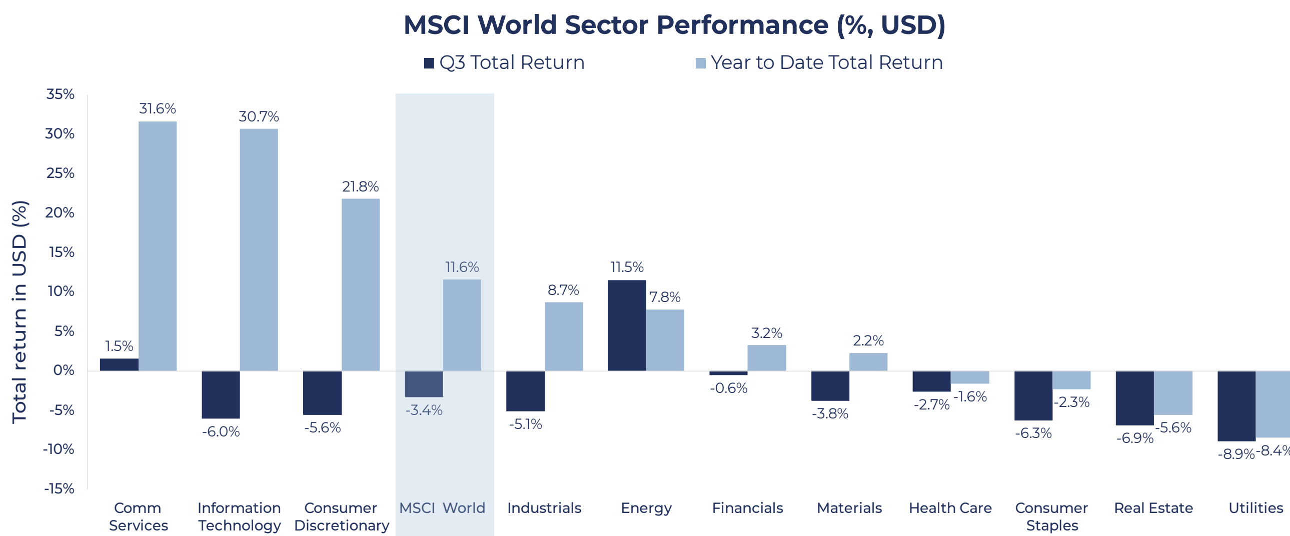
Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Since June, however, the Magnificent 7 largely tracked in-line with the broader market.



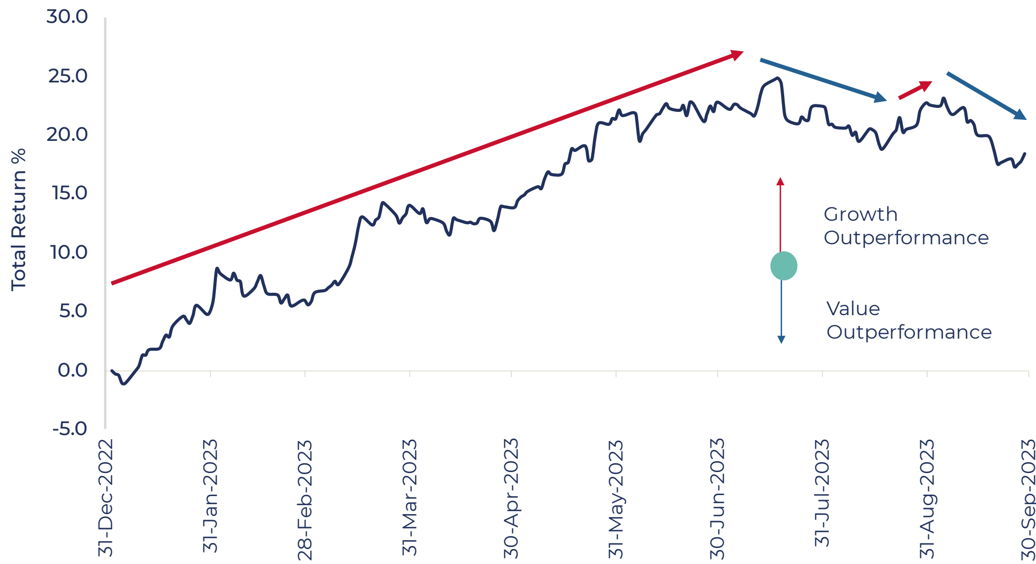
Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Despite a strong start to the quarter, weakness in markets during August and September resulted in just two sectors performing positively over Q3 – Energy (+11.5% USD) and Communication Services (+1.5% USD).



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

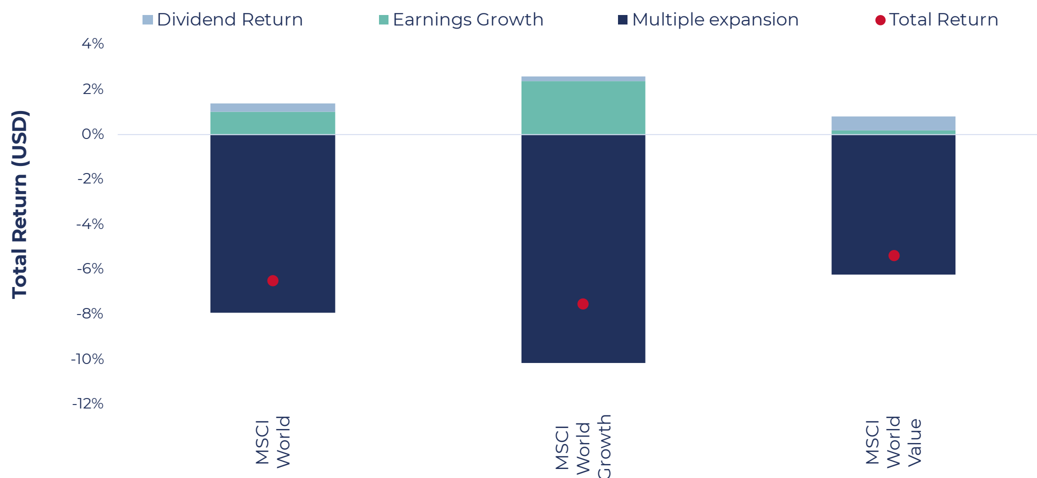
Unlike the first half of the year, value outperformed for much of the third quarter, despite a short-lived growth rally at the end of August.



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

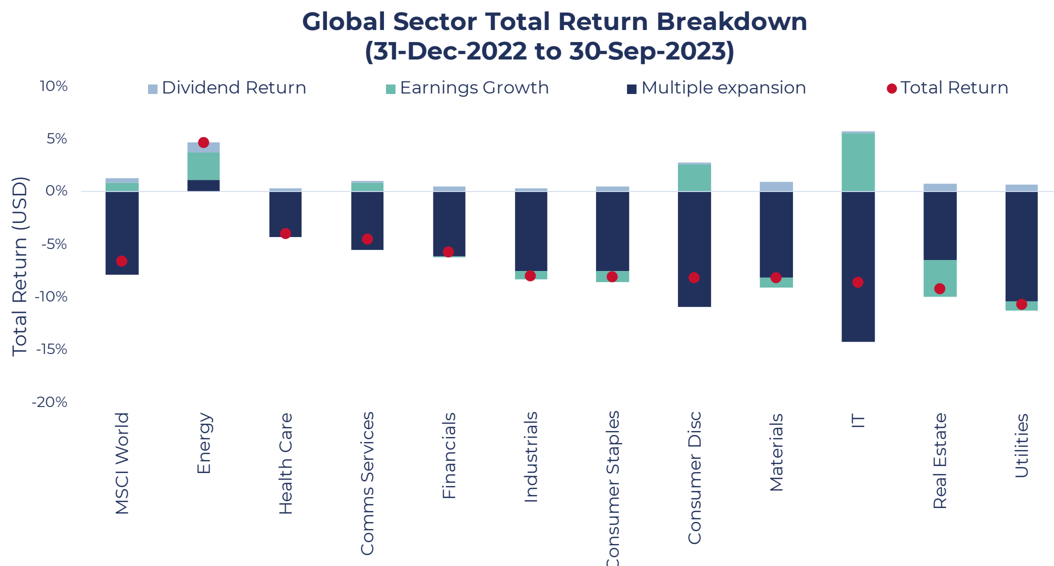
Why did the growth rally stall?

Interestingly, despite growth underperforming since the end of July, growth stocks actually experienced moderate earnings upgrades over July and August.



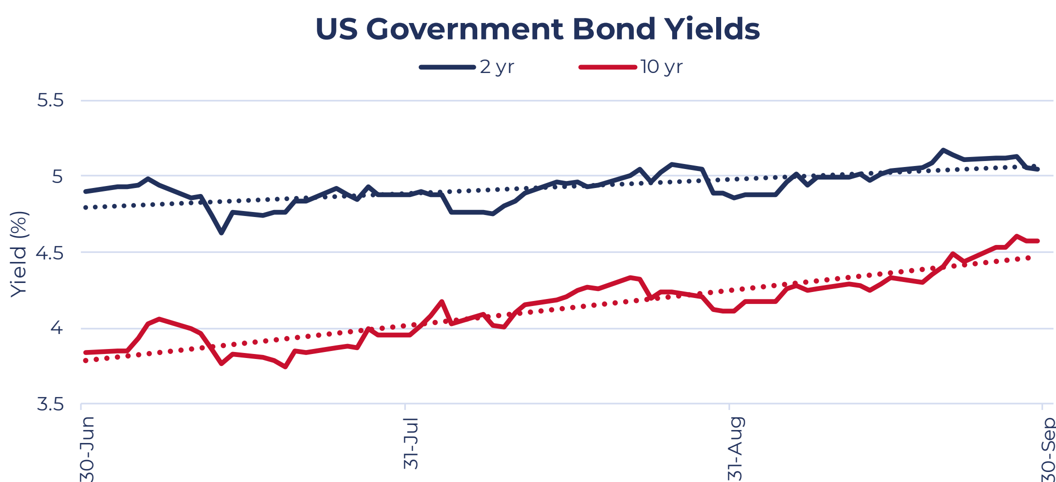
Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Positive MSCI World earnings upgrades were driven by two sectors in particular – Information Technology and Consumer Discretionary. Across other sectors however, earnings were either downgraded or remained flat.



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Alongside earnings weakness across half of GICS sectors, equity declines were in part driven by the rise in government bond yields during the quarter, particularly at the long end of the spectrum.



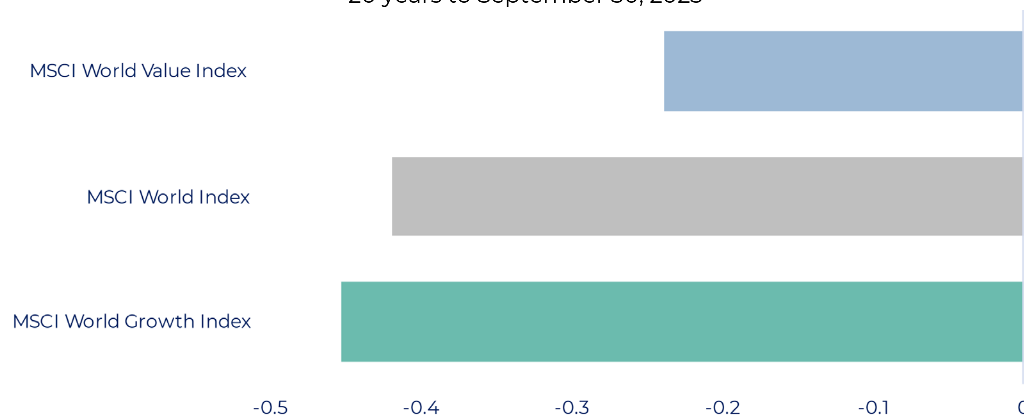
Source: Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Over the past 20 years, there has been a moderate negative correlation between yields and equity performance across almost all segments. In other words, rising yields tends to result in

weaker equity performance. The increase in yields not only entices investors away from equities, but creates a headwind from a valuation perspective too, given that the discount rate that equity valuations are often derived from are in themselves dependent on the yields of government bonds – i.e. the risk-free rate. This is particularly true of growth stocks, which tend to be "high duration" in nature, meaning the majority of their cash flows tend to be forecast further out into the future and as a result, these companies are typically more sensitive to changes in yields.

Correlation between MSCI Indices and US 10y Treasury Yields

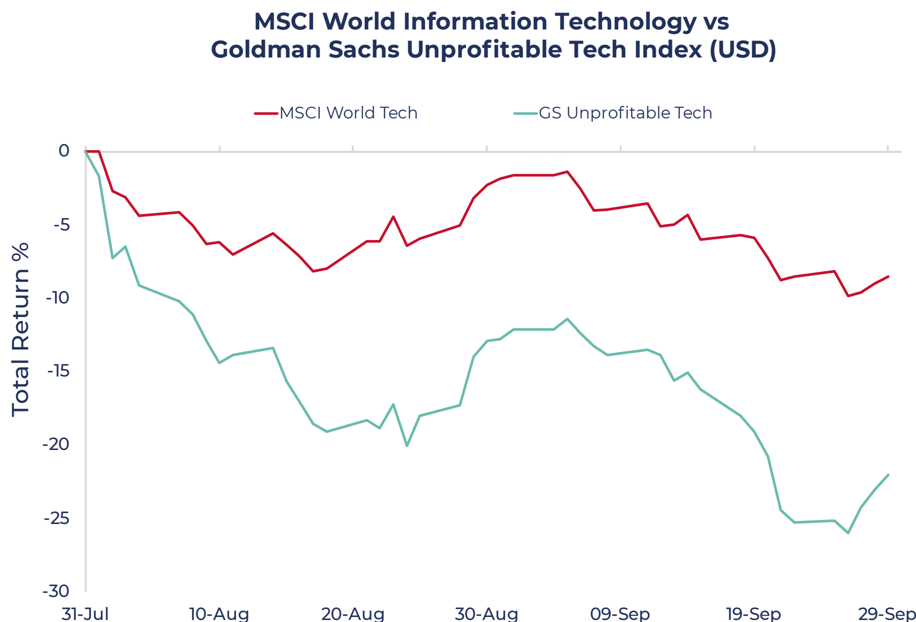
20 years to September 30, 2023



Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

This relationship does not always hold true. For example, the daily correlation between the US 10-year treasury yield and the MSCI World during the first half of 2023 was 0.1, meaning almost no correlation at all. The impact of rising yields had minimal impact on equity markets, as excitement over Artificial Intelligence offset this impact and took equities higher. Recently, the relationship has returned, showing yields are once again a key determinant of performance. In fact, the relationship is stronger than usual, with the daily correlation over Q3 reaching -0.8. This relationship explains why 'growth' faced greater multiple contraction over the final two months of the quarter despite modest improvement to earnings expectations.

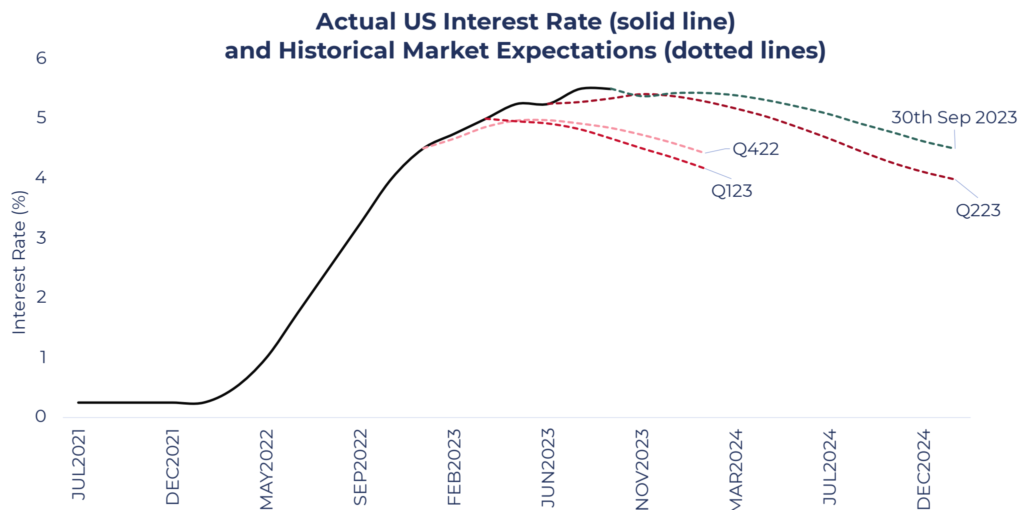
This relationship is even more evident when looking at the 'speculative' end of the growth spectrum. The Goldman Sachs Unprofitable Tech index, which is made up of a basket of unprofitable tech companies, significantly underperformed the broader MSCI Information Technology Index over the two month period.



Source: MSCI, Goldman Sachs, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

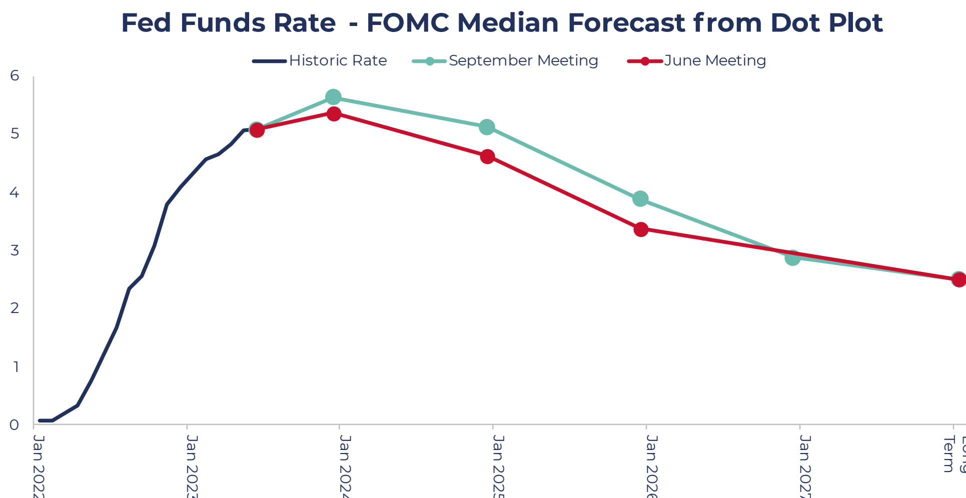
What has been the driver of this increase in yields?

During the quarter, we saw a credit downgrade to US government treasuries, greater supply of debt following the resolution of the debt ceiling and expectations of a stronger economic growth outlook. These factors all contributed to the rise in yields. The most significant driver, however, surrounded expectations of higher-for-longer interest rates. Since the end of Q123, 'peak-rate' expectations have been pushed higher and further out.



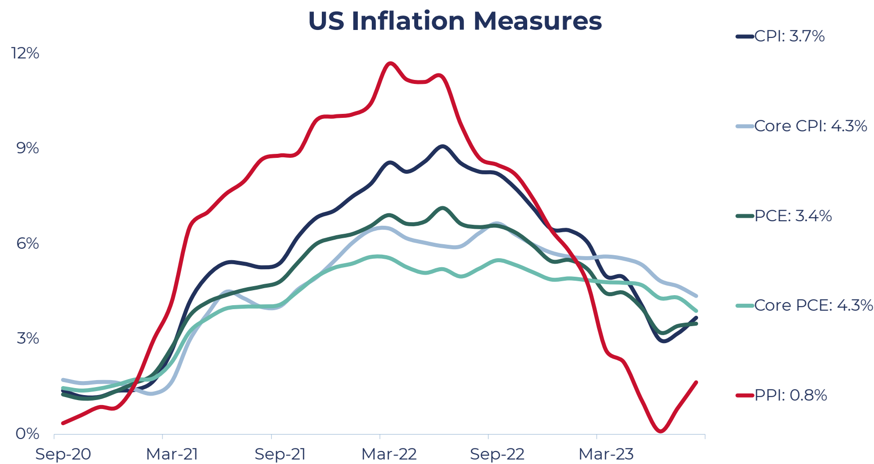
Source: Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

This change in expectations was in part influenced by signaling from the Federal Reserve. At the Jackson Hole symposium, Chairman Jay Powell pointed to the fact that *"…although inflation has moved down from its peak… it remains too high"* before pointing to a number of factors such as continued strength in consumer spending that *"could warrant further tightening of monetary policy."* The September 'dot-plot' showed committee expectations becoming more hawkish for 2024, with just two expected rate cuts before 2025 as opposed to the four forecast in June.



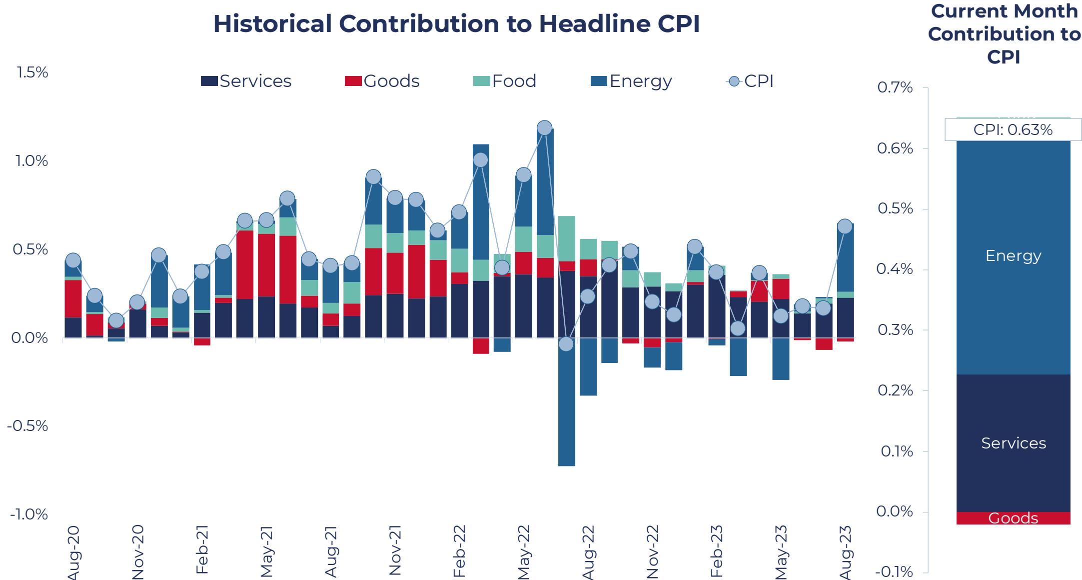
Source: FOMC, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

This more hawkish stance has been in part driven by the view that the path to the 2% inflation target may take longer than expected. Significant progress in bringing inflation down has been made, particularly in the US, but the Fed are likely to be wary about 'stepping off the gas' too early. Most measures of inflation have shown good signs of improvement, yet the Fed's preferred measure, Core PCE (Personal Consumption Expenditures), is showing the slowest downward trend. The last three readings of Core PCE (June, July and August) measured 4.1%, 4.2% and 3.9%, showing a slow, but choppy trend downwards.



Source: Guinness Atkinson Asset Management, Bureau of Labor Statistics, Bureau of Economic Analysis, as of September 30th 2023

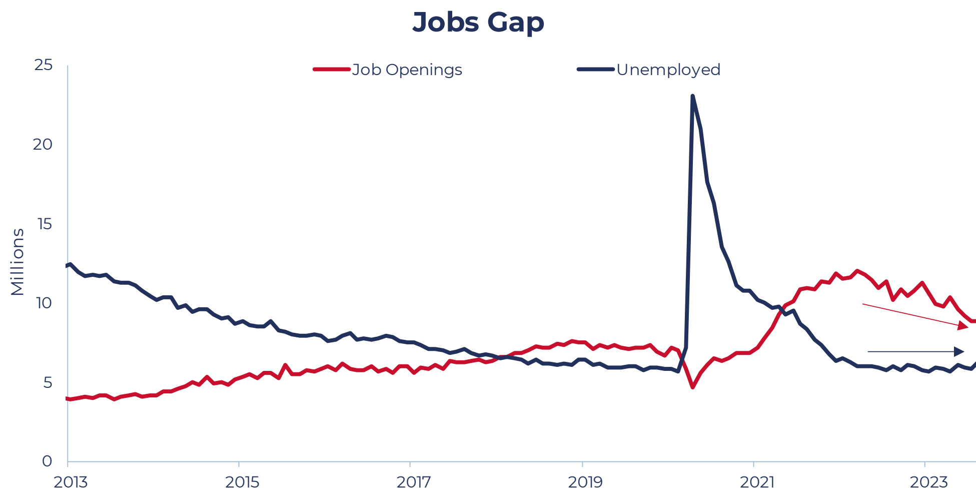
Positively, three of the four CPI components (Food, Energy and Goods) are no longer offering a meaningful contribution to month-on-month CPI over a sustained period, although energy showed a sharp uptick during August. The final and 'stickiest' source of inflation, Services, has made modest progress since 2Q22, but progress of late has slowed, with a month-on-month rate of 0.4%. Annualized this is equivalent to ~5%. Considering the fact that Services accounts for 58% of the CPI headline figure and over 70% of the Core reading, bringing down Services inflation is clearly key in bringing inflation back towards target levels.



Source: Guinness Atkinson Asset Management, Bureau of Labor Statistics, Bloomberg, as of September 30th 2023

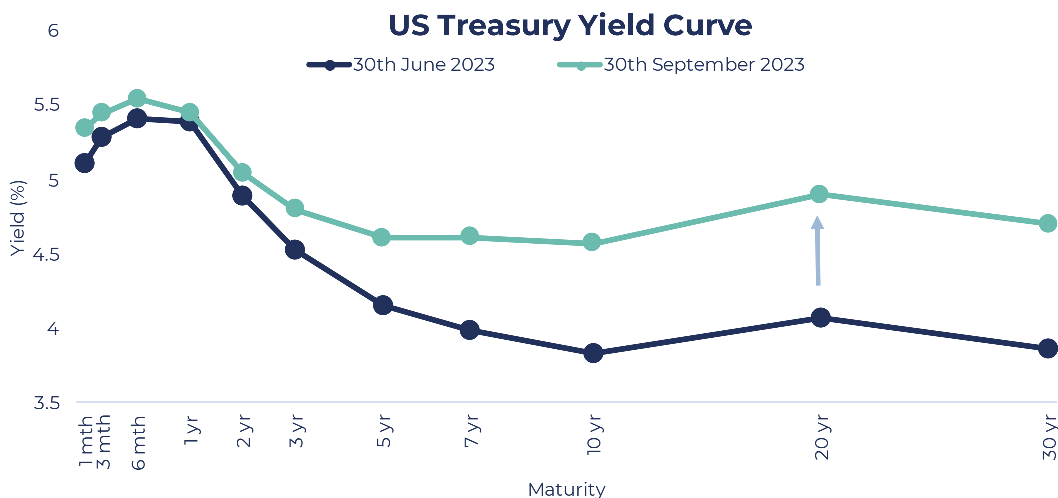
Around three-fifths of the Services sector cost base is wages, therefore a cooling jobs market is important in reducing Services inflation. Over Q3 we have seen good progress in 'closing

the jobs gap'. The unemployment rate has stayed relatively flat, yet job openings have been trending downwards. While this certainly represents a softening in the jobs markets, the gap remains, placing upward pressure on wage growth all else equal.



Source: Guinness Atkinson Asset Management, Bureau of Labor Statistics, Bloomberg, as of September 30th 2023

Central Banks will also take note of the economic backdrop. GDP growth came in at 2.1% for Q2, a showing of economic resilience amidst a record rate hiking cycle. Some suggest an improved economic outlook could be derived from a steepening of the yield curve, which has made significant progress in 'un-inverting' itself (an inverted yield curve has historically been a strong leading indicator of a recession). This could offer the Central Bank headroom to keep rates higher for longer.



Source: Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

Where does this leave equities?

In Q2, we stated that we were cautious and that it was not clear we were 'out of the woods' yet, in the context of a soft-landing. While earnings upgrades have been positive at the index level, they have largely been concentrated within just a few sectors, most notably Information Technology and Consumer Discretionary. And despite valuations coming down during the third quarter, at the broad index level they remain elevated relative to historical averages.

Source: MSCI, Bloomberg, Guinness Atkinson Asset Management, as of September 30th 2023

The future direction of markets into the year-end therefore continues to reflect the balance between the benefit of lower rates to equity valuations, if and when central banks begin their path to decreasing rates, and a weaker economic picture that might precede those lower rates. This is also in context of a market that through much of the year has been predominantly driven by a re-rating upwards of market multiples, rather than a fundamental change in company earnings today. We therefore believe our 'quality growth' approach, alongside our focus on valuation remains a sensible approach in this environment and over the long-term.

Stock performances over Q3 2023 (all total return in USD):

The chart below shows the portfolio constituents' returns over Q3 2023 in USD.

Stock	Return
Intuit Inc	11.7%
ANTA Sports Products Ltd	11.2%
Alphabet Inc	9.3%
Comcast Corp	7.5%
Meta Platforms Inc	4.6%
Adobe Inc	4.3%
Danaher Corp	3.4%
Zoom Video Communications Inc	3.0%
NVIDIA Corp	2.8%
Roper Technologies Inc	0.9%
Mastercard Inc	0.8%
Amphenol Corp	-0.9%
Lam Research Corp	-2.2%
Intercontinental Exchange Inc	-2.4%
Amazon.com Inc	-2.5%
Novo Nordisk A/S (Bought in Q3)	-2.6%
Thermo Fisher Scientific Inc	-2.9%
Visa Inc	-3.0%
Bristol-Myers Squibb Co (Sold in Q3)	-3.3%
Applied Materials Inc	-4.0%
Salesforce Inc	-4.0%
KLA Corp	-5.2%
Microsoft Corp	-7.1%
Schneider Electric SE	-8.6%
ABB Ltd	-8.8%
Medtronic PLC	-10.3%
Apple Inc	-11.6%
PayPal Holdings Inc	-12.4%
NIKE Inc	-13.1%
Taiwan Semiconductor Manufactu	-13.4%
Infineon Technologies AG	-19.6%

Source: Guinness Atkinson Asset Management, Bloomberg, as of September 30th 2023

Intuit (+11.7% USD).

Intuit ended the quarter as the Fund's top performer. Year-to-date returns now sit at +32% USD. Intuit is a global technology platform, providing the target market of small businesses and self-employed customers with key financial management and compliance products and services. Key products include QuickBooks, an accounting software platform, and US income tax return management software, TurboTax. The stock outperformed the MSCI World Information Technology index by 17.8% (USD) over the quarter. The majority of outperformance came from a positive earnings release at the end of August, injecting further momentum into the stock. Revenues came in +2.4% ahead of expectations, an increase of 13% year-over-year. The performance of the firm's core segment, Small Business and Self-Employed (which includes QuickBooks and Mailchimp) was particularly strong, with revenue growth of 24%.

"Five years ago, we declared our strategy to be an AI-driven expert platform with data and AI core to fueling innovation across our 5 Big Bets. - Sasan K. Goodarzi, Intuit Inc. - CEO, President & Director

The firm is continuing to double down on its 'big bets', in particular their efforts to become the 'center of small business growth'. Management have shown commitment and execution in driving efficiency gains across the business and forward revenue guidance remains conservative, with the firm noting that it was taking a 'prudent' approach to guidance given macro-uncertainty. We see this as sensible, but also note the opportunity for positive surprises down the road. The firm enters FY24 with a strong set-up, retaining a market leading position with a strong economic moat, and a number of long-term growth drivers.

Anta Sports (+11.2%, USD):

Following a relatively weak Q2, Anta Sports ended Q3 as the Fund's second top performer. In 4Q22, investors piled into the stock off the back of the Chinese reopening. However, the reopening trade has thus far failed to meet expectations with Chinese GDP only growing 0.8% in Q2 vs Q1 (below estimates) and manufacturing activity continuing to contract for the 4th straight month. The stock was further weighed by a $1.5bn placement during April. Entering into Q3, the stock performed strongly in July, but fell sharply in the first few weeks of August given renewed concerns over the Chinese region. However, Anta recovered the majority of those losses with a very strong 1H earnings release, which saw a 9.7% bounce on the day. The firm delivered a record high operating margin for the firm's FILA

and outdoor brands, record-high cash flow (134% operating cash flow growth) and strong inventory management. The firm delivered 1H adjusted profit growth of 40% from a year prior, with the top-line also growing 14.2%. The firm also increased the dividend to HK$0.82, 32% higher than the year prior. From a stock perspective, we remain confident in the outlook of Anta Sports, which benefits from long term structural tailwinds. Beijing continues to promote exercise and sports, pouring billions into initiatives such as the "Healthy China 2030" Plan, which should serve to lift the sports industry's contribution to GDP. China's per capita spending on sportswear remains comparatively low at $31, but as the middle class emerges, analysts expect this to rise to a similar level as Japan ($110) by 2030 (US $307). The firm has a number of meaningful growth opportunities including geographical expansions as well as forays into the premium segment of the market. All in all, we believe the fundamentals behind the company remain strong, and underlying secular trends should serve to boost Anta's revenue profile into the long term.

Infineon (-19.6% USD)

Infineon ended the quarter as the Fund's bottom performer, after the stock gave up a large chunk of its strong year-to-date performance during August and sold-off in line with the MSCI World Semiconductor index during September. Year to date the stock remains up 9.8%, relatively in-line with the MSCI World Index (up +11.4%), but lagging other Semiconductor peers. Nearly half of the firm's negative performance in August came on the day of results, despite revenues and earnings coming in broadly as expected. End-market performance was relatively bifurcated, with auto's & industrials performing well, while consumer remained weak. While revenue was down 1% sequentially, the firm beat guidance (+2.5%) and grew +13% year-over-year. The firm announced a significant expansion to their SiC (silicon chip) foundry in Kulin, costing $5bn through to 2028, making it the world's largest 200mm SiC factory. The firm has covered the cost of manufacturing through EUR 5bn 'design-wins' and EUR 1bn in customer pre-payments. The factory is expected to drive EUR 7bn revenues annually by the end of the decade. The share price reaction was likely driven by a.) the level of investment the firm has committed to in a competitive space – this capex (capital expenditure) comes atop a EUR 5bn commitment to their Dresden build-out; b.) by margin compression (26.1% vs 28.6% in Q2) and c.) weaker guidance for Q4. On the whole, we view the market reaction as overdone. The firm's balance sheet is in very strong (Net Debt to EBITDA 0.4x) (earnings before interest, taxes, depreciation, and amortization), as is cash generation (124% trailing 12 months), and we are also reassured that the firm is looking to fund this large capex through achieved design wins and customer prepayments. We therefore view the commitment to invest in industry leading facilities as a positive tailwind to future performance – although we agree that it opens the firm up to a greater risk of factory underutilization and/or a price war with peers who are also investing in the space. In the short term, while it may be disappointing that margins have compressed and the order book is decreasing, longer term, we continue to believe the picture remains bright for Infineon,

who are particularly exposed to favorable long term secular trends such as electrification and renewable energy demand.

Taiwan Semiconductor Manufacturing Company (-13.4% USD)

TSMC fell -13.5% USD over Q3, ending the quarter as the Fund's second bottom performer. Over August and September, the stock fell in-line with its broader MSCI World Semiconductor index, despite facing additional headwinds from a regional perspective. The stock started to slide in the latter half of July as the chipmaker warned of a deepening semiconductor slump, resulting in a downgrade of guidance from -5% year-on-year revenues, to -10% for the full year of 2023. The firm noted a weaker than expected Chinese economy resulting in less demand than hoped, with strong demand from artificial intelligence not able to offset weakness in smartphone, automotive and industrial applications. The semiconductor industry is highly cyclical and we expect near-term weakness from both a top-line and margin perspective. However, there are indications that the industry is approaching a trough in demand, and the long term outlook remains very healthy. The Fund's overweight position to the semiconductor industry is based on the view that these stocks have significant exposure to a number of the Fund's long term secular growth themes, including 'Artificial Intelligence and Big Data', 'Cloud Computing', 'Internet of Things', 'Clean Energy & Sustainability', and 'Internet, Media & Entertainment' – all of which we view as likely to drive long-term semiconductor industry growth. We view high quality market leaders such as TSMC as particularly well positioned into the long term. TSMC's numerous sources of sustainable competitive advantage, most notably intellectual property, cost advantages from economies of scale, and high barriers to entry from high upfront CapEx costs (particularly at advanced nodes), serve not just to protect market share, but drive long term top-line growth. Additional industry trends such as increasing semiconductor content per device and the increase in fabless firms outsourcing to foundries places TSMC particularly well. Paired with an attractive valuation that helps to mitigate against downside risk, we remain confident in the long term proposition that TSMC offers.

Changes to the portfolio:

In August we made one change to the portfolio.

Buy - Novo Nordisk

Novo Nordisk is an innovative industry leader characterised by high R&D / sales and world class new product innovation, driving sector beating cash returns. The firm has shown strong momentum in recent quarters, with their weight loss drug Wegovy exhibiting positive early results and looks set to be a meaningful growth driver for the business going forward. Additionally, they are also showing a broadening out of strength from the rest of the portfolio, particularly in Cardiovascular, which has a much wider addressable market. Sales growth has been accelerating with a 2yr forward sales compound annual growth rate (CAGR) of 22% and a 2yr forward EPS CAGR of 30%. The firm's CFROI (cash flow return on investment) stands at 20.4%, the firm has strong dividend growth (5 year dividend CAGR is 10%) and the balance sheet remains solid (debt has grown to $25bn but is ~ 0.3X EBITDA, a very manageable figure). The firm's has a very strong mix of both quality and growth characteristics, paired with a number of long term secular drivers – characteristics we look for within the Fund strategy.

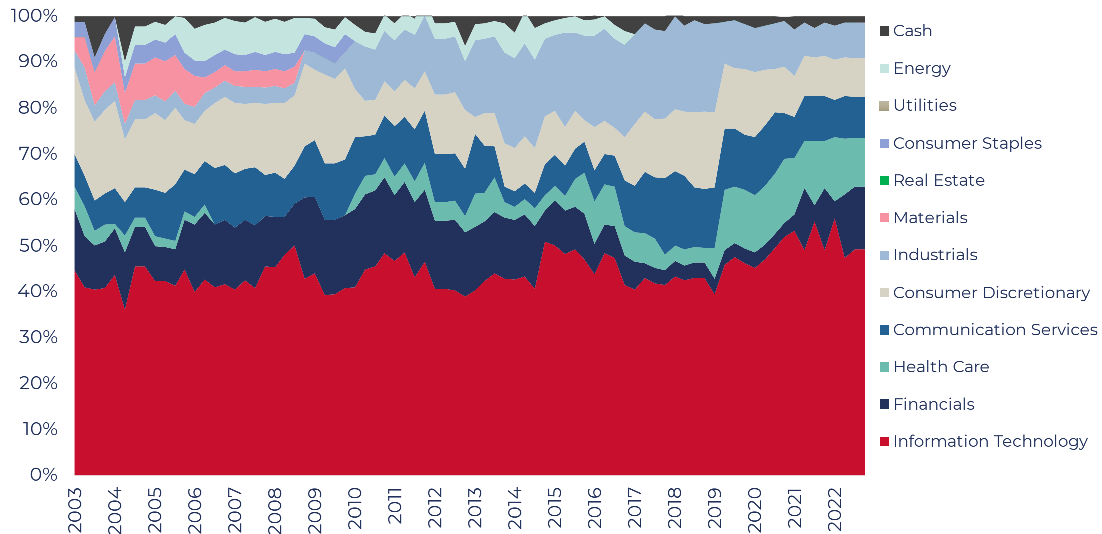
Sell - Bristol Myers Squibb

Over the holding period, Bristol-Myers Squibb returned +9.6% vs the MSCI World +34.4%. Our sell decision was based on a view of a weakened outlook. In Q2 2023, management downgraded guidance for FY2023, previously seeing 2% topline growth and now seeing low single digit declines, primarily due to generic competition from biosimilars which hurt demand for its myeloma therapy, Revlimid. Revlimid sales are tracking weaker than expected and there are additional headwinds on the horizon, with Bristol-Myers Squibb patents expiring on drugs such as Opdivo, a cancer drug, and Eliquis, a blood thinner.

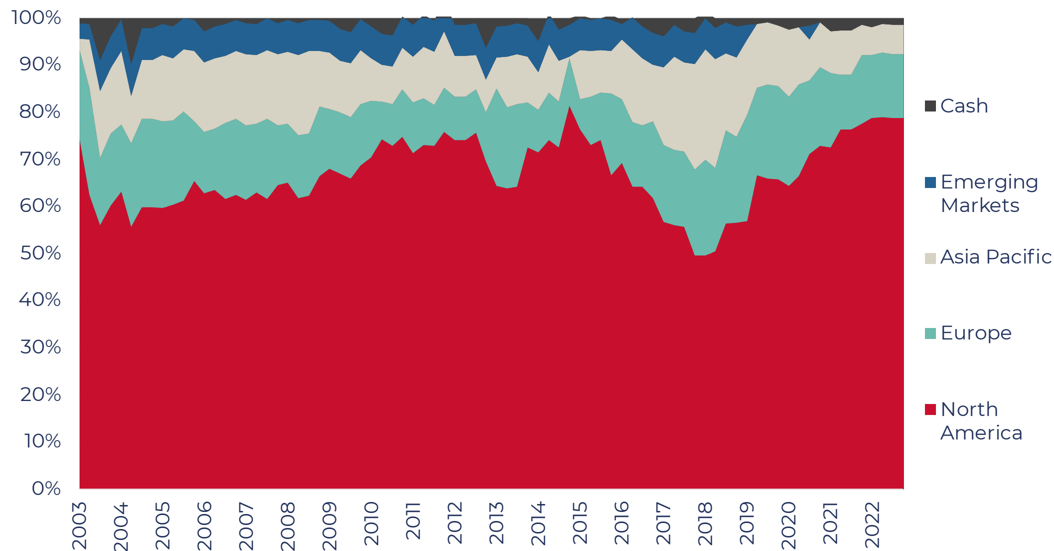
This somewhat weaker relative performance, comes on the back of very strong performance in 2022 - where the stock rallied +19% vs the benchmark MSCI World Index which fell -18% and made Bristol-Myers Squibb the best performer in the fund over the period. Generally, healthcare did better in that period (along with defensive sectors more broadly) but the stock also benefited from improved expectations of new pipeline drugs. In 2022 the multiple expanded from 8.5x to 10.5x, but we have seen that de-rate in 2023 back towards 8.5x on lowered growth expectations. We do not currently see strong potential for this to reverse, although we note any positive news flows on their pipeline progress would likely challenge that view (but is by definition hard to predict). We therefore felt there were better opportunities offering superior growth and quality characteristics that we seek.

Portfolio characteristics

The two charts below show how the exposure of the fund has evolved since we launched the strategy back in 2003. We continue to hold no exposure to Real Estate, Energy, Materials, Consumer Staples, and Utilities. Information Technology remains our largest exposure, split between the three sub-sectors of semiconductors; software and services; and technology hardware. On a regional basis, North America continues to be the largest exposure (78%), followed by Europe (15%) and Asia Pacific (6%).

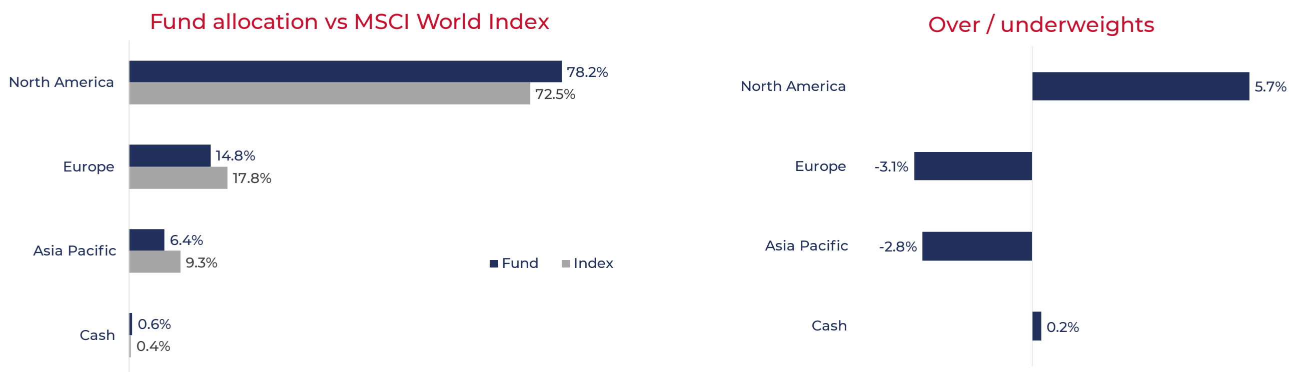


Portfolio sector breakdown. Guinness Atkinson Asset Management, Bloomberg (September 30th 2023)



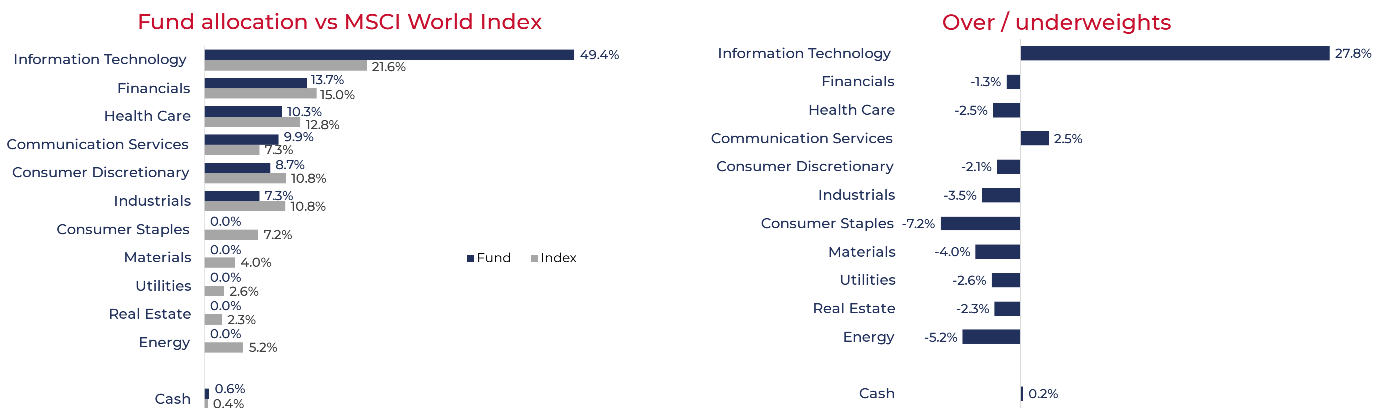
Portfolio geographic breakdown. Guinness Atkinson Asset Management, Bloomberg (September 30th 2023)

On a regional level, at the end of the quarter the fund held a small overweight position position to North America, and small underweight positions to Europe and Asia Pacific, relative to the benchmark.



Guinness Atkinson Asset Management, Bloomberg (data as at September 30th 2023)

On a sector level, the fund continues to have a large overweight to IT (28%), while the fund's 0% exposure to Real Estate, Energy, Materials, Consumer Staples, and Utilities leaves these areas underweight relative to the benchmark.



Guinness Atkinson Asset Management, Bloomberg (data as at September 30th 2023)

Outlook

The Guinness Atkinson Global Innovators fund seeks to invest in quality, innovative growth companies trading at reasonable valuations. By doing so, we seek to invest in companies that are experiencing faster profit growth, larger margins and with less susceptibility to cyclical pressures. In particular, our focus on quality growth-at-a-reasonable-price has shown its strength in avoiding the highly valued non-profitable tech businesses that have swung between large rises and falls, but ultimately underperformed significantly over the last two years.

Innovation: We seek companies that are exposed to secular growth themes, which should therefore be more insulated to cyclical cycles.

Quality: We only invest in companies with good (and ideally growing) returns on capital and strong balance sheets.

Growth and valuation: We look to buy good growth companies at reasonable valuations and specifically we try to avoid paying too high a premium for expected future growth – as this is inherently less predictable.

Conviction: We run a concentrated portfolio of 30 stocks, equally weighted.

The table below illustrates how the portfolio reflects the four key tenets of our approach of innovation, quality, growth, and conviction. The fund has superior characteristics to the broad market; higher spend on intellectual property through research and development (R&D), less capital intensiveness, higher cash flow returns on investment, with higher historic growth. The fund currently trades at a 33.9% premium to the benchmark on a 1 year forward P/E basis (24.4% on a 2 year forward P/E) which we believe is a reasonable price to pay for this attractive set of characteristics.

		Fund	MSCI World Index
Innovation	R&D / Sales	9.5%	6.7%
	CAPEX / Sales	6.7%	7.6%
Quality	Return-on-Capital	21.1%	6.1%
	Net debt / equity	16.5%	92.8%
Growth (& valuation)	Trailing 5-year sales growth (annualized)	15.0%	4.0%
	Estimated earnings growth (2024 vs 2023)	17.6%	9.4%
	PE (2023e)	24.1	17.4
	PE (2024e)	19.8	15.9
Conviction	Number of stocks	30	1630
	Active share	80%	-

Guinness Atkinson Asset Management, Bloomberg (data as at September 30th 2023)

In the current market environment where interest rate concerns, inflation and an economic slowdown remains top of mind, we are confident that the Fund's focus on high quality growth stocks, underpinned by secular trends should stand us in good stead going forward.

We look forward to updating you on the progress of the fund over the remainder of 2023.

We thank you for your continued support.

Portfolio Managers

Matthew Page, CFA

Dr Ian Mortimer, CFA

Summary performance

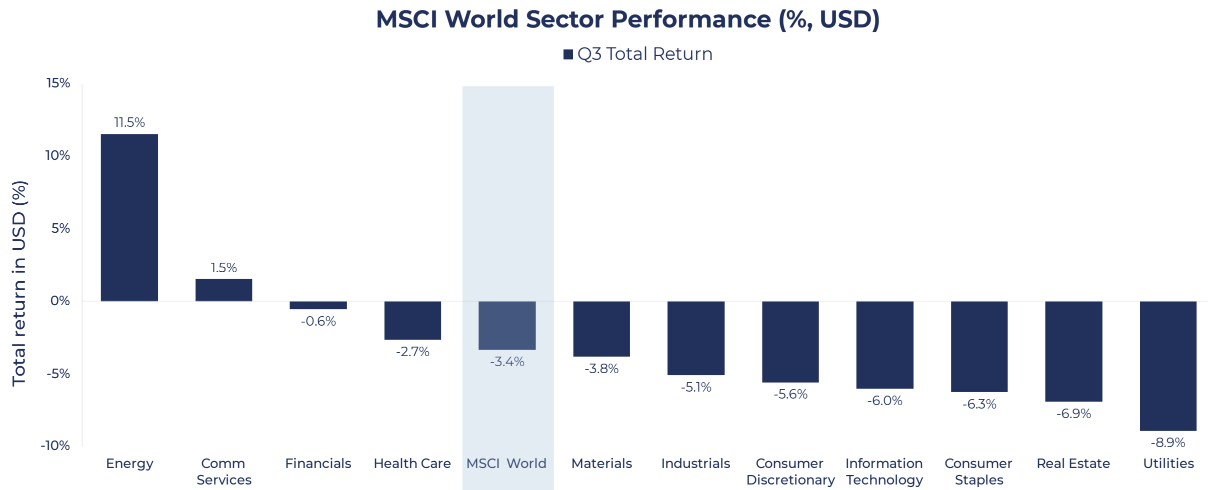
In the third quarter of 2023, the Fund returned -2.97% (in USD) and the MSCI World Index returned -3.46%. The Fund therefore outperformed the Index by 0.49% over the period.

Over the year-to-date, the Fund returned 22.46% (in USD) and the MSCI World Index returned 11.10%. The Fund therefore outperformed the Index 11.36% over the period.

Despite persistently high core-inflation across regions, tighter monetary policy than expected from global Central Banks, a disappointing Chinese re-opening and recessionary concerns, investors largely brushed these concerns aside since the US banking crisis was resolved in March. During that period, investors appeared optimistic that the US could achieve a soft-landing – whereby inflation was tamed but without tipping the economy into recession. Index performance was largely driven by a narrow selection of mega-caps stocks, and particularly those most exposed to Artificial Intelligence, notably large cap technology companies. However, during August and September equity markets faltered. The S&P 500, for example, posted its first negative monthly return in five months during August.

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.

In the third quarter, equities continued to rally into July, before giving way to weaker, albeit mixed, performance in August, and then a more pronounced and broad-based sell off in September. Only two sectors ended the period in positive territory.



Source: Guinness Atkinson Asset Management, Bloomberg (data as of September 30th 2023)

Sector performance over the quarter highlights the emergence of an expected slower/lower growth environment alongside 'higher for longer' interest rates. Outside of the Energy sector and Communication Services, all other sectors fell. The Energy sector had strong performance as the oil price rallied. Communication Services was dominated by Alphabet's positive performance in the quarter and large weight in the sector. 'Bond proxy' sectors Real Estate and Utilities led the declines, followed by Consumer Staples and then Information Technology. A key element of equity weakness over this period was a rise in treasury yields. The 10 year US treasury yield rose 73 bps to 4.6% - levels not seen since August 2007 – over the quarter, as expectations of tighter-for-longer monetary policy took hold. The Federal Reserve's September dot plot indicated just two rate cuts in 2024 from the four rate cuts estimated in the committee's June meeting. Combined, this led to the underperformance of 'higher duration' equities – both the high dividend yield sectors such as Utilities, and companies with valuation linked to higher future growth in the Information Technology sector.

Fund performance over the third quarter can be attributed to the following:

- The rotation towards 'value' acted as a headwind to relative performance over the third quarter, with the Fund's greater exposure to 'growth' as a factor acting as a drag. However, strong stock selection within Information Technology, Communication Services and Consumer Discretionary sectors more than offset this effect, allowing the Fund to outperform the benchmark. Being conscious of valuation allowed the Fund to avoid some of the more 'speculative growth' stocks that were most exposed to valuation contraction during the quarter.
- In terms of sectors, the Fund's holdings within Communication Services offered the greatest contribution to outperformance, with both good stock selection and a

positive allocation effect. All three of the Fund's holdings within the sector outperformed both the MSCI World Index and their sector index (MSCI World Communication Services): Alphabet (+9.3% USD), Comcast (+7.5% USD) and Meta (+4.6% USD).

- Information Technology offered the largest drag in terms of allocation, as the benchmark's third worst performing sector during the quarter and the Fund's largest overweight position. However, strong stock selection more than offset this impact, with names such as Intuit (+11.7% USD), Adobe (+4.3% USD), and Zoom (+3.0% USD) outperforming the broader sector index by at least 9% (MSCI World Information Technology Index, -6.0% USD).
- Having no exposure to the best performing sector, Energy, acted as a drag from an allocation perspective. The Fund's overweight position to Semiconductors offered one of the largest drags, with Infineon (-19.6% USD) and TSMC (-13.5% USD) the two weakest holdings over the period.

as of 09.30.2023 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	33.27%	6.32%	10.21%	11.37%
Global Innovators, Institutional Class[2]	33.62%	6.59%	10.48%	11.59%
MSCI World Index NR	21.95%	8.09%	7.25%	8.26%

All returns after 1 year annualized.

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.

[1] Investor class (IWIRX) Inception 12.15.1998 Expense ratio* 1.24% (net); 1.27% (gross)

[2] Institutional class (GINNX) Inception 12.31.2015 Expense ratio* 0.99% (net); 1.10% (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).

*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, 2026. 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 09/30/2023:

1. NVIDIA Corp	4.46%
2. Mastercard Inc	4.00%
3. Microsoft Corp	3.95%
4. Amphenol Corp	3.95%
5. Roper Technologies Inc	3.80%
6. Lam Research Corp	3.79%
7. Intuit Inc	3.79%
8. ABB Ltd	3.78%
9. KLA-Tencor Corp	3.73%
10. Applied Materials Inc	3.70%

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.

Basis points (BPS) refers to a common unit of measure for interest rates and other percentages in finance. One basis point 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 **Consumer Price Index (CPI)** is an index of the variation in prices paid by typical consumers for retail goods and other items.

The **European Central Bank (ECB)** is the central bank of the 19 European Union countries which have adopted the euro.

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.

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.

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.

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

The **Nasdaq 100 Index** is a basket of the 100 largest, most actively traded U.S companies listed on the Nasdaq stock exchange.

The **price-to-earnings ratio (P/E ratio)** is the ratio for valuing a company that measures its current share price relative to its earnings per share (EPS).

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Correlation is the interdependence of variable quantities. It is a statistical measure that expresses the extent to which two variables are related i.e. how much one variable changes when another variable changes. The relationship does not need to indicate causation.

Duration: The duration number is a complicated calculation involving present value, yield, coupon, final maturity and call features. Fortunately for investors, this indicator is a standard data point provided in the presentation of comprehensive bond and bond mutual fund information. The bigger the duration number, provided in years, the greater the interest-rate risk or reward for bond prices. It can also be used to describe equities in a similar manner: a higher duration suggests most cash flows are expected far into the future, with a lower duration suggesting more stable cash flows over the short and long term.

The Goldman Sachs Non-Profitable Technology Index consists of non-profitable US listed companies in innovative industries. Tech is defined quite broadly to include new economy companies across Global Industry Classification Standard (GICS) industry groupings. The basket of tech stocks is optimized for liquidity with no name initially weighted greater than 4.65%

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

The Personal Consumption Expenditures (PCE) Price Index Excluding Food and Energy, also known as the core PCE price index, is released as part of the monthly Personal Income and Outlays report. The core index makes it easier to see the underlying inflation trend by excluding two categories – food and energy – where prices tend to swing up and down more dramatically and more often than other prices.

The Producer Price Index (PPI) is a family of indexes that measures the average change over time in selling prices received by domestic producers of goods and services. PPIs measure price change from the perspective of the seller.

Capital Expenditure (CAPEX) Funds used by a company to acquire or upgrade physical assets such as property, industrial buildings or equipment.

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 **S&P 500 Index** features 500 leading U.S. publicly traded companies, with a primary emphasis on market capitalization. It is a float-weighted index, meaning the market capitalizations of the companies in the index are adjusted by the number of shares available for public trading.

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.

The **net debt-to-EBITDA ratio** is a debt ratio that shows how many years it would take for a company to pay back its debt if net debt and EBITDA are held constant.

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

Compound annual growth rate, or CAGR, is the mean annual growth rate of an investment over a specified period of time longer than one year. It represents one of the most accurate ways to calculate and determine returns for individual assets, investment portfolios, and anything that can rise or fall in value over time.

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

One cannot invest directly in an index.

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