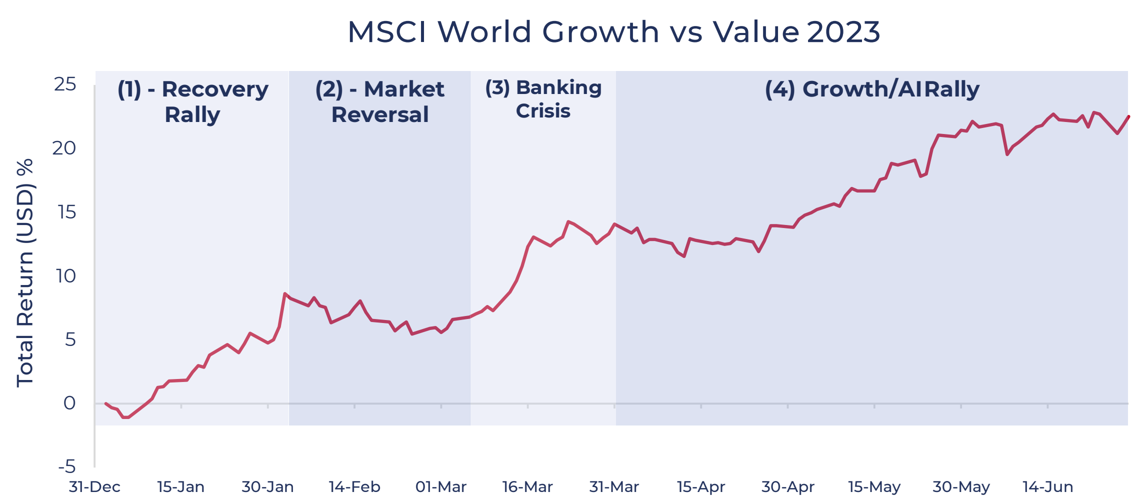
Guinness Atkinson
Global Innovators Fund
Managers Update – July 2023

Quarter in Review:

Following a relatively volatile first quarter, Q2 saw relative calm as equity markets ticked upwards, driven by 'growth' orientated stocks. The first half of 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 June 30th 2023

While the chart above offers a more complete picture, in particular the prevailing direction of markets, looking at the MSCI World Growth Indices against the MSCI World Value indices highlights more clearly the factor leadership within each period.



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

(1) – Recovery Rally

Many of the key market concerns from 2022 abated somewhat (inflation, China's COVID-19 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

The market reversed course in early February, as hopes of an earlier pivot away from tight monetary policy were dampened. 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. Expectations of a higher and later peak rate drove the underperformance of growth relative to value.

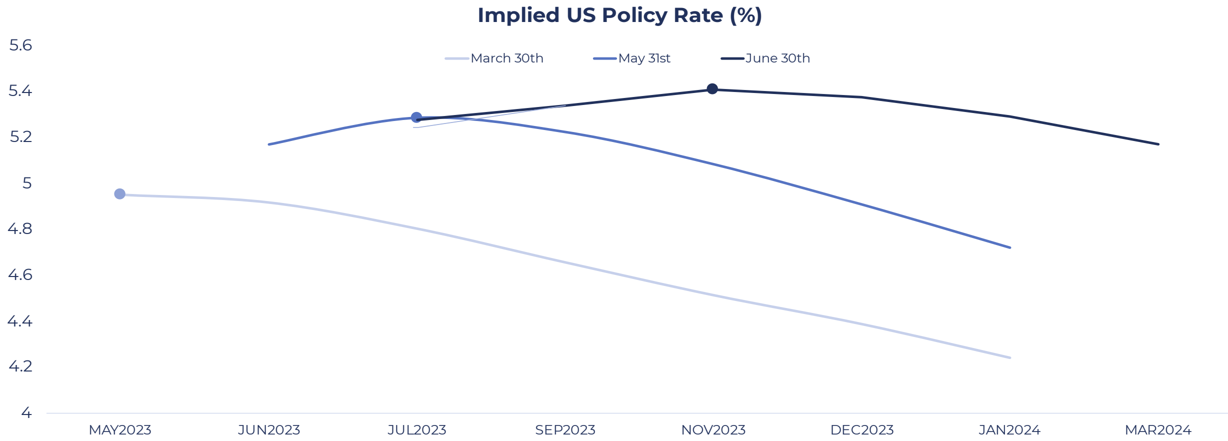
(3) – Banking Crises

The collapse of Silicon Valley Bank introduced a level of volatility back into markets. Equities initially reacted with a sharp sell-off, as fears of financial contagion grew. A strong policy response from regulators restored a level of confidence back into the banking system and calm back into equity markets, which rebounded over the subsequent weeks. The crises drove a tightening of credit conditions. Tight credit conditions typically create a headwind for economic growth, driving a rotation towards higher quality companies with strong balance sheets and margins. However, tighter credit conditions were also likely to play a part in reducing inflation, also supporting growth stocks, on the basis that the exogenous shock might play a part in bringing forward looser monetary policy.

(4) Growth/AI Outperformance

The drivers of growth outperformance seen over Q2 have largely differed from the two periods of outperformance seen by the factor in Q1. While the first period of outperformance was one in which equities on the whole were rallying hard, and the second period of growth outperformance was largely amidst a market correction, both were driven, in part, by interest rate expectations of when a pivot in monetary policy may occur. The latest period of 'Growth' outperformance was up until early June, in the context of sideways moving equity markets. Looking deeper, however, there was a range of interesting market dynamics.

Unlike the prior two period's, 'Growth' outperformance was not driven by expectations of an earlier pivot to loose monetary policy. In fact, over the second quarter interest rate expectations acted as a headwind for 'growth' stocks, with the implied peak policy rate shifting both higher and later. Yet growth outperformed anyway.



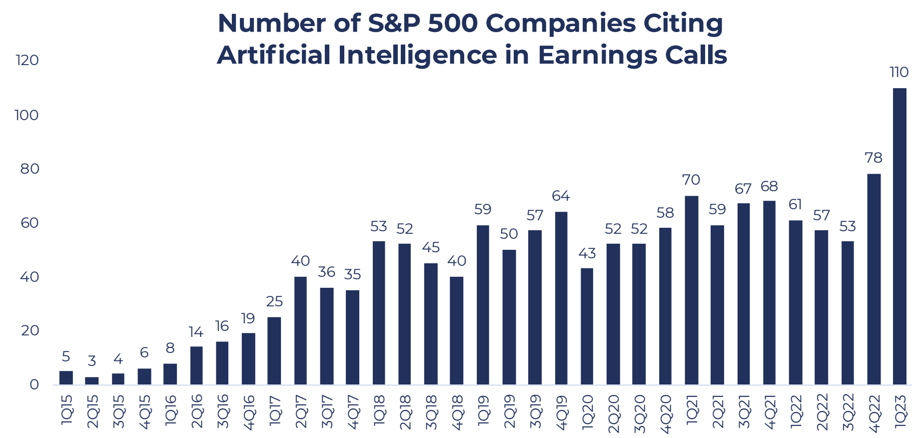
Source: Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

Growth outperformance in the second quarter was stark, yet was driven by just a handful of stocks. After struggling throughout 2022, 'Big Tech' continued on its strong run throughout 2023 and was the core source behind the outperformance of 'growth' and equities more broadly. Our analysis suggests that the MSCI World Growth index would have closely tracked that of the MSCI World Value, if the 'Big 6' tech stocks (Apple, Alphabet, Amazon, Meta, Microsoft and Nvidia) were removed. This period of 'Growth' outperformance was arguably not driven by an expectation of better prospects for broadly defined 'growth' stocks, but for a select few.

Big 6: Apple, Alphabet, Amazon, Meta, Microsoft, Nvidia

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

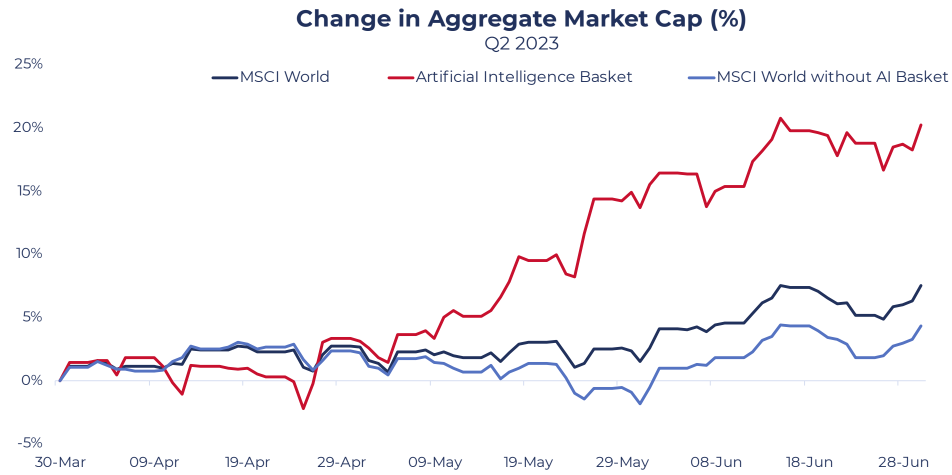
The catalyst for this outperformance was renewed enthusiasm over Artificial Intelligence. While AI is not a new phenomenon, the launch of Chat GPT earlier in the year has captured the imagination of consumers and businesses alike over 2023, and catalyzed businesses across sectors to investigate the best way to leverage and incorporate the technology into their business models and operations. As a result, the number of companies citing Artificial Intelligence in earnings calls surged to all time high's (110 S&P 500 companies), more than 40% higher than the previous record set just a quarter prior.



Source: Guinness Atkinson Asset Management, Factset, as of June 30th 2023

Investment into Artificial Intelligence was not just evident in company rhetoric and carefully marketed press releases, but in company fundamentals too. Nvidia added an astonishing $184bn to their market capitalization following their quarterly earnings, more than the entire market cap of close-peer Intel, with the stock surging +24% on the day of results. The company, which, for the second quarter running, ended as the Fund's top performer, guided for revenues of $11bn in the next quarter, 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.

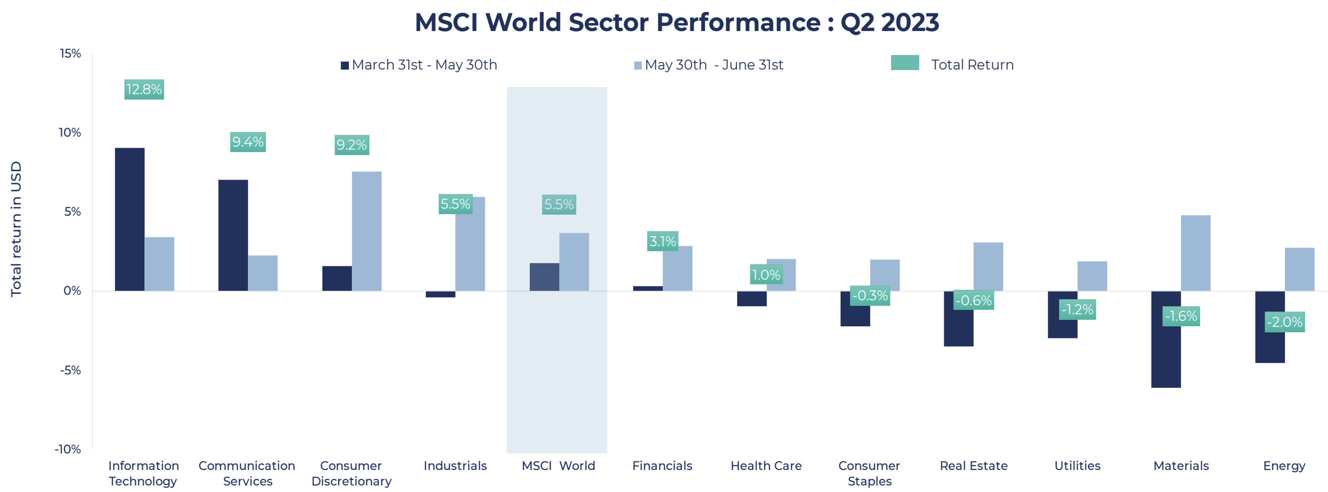
'Artificial Intelligence and Big Data' is one of the nine key innovation themes that the Global Innovators strategy focuses on. As part of our analysis into the theme, we have designated a basket of stocks (these stocks may or may not be held within the Fund) that we believe to be most aligned to Artificial Intelligence and Big Data. These include stocks from both developed and emerging markets, including the likes of Nvidia, Microsoft, Adobe and TSMC. Over the quarter, we can see that stocks identified within the Artificial Intelligence basket created a significant tailwind to positive equity performance.



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

The six 'Big Tech' names, who all feature within the Artificial Intelligence basket, are expected to be some of the key beneficiaries to the long term secular growth trend that is Artificial Intelligence. We also note, however, that in the context of tightening monetary conditions, debt ceiling concerns (up until June), and a risk of recession, big tech is as an attractive place to have exposure to. Long term secular growth trends support strong free cash flow, helping these firms to continue supporting investment in growth and innovation. But these firms also possess high barriers to entry to protect market shares, and stickier revenue models to increase the visibility of revenues. The cash generative and quality properties of these companies encourages a market preference for their more assured long-term growth. Hence, exposure to the long-term secular growth theme of Artificial Intelligence, paired with their quality attributes, contributed to outperformance over the period.

From a sector perspective, only four of the eleven GICS (Global Industry Classification Standard) sectors finished in positive territory between the beginning of the quarter and the end of May, and only IT and Communication Services outperforming the MSCI World, highlighting the relative 'narrowness' of the market. Interestingly, the MSCI World would have fallen into negative territory in late May (quarter to date) had the Big Tech names not been included in the index, but instead finished +2.9% USD. On the whole, H1 2023 was a record low for US equity market breadth. Just 32% of US stocks have outperformed the market YTD, highlighting the sharp concentration of winners. In June, we saw the rally broaden and the outperformance of growth decelerate, as all sectors finished in positive territory. While the technology sector continued to run (+6.2%), the performance was shared more equally with the more cyclically inclined Consumer Discretionary (+10.5%), Industrials (+9.0%) and Materials (8.3%) all outperforming the broader MSCI World.



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

In June, the macro backdrop evolved positively for equities. A resolution to the debt ceiling early in the month proved to be the catalyst needed to broaden the rally, before further strong economic data buoyed sentiment further, boosting hopes of a soft landing. Headline CPI fell 90bps (year-on-year) compared to the prior month, and expectations of a pause in the rate hike cycle provided an additional tailwind for the first half of the month.

While the Fed did pause for the first time in 10 meetings, it was a decidedly hawkish pause, which took equities temporarily lower, with slight outperformance from value. The ‘dot plot’ suggested committee members expected two more rate hikes this year, due to concerns of core inflation being too sticky. While this drove concern over an increased prospect of recession, upbeat economic data in the final week of the month quelled these concerns, reversing the losses of the previous week. This data included consumer confidence at a 15 month high, new home purchases rising at the fastest rate in a year, and durable goods orders exceeding expectations. A revised GDP number for the first quarter in the US, from 1.3% to 2.0%, drove further gains in the final trading sessions of the quarter.

Macro Outlook

There is no doubt that the macro-environment looks far more attractive for equities than it may have done at the beginning of the year. Even after a banking crisis, many more rate hikes than expected, a disappointing Chinese reopening and continued earnings downgrades across the market, equities have still recovered from the depths of 2022. The Nasdaq even recorded its best start to the year in four decades. And it is easy to see why. Many of the core concerns that weighed heavily on equities over the prior year have diminished: the economy has remained remarkably resilient, headline inflation has fallen consistently, the hiking cycle is on pause for now, and company earnings have, on the whole, continued to surprise to the upside. While we are not necessarily ‘bearish’ on the current macro-outlook, we do see reason for caution that we may not be ‘out of the woods’ just yet.

(1) **Company Earnings**

While company earnings have largely surprised to the upside over half-year, with 78% of S&P 500 companies exceeding Q1 estimates (in-line with the long-term average), this is largely in the context of cuts in earnings expectations. Throughout the year, we have seen continued cuts in earnings expectations for each quarter in 2023.

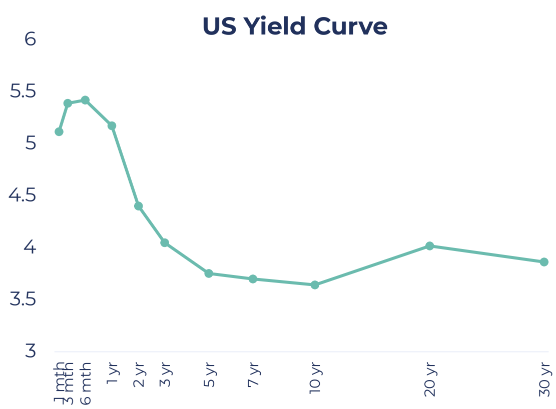
Source: S&P, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

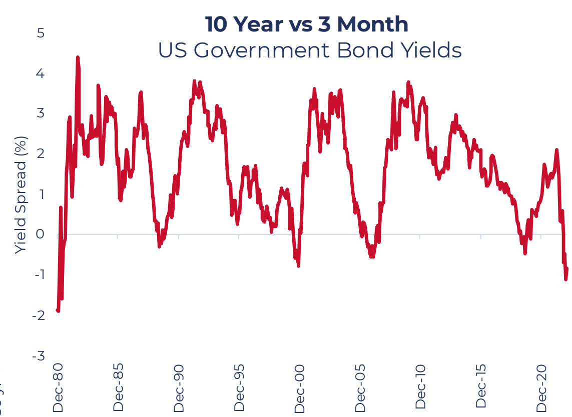
At the beginning of the year, the markets were expecting Q1 and Q2 to come in moderately flat, while Q3 and Q4 would exhibit strong growth to deliver moderate full year EPS growth (+3%). The picture now looks significantly different, with year-on-year earnings declines in Q1 and Q2 and a flat(ish) full year. In order to achieve flat earnings for the full year, the implication is a significantly stronger second half of 2023 than last year, particularly in the final quarter. While so far proving resilient (strong consumer confidence, GDP growth etc), there are a number of indicators that may suggest the road may be bumpier than anticipated – a recession for example.

Source: S&P, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

(2) Recession risk

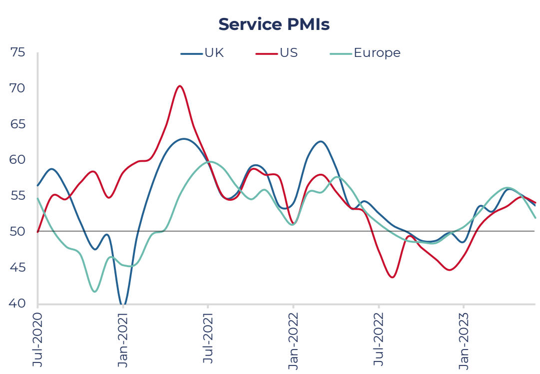
US recession expectations remain high, with the Bloomberg median forecasted probability of recession remains at 65%, the same as at the beginning of 2023. US economic growth, so far, has been remarkably resilient considering the rapid pace of rate hikes from the Fed, with US GDP being revised upwards to 2% for the first quarter. The fact that a recession has not yet occurred has positively surprised the market, and many are now expecting a 'less deep' recession than before, with the potential even for a soft landing. Soft landing or not, negative GDP growth is likely to hurt equity prices, and we note a number of leading economic indicators that may suggest an impending recession. The yield curve remains deeply inverted, with the 10 year/3 month indicator at its deepest inversion over the past 40 years – a period in which the curve has correctly indicated five out of five recessions.

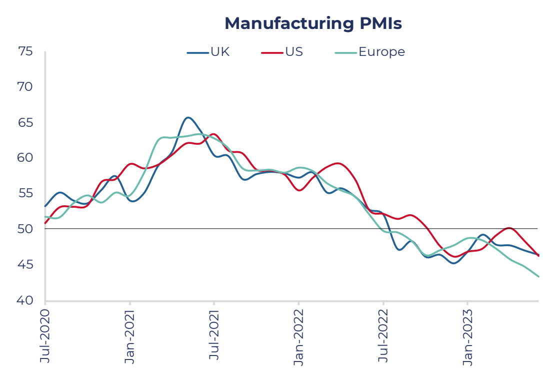




Source: Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

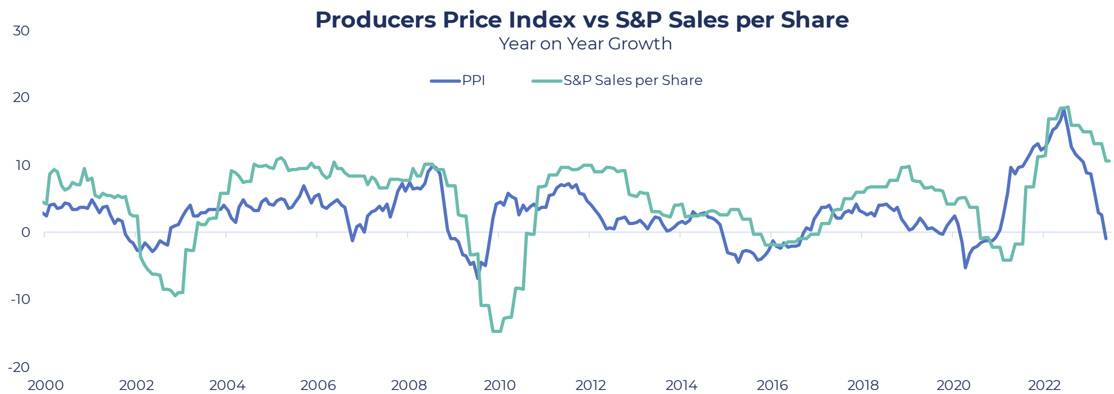
And while Service PMI's (Purchasing Managers' Index) remain in expansionary territory (above 50), they have recently turned back towards 50, while manufacturing PMI's remain in contractionary territory.





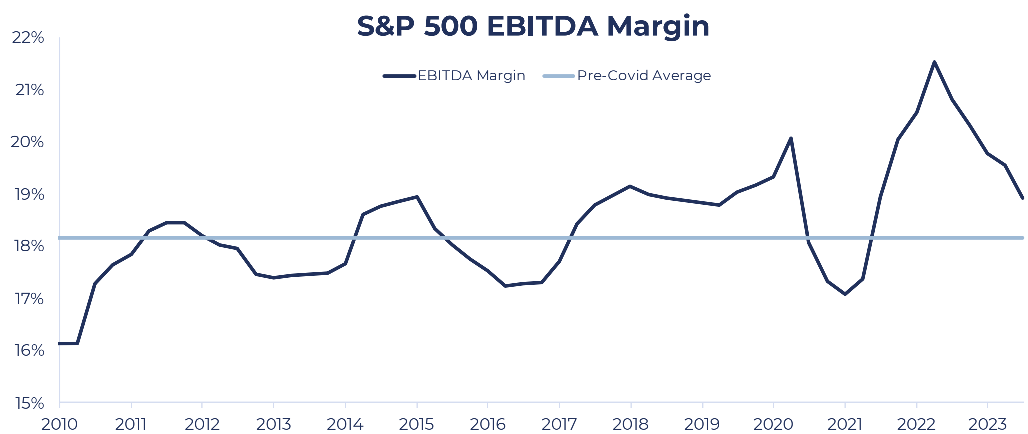
Source: S&P Global, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

We have also seen the Producers Price Index come down sharply, something that has traditionally been a leading indicator for declines in sales growth.



Source: S&P, ISM, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

On top of declining sales growth, margins have been contracting and have headroom to fall further, with the S&P 500 earnings before interest, taxes, depreciation and amortization (EBITDA) margin still ahead of the long-term pre-covid average.

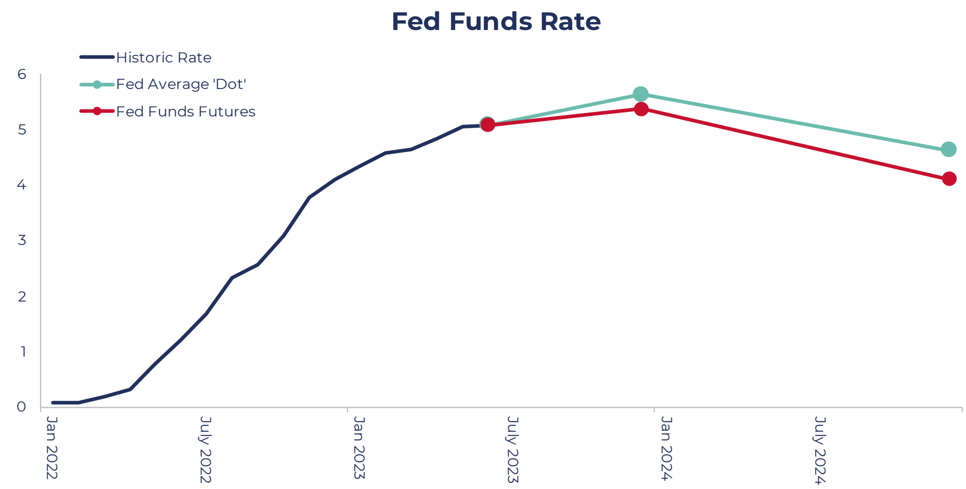


Source: S&P, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

While the economy has remained surprisingly resilient, there are signs that a slowdown could be on the horizon.

(3) Interest Rate Expectations

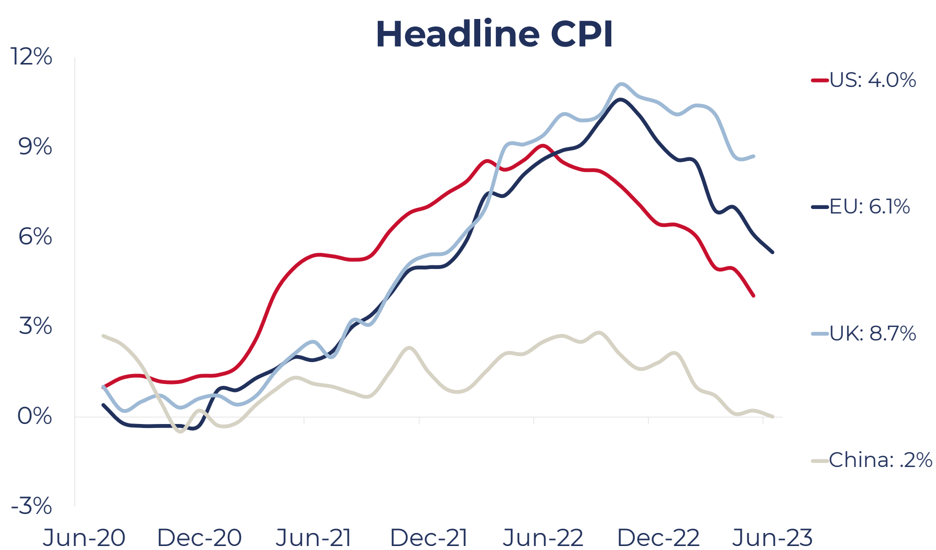
Hawkish monetary policy has played a key part in driving recession expectations. In June, the Federal Reserve offered their first tangible indication that we are at least near peak interest rates, after announcing a pause in the hiking cycle following 10 consecutive rate hikes. Fed Chair Jay Powell was keen to stress that this was a hawkish pause, with the Fed's dot plot indicating expectations of an additional two rate rises by the end of 2023. Yet, there is a divergence between Fed expectations, and what the market is pricing in. Fed Funds Futures suggest markets are pricing in an earlier pivot, with just one hike by the end of the year and more rate cuts in 2024. One way or another, this gap between the Fed's forecast and market expectations will need to close. If the Fed is correct, this could create a headwind for valuations, while if the market is correct, this is already priced in. Much of the future path of interest rates may rest on progress on inflation.



Source: Federal Reserve Bank of New York, FOMC, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

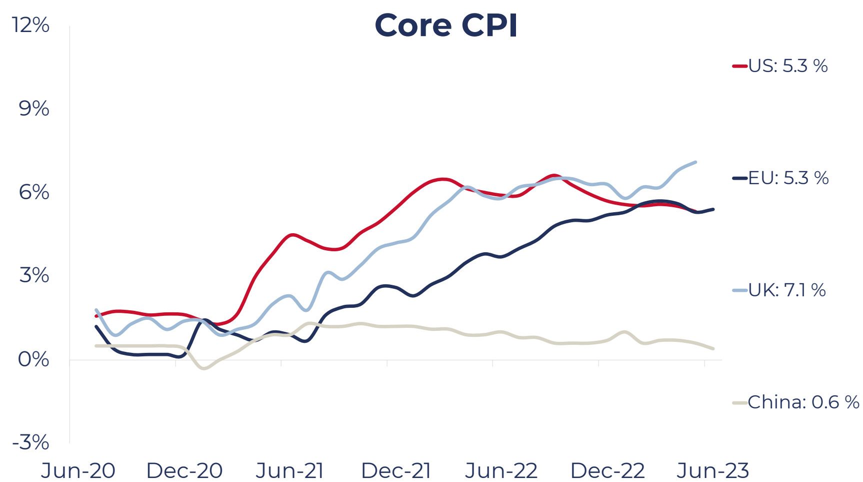
(4) Inflation may not be as 'cool' under the surface.

While significant progress has been made in driving down headline inflation…



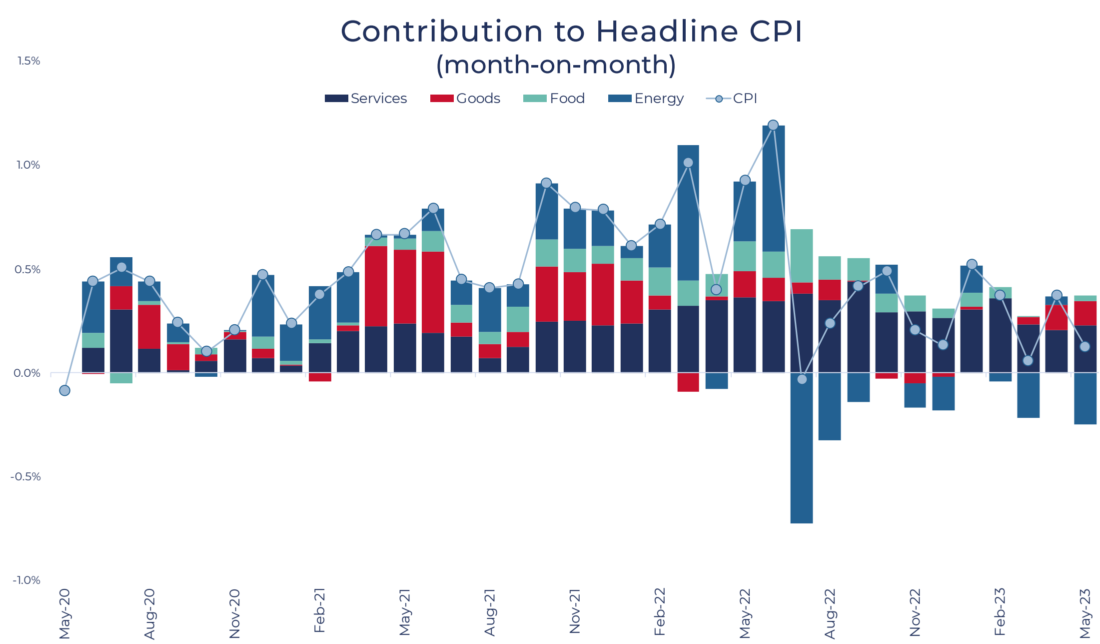
Source: Bureau of Labor Statistics, UK Office for National Statistics, Eurostat, National Bureau Statistics of China, Bloomberg, Guinness Atkinson Asset Management, June 30th 2023

… the core index is yet to have made a decisive turn towards disinflation.



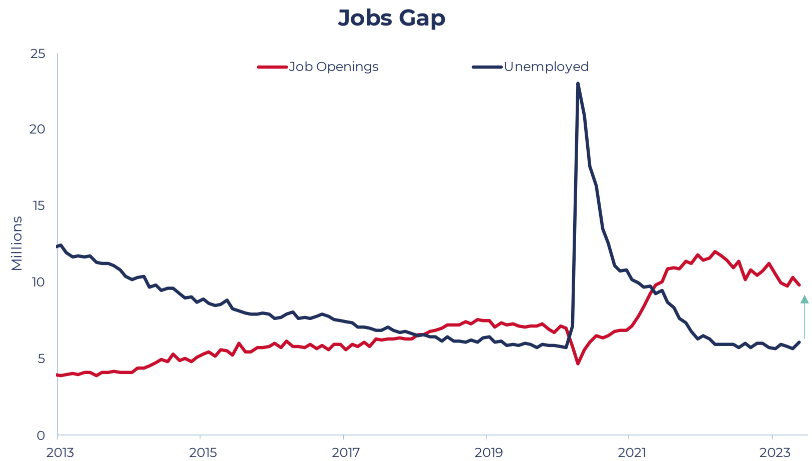
Source: Bureau of Labor Statistics, UK Office for National Statistics, Eurostat, National Bureau Statistics of China, Bloomberg, Guinness Atkinson Asset Management, June 30th 2023

Breaking down the components of headline CPI, we can see that services inflation remains firmly in expansionary territory, and a return to inflation in goods over the last two months of the quarter has also added pressure to the index.



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

The majority of the cost base for 'Services' is wages. We expect that progress in the jobs market will need to be made in order to see pressure on Services inflation ease. However, the 'jobs gap' (vacancies minus unemployed) shows continued tightness in the labor market, and wage inflation may persist until this gap 'closes'.

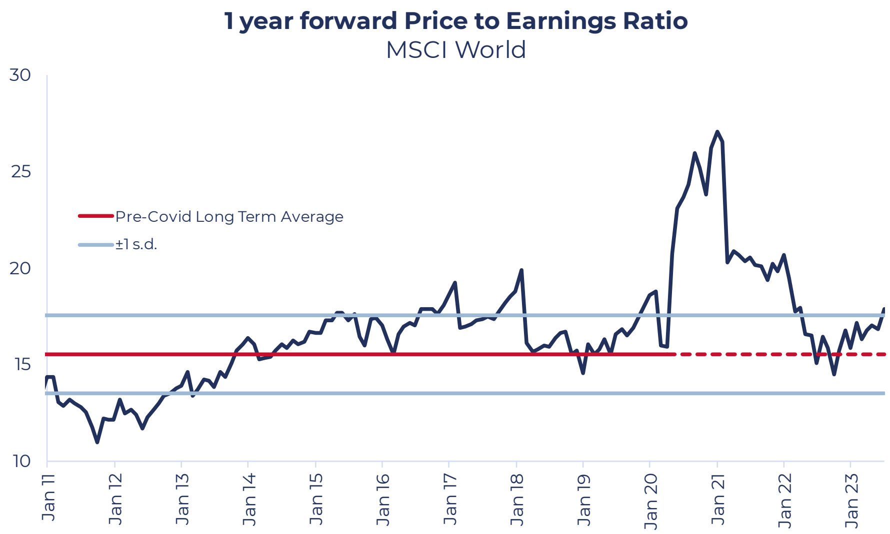


Source: Bureau of Labor Statistics, Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023

In the context of a seemingly resilient economy and limited progress in taming core inflation towards target levels, the Fed may yet be emboldened to maintain hawkish monetary policy, leading to later rate cuts than expected.

(5) Valuations remain elevated

We are also conscious of valuation risk. While earnings expectations have declined, equity markets have climbed over the duration of 2023, and remain 1 standard deviation above their long term pre-covid average, on a 1 year forward PE basis.



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

Fund Positioning

During the quarter, the Fund benefitted from the excitement generated by Artificial Intelligence. Through analysis of company data, we estimate that around 18 of our 30 holdings have at least some exposure to Artificial Intelligence and Big Data. On average, this exposure is around 17% of revenue generating activities, making overall estimated Fund exposure around 10%. The impact of Artificial Intelligence is not limited to revenues, however. Stocks exposed to artificial intelligence can typically be classified as either 'enablers' of the technology, or 'integrators' – companies who leverage their technology meaningfully within their businesses. Within the Fund, we hold a number of enablers, such as Nvidia, TSMC, Alphabet and Microsoft, as well as integrators, including Meta, Adobe, Intuit and Salesforce. A couple of case studies of how these firms are benefitting from the AI trend can be seen below.

NVIDIA.

Enabler of AI: **Nvidia –** The firm is the leading chip designer for graphics processing units (GPUs) used in generative AI systems, as well as selling related software to customers.

"Generative AI is driving exponential growth in compute requirements and a fast transition to NVIDIA accelerated computing, which is the most versatile, most energy-efficient and the lowest TCO approach to train and deploy AI. Generative AI drove significant upside in demand for our products, creating opportunities and broad-based global growth across our markets."

– Colette M. Kress, Nvidia CFO – 1Q24 Earnings Call

Adobe

Integrator of AI: **Adobe** – The firm has leveraged AI in such a way that its features can help users boost their productivity and idea generation. For example through Adobe's Sensei offering, the firm helps creators with their editing and organization, as well as producing real-time insights and predictive analysis.

"So that's why I would say AI is this platform shift because it really changes the nature of how we use all of these products. But for us, it's value expansion in the sense that people are going to get more value out of the tools we're giving them. They're going to be able to explore more possibilities, try more things, convert to more formats and more languages and they're going to be able to pay for that."

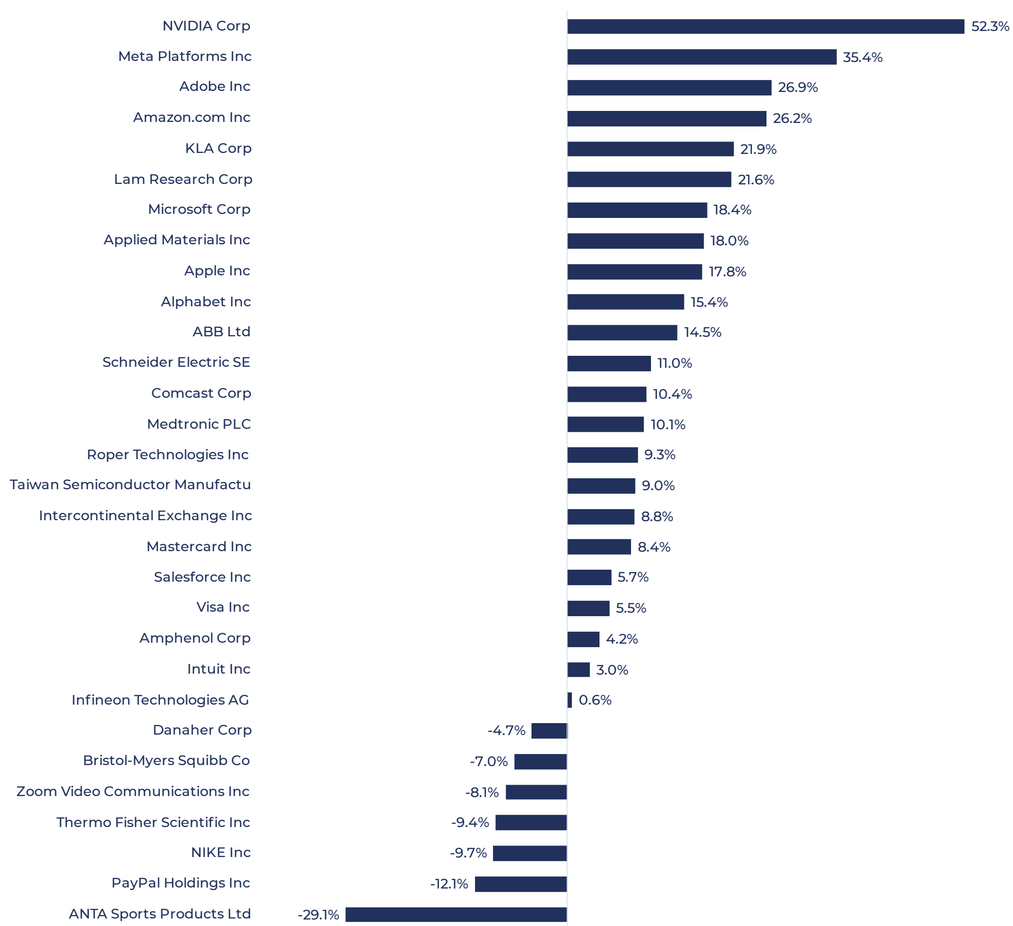
- Scott Belsky, Adobe Chief Strategy Officer - SVB Moffett Nathanson's TMT Conference

The Fund has good exposure to the long term secular trend that it Artificial Intelligence, investing in a number of the leading enablers and integrators within the space. However, the Fund is diversified across a number of other long term secular themes, that we believe should benefit from dampened cyclicality and continued growth prospects, regardless of the market environment. In our view, a diversified approach helps protect the Fund against the boom/bust cycles that a single theme (such as AI) may experience, reducing volatility of returns while also capturing the long term growth trends that these companies are exposed to. While we identify companies with exposure to a number of themes that are driving growth, disrupting incumbent business models or technology, or significantly improving current products or services, our focus is on high quality businesses with strong fundamental characteristics, rather than those at the more speculative end of the spectrum.

We believe there is a good argument for high quality stocks with exposure to long term secular growth themes in this current market environment, as these companies should continue to be able to grow despite market headwinds and cyclicality, while being protected by better fundamental characteristics in terms of margins and balance sheets. Our bottom up approach helps to identify these quality growth companies, while also maintaining a valuation discipline. In addition, our equally weighted positions limit over-reliance on any single company. We continue to focus on these key tenets in the Fund and remain confident of this process over the long term.

Stock performances over Q2 2023 (all total return in USD):

The chart below shows the portfolio constituents' returns over Q2 2023 in USD.



Source: Guinness Atkinson Asset Management, Bloomberg, as of June 30th 2023
Past performance cannot predict future results.

Nvidia (+52.3% USD)

After delivering +90.1% in the first quarter, Nvidia was the Fund's top performer for the second quarter running, outperforming the broader MSCI World by 45.3%, and the MSCI World Semiconductor Index by 31.6%, taking year-to-date total return to 189.5% USD. The majority of this outperformance was sparked at the end of May following Nvidia's blowout earnings release, where guidance of $11bn for the next quarter was $4bn ahead of expectations. The chip designer's unique position in supplying GPU chips that can handle the computing power required for Generative AI drove the stock to new heights, breaching the $1trn threshold for the first time on May 30th. The chip in question, the H100, was released last year and costs around $40,000 each, promising higher performance and reduced training costs for AI learning systems. Excitement over the technology demonstrated by Chat GPT led to a rush in tech firms across sectors attempting to purchase the chip, driving a positive read-across for the Semiconductor industry in general, with Semiconductor Equipment manufacturers such as Applied Materials, Lam Research and KLA all benefitting, and foundries such as TSMC also being dragged upwards. 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, not just Artificial Intelligence and Big Data, but themes such as Cloud Computing, Internet of Things, and Internet, Media and Entertainment which are likely to drive long-term growth in the industry. All in all, we continue to believe that Nvidia's unique, defensible market leading position, reputation as an innovator, exposure to numerous long-term secular growth themes, paired with high quality fundamental characteristics justify a premium valuation, and we are confident the firm can continue to outperform the broader market.

Meta (+35.4% USD)

After suffering a tumultuous 2022, Meta's stellar 2023 (+138.5% USD year to date) continued into Q2, finishing as the Fund's second top performer (+13.4% USD) for the second quarter running. Earlier in the year, Meta shifted their focus towards their cost structure which had been a core drag on the share price over 2022, particularly with respect to their Metaverse investments. While the headline news in February was certainly the cost focus, the underlying strength of the core platform was also apparent. The firm's Q1 results, released at the end of April, were no different. After three consecutive quarters of negative top-line growth, revenues grew 2.6% YoY, ahead of consensus (-1% expected). This was led by strong ad revenues (+7% year-on-year) stemming from better engagement and more effective monetisation – highlighting Meta's ability to grow even during a difficult spending environment in advertisements. The firm also saw a number of improvements to customer metrics, including above expected growth in Daily Active Users. The firm's 'reels' product has proven itself to be highly effective at driving greater engagement, with AI recommendations driving a +24% increase in time spent on Instagram since the launch of the product. Meta also issued an improved cost guidance forecast for FY2023 as their efforts to realize efficiency gains across the business continue to gather steam. This was a great quarter for Meta, who's renewed focus away from growth at any cost is proving to be the right strategy.

Anta Sports (-29.3% USD)

Following a positively performing Q1, Anta Sports sunk -29.3% USD in the first two month of Q2, before the share price leveled off in May. In 4Q22, investors piled into the stock off the back of the Chinese reopening, yet the valuation has fallen as the rebound has failed to meet expectations. The firm's 'top-up' placement of $1.5bn weighed heavily on the firms share price over April, and the shares continued to slide until the end of May. The placement price was at an 8.8% discount to the firm's closing price at the time and accounted for 4% of issued share capital. The proceeds are to be used for paying down some outstanding debt, investment in the South-East Asia business, while also adding to the firms general working capital. The placement is a decision based on capital structure, bolstering an already strong balance sheet that had, prior to the raise, net cash of $1bn. While creating an overhang for the stock, we view the decision on the whole as a positive, giving management the flexibility to continue investing in the business and allowing the firm to take advantage of long-term opportunities. During the placement briefing, management noted encouraging quarter-to-date trends, with full-year guidance maintained at double digit growth for the core business. From a fundamental perspective, we note that the post lockdown re-opening could lead to a consumption driven recovery – a result of excess savings accumulated over the prior three years. 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 segments 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.

PayPal (-12.1% USD)

PayPal ended the quarter as the Fund's second bottom performer. While the stock ended the quarter strongly, this was not enough to offset the weakness seen in May's earnings release. Despite an earnings release that offered a beat to the top-line and a raise of bottom-line guidance, the stock fell 13% on the day of results. Revenues were up +10% at constant currency, with the firm's core Transaction segment up +6% (vs +5% consensus) and Other Value Added Services such as interest from customer deposits and credit products delivering +39% year-on-year growth. But while Total Payment Volumes grew +12% at constant currency, the negative price reaction was driven by weaker Transaction margins (+47.1% vs the prior quarter's 49.7%). These weaker margins were driven by the firm's unbranded suite of products, PCP and Braintree, an unbranded checkout alternative to the firm's traditional payment button. The product is aimed at small businesses, and allows them to accept cards, digital wallets, and even Apple Pay. While currently lower margin, the product is a 'strategic imperative' for the firm since it is growing faster than the market and allowing the firm to take share of new market with approximately $750 million in TAM. More importantly, the unbranded suite offer a "significantly enhanced margin structure compared with the largest enterprise customers", an area that should allow the firm to demonstrate margin expansion over the long term. We therefore view the negative price movement as unjustified, particularly as operating margin actually came in ahead of estimates. While transaction margin may be pressured over FY23, we expect long-term benefits to the margin profile. Outside of transaction margin, the firm has performed very well. The branded portion of the business continues to grow and even accelerate (+6.5% vs +4% the quarter prior), with core PayPal transactions per user increasing by 4% year on year, with the newer cohort of customers offering average revenues per account +40% higher than the prior year. Management guided to +100bps full year margin expansion, a downgrade from their previous +125bps estimate driven by the lower margin unbranded business. However, solid revenue trends paired with efficiency gains in the operating expenditures line (management expects a 10% decline YoY) led to an incremental improvement in EPS guidance for the full year (+20% vs +18% prior).

Changes to the portfolio:

During the quarter, we made no changes to the portfolio.

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 (79%), followed by Europe (14%) and Asia Pacific (6%).

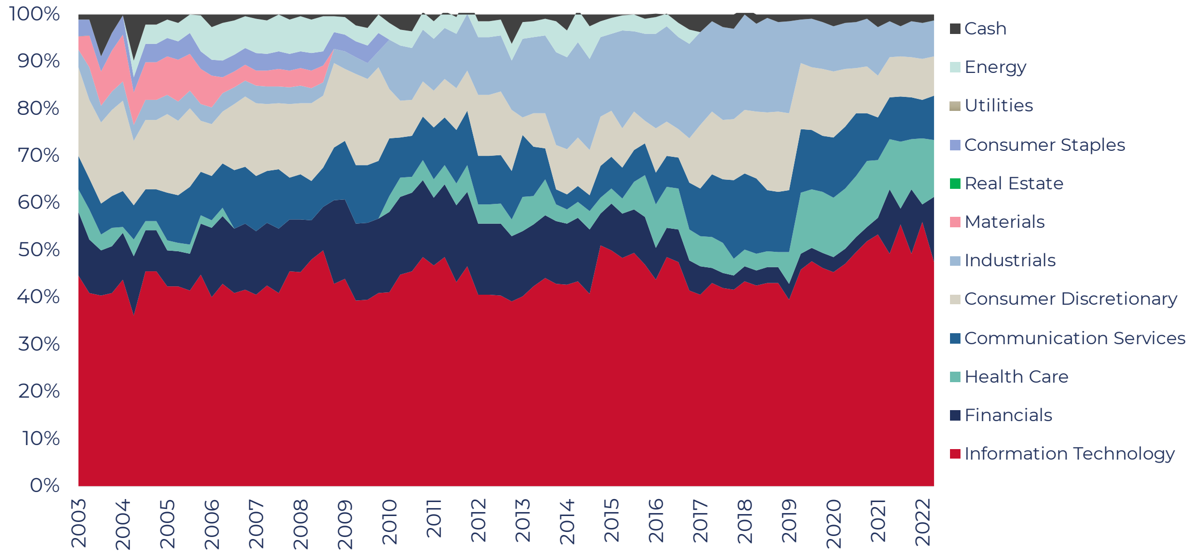


Figure 3: Portfolio sector breakdown. Guinness Atkinson Asset Management, Bloomberg (June 30th 2023)

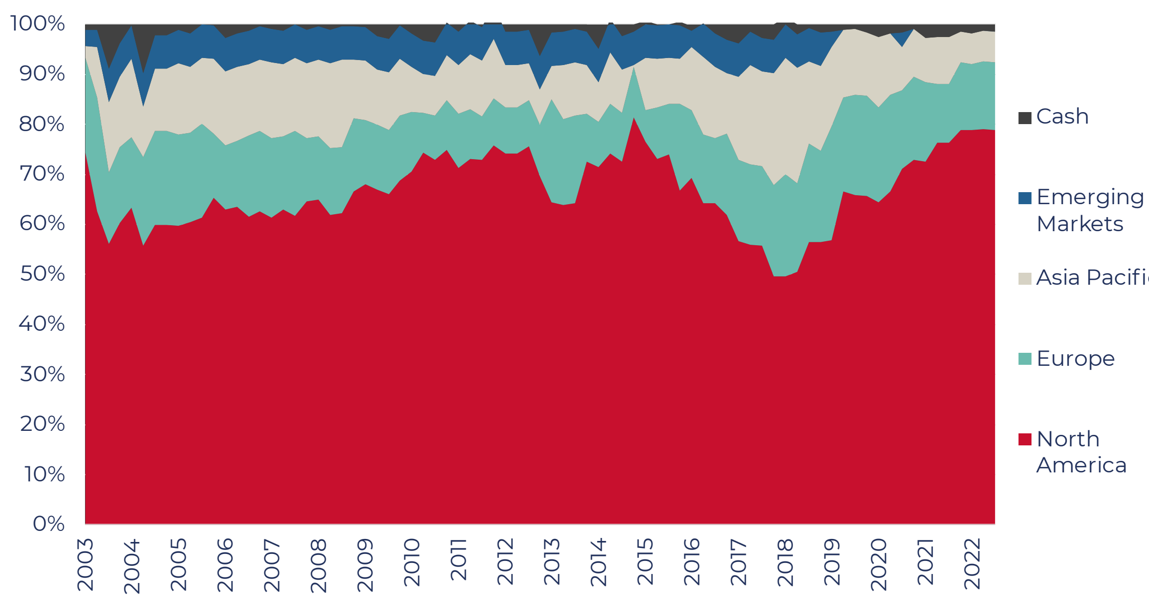


Figure 4: Portfolio geographic breakdown. Guinness Atkinson Asset Management, Bloomberg (June 30th 2023)

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

Geographic breakdown versus MSCI World Index

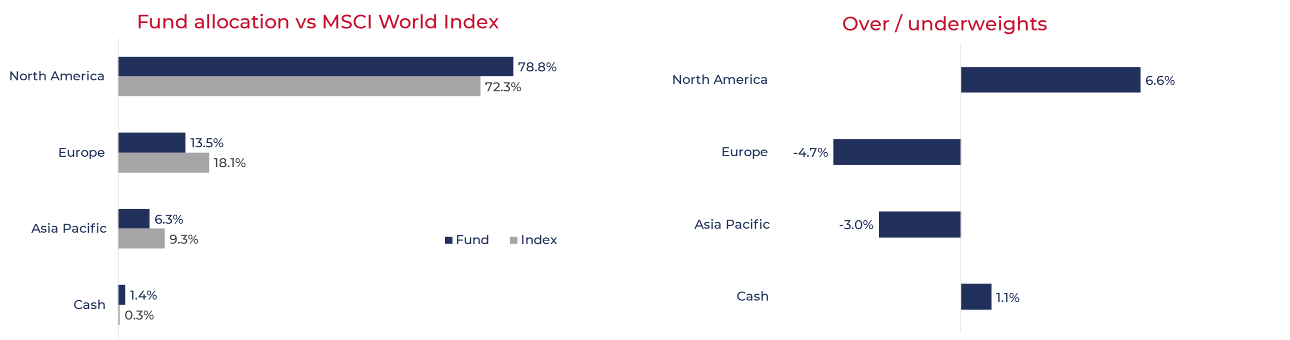


Figure 5: Guinness Atkinson Asset Management, Bloomberg (data as at June 30th 2023)

On a sector level, the fund continues to have a large overweight to IT (27%), while the fund's 0% exposure to Real Estate, Energy, Materials, Consumer Staples, and Utilities leaves these areas underweight relative to the benchmark.

Sector breakdown of the fund versus MSCI World Index

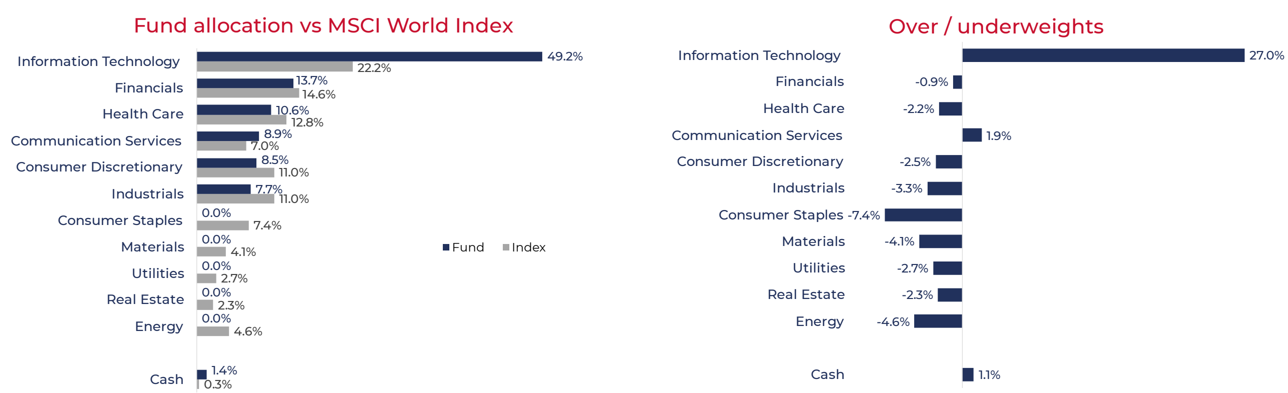


Figure 6: Guinness Atkinson Asset Management, Bloomberg (data as of June 30th 2023)

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 it 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 22.9% premium to the benchmark on a PE basis which we believe is a reasonable price to pay for this attractive set of characteristics.

		Fund	MSCI World Index
Innovation	R&D / Sales	9.6%	7.0%
	CAPEX / Sales	6.5%	8.7%
Quality	Return-on-Capital	19.4%	6.1%
	Weighted average net debt / equity	25.9%	40.8%
Growth (& valuation)	Trailing 5-year sales growth (annualised)	17.1%	3.5%
	Estimated earnings growth (2023 vs 2022)	8.4%	8.5%
	PE (2023e)	22.0	17.9
Conviction	Number of stocks	30	1630
	Active share	81%	-

Figure 7: Guinness Atkinson Asset Management, Bloomberg (data as of June 30th 2023)

In the current market environment where inflation concerns, slower growth, and broader economic uncertainty 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 second quarter of 2023, the Fund returned 9.08% (in USD) and the MSCI World Index returned 6.83%. The Fund therefore outperformed the Index by 2.25% over the period.

Over the year-to-date, the Fund returned 26.20% (in USD) and the MSCI World Index returned 15.09%. The Fund therefore outperformed the Index 11.11% over period.

After strong gains in the first quarter, equity markets continued on their run of positive performance during Q2. Inflation continued to prove sticky at the core level, tight monetary policy has stayed in place for longer than expected (and looks set to continue for longer), earnings downgrades were consistent throughout the first half, and the Chinese economic 're-opening' failed to meet high expectations. It seems almost contradictory that equity markets would have continued to tick upwards, and even accelerate during June. But, while corporate profit expectations may have fallen throughout the year, markets were focused on a more-resilient-than-expected economy, paired with an acknowledgment that recent developments in Artificial Intelligence had the potential to drive efficiencies and revenue opportunities for many companies.

Despite broad market strength seen over the quarter, equity performance was driven by a narrow selection of 'Big Tech' stocks, particularly those most exposed to the long-term secular trend of Artificial Intelligence. The 'narrowness' was concentrated particularly within the technology sector, causing outperformance of growth for the second consecutive quarter, despite interest rate expectations increasing meaningfully over the period.

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

- The Fund's high relative exposure to the MSCI's best performing sector, Information Technology, and in particular the MSCI's top performing industry, Semiconductors, was a key source of outperformance over the period.

- Holding 'Big Tech' names Apple (+17.8%), Amazon (+26.2%), Alphabet (+15.4%), Meta (+35.4%), Microsoft (+18.4%) and Nvidia (+52.3%), which all delivered double digit gains over the quarter, was a core driver of strong Fund performance. More broadly speaking, our exposure to stocks related to the secular growth theme of Artificial Intelligence acted as significant tailwind, as both 'integrators' of the technology, such as Adobe (+26.9%), and 'enablers', such as semiconductor equipment manufacturers KLA (+21.9%) and Lam Research (+21.6%), were driven higher.

- The Fund suffered a slight headwind from the Fund's Apparel names, with Nike (-9.7%) and Anta Sports (-29.1%) making up two of the bottom three performers. Weakness in PayPal (-12.1%) also acted as a headwind, as the second bottom performing stock over the period.

- From an allocation perspective, having a zero exposure to the five weakest performing sectors, Energy, Materials, Utilities, Real Estate and Consumer Staples, all acted as a positive for relative Fund performance.

as of 06.30.2023 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	25.40%	11.22%	10.80%	12.84%
Global Innovators, Institutional Class[2]	25.69%	11.49%	11.08%	13.05%
MSCI World Index NR	18.51%	12.18%	9.06%	9.49%

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.

All returns after 1 year annualized.

[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 06/30/2023:

1. NVIDIA Corp	4.22%
2. Microsoft Corp	4.15%
3. ABB Ltd	4.05%

4. Amphenol Corp	3.89%
5. Mastercard Inc	3.87%
6. KLA-Tencor Corp	3.84%
7. Lam Research Corp	3.79%
8. Applied Materials Inc	3.76%
9. Schneider Electric SE	3.74%
10. Roper Technologies Inc	3.67%

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.

A dot plot, also known as a strip plot or dot chart, is a simple form of data visualization that consists of data points plotted as dots on a graph with an x- and y-axis. These types of charts are used to graphically depict certain data trends or groupings. The most famous dot plot is perhaps the Federal Reserve's projections for interest rates that are published each quarter.

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

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.

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

A **yield curve** is a line that plots yields, or interest rates, of bonds that have equal credit quality but differing maturity dates. The slope of the yield curve can predict future interest rate changes and economic activity.A yield spread is the difference between yields on differing debt instruments of varying maturities, credit ratings, issuers, or risk levels. A yield spread is calculated by deducting the yield of one instrument from the other. This difference is most often expressed in basis points (bps) or percentage points

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

The Service PMI release is published monthly by Markit Economics. The data is based on surveys of over 400 executives in private sector service companies. The surveys cover transport and communication, financial intermediaries, business and personal services, computing & IT, hotels and restaurants.

The **Manufacturing Purchasing Managers**' Index measures the activity level of purchasing managers in the manufacturing (goods producing) sector. A reading above 50 indicates expansion in the sector; below 50 indicates contraction.

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.

Forward price-to-earnings (forward P/E) is a version of the ratio of price-to-earning (P/E) that uses 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.

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) according to the Global Industry Classification Standard (GICS®).

Total addressable market (TAM) is the overall revenue opportunity available or foreseen for a specific product or service, taking into account the future expansion scenarios.

One cannot invest directly in an index.

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