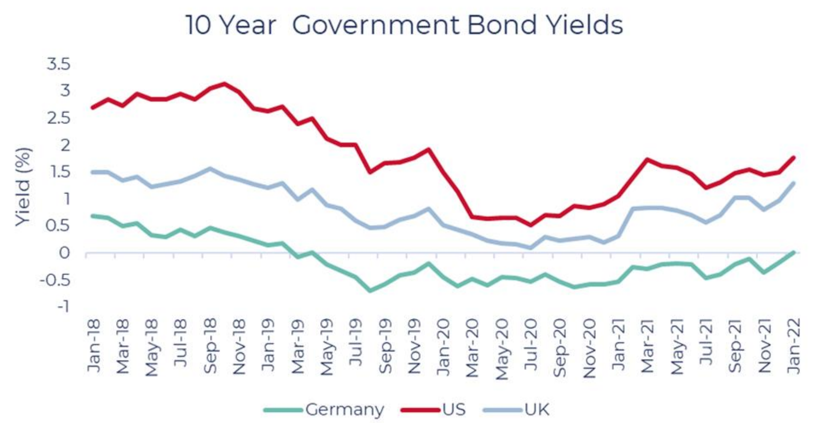
Guinness Atkinson
Global Innovators Fund
Managers Update – February 2022

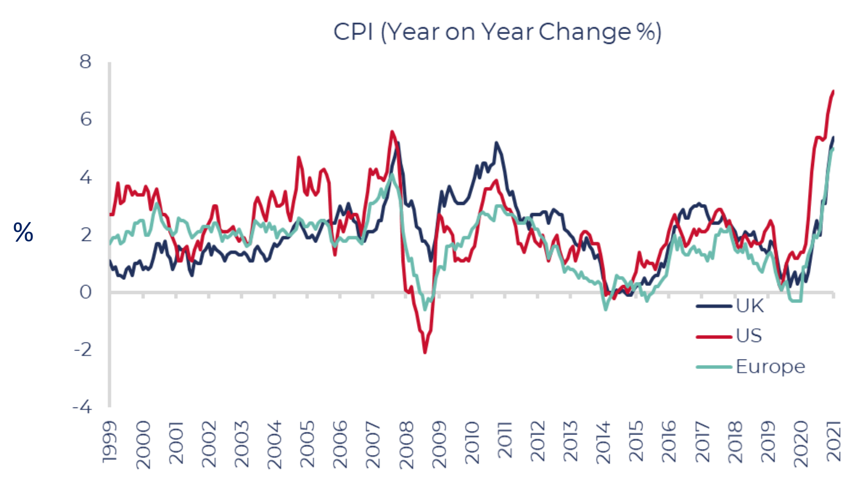
January in review:

January's poor equity performance was largely driven by a sizeable increase in the equity risk premium across regions, as bond yields rose sharply. For the first time since May 2019, the German 10-year yield climbed above zero, rising from -0.18% to 0.02%, and potentially marking progress towards more 'normal' borrowing conditions in Europe. The US and UK 10-year yields also rose 17 basis points (bps) and 34bps respectively. Yields rose off the back of an increase in expectations of tighter monetary policy, sparked both by high inflation in December and Central Bank commentary.



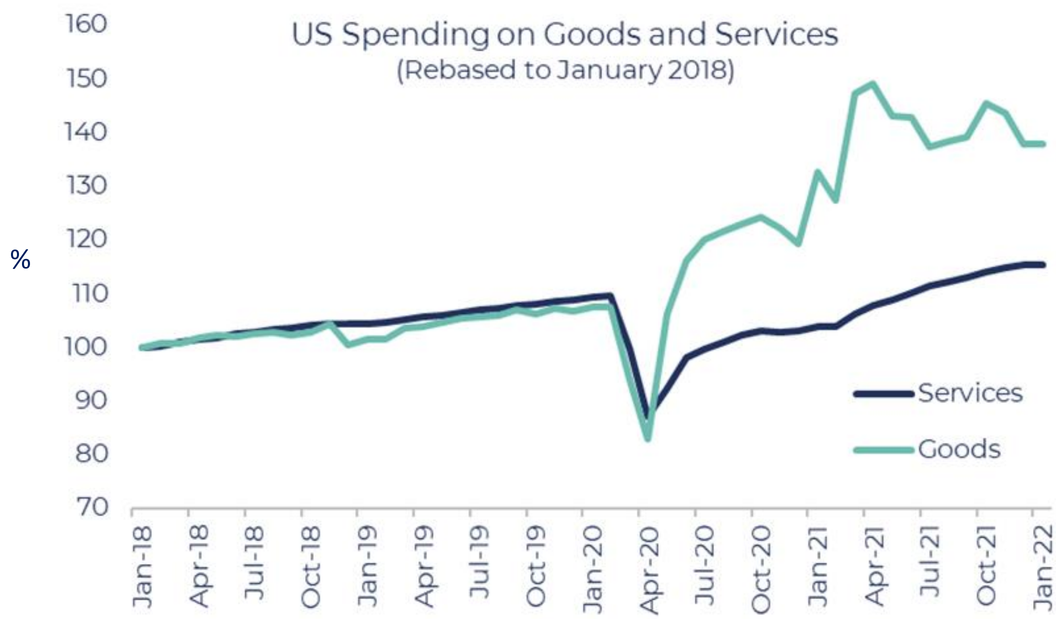
Source: Bloomberg, Guinness Atkinson Asset Management

A surge in inflation as economies emerge from the pandemic has lifted the prospects of tighter monetary policy, with market participants betting on not just an accelerated rate of interest rates, but in greater magnitude too. In the UK, the Consumer Price Index (CPI) reached its highest level in 30 years (5.4%), in the US its highest level in 40 years (7.0%), and in the Europe its highest since records began in 1997 (5.0%). Inflation was concentrated largely in energy and transportation across all regions. Core CPI (ex Food and Energy) was slightly tamer at 5.5% in the US, 4.2% in the UK, and 3.0% in Europe.



Source: Bloomberg, Guinness Atkinson Asset Management

Recent inflation has largely been a result of demand and supply imbalances. As seen in the chart below, it is clear how the demand mix has changed since pre-pandemic. While consumer spending is back above pre-pandemic levels for both goods and services, the mix differs from before. As the pandemic unfolded, mobility restrictions came into place, preventing consumers from spending on services and experiences. Instead, accommodative fiscal policy and reduced day-to-day spending allowed consumers to increase their intake of physical items, causing demand for goods to soar. Yet on the supply side, mobility restrictions placed significant strain on manufacturers. Particularly in emerging economies which had slower vaccine roll-outs, factories were prone to lock-downs and, in some cases blackouts from the energy crises. This strain on demand placed further upward pressure on prices. And even once goods had been manufactured, global transportation links were far from stable, with delivery increasing in cost and in delivery-time. Manufacturers struggled to gain key resources in time, particularly a concern for low-inventory Just-In-Time manufacturers. Recent wage inflation gives visibility for sustained inflation over the short-term, although supply chain imbalances are expected to ease. The transitory inflation narrative that was used to justify a more dovish stance in 2021 has all but diminished, with Central Banks becoming markedly more hawkish in recent months.

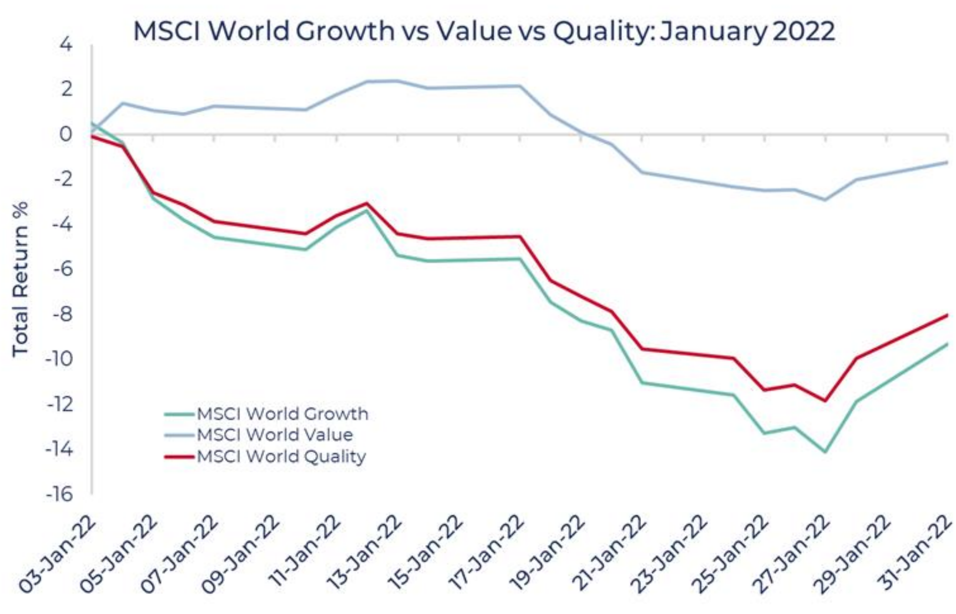


Source: Bloomberg, Guinness Atkinson Asset Management

Unlike last year, the question in the US is no longer "if" rates will be hiked, but "at what pace" and "by how much". Strong progress was made in employment in December, one of the two key mandates the Fed aims to achieve. Announced in early January, the unemployment rate of 3.9% was lower than expected, leading to a sell-off in US tech stocks, as investors placed bets on the Fed moving quickly to raise interest rates. Chair Jerome Powell confirmed this belief later on in the month, remarking that the US "labor market conditions are consistent with maximum employment". The Fed's other mandate is to keep prices stable at 2% inflation. With inflation at 40 year highs, Powell failed to rule out a string of aggressive rate rises above what the market had been expecting – including rate rises at every subsequent meeting this year and a 50bps hike in March. As expected, inflation and rate hikes ahead of expectations led to a further surge in bond yields and a sell-off in equities. The Bank of England has taken a similar stance, having already raised rates once in December, and investors pricing in a second rate rise with 90% probability at the end of January.

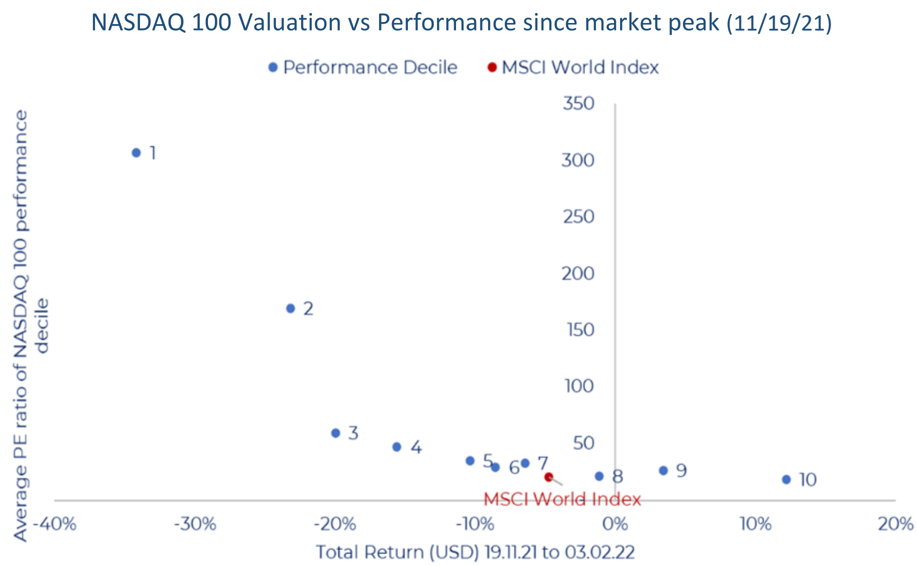
The European Central Bank remains the most accommodative of the developed regions, with President Christine Lagarde consistently playing down chances of monetary tightening. During the month, Lagarde stated that the central bank had “every reason not to act as quickly or as ruthlessly” as the Fed, maintaining their stance that no interest rate hikes are expected by the bank this year. Despite this, markets have growing conviction that rates in Europe are set to rise, currently pricing in two rate hikes by the end of 2022, starting from September (up from October previously). Europe has struggled to reach the ECB’s 2% inflation target for years and policy makers are clearly wary of “putting the brakes on growth” too early and continue to expect inflation to fall below their 2% target by the end of the year. Unlike the US, strong stimulus is expected to continue at the rate of €20bn a month through the Asset Purchase Program, which “would run for as long as necessary”. The Central Bank did confirm, however, that the likely end to the €1.85 trillion Pandemic Emergency Purchase Programme will come in March, although maturing principal payments will be reinvested until at least the end of 2024.

Divergence in monetary policy is clear, yet one commonality is *expectations* of rate hikes and tighter money in all regions – despite what the ECB may be insisting. The change in interest rate expectations has been swift, with the market first expecting a US rate-hike in 2022 in September last year. The market is now pricing in five rate hikes by the end of the year. Together, rising inflation led to rapidly changing expectations over interest rates and increasingly more hawkish policy from Central Banks, sending bond yields higher in January. This contributed to strong outperformance of value during the month.



Source: Bloomberg, Guinness Atkinson Asset Management

Low bond yields and interest rates had been a boon for growth companies over the pandemic. Growth companies not only rely on lower borrowing costs to fund said growth, but also enjoy a lower discount rate in which to measure the present values of their future cash flows. These ‘high duration’ stocks are typically more sensitive to movements in bond yields, as most of their cash flows are generated far into the future. The rise in yields over the month therefore created a headwind for most growth companies – but some more than others. In January, we saw a stark difference in performance between the 'higher duration' hyper-growth stocks - which had seen very strong price rises through 2020 and 2021 - and 'quality growth' stocks, where current valuations have a lower weight on future growth prospects. This can be seen in the chart below, where the bottom two deciles of performers in the Nasdaq 100 (often viewed as a more growth focused market) since the market peak in November were also the highest valued (on average) on a 1 year forward PE basis.



Source: Bloomberg, Guinness Atkinson Asset Management

These companies were typically the more speculative stocks which saw significant gains over the pandemic, as investor enthusiasm over work-from-home trends (Netflix and Peloton, for example) caused valuations to be bid up to extremely high ratios. With most cash flows forecast way out into the future, a rise in bond yields affected these companies the most. 'Quality growth" companies often have greater profitability and therefore lower valuation metrics. In the Fund we continue to apply a 'valuation discipline' to stock selection and monitor carefully the valuation we are ascribing to future growth vs that of the current business. We believe the secular growth trends and innovation themes that our companies are exposed to are unlikely to be slowed down significantly by higher levels of inflation and we believe the fundamental outlook for our companies has remained robust.

Stock Specific News:

Mastercard (+7.67% USD), Visa (+4.36%)

Mastercard and Visa featured first and third respectively in the funds top performers for the month. The electronic payments companies generate revenue through processing transactions across their respective networks, whether this is a credit-card payment, debit-card payment or cross border transaction. Each transaction, the firm will earn a flat-fee (switch transaction fee) and a percentage of the gross dollar volume (switch volume fee). The firms therefore benefited when transactional activity picked up in both value and volume, which generated the greatest margins on cross-border transactions.

Both firms experienced positive price reactions following quarterly earnings announcements during the month, with spending on the respective networks reaching record levels. In the final quarter of the year, Mastercard and Visa saw spending on their networks surge +27% and 20% respectively. Much of this volume growth has come from domestic spending, with the pandemic expected to have catalysed the shift from cash to electronic payments. Yet it is the high-margin cross-border payments segment that carried the majority of investor attention, with volumes rising +53% and +40% respectively, despite the emergence of Omicron in the final month of the quarter. Pent-up demand for travel and the re-opening of borders spurred this growth, alleviating investor concerns about the magnitude of the Omicron impact, with investors and management alike no longer expecting a lasting impact. While cross-border payments are yet to completely recover, both companies guided for cross-border travel volumes to reach above 2019 levels by the end of the fiscal year, as falling case counts and higher global vaccination rates help to alleviate covid pressures. Near-term uncertainty remains, with the potential rise of new variants and further lockdowns, but the acceleration of cash to electronic payments and further upside yet from the re-opening of economies offers a bright growth outlook.

Bristol-Myers Squibb (+5.0% USD)

Bristol-Myers Squibb was the funds second top performer during January. The firms +4.99% USD total return over the period significantly outperformed that of the MSCI World Healthcare Index (-7.36%). The drug manufacturer presented at the JP Morgan Healthcare Conference early on in the month, announcing their long-term strategy and guidance.

The firm's top-selling cancer drug, Revlimid, accounted for 27% of sales last year, yet will face a significant headwind as it comes off patent in March 2022, facing stiff competition from generic brands. While this was likely already baked into the share price, news surrounding the firm's product pipeline and business strategy during the conference was met with a strong positive market response, the stock rose +3.61% USD from the previous days close. The firm expects its current immuno-oncology brands (Opdivo and Yervoy) and blood-thinner (Eliquis) to add an additional $8-10bn in sales by 2025 (these brands already account for about $18bn), and longer term, the firms new product portfolio (most notably reblozyl, deucravacitinib, mavacamten and relatlimab) could generate $25 billion or more annually by 2029. Of the six recent drug launches and three heading for the market this year, six are expected to reach at least $3bn in revenue individually. The firm have an additional 50 drugs in the product pipeline. In terms of financials, the firm guided slightly below consensus for the current fiscal year, with the difference coming from a more aggressive forecast surrounding the genericization of Revlimid. However, the firm announced a 10% increase to the quarterly dividend and an acceleration in the share buyback program ($5bn in Q1 alone, $15bn increase in total), helping to reassure investors. EPS guidance was in-line with consensus.

In terms of strategy, the firm said it would continue to be active in the M&A market, and whilst they are “size-agnostic”, they are “particularly interested” for small and mid-sized bolt-on acquisitions. The firm guided for $45-$50 billion in cash flow over the next three years (cumulative), and while much of this will be used to return cash to shareholders, this can also be leaned upon when supporting any proposed deal. Overall, the firm’s outlook is positive, with strong diversification from a number of promising drug hopefuls and supported by growth in the product catalog.

LAM Research (-18.0% USD), NVIDIA (-16.7%), Applied Materials (-12.2%), KLA Corp (-9.5%), TSMC (+1.9%)

With the rotation away from growth and into value, it was a difficult start to the year for most of the funds Semiconductor companies. The sector was the MSCI’s worst-performing, underperforming the benchmark by 7.9% over the month, sparked by a rise in US Treasuries as markets priced in five rate hikes during 2022. The industry underwent significant multiple expansion over the pandemic, taking 1 year forward Price Earnings from about 20x to more than 26x pre-rotation (MSCI World went from about 18x to about 20x). This multiple expansion can be explained by the global supply-demand imbalance of chips, with a surge in demand from consumer electronics and the auto industry, paired with pandemic related supply chain disruptions and capacity constraints, combining to cause chip-prices to dramatically rise and global semiconductor revenues to rise by 26% over 2021 (S&P Global). To this point, the US Department of Commerce, during the month, warned that chip inventory held by manufacturers had fallen to a supply of just 5 days, down from 2019 levels of 40. Being a “high duration” sector with high earnings growth, an increase in yields was inevitably going to hurt the industry. Not only this, but with significant amounts of capex expected over the next decade in order to increase capacity and keep up with demand, higher than expected rate hikes affects the rate at which firms can borrow at – a negative for semiconductor firms in particular.

At the end of the month, following the sell-off, Lam Research and KLA reported their Q2 2022 results. While sales increased 36% for the quarter (year-on-year) to $4.2bn, this was below analyst estimates of $4.4bn. The firm cited supply chain issues that prevented the additional $200mn of revenue from being recognised. A negative market reaction followed, predominantly a result of muted guidance for Q3, with short term supply constraints expected to continue. KLA, while reporting above consensus sales (+43% year-on-year), also guided for a third quarter below analyst estimates, again a result of supply challenges. Both companies stressed the short-term nature of the supply constraints, with Q3 expected to be the bottom in revenues for the calander year. Both stocks received a small negative price reaction following the announcements, with Applied Materials, who are yet to report, also falling on the readacross. TSMC, one of the few positively performing companies within the sector during the month, delivered a strong beat to consensus. The firm also alleviated investor concerns around the outlook of the gross-margin, announcing expected expansion to 53% from 50% rather than a contraction stemming from a rise in CapEx. Nvidia, on the other hand, struggled from company specific negative news flow, after reports that they were “quietly abandoning” their $40bn acquisiton of ARM, following failures to gain approval.

While supply chain constraints will persist into the mid-term, the outlook for the industry remains strong. For chip equipment manufacturers LAM Research, Applied Materials and KLA, large-scale capacity expansion across the US, Europe and Asia offers significant visibility to future revenues. TSMC provided a prime example during the month, announcing an year on year increase to expected capex spend of $44bn during 2022 in order to expand capacity, up from $30bn last year and over triple the spend from 2019. Intel also announced a $28bn package (up from $25bn) for two new fabs in the US. The “Innovation Race” between the US and China is expected to bring large fiscal packages (about $54bn in the US) for domestic chip production, helping to alleviate the reliance each country has on the other. A multi $100-billion capex per year spend across the industry are clear tailwinds for capital equipment vendors such as Lam Research, Applied Materials and KLA benefitting from this spend. Additionally, designers and foundries alike expect to benefit from a strong demand outlook into the long-term, as themes such as autonomous driving, automation and digital transformation has continued to generate growth in the industry.

We thank you for your continued support.

Portfolio Managers

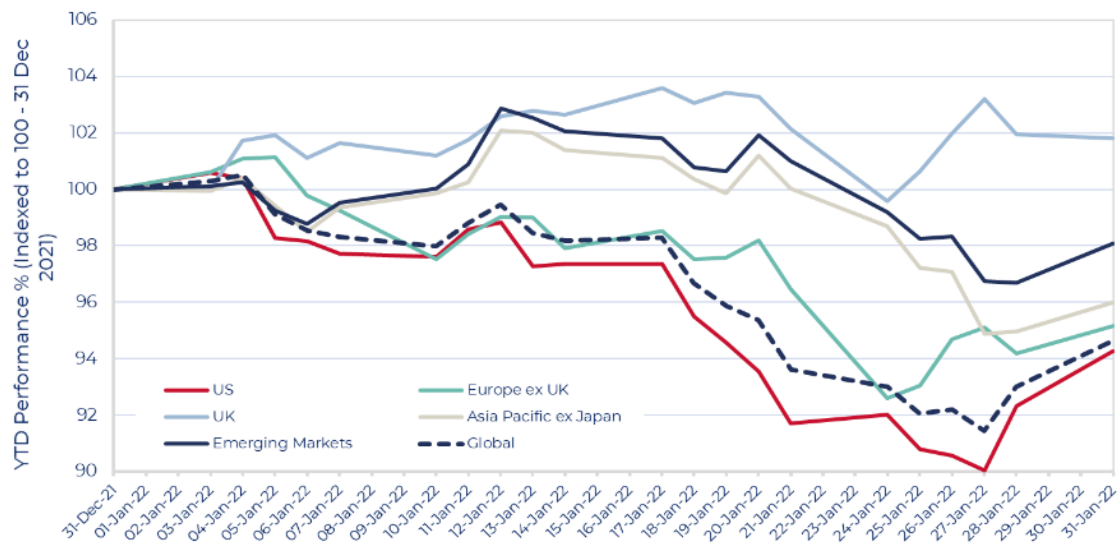
Matthew Page, CFA

Dr Ian Mortimer, CFA

Summary performance

For the month of January, the Guinness Atkinson Global Innovators Fund provided a total return of -7.54% (USD) against the MSCI World Index net total return of -5.29% (USD). Hence the fund underperformed the benchmark by 2.25% (USD).

Global equity markets suffered broad declines across most major markets during January, with falling share prices driven by a rise in the equity risk premium, rather than subdued growth expectations. Regional performance was predominantly driven by a significant rotation from growth to value, with the comparatively inexpensive UK market the sole positive performing region for the month. This was in contrast to the more expensive, growth-orientated US market, with the S&P 500 briefly touching upon "correction" territory before a pull-back in the last two days of the month.



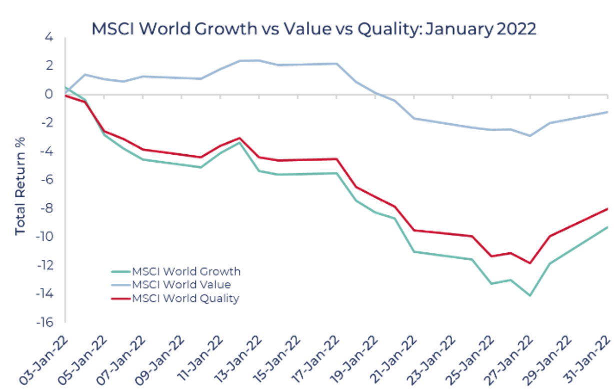
Source: Bloomberg, Guinness Atkinson Asset Management

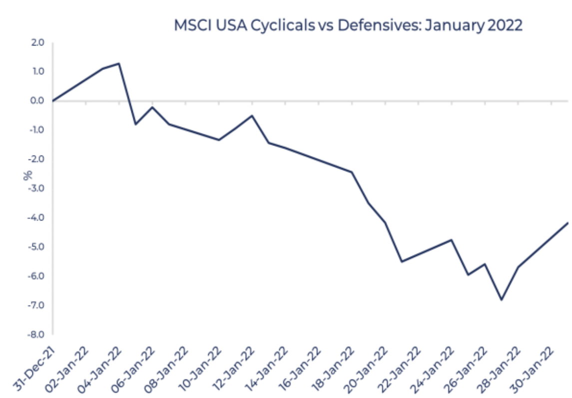
Performance data quoted represents past performance and does not guarantee future results. The investment return and principal value of an investment will fluctuate so that an investor's shares, when redeemed, may be worth more or less than their original cost. Current performance of the Fund may be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

*The Advisor has contractually agreed to reimburse expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 1.24% for the Investor class and 0.99% for the Institutional class through June 30, 2025. 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.

The Bank of England became the first major central bank to raise rates during January, and US Fed Chair Jerome Powell failed to rule out potential rate hikes at every subsequent FOMC meeting from March until the end of 2022. The market is now pricing in five rate hikes in the US during 2022. This is in stark contrast to the market's position in June last year, where consensus estimated no interest rate rises in the US during 2022, and just one by the end of 2023. Inflation concerns and the prospective tightening of monetary policy typically come during times of a strong economic growth, yet trepidation over the short-term outlook has led to a preference towards more defensive areas of the market. The onset of earnings season, so often the catalyst for improved equity performance during the previous year, generally saw positive EPS revisions and sales growth, yet weakened guidance stemming from supply-chain disruption often outweighed the better-than-expected past performance.

While equities on the whole declined during January, defensive sectors and value orientated stocks significantly outperformed, a continuation of the relative strength seen in December. But unlike December, where outperformance was in part driven by trepidation following Omicron concerns, sustained inflation and expectations surrounding the rate and magnitude of central bank rate hikes was the core driver of this rotation. Alongside the prospect of more expensive financing, the "high duration" nature of growth stocks creates high sensitivity to interest rate expectations, driving underperformance. More speculative "stay-at-home" growth stocks, such as Netflix and Peloton, suffered the most. Value outperformance was supported by strength in Financials and Energy, with banks in particular benefitting from prospective higher rates and Energy from rallying oil and gas prices.





Source: Bloomberg, Guinness Atkinson Asset Management

During the month of January, fund performance can be attributed to the following:

- The fund suffered a negative headwind due to the rotation into value. Energy, Financials (banks in particular), and Consumer Staples significantly outperformed the MSCI World, driven respectively by rallying energy prices, an outlook for an acceleration of rate hikes and defensive properties. The fund has no exposure to Energy and Consumer Staples, and an underweight position to Financials.
- While the fund holds an overweight position to the MSCI's weakest performing sector over the month, Information Technology, the fund benefitted from a number of strong stock selections, particularly within the Payments space, where both Mastercard and Visa featured in the Fund's top 3 performers.
- Having an overweight position to Semiconductors, the MSCI's largest underperforming industry, was a drag on the fund. Strong outperformance from TSMC helped partially offset this drag.

While the fund experienced a number of headwinds during the month, and volatility in the market is likely to continue into the short-term, we believe that the fund is well-positioned. We believe the secular growth trends and innovation themes that our companies are exposed to are unlikely to be slowed down significantly by higher levels of inflation and we believe the fundamental outlook for our companies remain robust.

as of 01.31.2021 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	12.43%	23.68%	17.85%	16.31%
Global Innovators, Institutional Class[2]	12.70%	23.98%	18.14%	16.49%
MSCI World Index NR	16.53%	16.55%	13.24%	11.53%

as of 12.31.2021 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	21.52%	31.36%	20.51%	18.13%
Global Innovators, Institutional Class[2]	21.86%	31.69%	20.81%	18.31%
MSCI World Index NR	21.82%	21.68%	15.01%	12.68%

All returns after 1 year annualized.

[1] Investor class (IWIRX) Inception 12.15.1998 Expense ratio* 1.24%
[2] Institutional class (GINNX) Inception 12.31.2015 Expense ratio* 0.99% (net); 1.07% (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).

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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 1/31/2022:

1.	Apple Inc	4.09%
2.	KLA-Tencor Corp	3.73%
3.	Mastercard Inc	3.66%
4.	Microsoft Corp	3.65%
5.	Taiwan Semiconductor Manufacturing	3.64%
6.	Intercontinental Exchange Inc	3.61%
7.	Bristol-Myers Squibb Co	3.60%
8.	Amphenol Corp	3.50%
9.	Applied Materials Inc	3.46%
10.	ABB Ltd	3.42%

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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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.

One cannot invest directly in an index.

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