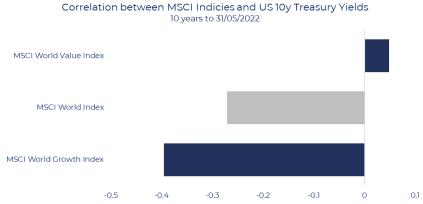


Managers Update – June 2022

May in review:

With supply chain pressures and rising commodity prices continuing to drive inflationary pressures, expectations of tighter money have driven US 10-year Treasury yields above 3% for the first time since the fourth quarter of 2018. Monetary tightening at an accelerated rate creates a sizeable headwind for growth stocks, with the increase in the equity risk premium leading to depressed valuations for 'high-duration' firms – those where expected future cash flows are weighted further into the future than more mature firms, making them more sensitive to discount rates. This can be seen in the chart below. In the past 10 years, there has been a positive correlation between yields and value-orientated stocks. When yields increase, value tends to outperform.



Source: Guinness Atkinson Asset Management, Bloomberg

In addition, many growth names, particularly at the speculative end of the spectrum, are now also dealing with the negative effects of the 'pull forward' in demand that occurred during the pandemic. Over the last couple of years, the market often failed to distinguish accurately between stocks in which a permanent change in customer behavior (stemming from the pandemic) would create superior cashflows for the underlying business and those for which the tailwinds were temporary. Some stocks with perceived permanent behavioral change tailwinds, such as the 'stay-at-home' trends, were bid up to high valuations as demand accelerated for their products. However, in some cases, this demand was just brought forward, rather than a catalyst for long-term growth. As the pull forward in demand is given back, we have seen many significant share price de-ratings, alongside changing future rate expectations.

Speculative growth is often characterized by a low (if not negative) bottom line, paired with a significant premium valuation relative to the market. As observed in the two charts below, the macroeconomic backdrop of 2022 has driven significant underperformance of stocks in this category.

Guinness Atkinson





MSCI World Information Technology vs Goldman Sachs Unprofitable Tech Index (USD) Year to date - May 2022



Source: Bloomberg, Guinness Atkinson Asset Management

NASDAQ 100 Constituents Performance Decile vs Median 1 yr Forward Price to Earnings Year-to-date (31st May 2022)



Source: Bloomberg, Guinness Atkinson Asset Management

The Goldman Sachs Unprofitable Tech Index (a basket of tech stocks with negative earnings) has sold off significantly this year. In the second of the two charts above, showing Nasdaq 100 constituents, we use



Managers Update - June 2022

valuation to identify 'speculative' growth stocks. Here, there exists a stark difference in performance year-to-date between high-valuation stocks (the 9th and 10th decile) and the rest of the market. Over 2022, the bottom two deciles in terms of performance have a 1-year forward P/E median of >50x, significantly ahead of all other deciles.

Within the Fund, holdings are exposed to long-term secular growth themes, which is often in contrast to many speculative stocks where hype during the pandemic drove valuations to unsustainable levels. While the pandemic may have been a catalyst for demand for products and services within the themes identified by the Fund such as Cloud Computing, Artificial Intelligence and Big Data, these revenues are typically 'stickier' and hence more long-term in nature. To illustrate, the shift to cloud for many companies was simply accelerated rather than a one-off, and business models in this space tend to rely on recurring subscriptions rather than one-time payments. As a result, the Fund has largely been isolated from the temporary behavioral changes that many speculative stocks at first benefited from but are now paying for.

Alongside exposure to long-term secular trends, the Fund's quality tilt is particularly important in periods of volatility and weak equity performance. One commonly used indicator of quality is return on capital. As seen in the chart below, over 90% of Fund holdings have a return on capital above that of the MSCI World, with a portfolio median of 19.9% vs the MSCI World's 8.6%.



Source: CS Holt, Guinness Atkinson Asset Management

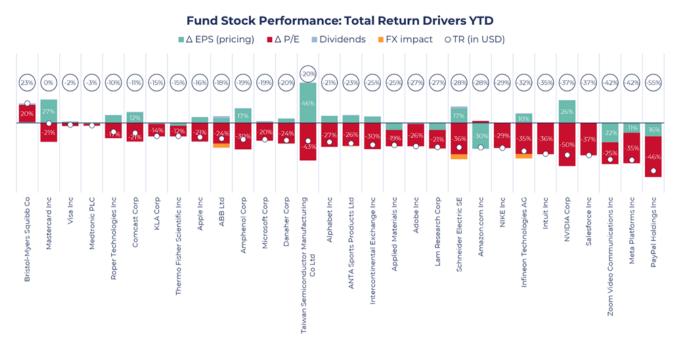
While the rotation away from many speculative stocks in this kind of market environment may be justified, in many instances we perceive that growth companies with strong, quality characteristics and bright long-term outlooks have been caught up in the broader growth sell-off, not necessarily reflecting their fundamental business strength.

Within the Fund, valuation compression has been the key driver of overall total return. Considering the

Guinness Atkinson Global Innovators Fund Managers Update – June 2022



portfolio year-to-date, we see earnings upgrades from 20 of the 30 portfolio holdings (with a mean of +3.6% and a median of +1.5%) while 28 of the 30 holdings which have experienced multiple contraction.



Source: Bloomberg, Guinness Atkinson Asset Management

While Zoom, Meta and Paypal offer Fund examples of both multiple contraction and earnings downgrades materially contributing to negative share price performance, the Fund's picture overall is of reasonable growth expectations. This is not just a result of having exposure to secular innovation themes that are likely to drive growth in most market conditions, but quality characteristics, where high returns on capital and stronger margin profiles can absorb some of the cost pressures.

Another aspect which we have been interested to note is the type of shareholder returns, more specifically buybacks and dividends. We would not necessarily expect good dividend prospects in growth companies, as they continue to reinvest in their business to nurture growth. In some cases, however, and especially among quality growth stocks, company management is aware of the need not to grow for growth's sake but instead only to reinvest in profitable projects and distribute excess cash to shareholders to maintain high return on capital rather than just achieve top-line growth. This again is a characteristic we feel is somewhat overlooked today with growth stocks all getting tarred with the same brush (to some degree).

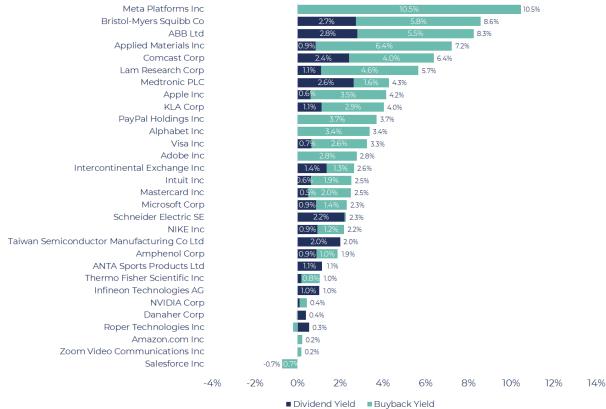
Management teams in growing companies often prefer buybacks to dividends; repurchasing stock in one year does not form an expectation to do so in the next, whereas dividends of a certain level are generally expected by investors. Cuts in dividends are perceived as a negative signal to the market, but buybacks afford companies far more flexibility when it comes to distributing excess cash.



Managers Update - June 2022

There have been material buybacks in the portfolio over the last 12 months, as seen in the chart below. Buybacks can generally be taken as a positive signal from management, although we recognize that in general, management teams have historically been poor at timing such programs. In addition, buybacks can be executed for the wrong reasons, such as boosting EPS to 'game' options in incentivization schemes. On the other hand, buybacks differentiate the 'quality growth' companies from the more 'speculative' growth companies, as they have both the cash and the ability to execute them. Moreover, in today's market, any type of 'yield' should be well rewarded (for better or worse).

Contribution to Shareholder Yield through Buybacks and Dividends Trailing 12 Months / Current Market Cap Meta Platforms Inc. Bristol-Myers Squibb Co 8.6%



Source: Bloomberg, Guinness Atkinson Asset Management

Within the Fund, we continue to see management teams from across the spectrum discuss share buybacks as a significant means of returning cash to shareholders and we will follow these indications closely over the rest of the year.

Meta: David M. Wehner, CFO, 22nd March 2022: "The priority is investing in growth... but we think that the core Family of Apps business will provide adequate capital to fund those investments, and that also allows us to continue to repurchase stock. And we think we can offset the employee dilution, but also continue to make anti-dilutive repurchases opportunistically".





Bristol Myers Squibb: David V. Elkins, Executive VP & CFO, April 2022: "And in the quarter, we executed a \$5 billion [about 3% of current market cap] accelerated share repurchase program... we remain opportunistic about future share repurchases".

Applied Materials: Brice A. Hill, Senior VP & CFO, May 2022: "During the quarter, we returned over \$2 billion to shareholders, deploying \$1.8 billion [about 2% of current market cap] to repurchase 15 million shares of company stock and paying \$211 million in dividends. During the quarter, we announced a new \$6 billion [about 9.5% of current market cap] stock buyback authorization and increased the dividend by 8.3%, marking our fifth consecutive annual dividend increase."

NVIDIA: Colette M. Kress, CFO, May 2022: "During Q1, we repurchased \$2 billion [about 0.5% of current market cap] of our stock. Our Board of Directors increased and extended our share repurchase program to repurchase an additional common stock up to a total of \$15 billion [about 4% of current market cap] through December 2023."

Medtronic: Karen L. Parkhill, CFO, May 2022: "We are an S&P Dividend Aristocrat, having increased our dividend for 45 years now, and our dividend is an important component of the total return we generate for our shareholders. This past year, we paid \$3.4 billion in dividends and we're supplementing that through opportunistic share repurchase, particularly in periods where we see share price dislocation. In fact, we repurchased over 2.5 billion [about 2% of current market cap] of our stock in fiscal '22, including 1.4 billion in the fourth quarter."

Changes to the Portfolio

In May we made six changes to the portfolio. With the market de-rating significantly this year, a number of attractive buying opportunities emerged, allowing us to make room for additions of companies that had been on our watchlist but not offered an attractive entry point. In keeping with our one-in one-out strategy, this meant the removal of three companies.

Buys



Intuit Technologies

Intuit Technologies is a global technology platform which provides its 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 for small and medium-sized enterprises, and US income tax return management software TurboTax. At the end of 2021 the firm bought MailChimp for \$12bn, adding an email marketing platform to its product portfolio.

QuickBooks' market-leading position (about 80% market share) has a wide economic moat, with significant switching costs stemming from product integration within business processes. Customer retention rates of



Managers Update – June 2022

79% highlight a defensible market position. In addition, having such a commanding share of the market offers a platform in which to launch additional products to upsell such as TurboTax and MailChimp, or any other new innovation the firm may bring to the market. Intuit grew customer numbers from 57m in 2020 to 102m in 2021, and we expect a combination of both organic and inorganic top-line growth to continue into the long term. In addition, its relatively high operating leverage offers ample runway for improved profitability, through closing the gap between operating margins (currently 24%) and gross margins (82%) as the top line grows. While offering a higher-growth outlook than peers, Intuit is trading at roughly similar P/E levels – an attractive entry point considering it traditionally trades at a significant premium. All in all, the track record of innovation, quality attributes and growth potential that Intuit offers make it a natural fit for the Fund.



Salesforce.com

Salesforce is regarded as one of the most innovative companies within the cloud computing application space, having built up a formidable brand among enterprise software providers. Through a number of products of substantial scale and growth, Salesforce aims to increase the productivity and efficiency of sales representatives. The firm's cloud-hosted customer relationship management technology is the outright market leader, with a market share over four times the size of its nearest competitor, Oracle, but with just about 24% (up from about 20% 2020) of the total market, there is still a large growth opportunity. Furthermore, the endmarket of each of the firm's five operating segments is expected to grow with a compound annual growth rate (CAGR) of at least 11% until 2025. Diversification is such that each product segment offers at least 17% of revenues (FY22 Q2).

Through building on the idea of Customer 360, a holistic product catalogue for companies in managing their business processes, the firm achieved a 26% eight-year CAGR by year-end 2022 while also expanding operating margins from below 0% to 19% over the same period. Through an integrated offering, the firm is building upon customer relationships and improving the quality of its revenues through customer switching costs and stickiness. The firm has demonstrated exemplary success in growing the top line through a combination of both organic and inorganic opportunities, with highly successful acquisitions such as ExactTarget, Demandware, MuleSoft and Tableau all delivering growth of at least about 29% (based on 1H22). Through the ability to cross-sell across adjacent products, margin expansion, inherent end-market growth, market share growth and both innovation and inorganic opportunities, Salesforce has many levers to pull in order to continue on its strong growth trajectory.



Zoom Video Communications

Zoom was one of the primary beneficiaries of the 'stay-at-home' period of the Covid pandemic, with the firm's



Managers Update – June 2022

Zoom Meetings product offering a low-cost platform for friends, family and colleagues to keep in touch during lockdowns. Market hype surrounding the new age of working from home and video conferencing caused the market to bid up the stock to extremely high levels. Concerns over whether the stock could maintain both market share and growth have caused a sharp decline since market highs in October 2020, with the stock now trading at near pre-pandemic levels.

The vastly better position that Zoom now finds itself in compared to before the pandemic (stickier revenues, higher market share, greater product portfolio), in our view, provided an attractive entry point. Although Zoom was certainly a 'speculative' stock in the early days of the pandemic, the company has executed an excellent strategy that built on the extreme growth it underwent and now holds a commanding position in a \$43bn market (latest fiscal year revenues of \$4.1bn), that is expected to reach in excess of \$90bn by 2025. With a lowtouch, 'freemium' model that lends itself to viral adoption, paired with a market-leading product, the firm has quickly become one of the best-known brands within video communications. By focusing on enterprise customers (now 50% of sales), Zoom is increasing the stickiness and therefore the quality of its revenues. Still in the early growth stage, it continues to invest heavily, but with a net cash position, it has the capacity to do so. An erstwhile concern was that Zoom would be displaced by in-person meetings after the pandemic. Clearly, this has not happened. Net customer adds continue to grow, albeit at a lower pace, as video calling is now normalized in offices and businesses appear likely to continue with a hybrid approach. The technology is now a necessity, rather than a luxury. The company's portfolio stemming from Zoom Meetings is expanding, in particular with Zoom Phone (the product went from a test two years ago to over two million 'seats' today), giving a long runway for revenue growth. While it remains to be seen whether Zoom will be one of the 'winners' in the space, in which it competes with strong brand names such as Microsoft, we believe the firm has given itself every chance of doing so, with a superior product, strength in the brand name, and a strong, sensible strategy.

Sells



SAP

Bought August 2015 and sold late May 2022. Underperformed benchmark over the period (+64% vs +94%, total return in USD).

SAP is a global software vendor which provides enterprise resource planning and database management software, among other products. The business has been transitioning away from licensing towards offering software as a service and has disappointed the market by pushing back guidance (some of which was pandemic-related) and seeing a somewhat slower and less profitable shift to cloud than potentially expected. This is likely to lead to higher margins and better profitability if successfully executed in the medium term, and the stock's discount to the wider software sector (SAP trades on 17.5X 2022 expected earnings) reflects some of this uncertainty. Nevertheless, we felt there were better opportunities with clearer earnings growth





Managers Update – June 2022

potential elsewhere, considering the significant market sell-off in 2022. We also noted some concern that the shift to cloud could in fact open the company up to higher levels of competition from cloud-only vendors if switching costs for customers became less onerous.



Cisco

Bought in strategy in June 2014 and sold late May 2022. Outperformed the MSCI World benchmark over the period (+132% vs +91%, total return in USD).

Cisco, a leading supplier of network IT hardware and in particular switches and routers, has been increasing its software capabilities over recent years and moving to capture a greater recurring revenue stream, even within its hardware offerings. The business is very well run and has been improving returns on capital over the past few years. Earnings had been growing at a high-teens rate leading up to the pandemic but fell as hardware orders declined. We have seen a recovery since, and management were bullish on the latest earnings call that demand remained strong – despite difficulties with supply chains in China causing issues in the near term. Although we rate the company highly, we are somewhat cautious on the potential for macro headwinds in a lower-growth (or potentially recessionary) environment, and although the valuation has de-rated to reflect this (along with the broader market) to a PE of 12.5X, we felt there were better opportunities for high-quality companies offering potentially higher growth.



Samsung Electronics

Bought in strategy mid-2004 and sold in late May. Strong outperformance versus the MSCI World benchmark (+748% vs +306%, total return in USD) over this period.

Although we are broadly constructive on the semiconductor market due to the expanding demand drivers versus history, we are conscious of the overall exposure of the Fund to this industry. Samsung Electronics generates a significant proportion of both revenues and earnings from memory within its semiconductor business, alongside consumer electronics such as displays and smartphones. The latter category does not command such high barriers to entry and may suffer from any consumer spending downturn, which may also affect the memory market alongside. We also note concerns regarding corporate governance and the potential exposure to (and lack of clarity and action on) significant carbon emissions via the power used in a large part of its manufacturing processes. Because of the strong run of the stock price through the pandemic period (some of which has been given back alongside the broader market sell-off this year), its exposure to lower-



Managers Update – June 2022

margin consumer electronics, and our significant exposure to the semiconductor industry, we felt it was an opportune time to take profits and invest in other companies that may offer greater secular growth opportunities that may be less susceptible to cyclical pressures – and which have potentially de-rated in similar magnitude to lower-quality businesses in the tech sell-off since the Fed pivot in late 2021.

Stock Specific News:





KLA Corp (+14.6% USD), LAM Research (+11.7%), Applied Materials (+6.5%)

The Fund's semiconductor equipment manufacturing names all performed strongly during May, with LAM Research, KLA Corp and Applied Materials all featuring in the Fund's top five holdings. The global chip shortage has prompted chip manufacturers such as TSMC and Samsung to spend more than ever on capacity expansion, with the industry as a whole forecast to make a total of \$190 billion in capital expenditures this year - 23% higher than last year and nearly double pre-pandemic levels. Natural beneficiaries of this spend are semiconductor equipment manufacturers. Alongside corporate spending, billions of dollars of subsidies and tax breaks are being offered across the US, Europe and Asia, providing strong visibility for future growth in equipment manufacturer revenues. While the chip shortage has given a short-term tailwind, the long-term outlook for chip equipment manufacturers remains attractive. Chip content within products is expected to drive capacity requirements, ever-increasing performance requirements drive complexity and therefore new manufacturing equipment, alongside the inherent growth of innovative end-markets (automotive, AI, 5G, datacenters etc). In particular, these semiconductor equipment manufacturers not only offer the desired growth prospects we are looking for within the Fund, but also very strong quality aspects, with strong margin profiles, balance sheets and return on capital.



Comcast (+11.4% USD)

Telecommunications conglomerate Comcast was the Fund's third top-performing stock over the month of May (+11.4% USD). The firm's revenues are roughly split across cable communications (provision of internet, video, voice etc) and media (through NBCUniversal and Sky). Trading on a P/E multiple (1 yr fwd) of 10.6x, Comcast is arguably one of the more value-tilted names in the Fund, and hence benefitted from the relative outperformance of value during the month.

Early in the month, Comcast, along with 20 other internet providers, agreed to help provide low-cost, highquality internet to the millions of unconnected US households through President Biden's infrastructure bill. This bill allows a \$30 per month subsidy to eligible low-income households, with the providers agreeing to offer plans to these households for no more than \$30. The plan is part of a \$65bn package to build up the country's



Managers Update – June 2022

broadband network. This should provide support for declining growth in new broadband customers (Comcast added 262,000 new broadband customers in Q1, down from 461,000 the previous year).

The firm also participated in the JP Morgan Global Conference at the end of the month and the market reacted positively to management commentary. During the conference, CFO Mike Cavanagh highlighted that although the firm's new broadband adds were falling, this is predominantly a result of overall lower market activity rather than market share loss to competitors. In fact, lower net adds was largely offset by record low churn, helping to improve the quality of the firm's revenues through greater long-term visibility. The market also reacted well to commentary surrounding M&A, where the CFO noted that the there is a very high bar for any acquisitions (following speculation of a potential merger with Electronic Arts) and that the firm has high confidence in its current businesses, strategy and investments. While agreeing there was some upheaval across the industry, Cavanagh highlighted that Comcast, as a large player with strong market position and propositions, was likely to be a relative beneficiary. The firm is not only able to exhibit strong quality metrics (Gross margin about 66%, cash flow conversion consistently >100%), but is also able to invest in growth. It continues to generate strong cash flow, helping to strengthen the solid balance sheet and aggressively repurchase shares – a record \$3.2bn was repurchased during the prior quarter.



Intercontinental Exchange (-11.6% USD)

Intercontinental Exchange, the Fund's only holding within the Financials sector, was the bottom performer. ICE, which is a market-leading provider of data, technology and market infrastructure, including the 12 regulated exchanges, announced a definitive agreement to acquire Black Knight, a software, data and analytics company focused on the real estate and mortgage market - helping to build on ICE's own rapidly growing mortgage technology business. The deal, valued at \$13.1bn (\$10.5bn in cash, remainder in stock), was met with a significant slide in share price over the subsequent week (-16.5% USD), despite ICE announcing a strong set of Q1 results in the meantime, with market concerns primarily related to balance sheet strength and the price paid. While net debt to Earnings Before Interest, Taxes, and Depreciation (EBITDA) will increase to 4.1x, the firm has a track record in deleveraging the balance sheet from these levels before, as it did with its 2018 acquisition of Ellie Mae. To achieve this, ICE will be suspending buybacks until 3.25x net debt to EBITDA is achieved - a prudent measure in our view. Although it clearly carries some execution risk, we see the acquisition as making strong strategic sense for ICE. The firm highlighted its strong business credentials during its Q1 earnings release, with heightened market volatility in energy and bond markets driving trading volumes. We continue to view the investment proposition as a strong one, with high recurring revenues (42%), high margins (35%) and good return on capital (about 12%) playing into the Fund's quality-growth tilt, but also offering some defensive properties from volatility (higher volatility drives revenues).

Guinness Atkinson **Global Innovators Fund**Managers Update – June 2022



We thank you for your continued support.

Portfolio Managers

Matthew Page, CFA

Dr Ian Mortimer, CFA

Summary performance

For the month of May, the Guinness Atkinson Global Innovators Fund provided a total return of +0.33% (USD) against the MSCI World Index net total return of +0.08% (USD). Hence the fund outperformed the benchmark by +0.25% (USD).

Following a torrid April, when the S&P 500 delivered the worst monthly performance since March 2020 (and the worst month since May 2008 for the NASDAQ 100), May offered equity markets some respite, with the MSCI World finishing broadly flat in USD terms. Still, the month was not without volatility. Amid uncertainty over the effectiveness of global central bank policy in both taming inflation and avoiding a recession, with even the chair of the Federal Reserve stating that it couldn't guarantee a soft landing, it seems only logical that a level of market anxiety drove equities lower in the first half of the month. In addition, rising yields, sustained inflationary pressures and further supply chain disruption gave equity investors little to be positive about. The S&P 500 even dipped into bear territory during the middle of the month. Yet, as seen in the chart below, the second half of the month saw a reversal of these declines, bringing equity market total returns into positive regions in all but the US (-0.2% in USD).

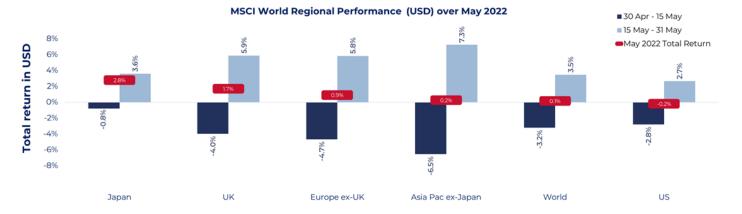
Several factors are likely to have contributed to the improvement in market sentiment. During the period, it



Managers Update - June 2022

emerged that the Biden administration was considering rolling back some of the Trump-era tariffs on Chinese goods. A number of high-profile comments at the World Economic Forum in Davos from CEOs such as Jamie Dimon (JP Morgan), Jane Fraser (Citigroup) and Brian Moynihan (Bank of America) indicated their belief that the US economy is in good shape. Inflation showed signs of moderation in the US following eight months of consecutive growth, with headline inflation 20bps down on the previous month to 8.3% and core inflation dropping from 5.2% to 4.9%.

Perhaps most importantly, the Federal Reserve indicated a potentially more dovish stance despite raising rates by 50bps for the first time in 20 years. The bank had discussed a more aggressive string of hikes but was concerned over the effect on the labor market, instead confirming its intention for 50bp rate hikes at the next two Federal Open Market Committee (FOMC) meetings, expediting hikes to the neutral rate. Subsequently, the bank would re-assess where to go next, opening the door for a less aggressive tightening path than market expectations.



Source: Guinness Atkinson Asset Management, Bloomberg



Managers Update – June 2022

From a factor perspective, value remained very much in favor during May, continuing the broad trend seen throughout much of the year. Tighter monetary policy has created a headwind for growth, with the increase in rates leading to the de-rating of valuations for 'higher-duration' firms. 'Speculative' growth stocks have been impacted particularly hard, whereas 'quality' companies with more stable earnings and stronger balance sheets, and high margins in which to absorb the shocks of rising costs, have been favored. These 'quality-growth' factors are all typical of stocks within the Fund. Having this quality focus aided performance during the month and it is pleasing to see performance relatively in line with the MSCI World, despite growth underperforming.



Source: Guinness Atkinson Asset Management, Bloomberg

Over the month of May, fund performance can be attributed to the following:

- Strong stock selection was a relative tailwind, although the Fund's growth tilt proved to be a headwind from an allocation perspective, due to the relative strength of value over May.
- The Fund has a significant overweight position to the Information Technology sector and this was a negative from an allocation perspective, with the continued rotation away from growth causing the MSCI Information Technology to underperform the MSCI World by -1.64% in USD. However, this negative allocation effect was more than offset by strong stock selection, particularly amongst semiconductor equipment manufacturers KLA Corp (+14.6% USD), Lam Research (+11.64% USD) and Applied Materials (+6.5% USD).
- From an allocation perspective, the Fund's zero weighting to Consumer Staples and Real Estate was a



Managers Update – June 2022

positive, as these were the two bottom-performing sectors during May (MSCI World Consumer Staples Index -3.8% USD, MSCI World Real Estate Index -3.8% USD). However, the Fund's zero weighting to the top-performing sector, Energy (MSCI World Energy Index +13.5% USD) was a drag.

as of 05.31.2022 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class ¹	-12.75%	17.08%	11.57%	14.75%
Global Innovators, Institutional Class ²	-12.52%	17.37%	11.85%	14.94%
MSCI World Index NR	-4.82%	12.64%	9.72%	11.05%

as of 03.31.2022 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class1	2.84%	19.23%	15.44%	14.74%
Global Innovators, Institutional Class2	3.10%	19.53%	15.73%	14.92%
MSCI World Index NR	10.12%	14.93%	12.42%	10.87%

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.qafunds.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.

¹ Investor class (IWIRX) Inception 12.15.1998 Expense ratio* 1.24% (net); 1.17% (gross)

² Institutional class (GINNX) Inception 12.31.2015 Expense ratio* 0.99% (gross/net)

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).

Guinness Atkinson

Global Innovators Fund

Managers Update - June 2022



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 change and risk.

Top 10 holdings for Global Innovators Fund, as of 05/31/22:

1.	KLA – Tencor Corp	4.07%
2.	Mastercard Inc	3.95%
3.	Thermo Fischer Scientific Inc.	3.82%
4.	Roper Technologies Inc.	3.79%
5.	Microsoft Corp.	3.72%
6.	Visa Inc.	3.64%
7.	Amphenol Corp	3.64%
8.	Meta Platforms Inc Class A	3.62%
9.	ABB Ltd	3.55%
10.	Lam Research Corp	3.44%

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.

Dividends are not guaranteed and may fluctuate.

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

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

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

Managers Update – June 2022



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

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

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

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

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

One cannot invest directly in an index.

Return on capital (ROC) measures a company's net income relative to the sum of its debt and equity value. It is effectively the amount of money a company makes that is above the average cost it pays for its debt and equity capital.

Forex, also known as FX, is the foreign exchange market where investors and institutions trade currencies, is the biggest financial market in the world. Foreign currency effects are changes in the value of foreign assets or holdings due to currency exchange rate changes, which can result in either gains or losses.

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

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

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.

Guinness Atkinson **Global Innovators Fund**Managers Update – June 2022



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

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

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

Forward price-to-earnings (forward P/E) is a version of the ratio of <u>price-to-earnings</u> (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

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

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

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