Guinness Atkinson
Global Innovators Fund
Managers Update – August 2022

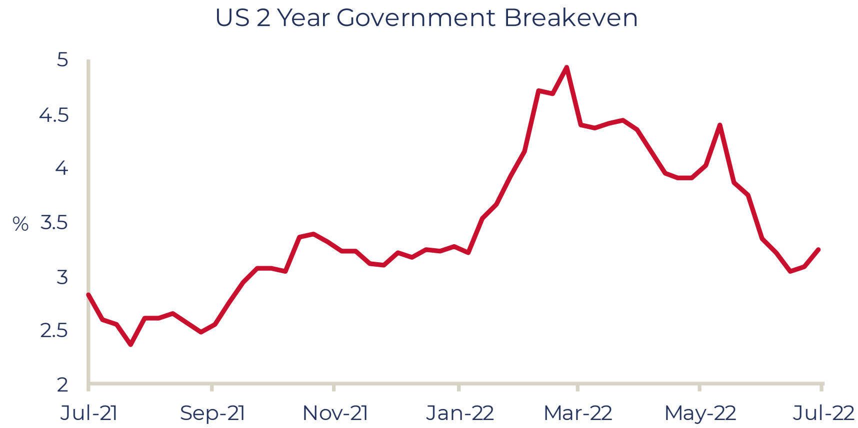
July in review:

Over the first half of 2022, there was a significant divergence in performance between growth and value, a trend which was particularly pronounced over the first 5 months of the year. Inflationary pressures, stemming from COVID-19 induced supply chain disruption, the European energy crisis, and the war in Ukraine, led global central banks to pivot to more hawkish monetary policy, creating an environment that was not conducive for strong equity performance on the whole. This particularly impacted 'high duration' growth stocks, leading to a significant outperformance of the MSCI World Value Index to the MSCI World Growth Index (although both delivered negative returns over the period). While we avoided some of the extreme downgrades seen at the more 'speculative' end of the growth spectrum, this factor rotation was a drag on Fund performance.

MSCI World Growth vs MSCI World Value

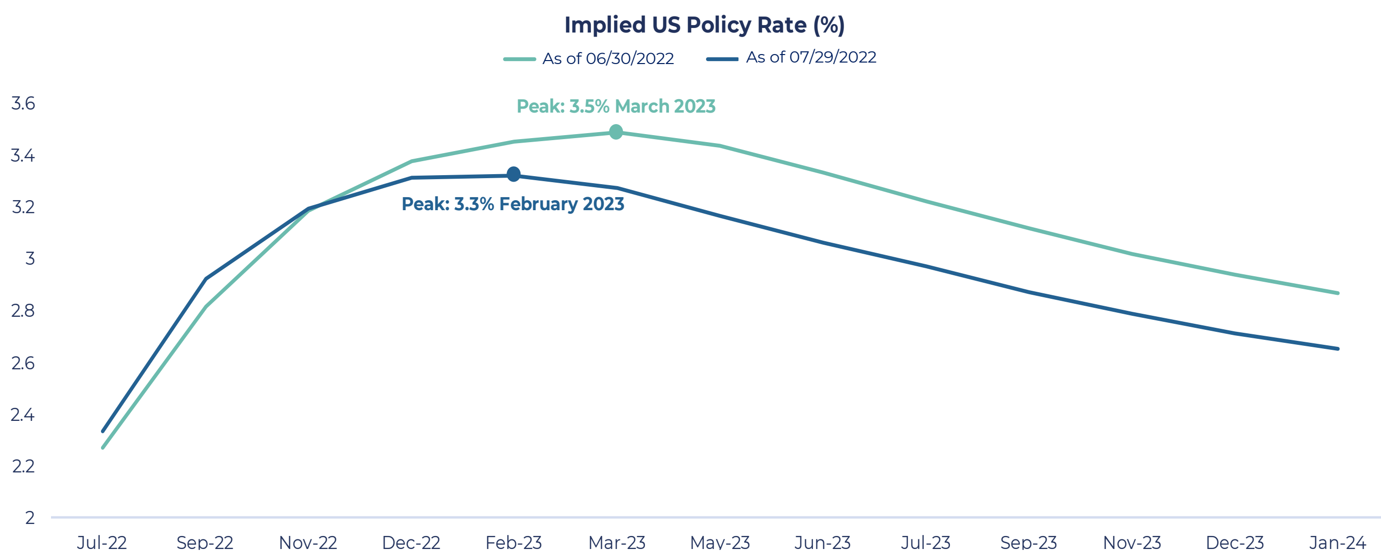
Source: Bloomberg, Guinness Atkinson Asset Management.

Since late May, markets have become increasingly worried that aggressive monetary tightening policies may tip economies into a recession – a concern which became increasingly likely following Q2 gross domestic product (GDP) prints. Despite inflation numbers coming in higher than expected to reach new 40-year peaks (9.1% Consumer Price Index in the US for June 2022), markets seemed to have reached a peak in inflation expectations. This can be seen in the 2-year breakeven, which implies what market participants expect inflation to be over the next 2 years, on average.



Source: Bloomberg, Guinness Atkinson Asset Management. Data as of 07.29.2022

With a slowing economy and heightened expectations of inflation coming under control, markets began to expect a sooner-than-previously-expected pivot to 'looser' money from central banks. This can be seen in the graph below, where investors were forecasting the US Federal reserve to begin *cutting* rates sooner and from a lower peak than had been forecasted one month prior.

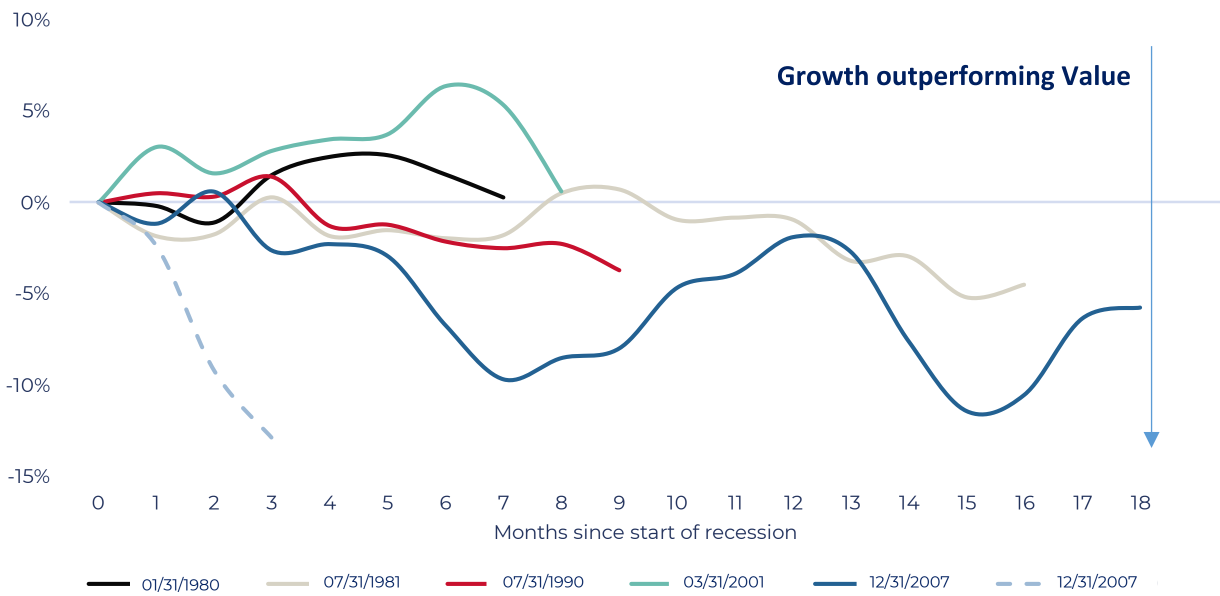


Source: Bloomberg, Guinness Atkinson Asset Management. Data as of 07.29.2022

This has multiple benefits for growth businesses. In a low growth recessionary environment, it becomes increasingly important to invest in businesses that can actually continue to grow, and a lower policy rate implies a lower cost of capital in order to invest. Additionally, a lower interest rate sooner would decrease the discount rate applied to company valuations, helping to support stock prices—particularly for growth companies. The net effect has been a rotation back in favor of growth.

In recent recessions, investors have sought companies that can continue to grow despite a low growth environment. Over the last 6 recessions in the US, growth has tended to outperform value by the end of the recessionary period.

MSCI World Value - MSCI World Growth Index during the last 6 U.S. recessions



Source: Bloomberg, Guinness Atkinson Asset Management. Data as of 07.29.2022 in USD

While behind the MSCI World Index year-to-date, the Fund has made up good ground and the focus on quality growth businesses through a low growth/recessionary period should put the Fund in good stead for the remainder of the year. Within the Fund, holdings are exposed to long-term secular growth themes that we believe are somewhat isolated from the business cycle, and less susceptible to weakness in the macro-environment. The Fund's quality tilt is particularly important in periods of economic volatility. With higher margins (on average) than the broader index, companies held within the fund are likely to be able to withstand greater inflationary pressures and continue investing in growth when others cannot. Over the month of July, we have been encouraged by a strong set of earnings announcements across Fund holdings, with these quality attributes and long-term, secular growth trends demonstrating their resilience over the past quarter.

Of the 22 companies that had reported at the time of writing, 91% of holdings reported comparable sales above or in-line (±1%) with analyst estimates, with an average 'beat' of +2.8%, and 95% of firms reporting sales growth (or flat, ±1%) with an average of +12.7%. Of the 21 companies that also reported earnings, 81% reported adjusted earnings above or in-line with analyst estimates, with an average 'beat' of 4.3%, and 67 reported earnings growth, with an average of 9.1%.

Over the course of the earnings season, a number of key themes emerged. These included resilience in recurring revenue streams, strength in cloud businesses, strong demand in the enterprise segment, incremental easing of supply chain disruption, and a difficult advertising environment.

Resilience in recurring revenue streams

Recurring revenue is the portion of a company's revenue that is expected to continue indefinitely in the future, as customer transactions are made more predictable through either subscription or service contracts. This helps firms to weather cyclical events and leads to more consistent revenue figures going forward. It was pleasing to see a number of Fund holdings offering positive updates on their recurring revenue streams.

Apple contended with a very difficult macro-environment over the past quarter, with inflation generating a moderation in consumer spending, significant Foreign Exchange (Forex or FX) headwinds and a heavily disrupted supply chain. Nonetheless, the firm posted solid earnings, growing revenues 2% to $83 billion (BN) alongside gross margin expansion of 45 basis points (bps) to 43.26%. Particularly promising was the growth in the services segment (+12% Year-over-Year) and a record number of service subscribers (860 million people) which offers a high quality, recurring revenue stream with significant 'stickiness'. This growth was facilitated by all-time high numbers for the "installed base of devices", with Tim Cook noting that Services continued to be a "strategic growth priority for the firm" going forward.

Adobe posted Q2 results which beat on both the top and bottom line. Revenues of $4.39 billion and earnings per share (EPS) of $3.35 came in 1.1% and 1.2% ahead of consensus. The firm also announced a $464 million net increase in 'new digital media' annually recurring revenue stemming from better-than-expected performance in the Creative Cloud and Document Cloud segments. Management reiterated their previous bullish guidance and explained that the full year outlook of a $1.9 billion increase in Annual Recurring Revenue is still on track.

Roper also posted impressive quarterly results, most notably growing software recurring revenues by 12%, which now makes up over 60% of total group sales. Additionally, Roper is making good progress in streamlining its portfolio to 26 high quality operating businesses (down from a peak of 46). Once the industrial asset sales are completed by year end, 75% of Roper's business will be in software, with the remaining 25% focused on medical and water products. The combination of their recurring (software related) and reoccurring (parts, services, and consumables) revenue base leave the business far less cyclically exposed compared to history. CEO Neil Hunn noted that Roper is able to charge customers on both the cost of perpetual software and related maintenance, while weaker players can only charge on the initial maintenance. This demonstrates the firm's significant moat and firm ability to pass through prices, on top of a strong reoccurring revenue base.

Strength in Cloud Businesses

A core theme identified within the innovators fund is the growth of cloud computing. Cloud vendors including Amazon Web Services (AWS), Microsoft Azure, and Google Cloud (Alphabet) give companies access to faster, more flexible resources and economies of scale. We view the shift to Cloud as a long term, secular growth theme that is likely to grow no matter the economic environment. The fund currently holds all three businesses, which between them collected over 65% of global cloud computing spend.

Amazon was the Fund's top performer for the month, returning +27.06% USD in July. This strong performance came off the back of 7% yearly revenue growth ($121.23 billion) and an optimistic outlook for the rest of the year. Leading the charge was the AWS segment, expanding 33% Year-over-Year (Y-o-Y), to net sales of $19.7 billion, an annualized run rate of nearly $79 billion. Driven by continued innovation and customer engagement, AWS has cemented its dominant market position. However, CFO Brian Olsavsky believes that we are still only *"in the early stages of the adoption curve for companies and governments. We see great opportunity to continue to make investments on behalf of AWS customers and … (keep) expanding AWS to new regions".* We remain confident that Amazon retains a market leading cloud hosting position and is well placed to benefit from sustained growth going forward.

Despite a mixed quarter for cloud computing giant **Microsoft**, including a contraction in the personal computer market, a strong US dollar, and lower Bing and LinkedIn advertising revenues, there were clear pockets of strength. The firm's Intelligent Cloud Segment posted revenues of $20.9 billion for the quarter, an increase of 25% in constant currency terms. Additionally, server products and cloud services revenue increased 22% and 26% respectively, with Azure growing 46% continuing its on-premises dominance. CEO Satya Nadella explained that the firm has taken *"share across all major categories"* specifically cloud security, where revenues increased 40%. He also commented on the strength of their mid- to long-term deal pipeline, noting particular progress with the larger $100m+ and $1bn+ deals, boding well for future growth.

Finally, **Alphabet**'s Google Cloud platform, whose market share continues to lag behind industry behemoths AWS and Azure, recorded promising yearly growth of 36% and surpassing $6.3 billion in sales for the quarter. They grew across all geographies, and notably rolled out the Google Public Sector offering in June, aimed at helping U.S. government agencies and public institutions accelerate their digital transformations. CEO Sundar Pichai remains confident in Google Cloud's growth runway, referencing their *"leadership in the data cloud market because they unify data lakes, data warehouses, data governance and advanced machine learning into a single platform that can analyze data across any cloud."* CFO Ruth Porat corroborated a similar sentiment to the rest of the industry, explaining that this is a *"long-term opportunity and enterprise customers are still early in their move to the cloud."* We share this optimism and feel that Google is also well placed to benefit from the significant industry structural tailwinds.

Strength in enterprise demand

Despite an environment with persistent inflationary pressures, we were encouraged to see strong enterprise demand across a number of the Fund's holdings. ABB, Schneider Electric, TSMC and Lam Research all offered insight into the general enterprise demand environment.

ABB's CEO, Bjorn Klas Otto Rosengren, opened their earnings call stating that *"It was really good to see that demand remains on a high level despite the challenges from high inflation … all business areas increased orders at a double-digit growth rate."* As a result, ABB posted a solid set of Q2 2022 earnings, booking 6% organic revenue growth. While the majority of this came from price increases, volume was also up 1% for the period, signaling strength in the end markets and a firm ability to pass through prices in an inflationary environment.

Schneider Electrics' quarterly revenues of €8.5 billion were up +10% organically, with strong end-market demand allowing significant pricing growth, although volume expansion also contributed. Jean-Pascal Tricoire, CEO, stated that the firm was *"facing accelerating demand…we see a sustained demand on all sites".* There were particularly good readings from the energy management division, which grew revenues by 12% and expanded earnings before interest, taxes, depreciation, and amortization (EBITDA) margins to an impressive 20.4% on the back of category strength and good execution. Further positive news came in the form of growth upgrades, as the firm improved their full-year top line guidance by 2%. CEO Tricoire noted that structural demand is very strong, and customers are increasing their orders for energy efficiency technologies in a bid to mitigate against higher market energy prices. We are encouraged by the clear structural demand from enterprise customers which should continue to be a positive tailwind for both margins and group profitability.

The fund has high exposure to the Semiconductor end market, through foundries, chip designers and equipment manufacturers, with holdings such as TSMC, Nvidia and Lam Research. **TSMC**'s earning release helped allay investor concerns surrounding the strength in chip market this year (supply chain disruptions, Russia-Ukraine War, rising material costs), with TSMC posting a record set of results. Revenue was up by 43.5% Y-o-Y to 534.14 billion Taiwanese dollars, an all-time high for the chip maker. While they did identify some weakness in the consumer end market, CEO *C. Wei* noted particularly *"strong HPC, IoT and automotive-related demand". He also sees a continuation into the next quarter; "we expect our business to be supported by continued demand for our industry-leading 5-nanometer and 7-nanometer technologies."* In terms of equipment manufacturers, the global chip shortage has prompted manufacturers, such as TSMC and Samsung, to spend more than ever on capacity expansion. Multiple $100-billion capex per year spend across the industry being clear tailwinds for capital equipment vendors such as Lam Research, Applied Materials and KLA. Lam Research CEO Timothy Archer noted that despite *"some macro-driven pockets of weakness, particularly in consumer-focused markets…overall semiconductor demand remains robust"* particularly in logic/foundry customers.

Improvements in the supply chain, although still heavily constrained

One of the core drivers of the multi-decade high inflation currently seen across markets is a result of disruption amongst supply chains, driven predominantly by lasting COVID-19 impacts. Most recently, regions across China have been in strict lockdown due to their zero-COVID policy, forcing factories to temporary close and freight routes to be disrupted. It was noticeable within company earnings that multiple firms were experiencing a slight easing of supply chain constraints that had plagued industries over the last six months, perhaps another indication that inflation could soon ease. In some cases, supply chain disruption was improved through enhancements in operations and in other cases, through improvements in the operating environment. It is important to note that this trend was certainly not the case for everyone, and companies often reminded investors of the changing and dynamic nature of the supply chain, with China being a prime example. Some important insights from company earning calls include:

Apple – In terms of outlook, the firm guided to an acceleration in year-on-year growth in the fourth fiscal quarter (FQ4), stating that *"the situation on supply is improving"*.

Schneider - *"Western Europe was up 18% for the quarter with some easing of supply chain pressures… though we see pressures on electronics remaining, and that's a big part of our attention on transformation. We see a strong recovery in China post Q2."*

Lam Research– *"On addressing the supply chain challenges we've previously talked about; it will take more time for them to be fully resolved. Despite the supply chain improvements and higher factory output levels, we still exited the June quarter with $2.2 billion in deferred revenue, which was an increase of $129 million sequentially."*

Danaher – *"(We have) done an incredible job leveraging the Danaher Business System to help mitigate supply chain constraints, manage inflationary pressures and improve our competitive positioning with impactful new innovation."*

ABB - *"While the general supply chain eased slightly compared to Q1, our revenues were still somewhat hampered."*

A Decline in advertising spend

Despite a broadly strong set of results from our Fund's holdings, it was clear that the Big Tech names are facing a slowdown in advertising spending, often viewed as discretionary spending, as their customers take a more cautious approach given the uncertain macroeconomic outlook.

Alphabet grew net advertising revenue 12% to $56.3 billion, however this is compared to 36% growth over the previous year. The net slowdown in the growth rate can be attributed in part to inflationary pressures, as many firms are cutting their advertising spend in order to maintain healthy margins. This pullback affected both the network advertising revenues and the YouTube business which saw quarterly revenues of $7.34 billion (vs. $7.52 billion consensus), citing stiff competition from short-form TikTok videos as part of the underperformance. Chief Business Officer Philipp Schindler noted that for the third quarter, given the uncertain macro picture, *"we expect an ongoing headwind from the slowdown in buyer spend that impacted results in the second quarter".*

Furthermore, **Meta** issued a mixed outlook, citing similar concerns. CEO Marc Zuckerberg said that *"we seem to have entered an economic downturn that will have a broad impact on the digital advertising business".* Chief Financial Officer David Wehner elaborated that *"advertising revenue growth slowed throughout the second quarter as advertiser demand softened. The deceleration has been broad-based across verticals, and we believe businesses are lowering their advertising spend in response to the increased economic uncertainty"*. However, part of the declining ad revenue can be explained by the growth of their short format video reels, a like for like competitor to TikTok. The segment reached $1 billion in annualized revenue and now accounts for 30% of total Instagram engagement (vs 20% in the previous quarter). Reels don't currently monetize at the same rate as feed or stories so, in fact, this growth has displaced revenue from higher monetizing surfaces. Nonetheless, over the long run, management believe that the greater prominence of Reels will grow total engagement and bring monetization closer to the feed, hence our continued optimistic outlook for the business.

Stock Specific News – Top and Bottom Performers

PayPal (+23.9% USD)

PayPal was the Fund's second top performer over July, behind Amazon (already discussed above), outperforming the MSCI World Information Technology Index by 10.8% USD. During the month, there were a number of tailwinds that benefitted the stock, including: the general rotation into growth; strong read-across from other technology firms, particularly payments providers Mastercard and Visa, who reported significant increases in payments volume; a number of analysts from the likes of Berenberg, JPM and RBC maintaining their overweight/buy ratings; and reports that activist investor Elliott was building a stake in the company, causing a one day jump of 12%. The company announced 2Q22 earnings in early August, somewhat ahead of estimates and guidance, leading to a strong positive market reaction. Net revenue increased 10% year over year, and 14% excluding the eBay headwinds. The firms recent shift in strategy towards higher quality users (rather than simply driving new user numbers) is helping to drive the quality of their cash flows, and it was reassuring to see that 'transactions per active account', a key indicator, was up +12% year-on-year. The firm also saw Total Payments Volume up 9% year on year. The headwind from the eBay disposal (about 2% of revenues) is diminishing, and growth avenues such as Buy Now Pay Later and Venmo are carrying strong momentum. Expansion into new product areas such as credit-cards and cryptocurrency offer further visibility to growth catalysts down the road. With a strong outlook and solid fundamentals, we continue to view PayPal as an attractive opportunity.

Anta Sports (-10.5% USD)

Anta Sports was the Fund's bottom performer, despite limited stock-specific news. Weak investor sentiment in the Chinese region was the core driver, although there was also a negative read-across from Adidas who cut their full year guidance noting a slower recovery in Greater China. Nonetheless, we continue to remain optimistic about the firm's future growth prospects and believe that the company is well placed to benefit from positive secular trends in the region. The Chinese government is driving sports participation with initiatives such as China's "Action Plan to Stimulate Sports Consumption (2019-2020)", the "Healthy China 2030" Plan and the "National Fitness Program (2016-2020)". In addition, the growing Chinese middle class and increasing disposable income should help lift the overall clothing market for some years to come. The business fundamentals remain robust; the firm has a strong balance sheet, peer leading margins and a Free Cash Flow (FCF) Yield in the high teens, therefore we continue our positive outlook for the stock, despite short-term weakness in the region.

Portfolio Managers

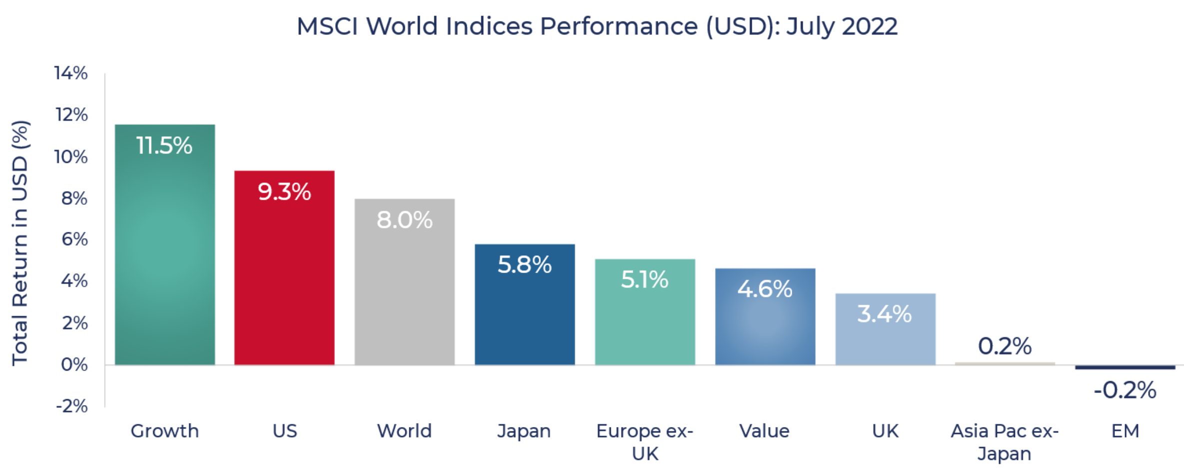
Matthew Page, CFA

Dr Ian Mortimer, CFA

Summary performance

For the month of July, the Guinness Atkinson Global Innovators Fund provided a total return of +10.70% (USD) against the MSCI World Index net total return of +7.94% (USD). Hence the fund outperformed the benchmark by +2.76% (USD).

Despite the weakening outlook for economic growth, developed equity markets delivered their best monthly returns since November 2020. In the US, the only major region to outperform the MSCI, there were multiple indications that a recession was looming. A preliminary GDP print of -0.9% for Q2 (quarter-on-quarter) meant two consecutive quarters of economic decline (the definition of a technical recession for many), the 10 – 2-year yield curve for US treasuries inverted to its largest spread since 2000 and the US composite flash Purchasing Managers' Index (PMI) fell to 47.5 - a number below 50 indicating a contractionary environment.



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.

Falling GDP, declining inventories, and a drop in private investment over the quarter all indicated that the Fed's tight monetary policy was beginning to impact the economy, leading to market optimism that inflation may soon also be brought under control. Inflation continues to run hot, with a consumer price index (CPI) of 9.1% for July in the US, although core inflation (CPI minus food and energy) has been slowly falling since March from 6.5% to 5.9%. Falling commodity prices induced by fears that a recession will stunt demand has also contributed to expectations of easing inflation.

For the first time in history, the Federal Reserve raised its policy rate by 75bps for the second consecutive meeting. However, markets were focused on the commentary of Fed Chair Jay Powell, who indicated that interest rates could already be near a “neutral level”. These comments were interpreted as the Central Bank ‘tapping the breaks’ of hawkish monetary policy, with investors scaling back their expectations of how far the Fed will in fact tighten. With markets now expecting a lower peak policy rate and earlier rate cuts, this provided a tailwind for growth stocks in particular, which are typically ‘higher duration’ and hence more sensitive to changes in interest rates expectations. Growth sectors, such as Consumer Discretionary and Information Technology, therefore outperformed their value counterparts. This could also be seen at a regional level, with the tech heavy, growth tilted US market significantly outperforming its cheaper European and UK counterparts.

Corporate earnings season also provided a boost to market sentiment, with 73% of companies in the Standard & Poor (S&P) reporting earnings per share above analyst estimates, and 66% reporting ‘beats’ to revenue expectations. The fall in equities since the beginning of the year has predominantly been driven by a decline in valuations, rather than earnings downgrades, suggesting that markets had already moved to price in a more volatile economic backdrop and recessionary risks. While there is still potential for earnings downgrades to cause an additional risk to the downside, current valuation levels suggest these could already be priced in.

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

- The Fund’s overweight position to growth orientated sectors gave the fund a significant positive allocation effect over the month. Having zero exposure to more value orientated sectors, such as Consumer Staples, Materials and Utilities, which all underperformed the MSCI World, also acted as a strong tailwind.

- Good stock selection, particularly within Health Care, Industrials and Information Technology was a strong contributing factor to Fund outperformance over the month.

- The Fund has a significant overweight position to the Information Technology sector, which was the MSCI World’s second top performing sector over the month. Not only did the fund benefit from this allocation effect, but strong selection from names such as PayPal (+23.9% USD), KLA (20.2%) and Nvidia (19.82%) helped drive outperformance.

- The Fund has a slight underweight position to the Consumer Discretionary sector, which was the top performing sector during the month, creating a slight drag from an allocation perspective. The sector also contained the Fund’s bottom performing stock over the month, Anta Sports (-10.5% USD), which struggled from regional headwinds.

GUINNESS ATKINSON FUNDS

as of 07.31.2022 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	-18.81%	13.15%	10.44%	14.06%
Global Innovators, Institutional Class[2]	-18.60%	13.43%	10.72%	14.25%
MSCI World Index NR	-9.16%	9.59%	8.82%	10.21%

as of 06.30.2022 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class[1]	-24.82%	9.80%	9.06%	13.02%
Global Innovators, Institutional Class[2]	-24.61%	10.08%	9.33%	13.21%
MSCI World Index NR	-14.34%	6.98%	7.66%	9.50%

All returns after 1 year annualized.

[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%

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

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

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

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 7/31/2022:

1.	KLA-Tencor Corp	4.30%
2.	Thermo Fisher Scientific Inc	4.05%
3.	Amphenol Corp	3.98%
4.	Mastercard Inc	3.93%
5.	Microsoft Corp	3.86%
6.	Roper Technologies Inc	3.76%
7.	Danaher Corp	3.73%
8.	Intuit Inc	3.72%
9.	Visa Inc	3.66%
10.	ABB Ltd	3.53%

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 (Morgan Stanley Capital International) World Index is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets.

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

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

The **MSCI Emerging Markets Index** is a selection of stocks that is designed to track the financial performance of key companies in fast-growing nations.

The **MSCI Japan Index** is designed to measure the performance of the large and mid cap segments of the Japanese market. With 238 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in Japan.

The **MSCI USA Index** is designed to measure the performance of the large and mid cap segments of the US market. With 627 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the US.

The **MSCI Europe ex UK Index** captures large and mid cap representation across 14 Developed Markets (DM) countries in Europe*. With 347 constituents, the index covers approximately 85% of the free float-adjusted market capitalization across European Developed Markets excluding the UK.

The **MSCI United Kingdom Index** is designed to measure the performance of the large and mid cap segments of the UK market. With 82 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in the UK.

The **MSCI AC Asia Pacific Index** captures large and mid cap representation across 5 Developed Markets countries* and 8 Emerging Markets countries* in the Asia Pacific region. With 1,503 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country

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

Free Cash Flow (FCF) Yield is a financial solvency ratio that compares the free cash flow per share a company is expected to earn against its market value per share.

The Purchasing Managers' Index (PMI) is an index of the prevailing direction of economic trends in the manufacturing and service sectors. It consists of a diffusion index that summarizes whether market conditions, as viewed by purchasing managers, are expanding, staying the same, or contracting. The purpose of the PMI is to provide information about current and future business conditions to company decision makers, analysts, and investors.

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.

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.

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

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

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

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

One cannot invest directly in an index.

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