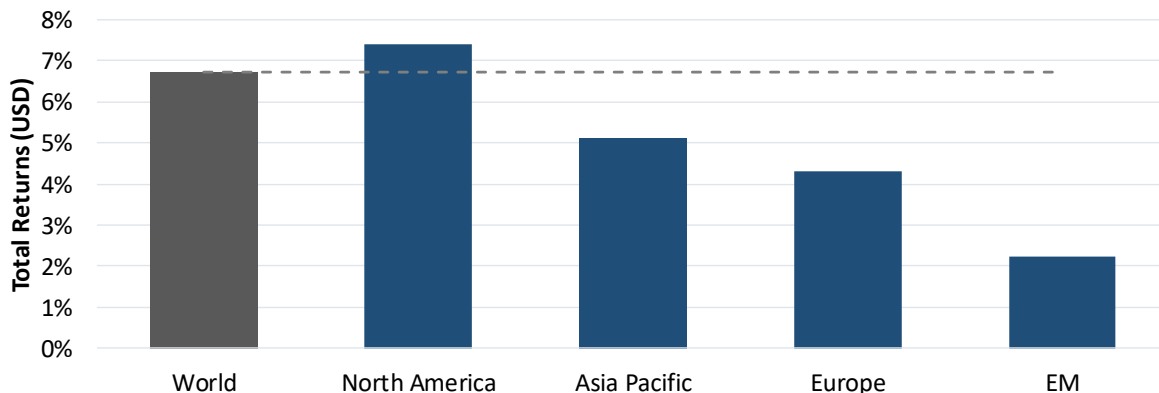


August in review:

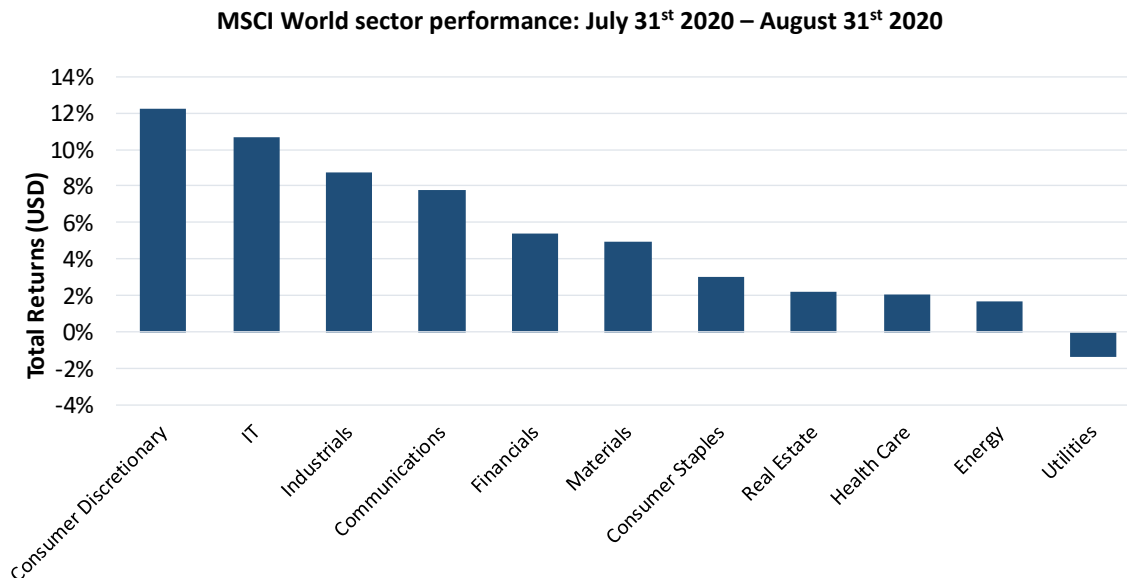
Although the number of cases of COVID-19 continued to rise globally, there was support for equity prices particularly from the US Fed, that helped lift the MSCI World Index to its best August return since 1986. Indeed, during the month, the US Fed announced a change in how the Federal Open Market Committee (FOMC) looks to adjust interest rates. Specifically, the FOMC now seeks to achieve an *average* inflation of 2% over time (although no time period was specified). This is a divergence with the previous method of pre-emptively adjusting rates and may allow inflation to run over 2% following a period of sub-2% inflation. All this made for support for equity prices as markets noted interest rates may be lower for longer. This had the knock-on effect of continuing to drive the US dollar weaker which will benefit US sectors such as IT and Energy which derive higher proportions of revenue from abroad. However, a weaker US dollar is a worry for the European Central Bank (ECB), as a relatively stronger Euro will weigh on exports, drag down asset prices and force the ECB's hand into further stimulus. This, in addition to regional rises in COVID-19 cases from EU countries including Spain and France, led to a relatively weak performance from European stocks, while US stocks benefited.

MSCI World regional performance: July 31st 2020 – August 31st 2020



Source: Bloomberg. Data as of August 31st 2020

In Asia, Prime Minister Abe of Japan announced his resignation due to deteriorating health conditions. The news will bring to an end his second term as Prime Minister lasting seven years and eight months, after marking the status as Japan's longest serving prime minister and ending an era of 'Abenomics'. In China, the US continues to protect national interests, after a new set of sanctions were announced on Chinese company Huawei. The new set of sanctions require companies to obtain a license before selling any microchip to Huawei made using US equipment or software. This is an escalation from previous sanctions that allowed the sale of chips to the business as long as they were not designed by the Chinese company or its subsidiaries. The news, cited as a 'death sentence' for the Chinese business by some analysts, was taken as a negative for the fund's semiconductor equipment manufacturers in general as analysts looked to a reduction in demand for US equipment from the Chinese market. This left Lam Research (down 10.8% in USD) and Applied Materials (down 3.9% in USD) as 2 of the bottom 3 fund performers over the month.



Source: Bloomberg. Data as of August 31st 2020

Cloud Computing: a deeper dive

The Guinness Global Innovators Fund was set up over 15 years ago to invest in quality businesses exposed to innovative themes that are transforming industries alike - be it artificial intelligence, cloud computing or robotics & automation. Many of these businesses have been seen to exhibit wider profit margins, faster growth and be less susceptible to cyclical pressures. And while COVID-19 and subsequent lockdowns have slowed or halted sales for many businesses, we have seen the acceleration of many of the innovation transformations we seek in the fund - from businesses operating remotely and improving the resiliency of supply chains, to consumers increasingly shopping online (ecommerce) and using cashless payments.

In the following pages, we take a closer look at cloud computing: more specifically, giving color to the rationale behind the investment prospect and examining the opportunity set within the fund's investible universe.



CLOUD COMPUTING

Sub Themes: Cyber Security, Networking, Software-as-a-Service

Cloud computing can be defined as the delivery of computing services – such as servers, storage, databases, networking, software, and analytics – over the internet (“the cloud”). The service, provided by cloud vendors including Amazon Web Services (AWS) and Microsoft Azure, gives companies access to faster, more flexible resources and economies of scale. Typically, companies such as SAP or Dropbox, which deliver their products to consumers using the cloud, pay cloud vendors including AWS only for the cloud resources they use – not dissimilar to your electricity bill. This helps to create lower fixed costs by eliminating expenditure incurred in setting up their own on-site data centers, while giving them the flexibility to increase usage as they scale. Cloud computing is enabling businesses across industries to deliver their products and services on-demand: from file storage and backups to video gaming, data analytics, and video conferencing.

As the use of the cloud has expanded, we have seen the increasing use of Subscriptions-as-a-Service (SaaS) business models. These new models charge consumers periodic fees for the right to use their product or service, as opposed to one (much larger) license payment. This enables companies to deliver automatic updates

or the latest content as soon as they’re available, while receiving smoother payments throughout the year with higher retention rates (you’re more likely to keep paying your \$8+ a month Netflix fee as opposed to repeating a larger one-off fee to get hold of the latest content). Adobe, for instance, has been transitioning consumers from perpetual licenses to subscriptions for its various software packages, and has consequently seen recurring revenue grow to 89% of revenues in 2019, while operating margins have expanded from 18.4% in 2015 to 29.2% in 2019.

As consumers increasingly demand greater user experiences and as firms increasingly see the benefit in transferring their products and services to the cloud, the opportunity for long-term growth across the value-chain is set to be immense. The growth in data volume will require greater quantities of more sophisticated networking hardware and software in data centers to manage the flow of data, while the increasing propensity to store data in the cloud will increase the need for more robust cyber security systems. This gives rise to numerous investment opportunities across the cloud computing value chain, from your upstream data center providers to end market SaaS business models.

CAPITAL INTENSITY



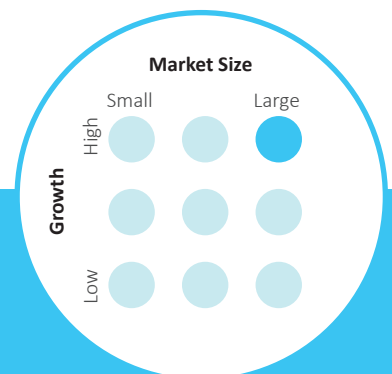
There is a large capital expenditures (capex) requirement to build vast data centers capable of aggregating and computing enormous quantities of data (AWS spent \$13bn on cloud capex in 2019 alone). However, the beneficiaries tend to have more asset-light models with no need to build on-site data centers. R&D, however, is key to continue developing this technology: from optimization of data flow, to reducing the vast energy consumption and cooling systems required to operate the centers (Microsoft’s project Natick is testing the feasibility of subsea data centers powered by offshore renewable energy).

BUSINESS MODEL



With few players able to afford the large upfront costs involved in designing and building vast data centers, the market is currently dominated by several vendors which are able to enjoy healthy margins (AWS operating margin 26% 2019 vs MSCI World 12%). Further, SaaS businesses are able to lower their long-term operating costs by utilizing the cloud, thereby expanding their margins. Cloud computing poses vast opportunities across industries: not only is it being harnessed by the big players in gaming and video streaming, but also in mission-critical applications that enable data access and remote working, which ultimately enable a business to continue operating. This leads us to our low cyclicality rating.

OPPORTUNITY



As the world continues to produce ever increasing volumes of data, the need for greater aggregation, storage and computational power grows. Additionally, as a growing number of businesses move to cloud-based products and services, the need for this technology becomes vital across applications – from streaming content to a business’s operational software. Indeed, AWS has grown revenues at 35% compound annual growth rate (CAGR) over the last 5 years. These reasons point to a considerable market size together with significant growth rates.

CLOUD COMPUTING'S UNIVERSE STATISTICS

DESCRIPTION	QUALITY	GROWTH
Total Number of Companies: 114	Gross Margin: 57%	R&D/Sales: 12%
Market Cap (\$bn): 14	ROC: 13%	Capex/Sales: 3%
Company Age (years): 21	NET Debt to Equity: 4%	5Y Sales CAGR: 10%

Source: Bloomberg as 08/31/2020. All data median, unless otherwise stated

OPPORTUNITY SET

The firms set to yield the greatest rewards seem likely to be the **cloud vendors**. These are the companies with the substantial financial ability required to build new data centers capable of delivering content on-demand on a mass scale. The market is currently comprised of a handful of players including AWS, Microsoft Azure, Alibaba Cloud, and Google Cloud Platform (with

AWS and Azure being the dominant players). These companies generate large economic moats as they benefit from economies of scale realised from providing cloud computing to an increasing number of businesses, while large upfront costs disincentivise potential new entrants.



Another set of companies highly exposed to growth in cloud computing is a group that can be collectively described as the **enablers**. In order to set up and manage the vast quantities of data in the cloud, the cloud vendors must use highly sophisticated equipment: networking companies such as Cisco and Arista produce switches and routers along with optimisation software to

manage the flow of data, while semiconductor companies design the 'brains' of the data centers – from central processing units (CPU) sold by Intel, to the more advanced so-called accelerator chips including field programmable gate arrays (FPGA) and graphic processing units (GPU) produced by Xilinx and Nvidia respectively.



Firms willing to transfer their products and services to the cloud-based equivalents can benefit from a more asset-light business model, higher recurring revenues, and subsequent opportunity for margin expansion. These **beneficiaries** are diverse and span varying industries, from Netflix (delivering your videos on-demand) to SAP (customer relationship management software) and Adobe (cloud-based creative software). Additionally, with the increased

use of the cloud to store and transfer data, this is driving demand for more sophisticated cyber security software. With data privacy ever more at the forefront of consumers' minds as a result of firms increasingly being targeted by cyber-attacks – the attack on Sony Pictures in 2014 being particularly memorable – firms such as Cisco and Fortinet have benefited from the growing need for businesses to protect their consumers' data.



Guinness Atkinson
Global Innovators Fund
 Managers Update – September 2020



Summary performance

For the month of August, the Guinness Atkinson Global Innovators Fund provided a total return of 5.75% (USD) against the MSCI World Index net total return of 6.68% (USD). Hence the fund marginally underperformed the benchmark by -0.93% (USD). Year to date (YTD) through August, the fund has produced a total return of 21.27% (USD) against the MSCI World 5.34% (USD). The fund remains 15.93% ahead of the MSCI World year to date (USD).

Equity markets continued in their remarkable ascent following the drawdown in March with a broadly solid earnings season (albeit from low expectations) and the prospect of low interest rates for longer in the US, offsetting some divergent regional COVID-19 case numbers. Indeed, as the number of US cases continued to fall following their second spike, cases in Europe looked uneasy as France and Spain case numbers came back close to their previous highs. From a fund attribution summary:

- Nvidia was the fund’s best performer over the month (up 26.0% in USD), continuing its strong year with CEO, Jensen Huang, recently outlining the firm’s plan to provide the full technology stack needed to run data centers.
- Healthcare was the fund’s largest sector contributor on positive stock selection: Medtronic (up 11.4% USD) and Bristol-Myers Squibb (up 6.0% in USD) were the stand-out performers on better than expected results having been relatively weak YTD. Indeed, Medtronic’s CEO pointed to a faster than expected recovery from the depths of the pandemic experienced in April.
- Information Technology, however, was a drag on performance primarily due to weakness in our semiconductor equipment names alongside the continued rally in Apple shares for which we do not own (and is the largest position in the benchmark).
- From a regional perspective, the fund’s exposure to Asia Pacific was the main drag on performance with weaker stock selection arising from Samsung (down 2.4% in USD) and Tencent (down 0.7% in USD) in particular.

as of 08.31.2020 (in USD)

	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class ¹	38.37%	14.99%	16.61%	16.59%
Global Innovators, Institutional Class ²	38.70%	15.28%	16.89%	16.73%
MSCI World Index NR	16.79%	9.81%	10.41%	10.73%

as of 06.30.2020 (in USD)

	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class ¹	20.65%	12.03%	11.78%	15.33%
Global Innovators, Institutional Class ²	20.97%	12.32%	12.03%	15.46%
MSCI World Index NR	2.82%	6.69%	6.89%	9.94%

All returns after 1 year annualized.

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

¹ Investor class (IWIRX) Inception 12.15.1998 Expense ratio* 1.24% (net); 1.35% (gross)

² Institutional class (GINNX) Inception 12.31.2015 Expense ratio* 0.99% (net); 1.21% (gross)

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

*The Advisor has contractually agreed to reimburse expenses (excluding Acquired Fund Fees and Expenses, interest, taxes, dividends on short positions and extraordinary expenses) in order to limit the Fund's Total Annual Operating Expenses to 0.99% for the Institutional class and 1.24% for the Investor class through June 30, 2021. 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 8/31/2020:

1. NVIDIA Corp	4.36%
2. Adobe Inc	4.00%
3. Amazon.com Inc	3.87%
4. Infineon Technologies AG	3.73%
5. Facebook Inc	3.60%
6. Microsoft Corp	3.60%
7. Schneider Electric SE	3.58%
8. PayPal Holdings Inc	3.53%
9. Tencent Holdings Ltd	3.48%
10. SAP SE	3.47%

For a complete list of holdings for the Global Innovators Fund, please visit: <https://www.gafunds.com/our-funds/global-innovators-fund/>

Guinness Atkinson
Global Innovators Fund
Managers Update – September 2020



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.

One cannot invest directly in an index.

Active share measures the extent of active management in a portfolio compared to the corresponding benchmark listed.

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