Guinness Atkinson

Global Innovators Fund

Managers Update – May 2020

April in review:

The fund's philosophy has always been to invest in quality companies who are exposed to long-term innovative drivers such as cloud computing, ecommerce and content streaming. We believe these businesses may display faster profit growth, wider margins and might be less susceptible to cyclical pressures. Focusing in on that last point, the current earnings season has given us an opportunity to assess whether these types of business have indeed been able to offset some of the inevitable slowdown in business caused by the coronavirus and subsequent lockdowns, with relatively robust demand for their products and services that are part of on-going transformations in many industries. Furthermore, industry leaders are looking through the short-term disruption to see the positive implications the current environment might leave on the world.

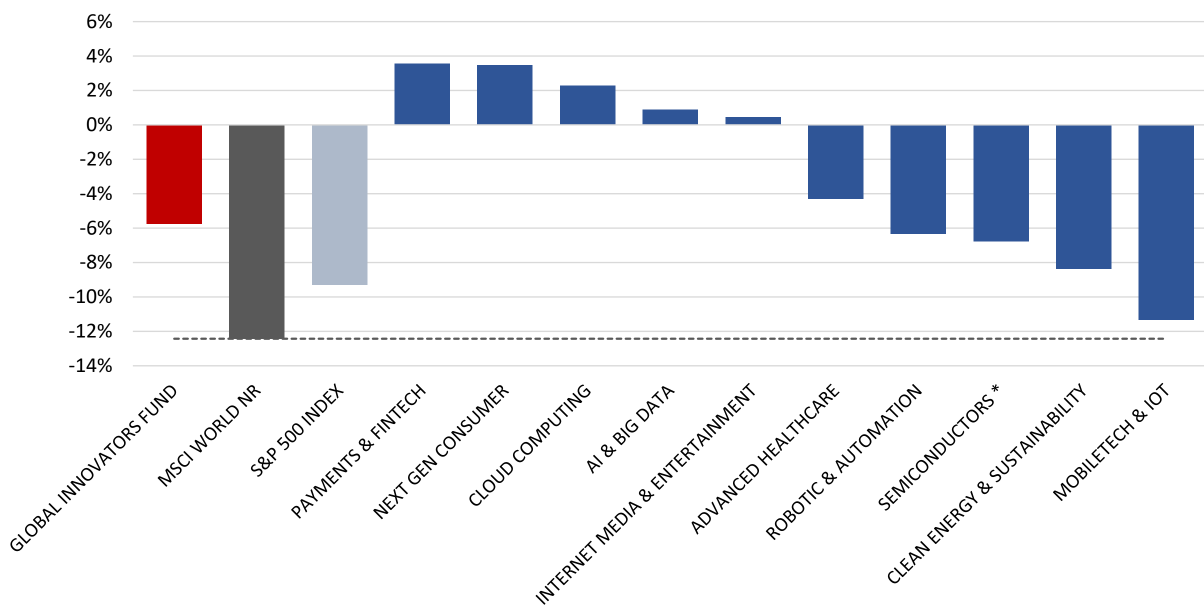
***"We've seen two years' worth of digital transformation in two months,"*- Satya Nadella, Microsoft**

While the companies in the fund are by no means immune to a global slowdown, the short-term impacts of COVID-19 could give way to long-term opportunities for many of the businesses we invest in. Specifically, the current environment has forced companies into revaluating their business models which could ultimately lead to an acceleration in global digital adoption going forward.

- Better online presence by businesses who now more than ever recognize the need to have continuous communication and distribution channels with consumers in all environments
- Businesses recognizing the importance of being flexible regarding working conditions – accelerating the need for cloud-based remote working infrastructure
- A change in the psychological behavior of the consumer – increased demand for online classes from fitness to education.

That being said, we believe not only can these innovative companies show resiliency in times of distress but also be some of the best placed businesses in the recovery and ultimately thrive in the long-term thanks to their long-term demand drivers.

Year-to-date performance by theme (TR in USD):



Source: Bloomberg, Guinness Atkinson Asset Management (data as of 04.30.2020)

**Semiconductors is not one of our innovation themes, however these companies fit into multiple themes and as such we find it beneficial to include in this analysis*

As can be seen above, using a basket of (Guinness Atkinson-defined) bellwethers for each theme, all of these themes have thus far outperformed the broader MSCI World. This outperformance, alongside our focus on strong balance sheets, we believe has been the main contributors to the fund's outperformance versus the MSCI World year-to-date.

Here, we review each of the fund's innovative themes, how businesses have fared and look at what some of the industry leaders are saying in their latest earnings:

Advanced Healthcare:

Perhaps the most directly impacted theme, healthcare stocks have been seen as a relatively safe haven for many investors due to their essential nature and frontline defence against the COVID-19 pandemic. While areas of MedTech have seen a short-term negative impact as elective surgeries are deferred, businesses providing ventilators and developing testing kits are experiencing a huge boost in demand. Although pharmaceutical and biopharmaceutical businesses have had to postpone clinical trials, many are working hard to understand the virus and have drug candidates under review as possible vaccines.

- *"There are specific product categories for Medtronic that are being -- we are seeing significant increases in demand. And I would point to things like ventilators, pulse oximeters … And we are seeing within our Diabetes Group a move for patients to want to increase their on-hand level of supplies."* – ***Medtronic***
- *Based on this work, Johnson & Johnson announced on March 30th that we have identified a lead COVID-19 vaccine candidate, along with two backups…We plan to begin production at risk imminently, and our goal is to enable the supply of more than 1 billion doses of the vaccine globally."* – ***Johnson & Johnson***

Artificial Intelligence & Big Data:

In AI, businesses are continuing to invest in order to stay ahead and not lose ground in these pioneering technologies. Chatbots, for example, are being used extensively to handle customer requests as well as being used to distribute important information. In addition, Artificial intelligence is being used on the frontline to help develop therapeutics and vaccines for COVID-19.

- *"In AI, customers are applying our comprehensive portfolio of tools, services, and infrastructure to address unique challenges, including those created by COVID-19. In healthcare, we are seeing compute, data, and AI come together to help speed up response, from testing to therapeutics and vaccine development. Healthcare providers have created more than 1,400 bots using our Healthcare Bot service, helping more than 27 million people access critical healthcare information."* – ***Microsoft***
- *"In general, most customers are still indicating that they are continuing relatively normal fab operations so far. Logic customers are currently continuing to ramp their 7-nanometer and 5-nanometer node in support of end market applications like 5G, AI and high-performance compute." -* ***ASML***

Clean Energy & Sustainability:

With regions in lockdown, discretionary spending and subsequent car sales have fallen dramatically over the quarter, affecting electric car sales in particular (although Tesla showed some resiliency as the top car seller in the UK over April). Airlines have also been some of the hardest hit by the outbreak, while the collapse in oil prices has exasperated the pain for big oil companies. There have been subsequent calls for governments to not waste this opportunity to back a green recovery including conditions on bailouts for heavy emitting sectors, such as airlines and car manufacturing, that would require the companies to reduce their climate impact.

- *"you never let a serious crisis go to waste . . . Let's try to use it [the present crisis] to take a step forward . . . How can you now use the kick-start of the global economy to make sure it becomes a much more sustainable economy?" Mr Henriksson, chief executive of lender* ***Swedbank***

Cloud Computing:

As nations work from home, stream ever more video content and log onto online courses, the need for cloud computing has perhaps never been more important in order to continue functioning as close to normal as possible. Companies from Netflix and Zoom rely on cloud vendors including Amazon and Microsoft in order to deliver their content on demand. The ability to deliver content remotely shows the importance for companies to leverage the cloud.

- "Now more than ever, organizations are relying on Azure to stay up and running, driving increased usage." – ***Microsoft***
- Microsoft's Azure grew 59% this quarter while Amazon Web Services (AWS) grew 33% YoY
- The World Health Organization is using AWS to build large-scale data lakes, aggregate epidemiological country data, rapidly translate medical training videos into different languages, and help global healthcare workers better treat patients. – **Amazon** Quarterly Report
- *"Third-party estimates suggest that cloud capacity would need to increase tenfold to service the peak workloads seen as shelter-in-place rules went into effect. Although these heightened workloads are likely a short-term phenomenon, this event will underscore the need for companies to invest more in*

infrastructure and business continuity capabilities as the data economy and our dependence on technology continues to expand over time." – **KLA Corp**

Internet Media Entertainment:

With more time on their hands, limited activities and an inability to see friends and family, consumers have filled the void by streaming more content, playing video games and using video calling to talk to loved ones. This has led to an increased demand for streaming services including Netflix and Disney+, gaming platforms such as Microsoft's Xbox and social media sites platforms including Facebook. Additionally, with schools closed, businesses providing educational courses have seen a surge in demand for online resources which has helped offset the collapse in offline classes.

- *"We saw all-time record engagement this quarter, with nearly 90 million active users of Xbox Live, led by strength on and off console. Xbox Game Pass has more than 10 million subscribers, and we are seeing increased monetization of in-game content and services."* – ***Microsoft***
- **Netflix** added almost 16m subscribers in the latest quarter - double its target
- *"whether that's the Pope's weekly mass on Facebook Live or DJs hosting dance parties on Instagram, every day more than 800 million daily actives are engaging with live streams, across workout classes, concerts and more".* – **Facebook**
- *"In many of the places that have been hardest hit by the virus, messaging volume has increased more than 50% and voice and video calling has more than doubled across Messenger and WhatsApp."* –**Facebook**
- *"In response to the outbreak of the COVID-19, New Oriental has immediately transferred more than 1 million students to online programs through New Oriental cloud-based classrooms"* – ***New Oriental Education***

Mobile Technology & IoT:

While discretionary item spending such as smartphones sales have inevitably been deferred, the importance of mobile technology has become increasingly important as more businesses quickly pivot to using mobiles, laptops and tablets to work remotely. Smart watches, additionally, can play an increasingly important role in remotely tracking vitals and communicating that data to doctors if necessary. Further, 5G spending has seen some resiliency as nations continue to look to the future: while telecoms providers will face pressures from reduced business, they are arguably better placed than other industries such as airlines to continue their infrastructure upgrades.

- *"doctors and medical professionals are making even greater use of Apple Watch and other health features to communicate with patients and to treat them safely from a distance when necessary. With new FDA guidance on non-invasive remote patient monitoring for example, the ECG app on Apple Watch is increasingly being used to facilitate remote ECG measurements and recordings for telemedicine usage, reducing patient and healthcare provider contact and exposure."* – ***Apple***
- *"we expect continued demand across Windows OEM, Surface, and Gaming from the shift to remote work, play, and learn from home."* - ***Microsoft***
- *"Moving into second quarter 2020, we expect our revenue to be flattish, as weaker mobile product demand is expected to be balanced by continued 5G deployment and HPC-related product launches."* – ***TSMC***

Next Gen Consumer:

In ecommerce, although we have seen supply chain disruption, companies who have invested in their online presence have been able to show better resiliency as high street stores close. You only have to compare Primark, who own large bricks and mortar stores and no online infrastructure to the likes to Nike who have invested heavily in ecommerce and was able to still derive ~20% from these sales over the quarter. It is a stark reminder of the importance in being able to communicate and sell to consumers through different channels - Amazon hired an additional 175,000 employees for warehouses and raised wages to meet the increased demand of online goods (although this did negatively affect their bottom line). In healthy living, Nike again provides good insights as consumers stay fit with home workouts, buying new Athleisure wear and downloading more workout apps.

- *"From making sales of £650m each month, since the last of our stores closed on 22 March, we have sold nothing" –* ***Primark***
- *"in Q3 digital delivered 36% currency-neutral growth and it will continue to be a powerful driver of our deep consumer connections." -* ***Nike***
- Amazon Online stores revenue grew 24% YoY - the fastest rate since the company began disclosing
- *"our weekly active users for all of our NIKE activity apps [in China] were up 80% by the end of Q3 versus at the beginning of the quarter" –* ***Nike***

Payments & FinTech

In payments, although a slowdown in general spending and a collapse in cross-border transactions has been negative for the likes of Visa and Mastercard, the current environment looks to be accelerating the move to cashless payments via a surge in ecommerce business in addition to a reluctance to use cash for essential instore spending.

- *"We've seen a dramatic increase in e-commerce in this time of low mobility, and we expect some of these behaviors to persist going forward. When we look at our switched volumes in April, card-not-present accounts for over 50% of volume, which is up from 40% last year." -* ***Mastercard***
- *"We've seen over 40% growth in contactless transactions worldwide in the first quarter." –* ***Mastercard***
- *"Crises bring with them both risks and opportunities, and this one is no different… It is very likely that this crisis could accelerate trends that were already under way, like the shift to e-commerce and the shift to digital forms of payment. It is speeding up tap-to-pay adoption, driving growth of new flow use cases" -* ***Visa***

Robotics & Automation:

Within robotics and automation, significant declines in the automotive sector – robotics largest end market - led to challenging environment for many robotic arm manufacturers and enablers. However, as consumer's demand for online goods surged, many of these players benefitted from the increased need for automation in the logistic market. We believe many of those companies that had already invested in a more autonomous workflow have been better equipped to manage this crisis with less a need for manual tasks and more efficient use of resources – a trait we believe will be crucial in the long-term.

- *"At the moment, yes, it's short-term challenges for the Robotics side, which is, of course, very much related to the automotive industry that is more or less in shutdown." -* ***ABB***

- *"Particularly hard hit is the automotive industry, which was our largest end market last year. There is a long-term potential for growth as the market transitions from internal combustion engines to electric vehicles, but the near-term outlook has deteriorated significantly." -* ***Cognex***
- *"The best end market for us right now is clearly logistics, which was our third largest market in 2019. Online e-commerce sales are accelerating as a result of COVID related restrictions… Our technology has become even more valuable in this crisis as our customers are able to achieve higher throughput and are better able to maintain social distancing in their distribution centers." -* ***Cognex***

We thank you for your continued support.

Portfolio Managers

Matthew Page, CFA

Dr Ian Mortimer, CFA

Summary performance

For the month of April, the Guinness Atkinson Global Innovators Fund, Institutional Class produced a total return of 12.57% (in USD) against the MSCI World Index net total return of 10.92%. The fund therefore outperformed the benchmark by 1.65%.

The fund continues to perform well in an environment of uncertainty owing to the fund's core philosophy of investing in quality companies exposed to long-term innovative themes. Over the month, markets seemingly looked through inevitably bad economic data, and more to a possible flattening of infection rate curves in many regions, lockdown easing plans being released by governments and some positive commentary out of earnings season. The subsequent strong performance in consumer discretionary and IT stocks boosted the fund, however, it was strong stock selection that led to the fund's strong outperformance with positive earnings releases from many of the constituents owing to their short-term resiliency as well as their long-term demand drivers.

as of 04.30.2020 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class [1]	2.75%	8.85%	8.51%	11.75%
Global Innovators, Institutional Class [2]	3.01%	9.13%	8.75%	11.87%
MSCI World Index NR	-3.99%	4.97%	4.92%	7.67%

as of 03.31.2020 (in USD)	1 year	3 years annualized	5 years annualized	10 years annualized
Global Innovators, Investor Class [1]	-2.62%	5.61%	6.21%	10.45%
Global Innovators, Institutional Class [2]	-2.40%	5.87%	6.44%	10.57%
MSCI World Index NR	-10.39%	1.92%	3.24%	6.57%

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.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 4/30/2020:

1. Amazon.com Inc	4.39%
2. Facebook Inc	3.91%
3. Tencent Holdings Ltd	3.75%
4. PayPal Holdings Inc	3.63%
5. Microsoft Corp	3.55%
6. Medtronic PLC	3.49%
7. Alphabet Inc - A Shares	3.46%
8. Danaher Corp	3.46%
9. Adobe Inc	3.42%
10. Intercontinental Exchange Inc	3.33%

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

The Fund's investment objectives, risks, charges and expenses must be considered carefully before investing. The statutory and summary prospectuses contain this and other important information and can be obtained by calling 800- 915-6565 or visiting www.gafunds.com. Read and consider it carefully before investing.

Earnings growth is not representative of the Fund's future performance.

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

One cannot invest directly in an index.

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

Distributed by Foreside Fund Services, LLC