

CERNO *Global Leaders (Dublin)*

Global Equity Portfolio (Class A)

Q1-2024

Fund Data

AV/Share (Class A Acc)	£10.62
Fund Size (£mn)	19.14
Currency Share Class	GBP (Base)
Investment Management Charge	0.65%
Ongoing Charges Figure	1.36%*
Dealing Frequency	Daily
Legal Structure	ICAV
Number of Holdings	27
Active Share	95%
Lead Manager	James Spence
Inception Date Fund	2021
Inception Date Strategy	2014

Investment Objectives

Cerno Global Leaders invests in global companies with sustainable competitive advantages delivering above average returns. Its target is to achieve long term growth in value. The fund will hold no more than 30 securities, equally weighted, selected according to a distinct investment thesis that accents industry structure, the sustenance of return on capital and secular growth. The fund does not invest in banks, commodity, fossil fuel or tobacco companies. The portfolio is fully invested at all times.

Portfolio Review

The portfolio returned +4.3% in the first quarter. Within the portfolio, the strongest positive allocations were obtained from TSMC +1.1% (on an attribution basis), ASML +1.1%, Renishaw +0.6%, Linde +0.6%, Techtronic +0.6%, Essilor Luxottica+ 0.5% and Microsoft +0.5%. The first three of these companies are thematically linked to the mega-trend in the microchip complex. TSMC being the world's leading fab, ASML the world leader in state-of-the-art chip lithography machines and Renishaw a leading precision engineer, responsible for designing, engineering and calibrating measuring devices for such machines and lines of which they run.

On the negative side of the ledger, the weaker stocks over the quarter were Nestle -0.3%, Aptiv-0.5%, Philips -0.5% and Adobe -0.5%. Whilst there are no prevailing themes linking the detractors, we note that Adobe and Philips were top of the pile in terms of positive performance last year so the negative first quarter represents somewhat of a give back.

Overall, of the 27 holdings in the portfolio currently, 15 made either a negative return or a negligible return for the quarter and this drag accounts for the insipid performance of the fund when compared with benchmark indices.

There were no changes to constituent holdings during the quarter.



James Spence



James Spence

AI and Global Leaders

A large part of this investment report is given over to analysing the potential implications of Artificial Intelligence and the Global Leaders portfolio. Captioned within this introduction to the topic is a presentation and audio file in which Fay Ren and Oscar Mackereth go into the subject in some depth. The presentation lasts 27 minutes and is well worth a listen. [Click here to listen](#)

Bookending the report is an article by James Chenevix-Trench who meditates that the Apple Vision Pro, released on February 2nd of this year, might well be the first meaningful step in issuing in the world of spatial computing. If widely adopted, spatial computing has the potential to absorb a good number of our working and leisure hours. It has the potential to transfigure both or working and social lives. James's article was originally published as a Journal so some investors may have read it already. We think it is worth reproducing.



The Apple Vision Pro

In some respects, we have been primed by the COVID-19 virus to be receptors of this next phase in our technological age. The various interactions of lockdown, home-working and home-schooling rendered a set of adaptations to the majority of human lives that makes us susceptible to the next raft of technological developments. There are, as there always are, radically different takes on how to meet these possibilities. At one end the spectrum, a good amount of people regard this wave as either deeply unimpressive (compared say with the multiple technological revolutions of the 19th and early 20th centuries when no economist fretted about productivity) or deeply suspicious – reductive to the human spirit. At the other end of the spectrum, many sense opportunity, new diversions and are more willing to engage.

As Marc Andreessen aptly mentions in the below captioned Podcast, new technologies are received differently by aged groupings. For the under 15 year olds, it will be all they have ever known, for the 15-35 years old, they are greeted with enthusiasm: “this might be something I can get a job in”. The reaction amongst the over 35s is more nuanced. A Californian venture capitalist will sense a duty to engage with enthusiasm, but for many, new advents are either mildly disturbing and somewhat threatening. “Here is something else that I don’t really understand but is likely to change my life in ways I don’t yet grasp”.

<https://podcasts.apple.com/gb/podcast/conversations-with-tyler/id983795625?i=1000649051478>



Marc Andreessen

Any discomfort experienced by this author, or indeed the readership of this report, should be understood, at some level, as a bias that we may be subject to and, to some degree, should be fought. The Edinburgh based investor James Anderson, who for many years piloted the Scottish Mortgage investment trust, was famous in the halls of Baillie Gifford for pushing the discipline that the first 10 minutes of any investment appraisal should be resolutely positive and no negative views were permitted. Why would he do this? Some effort to socially engineer East Lothian glumness?

The Growth investment approach aims to identify the most promising and fastest growing businesses in the world. When investors reach for growth and fall short it is either because they have overestimated the security of the business franchises that they are backing (most common) but sometimes they underestimate the growth potential. The investment world is full of very smart people who make consistent underestimations. There is also a bias whereby smart investors become more sceptical as they grow older. The brain advises us that this is a very shrewd survival strategy, however the encroachment of excess scepticism is fatal for the professional investor.

One of the founding ideas of our own Global Leaders’ strategy is to invest in what businesses are doing today, what their managements plan to do in the future and what they might do but haven’t thought of yet. How do we identify companies that have the prospect of accessing this optionality? The proof of concept comes in understanding if the culture has a track record of adaption and, in many cases, we can look back 50, 75 or even 100 years to witness this. Henri Nestlé was initially engaged in infant milk powder but when he met somebody engaged in the burgeoning chocolate industry, he moved his company into this. To some extent the current CEO, Marc Schneider is engaged in a parallel set of activities, shifting priorities, selling divisions, buying other ones.

So what does this author see as the large, immediate opportunities in AI? It is important to keep an open mind so the broad observations that follow are those of the author. Other people will have other ideas and they may come to fruition as well. What is fascinating about the proliferation of AI is that nobody knows, that includes Demis Hassabis and Mustafa Suleyman (the co-founders of Deep Mind which is owned by Alphabet, Suleyman just having been hired by Microsoft) where we will be 12 months from now, let alone 5 or 10 years.

7 initial conclusions from the Lead Portfolio Manager (James Spence):

- 1) This phase of AI adaption suits large, installed companies best: they have the deep pools of engineers, the budgets to acquire the best microchips and data sets to deploy
- 2) As to whether the data sets are truly “owned” by the companies in question is a very significant moral issue and to the extent that laws follow morals, a business threat for some of them (Alphabet, Meta)
- 3) The more benign application of proprietary data sets and chemistry offers significant positive possibilities for a host of companies in the medical (Thermo Fisher, Philips) and consumer sectors (Nestlé, Diageo)
- 4) There are seemingly existential threats faced by companies who appear well placed to benefit were their tech to be improved upon by others (Adobe). The risks of obsolescence are high (should this undermine valuations? It easily could)
- 5) There are enormous, vested interests in developing chips to replace Nvidia. When was the last time everybody wanted something but there was only one supplier? The Dutch monopoly of nutmeg in the Banda Islands of Indonesia comes to mind but that was 500 years ago. Nvidia has been smart in the way good hardware companies can be smart: specifically by being super customer friendly and building application/industry specific software around their chips
- 6) The bifurcation of Chinese and US tech platforms is deeply interesting, whilst China is clearly getting their hands on Nvidia chips, nowhere is the incentive greater to find alternatives. While the West disdains the version of surveillance capitalism that has proliferated in China, it is happening in the West too. Even if governments restrain themselves, the private sector is deeply interested and already enmeshed in surveillance capitalism (that nice man Nick Clegg just calls it something else)
- 7) We should be worried that Open AI recently deemed its voice-cloning AI too good, too effective to release. But if not them, then others probably. Voice cloning is a boon for fraudsters. Fraud and security is the most reliable bull market of all (Microsoft, Rockwell, VISA)

James Spence





JAMES CHENEVIX-TRENCH

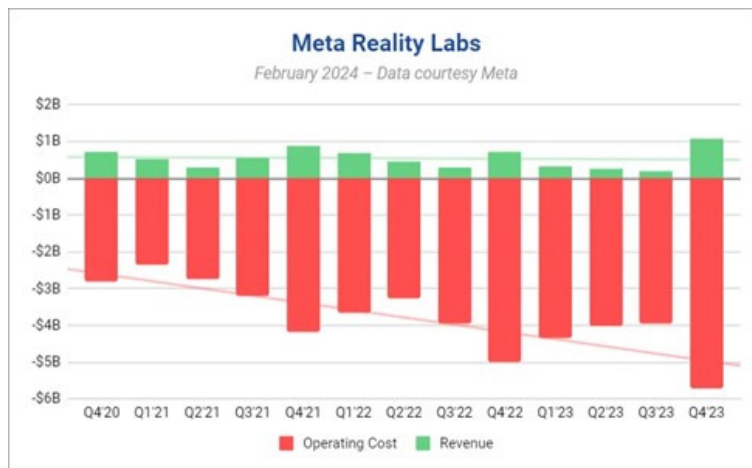
The quest for a future internet

'The release of Apple's vision pro represents an important moment in the history of virtual reality capable devices. It has also refocused minds on the drive toward a more immersive internet, on the lines of that promised by Facebook when they rebranded to Meta in late 2021. In this piece we examine these developments as part of a wider trend; the rapid emergence of a next generation internet that will put more powerful tools in our hands than have ever existed. We show how massive spending by big tech on virtual and augmented reality technologies is part of the same rapid technological progress that has brought breakthroughs in artificial intelligence that have already changed the digital landscape. In doing so we conclude that Big Tech is pouring money in to creating a more powerful and immersive digital future that is likely to suit their aspirations in regards to their profit margins with significant consequences for consumers, workers and wider society.'

In July 2021, a few months before the radical rebrand of Facebook, Mark Zuckerberg, told The Verge "We're basically mediating our lives and our communication through these small, glowing rectangles. I think that that's not really how people are made to interact.... People aren't meant to navigate things in terms of a grid of apps. I think we interact much more naturally when we think about being present there."¹

At that moment, Zuckerberg was planting a stake in the ground, outlining a vision for a dramatically more immersive digital environment which has thus far defied classification. At the time he spoke these words, no viable piece of hardware existed that would allow consumers to indulge in such a world, even if they wished to. The consumer response to successive generations of the Oculus Rift had been lukewarm at best. The Oculus devices were long seen as a niche gaming products lacking mass market appeal. The rebranding of Facebook to Meta in October 2021 stirred a forensic re-examination of the concept of the 'Metaverse' among technology watchers and journalists; What did this mean for the future of the internet? This intellectual exercise achieved little other than revealing that no one truly knew what the metaverse was, only that it must be the next big step in the technological development of the internet.

For many the rebrand was seen as a farce (remember “Feta?” which memed on Greek cheese?), costs ballooned with little sign of any tangible gain, but Meta doggedly stuck to the general vision of a more immersive internet, even if hard definitions continue to elude everyone, including them. While they have cut costs elsewhere, most notably by laying off staff², their focus never wavered. During its 2023 Q4 earnings call, Meta revealed its XR (Extended Reality): a catch-all term used by Meta to refer to its augmented reality (AR), virtual reality (VR), and mixed reality (MR) division had crossed over \$1bn in revenue for the first time driven by sales of the meta Quest device and games that run on it. They had also incurred the largest quarterly costs on record of US\$5.72bn, resulting in a quarterly loss of US \$4.65bn.



Source: Meta

The chart above shows the quarterly revenues against losses for Reality Labs (Meta’s division responsible for the metaverse). As we can see costs in this area have only grown. To spin it another way, these losses reflect belief in the mission despite definitional challenges. For Meta ‘Augmented Reality’ and ‘Artificial Intelligence’ are two sides of the same coin, and spending in both areas remains relentless.

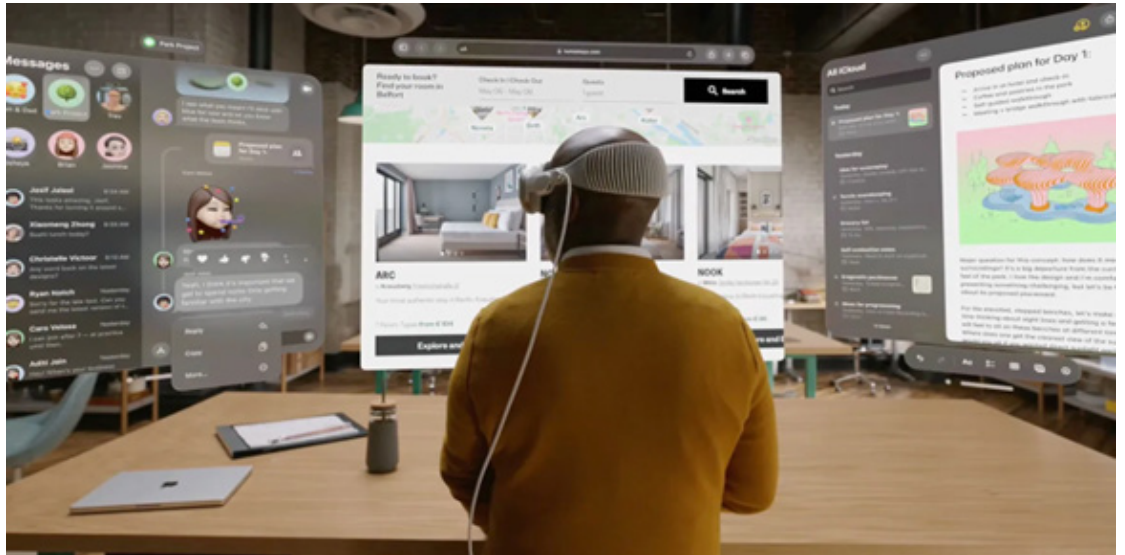
How does Meta justify these massive costs against growing, but still comparatively small revenues? The answer lies in their belief in the value of an immersive digital future that they want to dominate. A recent report by Grand View Research³ estimated the global metaverse market at US\$65.5 billion in 2022 and expected a compound annual growth rate of 41.6% from 2023 to 2030.

Matthew Ball, a Silicon Valley venture capitalist who widely popularised the term ‘metaverse’, sees a consensus forming among Big Tech companies. In his words:

“We are on the cusp of a new era in which the internet isn’t something we reach for, or that runs underground and is transmitted through the air. Instead, it will be all around us and we will be in it. That the world will be represented by an infinite number of 3D simulations that are running in the buildings we walk through and the cars that drive by, which dynamically manage the traffic lights of our street and manage our checkouts as we leave a store, and which involves many objects that are not “real” in the sense they cannot be touched, yet nevertheless interacted with by millions each day.”⁴

As we step timidly towards the mass market for the immersive internet, it is worth contemplating just how achievable or indeed desirable such a world really is.

The launch of Vision Pro – The potential of ‘Spatial computing’



Vision Pro was released to the public in January 2024. It is the most significant release of an Apple product in a decade. As far back as 2016, just as development of the Vision Pro was gathering pace, Apple CEO Tim Cook remarked:

“a significant portion of the population . . . will have AR experiences every day, almost like eating three meals a day. It will become that much a part of you. . . . VR I think is not going to be that big, compared to AR. I’m not saying it’s not important, it is important.”

For those who are interested in the Vision Pro It is worth spending time watching this video review from tech expert Marques Brownlee:



Pass through – A mixture of reality and simulation

Apple chooses to stay away from the negativity surrounding the virtual reality label, instead describing Vision Pro as ‘Spatial computing’. Vision Pro can be seen as a first-generation product, its current form is still likely too cumbersome and expensive for mass market appeal, however it does have promise. It introduces important new features:

A key leap forwards with the Vision Pro device is their ‘Passthrough’ technology. With pass through both in Meta Quest and Vision Pro we can see that big tech has moved away from the pure VR simulation dreams of the 90’s and towards a hybrid augmented reality which makes no distinction between physical and digital realness.

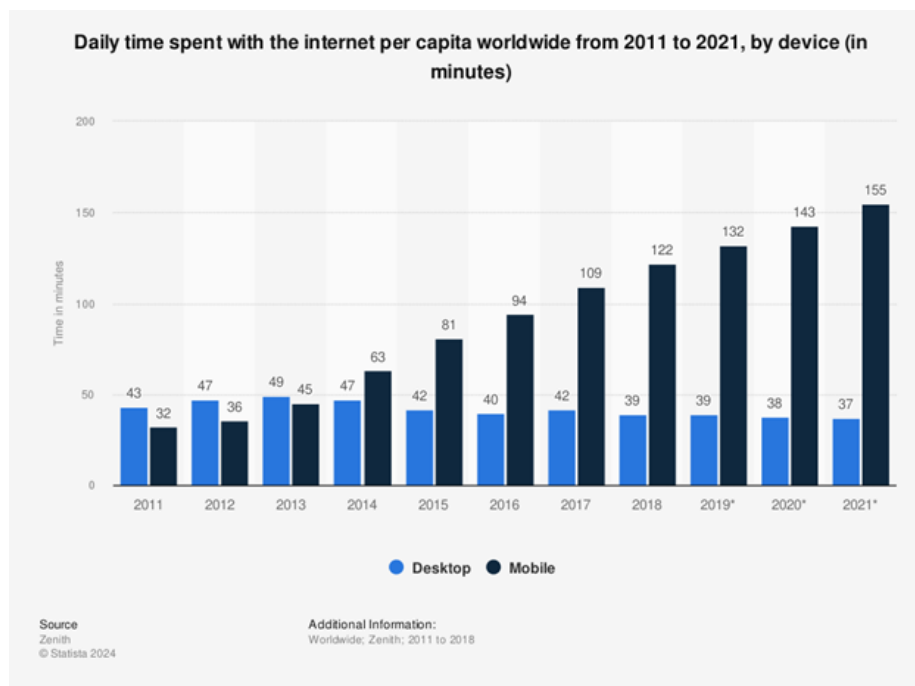
Passthrough provides real-time video from the device’s external cameras, allowing consumers to feel connected to their environment. It is so good that users forget that they are not truly ‘seeing’ the world but are instead viewing it on a screen.

Passthrough mode in Vision Pro attains its full potential when it mixes with AR. It resolves the key problem of latency – things appear to happen in real time with no lag, thereby reducing the motion sickness problems that plagued earlier VR iterations.

Virtual objects can be juxtaposed with the normal world – it could be as simple as a giant movie screen, a desktop interface, education, or professional applications. It is easy to reimagine an office without huge banks of LCD monitors. In fact, with devices like these there will be little need for offices to exist in their current form. Evidently, work could be done in a more decentralised way, it would be possible to interact with colleagues within a three-dimensional environment that would be entirely simulated. Simulations, design of three-dimensional models and navigation applications are three obvious areas where this technology is breaking new ground. It is the hope of Apple that a capable device like Vision Pro will inspire the development of a new generation of applications built to exploit the power of this new VR/AR capability. While some may not connect with Vision Pro today, the development of increasingly powerful chips will likely see these devices becoming smaller and more manageable, and more widely adopted.

The insatiable desire for digital immersion

Two core assumptions lie behind the viability of the metaverse and immersive ‘spatial computing’. First, and most obviously, we are spending ever more time in the day online.



Source: Statista

The latest statistics have determined the average consumer spends 6hrs 37mins online. Smartphones have spurred usage, and now count for 3hrs 46mins of the total. American teenagers spend 7hrs 22mins per day in front of screens. That equates to 43% of their waking hours⁵ and an increase of 2 hours since 2015.

The second assumption borrows from the famous line of Henry Ford “If I had asked people what they wanted, they would have said a faster horse”. Apple changed the world by giving us the smart phone at a time when there was little mobile internet speed to justify it. Established players like Nokia had what most analysts thought to be a tight grip on the market.

If it was the iPhone that redoubled time spent online, the bet for Apple here is that the Vision Pro will catalyse another profound behavioral shift into an internet world. To refer back to Henry Ford’s assertion, Apple believes that if this product can prove itself to be manifestly useful then consumers will willingly follow their lead into an immersive internet world.

The final vision for both Apple and Meta is a world in which offline and online becomes almost indistinguishable. This chimes with the opening remarks in this piece made by Zuckerberg about interacting with the digital in three-dimensional spaces rather than flat smartphones. The future internet will be physically all around us. Today’s devices evidently come up short, but few would deny their potential, even as we await a truly killer app for AR capable devices.

A social good? Spatial computing has the potential to change our perception of reality.

Alongside the advent of the smartphone era, perhaps following just in its wake, consumers' social media engagement has proliferated. Such applications have become so ubiquitous that it is almost impossible to re-imagine the world without it. Might a similar thing be possible with devices like Vision Pro?

For anyone born this century, it is blindingly obvious the importance attached to a social media profile, and the need to project status, experiences and to be always connected. How might an increased level of immersion exacerbate these trends?

In a recent study of spatial computing at Stanford University in California researchers expressed the fear that the technology would lead to a loss of a common reality. As one researcher told Business Insider. "People will be in the same physical place, experiencing simultaneous, visually different versions of the world. We're going to lose common ground." Spatial computing allows users to further alter their perception of what is 'real' for them, extending and deepening the process already started by the internet and smartphones. This will be fodder for authoritarian regimes seeking to reinforce division in western democracies. In a world where AI is capable of constructing entire narratives and video from simple text prompts^[6] and parts of our physical environment are digitally augmented, who will be able to agree on what is real? The idea of this technology being merged with immersive reality altering technology should concern everyone who values living in a free society.

Similarly deeper immersion in a digital reality should concern those already seeing the negative consequences of social media in society, but it is likely that as with previous changes regulators will struggle to keep up.

Big Tech needs us to buy in

Recent developments in spatial computing are a strong signal that we are on the cusp of a more immersive digital future that will place unprecedentedly powerful tools in our hands, as well as profit levers in the hands of already dominant tech platforms.

The rise of AI is part of this story and has already shown us how value will accrue in the next generation immersive internet. Large tech companies that have access to vast amounts of data, cash and expertise to train AI models have seen extraordinary reratings in their share prices. The need for scale to drive this technology forward gives incumbents a clear advantage over newcomers and smaller players. Those same companies are making breakthroughs in Spatial Computing because only they have the resource levels needed to deliver the technology. What is clear is that big tech needs this to work. The history of the internet has seen the birth of these massive companies capturing vast amounts of value. They have done this by evolving from startups to near monopolistic positions. We have now entered a period where technological progress has shifted up a gear and for the first time is threatening the foundations of these monopolies. Big tech has already grown to massive size is now looking to vast future markets driven by AI tools and new hardware to expand corporate profits and secure their position in the years to come. The future they want the world to follow is unsurprisingly the one where they maintain a dominant position.

A diverse range of winners

We recognise the clear advantages held by larger companies, to the extent they will dictate the consumer experience in these new immersive worlds. Governments should fear CEO's wielding such power. Regulators must surely scramble to catch up. If all new applications are passed through the gatekeepers of Apple and Meta, they can impose enormous levies on companies wishing to operate within these environments. It is self-evident that the demand for compute must rise accordingly. The likes of ASML and TSMC are surely the obvious shovel-makers in this gold rush. This was clearly reflected in TSMC's latest results where revenues marked an all-time high, supported by demand from Nvidia and AMD. For them, it will not matter who wins the chip design war.

Likewise, Microsoft has a firm grip on our enterprise environment looks untouchable as of today, but they will surely not sleep easily if the interface for our work existence shifts towards Spatial Computing, with hardware controlled by its two key competitors. They will surely enter the race. The development of next generation AR/VR products like Vision Pro and Meta Quest should not be seen as isolated examples or niche technologies. Instead, they must be viewed as part of a wider story that has seen our world utterly transformed by Big Tech. These emerging technologies are part of a wave of technological progress that is set to create a more powerful and more immersive digital future.

James Chenevix-Trench

^[1] <https://www.theverge.com/22588022/mark-zuckerberg-facebook-ceo-metaverse-interview>

^[2] <https://www.theguardian.com/technology/2023/apr/19/meta-layoffs-facebook-cuts-workers>

^[3] <https://www.grandviewresearch.com/industry-analysis/metaverse-market-report>

^[4] <https://www.matthewball.co/all/metaversespatialandmore>

^[5] <https://www.independent.co.uk/advisor/vpn/screen-time-statistics>



CERNO Global Leaders (Dublin)

FUND FACTS

Holding History

Company Name	Description	Holding Period*
Samsung Electronics	Dominant in semiconductor memory chips and leader in smartphones	>10 years
Nestle	Diversified global food & beverage company	>10 years
Visa	Largest global electronic payments network	>10 years
Zimmer Biomet	Leading orthopaedic care specialist	>9 years
Linde	Largest industrial gas provider in the world	>9 years
Renishaw	Engineering specialist focused on equipment for precision measurement	>9 years
PPG	Coatings company leading in the industrial/speciality business	>8 years
Shimano	Dominant supplier of cycling componentry	>8 years
Givaudan	Leading player in the Flavours and Fragrance industry	>7 years
Novozymes	Produces enzymes which application in a wide variety of daily products	>7 years
Assa Abloy	World's leading manufacturer of security locks and automatic doors	>7 years
LVMH	The largest luxury goods conglomerate and most diversified	>6 years
EssilorLuxottica	Vertically integrated producer of luxury, fashion and sports eyewear	>6 years
Heineken	Brewer with a strategic bias to premium beer, interests in low alcohol/craft	>5 years
Atlas Copco	Dominant producer in air compression and vacuum techniques	>5 years
TSMC	World's largest pure-play semiconductor foundry	>4 years
ASML	Leading photolithography tools manufacturer for the semiconductor industry	>4 years
Microsoft	Dominant player in computing operating system and business software platform	>3 years
Philips	Healthcare technology company serving professional and consumer markets	>3 years
Accenture	Independent technology consultant and outsourcing provider globally	>3 years
Aptiv	Leader in smart vehicle architecture enabling autonomous driving	>2 years
Techtronics	Global leader in power tools and floor care	>1 year
Adobe	Dominant digital creativity software and marketing CXM tool provider	>1 year
Rockwell	Largest pure play in industrial automation and control processes	>1 year
Thermo Fisher	Diversified provider of scientific instrumentation, medical reagents and consumables	>1 year
Keysight	Global leader in testing and validation of products utilising the electromagnetic spectrum	>1 year
Ansys	Leading developer of digital simulation software for product development	>1 year

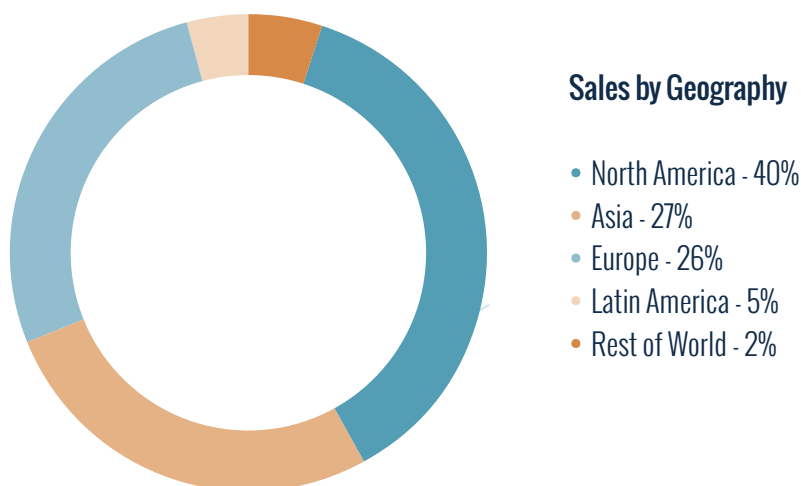
*Holding periods since inception of strategy

Sales by Geography

Global Leader companies are, by definition, global in their sales. Their domiciles are not an investment consideration and most of the companies have outgrown their home market base many decades ago.

The perceived reliability of the earnings of constituent companies and the fact that they have commanding market shares in their industries means that they will trade at a premium to wide equity market aggregates. The question is how much? The portfolio has an aggregate Return on Equity of 24% versus 11% for the World Equity Index.

We aim to rationalise margins, earnings consistency and economic value against the price paid. The fund's approach to valuation could be described as growth at a reasonable price (GARP).



Performance

Year Ended	Mar 2024	Mar 2023
Net Performance	+12.7%	+0.4%

Fund Codes

	ISIN:	SEDOL:	Bloomberg:
A Acc	IE00BMG4G674	BMG4G67	CEGLANH ID

**Inception date - Share Class: February 2022

Key Fund Information

NAV/Share Class (Acc)	£10.62
Fund Size (£mn)	19.14
Currency	GBP (Base)
Administrator	Northern Trust International
Fund Depository	Northern Trust Fiduciary Services
Auditor	Grant Thornton
Fund Legal Structure	ICAV
Inception Date - Fund	February 2021
Key Fund Documents	cernocapital.com/cerno-global-leaders-dublin
Ongoing Charges - Class A (incl. Management Fee)	Management Fee 0.65% Other Fees (incl. running costs) 0.71% OCF 1.36%
Contact	Tom Milnes 020 7036 4126 tom@cernocapital.com

**We have only started calculating this data from 1st July 2021, and as such this is an estimate based on the available data so far*

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