Interim Investment Manager's Report

July 28, 2020

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Introduction

The defined remit for the Fund is to invest globally in information technology, communications and multimedia. The Investment Manager believes this area of the economy offers growth greater than the world economy as a whole and presents attractive investment opportunities. In addition, the Investment Manager offers focused specialist management. The Fund was launched in April 1998 with an initial asset value per Class A share of £10.00. At the end of the period to 30th June 2020 the net asset value per Class A share was £77.96. On the 9th June 2010, a Class B share was launched with an initial net asset value per share of £10.00. At the end of the period the net asset value per Class B share was £50.61.

Total return for the six months to 30th June 2020

Herald Worldwide Technology Fund NAV (Class A)	15.8%
Herald Worldwide Technology Fund NAV (Class B)	16.5%
Global	
S&P Dow Jones World Technology	22.3%
United States	
Russell 1000 (Large Cap) Technology	24.2%
Russell 2000 (Small Cap) Technology	6.7%
S&P 500	3.7%
Russell 2000 Small Cap	-6.8%
United Kingdom	
iShares Core FTSE 100 UCITS ETF	-17.2%
Numis Smaller Companies plus AIM (ex. Inv. Cos.)	-19.8%
Europe	
DAX	-1.2%
Deutsche Bourse TECDAX	4.1%
CAC 40	-10.1%
Asia Pacific	
NIKKEI 225	2.0%
KOSDAQ IT Composite Index	7.4%
Taiwan Electronics Index	8.0%

All percentage returns are in GBP
Source: Herald Investment Management Limited and Bloomberg.

The Fund is not managed by reference to any benchmark and the indices above are shown for comparative purposes only.

Past performance is not a reliable guide to future performance.

Summary

Equity markets have been extremely volatile in the first half, following the emergence of COVID-19 and the unprecedented actions by governments around the world in reaction to the health, social, and financial risks posed by the global pandemic.

The data above shows a large divergence between the returns of the different indices as a result of the crisis. The Russell 1000 (Large Cap) Technology Index and the S&P DJ World Technology Index have both appreciated over 20% during the first six months of 2020, after having appreciated 41.5% and 39.0% respectively in 2019, whereas indices with a smaller exposure to technology stocks have risen far more modestly or have declined during the period.

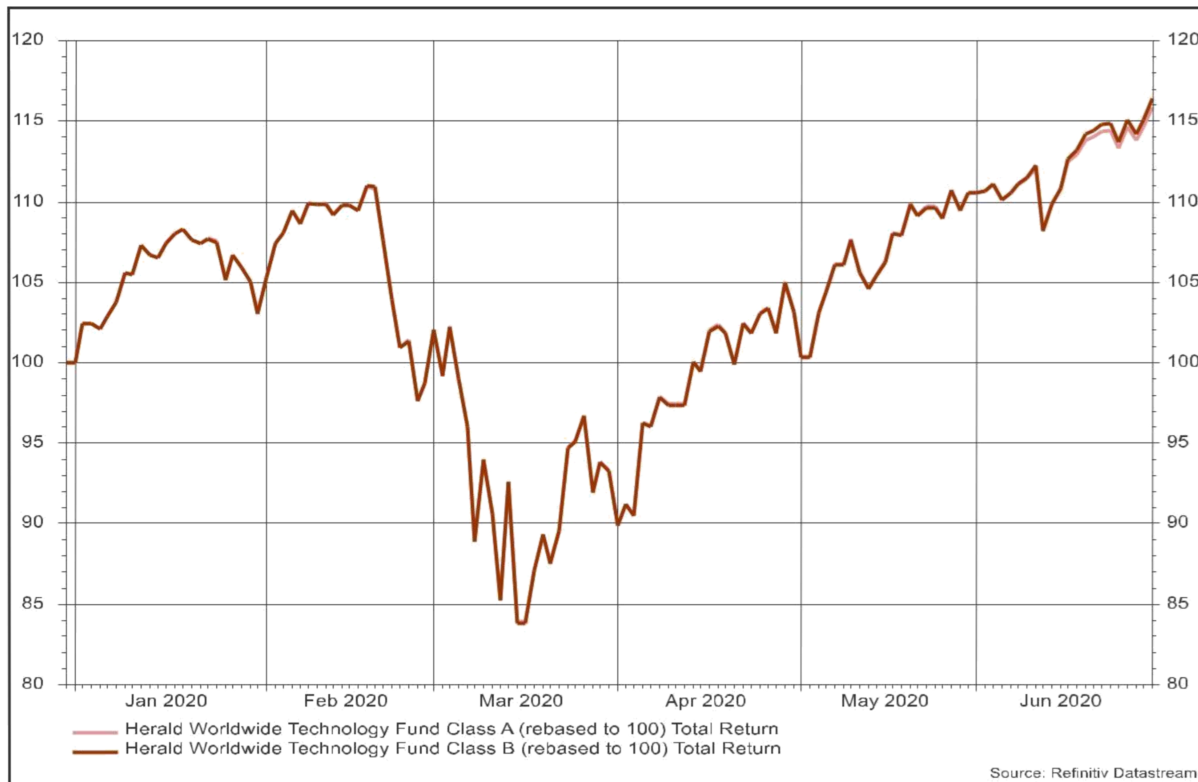
It is evident to us all how much the development of the internet and associated infrastructures has enabled the economy to function as well as it has during the lockdown. Many technology companies have benefitted from the step change in the use of the internet and online services caused by the lockdown. Many hardware companies have seen increased demand for PC's, peripherals, and office equipment needed by employees adjusting to a 'work from home' (WFH) environment. Most of the large cap technology companies have extremely strong balance sheets. The combination of resilient operating infrastructures, surge in demand, and solid balance sheets has caused the technology stocks to be recognised as safe havens compared to much of the rest of the market, thus leading to the divergence in performance between the large cap technology indices and indices with less exposure to large cap technology companies.

Technology and healthcare appear to have been the go to sectors for investors trying to decide what to do in a world where interest rates are likely to remain lower for longer and where financial markets are heavily influenced by government stimulus and the monetary policies of central banks.

The outcome for the full year remains uncertain. On the whole, the Fund's holdings have strong balance sheets and resilient supply chains, allowing them to absorb the temporary shocks, as well as some of the sharp changes in demand. Concerns about US/China trade policy and evolving trade restrictions imposed by the US Government, such as the US Department of Commerce's new export control rules issued on 15 May 2020, have added further uncertainty to revenues and earnings outlooks for companies with direct or indirect exposure to China. The large cap companies also face the risk of increased regulatory pressures from governments around the world.

Despite these uncertainties, we remain optimistic about the long-term opportunities presented by investing in the sector.

Total Return: 31/12/2019 – 30/06/2020



Total Return: 31/12/2002 – 30/6/2020

North America

The total return for the US portfolio was 22.5% which compares closely with the Russell 1000 (Large Cap) Technology Index total return of 24.2% and is pleasing given the unprecedented uncertainty in the economy. The US portfolio comprises the majority of the Fund (72.8%).

The star performer in sterling terms was Nvidia, which appreciated 73%. The largest contributor by value to performance was Microsoft, which appreciated 39% and is the largest position in the portfolio. During the past 7-8 years, Microsoft has been successfully migrating its business by substantially enhancing its offerings to include leading-edge cloud PaaS, IaaS, and SaaS (platform, infrastructure and software as a service) services. Microsoft is a critical partner and supplier to companies large and small across the globe, which has helped to adjust to COVID-19 and the rapid shift to WFH. Their Azure data-centre business is the trusted enterprise partner, and in the last quarter growth to the end of June has been 47.0% (50.0% in constant currency).

Apart from Microsoft, other holdings which have been significant contributors to the returns of the North American portfolio include Amazon (+60%), Cadence Design Systems (+48%), Pegasystems (+36%), Apple (+34%), Akamai Technologies (+33%), and Advanced Micro Devices (+23%). The key negative contributors to returns were Yelp (-46%), NetApp (-22%), NXP Semiconductors (-20%), and CyberArk (-9%). We remain positive on the outlook for CyberArk. It is a leading vendor in the cyber security market, specialising in privilege access management. We exited our holding of Yelp as we had lost confidence in management's ability to reposition the company for sustainable long-term growth; the position was only 0.6% of the Fund at the start of the year and even smaller at the point of sale. We sold out of NXP and recycled the cash into Arista Networks and Bottomline Technologies. Both are positions which we know well; we have previously held Arista in the Fund and are familiar with Bottomline having owned it within Herald Investment Trust for many years. The sale of NXP was largely due to concerns we had about automotive demand, a sector which accounts for nearly 50% of NXP's revenues. In hindsight the sale was premature, as the shares have bounced sharply; however the shares of Bottomline have appreciated over 30% since purchase. Pleasingly the positions with negative contributions during the half were small, and the aggregate losses of all positions with negative contributions were more than mitigated by the profits made on any one of the Fund's top three holdings.

Having taken profits from the sale of Atlassian last year and Zscalar earlier this year, after very strong appreciation of the share price of both companies, one area of the sector that we are maintaining a modest exposure to is the mainly West Coast based SaaS companies. This is because reported earnings are often described on an adjusted basis, which is before share-based compensation. There is a bubble in remuneration in this area, and we do not believe the market sufficiently reflects these costs in valuations. Although many will benefit from the shift to WFH caused by the pandemic, WFH makes securing and closing new deals harder. We expect mid-term growth rates for many of these companies to be lower than the current market expectations.

The P/E of the North American portfolio on Bloomberg forecasts was 29x on 30th June 2020 compared to 25x at the end of 2019 and 18x at the end of 2018. This expansion in P/E has been mostly due to the re-ratings of the Fund's holdings as opposed to any substantial changes in our holdings.

Europe

The Fund's only European holding is SAP, with a weighting of 2.4%. SAP returned 12.6% in the first half of 2020. We like the outlook for SAP as it retains a strong competitive position in its core enterprise software markets, with scope for sustainable long-term growth, and a supportive valuation.

UK

The UK portfolio comprises 6.8% of the Fund and the total return was 14.2%. The Fund's largest UK holding was Herald Investment Trust, with a weighting of 3.2%. Herald Investment Trust appreciated 3.8% in the period, following a strong appreciation of 38% in 2019. Other UK stocks that have performed strongly include Wandisco and Avast which appreciated 20% and 19% respectively during the period.

Asia

The Asian portfolio comprises 5.7% of the Fund and the total return was 2.0%. Early in the year, as news about the pandemic was emerging, we reduced the Fund's exposure to China. We sold out of CTrip.com, the leading online travel company, and reduced the holding in Alibaba. The Fund's largest holding in Asia continues to be Alibaba, which had a total return of 9.0% in the period.

We remain concerned about investing in domestic Chinese companies due to corporate governance issues and the lack of protection for shareholders. The Chinese government continues to fund and support its domestic champions across different segments of the technology sector, e.g. Huawei in telecoms and SMIC for semiconductor manufacturing.

Technology supply chains are global and highly distributed. Geopolitical tensions such as those we are currently experiencing will have long-term impacts on companies in those supply chains. We continue to believe both Taiwan Semiconductor Manufacturing Company (TSMC) and Samsung Electronics remain well placed, despite concerns about the outlook for demand and increasing competition from domestic Chinese companies.

Market Background

The global pandemic caused by COVID-19 and the associated social, fiscal, and monetary policies of governments around the world have dominated the markets in H1-2020. Volatility was at unprecedented levels. There was a large divergence in the performance of different sectors, with strong outperformance by the technology sector and strong underperformance by the energy, financial and travel and leisure sectors.

The technology sector has been a key enabler of lockdown policies such as WFH, online learning, online medicine, and the suspension of sports and other out of home entertainment activities. This has led to a surge in demand for internet shopping and other online services ranging from banking to gaming and entertainment. These services in turn have driven demand across the technology supply chain, from laptops and peripherals for home workers to security products to protect access to corporate networks and the underlying semiconductor chips which are critical in the functioning of those products and services.

It is difficult to imagine lockdown policies such as those implemented in H1-2020 being possible without the technology infrastructure of today. The infrastructure of 10 years ago would not have been able to provide the level of reliability and the breadth of functionality which today's infrastructure has enabled.

The technology sector has also been a beneficiary of governments' fiscal responses. With bond yields plummeting, investors have valued companies with strong balance sheets and strong cashflows with prospects for long-term growth.

In recent months, there has also been a step change in interest by investors and companies to integrate ESG risk factors into investment decisions. Many companies with which we interact have remarked about the notable increase in investors' questions on these matters in recent months. In this area too, the technology sector stands-out as the large companies in the sector such as Apple, Microsoft, and Alphabet have been standard bearers for pursuing global initiatives aimed at improving environmental and social standards across companies in their supply chains.

All these factors have supported the technology sector and caused the outperformance of technology-heavy indices compared to broader indices. Markets have also rationally discounted the uncertainty in 2020 revenues and earnings and are looking through to 2021 and beyond with the expectation that the normalisation of the economy will lead to a normalisation of long-term growth.

We are concerned about some of the valuations we are seeing in the sector given the economic outlook. We are also concerned about a surge in COVID-19 cases in the US as unlike Europe and Asia, the US does not yet seem to have a coherent policy to address and contain the virus.

The Fund holds 12.3% of its portfolio in cash. This has been partly due to the take-over of Mellanox in the period for which the Fund received cash at the end of June and partly a reflection of our concerns about the mid-term economic outlook.

Sector Outlook

The first six months of 2020 have been extraordinary. Concepts such as quarantine, work from home, school closures and banning of sports, which were entirely unimaginable at the beginning of 2020, became the norm across Europe and the US as governments effectively shut down economies in their struggle to contain the virus. Meanwhile, many of the South East Asian countries, based on their prior experiences with SARs, managed to keep their economies operating, albeit at reduced levels.

The virus caused an unprecedented shock to nearly every aspect of life, especially in Europe and US. Companies, employees, citizens, parents, schools, governments, health authorities, sports and entertainment providers and transport authorities all had to scramble to somehow adapt to the lockdown conditions and resume aspects of normal life, to the extent possible. Almost none of the disaster recovery plans of any of these institutions had been designed to cope with these conditions.

As revenues became uncertain, cash on balance sheets went from being king to emperor, benefitting tech companies which mostly have large amounts of net cash on their balance sheets.

For those producing physical goods, the agility and resilience of their manufacturing systems and supply chains became key differentiators.

Businesses, governments, schools, hospitals, and other organisations were suddenly forced to adopt new communications, collaborations and security tools to try to create a semblance of normality. The way of working and communicating has undergone a permanent transformation.

As Satya Nadella, the CEO of Microsoft, said on its Q1 conference call,

> *"We've seen two years' worth of digital transformation in two months. From remote teamwork and learning, to sales and customer service, to critical cloud infrastructure and security—we are working alongside customers every day to help them adapt and stay open for business in a world of remote everything."*

We started the year, with prospects of robust global spending in technology, driven by the benign economic background and opportunities for efficiency by driving cloud and As-a-Service models. In February 2020, Gartner estimates had been for 4.6%* overall growth in IT spending in 2020 to $3.5tn. Within this, segments like software and cloud were expected to grow much faster than the average. Moreover, spending growth had been expected to be almost evenly distributed across industries, i.e. banking sector growth was expected to be 5.5%* year-on-year (y/y) and manufacturing and transport were expected to be 4.3%* and 4.4%* y/y respectively.

Within a few weeks, in March, all spending plans were shelved and focus was shifted to critical needs. This meant different courses of action for different industries and individual companies. Some had to cut spending dramatically to prioritise cashflows, while others with strong balance sheets could continue spending, but had to change priorities.

Currently Gartner expects 2020 IT spending to be down 6.3%* y/y. Within this, there is a large variation across sectors, i.e. transportation is expected to be down 19.3%*, manufacturing is expected to be down 15.0%*, while IT spending by utilities and governments is expected to increase 3.1%* and 1.2%* respectively.

Considering the magnitude of the disruption across geographies and industries, a 6.3%* decline in IT spending is rather modest, and shows that much of technology spending is non-discretionary. In H1-2020, although demand for some products such as enterprise PC's and storage systems declined, there was also a surge in demand for consumer products such as laptops, game machines, online-gaming, and online entertainment services.

Looking beyond 2020, a return to long-term IT spending growth is anticipated. A bounce of 4.7%* is expected in 2021 and solid growth of 6.0%* y/y is expected between 2022-2024.

The experience of the past few months has shown the capabilities as well as the shortcomings of different technology products and services to address the needs of the "remote everything." Most cloud services proved their promise of offering a highly resilient service which can scale up as well as down, while many proprietary on-premise solutions struggled to cope with remote access.

We expect demand for cloud-based services such as SaaS, PaaS, and IaaS to remain robust longer-term. Following the experience of the last few months, IT professionals will have less of a challenge explaining and justifying the need for budgets for Cloud spending to CEOs and CFOs.

Ease of use and ease of deployment proved their value, as we saw with the meteoric rise of Zoom adoption across companies around the world, despite the prevalence of a multitude of pre-existing conferencing tools. People just found it easier to use Zoom and so that's what they used.

We believe ease of deployment and ease of use will remain important going forward. We've always preferred products which sell themselves rather than those which need large amounts of sales and marketing investment to drive demand. Travel restrictions and cancellations of exhibitions and conferences mean old school face-to-face, wine and dine sales models will continue to be challenged, favouring demand for products with short paybacks which are easy to understand, deploy, and use.

* Source: Gartner 2020

Supply Chains and Trade Tensions

Another feature of the last 6 months has been a realisation of critical weakness in some companies' and governments' supply chains. The world watched in disbelief as Western governments struggled to procure seemingly simple products like face masks and protective equipment for care workers. At the same time, companies with resilient supply chains, like Apple and Renault, succeeded in designing and procuring critical equipment and distributing it to hospitals within weeks.

During the last 20 years, more and more manufacturing has moved to China largely due to favourable cost and availability of labour.

Tariffs, the US trade war and President Trump's MAGA policies have led companies with large markets in the US to consider diversifying manufacturing away from China. The virus has arguably added further impetus to these initiatives. Governments around the world have realised the risks of too much dependency on other countries (e.g. the Indian government banning the export of key pharmaceutical products in March 2020).

A bipolar world looks to be re-emerging, with Chinese companies relying more and more on domestic sources for their supply chains, while non-Chinese companies are assessing reducing their reliance on Chinese manufacturing and considering alternatives. At the same time, governments are also reassessing risks of non-local supply chains.

One particular area of focus by the US government has been the semiconductor supply chain. The recent experience with the virus has proved beyond any doubt the criticality of IT infrastructure for any economy. IT infrastructure in turn relies on leading edge communications systems and underlying semiconductor technologies. In recent months, the US government has been increasing pressure on Chinese companies' use of US intellectual property. Chinese companies in turn have been trying to diversify away from using foreign products and favouring domestic vendors. However, within the semiconductor supply chain, there are many critical products which the Chinese cannot yet produce or which are not yet competitive compared to global leaders.

To compete against global peers, Chinese companies still need to rely on key software, like that of Cadence, or manufacturing, like TSMC, or testing like Teradyne.

We expect the technology sector to remain at the centre of trade, economic, and strategic policies of both Western and Chinese governments. Technology leadership and security of supply chains is an East/West competition which will likely continue for many years to come and is the equivalent of the arms race of the post-cold war era. The Chinese government's support for its national champions such as Alibaba and Huawei is causing some in the US government to consider the strategic importance of companies such as Alphabet, Apple, and Microsoft which invest heavily in research and development.

Summary

While we remain cautious on the near-term outlook, with economic effects of the virus still unknown and valuations at premiums that are unseen in this decade, global interest rates remain supressed and investors are faced with few alternatives for sustainable long-term growth, we remain optimistic about the outlook for investing in technology and continue to see opportunities for long-term capital growth. The virus has shown the criticality of technology for the functioning of economies across the world. Although the spending outlook will be challenged near term as companies adjust to shifts in demand, we expect the pace of innovation to remain high, driving growth across diverse sub-segments within the broad technology sector.

Important Information

Market and currency movements may cause the value of shares, and the income from them, to fall as well as rise, and you may get back less than you invested when you decide to sell your shares. Certain statements in this report constitute ‘forward-looking’ statements. Such statements, including the intended actions and performance objectives of the Fund, involve unknown risks, uncertainties and other factors which may cause actual results, performance or achievements of the Fund to differ materially from those implied by such forward-looking statements.

This report has been issued on behalf of Herald Worldwide Technology Fund, and has been approved by Herald Investment Management Limited, its investment manager. Herald Investment Management Limited is authorised and regulated by the Financial Conduct Authority. Contact details:

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