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[NTRODUCTION]

Staci West (SW): Welcome back to the Investing on the go podcast brought to you by FundCalibre. Discover new perspectives on why the US is a prime destination for growth investors and the profound impact of Artificial Intelligence on the investment landscape. Today's episode is a thought-provoking discussion on the evolving realm of investing and growth strategies.

James Yardley (JY): Hello, I'm James Yardley. Today I am joined by Ben James, investment specialist director on the Baillie Gifford American Growth fund. Ben, thank you so much for joining us today.

Ben James (BJ): Thank you for having me, James. It's good to be here.

[INTERVIEW]

JY: Now Ben, just tell us a little bit about the US and why it's such a great place for investing for growth investors such as yourselves.

BJ: Sure. Well, thanks for having us on. The US is a wonderful country. It's the most innovative country in the world, we believe. It creates more growth businesses than the rest of the world combined, so it makes it a wonderful hunting ground for selective and patient long-term growth investors like us on the Baillie Gifford American fund. We are trying to find 30 to 50 of the best growth companies in America and hold them for the long-term. And to put why we think it's so good into context, at the end of 2023, 62 of the world's 100 most valuable listed companies were US-based. And if you include Canada's Shopify, which is also one of our holdings, then North America's tally is 63. If you look at private companies as well, it's even more dominant. It has over 1,500 billion-dollar startups and the next closest is China with 348, which is under a quarter of the US's total.

We think it's going to remain the best place to find and invest in exceptional growth companies for years to come. And the reasons are manifold. It has the best academic research institutions in the world, a strong talent pool, which is supplemented by immigration. It has a broad and deep venture capital system that supercharges startups' growth by providing funds in addition to technical and managerial advice, and has strong intellectual property protection business friendly environment.

But for me, actually, I think it's the culture of optimism and ambition and the willingness to accept failure that is unrivalled. It is the home of the American dream and I don't think that is mirrored anywhere else in the world.

JY: It has been a tougher period recently for growth investors since interest rates and inflation have come back. The cost of money has gone up. I mean, your fund had an exceptional period during the QE era and then there has been a bit of a hangover, but I mean, growth is starting to do a bit better again recently, so, can we expect this to continue going forward?

BJ: Yeah, so you're right, James, the last three years in particular have seen some extreme volatility, more than we had ever anticipated. And I think it's important to cover the fact that it was a set of extreme circumstances that we've all lived through: a once-in-a-hundred year pandemic; unparalleled government support in the first six months of the pandemic; societies being locked down; and then the uneven opening up of economies; the first state-on-state conflict in Europe since the Second World War; record-breaking inflation and interest rate rises that have shocked everyone. Now we've got conflict in the Middle East and the emergence of a new technology paradigm in the shape of generative AI. And this is all during a period where our financial system has never been more digitally connected or as fast.

Now, 2023, did see the start of a strong recovery for the American fund, and it was good to see, and we're seeing some strong fundamental progress coming through at the company level. We're obviously disappointed with the returns that the American fund has delivered on a three and five year basis, and we'd really like to take this opportunity to thank our clients and your clients for their patience and for sticking with us. And I want to just reassure folks that we're focused on the long-term, and we believe that we have a portfolio of exceptional growth companies that will deliver on our long-term objectives.

You ask will growth continue? Well, who knows what will happen in the next month, quarter, or year, but I haven't seen the team this excited for a long time.

We think that the increased cost of capital environment that we're in now, is separating the best from the rest. The tough decisions that all of our holdings had to make during 2022, the year of adaptation as inflation and interest rate rises started to kick in, started to come to fruition in 2023, and we saw profitability massively increase within the portfolio. So, over 85% of the portfolio is now profitable on an income basis or on free cash flow, so, basically, for our retail listeners here, making cash above their operations, and that has gone up from about two thirds over a year ago.

And the portfolio is growing strongly too. The average top line sales growth for the companies in the portfolio is 27%. That is not just decent growth, that is really strong growth. And to put that into context, if you are growing at 15% a year for five years, you double in size. So, we’re growing much faster than that.

And why do I think that the team is optimistic is because these companies are going to be leaner and more efficient for a long period of time, so they could be more profitable for a long period of time. They're growing with cost controls because of the experience they've been through, but they're powered by these long-term structural changes that will continue to and through economic cycles such as the digitisation of our economy, the electrification of our economy, and the decarbonisation of it, so, new energy suppliers, electric vehicles, the improvements to healthcare and the new technology paradigm that I mentioned of AI affecting every business and every bit of the economy. This will drive demand and, we think, will put our companies in a good place to continue to grow in the top quintile, which is what we want them to do over a five-year period.

JY: Well, let's get into AI a bit because I think it is a major theme in the portfolio, I mean, your biggest holding I see here is Nvidia. So, how are you guys thinking about this? How is this all going to potentially develop? Because we've seen some extraordinary ideas and headlines, talks of this completely revolutionising economies and things. Is that where you're thinking it's going to go and I mean, potentially this could be the most disruptive force we've ever seen, and you guys are experts in disruptive growth. So, how are you thinking about this?

BJ: Yeah, thanks James. The first caveat I would say is that anyone talking about AI and how it will impact society and making firm predictions is going to be wrong. We have no idea where this will take us on a 50-100 year view, let alone a one-year view or a five-year view. We do think, though, that you can start to make some early tentative discussion, shall we say, about the potential impact it may have on the system. We do think that it is a new technology paradigm, and Tom Slater, the head of the team and one of the four decision makers on the American fund, has written a paper on this, why the AI paradigm is important for growth investors. And he looks at history to describe why it might be important for growth investors today. And if you look at every technology paradigm that comes in the computing era, then new, bigger companies rise from it. So, when the mainframe emerged back in the late '50s / '60s, IBM was the major player and one of the largest companies in the world. And then as the mini computer and personal computer era took over because things got faster and cheaper - because of Moore's law, Intel and Microsoft emerged as winners. You then had the mobile era take off, and Apple has emerged as this super company. And now we have accelerated computing, and Nvidia is emerging as one of the winners here.

We don't know how this will affect our day-to-day work, but if you use some mental models, it might start to help us understand where problems might be solved in the system and where other problems might arise.

So, if you think about what chatGPT, which is OpenAI's generative AI tool, can do for you, it essentially devalues the ability to write software. So, we can ask chatGPT, as a lay person, write me some code for a computer program and it'll do it for me. And I don't need a qualification in software development. And so something that has been scarce such as software development skills is now abundant. That could mean that anyone can set up a software company or can tweak their software in their company to improve their efficiency and so on, without having to hire an expensive software developer. It means that the trust in humanness and security is probably going to be on the increase. If anyone can ask a computer program to mimic Joe Biden's voice or Donald Trump's voice, then what does that mean for elections and so on. So, companies that can help provide security, such as CloudFlare, which is one of our holdings, might be more valuable.

Energy we think is going to continue to be scarce because the amount of energy that these data centres need to use is absolutely massive. I think 1% of the world's electricity use has just been calculated to be used for these data centres, and the internet's going to use about a quarter of the world's electricity use in 2025. And so, to provide that in a clean and zero carbon way is going to be a challenge, but also an opportunity for companies.

Other things such as data and analysis of data will be really important because AI is all about data and compute power. So, companies that can help dig into data goldmines, shall we say, are going to become more valuable. And if they can connect different data mines as it were together and create new innovations on top of it, they're going to be valuable too. And what might it mean? Early tentative takeaways are that there could be a lot of big, very profitable private companies with only a few employees. Indeed, the battle cry of this generation could be the billion-dollar startup with three employees. Because you don't have the limits of scaling because of people, because these tools can do a lot of it for you, then that could generate a lot of very big, private companies that make a lot of money with very few people.

JY: Are you worried about this for some of your existing holdings at the moment? I mean, as you say, if it's so much easier to suddenly generate software, then potentially that's bad for some software businesses. [**BJ:** Yes.] So, are you as equally worried as you are excited about it, or is that not fair?

BJ: I mean, I wouldn't say we're equally as worried as we are excited. I say that how companies deal with the new technology paradigm will be a material factor in our investment hypothesis for them. Every company we speak to is saying that AI is good for them - not all of them will be correct. [**JY:** Yeah.] And for some though, it will massively increase the value of their proposition and products and services. So, we bring it into our investment analysis for every company we look at. And for some it has reduced our conviction in the upside. Take Chegg, the education company. This is a company which essentially provides answers, it's digitised textbooks and students can use it to help answer questions and help write essays. Well, if that's something that generative AI can't do, then tell me something that is. Now we weren't reassured, shall we say, that the management team at Chegg were fully embracing how significant this was and executing on it and given greater opportunities in the portfolio, we decided to exit.

On the other hand though, you've got the likes of Duolingo, which I'm sure many of the listeners will be aware of, the language learning app, and they embraced it early on, generative AI. Indeed, they were one of the first companies to launch a product that incorporated generative AI. So you have in Duolingo three tiers of membership: the free version which is powered by adverts; there's the paid version subscription where you don't have adverts and have unlimited lives - I should know, I'm on 691 days of French.

JY: That’s very good.

BJ: Thank you. And then the highest level is now an autonomous AI-generated teacher who you can have live, one-to-one conversations with and real time analysis of your mistakes in your language. And this has been extremely transformative because the founder of Duolingo thought that this was 5 to 10 years off, this technology, but it's now here.

JY: Sorry. When did they launch that?

BJ: They launched that very shortly after chatGPT was launched. In fact, they partnered with OpenAI to do it. So, it comes back to that broader question of how each of the company management teams are dealing with this new shift. Are they embracing it? Are they adapting to new technologies and threats to their business, which is what we would hope to see. Are they thinking, can this disrupt me and my current business? And if so, we need to disrupt ourselves. Or are they ostrich-ing, are they putting their head in the sand and saying, it'll all be all right on the night?

What we've seen over the last 20-25 years, experience of investing in the likes of Tesla and Amazon and and so on, is that - and Netflix - that they have pivoted and disrupted their own businesses because they have embraced new technologies and seen that if they don't do it, someone else will. So, that's how we're incorporating into our analysis of companies.

JY: And I'm sure our listeners are keen to know how you are playing it in the portfolio. So, I mean, I already mentioned Nvidia, which everybody knows obviously, that's your biggest holding. What are some of the other holdings though, which are perhaps less obvious playing this theme?

BJ: Yeah, so I mean, on a broadest term, you could say that every company linked to my previous point will be using AI in some shape or form. And it's something that we've been thinking about for years. It's one of the reasons we invested in Nvidia eight years ago. It's GPU graphic processing chips were very good and designed for gaming because they can do multiple calculations at once in parallel. But our hypothesis in 2016 when we bought into it was that they were well suited for machine learning and it's proven to be the case.

But if you look in the American fund and split down this value chain, shall we say, of artificial intelligence, then you've got sort of five broad areas that we're exposed to. You've got the hardware and chips area, which is Nvidia, all roads lead to Nvidia at the moment. It does 90% of AI calculations through its GPUs. They're the picks and shovels.

Then if you move along the value chain, you've got the cloud, computer, cloud and platform storage. So, Amazon Web Services here is a major player in this space and does a lot of the computation for AI and language learning models. So, they are set to benefit from this.

On top of the cloud, the third level is sort of cloud services and enterprise solutions, so solutions for businesses to improve their computation and services. And so on top of that, you've got companies like CloudFlare, which I mentioned, which is about internet security. It also promises to help with the memory wall problem. So, very briefly, this is about the speed with which you can get data and information to a computer. If you can't get it to the computer quick enough, then it slows down whereas CloudFlare operates edge computing, so it has lots of little nodes basically close to the user, which helps things speed up. And we've got a company like Snowflake, which helps businesses analyse their data and get useful insights from it.

Then, I think, if you go to an area beyond the cloud services and enterprise solutions, you've got companies that are incorporating it into their solutions, so, industry solutions. And there you've got some companies like Samsara, which is collecting data from its current main customer, which is fleet management trucking, collating it all together, digging into the details and picking out any potential valuable learnings from that, and passing that on to the customer. But you've also got that in healthcare, something like Moderna or Recursion [Pharmaceuticals] where they are using AI to help discover drugs or design drugs.

And then you've got consumer services level, the fifth level, the one that we see, so Duolingo I already mentioned, but Roblox, the gaming platform. This is using AI to help people design games for the platform. And Meta. So, we recently bought back into Meta, which owns Facebook and Instagram, because it can use AI to better target adverts and circumvent the limitations that the Apple privacy changes that hurt Facebook 18 months or so ago, they're able to now circumvent that using AI and also better service content.

So, there's a broad exposure across the American fund across that value chain, and as I said, most companies, if not all, should be looking at how AI will disrupt their business and incorporating it.

JY: Yeah, I mean, you mentioned healthcare there, which I know is also quite a big part of the fund. I guess one of the things I worry about is how AI might make drug discovery that much easier and potentially we could see a flood of new products coming on the market. I mean, do you worry about that at all for your existing healthcare names or do you just think, actually there's more potential here and just …?

BJ: Yeah, I think healthcare, particularly US healthcare, the US healthcare system, is ripe for disruption. It is so expensive and there's been an increase in spend and a decline in the number of drugs coming through and it spends more money than any other country on healthcare and has less superior outcomes to many countries. We welcome the fact that AI is going to disrupt this, and we believe we hold some of, if not all, the most innovative healthcare companies addressing these problems.

Traditional drug discovery is the equivalent of throwing spaghetti at a wall and seeing what sticks. There's very little correlation of the success of one drug to another, and this is why most large pharmaceutical companies have negative returns on their R&D spending. It was traditionally dependent on high throughput screening to find a target drug that works, but the opportunity now is to use a data-driven approach to decrease this cost and the time required to bring a drug to market, and, most importantly, increase the chance of success. Clinical trial times are quite fixed. They may have been sped up a bit because of the pandemic and lessons from that, but the largest opportunity today is to improve the time-cost of preclinical development through finding targets and screening potential drug target interactions in silico, digitally with AI. So, we have Recursion, which is a company in the portfolio that primarily, through better target discovery, uses AI, but is now also moving into drug target modelling using AI to improve its preclinical testing for faster iteration times.

JY: Are we already seeing AI as part of the design process? [**BJ:**Yes.] So, some of these drugs coming through now are sort of partly AI design?

BJ: Yes. AI is a very general term. It's a catch-all term for computers using data to mimic and replicate human activity. So, what do we mean? Using machines as tools to help you design something or do something that humans might be able to do. But Moderna is a prime example, and if you listen to the podcast from Scottish Mortgage [Investment Trust], indeed - and I know that's not what we're here to talk about - but Tom Slater interviewing Stéphan Bancel [MD, Moderna Therapeutics] from Moderna, they designed the drug candidate for the Covid vaccine in something like 15 to 20 minutes, on a computer using a Word document printout of the genetic code of the spike protein. They then spent the next 48 hours just checking that everything was right. And then that was the drug that went into trials and has now been put in billions of arms. And if you think about how long that process took 20 years ago for SARS, which took about three years, that's the condensation of the speeding up the process. It's incredible. So yes, we're seeing it now and we think it's great for humanity and it's great for some companies who are able to embrace it.

So we think that the healthcare system is right for disruption and you ask, are we worried about it? Now, we think that competition is good, obviously, but we will keep an eye out for companies that are coming up, developing drugs that potentially threaten our current portfolio holdings like our holdings that are delivering drugs like Moderna or Alnylam [Pharmaceuticals] which does gene-silencing drugs.

But I think one of the other key things in our approach in the American fund is that we tend to look for platform companies. So, not just a company that will come out with one wonder drug. We are looking for a company that has a technology that can be, if proven to be effective, rolled out across various different diseases. And that's what we're seeing with Alnylam, which silences diseasecausing genes so silences genetic diseases, or with Moderna, which uses messenger RNA to essentially treat many infections through vaccinations and potentially even treat cancer by getting the body to create the proteins needed to tackle a disease by sending messenger RNA into the body which then makes these proteins. So we're looking for …

JY: Are they having any success on that front yet? [**BJ:** Yes] I mean, are those cancer vaccines in trial at the moment?

BJ: Yes, they are. So, they currently have a cancer vaccine for skin cancer in Phase 3 trial. And there it's a co-trial with Merck based on the Keytruda drug now. So, this is for skin cancer and Keytruda is Merck's best in class drug for treating skin cancer. And what the cancer vaccine that Moderna has developed is, in layperson's terms, you inject the vaccine and it essentially puts a highlighter, makes the body highlight the cancerous cells better, so it makes them more targetable, makes them more visible. And the Phase 2 readout has shown something like above a 40% increase in effectiveness of Keytruda. So, it's materially improved, at Phase 2 level, the effectiveness of the best in class drug. Now this is a drug which costs $90,000 / $150,000 a year. So how much will a cancer vaccine be billed at? These are things that we're still working out, but it's the early days …

JY: I mean, we're not seeing it in Moderna's share price though. I mean, obviously they had the Covid boost but they've had a very tough time recently [**BJ:** They have] but they have still believers in it. Have you been adding to it at all or just sticking with what you've got?

BJ: We are significant believers in Moderna, given the data that is coming through. We think that the market is overly focused on the decline in the covid revenues. We knew this was going to decline as we moved into the endemic phase. We think that the market is massively overlooking the potential of its pipeline. And again, it comes back to this history of drug discovery has been throwing spaghetti at the wall, there's been no real predictability of success from one drug to the next. Whereas when you have messenger RNA which is programmable like software, we could potentially have a much higher probability of success from one drug to the next because it is the same platform, it's messenger RNA. So, the fact that it worked for Covid improves the chances that messenger RNA vaccines will work for CSV and RSV [Respiratory Syncytial Virus infection] and indeed, Moderna is releasing some vaccines on this very shortly. And they also have a pan-respiratory vaccine coming, which addresses flu, Covid and one of RSV and CSV. So we think the probability of success for the pipeline is much higher than we think the market is pricing in at the moment. And if the success in the cancer treatments continue to be positive, then this could be a significantly larger company in five years' time than it is today.

JY: Brilliant. Well, Ben, I think we could probably chat all day, but I better let you go. So, thank you very much for joining us today, that's been an absolutely fascinating discussion.

BJ: Well, thanks very much for having me and thank you for all your interest in the American fund and yeah, we're as excited as we've ever been about the long-term opportunity for growth in these 30-50 great growth companies in America.

SW: This US equity fund is one of the purest examples of the Baillie Gifford growth philosophy. It is run by a team of four co-managers who focus on the small number of companies that create exceptional returns. For more information on the Baillie Gifford American fund visit fundcalibre.com – and don't forget to subscribe to the Investing on the go podcast, available wherever you get your podcasts.