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QUARTERLY LETTER
TO OUR CO-INVESTORS

JULY 2023

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Dear co-investor,

These are good times for Horos because, at this moment, almost all of our more than 3,000 clients have positive returns with their investments in our funds and pension plan. A milestone that shows that our investment process continues to bear fruit, as is also reflected in the 236% and 185% total returns that this management team has delivered since 2012, or in annualized terms, 11.5% in the international strategy and 10.2% in the Iberian strategy, outperforming their benchmark indexes in both cases.[1] However, our satisfaction is even greater given that the upside potential of our portfolios remain at historically very high levels. In other words, if our analysis has been correct, the returns we can expect as investors in our vehicles in the coming years will also be very attractive.

The year 2023 is being characterized by a generalized rise in global equity markets. In this favorable environment, our funds have also performed well, up 8.5% in the case of Horos Value Internacional (versus 11.5% of its benchmark index) and 8.9% for Horos Value Iberia (versus 15.8%) in the first six months of the year. However, these gains in 2023 are particularly strong for the NASDAQ-100 technology index, with a return of around 45% and, more worryingly, driven by a very significant multiple expansion. We believe that these higher valuations are being caused, to a large extent, by the expectations that the investment community has placed on the future deployment of artificial intelligence. We will therefore devote this letter to explaining what is happening and what risks we see ahead for the sector and this market

Thank you for your confidence.

Yours sincerely,

Javier Ruiz, CFA
Chief Investment Officer
Horos Asset Management

[1] The data includes the performance of the portfolio management team in its previous professional period working for another asset management firm (from May 31, 2012 for the international strategy and September 30 for the Iberian strategy, until May 22, 2018 in both cases, when they joined Horos AM). Past performance is not a guarantee of future performance.

Executive summary

Some people get rich studying artificial intelligence. Me, I make money studying natural stupidity.
— Carl Icahn

Are the drums beating of a potential bubble in the technology sector? We cannot say for sure. However, there are reasons for concern in the stock market performance of some of the most important companies in this industry. The launch of ChatGPT, by the company **OpenAI**, for the deployment of generative artificial intelligence, has led to a (concerning) stock market boost in the sector and, more specifically, in the companies baptized as the "Magnificent Seven". From Horos, we do not intend to label this behavior as a bubble, nor to elucidate whether their valuations are justified or not. It is not our game. However, we think it is important to understand the dynamics behind this evolution, as well as the potential risks that the market seems to be ignoring now. This is the subject of this quarterly letter.

As usual, we will also discuss the most significant changes that we have made to our portfolios. Among others, we can highlight that Horos Value Internacional fully exited the testing, inspection and certification company **Applus Services**, following the takeover bid received by the Apollo group, and the car dealership company **Vertu Motors**. Meanwhile, we invested in the Italian financial company **Azimut Holding** and reinvested, only one quarter after our exit, in the data services company for the oil and gas industry, **TGS**. Horos Value Iberia also sold the entire stake in **Applus Services**, due to the aforementioned takeover bid, and did not add any new name to the portfolio.

Revenge of technology

Careful you must be when sensing the future Anakin. The fear of loss is a path to the dark side.

— Yoda ("Star Wars: Revenge of the Sith")

In contrast to a 2022 that we described at the time as an annus horribilis for the markets as a whole (see **here**), as well as a first quarter of 2023 in which the rapid rise in central bank interest rates was sweeping away part of the U.S. and European banking systems (see **here**), today we see returns that, in most of the world's main stock markets, defy the negativism that has been with us for more than a year and a half. Thus, without pretending to be exhaustive, at the time of writing, the YTD return of the Standard & Poor's 500 in the United States reaches 19%, while that of some of its European counterparts (German DAX, French CAC-40 or Spanish Ibex-35, for example) is around or above 15%. In Asia, the Japanese Nikkei index joins in the joy and is up 25% (15% in euros), in contrast to the Hong Kong Stock Exchange, which has fallen by approximately -5% over the period, possibly due to a Chinese economy that has not yet entirely digested its real estate crisis. It is therefore a year which, if it closes at these levels and with the exception of Hong Kong, could be considered very good in terms of returns.

However, this positive performance is not really what attracts our attention. After all, these are not exorbitant gains. What surprises (worries?) us is the performance of another type of assets linked, directly or indirectly, to technology. For instance, the world's main technology index, the NASDAQ-100, has rallied around 43% in 2023. **This is a rise that has not been seen for this sector since the dotcom bubble at the end of the 1990s.**[2] What is the reason for the tech outperformance? What justifies the strong rebound in the stock market and, in particular, in those assets most closely related to technology?

Of course, if we had bet at the beginning of the year on the return that the NASDAQ-100 could achieve by 2023, we would have lost all our money with absolute certainty. Fortunately, Alejandro, Miguel and I do not waste a single second trying to predict the future of the markets. We simply think that this is a futile exercise, so we focus all our efforts on investing in companies that, after a thorough analysis, meet our investment criteria. However, this does not prevent us from trying to understand the dynamics behind the performance and valuation of different assets, as we can draw valuable conclusions for our decision making.

[2] Bianco, J. [@biancoresearch]. (July 3, 2023). *The NASDAQ-100 is off to its best start to a year since at least 1999, when total return data began*. Twitter. https://twitter.com/biancoresearch/status/1675894182894764034

In the case at hand, while knowing that there are a myriad of other factors that may also be influencing, we think that there are two narratives that are driving the markets and, in particular, the NASDAQ-100 and other technology companies. The first is about the expectations around **interest rates**. We explained several quarters ago how high inflation had awakened central banks from what seemed to be an endless lethargy, forcing them to raise interest rates at an accelerated pace to try to prevent inflation from getting out of control, and how this rate hike affected the valuation of financial assets (see **here**). Well, for some months now, especially after the collapse of **Silicon Valley Bank** and other U.S. regional banks, as well as lower (but still high) inflation rates, the market seems to be betting on the end of interest rate hikes. **If rate hike expectations had been a relevant factor in the market downturn of 2022, we can safely assume that they are also playing some role in the broad-based gains of 2023.**

> *interest is really a force like gravity, that holds everything in place.*[3]

That said, central bankers do not sound very convinced that the hikes will end imminently, especially in Europe, where the hiking cycle started later. Their statements seem to indicate that there could still be some room for further hikes. In the words of Christine Lagarde, President of the European Central Bank:

> *(We are) not seeing enough tangible evidence of underlying inflation — particularly domestic prices — stabilising and moving down.*[4]

In fact, the performance of the bond market is striking, as it does not seem to be fully buying the idea of the end of the rate hike cycle. Thus, some of the sovereign bonds of the United States, Australia or the United Kingdom, for example, are showing a poor performance in 2023, offering yields today even higher than those of the worst moments of the past year.[5] However, I insist that Horos does not try to predict which scenario will finally materialize. It does not affect our way of investing. However, it helps us to better understand certain behaviors of listed companies and to elucidate whether their valuations may respond to fundamental reasons intrinsic to their business or otherwise.

The expectation (whether right or not) about the future evolution of interest rates could explain, as we have said, this generalized recovery in equity markets. However, to what extent can it justify the outstanding performance of the NASDAQ-100? As I said, there is another catalyst that is undoubtedly helping to

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[3] Somerset, M. (July 14, 2022). Edward Chancellor: why interest is the force that holds everything in place. *MoneyWeek*.
[4] Arnold, M. (July 28, 2023). Central bank chiefs warn interest rates will keep rising. *Financial Times*.
[5] Reynolds, G. (July 6, 2023). Australian Yields Spike to Join Global Push Toward 2022 Peaks. *Bloomberg*.

boost technology stocks: **artificial intelligence** and, more specifically, the launch of a chatbot that promises to revolutionize the world.

The innovator's dilemma

Google makes more money on Windows than all of Microsoft.
— Satya Nadella (Microsoft CEO)

November 30, 2022. On that day, the deployment of artificial intelligence experienced a turning point that will alter, forever, the paradigm of our communication with machines. Or maybe not and, in reality, we are just witnessing the beginning of a potential quantum leap in the productivity of many industries (with all that that entails). Or maybe that is not the case either, and all this flurry of announcements since then are nothing more than a passing fad that will end as soon as it came. Be that as it may, **the launch of ChatGPT by the company OpenAI** (co-founded by Sam Altman, current CEO, and Elon Musk in 2015) **has unleashed a myriad of reactions in technology companies around the world**, as well as in their share prices, impossible to ignore.[6] But what exactly is ChatGPT? Simplistically, it is a natural language processing tool (Large Language Model or LLM) powered by artificial intelligence and, as many will have already tested, capable of holding written conversations as if it were a human.[7] Not only that, this software beats traditional Internet search engines in many respects by generating more elaborate answers based on all the information it can access and process from the web.

Of course, if there is a major tech company that might be concerned about the emergence of ChatGPT, it is certainly **Alphabet**, whose major source of profits comes from the advertising revenue generated by its Google search engine. Especially when, in January this year, the software giant **Microsoft** (with a much larger market capitalization than **Alphabet**) confirmed that it was going to invest several billion dollars in **OpenAI** and implement this tool across its entire product range.[8] It could well be that, after many years of total irrelevance as far as search engines are concerned, **Microsoft** has finally found a loophole through which its Bing search engine can threaten Google's lucrative business. All of a sudden, one of the best businesses in the world seemed to be vulnerable and the specialized press did not cease, day in and day out, to speculate about its future. In fact, **Microsoft**'s own CEO, Satya Nadella, was quick to make an appearance in various media to

[6] Elon Musk left the company in 2018, allegedly due to disputes over its control and direction.
[7] Hao, K. (May 16, 2023). What Is ChatGPT? What to Know About the AI Chatbot. *The Wall Street Journal*.
[8] Waters, R. and Kinder, T. (January 16, 2023). Microsoft's $10bn bet on ChatGPT developer marks new era of AI. *Financial Times*; Dotan, T. (March 16, 2023). Microsoft Adds the Tech Behind ChatGPT to Its Business Software. *The Wall Street Journal*.

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announce that he was willing to stop making money with the current business model of his search engine Bing in order to have a chance to grab a slice of Google's cake.[9] To better understand Nadella's incentive to play this card, it is worth noting that, according to some estimates, **Alphabet**'s search engine has a global market share of 93%, compared to Bing's 3%.[10]

> *I hope that, with our innovation, they will definitely want to come out and show that they can dance. And I want people to know that we made them dance.*[11]

It soon became clear that it wasn't all media noise or an attempt by Nadella to justify his billion-dollar investment in ChatGPT. Shortly after the **OpenAI** tool was announced, it was leaked to the press that **Alphabet**'s management team had activated a "code red" internally.[12] Not only that, but they had also asked Larry Page and Sergey Brin, its charismatic and now "retired" founders, for advice on how to combat this potential threat.[13] All this deluge of news led to some downward pressure on **Alphabet**'s share price, fearing that the company was facing what is known as the **"innovator's dilemma"**. This term, coined by the late Clayton Christensen, refers to the inability of many leading companies in an industry to cope with the emergence of new disruptive innovations.[14] In essence, these new innovations do not initially appear to be such a serious threat, since they generally satisfy a smaller and less profitable market, which discourages a significant reaction from the incumbent company. However, the risk is that these new products or services start to gain traction and the leading company suffers paralysis, since adopting the new innovation would mean reducing its current margins and, in the most drastic cases, having to reinvent itself.

Although all the executives of large tech companies would claim that they are capable of taking this step of self-disruption, the reality is often very different. Let us think of **Microsoft** itself, the company that today intends to break with the traditional way of searching for information on the Internet. As its CEO often comments, the company has already faced the innovator's dilemma twice. First, when **Microsoft**, under the leadership of Steve Ballmer, failed to react to the arrival

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[9] Waters, R. and Murgia, M. (February 8, 2023). Microsoft targets Google's search dominance with AI-powered Bing. *Financial Times*.
[10] *Idem*.
[11] Bove, T. (February 10, 2023). Microsoft CEO Satya Nadella says he hopes Google is ready to compete when it comes to A.I. search: 'I want people to know that we made them dance'. *Fortune*.
[12] Grant, N. and Metz, C. (December 21, 2022). A New Chat Bot Is a 'Code Red' for Google's Search Business. *The New York Times*.
[13] Phelan, D. (January 23, 2023). How ChatGPT Suddenly Became Google's Code Red, Prompting Return Of Page And Brin. *Forbes*.
[14] Christensen, C. (2016). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (Management of Innovation and Change)*. Harvard Business Review Press.

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of smart mobile devices (on that occasion, it was **Google** that took advantage of **Microsoft**'s paralysis to take over the software market for mobile devices with Android) and, second, when Nadella did successfully bet the company's future on the development of the cloud.

> *We've gone through some very harsh ones. The last one we went through was obviously the mobile and cloud. We caught one, we missed one.*[15]

Or let us also remember the case of **Apple**, today the company with the highest market capitalization in the world, when Steve Jobs, its idolized CEO at the time and co-founder of the company, also gambled the future of the company with the launch of the revolutionary iPhone in 2007, a device that would end up destroying its flagship product of those years: the iPod music player.[16] It was undoubtedly a necessary sacrifice to avoid becoming the victim of the future disruption of smart mobile devices. As Jobs himself said:

> *If you don't cannibalize yourself, someone else will.*[17]

Where will **Alphabet** end up, on the side of the paranoid who manage to survive, as Andrew Grove (**Intel**'s CEO for many years) liked to say, or on the side of most companies, who fail to see that moment of reinvention needed to maintain their historic leadership position?[18] There are no simple answers to such an enigma.[19] On the one hand, there is the possibility that ChatGPT will not have the major impact it is supposed to have, so an overreaction could be not only unnecessary, but also very costly for **Alphabet**. On the other hand, it cannot be ruled out that we are indeed facing a paradigm shift and doing nothing will end up destroying the goose that lays the golden eggs that Google is today.

Alphabet's management team seems to prefer to assume the worst-case scenario and has been quick to react. Thus, in early February, Sundar Pichai (CEO of **Alphabet**) announced the launch of Bard A.I., an initial response to **OpenAI**'s (i.e., **Microsoft**'s) ChatGPT, which, weeks later, was updated with new capabilities.[20] Additionally, Pichai and his team have decided to restructure their artificial

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[15] Capoot, A. (February 7, 2023). Microsoft CEO Nadella calls A.I.-powered search biggest thing for company since cloud 15 years ago. *CNBC*.
[16] CNET (January 9, 2017). *Steve Jobs unveils the iPhone*. YouTube. https://www.youtube.com/watch?v=LOb3FJhDbYs
[17] Nielson, J. (May 21, 2014). 10 Innovation Lessons From Steve Jobs And Apple: Story of the iPhone [And The Theory of Integrative Innovation]. *IGNITIONframework*.
[18] Grove, A. (1998). *Only The Paranoid Survive*. Profile Books.
[19] Waters, R. and Murgia, M. (January 26, 2023). How will Google solve its AI conundrum? *Financial Times*.
[20] Elias, J. (February 6, 2023). Google announces Bard A.I. in response to ChatGPT. *CNBC*; D'Cruze, D. (July 13, 2023). Google Bard Big Update: The AI can now look at images, speak and even understand Hindi. *Business Today*.

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intelligence teams, merging their historic Google Brain division with **DeepMind**, the special London-based entity acquired by Google in 2014 and famous for the development of AphaGo (the program that overwhelmed the world's best players in the game of Go) or AphaFold (the program capable of predicting the three-dimensional structures of proteins). The new unit will be called Google DeepMind and will be headed by Demis Hassabis, the CEO and co-founder of **DeepMind**, as well as one of the world's leading figures in artificial intelligence.[21] Will these moves bear fruit? For now, Hassabis, usually cautious in his statements, has promised to be developing a tool, called Gemini, which will be superior to ChatGPT, by combining the classic technology of these models with the learning and problem-solving capabilities and techniques behind AlphaGo or AlphaFold.[22]

Ultimately, time will tell whether **Microsoft** will be able to leverage ChatGPT to attack Google or whether the measures being taken by **Alphabet** will be enough to counter this threat or even come out stronger. It also remains to be seen what impact this will have on the growth and profitability of both companies. However, there is much more to this story than the battle between these two tech giants. ChatGPT has sparked interest in artificial intelligence worldwide, and how!

The Magnificent Seven

Danger always strikes when everything seems fine.
— Kanbei ("Seven Samurai")

Amazon, **Meta Platforms** or **Apple** did not take long to announce the adoption of similar generative artificial intelligence tools in their products and services.[23] Other companies such as **Tesla** or **Twitter**, controlled by Elon Musk, have followed suit, announcing their intention to enter into some kind of collaboration similar to that of **Microsoft** with ChatGPT.[24] In fact, Elon Musk (who, remember, co-founded **OpenAI**) has also set up an artificial intelligence company called **xAI**, which will have a team made up of leading companies in the field, such as **DeepMind**, **OpenAI**, **Alphabet** and **Microsoft**. The company has set itself the laudable goal of "understanding the true nature of the universe."[25]

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[21] Murgia, M. (April 28, 2023). Google's DeepMind-Brain merger: tech giant regroups for AI battle. *Financial Times*.
[22] Knight, W. (June 26, 2023). Google DeepMind's CEO Says Its Next Algorithm Will Eclipse ChatGPT. *WIRED*.
[23] (May 26, 2023). Big tech and the pursuit of AI dominance. *The Economist*; Gurman, M. (July 19, 2023). Apple Tests 'Apple GPT,' Develops Generative AI Tools to Catch OpenAI. *Bloomberg*.
[24] Khan, A. (June 12, 2023). ChatGPT in Tesla: Here's what Elon Musk has to say. *YourStory*.
[25] Dang, S. and Hu, K. (July 15, 2023). Elon Musk says xAI will examine universe, work with Twitter and Tesla. *Reuters*.

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However, it is not only the usual suspects in the tech sector that have made announcements or highlighted the current and future use of artificial intelligence in their business. Suddenly, EVERYONE has artificial intelligence resources or claims to be ready to adopt it. I am not trying to exaggerate. In recent earnings presentations, U.S. companies across all industries have named artificial intelligence more than a thousand times.[26] This is certainly an unexpected turn of events. Until not so long ago, the word most repeated by company executives was ESG.[27] It is undoubtedly yet another demonstration of the overwhelming tyranny of 'short-termism' in the markets and in the decisions of most managers.

This artificial intelligence fever, coupled with the cost-saving measures announced in recent quarters by most technology giants, has created a bullish perfect storm only seen at times of extreme speculation. As I highlighted at the beginning of this quarterly letter, the NASDAQ-100 is experiencing its best start to the year since the dotcom bubble. The culprits? Seven companies that the investment community, always eager to find catchy labels, has dubbed the Magnificent Seven. **Alphabet** (+40% YTD), **Microsoft** (+50%), **Amazon** (+55%), **Apple** (+55%), **Meta Platforms** (+150%), **Tesla** (+170%) and, the new darling of the sector, **Nvidia** (+250%) are mainly behind this outstanding performance. To what extent have they contributed to the excellent performance of the overall equity markets? According to some analyses, the U.S. stock market would hardly be showing any gains in 2023 if it were not for these seven companies. In fact, we are currently seeing the lowest percentage of companies doing better than the Standard & Poors 500 index in decades in the U.S. stock market.[28] If history is any guide, this anomaly usually brings bad news. Not only that, nearly half of the gains of the MSCI All-Country World index of global equities would be due to the bullish explosion of these Magnificent Seven.[29]

We will not assess here whether this behavior is justified or not. Nor do I think that we should be so quick to use the term "bubble" to describe it. To tell the truth, we still own a small stake in **Alphabet** through Horos Value Internacional. However, we do see signs that invite caution. On the one hand, as a result of their strong rally, these companies have recently seen their weighting in the Standard & Poors 500 index exceed 28%, with only two names, **Apple** and **Microsoft**, accounting for more than 14.5% of the total—a level similar to the one they reached just before the 2022 stock market debacle.[30] Of course, one can also draw one's conclusions as to what

[26] Ryan, J. (May 5, 2023). AI Is the Hot Topic on Earnings Calls This Quarter. *Bloomberg*.
[27] Tracy (Chi) [@chigrl]. (June 18, 2023). *Number of companies citing "ESG" on earnings calls*. Twitter. https://twitter.com/chigrl/status/1670460674533736448?s=20
[28] (July 2023). *Bad breadth usually mean reverts*. BofA US Equity & Quant Strategy.
[29] (July 2023). *Rates, recessions and robots*. Rothschild&Co.
[30] (June 2023). *The Magnificent Seven Bubble*. BofA Global Investment Strategy.

implications this might have for the U.S. index. On the other hand, the expectations that the investment community has placed on these companies, as well as the pull effect that the prevailing narratives of the moment tend to generate, have led to massive capital inflows into the technology sector to the detriment of the other sectors. To prove this, just consider that in June this industry experienced the biggest-ever weekly inflow.[31] Will we live again a great divergence like the one we suffered in the years 2018-2020? (see here).

Unsurprisingly, this excellent performance has led to an expansion in the multiples at which these companies are trading. Thus, while the U.S. stock market as a whole is now valued at multiples similar to its 10-year average, tech companies are trading at much higher levels. Of course, the future growth of free cash flows generated by these companies will determine whether or not current valuations are justified. Indeed, companies such as **Nvidia** will benefit greatly from the anticipated explosion of artificial intelligence, as it is the manufacturer of the most in-demand chips for this market.

> *Generative AI is driving exponential growth in compute requirements and a fast transition to Nvidia accelerated computing.*[32]

However, does its future growth justify a valuation of close to 50x its sales or more than 200x its profits? We do not know. It is not our game. But it is clear to us that talking about **Nvidia** inevitably leads us to ask uncomfortable questions on many levels. For example, to what extent is it a risk that the largest chip manufacturer for **Nvidia** (the company designs the chips) and the rest of the companies in the sector is **TSMC**, the most important company in the country that has been of most geopolitical concern for years (Taiwan)? Or, also, how might the power struggle between the U.S. and China affect the entire technology industry and the potential deployment of artificial intelligence? Obviously, we have no answer to any of these questions, but they do make us think that there is an excessive complacency in the valuation of some of these companies.

> *I'll be totally honest that I've absolutely no idea how to value Nvidia.*[33]

Of course, when mentioning China, one may wonder how this country is reacting to the recent boom in artificial intelligence. As investors in some of its leading companies, it is worthwhile to analyze it in a few lines.

[31] (June 2, 2023). Tech shares see biggest-ever weekly inflow on AI boom, Bank of America says. *Reuters*.
[32] Starks, R. (June 21, 2023). How Nvidia Is Using Generative AI to Accelerate Its Growth. *The Motley Fool*.
[33] Daily Chartbook [@dailychartbook]. (June 28, 2023). *"I'll be totally honest that I've absolutely no idea how to value Nvidia." Jim Reid, Deutsche Bank*. Twitter. https://twitter.com/dailychartbook/status/1674121189969612802

The next Great War?

Complexity and severity of national security problems faced by our country have increased dramatically.
— Xi Jinping

We already had the opportunity to point out years ago, when we presented our investment thesis on **Tencent Holdings** ("Tencent") through the South African holding company **Naspers**, the role that China wanted to play in the field of artificial intelligence globally (see **here**). As a quick recap, the Asian giant set itself the goal in 2017 to be the world's largest power by 2030. Is it succeeding in achieving this ambitious plan? While there is still a long way to go until the end of this decade, for now, China has reasons for optimism, but also significant (in some cases, self-inflicted) dark clouds on the horizon.

Indeed, Chinese tech companies have long since stopped copying the products and businesses of U.S. companies, and have earned their own place as innovative entities and even as benchmarks for Western technology businesses. Therefore, it is not surprising that companies like **Baidu** (of which we are shareholders), with business lines similar to those of **Alphabet**, announced in March the launch of Ernie Bot, its particular version of ChatGPT, which it had been working on for years. After a disappointing debut, **Baidu** has made several updates and dares to claim that its chatbot is superior to ChatGPT in several key aspects.[34] On the other hand, countless other companies, including **Alibaba Group**, **Tencent**, **JD.com**, **NetEase**, **Qihoo 360** or, more recently, **Trip.com**, have also announced the deployment of this type of generative artificial intelligence tools.[35]

However, in the face of this artificial intelligence boom, China is encountering three major obstacles in its quest to become the world's leading power in the area. On the one hand, the country is still immersed in a real estate crisis that is difficult to digest, which has led to a slowdown in enthusiasm about its economic recovery after the end of the 'zero-COVID' policy implemented for so long by Xi Jinping's government. The poor economic situation may hinder the raising of the capital necessary for the large deployment they intend to carry out. This has led very relevant personalities, such as Xia Zuoquan (billionaire co-founder of the automobile company **BYD**), to state that the current (relative) underdevelopment

[34] Kharpal, A. (June 27, 2023). China's Baidu claims its Ernie Bot beats ChatGPT on key tests as A.I. race heats up. *CNBC*.
[35] Jiang, B., Qu, T. and Cao, A. (July 7, 2023). China's frenzy over ChatGPT-style services on full display at AI show despite Beijing's caution. *South China Morning Post*; Jiang, B. (July 18, 2023). China travel company Trip.com Group creates own AI model, Wendao, to push artificial intelligence as a tool for accurate voyage data. *South China Morning Post*.

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of Chinese capital markets, as well as its great dependence on software and hardware from the United States, may be a stone in the road difficult to overcome.[36]

Precisely, the relationship with the United States is another factor that may play a significant role in this new "space race." As Chris Miller explains in his fabulous book **Chip War**, the key piece in this global battle for technological supremacy may be, against all odds, a tangible product: the **chip**.[37] Why? Because, due to various geopolitical interests and twists of fate that have come together over the last few decades, the value chain of the chip industry is highly concentrated, with many parts of it operating as a quasi-monopoly. Specifically, as mentioned in the previous section, the world's largest chip manufacturer is called **TSMC** (Taiwan Semiconductor Manufacturing Company). This entity is responsible for more than 35% of the world's production of logic chips (CPUs or GPUs, for example). These chips are literally the brains of computers, mobile phones or data centers, among other devices that need them to maintain or increase their compute capacity.[38] The semiconductor bottlenecks experienced in recent years in sectors such as the automotive industry are a small sample of what it would mean if **TSMC** stopped manufacturing chips designed by companies such as **Nvidia**, **Apple** or **AMD**, to name a few of the most important names in the industry. This undisputed leadership has led **TSMC** to be, at times, the company with the largest market capitalization in Asia.[39] However, it has also been the focus of constant rumors due to its geographical location, as analysts have reminded the management team more than once:

> *Are your customers concerned when COVID happened in Taiwan, when China from time to time threatened a war against Taiwan? And are your customers concerned that they are so reliant on you?* [40]

China has, for decades, claimed Taiwan as its own, so the risk of an invasion or attempted takeover could prove fatal at all levels. However, this risk has existed for a long time. So, what might trigger some kind of move on China's part? Certainly, the deterioration of **trade relations between the United States and China** in recent years may play a determining role. The tariff wars initiated by former U.S. President Donald Trump have been increasingly focused on the technology sector. In particular, the discovery of the espionage capabilities of the infrastructures and

[36] Shen, X. (July 18, 2023). Billionaire co-founder of BYD uncertain about China's ability to create breakthrough tech on par with ChatGPT. *South China Morning Post*.
[37] Miller, C. (2022). *Chip War: The Fight for the World's Most Critical Technology*. Simon & Schuster Ltd.
[38] *Idem*.
[39] *Idem*.
[40] (July 15, 2021). *Taiwan Semiconductor Manufacturing Company Limited's (TSM) CEO C. C. Wei on Q2 2021 Results - Earnings Call Transcript*. Seeking Alpha.

products sold by the Chinese telecommunications giant **Huawei Technologies** ("Huawei") acted as a catalyst for the United States first and, subsequently, a large number of Western countries, to impose restrictions or, directly, to prohibit any type of commercial relationship with **Huawei.**[41] The sanctions against **Huawei** were the first of many that were extended to the chip industry as a whole, with the aim of limiting the sale of advanced technology to China, fearing the increase of its capabilities in the development of artificial intelligence, quantum computing and ballistic missiles, among others.[42]

In anticipation of this possible scenario, China has been trying for years to boost its domestic semiconductor manufacturing and design capabilities, supporting through subsidies and favorable laws companies such as **SMIC** (Semiconductor Manufacturing International Corp.), **HiSilicon** (a subsidiary of **Huawei**), **YMTC** (Yangtze Memory Technologies Corp.) or **Biren Intelligent Technology**, the Chinese alternative to **Nvidia**, which plans to go public on the Hong Kong Stock Exchange in 2023.[43] It is also promoting the creation of several chip manufacturing technology centers, such as those already existing in the cities of Nanjing, Wuxi and Suzhou in the province of Jiangsu.[44] Other cities, such as Shenzhen, Hefei, Hangzhou and Shanghai, are taking steps to boost the development of this industry locally.[45] However, the industry's value chain is so dependent and concentrated at the global level that it has not taken long for problems to appear. For example, some companies in the country are finding it extremely difficult to source the lithography machinery needed for chip manufacturing.[46]

In response to this, just as has happened with the sanctions on Russia in the oil market, China has managed to trade outside the usual channels, sourcing chips manufactured by **Nvidia** or **AMD**.[47] Not only that, the U.S. companies themselves are taking steps to be able to continue supplying this Asian market, which is so important to them.[48] However, if the sanctions are not reversed, it is logical to conclude that China will end up suffering a strong impact on its technological development, which brings us, once again, to **TSMC**. In fact, some relevant

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[41] Keane, S. (September 30, 2021). Huawei ban timeline: Detained CFO makes deal with US Justice Department. *CNET*.
[42] Hao, K. and Brinson, J. R. (October 23, 2022). How U.S. Uses Supply Chain Sway to Throttle China's Chip Development. *The Wall Street Journal*.
[43] Cao, D. (July 18, 2023). China AI Chip Firm Targeting Nvidia Seeks HK IPO in 2023. *Bloomberg*.
[44] Cao, A. (January 12, 2023). Tech war: China's Jiangsu province offers US$74 million a year to bolster vital semiconductor industry to counter US sanctions blow. *South China Morning Post*.
[45] *Idem*.
[46] Kubota, Y. (July 4, 2023). China's Chip Industry Braces for Further Sanctions With Concerns and Defiance. *The Wall Street Journal*.
[47] Pan, C. and Deng, I. (June 27, 2023). Tech war: strong demand in China for advanced chips used on AI projects creates growing market for smuggled Nvidia GPUs, despite US ban. *South China Morning Post*.
[48] Butts, D. (July 18, 2023). American chip companies need access to China and want to avoid 'ambiguous' sanctions, US chip trade group says. *South China Morning Post*.

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members of the Chinese Communist Party have made it very clear how they should act if the situation does not change:

> *We must recover Taiwan, especially in the reconstruction of the industrial chain and supply chain. We must seize TSMC, a company that originally belonged to China.*[49]

Do you have a better idea now of why China's invasion of Taiwan, or "only" taking control of TSMC, could be so destabilizing on a global level? And of its much more devastating impact on companies so dependent on **TSMC**, such as **Nvidia** or **Apple**? What probability is the market pricing in this risk right now, when the valuations of these companies require massive future growth in their earnings to be justified?

In addition to China's current economic situation and its tense relationship with the United States, there is a third factor that could self-sabotage the development of generative artificial intelligence in this country: **censorship**. In a country where the Chinese Communist Party's control over public opinion is total, there is a growing fear that generative artificial intelligence may escape its domain. It is not the same to control the information published on the internet or on social media, as it is to control the "thought" expressed by a tool like ChatGPT.

> *A chatbot that produces racist content or threatens to stalk a user makes for an embarrassing story in the United States; a chatbot that implies Taiwan is an independent country or says Tiananmen Square was a massacre can bring down the wrath of the CCP on its parent company.*[50]

For this reason, they have started to move fast and announced a series of regulations to control these chatbots that will come into force on August 15.[51] Time will tell how effective these measures will be. However, without assessing the true spirit of this Chinese regulation, one cannot help but wonder to what extent it may be an existential risk for humanity to allow artificial intelligence to continue to evolve and improve exponentially.

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[49] Clarke, P. (June 7, 2022). China must seize TSMC if the US tightens sanctions, says economist. *eeNewsANALOG*.
[50] Welch, N. and Schneider, J. (March 3, 2023). China's Censors Are Afraid of What Chatbots Might Say. *Foreign Policy*.
[51] (July 17, 2023). China's Generative AI Regulations Go Live Next Month. *PYMNTS*.

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The point of no return?

What I lose the most sleep over is the hypothetical idea that we already have done something really bad by launching ChatGPT.
— Sam Altman

As is always the case with such uncertain and high-impact topics, there are two opposing schools of thought on the future capabilities of artificial intelligence and, in particular, on what we should do about it. Undoubtedly, on the side of the more optimistic, we have for several decades now Ray Kurzweil, **Google**'s director of engineering since 2012. Kurzweil has been explaining for many years why technology responds to the law of accelerated returns in its development and assures that artificial intelligence will be able to pass the famous Turing Test (we will not be able to distinguish whether we are talking to a machine or a human) before 2030. Not only that, but he also believes that artificial intelligence will reach the singularity before 2050.[52] What is the singularity? Among other milestones, it will be the moment when artificial intelligence will be self-aware—Kurzweil even argues that we will merge with machines to overcome the limitations of our matter, in addition to exponentially increasing our intelligence.

Precisely, this is the point that worries most people about the development we are experiencing in artificial intelligence. Of course, the launch of ChatGPT and other similar tools has brought the debate back into focus: will artificial intelligence be able to continue to evolve beyond our control? Scientists of the stature of Stephen Hawking warned a decade ago that "the development of full artificial intelligence could spell the end of the human race."[53]

Indeed, these fears have gradually spread. The White House, for example, is currently hosting executives from the country's leading artificial intelligence companies to obtain assurances of responsible development. Thus, several entities have committed to carry out various internal and external tests before the launch of any product related to this field.[54] As with the Chinese censorship measures, time will tell how much the tide can be stemmed. Will we be approaching a scenario in which the human race ends up merging with artificial intelligence and machines? Will we end up in a world in which artificial intelligence decides that humanity is a problem, as Hollywood reminds us with the *Terminator* and *Matrix* sagas or the movies *I, Robot* and the wonderful *Ex Machina*? Or are all these mere

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[52] Diamandis, P. H. (January 26, 2015). Ray Kurzweil's Mind-Boggling Predictions for the Next 25 Years. *Singularity Hub*.
[53] (December 2, 2014). Stephen Hawking warns artificial intelligence could end mankind. *BBC News*.
[54] Fedor, L. (July 21, 2023). Tech companies to make AI safety and transparency pledges to White House. *Financial Times*.

ramblings that will never come close to materializing? For the time being, Sam Altman, precisely the man most responsible for ChatGPT, said in an interview:

> *The bad case—and I think this is important to say—is, like, lights-out for all of us.*[55]

Let us hope we have an *off* button, in case we ever approach that point of no return.

Main changes to our portfolios

Every investment fashion, when carried to excess, has led to a painful correction.

— Bill Ruane

The following is a summary of the most significant changes to our funds' portfolios:

HOROS VALUE INTERNACIONAL
Stake decreases & exits:

TECHNOLOGY PLATFORMS (10%)
Holdings discussed: Alphabet (0.9%)

As we have already highlighted throughout this quarterly letter, the technology sector has had an outstanding rebound so far in 2023 and, although **Alphabet** has been among the least benefited by the current narratives of artificial intelligence, efficiency and interest rate expectations, it has had a great performance. True to our discipline, we have been trimming our stake in this excellent company given its lower upside potential.

OTHER
Holdings discussed: Applus Services (exited) and Vertu Motors (exited)

This quarter, **Applus Services** ("Applus") and **Vertu Motors** were divested. In the case of **Applus**, our exit was just one quarter after it was added to the Horos Value

[55] Shin, R. (June 8, 2023). Sam Altman, the man behind ChatGPT, is increasingly alarmed about what he unleashed. Here are 15 quotes charting his descent into sleepless panic. *Fortune*.

Internacional portfolio. **Applus**' share price has done very well, as a result of the leak to the press (with subsequent confirmation by the company) of the buying interest of several private equity firms. This interest materialized with the takeover bid launched by the **Apollo** group. The price offered is 9.5 euros (higher if we include dividends). Although we believe that there is still some upside, we sold our stake in the company, given its lower relative attractiveness compared to other alternatives that we added to the fund during the quarter.

Meanwhile, the excellent performance of **Vertu Motors'** British car dealership business has driven its share price up to the highs it reached last year. Its lower margin of safety compared to other alternatives in the portfolio, such as its peer **Pendragon**, led us to sell our stake.

Stake increases & new stakes:

FINANCIALS (16%)

Holdings discussed: Azimut Holding (2.0%)

Azimut Holding ("Azimut") is an Italian financial group with 85 billion in assets under management, which are distributed among four business segments: traditional investment funds, financial advisory and wealth management, life insurance and private market products. **Azimut** distributes its products to more than 200,000 direct clients in Italy, leveraging its nearly 2,000 advisors. In addition, the management team has pursued a very dynamic inorganic growth strategy outside Italy in recent years, acquiring or entering into agreements with financial institutions in countries such as Australia, the United States and Brazil, to the point where these markets now account for around 45% of the group's assets under management. One of the most attractive aspects of this investment is the total alignment of interests between management and employees and the rest of the shareholders. Timone Fiduciaria, the vehicle through which the executives and advisors are shareholders of **Azimut**, owns 21% of the company's shares. Furthermore, the current valuation of the company is very attractive to us, as it trades at a P/E 2025e of around 4x and a 6% dividend yield at current prices.

COMMODITIES (15%)

Holdings discussed: TGS (1.1%)

TGS has experienced the opposite movement to that of **Applus** this quarter, having exited our portfolios a few months ago, only to re-enter following the sharp decline in its share price. Fears of a slowdown in oil demand, due to the weakness of the Chinese economy or central banks' tightening policies, among other factors, have had a negative impact on the price of this commodity and on the market performance of the oil and gas companies. However, we believe that **TGS** and the seismic services sector is at the beginning of a significant capex cycle, which will end up materializing in higher cash flows for this company. This is why, taking advantage of its more attractive valuation after the stock correction, we reinitiated (for the sixth time in our professional career!) a stake in this excellently managed company.

OTHER

Holdings discussed: Talgo (3.6%), AmRest Holdings (2.8%), Meliá Hotels International (2.6%) and Elecnor (2.4%)

Let me reaffirm a few lines I wrote in the last quarterly letter:

We have long argued that the Horos Value Internacional portfolio will always reflect the best investment ideas we find in the world and, as we also emphasize, this includes the Spanish market. A market that we know very well and that, for many reasons, is today off the radar of investors. When this happens, it usually generates great investment opportunities (Hong Kong would be an even more extreme case).

Well, the situation has not changed one iota, so we continued to increase our weighting in some of the Spanish companies where we see the greatest discrepancy between value and price, such as **Talgo** (possibly at its best moment in terms of its business since its IPO several years ago), **AmRest Holdings** (with the Russian uncertainty now behind it and its operating margins improving), **Meliá Hotels International** (with the pandemic completely behind it) and **Elecnor** (the possible sale of Enerfín could act as a catalyst to uncover the huge discount at which the group is trading compared to the value of its various divisions).

HOROS VALUE IBERIA

Stake decreases & exits:

OTHER

Holdings discussed: Applus Services (exited)

As in the case of Horos Value Internacional, we fully exited our stake in the testing, inspection and certification company **Applus Services**, following the takeover bid received by the Apollo group.

Stake increases & new stakes:

OTHER

Holdings discussed: Meliá Hotels International (3.9%)

Meliá Hotels International ("Meliá") was the company to which we increased our exposure the most during the quarter. The Spanish hotel company has continued its recovery in occupancies, following the end of the worldwide restrictions due to the coronavirus pandemic. This has allowed **Meliá** to report revenues in the first quarter of 2023 even higher than in the same period of 2019, in addition to reducing its debt, due to the recovery in cash generation of the business and the sale of hotel assets. However, despite all this, the market continues to heavily undervalue **Meliá** on a reasonable valuation of its assets and its hotel management business, so we took advantage of the inefficiency to increase our stake.

No new names were added to the portfolio in the period.

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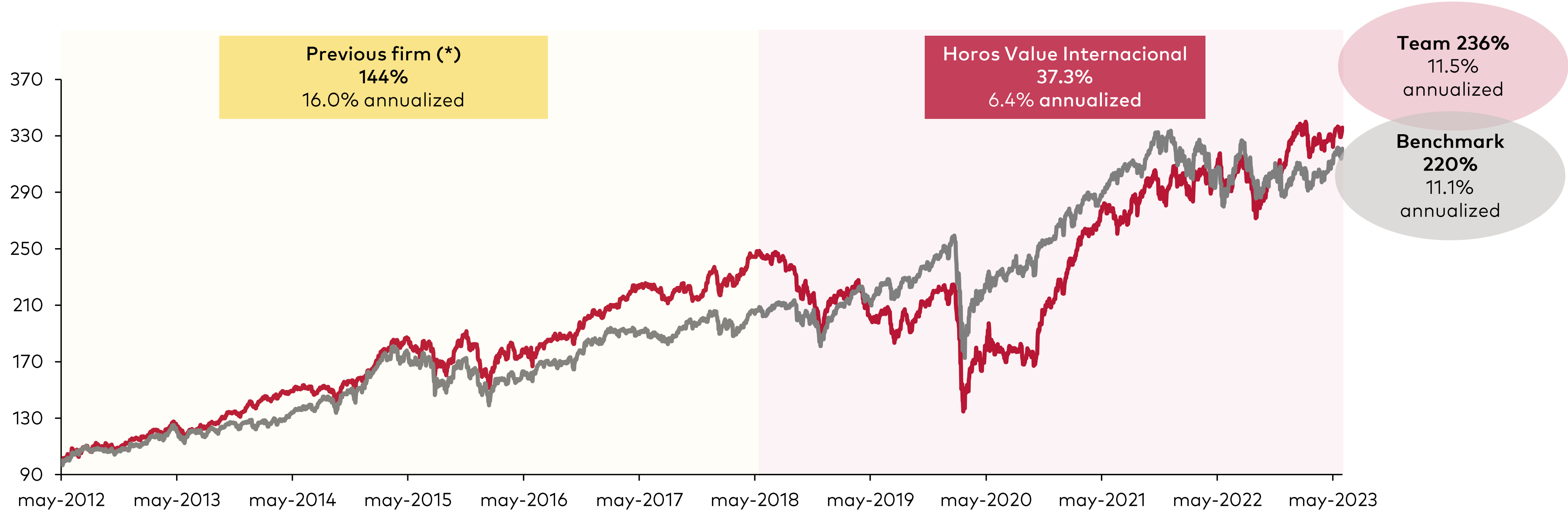
Returns

Historical returns of the management team in the International Strategy



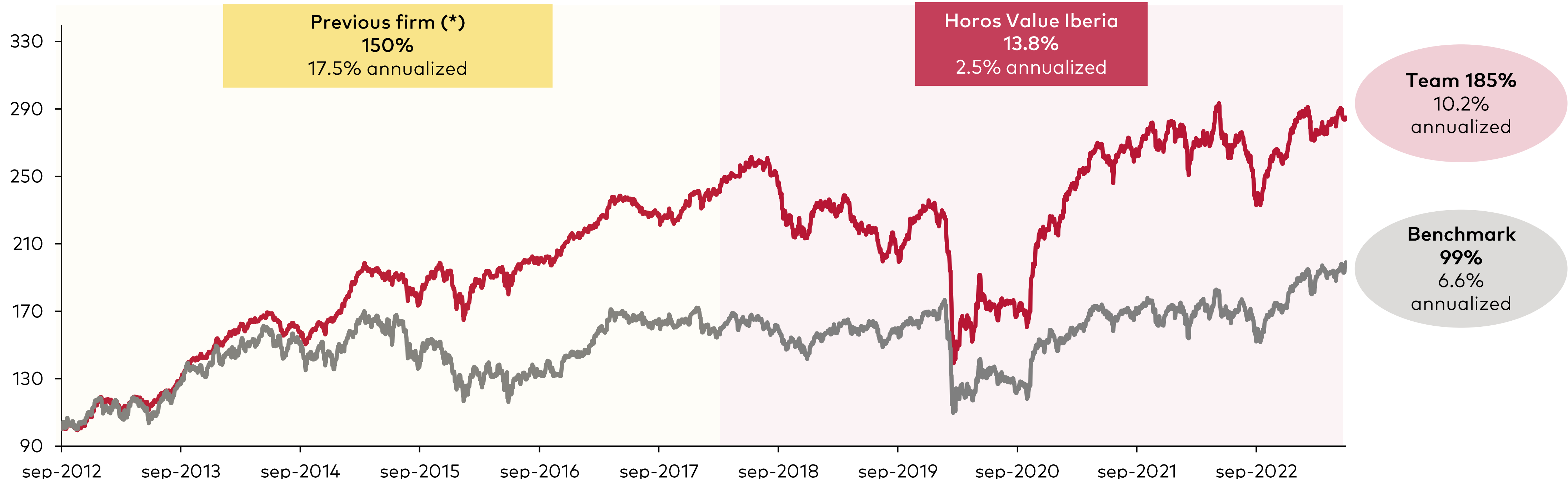
Data cover the period between the 30th May 2012 and 30st June 2023.

*Previous firm returns correspond to the management team performance achieved in their previous profesional stage, where they worked for a different asset management firm. This "previous stage" corresponds to the period between the 30th May 2012 and 22nd May 2018.

Past performance is no guarantee of future performance. The Fund's investments are subject to market fluctuations and other risks inherent to investing in securities, so the acquisition of the Fund and the returns obtained may vary both upwards and downwards and an investor may not recoup the amount initially invested. Decisions to invest or divest in the Fund must be made by the investor in accordance with the legal documents at all times, and in particular on the basis of the Regulations and the Fundamental Data for the Investor (DFI) of each Fund, accompanied, where appropriate, by the Annual Report and the last quarterly Report. All this information, and any others, will be available to you at the headquarters of the Manager and through the website: www.horosam.com

Returns

Historical returns of the management team in the Iberian Strategy



Data cover the period between the 30th September 2012 and 30st June 2023.

*Previous firm returns correspond to the management team performance achieved in their previous professional stage, where they worked for a different asset management firm. This "previous stage" corresponds to the period between the 30th September 2012 and 22nd May 2018.

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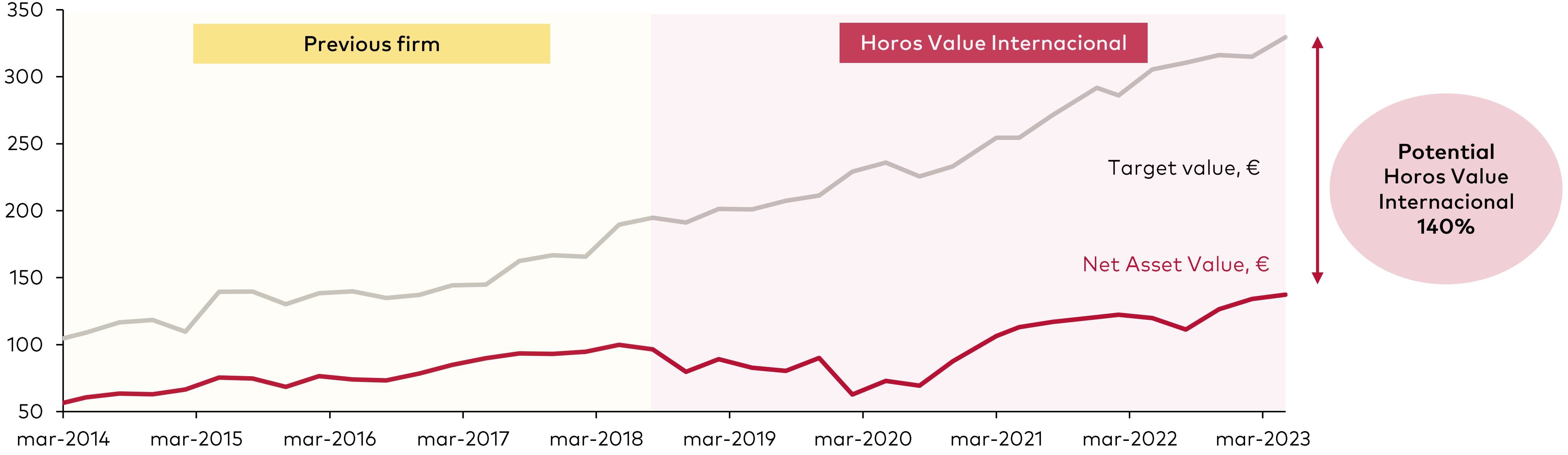
Upside Potential

Target value vs. Net Asset Value of the Management Team



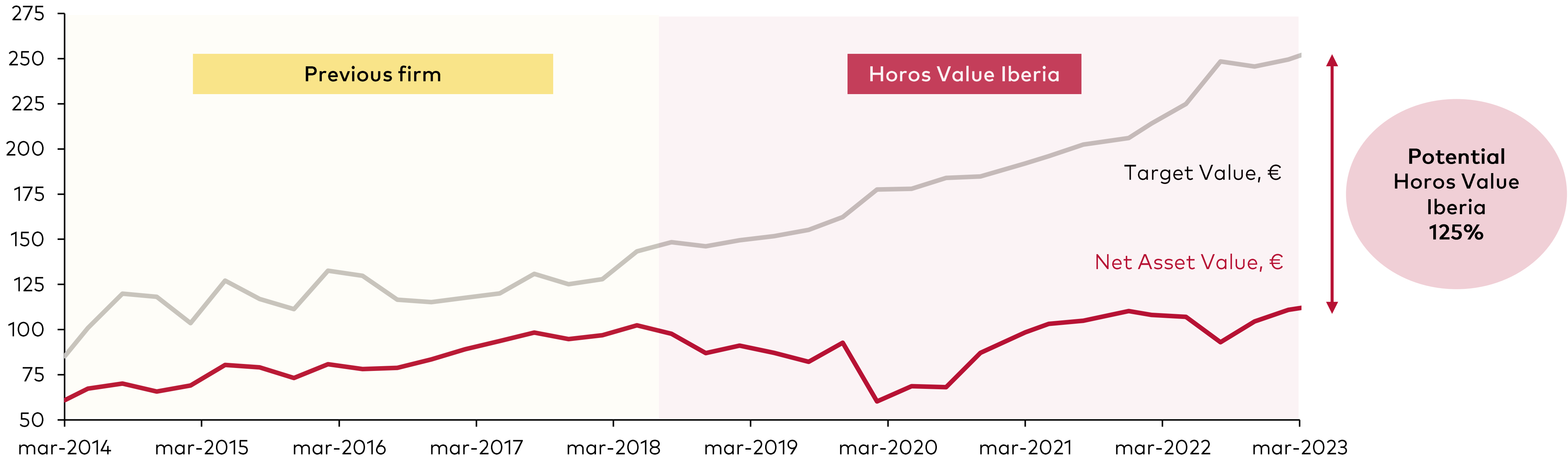
Data cover the period between the 31st March 2014 and the 30st June 2023.

Previous firm data correspond to the period when the management team worked for a different asset management firm. For the NAV calculation, this previous firm performance has been used, and as a base for retrieving the simulated NAV within this period, the NAV of Horos Value Internacional at 23rd May 2018, the day when the management team joins the project.

For the target value calculation, we perform an individual assessment of each Investment included in the portfolio. Specifically, we make a three-year estimate of the value of each company in which we invest. To do this we calculate, in a conservative way, the future cash flows we think the business will generate over the next three years in order to estimate the company future value (understood as market capitalization adjusted for net financial position). Subsequently, with this data we estimate the EV/FCF multiple (future value of the company divided by its normalised free cash flow, adjusting the latter for extraordinary items) at which each company would be priced. Finally, as a result of the qualitative analysis we do on each company, we assign an exit multiple to each investment (how much we think each business is worth trading at) and compare it with the previous figure to estimate the potential or attractiveness of the investment. Occasionally, given the nature of the investments, other generally accepted valuation methods would be used such as sum of parts, discounted cash flow or price to book value multiples.

Upside Potential

Target value vs. Net Asset Value of the Management Team



Data cover the period between the 31st March 2014 and the 30st June 2023.

Previous firm data correspond to the period when the management team worked for a different asset management firm. For the NAV calculation, this previous firm performance has been used, and as a base for retrieving the simulated NAV within this period, the NAV of Horos Value Iberia at 23rd May 2018, the day when the management team joins the project.

For the target value calculation, we perform an individual assessment of each Investment included in the portfolio. Specifically, we make a three-year estimate of the value of each company in which we invest. To do this we calculate, in a conservative way, the future cash flows we think the business will generate over the next three years in order to estimate the company future value (understood as market capitalization adjusted for net financial position). Subsequently, with this data we estimate the EV/FCF multiple (future value of the company divided by its normalised free cash flow, adjusting the latter for extraordinary items) at which each company would be priced. Finally, as a result of the qualitative analysis we do on each company, we assign an exit multiple to each investment (how much we think each business is worth trading at) and compare it with the previous figure to estimate the potential or attractiveness of the investment. Occasionally, given the nature of the investments, other generally accepted valuation methods would be used such as sum of parts, discounted cash flow or price to book value multiples.

Top 10 Holdings
Horos Value Internacional

Holding	%	Theme
Naspers	4.2%	TMT
Mistras Group	4.2%	Commodities
ALD Automotive	4.1%	Financial
Semapa	4.0%	Holding
Aercap Holdings	3.8%	Financial
Fairfax India	3.8%	Holding
Talgo	3.7%	Industrial
Sung Hung Kai and Co	3.6%	Asia
Catalana Occidente	3.2%	Financial
Gestamp Automocion	3.2%	Industrial

Top 10 Holdings
Horos Value Iberia

Holding	%	Theme
Semapa	6.5%	Holding
Catalana Occidente	6.3%	Financial
Horos Value Internacional	6.0%	Others
Gestamp	5.3%	Industrial
Merlin Properties	5.0%	Real estate and construction
Iberpapel	4.9%	Industrial
Elecnor	4.8%	Engineering
Talgo	4.5%	Engineering
Amrest Holdings	4.1%	Defensive consumer
Meliá Hoteles	4.0%	Consumer cyclicals