aster capital

3rd Letter to Investors

July 2023

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Dear Investor,

In this third letter, we will begin with an evaluation of the portfolio in the first half of 2023 (1H 2023) and then proceed with a discussion on Artificial Intelligence (AI), which was largely based on a series of 4 interviews called AI360 that we conducted with industry experts. Finally, we will explore how we have been incorporating this topic into our analyses.

Following the notable surge in global cost of capital in 2022, we witnessed a generally more favorable market condition throughout the first half of 2023.

In the United States, even though short-term interest rates continued to rise, the 10-year Treasury yield actually declined slightly, from 3.88% to 3.84%. This shift in long-term interest rate trend, combined with the 19.4% decline in the S&P 500 in 2022, set the stage for better returns in the first half of the year.

In Brazil, the landscape in 2023 was also better compared to 2022. Following the election, though there was a lot of noise surrounding our country's fiscal framework, progress was made apparently without disruptions. This positively impacted the yield curve, which, by the end of the semester, signaled not only that the easing cycle is near but also priced the Selic rate to 8.75% at the end of the cycle - a substantial 500bps reduction from its current 13.75%.

Brazilian equities also experienced a better performance in the first half of 2023. Throughout 2021 and 2022, the Brazilian market was much worse than the Ibovespa index might have suggested. This was largely due to Petrobras and Vale do Rio Doce, which together constituted an average of 25% of the index over this period and significantly outperformed the rest of the index.

	IBOV	IBOV ex. PETR & VALE
2021	(11.9%)	(14.7%)
2022	4.7%	(4.1%)
2021 + 2022	(7.8%)	(18.2%)
1H 2023	7.6%	8.2%

We envision our portfolio as a non-operational holding company with some of Brazil's best businesses, designed to seek solid risk-adjusted returns. Once again, this holding company delivered a strong operational performance, which was, this time around, followed by a good stock performance. Over the period, the Aster FIC FIA was up by 18.5%:

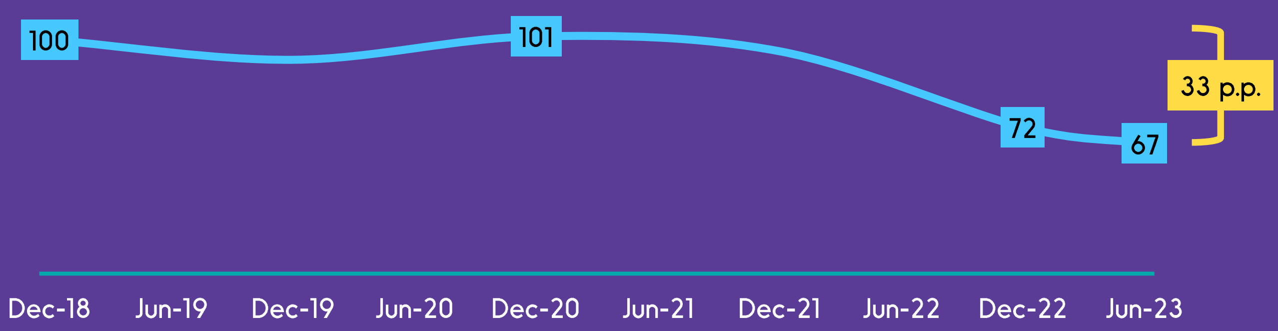
Weighted Average	1Q23 LTM[1] vs 1Q22 LTM[1]
Revenue Growth	28%
EBITDA Growth	36%
Net Income Growth	27%
ROIC	17%

1. Last-twelve months.

Assessing and breaking down the fluctuation of asset prices can be a tricky and imperfect task. When it comes to companies, we can break this assessment into two primary elements: the future cash flows expected to be generated by these enterprises, and the required cost of capital used to discount those cash flows to their present value. A more simplified way of conducting this evaluation is to break down the movement between (1) the performance of earnings and (2) the expansion or contraction of valuation multiples.

Throughout 2021 and 2022, the companies within our portfolio experienced a substantial contraction of multiples, which exceeded what the fluctuations in interest rates could justify. In contrast, during the first half of 2023, we noticed a reversion of the trend, and there was a 6% expansion in the portfolio's weighted average P/E ratio.[2] Nonetheless, this expansion underperformed the appreciation of the government bond basket[3] we use to mimic the average duration of the companies within our portfolio.

Multiples / Bond Basket Performance (100 = 2018FY)



In other words, despite some expansion in our portfolio multiples, we understand that, so far, we are in the third consecutive year in which multiples underperform the basket of government bonds of similar duration.

Multiples expanded much less than the average performance of portfolio stocks due to the carry-over effect of earnings growth, which accounts for nearly all the remaining impact on returns. This effect is defined by the difference between our expected earnings for portfolio companies over the next 12 months as of June 30, 2023, and the expectations for the next 12 months on December 31, 2022.

Another potential factor determining returns could be earnings revisions. However, our portfolio's average revision hovered around zero (slightly positive). So, in fact, we experienced a period where the carry-over effect of earnings growth was the major driver of stock performance, representing 70% of our portfolio's performance in 1H 2023.

Another important aspect of this portfolio review in 1H 2023 are the positions that had the largest attributions.

2. Price to earnings ratio, in which earnings is estimated from the current day to twelve months forward.
3. Average between 2035 and 2045 maturity government Inflation linked bonds.

Attributions

Assaí, Energisa, and Eletrobras represented the 3 worst attributions during this period, totaling -208 bps of result. Among these positions, only Eletrobras remains in the portfolio.

Assaí

We have long observed and admired Assaí's operations. The business has robust growth, stable and high ROIC, and provides undeniable value to its customers. However, due to the questionable corporate governance track record of its controlling shareholder, Assaí was not even considered a viable investment option for us. A significant shift occurred at the close of 2022 when changes were made to the company's bylaws, seemingly initiating a period of corporate governance enhancement through restrictions on capital allocations involving related parties. This adjustment prompted a change in our perspective, leading us to invest.

The first Annual Shareholders Meeting after this change in bylaws was held in April 2023. We perceived this as a significant opportunity for the company to show its commitment to enhancing corporate governance. However, we think that the company did not fully seize this opportunity. A key issue, the compensation proposal, was even rejected by shareholders. Given that the company's engagement in this journey played a critical role in our decision to invest and this event prompted us to question the rate of change, we decided to divest and monitor the company's progress from the sidelines.

Energisa

We have a long-standing relationship with Energisa. We see the company, alongside Equatorial, as part of a distinguished group of growth platforms in the electricity sector that combine capital allocation skills and execution of acquired assets. We have not identified any deterioration in the company's business, and an investment in the near future should not come as a surprise. However, at a certain point during 1H 2023, we recognized a more attractive risk-adjusted return in Equatorial and decided to concentrate our exposure to energy distributors in that company.

Eletrobras

We initiated our investment in Eletrobras during its privatization. On one hand, the appointment of a capable CEO and a rapid implementation of cost and expense optimization measures reinforced our investment thesis. On the other hand, the long-term energy price outlook emerged as a concerning factor. All in, we still view the investment fundamentals in a positive light.

A growing concern regarding Eletrobras is the mounting political noise surrounding the company, which includes inquiries about the legality of its privatization process. While we are confident about the robustness of the process and believe there is a high likelihood that we will, in hindsight, see this phase as merely noise, we are wary about the potential impact of continuous government intervention attempts on the business or the company's market multiples. Consequently, we remain invested, but reduced our exposure in what could potentially be the most relevant turnaround in the history of Brazil's electric sector.

On the other hand, Equatorial, Localiza, and Banco BTG Pactual were the largest positive contributors to our performance, totaling +645bps. They remain significant positions in our portfolio, accounting for 22% of our exposure.

Equatorial

Equatorial holds a variety of distribution concessions in different stages of maturity. These range from the legacy concessions acquired in 2004 and 2012 (Maranhão and Pará), those acquired in 2018 (Piauí), 2019 (Alagoas), and 2021 (Rio Grande do Sul), to the most recent concession in Goiás, which started contributing to the results in the first quarter of 2023. We see a particularly positive moment for Equatorial as all these concessions are simultaneously driving the group's operational momentum.

In Brazil, well-managed electricity distribution concessions generate significant and relatively steady cash flows. This stability allows these businesses to maintain a high degree of leverage. Equatorial has solidified its position as a competent operator, currently presenting a 3.8x Net Debt/EBITDA ratio, and stands as one of the portfolio's businesses poised to benefit the most from the imminent easing cycle. Considering only the assets currently part of Equatorial, we already expect a real internal rate of return (IRR) exceeding 10%. Furthermore, we believe that this team possesses the capability to execute capital allocations that generate incremental value for patient investors willing to remain invested in the long-term.

Localiza

Localiza is currently experiencing a promising phase, marking the start of a new cycle after overcoming numerous challenges. The supply chain crisis in the automotive industry due to the microchip shortage has affected both Localiza and its competitors, leading to elevated car prices, limited supply availability, the need for significant rental price increases, and asset management volatility (reduction of car purchase discounts and increased volatility in asset depreciation management). Additionally, high interest rates have had a negative impact on its capital-intensive business. However, Localiza has been less affected than its main competitors and has materialized another round of the strong getting stronger phenomenon.

The 1H 2023 can be viewed as a period of normalization following a significant storm. Throughout this period, Localiza has exhibited resilience, adaptability, and solid asset management skills. The merger with Unidas has further fortified the company's market position, enabling synergies and margin expansion across all business segments this year.

The fleet management segment has displayed robust growth (exceeding 20%), while the company continues to consolidate its foothold in the car rental segment (RAC). Given a scenario where major competitors are weakened with excessive leverage, we observe a favorable car rental pricing environment. In this situation, Localiza has a margin of safety to continue delivering a return on invested capital (ROIC) well above its cost of capital. We have not found any evidence of deterioration in this competitive landscape, which should continue to support solid EPS growth of 18% per year over the next 3 years

BTG Pactual

BTG Pactual has displayed notable resilience, delivering impressive results even amid challenging times for Investment Banking and the credit market in the aftermath of the "Americanas event". This resilience attests to the robustness of BTG Pactual's franchise, which is now more diversified than it ever was.

The Asset and Wealth Management segments continue to demonstrate strong revenue growth, with the net new money (NNM) being a positive surprise. In 1Q23, BTG Pactual raised more funds than peers with greater distribution reach.

Even though BTG has reduced its earnings' dependence on a thriving capital market, we still view the bank as one of the businesses best positioned to benefit from a lower-interest-rate environment. If its proven partnership is able to maintain its track record of execution, this investment has the potential to offer a combination of positive revisions of expected earnings and multiple expansions.

Additions to our Portfolio

During 1H 2023, we added new positions that currently account for 19% of our portfolio exposure. We would like to highlight the three largest positions among them, in order of size: Aliansce Sonae + brMalls, Multiplan, and Nubank. Together, these three holdings represent 11% of the total 19% allocation.

Aliansce Sonae + brMalls

Aliansce Sonae + brMalls (Aliansce) is our largest holding in the Malls business. The company is the result of the combination of Aliansce and brMalls, which created the largest shopping center company in Latin America. The current portfolio spans an impressive 2.2 million square meters and includes 10 assets that generate over BRL 1 billion in annual sales – a metric we use as a proxy for properties that dominate their respective regions.

Since Rafael Sales became Aliansce's CEO in 2018, the company has played a pivotal role in the consolidation of the Brazilian mall industry. The transformational acquisition of Sonae in 2019 not only generated value for shareholders but also fortified the management team's capabilities and enhanced the company's relevance in the industry. Relying on an enhanced experience in integrations, the recent acquisition of brMalls in 2022 marked another milestone in the company's history, creating the largest company in the sector by any metric and a vehicle for investment that has the required attributes to gain even more relevance and stock liquidity.

Although we do not anticipate substantial growth in the overall mall industry – we are more positive about the growth of e-commerce – we recognize an opportunity for continued relevance and market share gains for stronger players relative to less structured groups. We believe that both Aliansce and Multiplan are well-positioned companies to continue delivering market share gains for many years.

Furthermore, we are in an environment where Aliansce will not only benefit from lower interest rates but also has a high probability of generating incremental returns through the divestment of less relevant properties.

Multiplan

Multiplan adds complementary attributes to our portfolio. While it trades at higher multiples than Aliansce, it features a higher concentration of rental revenue in properties generating over BRL 1 billion in annual sales. We estimate approximately 63% of its rental income is centered on these seven malls. Furthermore, its portfolio focuses more heavily on the A and B income brackets. These attributes contribute to even greater revenue resilience in various potential scenarios in Brazil.

Nubank

Since Nubank's IPO in December 2021, we have been closely monitoring it with great interest in investing because we believe it will continue to be a winner for many years. However, we did not invest primarily due to insufficient expected returns. Following consecutive positive earnings surprises, particularly in Q3 and Q4 of 2022, we revised our earnings expectations upward by 20% during 1H 2023 and seized an opportunity during a stock correction in April to finally initiate our investment in Nubank.

The advent of fintechs in Brazil came with a series of expectations: these new companies would be able to acquire customers at a low cost and engage these customers, as successfully, if not more so, than traditional incumbents, due to a superior and more modern user experience. Moreover, they were expected to generate higher profit per user by not having the burden of a heavy legacy cost structure (e.g., branches).

Most fintech companies failed to meet these expectations, but Nubank stands out as one of the few exceptions. Not only is it currently the largest bank in Brazil in terms of total and primary accounts, but it has also managed to achieve this while enhancing its customer base engagement. Besides, Nubank has successfully monetized this engagement without significantly increasing expenses, leading to significant operational leverage.

We will explore more positive attributes of Nubank in our next section of the letter when we discuss AI - Artificial Intelligence.

AI: The Frontier of Technology

We believe in the transformative power of technology and innovation in business. These transformations can have different natures, from specific solutions to the creation of entirely new business models that can only exist because of the adoption of these new technologies.

We like to analyze the effect of disruptive technologies on companies and business models using the framework described by Avi Goldfarb and his co-authors in the book Power and Prediction.

Below we describe some key concepts of this framework:

- **Point Solutions**: replace, without any necessary changes in existing transactional systems, tasks that previously required prediction. Example: a new deep learning-based fraud prevention solution.

- **Application Solutions:** automate new and unexplored tasks and problems in current systems, requiring a new approach to process redesign. Typically, this involves the implementation of new organizational structures within companies, with a new set of goals and incentives, increasing the risk of implementation failure. Example: the launch of a new online sales channel featuring automated product suggestions.

- **System Solutions:** these are the hardest to implement, as they impact other areas of the company and might disrupt the legacy business models. Example: a supply chain system completely managed by AI, from inventory control to goods transportation, with demand management carried out without human interference.

We explored in-depth the concepts of AI in our AI 360 series and encourage everyone to listen. With that said, AI, or artificial intelligence, can be defined as an area within computer science that strives to engineer systems regarded as intelligent. These systems are predictive algorithms, i.e., they are prediction machines capable of receiving a set of data inputs and predicting something by delivering a set of data outputs. Examples of these types of systems have been a part of our lives for many years, with some being integral parts of our routines without us even realizing.

When you input a destination address in your transportation app, it generates outputs that are predictions, such as (i) how long a driver will take to pick you up, (ii) how long the trip will take considering the current traffic and (iii) the amount you will spend on the trip. All this even before you accept it. Millions of users go through this flow daily and generate even more data that are used for machine learning, a subset of AI.

Within this subset, there is a machine learning technique called Neural Networks, which is widely used in natural language processing applications, computer vision systems, and recommendation systems, with which we are already well familiar on e-commerce sites.

This technique has been used for years and requires a high level of computational processing, since, just like the design of a human neural network, the larger the number of layers and connections between neurons, the more (exponentially) complex is the calculation needed to train this neural network. This deep training of a neural network is known as deep learning.

All these techniques have been used for years with transformative effects on specific aspects (Point Solutions), applications, and even new business models, like the example of the transportation app abovementioned. We explore these effects extensively in episode two of the AI 360 series.

2017, the 'Transformer' year for AI

The attention generated by the launch of the ChatGPT service (Generative Pre-trained Transformer), in its versions 3.5 and later 4.0 by OpenAI at the end of 2022, reaching over 100 million users in just under two months, is related to an area where neural networks and deep learning have always struggled to generate functional results, the Generative AI (or GenAI), or more specifically, natural language generation.

This was made possible due to the work published in 2017 by a scientific division of Google about a new technique for working with neural networks called Transformers, the 'T' in GPT. The result of this publication was the ability to use less data and less computing power with better results than before.

Spurred by this innovation, tech giants like Google, OpenAI, META, NVIDIA, and Microsoft began working on increasingly advanced versions of Large Language Models (LLMs). This period of rapid advancement spanned from 2018 to 2022 and was characterized by an increasing number of parameters – the variables that the model learns during training to influence its predictions or decisions – and a corresponding growth in the capabilities of these trained models.

Large models, with more than 100 billion parameters, are capable of performing tasks such as understanding and summarizing texts, generating general knowledge responses, and generating programming codes. Even with the evolution of Transformer techniques, the processing costs of these trainings are still high. The ChatGPT 3.0 model, with 175 billion parameters, cost approximately USD 4.5 million to process in 2020.

Different levels of maturity for the adoption of technologies

While all these advancements in GenAI were happening since 2017, many companies were facing the challenges of digital transformation, among them: (i) investments in new software architectures, (ii) adoption of new methodologies, (iii) creation of products, (iv) internalizing software engineering competencies, (v) organizing and governing data, (vi) migrating to cloud providers, and, most importantly, (vii) evolving towards an innovative and agile culture.

This process was not homogeneous across economic sectors or even between companies within the same sector. Newer companies, like Nubank, which were already built incorporating these concepts, scaled up quickly. At the same time, other companies in this sector are still discussing whether or not it's worth working with cloud providers.

This diversity of digital maturity levels among companies in the same sector is the first indicator for us to analyze the first (possible) winners and losers of AI, and especially GenAI, adoption.

We understand that a lack of management capacity and culture are the main causes of failed digital transformation movements in recent years. Companies focused on short-term results, with a mindset of delivering projects with rigid planning and no room for rapid adjustment of mistakes, often have management processes and rituals (from the Board to the Executive Directors) that prevent agility gains through small iteration cycles. This type of approach can work when conducting already known activities and even for most Point Solutions, but it is incompatible with disruptive solutions.

To delve deeper into this topic, we recommend episode three of our AI 360 series.

Productivity, hyper-personalization and the effects on leadership

For companies that are already reflecting the use of technology in their processes, products, services, and customer journeys, GenAI technologies can be applied for productivity gains and the creation of hyper-personalized solutions.

We can divide these applications in two ways. The use of "copilots", i.e., AI that assists humans in their tasks, and "autopilots", AI that, through digital agents, operate independently, without human intervention.

An example of a copilot AI is a digital agent that collaborates with human designers to speed up the design process and improve the quality of the results. This AI can suggest designs based on provided specifications, allowing the human designer to focus on refining the generated ideas. In customer services, the copilot AI can suggest responses to human representatives based on common questions and issues, making the support process more efficient.

An example of an autopilot AI is in social media monitoring: AI can be programmed to monitor social media and other online channels to identify emerging trends, reputation issues, or engagement opportunities. This can be done autonomously, without the need for ongoing human supervision. We explore these concepts in episode four of our AI 360 series.

How do we reflect AI in our Portfolio?

We believe that, like all disruptive technologies, AI and GenAI will be packaged into smaller functionalities and all-in-one solutions to be consumed by all types of companies. However, the effect of adoption will not be homogeneous among them.

We do not yet have investments in our portfolio primarily because of AI, but we do have positions in some businesses that, precisely because they have already done the prior preparation work, are in a favorable position to take advantage of the adoption of new technologies faster and in a more impactful manner than their competitors. Next, we will discuss the businesses in the portfolio that are most exposed to this wave.

CI&T

CI&T is a Brazilian IT Services company specializing in the development of digital applications for large companies. It stands out as a partner capable of assisting companies in implementing AI tools in their businesses and, more than that, capable of evaluating, building a plan, and assisting in the execution of the necessary prior work to enable the adoption of this technology in situations where companies are not yet mature enough for it.

We also see the company taking actions in its own business model and redesigning, with the implementation of AI, the way it conducts its work, from the discovery stages to the development stages. We understand that productivity gains in software development, for example, are already occurring.

Microsoft

The company with the largest installed base of enterprise software in the world has taken a leadership position in AI. Under the management of Satya Nadella, Microsoft not only caught up in the cloud computing sector with Azure, but also through its investment in OpenAI, was quickly able to launch AI solutions on Azure and rebuild important solutions, launching the Copilot family of products.

Even without specific information about the offerings of this product family, we already have examples like GitHub CoPilot. Its technological foundation has been rewritten, and the effects of the new AI functionalities are evident in the current version of the product. As a result, junior developers are now taking 50% less time to be trained.

Nubank

We see Nubank at the intersection of a financial services company and a technology company. Regardless of how we define Nubank, we are convinced of the company's ability to leverage digital assets to launch new products and services. This capability is linked to the company's organizational model, agile culture and mindset, and a technology architecture built with high levels of functionality and data abstraction, which allows Nubank to work with the highest standards of governance, enabling the company to safely share data internally among different teams. This capability puts Nubank in an advantageous position regarding the use of technologies.

The hyper-personalization that GenAI can offer seems to fit perfectly with Nubank's product philosophy. Not only do we see Nubank refining and personalizing credit products and limits more and more, but we also see them going beyond, creating fully hyper-personalized experiences. We would not be surprised if Nubank's app screens, with their buttons and offers, were to be fully personalized. We see Nubank as a tangible example of a company much better prepared to use GenAI to its advantage than its direct competitors in its industry.

How are we preparing Aster Capital to handle technological waves?

We have always believed in the transformative power of innovation and technology. In 2021, we did not fully understand the effects that solutions like ChatGPT would have, nor are we sure what the next technological waves will be in the coming years. Nevertheless, we have always believed that we should reflect in our investment process the necessary capabilities to absorb any impactful technologies.

Because of this belief, from the outset, we built a data architecture capable of capturing, storing, organizing, and making available structured and unstructured data, such as texts and analyses made by our investment team within an integrated investment and data science process. All this infrastructure was added to the construction of weekly, biweekly, and monthly rituals that unify the data science and investment processes into one. This unification brings two major fronts of action that build a virtuous cycle. We describe these two fronts below.

- **Insights.** Constant iteration on an investment thesis naturally generates hypotheses about different aspects of a company's business. These hypotheses need to be tested through data, which when correctly collected, visualized, and analyzed, typically generate provocations and questions that the Aster team, armed with this data, poses to companies, which allows for a more objective discussion.

- **Monitoring.** On this front, the investment team can follow, sometimes daily, operational indicators built from public or synthetic data from the companies in our coverage. The hypotheses that were tested in the insights front are added to the monitoring indicators and discussed in the rituals of investment management.

This work method also affects the professional development of Aster participants, adding skills and capabilities to professional training in the investment career. We believe that the balance between (i) methodology (e.g., research process), (ii) technology (e.g., data architecture and governance), and (iii) culture (e.g., organization of data and investment teams in rituals) are the foundations for Aster Capital to benefit from disruptive technologies.

In closing, we reinforce our willingness to build a close and transparent long-term relationship with our investors. For us, it is essential that our partners understand us well. We thank them and value their trust.

Aster Capital Team

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