The Age of Social Proof

September 2022

Dear investors,

It is hard to observe the movements of the stock market without being intrigued. At one moment, a sense that the future is bleak predominates; shortly after, a wave of optimism sweeps through the markets and triggers a new upward cycle. Sometimes, no particularly significant event occurs during this shift in sentiment. It is no coincidence that one of the most famous representations of the market is the allegorical Mr. Market, conceived by Benjamin Graham, an emotional figure who, in his bipolar episodes, can completely abandon his usual rationality and act in ways that are incomprehensible to an outside observer.

Yet this perception conflicts with the fact that the investment market is made up of talented, highly qualified professionals, selected through extremely competitive dynamics. How can this group of accomplished individuals act in an emotional and irrational manner? One can conceive that some investors might make mistakes in isolation. But the aggregate opinion of all of them, which ultimately sets prices in the market, should surely reflect the best possible forecast of the future?

This view, which argues for the wisdom and competence of the collective of investors, is the famous efficient market theory, which we are so fond of critiquing. How can we describe as efficient a market that reduced its valuation of some companies by more than 80% within the space of a year, attributing the adjustment primarily to macroeconomic factors? We see only two types of factors that could cause adjustments of this magnitude: either a macroeconomic catastrophe on the scale of a nuclear war, or a major error in the valuation of those companies…

Critiques aside, the question remains: how can this collective of investors genuinely composed of intelligent and highly educated individuals make errors of this magnitude? Understanding the source of these distortions is of paramount importance, so that we can avoid being part of such collective mistakes. That will be our theme.

The usual suspects

In his famous book Thinking, Fast and Slow, Daniel Kahneman, Nobel laureate in economics, describes the existence of two reasoning systems that coexist in every human brain: System 1 is fast and heuristic, responsible for what we call intuition, while System 2 is slow and methodical, responsible for what we understand as classical rationality. The ordering between them is not arbitrary. The response that first comes to mind is always from System 1, while System 2's role is to override System 1 and arrive at more precise conclusions on the matter at hand. When time is available and we actively decide to invest the effort.

System 1's quick responses are useful in many stressful situations. When you see an out-of-control car coming toward you, it is more efficient to jump behind a lamppost than to stand still analyzing the car's trajectory to determine whether it will actually hit you. However, System 1 introduces a range of chronic reasoning errors known as cognitive biases. We discussed this in our April 2022 letter, but we will return to the topic to explore some considerations in greater depth.

Collective errors

Virtually every formal test of intellectual ability is focused on System 2. So when we say that the investor community is made up of intelligent, well-educated people, we are paying tribute to their System 2 capabilities. These are undoubtedly great qualities, but they do not make this community immune to the cognitive biases imposed by System 1. Among the dozens of biases that exist, some are particularly dangerous because they are “highly scalable” and amplified in contexts where a large number of people are interacting with one another, making them potential sources of collective error. One such bias is the social proof bias, in which an individual tends to imitate the behavior they observe in the people around them.

To illustrate what a bias can cause, we bring up a curiosity mentioned by Charlie Munger in his brilliant lecture titled “Psychology of Human Misjudgment”: ants are conditioned to march immediately behind any other ant walking ahead of them (the behavior responsible for the long ant trails we have all observed at some point). In most cases, the behavior is efficient for coordinating the colony’s collective work, but when one of these trails happens to form a large circle, the ants remain subject to their instinct to follow the ant ahead and can continue marching in circles until they die.

This is a rather simplified example of social proof. Our human brains would never fall into such a simple trap but we are far from immune. In an experiment designed to test this bias, actors enter an elevator in which the test subject is alone and position themselves all facing away from the door. The test subject promptly turns to face away from the door as well, despite it being so unnatural and making no sense whatsoever (search for “social proof elevator” on YouTube to watch videos of the experiment). In a more serious and complex example, many attribute to the social proof bias the adherence of a large portion of the German population to Nazism (the 1981 film The Wave addresses this theme).

Let us now examine how this bias operates in investment markets.

The social proof trap

One characteristic of the social proof bias is that it intensifies in situations of uncertainty and stress. Without a rational framework for determining how to act, and under pressure, it is instinctive to seek guidance from people who project greater confidence, or simply to copy what they are doing. This instinct is not entirely unjustified: in most cases, someone who acts calmly and confidently genuinely knows what they are doing. The problem is that this criterion judges only appearances, not the quality of the recommendation. A case in point is certain “financial market gurus” who have more self-confidence than actual skill, or who in some cases give self-interested, bad-faith advice.

When it comes to investment analysis, the problem is compounded by the fact that two types of uncertainty are involved: epistemic uncertainty, which could in principle be eliminated with more information and analytical effort (at least in theory, since the necessary information is often inaccessible), and aleatory uncertainty, related to completely unpredictable parameters that therefore cannot be eliminated. The skilled investor recognizes that this irreducible portion of uncertainty exists, which makes absolute confidence in any investment thesis impossible. As a result, the discourse of capable investors tends to be measured and reflective.

Yet there are always those willing to speak publicly about uncertain matters with extreme confidence and assertiveness whether out of a lack of awareness of the uncertainties involved, or because they know this style of communication is more effective for self-promotion than a more measured approach. In both cases, the appearance of certainty is manufactured. But even manufactured, this image attracts those seeking guidance on how to act in a situation of uncertainty and stress. And so the vicious cycles that lead to collective errors begin.

The ant circle

When there is considerable uncertainty in the macroeconomic, political, or corporate environment, it would be appropriate for investors to remain in a state of doubt. But this state is profoundly uncomfortable for the human mind. Eliminating it at any cost is, in itself, another cognitive bias that drives people to oversimplify analyses, adopt assumptions without reasonable basis, and ignore flaws in their reasoning, all in order to reach a conclusion, even a forced one, that allows them to escape the state of doubt.

Now imagine that this forced conclusion is brought to the public by a self-confident speaker, regardless of whether he believes his own argument or is a sophist. For listeners who are already seeking a way out of their own state of doubt, the conclusive argument combines with the social proof of seeing someone defend a position publicly. Less rigorous analysts adopt the new viewpoint first and begin propagating it alongside the original advocate. As the number of people endorsing the thesis grows, the social proof becomes increasingly powerful and attracts more and more people. The ant circle has been formed.

Note that, in real-world cases that reach large proportions, the arguments behind these movements are rarely obviously flawed. They are typically elegant, logically consistent, and supported by numerous real facts and data. But all it takes is an exaggeration of the probability of a few favorable assumptions to render the entire thesis fragile. Making this kind of diagnosis is not a simple task, especially when the majority of people are endorsing the thesis.

Social Proof 2.0

Before the technology that allowed audio recordings, all musical performances were obviously attended live. This greatly limited the reach and consequently the fame that any musician could attain, however prominent within their milieu. By contrast, many artists achieve global fame today thanks to the ability to distribute their music over the internet easily and at low cost.

In an analogous way, the existence of social networks has greatly facilitated the publication of any type of content. But since the volume of content created daily is enormous, some criterion must be established to select what will be most widely propagated. The logic adopted makes a great deal of sense: the content that receives the greatest public acceptance, measured by engagement (likes, comments, and shares), is chosen for more intense propagation.

The problem with this selection mechanism is that it favors content that is most appealing to our System 1, which quickly decides what does or does not deserve our engagement before any deeper reflection by our System 2. As a result, content that is more emotionally appealing than analytically rigorous is what goes viral most easily on social networks, constituting the modern form of social proof.

Going a step further, social networks have become sophisticated enough to select what is shown to you not based on general public approval rates, but based on the approval of audiences with similar profiles to your own. As a result, you are already naturally inclined to agree with the content shown to you and, from your perspective, the majority of people share the same lines of thinking. It is hard to imagine a more effective communication channel than today’s social networks for creating trends driven by social proof.

If this diagnosis seems more applicable to political discussions than to topics related to economics and investing, recall the companies that grew explosively in the financial market by promising high returns in a short time, through special methods and secret theses that would be revealed “only” to those willing to pay a nominal fee… You will certainly be able to think of a few names.

The glass half full

The dynamic we have described is undoubtedly negative for the broader economy, as it tends to impair the quality of capital allocation decisions. As a result, the resources generated by human labor are deployed sub optimally and, ultimately, the material wealth available to society is reduced.

Although these consequences of modern media seem inevitable to us, we also seek to see the other side of the coin: the market excesses created by these macro trends are precisely what generate, from time to time, opportunities for us to buy stocks at prices lower than is reasonable, or when the exaggerated movement runs in the opposite directions, to sell stocks for more than they should be worth.

But to take advantage of the opportunities created by collective errors, one must first avoid succumbing to the tendency to participate in them. The first step is what we have sought to describe through this letter: understanding that collective errors happen and grasping the mechanisms through which they develop and spread through markets.

From there, what has produced excellent results for us over the years has been maintaining a strong culture of discipline, methodological rigor, and confidence in our own analyses. It is on this basis that, throughout this year, we have invested our time in company analysis rather than joining the trend of projecting the macroeconomic and political future of the world, and we have made a series of stocks purchases at prices we consider highly attractive.

The best expression of our conviction that we will earn strong returns on the investments made this year are the contributions of our own capital to the Ártica Long Term FIA, made in the recent past. Although the stock market has recovered somewhat recently, we do not know whether this is the beginning of a new upward cycle or whether we will see further declines in the coming months. Short-term movements are part of the aleatory uncertainty, and any forecast about them could itself become a source of errors, along the lines we have just discussed.

“Learn how to ignore the examples from others when they are wrong, because few skills are more worth having.” — Charlie Munger

Fund Information

ANBIMA Classification	Free Equities
Manager	Ártica Gestão de Recursos Ltda.
Administrator / Custodian	BTG Pactual Serviços Financeiros S.A. DTVM
Minimum Investment	BRL 20,000
Additional Investment	BRL 1,000
Minimum Balance	BRL 10,000
Management Fee	2% p.a.
Performance Fee	20% of returns exceeding the Ibovespa, with high-water mark
Application Quotas	D+1 (business day)
Redemption Quotas	D+89 (calendar days)
Financial Settlement	D+1 (after quota pricing)
Taxation (Income Tax)	15% on gains, at redemption (no semi-annual withholding)

Fund Highlights

Current AUM	BRL 182.8 million
12-month average AUM	BRL 160.4 million
Cumulative Return	1,212.4%
12-month Return	-10.8%
36-month Return	54.4%

Fund Objective

The Fund's objective is to provide its shareholders with medium- and long-term capital gains through investment of its resources primarily in the equity market, without pursuing high correlation with any specific available stock index.

Target Investors

The Fund is exclusively intended for qualified investors (as defined by CVM Instruction 555/2014) seeking long-term focused returns.

Fund Characteristics

ÁRTICA LONG TERM FUNDO DE INVESTIMENTO DE AÇÕES ("Fund"), managed by Ártica Gestão de Recursos Ltda., is an equity investment fund regulated by CVM Instruction 555/2014. CNPJ: 18.302.338/0001-63

Monthly Returns

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Cumulative
2013	**Ártica LT**	-	-	-	-	-	2.2%	6.7%	(5.2%)	8.8%	8.3%	(1.0%)	(0.3%)	20.2%	20.2%
	Ibovespa	-	-	-	-	-	(11.3%)	1.6%	3.7%	4.7%	3.7%	(3.3%)	(1.9%)	8.2%	8.2%
2014	**Ártica LT**	(4.5%)	2.9%	2.2%	(0.9%)	4.2%	7.7%	1.2%	0.9%	(1.2%)	(1.2%)	6.2%	(1.7%)	16.0%	39.4%
	Ibovespa	(7.5%)	(1.1%)	7.1%	2.4%	(0.8%)	3.8%	5.0%	9.8%	(11.7%)	1.0%	0.2%	(8.6%)	-2.9%	5.0%
2015	**Ártica LT**	(4.4%)	(3.6%)	3.4%	5.1%	1.3%	(4.2%)	(10.6%)	(2.9%)	0.2%	(8.7%)	0.5%	3.5%	-19.7%	12.0%
	Ibovespa	(6.2%)	10.0%	(0.8%)	9.9%	(6.2%)	0.6%	(4.2%)	(8.3%)	(3.4%)	1.8%	(1.6%)	(3.9%)	-13.3%	-8.9%
2016	**Ártica LT**	(9.7%)	2.8%	20.9%	4.7%	1.8%	(0.7%)	16.1%	7.8%	(0.3%)	(1.0%)	1.6%	0.6%	50.3%	68.3%
	Ibovespa	(6.8%)	5.9%	17.0%	7.7%	(10.1%)	6.3%	11.2%	1.0%	0.8%	11.2%	(4.7%)	(2.7%)	38.9%	26.5%
2017	**Ártica LT**	2.0%	3.7%	1.4%	2.6%	20.4%	1.7%	27.9%	9.4%	8.7%	8.9%	14.1%	(1.2%)	151.7%	323.7%
	Ibovespa	7.4%	3.1%	(2.5%)	0.7%	(4.1%)	0.3%	4.8%	7.5%	4.9%	0.0%	(3.2%)	6.2%	26.9%	60.5%
2018	**Ártica LT**	22.1%	23.9%	0.8%	2.4%	29.7%	(8.4%)	7.9%	5.1%	(7.8%)	6.5%	(4.7%)	0.9%	98.8%	742.3%
	Ibovespa	11.1%	0.5%	0.0%	0.9%	(10.9%)	(5.2%)	8.9%	(3.2%)	3.5%	10.2%	2.4%	(1.8%)	15.0%	84.6%
2019	**Ártica LT**	10.7%	(1.7%)	(3.4%)	(1.2%)	(5.7%)	(1.5%)	3.6%	1.0%	(7.8%)	14.0%	0.5%	25.0%	33.1%	1,021.5%
	Ibovespa	10.8%	(1.9%)	(0.2%)	1.0%	0.7%	4.1%	0.8%	(0.7%)	3.6%	2.4%	1.0%	6.9%	31.6%	142.9%
2020	**Ártica LT**	2.7%	(4.2%)	(24.8%)	8.0%	0.2%	6.7%	9.9%	(2.9%)	(0.2%)	0.1%	12.2%	4.6%	7.1%	1,101.6%
	Ibovespa	(1.6%)	(8.4%)	(29.9%)	10.3%	8.6%	8.8%	8.3%	(3.4%)	(4.8%)	(0.7%)	15.9%	9.3%	2.9%	150.0%
2021	**Ártica LT**	(1.1%)	(1.5%)	8.1%	6.3%	7.8%	4.8%	(2.1%)	(1.3%)	(2.2%)	(1.6%)	(2.7%)	4.1%	19.4%	1,335.2%
	Ibovespa	(3.3%)	(4.4%)	6.0%	1.9%	6.2%	0.5%	(3.9%)	(2.5%)	(6.8%)	(6.7%)	(1.6%)	3.0%	-11.9%	120.2%
2022	**Ártica LT**	0.5%	(9.2%)	0.4%	(6.1%)	0.3%	(8.7%)	5.0%	10.5%	-	-	-	-	-8.6%	1,212.4%
	Ibovespa	7.0%	0.9%	6.1%	(10.1%)	3.2%	(11.5%)	4.7%	6.2%	-	-	-	-	4.5%	130.0%

** Ártica LT began on 27/06/2013 as an "investment club" and was converted into an "equity investment fund" on 27/09/2019. Returns shown from inception on 27/06/2013 through 31/08/2022.*

Max drawdown Ártica LT: 34% Max drawdown Ibovespa: 47%
Max drawdown Ártica LT: 30% Max drawdown Ibovespa: 39%

Performance in Crisis Situations

	Ártica LT	Ibovespa
Volatility – since inception	23.3%	25.3%
Sharpe – since inception	1.08	0.16
Correlation (Ártica LT vs. Ibov) – since inception	0.38	–
Volatility – 12 months	18.7%	20.2%
Sharpe – 12 months	(0.95)	(0.72)
Correlation (Ártica LT vs. Ibov) – 12 months	0.70	–

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