

THE FOG OF WAR

March, 2022

Dear investors,

Our last letter discussed the difficulty of predicting the macroeconomic scenario and, one week after it was published, Russia invaded Ukraine. History shows that wars are always unpredictable and full of twists and turns, so any inference about the future becomes a very challenging task.

In this letter, we would like to share our reflections on the current moment and tell you what we have been doing at Ártica Long Term FIA.

The uncertainty created by war

“Fog of war” is a military term that describes the difficulty of obtaining reliable information about what is happening in the midst of combat and, consequently, the difficulty of drawing up a plan of action. New information arrives all the time, both true and false, and decisions must be made with a good deal of uncertainty.

Besides the military conflict, wars are also fought on the economic front. Damaging the enemy country's economy to make it unable to bear the high costs of the military conflict is a classic strategy that we are seeing in practice during the war between Russia and Ukraine, in which several Western countries decided not to become involved in the military conflict, but openly entered into an economic war with Russia through packages of sanctions.

Given how globalized and complex the economy is today, these sanctions do not affect only the countries and sectors directly involved. As they break links in supply chains (and establish new ones), the sanctions have broad indirect effects that are difficult to predict, cascading to many companies around the world that were not intentional targets, but become part of the collateral damage. Furthermore, sanctions may appear or disappear within short periods of time, making the fog that also extends over the economic front even thicker.

Estimating the duration, scale and economic impact of wars is practically impossible, so we will not make any kind of statement in that regard. However, this does not prevent us from trying to understand the impact that this scenario of uncertainty has on the markets, and from reflecting on the most rational approach to managing our investments during this period.

Fear of the unknown

Fearing the unknown is one of the primitive human behaviors and, to a greater or lesser degree, it is present in all of us. In several studies, researchers have shown that unpredictability causes discomfort in most people. In one of these studies, participants played a game in which mistakes resulted in small electric shocks (which caused no harm, but did hurt), and their stress-related physiological responses (such as changes in pupil diameter) were measured by the researchers. The result was interesting: in the games in which participants

went through a series of moments in which they had a 50% chance of receiving shocks, the level of stress shown was higher than in situations in which they were exposed to a predictable sequence of shocks, which occurred with 100% certainty. Although counterintuitive, since any chance below 100% should be better than the certainty of being shocked every time, this is how human instinct works.

We find the subject relevant because it allows us to understand that psychological factors affect professional and sophisticated investors in the same way they affect everyone else. In general, sophisticated people are less likely to admit when their actions are influenced by their fears, but they continue to live with them.

In times of great uncertainty, the possibilities the future holds are left to each person's imagination, and the gloomiest theses tend to be the ones that receive the most attention. Thus, an investor's instinctive behavior at such times is to seek the asset classes that seem safest to him, even if they offer a risk-return relationship that would be considered unfavorable under normal circumstances.

There is a second psychological factor that we believe is contributing to what we are seeing in the markets.

Availability bias

To worry about something, one must first remember that this something exists. Since our memory depends heavily on the number of times we receive a piece of information and on how recently we were exposed to it, we tend to worry much more about the topics in the media, or that have otherwise featured prominently in our recent past, than about all the other aspects of the world that are still under way but out of focus at the moment.

This tendency to overestimate the importance of the information that comes to mind most easily is called availability bias: one of several cognitive tendencies that divert human judgment from pure rationality. This bias can cause exaggerations both in times of optimism, when we remember only the good things and neglect the risks, and in times of pessimism, when we pay more attention to the risks and make them seem larger than they actually are.

Every topic that is widely covered by the media ends up triggering availability bias in a large share of people. During the pandemic, for example, many people worried more about the risk posed by Covid than about all the other risks in life, which did not cease to exist during the same period. Now, with the war between Russia and Ukraine in the news every day, the tendency is for the focus of our concerns to turn to it. Note that we are not underestimating the seriousness of either of these two events; we are merely stressing that there is a bias toward increasing the weight given to these factors relative to the weight we would assign to them if we were purely rational.

Now, let us turn to our view of how these factors have been influencing the stock market.

A self-reinforcing cycle

In recent months, several negative factors have emerged almost simultaneously: i) we had the Omicron wave of Covid, which revived concerns and problems related to the pandemic; ii) interest rates in Brazil have almost doubled since September 2021, encouraging investors to move from the stock market to fixed income; and iii) the war between Russia and Ukraine began, which led to a series of economic sanctions. This news is objectively bad for the economy in general, so it was to be expected that it would cause negative reactions in the market. In addition, we have two significant sources of uncertainty: the unpredictable course of the war and the approaching presidential elections amid a highly polarized political scenario. The way all of this has lined up during this period tends to trigger a self-reinforcing cycle of pessimism.

This cycle may unfold as follows:

- Negative news causes an initial decline in stock prices;
- The decline itself causes concern among investors, who begin to pay more attention to the risks they are exposed to;
- The elements of uncertainty in the war and in the elections make it difficult to measure their economic impacts, which causes fear and anxiety among investors;
- Defensively, many investors move their equity investments into other asset classes, putting further pressure on stock prices;
- The continued decline attracts more media attention, availability bias becomes increasingly present, and the cycle reinforces itself.

The tone may seem pessimistic, but our reflections seek to assess whether the current pessimism is exaggerated or not, so that we can position ourselves accordingly. In this regard, we will briefly discuss the impact of the war on the companies in which Ártica LT FIA invests and then comment on our current approach to managing the fund.

The impact of the war on our portfolio

We would venture to say that this is one of the moments when there are advantages to being Brazilian. With Brazil far from the battlefields, little involved in the geopolitical issues related to the conflict and seeking to remain neutral in international relations, the impact we suffer tends to be limited. The main point of attention is the commodities market, which ends up affecting the cost structure of many economic activities.

For our portfolio, we expect a limited impact, since our portfolio companies do not consume large volumes of oil derivatives (the commodities most affected by the war), do not consume agricultural inputs (affected by Russia's role in supplying fertilizers to Brazil), and have most of their demand coming from the Brazilian market itself. A possible negative impact could come from a rise in the prices of steel and aluminum, which are relevant cost components for some of our portfolio companies. However, Russia today accounts for only ~4% of global iron ore production and ~2% of global aluminum oxide production, so a disruption in its supply is far less significant than in the case of oil, of which Russia accounts for ~12% of global production.

Despite the limited impact of the war, the price of our portfolio has been falling in recent weeks. Part of the decline is certainly related to the rise in interest rates and to political uncertainty in Brazil, but part of it seems to us to be related to the effect of the uncertainties and biases we discussed above. In any case, the decline is not necessarily bad for us. We explain why below.

Still against the tide

A perfectly rational concept, but one that goes against the instincts of most investors, is that a decline in a stock's price is beneficial while we are still looking to make new purchases (as long as it is not accompanied by a deterioration in the earnings prospects of the company being bought).

An example that helps illustrate the point: if you were building a house and planned to buy building materials over the next year, would it be better for the prices of these materials to rise or fall during that period? You will feel better about your past purchases if material prices rise continuously, since all of them will have been made at prices lower than the current ones, but the final cost of the house will be higher. Conversely, past purchases will look like bad deals if prices are falling, since you would have paid less if you had simply waited, but the total cost of the house will be lower.

We still have cash available at Ártica LT FIA, and we are one of the few funds in the market currently with positive net inflows this year, so the decline in prices is welcome. Without disregarding the complexity of the moment, frequently revisiting our theses and applying an extra dose of caution to each decision, we continue to move in the same direction we discussed in our last letter: we are buying shares of good companies that seem cheap to us, and our team continues to make new contributions to the fund.

One final comment is that our best investments were made when we found opportunities with solid fundamentals and the general market sentiment was against the move we made. In a way, it could not be otherwise, since when everyone is buying, stocks become expensive, and when everyone is selling, they become cheap, which makes following the majority a terrible investment strategy.

"Be fearful when others are greedy and be greedy when others are fearful."

- Warren Buffett

Fund characteristics

ÁRTICA LONG TERM FUNDO DE INVESTIMENTO DE AÇÕES (the "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

Target audience

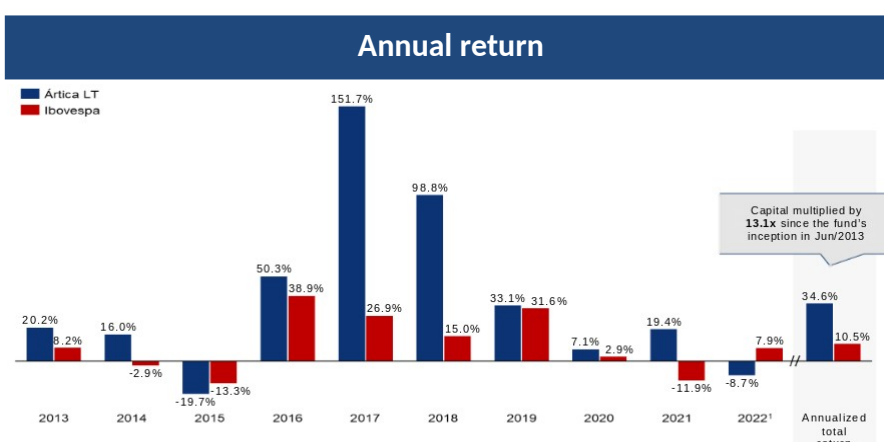
The Fund is intended exclusively for qualified investors (under CVM Instruction 555/2014) seeking long-term-focused returns.

Fund objective

The Fund's objective is to provide its unitholders, over the medium and long term, with capital gains by investing its resources primarily in the stock market, without pursuing a high correlation with any specific equity index available.

ANBIMA classification	Equities (Free)
Manager	Ártica Gestão de Recursos Ltda.
Administrator / custodian	BTG Pactual Serviços Financeiros S.A. DTVM
Minimum investment	R\$20.0 thousand
Additional investment	R\$1.0 thousand
Minimum balance	R\$10.0 thousand
Management fee	2% p.a.
Performance fee	20% of excess return over the Ibovespa (high-water mark)
Subscription conversion	D + 1 (business day)
Redemption conversion	D + 89 (calendar days)
Settlement	D + 1 (after conversion)
Taxation (income tax)	15% of gains upon redemption (no come-cotas)

Current net assets	R\$162.2 million
12-month average net assets	R\$146.5 million
Cumulative return	1,210.0%
12-month return	11.9%
36-month return	42.9%


Monthly return

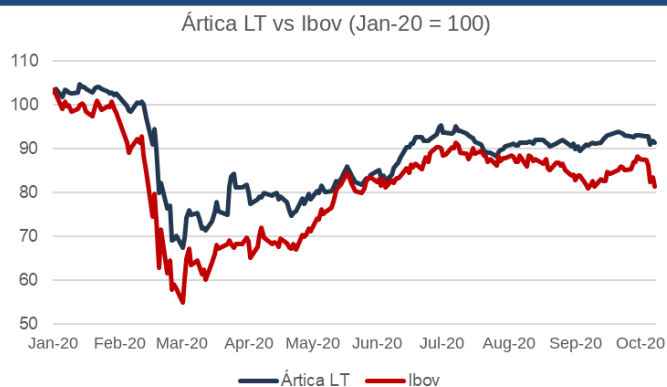
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year	Cumulative
2013	Ártica LT	-	-	-	-	-	2.2%	6.7%	(5.2%)	8.8%	8.3%	(1.0%)	(0.3%)	20.2%	20.2%
	Ibovespa	-	-	-	-	-	(11.3%)	1.6%	3.7%	4.7%	3.7%	(3.3%)	(1.9%)	8.2%	8.2%
2014	Ártica LT	(4.5%)	2.9%	2.2%	(0.9%)	4.2%	7.7%	1.2%	0.9%	(1.2%)	(1.2%)	6.2%	(1.7%)	16.0%	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%	1021.5%
	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%)	-	-	-	-	-	-	-	-	-	-	-8.7%	1,210%
	Ibovespa	7.0%	0.9%	-	-	-	-	-	-	-	-	-	-	7.9%	137.6%

* Ártica LT began on June 27, 2013 as an "investment club" and, on September 27, 2019, it was converted into an "equity investment fund." Returns shown from inception on June 27, 2013 through February 28, 2022

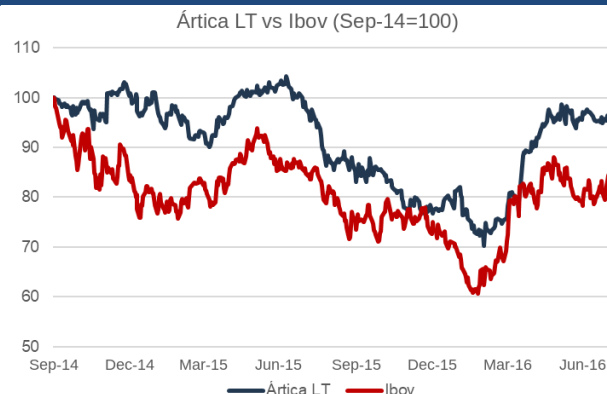


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Performance in crisis scenarios



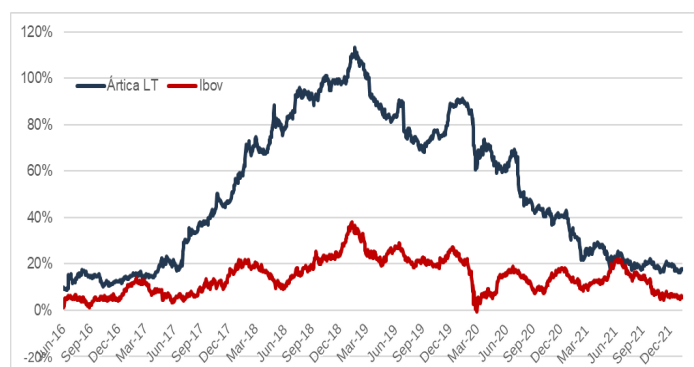
Max drawdown Ártica LT: 34%
Max drawdown Ibovespa: 47%



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

	Ártica LT	Ibovespa
Volatility – since inception	23.5%	25.6%
Sharpe – since inception	1.17	0.21
Correlation (Ártica LT vs Ibov) – since inception	0.37	-
Volatility – 12 months	14.4%	19.1%
Sharpe – 12 months	0.49	(0.05)
Correlation (Ártica LT vs Ibov) – 12 months	0.68	-

Rolling 3-year returns



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