INVESTING IN *SMALL CAPS*

September, 2021

Dear investors,

Historically, investing in *small caps* has proven to be a profitable and consistent way to beat market returns. *Small caps* are the companies with the lowest market value, which, because of their size, end up being ignored by most investors. This neglect ends up creating price asymmetries and, consequently, investment opportunities.

In this month's letter, we explore the subject and present some research based on historical data that shows the advantages of investing in *small caps*.

Although there is no official definition establishing whether a company is a *small cap*, a *small cap* is generally considered to be a company with a market value between US$300 million and US$2 billion (R$1.6 billion to R$10 billion at the current exchange rate of R$5.20). In Brazil, B3 has a *small cap* stock index (SMLL)[1], which represents a portfolio of 110 companies and, currently (August 2021), the market value of the companies in this index ranges from R$210 million (Recrusul) to R$23.8 billion (Banco Pan), with an average of R$5.0 billion, figures in line with the international benchmark.

Small caps are often associated with *start-ups*, companies in their early stages or that are not yet profitable. This association is quite mistaken. Many *small caps* are companies with proven business models and a solid, profitable financial track record, that is, quality companies that, at the right price, can be excellent investment opportunities.

And such opportunities do arise from time to time. Because of their small size, these companies generally have low liquidity and end up being ignored by a large share of investors. Many funds and institutional investors even have legal restrictions that prevent them from investing in *small caps*.

In addition, *small caps* have further advantages: (1) given their size, *small caps* are easier targets for M&A transactions; and (2) these companies often still have ample room for growth, which tends to favor the appreciation of their shares.

Today's large companies were once *small caps*. Investors who limit themselves to investing in large companies sometimes end up investing after most of the share price appreciation has already taken place. For example, Magazine Luiza was worth R$300 million in 2016, and today it is worth R$126 billion!

There may be growth opportunities in large companies, but such situations are rarer. These companies have often already grown enough to reach significant market shares in the markets in which they operate, and growth alternatives

[1] The SMLL index is made up of companies that meet minimum liquidity criteria and fall outside the list of those that account for 85% of the market value of all companies listed on the spot market.

become scarcer, or involve expanding into new markets or geographies, taking them away from the competencies and competitive advantages that brought them success in the first place.

These positive factors are reflected in the results of research on the subject. In 1981, Rolf Banz, a student at the University of Chicago, investigated stock returns according to company size. He found that *small caps* consistently delivered higher returns than *large caps*, even when adjusted for risk.

To examine this claim, the table below shows the returns of stocks divided by market size over the period from 1926 to 2012.

Table 1 – Returns by size decile, 1926-2012, USA[2]

Size decile (smallest to largest)	Annual return	Excess return relative to the CAPM
1	17.0%	9.6%
2	12.8%	3.6%
3	11.3%	1.9%
4	11.3%	1.6%
5	11.0%	0.7%
6	11.0%	0.7%
7	11.2%	0.8%
8	10.2%	-0.1%
9	11.0%	0.8%
10	9.3%	-0.0%
Total market	9.7%	0.0%

The annualized return of the smallest stocks in the table was 17.0% p.a., substantially higher than the average market return of 9.7%.

A common criticism of investing in *small caps* is that they are riskier and should therefore be avoided or limited in an investor's portfolio. That is not what the table above shows. The second column shows the return in excess of what would be expected given the volatility of each group of stocks, and it is clear that, even adjusting for this factor, investments in *small caps* show a superior risk-return track record.

Obviously, risk should not be disregarded. Unlike *large caps*, it is common to face greater difficulty in accessing information that is important for evaluating the investment, but with careful and disciplined analysis, seeking to understand the company's business in depth, we believe attentive investors are able to identify and manage the risks associated with investing in *small caps*.

This result holds not only in the US, but in several other countries. Tables 2 and 3 below show, respectively, the results of research on stock returns in the United Kingdom between 1956 and 1987 and in Japan between 1966 and 1983.

[2] The results in the table reflect the study conducted by Rolf Banz in 1981, updated through 2012 by Jeremy Siegel in his book "Stocks for the Long Run"

Table 2 – Returns by size decile, 1956-1987, United Kingdom[3]

Size decile (smallest to largest)	Annual return
1	21.6%
2	17.7%
3	17.0%
4	15.6%
5	14.7%
6	13.7%
7	13.1%
8	13.2%
9	13.3%
10	11.4%

Table 3 – Returns by size quintile, 1966-1983, Japan[4]

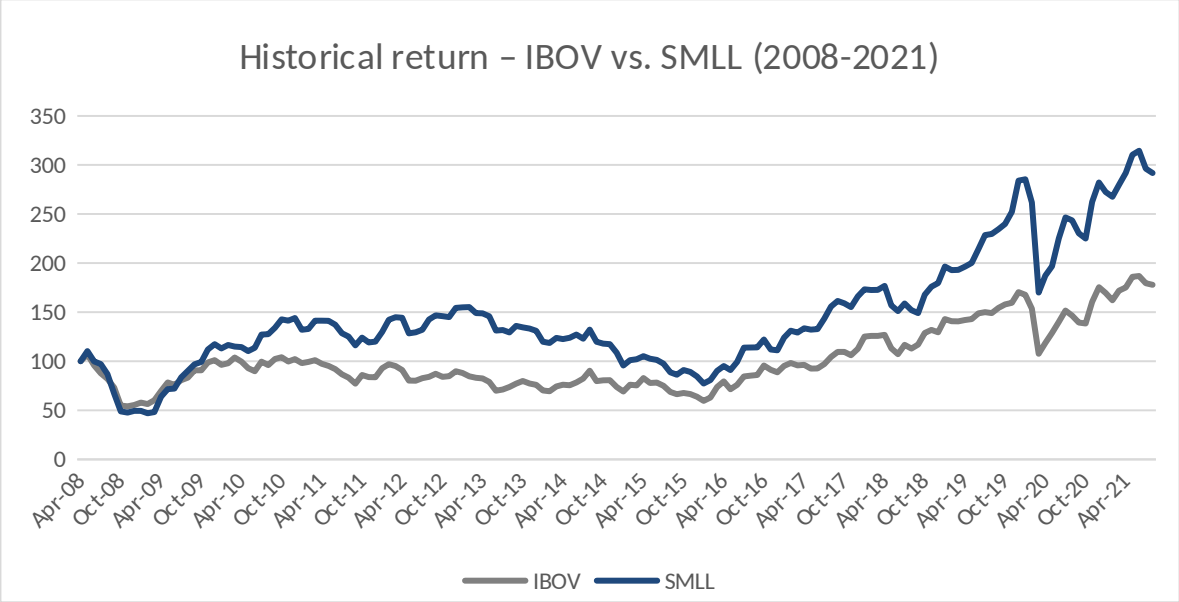
Size quintile (smallest to largest)	Annual return
1	24.4%
2	18.0%
3	16.6%
4	14.0%
5	13.7%

The results above also hold true in Brazil. The chart below shows the returns of the SMLL index compared with the Ibovespa from April 2008 to August 2021. The results show that, over the period, the SMLL performed far better than the Ibovespa, appreciating 2.92x (an annual return of 8.4% p.a.), compared with 1.78x for the main Brazilian stock index (an annual return of 4.4%).

[3] Study conducted by Mario Levis, Professor at the University of Bath, United Kingdom, and John Moxon

4 "The Size Effect and Seasonality in Japanese Stock Returns," Nomura Research Institute, 1984. Conducted by T. Nakamura and N. Terada

Chart 1 – Historical return of IBOV vs. SMLL (2008-2021)[5]



At Ártica, unlike many investors, we have a great deal of flexibility to invest in companies of any size on the stock exchange, from *small caps* to the largest Brazilian companies. And our fund is designed precisely for this. The 90-day redemption period, the fact that a significant share of the fund's capital belongs to our partners, and the long-term view of our investors allow us to have a greater tolerance for investing in *small caps*.

This wider range of options has allowed us to find excellent opportunities ignored by the market, which have been fundamental to our return track record. We hope to keep finding these hidden gems on the stock exchange!

In our next letter, we will discuss a specific case of a *small cap* that is a significant part of our portfolio today.

[5] Source: B3; Ártica analysis

ÁRTICA LONG TERM FIA – AUGUST 31, 2021

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

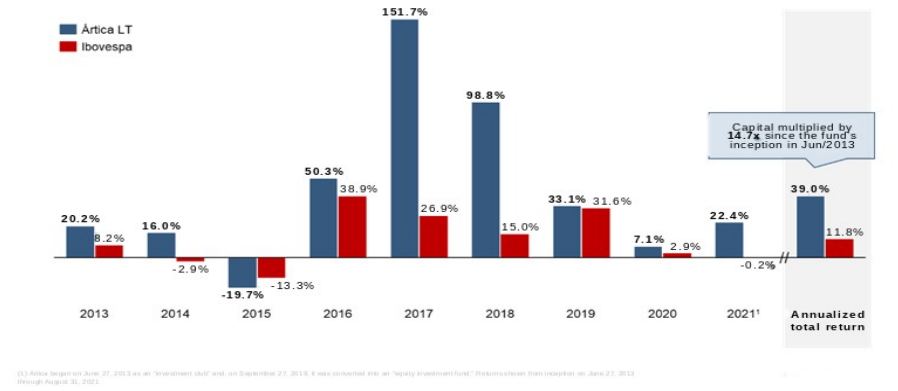
The Fund is intended exclusively for qualified investors (under CVM Instruction 555/2014) seeking long-term-focused returns.

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)

Annual return



Current net assets	R$150.2 million
12-month average net assets	R$118.1 million
Cumulative return	1,370.9%
12-month return	43.6%
36-month return	65.0%

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%)	-	-	-	-	22.4%	1,370.9%
	Ibovespa	(3.3%)	(4.4%)	6.0%	1.9%	6.2%	0.5%	(3.9%)	(2.5%)	-	-	-	-	-0.2%	149.5%

* 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 August 31, 2021

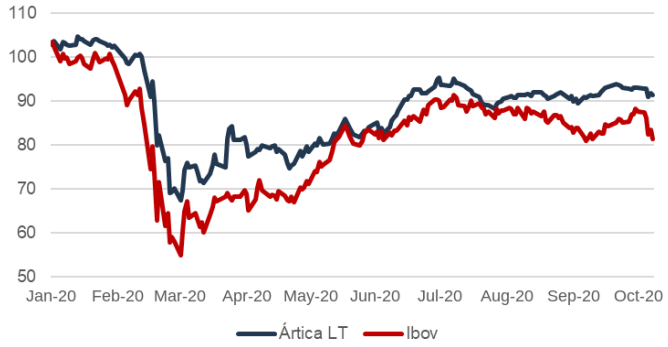
Autorregulação ANBIMA – Gestão de Recursos

This material is intended solely to provide information and transparency regarding the management carried out by Ártica Gestão de Recursos, and does not constitute, and should not be construed as, an offer or solicitation to buy or sell any financial instrument or to participate in any specific business strategy. All opinions contained herein were prepared within the context and conditions prevailing at the time the presentation was edited and may change without notice. They also do not take into account the investment objectives, financial situation or specific needs of any particular investor.

ÁRTICA LONG TERM FIA – AUGUST 31, 2021

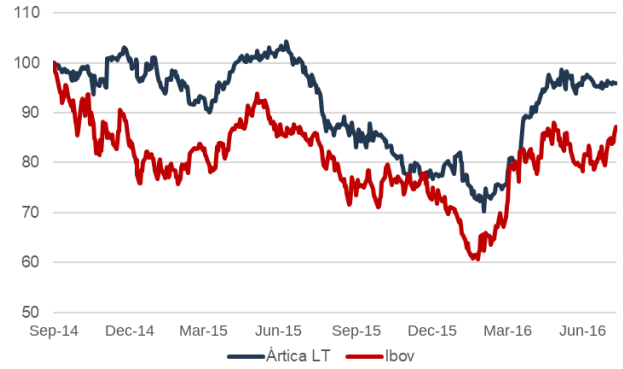
Performance in crisis scenarios

Ártica LT vs Ibov (Jan-20 = 100)



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

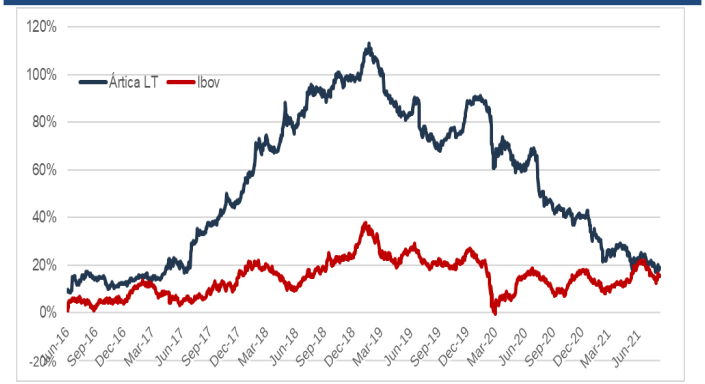
Ártica LT vs Ibov (Sep-14=100)



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

	Ártica LT	Ibovespa
Volatility – since inception	23.9%	25.9%
Sharpe – since inception	1.36	0.27
Correlation (Ártica LT vs Ibov) – since inception	0.36	-
Volatility – 12 months	12.0%	20.7%
Sharpe – 12 months	3.29	0.88
Correlation (Ártica LT vs Ibov) – 12 months	0.57	-

Rolling 3-year returns



This material is intended solely to provide information and transparency regarding the management carried out by Ártica Gestão de Recursos, and does not constitute, and should not be construed as, an offer or solicitation to buy or sell any financial instrument or to participate in any specific business strategy. All opinions contained herein were prepared within the context and conditions prevailing at the time the presentation was edited and may change without notice. They also do not take into account the investment objectives, financial situation or specific needs of any particular investor.

www.articainvest.com.br/asset
+55 11 3707-1890 – investimentos@articainvest.com.br