xp research

April 3, 2025
Quantitative Equity Strategy

Thematic
Research

Keeping Up with Inflation

Investing through different rates and inflation regimes in Brazil

Júlia Aquino
julia.aquino@xpi.com.br

Lucas Rosa, CQF
lucas.vrosa@xpi.com.br

Fernando Ferreira, CFA
fernando.f.ferreira@xpi.com.br

Raphael Figueredo
raphael.sfigueredo@xpi.com.br

Felipe Veiga
felipe.bveiga@xpi.com.br

Keeping Up with Inflation

Investing through different rates and inflation regimes in Brazil

Defensive styles work best in times of rising rates and inflation

Based on trends in interest rates and inflation in Brazil, we propose an alternative method for identifying equity market regimes and revisit assets' performance across various cycles over the past two decades. Our key findings are: (i) the current regime, characterized by rising inflation and interest rates, tends to be the most challenging for stocks, which consistently deliver negative returns; (ii) while there are no clear winners across all cycles, we identify Banks, Utilities, and High Quality stocks were more likely to perform well in any scenario.; (iii) finally, we present two baskets: one with High Quality, Low Risk stocks for the current regime,; and a High Value, Low Risk basket as we anticipate a shift in rates regime ahead.

Extra, extra, this just in! Our analysis has resulted in four regimes: Inflation down, Rates up; Inflation up, Rates up; Inflation up, Rates down; and Inflation down, Rates down. Currently, we find ourselves in the "Inflation up, Rates up" regime, having transitioned from the "Inflation down, Rates up" regime on March 12th. Notably, we are already one year into a rate-hiking cycle.

Looking back. With regimes assigned, we then examine the historical performance of various asset classes, as well as equity sectors and factors. Our findings indicate that the rate regime is the most influential factor affecting equity returns. Additionally, positioning for any regime isn't obvious, as best and worst performers vary a lot across rates and inflation conditions.

Looking forward. We propose a factor rotation strategy to navigate market regimes, now focused on high quality and low risk stocks, which have historically performed well with rising inflation and rates. As we anticipate a transition to a "Inflation up, Rates down" regime, we also present a basket of high value and low risk stocks, which showed stronger performance in this scenario historically.

Júlia Aquino
Quantitative Equity Strategist
julia.aquino@xpi.com.br

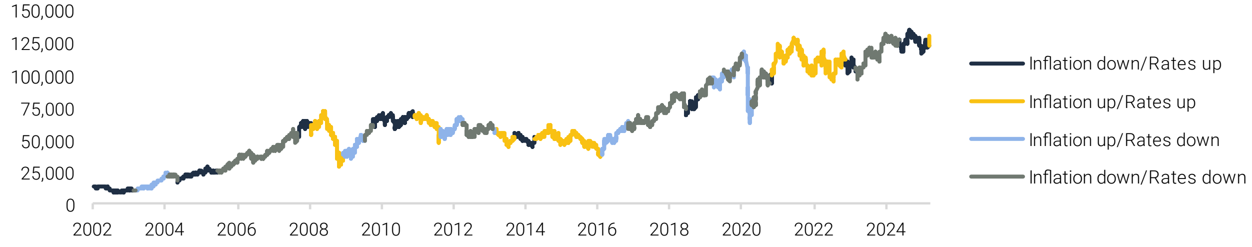
Lucas Rosa, CQF
Quantitative Equity Strategist
lucas.vrosa@xpi.com.br

Fernando Ferreira, CFA
Chief Strategist and Head of Research
fernando.f.ferreira@xpi.com.br

Raphael Figueredo
Equity Strategist
raphael.sfigueredo@xpi.com.br

Felipe Veiga
Equity Strategist
felipe.bveiga@xpi.com.br

Ibovespa across all regimes



Keeping up with Inflation

Assigning regimes

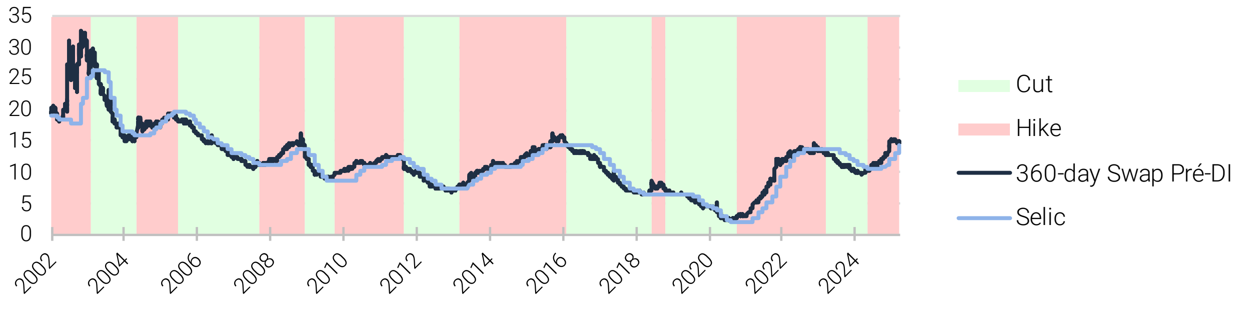
With the recent shift in monetary policy and expectations that inflation will remain under pressure, we have revisited and expanded our analysis of Brazilian equities' performance across interest rate cycles, now incorporating inflation dynamics.

Since markets often anticipate changes in rate cycles ahead of actual adjustments to the Selic rate, we use the slope of the 360-day Swap Pré-DI curve as a leading indicator of regime shifts. This enables us to capture market expectations more accurately and incorporate forward-looking reactions into our analysis.

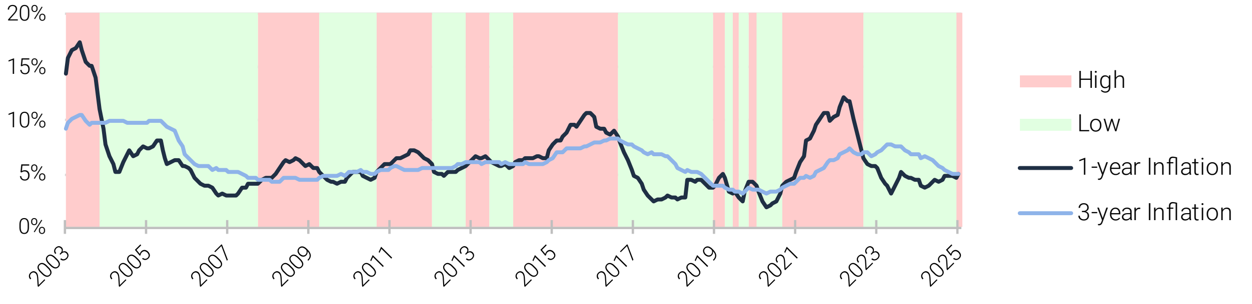
In contrast, market reactions to inflation tend to materialize when investors perceive a shift in trend. To assess this, we compare the current 12-month change in the IPCA to its three-year average. If the current reading exceeds the historical average, we classify it as a high-inflation regime; otherwise, it is categorized as a low-inflation regime.

We then combined these cycles to derive four composite rates and inflation regimes, which will be analyzed in detail in the following section.

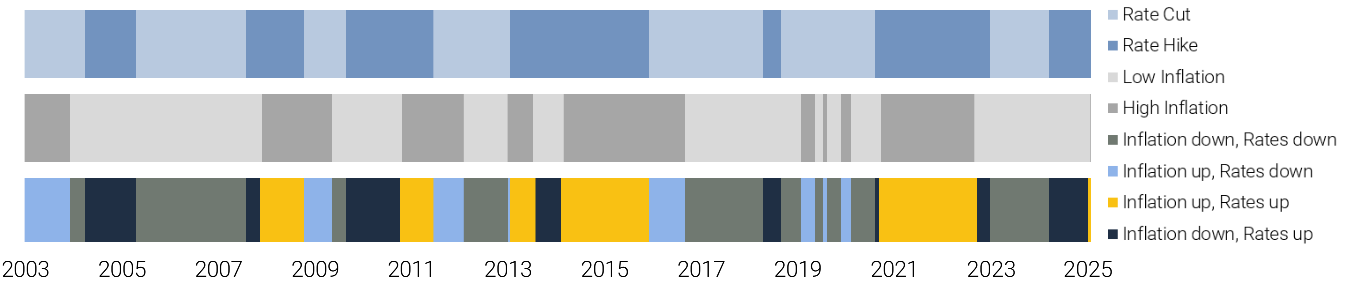
Rates regimes



Inflation regimes



Combined regimes (Rates and Inflation)



Keeping up with Inflation

Combining Regimes

Finally, we combine both analyses by juxtaposing the individual regimes, resulting in four possible outcomes:

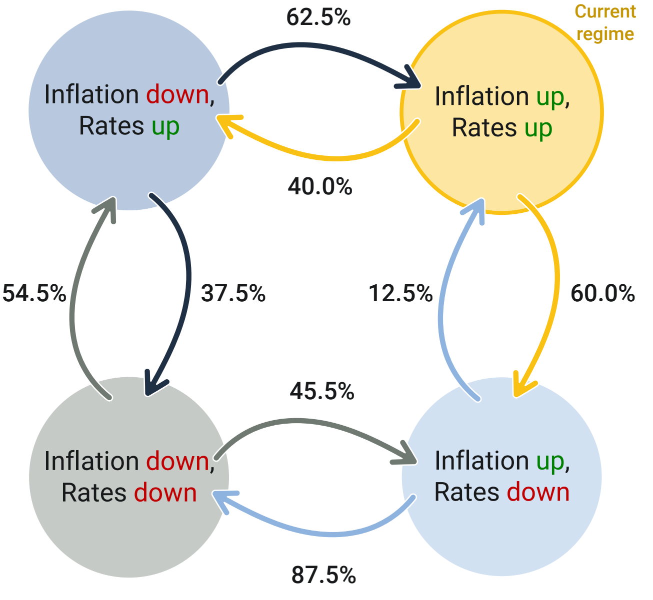
- Inflation down, Rates up
- Inflation up, Rates up
- Inflation up, Rates down
- Inflation down, Rates down

Currently, we are in the *Inflation up, Rates up* regime, having transitioned from *Inflation down, Rates up* on March 12. The diagram on the right illustrates the four regimes and the historical frequency of transitions to subsequent regimes.

The most common path is represented in clockwise direction. Typically, we see rates decline before inflation retreats; therefore, the next regime is expected to be *Inflation up, Rates down*. We expect this shift will occur only when the swap fully prices in a scenario of falling rates.

Inflation/Rate Regimes: Transition Diagram

With % of times each transition occurred historically



Inflation up, Rates up (25.7% of the time)

First signal	End Date	Length (days)
11-Jan-2008	10-Dec-2008	334
8-Dec-2010	17-Aug-2011	252
25-Feb-2013	6-Sep-2013	193
9-Apr-2014	10-Feb-2016	672
6-Nov-2020	10-Nov-2022	734
12-Mar-2025		19

Inflation down, Rates down (32.9% of the time)

First signal	End Date	Length (days)
5-Feb-2003	28-Feb-2003	23
30-Jan-2004	7-May-2004	98
21-Jun-2005	6-Sep-2007	807
8-Jul-2009	5-Oct-2009	89
5-Apr-2012	7-Feb-2013	308
9-Nov-2016	8-Jun-2018	576
26-Oct-2018	12-Mar-2019	137
10-Jul-2019	6-Sep-2019	58
9-Oct-2019	10-Jan-2020	93
9-Apr-2020	5-Oct-2020	179
8-Mar-2023	9-May-2024	428

Inflation up, Rates down (15.6% of the time)

First signal	End Date	Length (days)
28-Feb-2003	30-Jan-2004	336
10-Dec-2008	8-Jul-2009	210
17-Aug-2011	5-Apr-2012	232
7-Feb-2013	25-Feb-2013	18
10-Feb-2016	9-Nov-2016	273
12-Mar-2019	10-Jul-2019	120
6-Sep-2019	9-Oct-2019	33
10-Jan-2020	9-Apr-2020	90

Inflation down, Rates up (25.8% of the time)

First signal	End Date	Length (days)
7-May-2004	21-Jun-2005	410
6-Sep-2007	11-Jan-2008	127
5-Oct-2009	8-Dec-2010	429
6-Sep-2013	9-Apr-2014	215
8-Jun-2018	26-Oct-2018	140
5-Oct-2020	6-Nov-2020	32
10-Nov-2022	8-Mar-2023	118
9-May-2024	12-Mar-2025	307

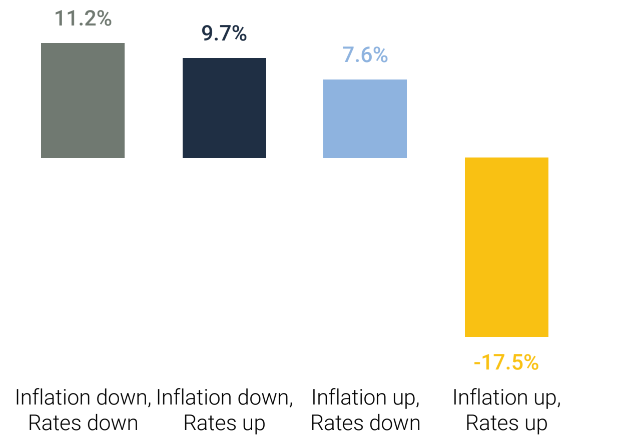
Keeping up with Inflation

Ibovespa across regimes

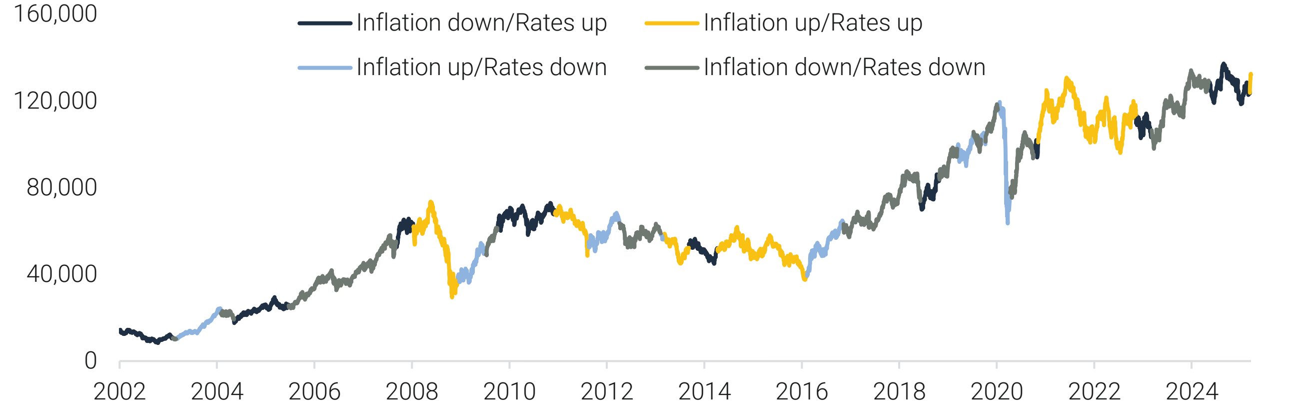
Analyzing the Ibovespa's performance across past regimes, we observe that the index tends to deliver positive real returns in most scenarios. Notably, the exception occurs when both rates and inflation are rising, like the current environment, creating a more challenging environment for stocks.

Additionally, we highlight that the rate regime significantly influences the direction of nominal returns. While cumulative performance in rate-cutting regimes tends to grow consistently, the behavior is mixed to negative when interest rates are on the rise.

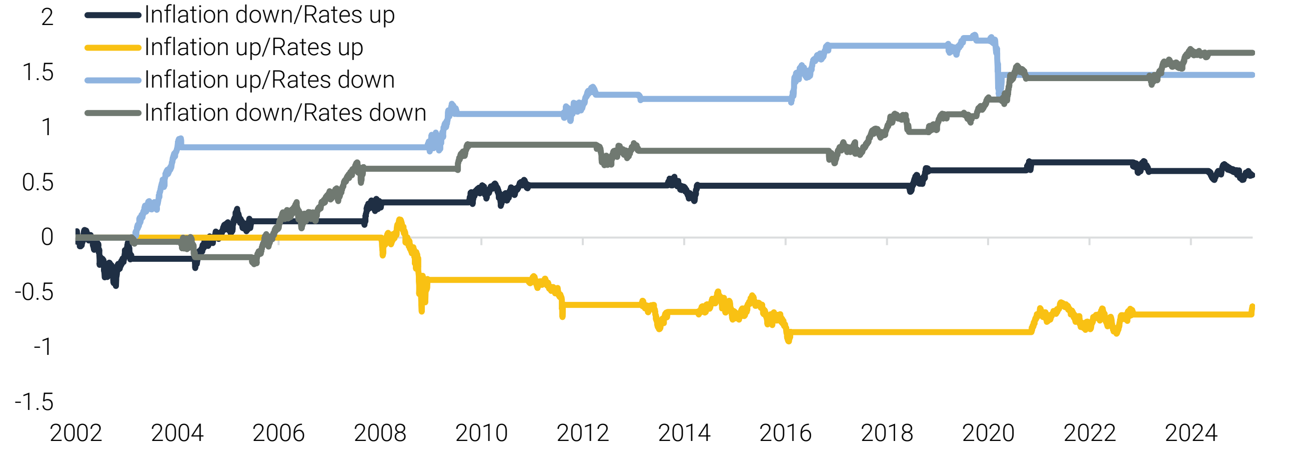
Ibovespa annualized real returns across regimes



Ibovespa across all regimes



Ibovespa cumulative performance during each regime



Keeping up with Inflation

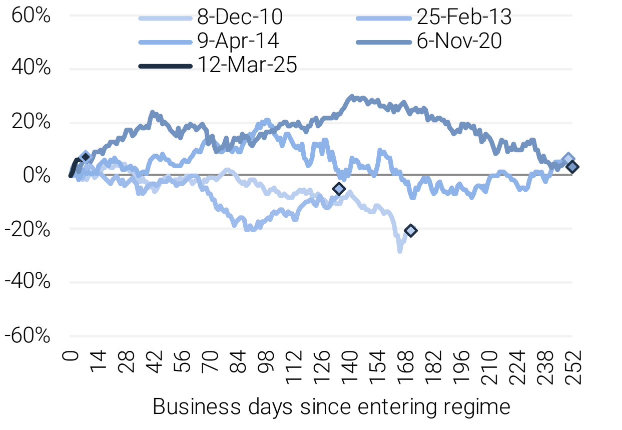
Regimes: **Inflation up, Rates up**

The regime characterized by rising inflation and interest rates tends to be the most challenging for stocks, as equity indices consistently deliver negative returns during these periods.

Furthermore, most sectors underperform the index in such scenarios, with the exception of Banks, Utilities, and Agri, Food & Beverages. In this environment, High Quality and Low Risk stocks have thrived, while Small Caps have struggled.

As we are currently in this regime and experiencing a rally, we have observed strong performance thus far.

Ibovespa performance in the last 5 events



Asset classes, equity Sectors and Factors performance in each event

Start Date	11-Jan-08	8-Dec-10	25-Feb-13	9-Apr-14	6-Nov-20	12-Mar-25
End Date	10-Dec-08	17-Aug-11	6-Sep-13	10-Feb-16	10-Nov-22	
Duration	334	252	193	672	734	16
Annualized Nominal Returns						
USDBRL	29.4%	-6.3%	22.5%	24.2%	-1.4%	-15.2%
SMLL	-43.0%	-15.1%	-15.6%	-15.5%	-4.7%	174.6%
IMA-B 5	8.0%	10.2%	0.8%	9.9%	5.3%	-2.2%
IMA-B 5+	1.7%	7.9%	-16.9%	7.6%	1.0%	12.6%
Ibovespa	-29.5%	-19.2%	-6.6%	-8.5%	2.9%	169.2%
Sectors (ann. excess returns)						
Agri, Food & Beverages	9.6%	6.7%	7.7%	13.0%	4.2%	107.8%
Banks	11.2%	0.7%	0.9%	2.9%	0.0%	20.9%
Capital Goods	-8.9%	-2.9%	33.5%	19.9%	-1.7%	-86.8%
Education				-1.3%	-23.5%	568.8%
Financials Non-Banks	1.1%	6.0%	9.1%	8.3%	-7.4%	93.4%
Health Care			0.6%	10.4%	-21.6%	-15.1%
Metals & Mining	-4.9%	-4.7%	4.5%	-21.9%	11.3%	9.9%
Oil, Gas & Petrochemicals	-6.3%	-0.6%	-18.1%	-12.3%	26.5%	106.3%
Pulp & Paper	-21.8%	-14.0%	30.1%	24.9%	0.1%	-76.1%
Real Estate	-23.5%	-6.3%	-17.7%	-2.4%	-9.8%	8.8%
Retail	1.2%	3.0%	-2.1%	0.6%	-34.4%	-53.5%
TMT	14.3%	40.7%	-5.4%	-10.6%	-5.2%	-47.6%
Transportation	-10.8%	-14.3%	-4.3%	-7.5%	-5.8%	-10.8%
Utilities	19.8%	19.1%	4.2%	5.1%	5.7%	-38.6%
Factors Long-only (ann. excess returns)						
Value		16.1%	4.7%	-2.6%	5.6%	40.6%
Quality		14.6%	2.2%	5.4%	4.7%	-33.6%
Momentum		17.1%	-6.3%	8.7%	7.8%	-38.1%
Low Risk		12.8%	1.4%	8.9%	3.7%	-22.5%
Short Interest					2.9%	-9.2%
Sell-side Revisions		8.7%	-0.4%	8.8%	-3.4%	-26.5%
Size		1.6%	-17.7%	-17.2%	-6.0%	115.4%
Factors Long/Short (ann. nominal returns)						
Value		25.5%	29.1%	12.3%	22.7%	102.7%
Quality		24.1%	11.4%	24.6%	20.6%	-65.2%
Momentum		26.6%	2.7%	48.4%	28.4%	-85.0%
Low Risk		14.0%	19.0%	46.5%	18.9%	-65.3%
Short Interest					26.5%	-52.8%
Sell-side Revisions		15.9%	14.5%	28.5%	13.4%	-54.0%
Size		-4.1%	-24.4%	-27.6%	-0.8%	146.8%

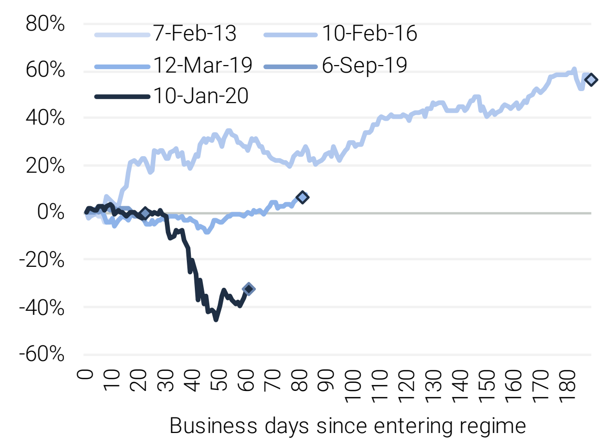
Keeping up with Inflation

Regimes: **Inflation up, Rates down**

The most frequent transition from the current environment is to the Inflation up, Rates down regime. During these periods, the Ibovespa improves, posting positive returns in 62.5% of cases, even though they tend to be are relatively brief, averaging 164 days.

In this context, Low Risk and High Value stocks perform strongly, beating the index in 85.7% and 71.4% of occurrences, respectively. Financials (non-Banks) generally perform well, but Banks often underperform. Retail stocks also show consistent excess returns in this scenario.

Ibovespa performance in the last 5 events



Asset classes, Equity sectors and factors performance in each window

Start Date	28-Feb-03	10-Dec-08	17-Aug-11	7-Feb-13	10-Feb-16	12-Mar-19	6-Sep-19	10-Jan-20
End Date	30-Jan-04	8-Jul-09	5-Apr-12	25-Feb-13	9-Nov-16	10-Jul-19	9-Oct-19	9-Apr-20
Duration	336	210	232	18	273	120	33	90
Annualized Nominal Returns								
USDBRL	-13.4%	-22.4%	17.1%	-7.7%	-16.9%	-2.4%	5.9%	85.2%
SMLL		64.9%	25.0%	-6.2%	45.3%	38.8%	10.8%	-75.2%
IMA-B 5		15.1%	12.4%	-3.0%	8.9%	11.9%	12.2%	0.5%
IMA-B 5+		27.4%	19.6%	19.2%	23.6%	29.1%	28.5%	-27.8%
Ibovespa	76.0%	32.1%	17.1%	-34.8%	51.4%	17.9%	-11.9%	-67.1%
Sectors (ann. excess returns)								
Agri, Food & Beverages	-28.6%	-4.6%	23.1%	11.1%	-52.6%	64.4%	10.1%	-10.7%
Banks	-40.0%	-16.9%	-5.7%	177.9%	19.8%	-10.5%	-23.0%	-4.2%
Capital Goods	18.8%	-54.7%	56.4%	78.6%	-74.3%	13.0%	-2.4%	71.5%
Education					5.5%	9.1%	42.7%	-48.2%
Financials Non-Banks	-10.4%	27.7%	20.2%	88.9%	-10.4%	9.7%	-2.3%	9.0%
Health Care			-18.8%	-18.4%	-32.3%	27.2%	46.4%	16.7%
Metals & Mining	4.6%	-1.4%	-8.0%	-43.6%	108.1%	-5.7%	-1.0%	22.7%
Oil, Gas & Petrochemicals	-12.1%	16.4%	-2.1%	-32.2%	77.7%	-19.0%	12.6%	-29.1%
Pulp & Paper	-35.3%	-2.3%	10.1%	2.5%	-80.9%	-56.7%	64.0%	47.7%
Real Estate		64.5%	-24.0%	-14.1%	-18.6%	38.6%	48.8%	-32.4%
Retail		15.5%	5.3%	10.7%	-12.0%	6.2%	43.7%	13.7%
TMT	10.6%	-28.7%	2.7%	-8.4%	-15.6%	4.7%	-6.1%	45.5%
Transportation		-9.5%	7.9%	-34.0%	3.2%	30.6%	3.4%	-20.1%
Utilities	-30.6%	-13.9%	16.9%	37.8%	-14.7%	10.8%	-33.4%	12.5%
Factors Long-only (ann. excess returns)								
Value		44.9%	11.5%	62.2%	8.9%	12.8%	-1.8%	-8.5%
Quality		18.4%	22.1%	31.5%	-3.0%	20.5%	21.9%	-18.3%
Momentum		-3.8%	20.7%	33.4%	-1.5%	24.2%	18.4%	-17.9%
Low Risk		4.6%	17.1%	27.2%	-23.0%	14.7%	2.8%	23.4%
Short Interest					9.5%	10.8%	-2.1%	1.6%
Sell-side Revisions		26.3%	19.9%	50.6%	2.8%	36.5%	16.0%	1.0%
Size		49.2%	-1.8%	6.6%	40.8%	6.1%	-0.9%	-21.9%
Factors Long/Short (ann. nominal returns)								
Value		-1.8%	17.8%	63.2%	11.4%	-5.3%	-28.0%	-15.3%
Quality		3.5%	23.6%	60.2%	-21.1%	17.3%	6.7%	-11.4%
Momentum		-45.3%	19.6%	27.7%	-20.4%	29.8%	-6.8%	6.2%
Low Risk		-29.6%	27.6%	51.7%	-44.1%	5.1%	-14.0%	71.1%
Short Interest					12.7%	10.6%	-19.5%	25.0%
Sell-side Revisions		7.9%	20.1%	67.0%	0.1%	24.0%	-0.6%	30.5%
Size		42.0%	-13.0%	-19.6%	42.5%	-6.7%	-2.0%	-46.4%

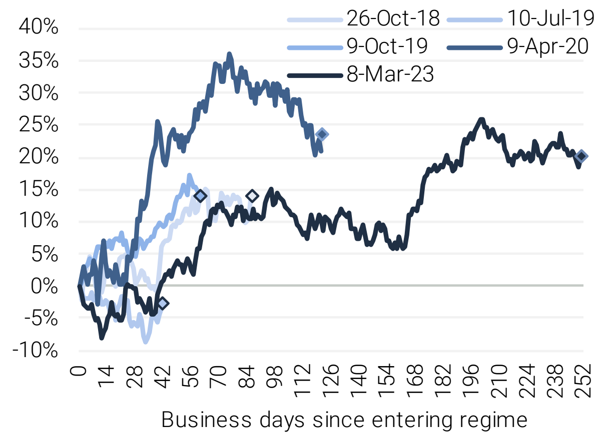
Keeping up with Inflation

Regimes: **Inflation down, Rates down**

The most common regime historically, Inflation down, Rates down also tends to benefits risk assets the most. In this scenario, most long-only factors outperform, particularly Value and the more volatile Momentum and Size.

While most sectors deliver positive returns during these periods, their hit ratio (% of times sectors outperformed the Ibovespa) diminishes as it becomes harder to beat the market in what is typically a more optimistic environment for stocks.

Ibovespa performance in the last 5 events



Asset classes, Equity sectors and factors performance in each window

Start Date	5-Feb-03	30-Jan-04	21-Jun-05	8-Jul-09	5-Apr-12	9-Nov-16	26-Oct-18	10-Jul-19	9-Oct-19	9-Apr-20	8-Mar-23
End Date	28-Feb-03	7-May-04	6-Sep-07	5-Oct-09	7-Feb-13	8-Jun-18	12-Mar-19	6-Sep-19	10-Jan-20	5-Oct-20	9-May-24
Duration	23	98	807	89	308	576	137	58	93	179	428
Annualized Nominal Returns											
USDBRL	-6.3%	9.9%	-5.9%	-29.4%	6.6%	7.3%	7.0%	38.8%	-1.4%	15.6%	0.2%
SMLL				139.5%	4.7%	12.0%	38.5%	-6.7%	88.8%	50.3%	5.7%
IMA-B 5		9.5%	11.8%	5.7%	9.3%	6.8%	8.0%	2.1%	7.2%	5.8%	6.4%
IMA-B 5+		10.8%	16.1%	10.9%	18.4%	5.7%	23.0%	1.2%	6.6%	10.5%	8.6%
Ibovespa	-27.9%	-33.7%	26.5%	96.0%	-6.9%	6.4%	27.5%	-11.3%	42.9%	34.9%	11.5%
Sectors (ann. excess returns)											
Agri, Food & Beverages	305.9%	8.7%	-6.2%	-13.3%	16.4%	-13.3%	1.1%	42.1%	-32.8%	-20.5%	-1.6%
Banks	74.0%	34.1%	8.7%	30.9%	11.9%	0.1%	23.4%	-20.1%	-13.5%	-29.5%	6.8%
Capital Goods	-92.3%	1.3%	-32.6%	7.9%	12.8%	7.1%	-23.2%	-9.5%	68.9%	54.8%	-2.8%
Education						-12.4%	-10.4%	-28.2%	26.4%	-18.8%	12.8%
Financials Non-Banks	15.4%	3.3%	15.6%	-13.9%	15.7%	-4.3%	17.0%	33.2%	-18.2%	-2.8%	-4.5%
Health Care					27.2%	-0.3%	-29.2%	66.0%	21.7%	-5.6%	-3.0%
Metals & Mining	74.9%	6.8%	27.7%	11.1%	-1.7%	29.4%	-36.1%	-35.0%	30.9%	44.4%	-21.4%
Oil, Gas & Petrochemicals	-46.7%	27.9%	-11.1%	-19.2%	-23.1%	-9.3%	-15.6%	-10.6%	5.7%	-3.1%	35.6%
Pulp & Paper	128.0%	55.2%	-15.6%	20.3%	47.3%	51.1%	-1.5%	-17.5%	67.2%	22.3%	-1.0%
Real Estate				134.1%	-13.1%	-8.5%	8.8%	-19.7%	39.9%	-13.7%	-1.8%
Retail				34.0%	23.6%	-0.1%	4.6%	46.9%	22.2%	43.2%	-21.1%
TMT	-30.2%	59.2%	-34.7%	-18.4%	-2.3%	1.3%	15.8%	23.2%	11.8%	-26.0%	1.3%
Transportation				5.1%	18.4%	0.9%	29.6%	36.6%	-3.5%	9.4%	-13.8%
Utilities	-30.0%	86.2%	1.1%	-47.1%	-20.2%	-15.4%	40.9%	32.9%	7.1%	-14.3%	2.2%
Factors Long-only (ann. excess returns)											
Value				1.2%	9.3%	11.1%	27.3%	10.6%	27.3%	9.0%	7.3%
Quality				-1.9%	10.8%	11.6%	0.1%	16.1%	41.6%	18.3%	1.6%
Momentum				-0.5%	24.9%	16.3%	4.4%	21.9%	51.0%	29.7%	2.1%
Low Risk				-21.6%	22.9%	-0.7%	14.9%	8.5%	15.2%	-13.8%	-4.1%
Short Interest						8.4%	16.7%	7.8%	38.8%	11.9%	0.2%
Sell-side Revisions				1.6%	12.1%	14.4%	9.1%	20.5%	27.7%	26.0%	-6.7%
Size				16.9%	6.5%	7.6%	9.9%	14.7%	72.7%	15.1%	-13.7%
Factors Long/Short (ann. nominal returns)											
Value				-12.8%	18.2%	7.3%	25.6%	-24.3%	3.7%	-15.5%	17.9%
Quality				-14.6%	9.7%	10.4%	-5.2%	5.3%	5.6%	-7.0%	9.9%
Momentum				-10.6%	25.8%	12.6%	-8.0%	17.4%	16.8%	3.2%	6.7%
Low Risk				-43.9%	24.7%	-8.0%	2.3%	-11.0%	-26.7%	-40.8%	6.8%
Short Interest						11.2%	6.3%	-13.0%	4.9%	7.9%	13.1%
Sell-side Revisions				-14.3%	9.8%	11.6%	-8.8%	8.6%	9.3%	9.8%	-7.6%
Size				17.9%	-1.2%	9.4%	-3.5%	-13.7%	60.8%	13.7%	-11.1%

Keeping up with Inflation

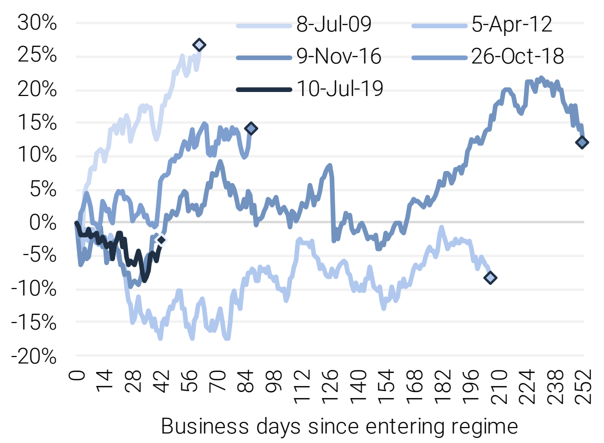
Regimes: **Inflation down, Rates up**

When inflation trends downward but rates begin to rise, the Ibovespa delivers positive returns in 62.5% of observations.

Agri, Food & Beverages struggle the most in this environment, outperforming in only 1 out of 8 periods. Additionally, Pulp & Paper and TMT also face challenges. On the other hand, Banks tend to generate returns that exceed the market index.

Quality and Momentum factors emerge as the top performers, with both top quintile baskets and long/short strategies achieving positive excess and nominal returns.

Ibovespa performance in the last 5 events



Asset classes, Equity sectors and factors performance in each window

Start Date	7-May-04	6-Sep-07	5-Oct-09	6-Sep-13	8-Jun-18	5-Oct-20	10-Nov-22	9-May-24
End Date	21-Jun-05	11-Jan-08	8-Dec-10	9-Apr-14	26-Oct-18	6-Nov-20	8-Mar-23	12-Mar-25
Duration	410	127	429	215	140	32	118	307
Annualized Nominal Returns								
USDBRL	-22.1%	-10.3%	-4.4%	-3.8%	-2.9%	-1.8%	-3.2%	13.0%
SMLL		-3.4%	41.6%	-8.7%	8.2%	4.5%	-10.0%	-13.5%
IMA-B 5	15.4%	3.5%	14.0%	6.3%	6.6%	0.8%	4.8%	6.9%
IMA-B 5+	15.8%	2.8%	18.5%	-0.1%	13.2%	2.6%	1.5%	-3.2%
Ibovespa	38.1%	13.5%	9.3%	-4.8%	17.5%	5.0%	-2.9%	-3.4%
Sectors (ann. excess returns)								
Agri, Food & Beverages	-13.4%	-3.0%	-1.9%	-3.3%	-48.4%	-31.0%	-21.8%	17.1%
Banks	38.3%	-2.8%	0.6%	20.5%	19.4%	21.0%	0.2%	6.1%
Capital Goods	-18.0%	-37.5%	9.8%	4.8%	-34.2%	163.6%	25.8%	45.0%
Education				35.5%	-23.5%	-80.0%	-40.3%	-20.4%
Financials Non-Banks	27.2%	-29.3%	-5.0%	18.0%	-8.2%	-19.4%	-2.8%	6.1%
Health Care				19.9%	-28.7%	29.8%	-47.8%	-16.9%
Metals & Mining	16.1%	-1.4%	4.8%	-0.6%	-8.7%	11.1%	45.4%	-5.6%
Oil, Gas & Petrochemicals	10.0%	70.8%	-15.0%	-30.3%	73.7%	-33.1%	15.1%	-9.3%
Pulp & Paper	-26.8%	-29.5%	1.2%	-4.6%	-39.4%	-14.9%	-19.7%	4.8%
Real Estate		30.1%	-3.2%	-10.6%	1.3%	24.5%	-1.9%	-4.3%
Retail		-37.4%	13.6%	2.3%	-3.5%	4.1%	-24.3%	-23.0%
TMT	-27.5%	-28.4%	-6.6%	9.3%	-50.3%	-18.3%	-10.6%	11.0%
Transportation		-39.2%	11.2%	2.5%	-7.3%	27.6%	-11.3%	-17.5%
Utilities	-12.4%	-27.1%	7.0%	8.3%	25.1%	7.8%	-21.1%	7.6%
Factors Long-only (ann. excess returns)								
Value			9.5%	7.2%	-11.7%	-15.1%	6.8%	3.3%
Quality			20.2%	2.1%	-0.3%	5.8%	18.3%	8.4%
Momentum			14.8%	7.6%	-18.0%	23.6%	-9.6%	5.5%
Low Risk			15.2%	10.1%	-21.4%	-2.3%	6.2%	5.3%
Short Interest					-4.5%	-1.1%	-3.3%	-5.0%
Sell-side Revisions			13.7%	1.3%	-0.3%	15.2%	-1.8%	-7.6%
Size			5.2%	-10.6%	-5.2%	-15.3%	0.3%	-1.2%
Factors Long/Short (ann. nominal returns)								
Value			6.0%	27.5%	1.4%	-3.8%	7.8%	11.7%
Quality			33.6%	4.7%	2.8%	-0.5%	23.0%	28.6%
Momentum			16.1%	29.5%	-10.3%	3.5%	5.9%	14.2%
Low Risk			10.9%	24.1%	-14.4%	1.9%	6.2%	6.1%
Short Interest					4.0%	2.0%	7.3%	-1.7%
Sell-side Revisions			18.6%	15.3%	6.6%	1.6%	4.2%	-4.6%
Size			-2.7%	-13.8%	0.2%	-2.1%	2.3%	-3.5%

Keeping up with Inflation

Sector performance across regimes

In an **Inflation up, Rates up** environment, only **Banks**, **Financials (non-Banks)**, **Utilities**, and **Agri, Food & Beverages** have consistently outperformed the Ibovespa. Conversely, **Education**, **Transportation**, and **Real Estate** have struggled to deliver positive returns in past occurrences of the current regime.

Across other regimes, performance shows some dispersion. Although certain sectors have shown positive returns in all previous observations, no equity sector appears to be an inflation hedge for Brazil, as no clear sector rotation pattern is evident.

Sectors: Annualized excess returns relative to Ibovespa across regimes

	Inflation down, Rates down	Inflation down, Rates up	Inflation up, Rates up	Inflation up, Rates down
Agri, Food & Beverages	**26.0%**	-13.2%	**8.2%**	1.5%
Banks	11.5%	12.9%	3.1%	**12.2%**
Capital Goods	**-0.7%**	**19.9%**	**8.0%**	**13.4%**
Education	**-5.1%**	**-25.7%**	**-12.4%**	2.3%
Financials Non-Banks	5.1%	-1.7%	3.4%	**16.6%**
Health Care	11.0%	-8.7%	-3.5%	3.5%
Metals & Mining	11.9%	**7.6%**	-3.1%	9.5%
Oil, Gas & Petrochemicals	**-6.3%**	**10.2%**	-2.2%	1.5%
Pulp & Paper	**32.3%**	**-16.1%**	3.8%	**-6.3%**
Real Estate	15.8%	5.1%	**-11.9%**	9.0%
Retail	**19.2%**	-9.8%	-6.3%	11.9%
TMT	0.1%	**-15.2%**	6.7%	0.6%
Transportation	10.3%	-4.9%	**-8.5%**	**-2.6%**
Utilities	3.9%	-0.6%	**10.8%**	**-1.8%**

Sectors: hit ratio (% of periods with positive excess returns) across regimes

	Inflation down, Rates down	Inflation down, Rates up	Inflation up, Rates up	Inflation up, Rates down
Agri, Food & Beverages	45%	**13%**	**100%**	50%
Banks	**73%**	**88%**	**100%**	**25%**
Capital Goods	55%	**63%**	40%	**63%**
Education	**18%**	**13%**	**0%**	**38%**
Financials Non-Banks	55%	38%	80%	**63%**
Health Care	**27%**	**25%**	40%	38%
Metals & Mining	**64%**	50%	40%	38%
Oil, Gas & Petrochemicals	27%	50%	20%	38%
Pulp & Paper	**64%**	25%	60%	50%
Real Estate	**27%**	38%	**0%**	**38%**
Retail	55%	38%	60%	**75%**
TMT	55%	25%	40%	50%
Transportation	55%	38%	**0%**	50%
Utilities	55%	**63%**	**100%**	50%

Keeping up with Inflation

Factor performance across regimes

As market returns tend to be subpar when both inflation and rates are rising, we analyze how the top quintile of our factors behaved historically:

- **Inflation up, Rates up (<u>current environment</u>):** historical data indicates that **High Quality** and **Low Risk** stocks outperform in 80% of the last occurrences of this regime.
- **Inflation up, Rates down: Value** and **Low Risk** stocks may be a good bet. While Value has the same hit ratio as Quality, it provided higher excess returns in this regime.
- **Inflation down, Rates down: Momentum** yields good returns when rates are declining, while **Value** stocks outperform in 73% of the observations.
- **Inflation down, Rates up: Quality** and **Momentum** are the best factors considering profits and hit ratios, although excess returns for all factors tend to be lower in that environment.

Therefore, we propose a long-only factor rotation based on the inflation/rates regimes. This strategy has outperformed the Ibovespa, achieving a gross Return/Risk ratio of 0.88, compared to 0.38 for the market index. We focus exclusively on stocks that belong to the MLCX (Mid-Large Cap Index), as these names are generally more actively traded. The names in the Quality + Low Risk portfolio are presented on the next page.

Factors: annualized top quintile excess returns relative to Ibovespa across regimes

	Inflation down, Rates down	Inflation down, Rates up	Inflation up, Rates up	Inflation up, Rates down
Long Value	12.8%	0.4%	6.0%	**18.5%**
Long Quality	12.3%	**9.0%**	**6.7%**	13.3%
Long Momentum	**18.7%**	**4.0%**	**6.8%**	10.5%
Long Low Risk	2.7%	2.2%	6.7%	9.6%
Long Sell-side Revisions	13.1%	3.4%	3.4%	**21.9%**
Long Size	**16.2%**	-4.5%	-9.8%	11.2%

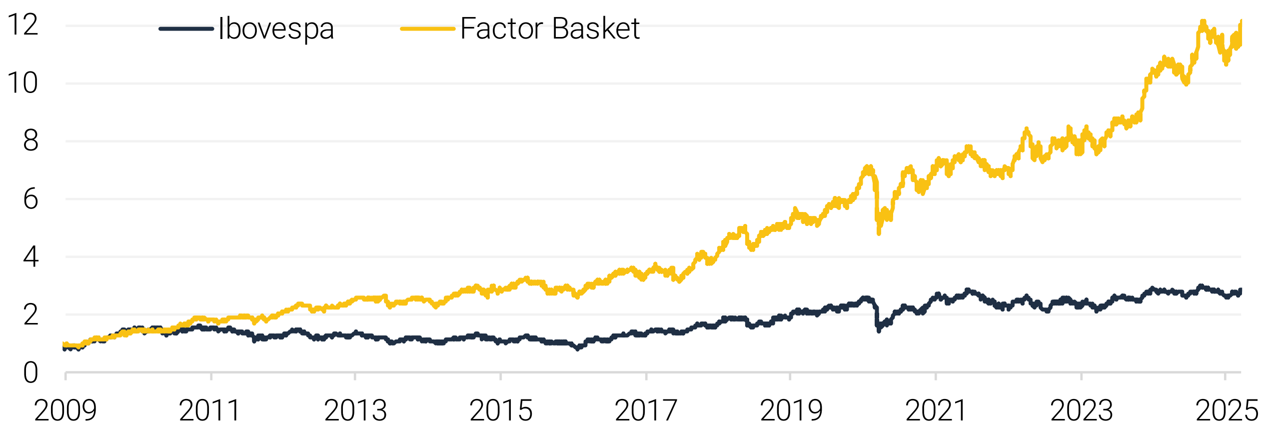
Factors: hit ratio (% of periods with positive excess returns) of the top quintile across all regimes

	Inflation down, Rates down	Inflation down, Rates up	Inflation up, Rates up	Inflation up, Rates down
Long Value	**73%**	**50%**	60%	63%
Long Quality	**64%**	**63%**	**80%**	63%
Long Momentum	64%	50%	60%	50%
Long Low Risk	36%	50%	**80%**	**75%**
Long Sell-side Revisions	64%	38%	40%	**88%**
Long Size	64%	25%	20%	50%

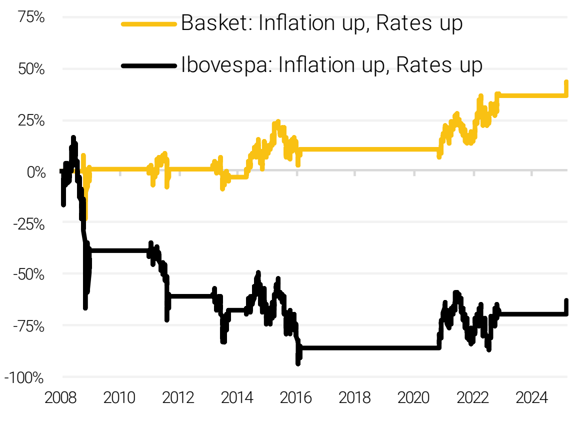
Keeping up with Inflation

Factor performance across regimes

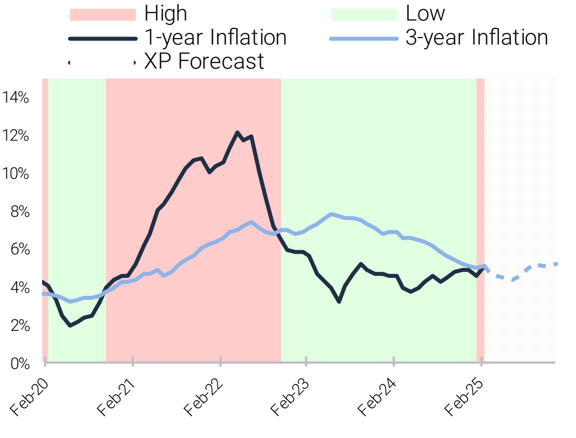
Factor rotation strategy based on Inflation and Rates regimes (Mid-Large caps)



Performance of the Quality + Low Risk basket



We expect to remain in *high inflation* regime ahead



Defensive (Quality + Low Risk) basket as of April 1st, 2025 – Inflation up, Rates up

Ticker	Company Name	Sector	Quality Score	Low Risk Score	**Overall Score**
BBSE3	BB Seguridade	Financials Non-Banks	100	99.5	**100**
EGIE3	Engie	Utilities	81.4	99.5	**98**
ABEV3	Ambev	Agri, Food & Beverages	83.4	92.0	**96**
BBAS3	Banco do Brasil	Banks	89.4	81.0	**94**
ITUB4	Itaú	Banks	72.5	89.5	**92**
CPFE3	CPFL Energia	Utilities	68.7	85.7	**90**
RDOR3	Rede D'or	Health Care	87.5	66.0	**88**
WEGE3	Weg	Capital Goods	79.4	71.0	**86**
PSSA3	Porto Seguro	Financials Non-Banks	72.2	76.0	**84**
VIVT3	Vivo	TMT	57.8	88.5	**82**

Keeping up with Inflation

What to expect next?

According to our macro team, which forecasts a 6% YoY IPCA by 2025YE, we believe that this high inflation environment will persist ahead. The next regime change, which should be for *Inflation up, Rates down*, is only expected only when the monetary easing cycle is fully priced into the Pré-DI swap. Currently, the swap slope is declining, and the metric itself has remained flat for some time, suggesting an impending shift — and, consequently, a change in regime

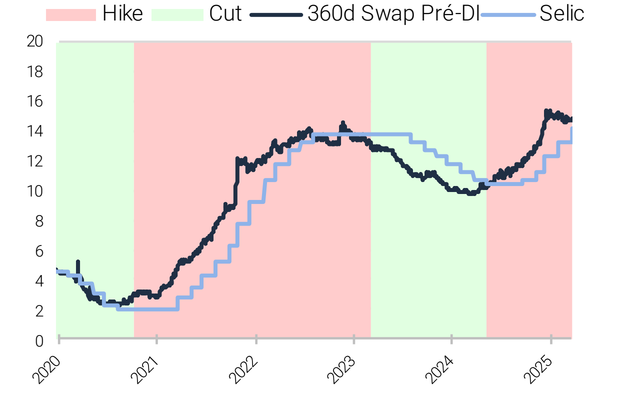
In that environment, a basket of High Value (i.e. cheap) and Low Risk stocks generally outperform. Financials (non-Banks), Capital Goods and Retail are sectors that historically do better in the "Inflation up, Rates down" regime, although hit ratios are relatively fragile. On the other hand, Banks show the worst performance when the rates trend shifts.

The performances of both suggested baskets have been similar year-to-date, with the *Inflation up, Rates down* portfolio picking up since February. This could mean that the market is already positioning for a regime change.

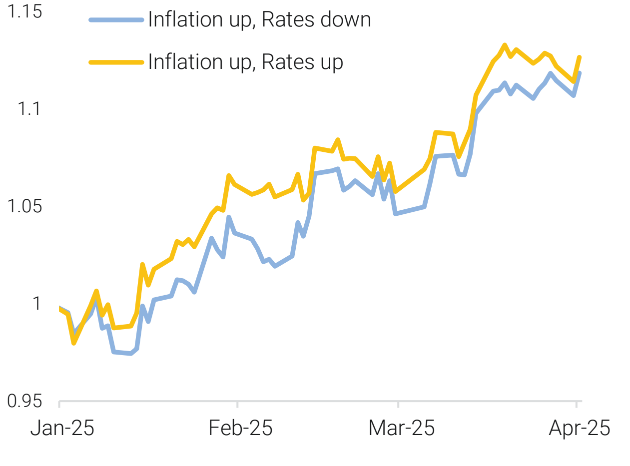
Value + Low Risk as of April 1st, 2025 – Inflation up, Rates down

Ticker	Company Name	Sector	Value Score	Low Risk Score	Overall Score
ABEV3	Ambev	Agri, Food & Beverages	72	92.0	**100**
VIVT3	Vivo	TMT	73.5	88.5	**98**
KLBN11	Klabin	Pulp & Paper	59.5	94.0	**96**
VBBR3	Vibra	Oil, Gas & Petrochemicals	92.8	58.0	**94**
CPFE3	CPFL Energia	Utilities	63.7	85.7	**92**
ISAE4	ISA Energia	Utilities	54.4	93.8	**90**
TIMS3	TIM Brasil	TMT	81.0	66.8	**88**
RADL3	Raia Drogasil	Retail	69.2	75.5	**86**
ITSA4	Itaúsa	Financials Non-Banks	64.9	79.5	**84**
NEOE3	Neo Energia	Utilities	72.1	71.8	**82**

Pré-DI swap has been flat for some time now



Performance of the baskets



Disclaimer

1) This report was prepared by XP Investimentos CCTVM S.A. ("XP Investimentos or XP") according to the requirements provided in CVM Resolution 20/2021 and aims to provide information that can help the investors make their own investment decisions, and does not constitute any kind of offer or purchase request and/or sale of any product. The information contained in this report is considered valid on the date of disclosure and has been obtained from public sources. XP Investimentos is not liable for any decisions made by the customer based on this report.

2) This report was prepared considering the product risk classification in order to generate allocation results for each investor profile.

3) All of the views expressed in this research report accurately reflect the research analyst's personal views regarding any and all of the subject securities or issuers. No part of analyst(s) compensation was, is or will be, directly or indirectly related to the specific recommendations or views expressed in this research report.

4) The signatory of this report declare that the recommendations reflect solely and exclusively their personal analyses and opinions, which have been produced independently, including in relation to XP Investimentos and which are subject to modifications without notice due to changes in market conditions, and that their remuneration are indirectly affected by revenue from business and financial transactions carried out by XP Investimentos.

5) The analyst responsible for the content of this report and the compliance with CVM Resolution 20/2021 is indicated above, and, in the event of an indication of another analyst in the report, the person responsible will be the first accredited analyst to be mentioned in Report.

6) XP Investimentos' analysts are obligated to comply with all the rules laid down in the APIMEC's conduct code for the securities analyst and XP Investimentos' analyst of securities conduct policy.

7) Customer service is carried out by XP Investimentos employees or by autonomous investment agents who perform their activities through XP, in accordance with CVM Resolution 16/2021, which are registered in the national association of brokers and distributors of securities ("ANCORD"). The autonomous agent of investment may not provide consulting, administration or management of customer net worth, and must act as an intermediary and request prior authorization from the client for the realization of any operation in the capital market.

8) The products presented in this report may not be suitable for all types of customer. Before making any decisions, customers should ensure that the products presented are suitable for their investor profile. This material does not suggest any change of portfolio, but only guidance on products suitable to a certain investor profile.

9) The profitability of financial products may present variations and their price or value may increase or decrease in a short period of time. Past performance is not necessarily indicative of future results. Performance disclosed is not net of any applicable taxes. The information present in this material is based on simulations and the actual results may be significantly different.

10) This report is intended exclusively for to the XP Investimentos' network, including independent XP agents and XP customers, and may also be released on XP's website. It is prohibited to reproduce or redistribute this report to any person, in whole or in part, whatever the purpose, without the prior express consent of XP Investimentos.

11) XP Investimentos' ombudsman has the mission to serve as a contact channel whenever customers who do not feel satisfied with the solutions given by the company to their problems. The contact can be made via telephone 0800 722 3710 if you are in Brazil or via ombudsman form if you are in other localities: ttps://institucional.xpi.com.br/ouvidoria.aspx/.

12) The cost of the transactions billing policies are defined in the operational cost tables which are made available on XP Investimentos website: www.xpi.com.br.

13) XP Investimentos is exempt from any liability for any damages, direct or indirect, that come from the use of this report or its contents.

14) Technical analysis and fundamental analysis follow different methodologies. Technical analysis is performed following concepts such as trends, support, resistance, candles, volume, and moving averages, amongst others. Fundamental analysis uses as information the results disseminated by the issuing companies and their projections. In this way, the opinions of fundamental analysts, who seek the best returns given the market conditions, the macroeconomic scenario and the specific events of the company and the sector, may differ from the opinions of technical analysts, which aim to Identify the most likely movements on asset prices, using "stops" limit possible losses.

15) Investment in stocks is appropriate for moderate and aggressive profile investors, according to the suitability policy practiced by XP Investimentos. Equity investments available are portion a company's capital that is traded on the market. Stock is a variable financial investment (i.e. an investment in which profitability is not pre-established and varies depending on market quotations). Investment in stock is a high-risk investment and past performance is not necessarily indicative of future results and no statement or warranty, expressed or implied, is made in this material in relation to future performance. Market conditions, macroeconomic scenario, company and sector specific events can affect investment performance and may even result in significant asset losses. The recommended duration for equity investments is medium-long term. There is no guarantee of investment return for customers' investments in stock.

16) Investment in options is preferably indicated for aggressive profile investors, according to the suitability policy practiced by XP Investimentos. In options market, the purchase or sale rights of a good shall be negotiated at a price fixed at a future date, and the purchaser of the negotiated duty should pay a premium to the seller as in a secure agreement. Operations with these derivatives are considered very high risk for presenting high risk and return relationships and some positions present the possibility of losses higher than the capital invested. The recommended duration for the investment is short-term and the customer's assets are not guaranteed in this type of product.

17) Investment in terms is indicated for aggressive profile investors, according to the suitability policy practiced by XP Investimentos. They are contracts for the purchase or sale of a certain number of shares at a fixed price for settlement within a specified period. The term of the contract is freely chosen by the investors, complying with the minimum period of 16 days and a maximum of 999 days. The price will be the value of the added share of a portion corresponding to the interest-which are set freely on the market, depending on the term of the contract. Every transaction in the term requires a guarantee deposit. These guarantees are provided in two forms: coverage or margin.

18) Investments in futures markets are subject to significant loss of principal, and are therefore appropriate for aggressive profile investors, according to the suitability policies practiced by XP Investimentos. A commodity is an object or price determinant of a future contract or other derivative instrument, which may substantiate an index, a fee, a movable value or a physical product. Commodities are considered high risk investments, which include the possibility of price fluctuation due to the use of financial leverage. The recommended duration for commodity investments is short-term and customers' assets are not guaranteed in this type of product. Market conditions and the macroeconomic scenario can affect the performance investments.

19) This institution is adhering ANBIMA Code of Regulation and best practices for the distribution activity of retail investment products.

20) XP Investments US, LLC, a broker-dealer registered with the U.S. Securities and Exchange Commission, has assumed responsibility for this research for purposes of U.S. law. All transactions arising from this research should be directed to XP Investments US, LLC, at +1 646-664-0525

April 3, 2025

XP. An ecosystem that takes you

beyond

Vote for all XP teams that helped shape your decisions

RESEARCH

CORPORATE ACCESS

SALES

TRADING & EXECUTION