Morningstar Brazil Target Momentum Index

A strong factor tilt and quality portfolio construction make this index an effective tool for momentum investors.

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Contents

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Executive Summary

The Morningstar Brazil Target Momentum Index is designed to represent efficient exposure to the momentum factor by targeting Brazilian stocks with strong price performance as well as strong and improving earnings. It was crafted for investability, taking steps to diversify firm- and sector-specific risk and limit unnecessary turnover. While its compact portfolio and strong momentum exposure give it ample room to run when momentum is in favor, that positioning can cut the other way. Investors can reduce risk by using this index-based strategy as a small part of a diversified portfolio.

Key Takeaways

- Momentum is one of several well-documented investment factors that have historically been associated with market-beating returns. There is strong economic rationale, rooted in investor behavior, that suggests it will likely persist in the future.
- There are often significant differences among indexes that target the same factors. Portfolio construction choices matter.
- The Morningstar Brazil Target Momentum Index aims to represent potent exposure to momentum, while considering investability and quality.
- This index has established a strong long-term record.
- Equal weighting and constraints on sector weightings help diversify risk, though this index's strong momentum exposure give it high active risk relative to the broad Brazilian market.
- Pairing this strategy with a core equity allocation can reduce risk, while still providing potential outperformance when momentum is in favor.

Strong Underpinnings

Momentum investing is based on the premise that recent performance is likely to persist in the short term. This may seem contrary to the omnipresent warning that past performance is not indicative of future results, but there is substance to the strategy. In fact, it is one of the most well documented return-enhancing factors in the financial literature.[1,,2,3,4] Researchers have known about the momentum effect since the early 1990s, and it has paid off out-of-sample (not just in the original studies) and in practice, which breeds confidence it is likely to persist and not just the product of data mining.

One possible explanation for momentum is that prices may adjust more slowly than they should to new information, as investors often initially underreact. Once a trend is established, more investors may jump on the bandwagon, further fueling price momentum. Momentum is so pervasive that it has not only been observed among individual stocks but also among entire sectors and countries[5].

Momentum is what researchers call an investment factor, defined as a common source of security returns. Factors, like momentum, can be observed with common security characteristics that can be used to both analyze and predict investment returns. Among equities, researchers have identified several other factors that have historically outperformed the market over long periods. These include value, quality, small size, yield, and low volatility[6].

These factors have been well-vetted in the academic literature. Their persistence is supported by strong economic rationale, related to either risk or investor behavior. Additionally, they are robust to different definitions and efficacious out of sample and persistent across different time periods, asset classes, and regions. The appendix on Page 10 provides a summary of each factor with descriptions of the academic rationale for their existence.

While there is strong empirical and theoretical support for these factors, they won't always outperform. Cyclicality is a feature not a bug of factor investing. Adherents to the value, size, and yield factors suffered years of underperformance in the late 1990s, and then for an even longer period following the 2008 financial crisis, a market epoch initially dubbed "FAANG" for large-cap growth leaders Facebook (now Meta Platforms), Apple, Amazon.com, Netflix, and Google (now Alphabet). Quality is notorious for lagging during market rallies though earning its keep in downturns. Momentum tends to struggle during periods of heightened volatility and during reversals after market inflection points.

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1 Asness, C., Moskowitz, T., Pedersen, L. 2013. "Value and Momentum Everywhere." *The Journal of Finance.* https://pages.stern.nyu.edu/~lpederse/papers/ValMomEverywhere.pdf .

2 Carhart, M. 2012. "On Persistence in Mutual Fund Performance." *The Journal of Finance.* https://onlinelibrary.wiley.com/doi/full/10.1111/j.1540-6261.1997.tb03808.

3 Jegadeesh, N. and Titman, S. 1993. "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency." https://www.jstor.org/stable/2328882.

4 Asness, C., Frazzini, A., Israel, R., and Moskowitz, T. 2014. "Fact, Fiction and Momentum Investing." https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2435323.

5 Bryan, A. 2016. "Harnessing Momentum With Indexes." Morningstar. https://www.morningstar.com/articles/779707/harnessing-momentum-with-indexes.

6 Low volatility has historically been associated with better risk-adjusted performance than the market, not necessarily higher absolute returns.

Of course, if factors outperformed consistently and predictably, they would be arbitraged away and lose efficacy. Investors would do well to bear in mind a tagline coined by Corey Hoffstein of Newfound Research: "No pain, no premium."

Index strategies are well-suited for factor investing, as they can capture factors with transparent consistent rules, in a more cost-efficient manner than active managers. In fact, these strategies often package sources of outperformance that active managers have long exploited either knowingly or unknowingly. Because cyclicality comes with the territory, passive factor investors should be, at least in theory, better prepared to stick it out for the long term than with active managers feared to have "lost their touch."

Translating From Theory to Practice

The factors defined in the academic literature are not directly investable. They don't account for transaction costs and may look quite different from the portfolios investors can hold at scale. Index strategies that attempt to harness the same factor often look and perform quite differently from one another, owing to differences in how they measure the targeted factor, how aggressively they pursue it, and other portfolio construction steps.

It's important to balance the targeted factor exposure against practical considerations, like liquidity, investment capacity, and diversification. This is especially true for momentum, where high turnover can create high transaction costs.

The Morningstar Brazil Target Momentum Index is designed to provide strong exposure to the momentum factor, while ensuring investability and considering stock quality. This index does not look at recent performance in isolation but also considers profitability to better target stocks with momentum backed by solid and improving fundamentals.

Each eligible stock from the Morningstar Brazil Index is assigned a weighted average fundamental factor rank, or WAFFR, based on six metrics, which capture both price momentum and profitability:

- Percentage change in price from 12-month high
- Price change (%) from month-end nine months ago
- Price change (%) from month-end three months ago
- Three-month fiscal earnings-per-share estimate revision
- Latest fiscal period earnings surprise
- Trailing return on equity

This composite approach reveals a more complete picture of each stock than any single metric in isolation. The inclusion of three price metrics favor stocks with more consistent momentum, which may be more likely to persist. The EPS revision and earnings surprise metrics favor stocks with improving profitability, while return on equity emphasizes strong past profitability. The inclusion of these fundamental factors reduces the risk of loading up on stocks that are climbing on nothing but speculation.

Each quarter, liquidity screened stocks are ranked on their WAFFR, and the highest-ranking 30 securities are targeted for inclusion[7]. To mitigate unnecessary turnover, existing constituents may remain in the index as long as their WAFFR continues to rank in the top 40% of the eligible universe. The index is equally weighted and constrains its sector weightings to limit concentration risk.

Performance

The Morningstar Brazil Target Momentum Index has established a strong long-term record. From its performance start date in June 2007 (which includes back-tested data) through December 2022, it outperformed the Morningstar Brazil Index by 6.0 percentage points annualized. It also outperformed over the most recent three-, five-, and 10-year periods, as well as since its live inception in September 2015.

Exhibit 1 Performance Summary

Name	Live Incept. Date	1 Yr	3 Yr	5 Yr	10 Yr	Since Live Incept.	Since	Std Dev 10 Yr	Beta 10 Yr	Down Capture Ratio 10 Yr	Up Capture Ratio 10 Yr
Morningstar Brazil Tgt Mtum	21/09/2015	4.38	14.53	15.40	12.55	18.24	12.71	20.11	0.89	70.81	89.92
Morningstar Brazil	22/12/2014	5.06	6.83	8.68	7.87	13.27	6.69	22.16	1.00	100.00	100.00

Source: Morningstar Direct. Performance based on GR BRL variants. Data as of Dec. 31, 2022.

While this outperformance was significant, it was not uniform across all periods, as shown in the relative wealth chart in Exhibit 2.[8] Interestingly, the index tended to offer stronger market-relative performance during downturns than it did during rallies, likely partially because of its inclusion of quality metrics in the stock-selection criteria. However, the index may not always outperform during downturns. Its strong momentum orientation should provide an edge when momentum stocks are in favor but can just as easily cut the other way.

7 As of December 2022, there were 127 stocks in the parent benchmark, so the Morningstar Brazil Target Momentum Index's target count of 30 translates to a coverage ratio of 24%.

8 Relative wealth charts show the growth of a dollar in one investment relative to a benchmark, providing a gauge of the timing and magnitude of outperformance. When the line is sloping up, the investment is outperforming.

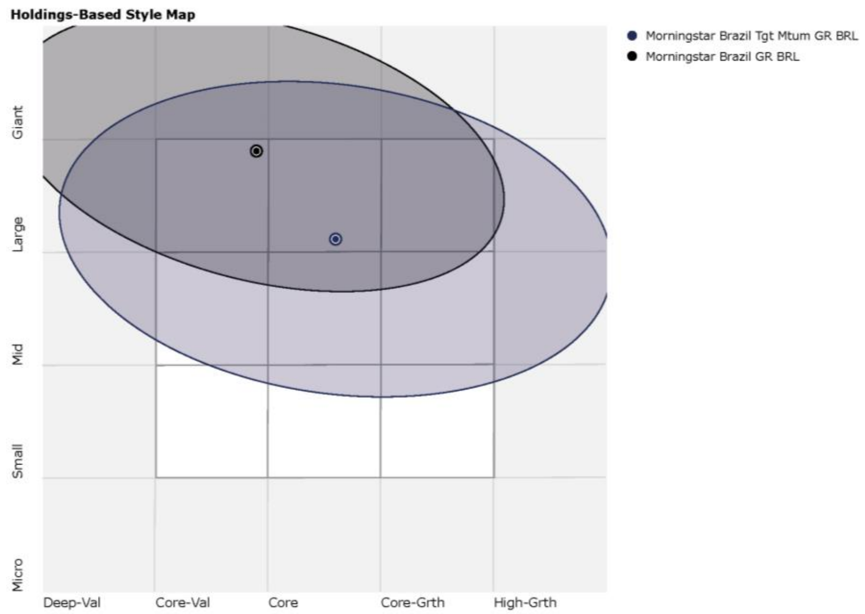
Exhibit 2 Relative Wealth: Morningstar Brazil Target Momentum Index vs. Morningstar Brazil Index

Source: Morningstar Direct. Data as of Dec. 31, 2022.

Portfolio Highlights

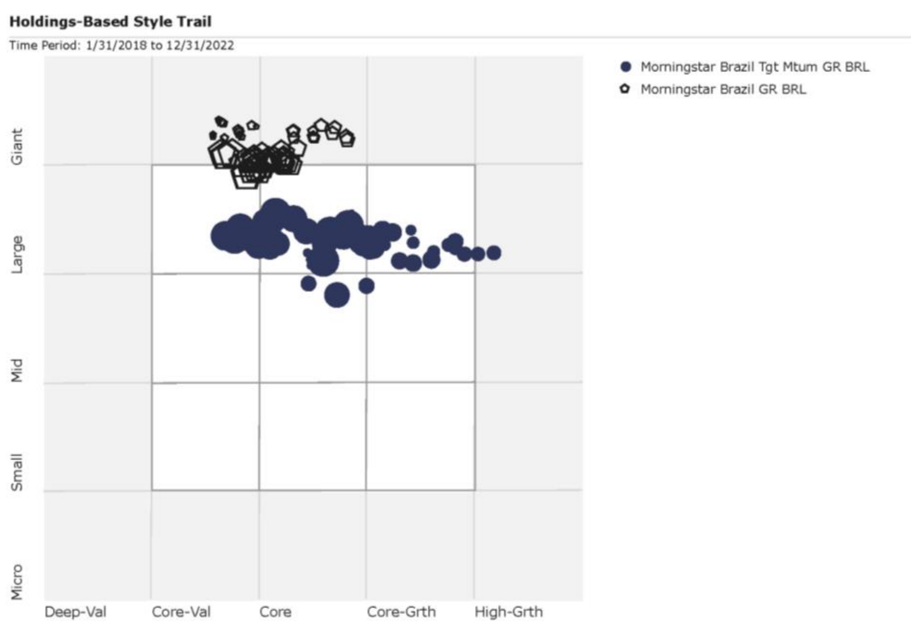
In addition to its strong momentum factor orientation, the Morningstar Brazil Target Momentum Index has tended to tilt toward smaller-cap stocks. This arises from its equal-weighting approach and all-cap selection universe. While the index currently sits in the middle of the value-growth spectrum, it has tended to move around the Morningstar Style Box as momentum shifts. This is shown in Exhibits 3 and 4.

Exhibit 3 Style Orientation



Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 4 Style Movement (Trailing 5 Years Through December 2022)



Source: Morningstar Direct. Data as of Dec. 31, 2022.

To improve diversification, the index's sector weightings cannot exceed the weighting in the parent index (Morningstar Brazil Index) plus 10 percentage points. Still, some of its sector weightings can deviate considerably from that benchmark, as Exhibit 5 shows. This is a source of active risk, but one that helps strengthen the index's momentum exposure.

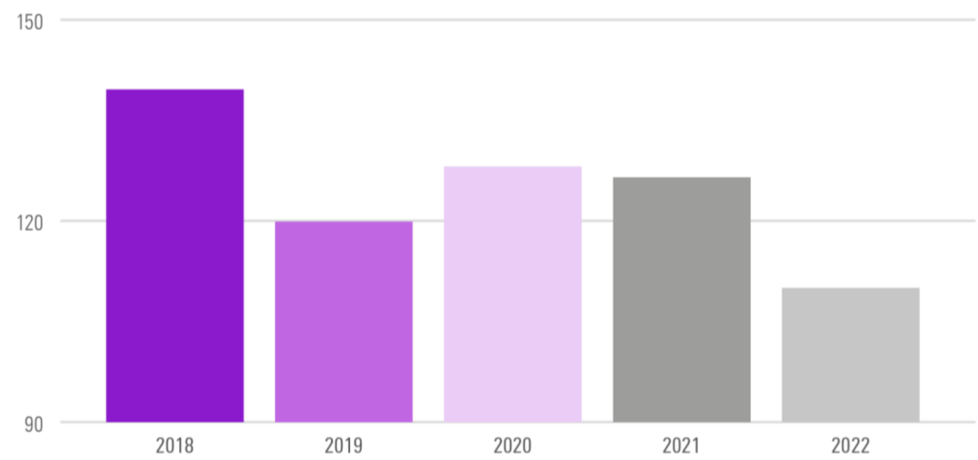
Exhibit 5 Distribution of Sector Tilts (%) Relative to the Morningstar Brazil Index

Sectors	Min	Q1	Median	Q3	Max
Basic Materials	-10.49	-5.61	-4.43	-0.62	4.64
Communication Services	-3.11	-2.09	0.4	1.11	3.24
Consumer Cyclical	-5.82	1.63	4.09	6.3	10.96
Consumer Defensive	-10.33	-3.79	0.84	4.41	13.35
Energy	-8.39	-6.39	-5.12	-3.98	1.02
Financial Services	-11.29	-6.97	-5.84	-4.59	-0.53
Healthcare	-3.91	-0.86	2.73	4.75	7.51
Industrials	-4.26	0.79	2.97	5.25	7.28
Real Estate	-2.32	-1.5	0.5	2.5	5.03
Technology	-2.77	-1.15	0.69	2.33	4.8
Utilities	-3.29	3.51	4.78	5.83	8.27

Source: Morningstar Direct. Distribution from July 1, 2007, to Dec. 31, 2022. Data as of Dec. 31, 2022.

Turnover here is high, as Exhibit 6 illustrates. Even over a one-year holding period, the composition of each index changed considerably, and these changes tend to be more pronounced over longer periods. This flexibility to follow the factor signals as they shift strengthens factor exposure. However, to mitigate unnecessary turnover, current constituents are given preference in the stock-selection process, as long as their factor characteristics remain close to the targeted selection threshold.

Exhibit 6 Turnover (%)

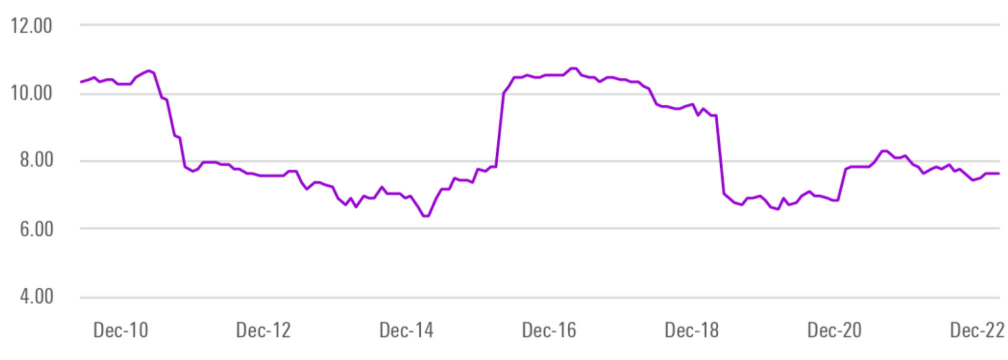


Source: Morningstar Direct. Data as of Dec. 31, 2022.

Role in a Portfolio

Owing to its compact portfolio and strong momentum exposure, the Morningstar Brazil Target Momentum Index carries high active risk relative to the market, as shown in Exhibit 7. However, investors can pair this index with a core allocation to a market benchmark to moderate active risk.

Exhibit 7 Tracking Error (%) Against the Morningstar Brazil Index (Rolling Three Years)



Source: Morningstar Direct. Data as of Dec. 31, 2022.

Exhibit 8 shows the performance of a portfolio with a 25% allocation to the Morningstar Brazil Target Momentum Index, with the remaining 75% allocated to the broad market-cap-weighted Morningstar Brazil Index. This diversified portfolio had considerably lower active risk (measured by tracking error) than the target momentum index and better performance than the market. This demonstrates the benefits of using this factor index as a satellite allocation in a broadly diversified portfolio.

Exhibit 8 Diversification Moderates Risk (Performance Over Trailing 10 Years Through December 2022)

Name	Return (%)	Std Dev (%)	Beta	Tracking Error (%)
Morningstar Brazil Tgt Mtum	12.55	20.11	0.93	6.15
Brazil Portfolio	9.09	21.37	0.97	2.05
Morningstar Brazil	7.87	22.16	1.00	0.00

Source: Morningstar Direct. Data as of Dec. 31, 2022.

While the Morningstar Brazil Target Momentum Index exhibited the lower and higher returns than the broad market over the past decade, it will not always outperform. Momentum has historically underperformed in the wake of sharp market reversals and periods of heightened volatility when past trends are less likely to persist. However, these periods have tended to be more favorable for other factors like value and low volatility, respectively. As such, single factor strategies, like the Morningstar Brazil Target Momentum Index, are often most compelling as supporting complementary building blocks for a diversified portfolio.

The Morningstar Brazil Target Momentum Index delivers potent factor exposure, providing an effective tool for investors to express their views on momentum. While factors like momentum have historically rewarded investors over the long term, it can be difficult to predict when they will pay off. Diversification is always a good idea. Pairing factor indexes with each other and traditional core equity allocations should help reduce portfolio volatility and smooth the investor's ride.

Appendix: Factor Overview

Value: Value investing is about buying low and selling high—targeting stocks trading at low multiples of fundamental measures like earnings, book value, cash flow, sales, and dividends. Value investing is backed by strong economic rationale and empirical evidence. Lower valuations should reflect higher expected returns, either as compensation for risk or because investors may be overly pessimistic about these stocks' prospects[9].

Momentum: Momentum strategies target stocks with strong recent returns, based on the premise they are likely to continue to outperform. One possible explanation for this persistence: Prices may adjust more slowly than they should to new information, as investors often initially underreact. Once a trend is established, more investors may pile on, further fueling price momentum[10].

Quality: The shares of companies with strong profitability and balance sheets have performed better historically than less profitable and more highly indebted counterparts.[11] They tend to be less risky than the market and hold up better during downturns, characteristics that intuitively wouldn't lead to an expectation of higher returns. However, investors may have historically underestimated the long-term durability of these firms' strong cash flows, leading to an impressive long-term track record of risk-adjusted returns.

Small Size: Historically, smaller-cap stocks have tended to outperform their larger counterparts.[12] The small-cap premium is rooted in risk. Smaller, less proven companies are more volatile than their larger cousins and should compensate investors for the extra risk they bear.

Yield: Higher-yielding stocks have historically offered superior returns than their lower-yielding counterparts.[13] This strategy targets stocks with high shareholder yields, inclusive of both dividend yield and buyback yield. Companies with generous cash distribution yields tend to be more stable and profitable and trade at lower valuations. Their shareholders are more loyal because they are holding the stock for both income and total return. And the dividend commitment tends to instill discipline and lead to careful stewardship.

Low Volatility: Stocks with low past volatility have tended to offer better risk-adjusted performance than those with high volatility[14]. Unlike many of the other factors, there isn't a clear risk-based explanation for this effect. The anomaly is typically explained through investor behavior, given leverage and tracking-error constraints. Professional investors overly focused on returns and unable to leverage

9 For academic work on value, see https://people.duke.edu/~charvey/Teaching/BA453_2006/FF_Common_risk.pdf and https://www.jstor.org/stable/2327804

10 For academic work on momentum, see https://www.jstor.org/stable/2328882

11 For academic work on quality, see: http://rnm.simon.rochester.edu/research/OSoV.pdf and http://www.econ.yale.edu/~shiller/behfin/2013_04-10/asness-frazzini-pedersen.pdf

12 For academic work on the small-cap premium, see: https://www.ivey.uwo.ca/media/3775518/the_cross-section_of_expected_stock_returns.pdf

13 For academic work on yield, see: https://www.jstor.org/stable/2327346

14 For academic work on low volatility, see: http://rnm.simon.rochester.edu/research/UDE.pdf

https://pages.stern.nyu.edu/~lpederse/papers/BettingAgainstBeta.pdf their portfolios can crowd into volatile stocks, which have greater upside potential than their more staid counterparts. Retail investors looking for lottery-like upside can also crowd into these trades. As a result, not only are low-volatility stocks more resilient during "risk-off" market environments, but they may also be priced to offer a more favorable risk/reward trade-off over the long term.

About Morningstar Indexes

Morningstar Indexes was built to keep up with the evolving needs of investors—and to be a leading-edge advocate for them. Our rich heritage as a transparent, investor-focused leader in data and research uniquely equips us to support individuals, institutions, wealth managers and advisors in navigating investment opportunities across major asset classes, styles and strategies. From traditional benchmarks and unique IP-driven indexes, to index design, calculation and distribution services, our solutions span an investment landscape as diverse as investors themselves.

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