LAZARD
ASSET MANAGEMENT

Tracking Error: Myth vs. Reality

Executive Summary

- Low tracking error does not always mean low conviction: In some cases, it reflects active risk that focuses specifically on stock-picking rather than volatile macro bets.
- Macro timing can be costly: High tracking error strategies often rely on sector, style, or country deviations that are hard to time and can lead to sharp losses, especially in environments of heightened economic uncertainty.
- A stable and consistent approach can pay off: A benchmark-aware, bottom-up approach focused on idiosyncratic stock selection can potentially deliver steady returns, higher information ratios, and less volatility across market cycles—all with relatively low tracking error.

Introduction

Tracking error measures the extent to which a fund's returns "track" the performance of a benchmark. Viewed through this lens, high tracking error is often associated with high levels of purposeful, active risk-taking in pursuit of outperformance—a measure of a manager's confidence in their positions or of the sophistication level of an investment process. Low tracking error, in contrast, is often associated with lower levels of investment insight and hence lower levels of conviction. In some cases, low tracking error can raise concerns about "closet indexing," whereby a fund charges active management fees while delivering passive-like, benchmark-hugging performance.

However, large deviations from an index are not necessarily a prerequisite for achieving outperformance over the long term. In fact, investors seeking stability through different market environments may find that low tracking error strategies can deliver competitive active returns compared to high tracking error strategies—but with tighter risk controls and less volatility along the way.

A Closer Look at the "Bets" That Drive Tracking Error

Fund managers do not typically make tracking error an explicit target. Instead, they develop an investment process based on research and investment insight, and the active risks they take as a part of that process can naturally drive tracking error higher or lower.

For example, an investment team taking a top-down approach may start by forming a world view and subsequently seeking out various country, sector, style, and size biases to support it. This could mean overweighting China against an emerging markets benchmark to support an optimistic view of that country's future or overweighting defensive value stocks based on a weaker economic outlook than the market's. An investment team taking a bottom-up approach, by contrast, will seek to identify attractive stocks with certain appealing investment characteristics and *then* diversify their investments across the dimensions of country, sector, style, and size—either tightly or loosely aligning with the make-up of a benchmark, depending on a team's particular conviction, style preferences, or risk appetite.

Regardless of their approach, all active managers will take "bets" against a benchmark, and it is those bets that will determine tracking error. Exhibit 1 illustrates what these bets look like "under the hood" of a portfolio: the most common categories of active risk (e.g., style bias, market timing), the approximate number of risk-taking opportunities available in each one, and how these decisions factor into tracking error.

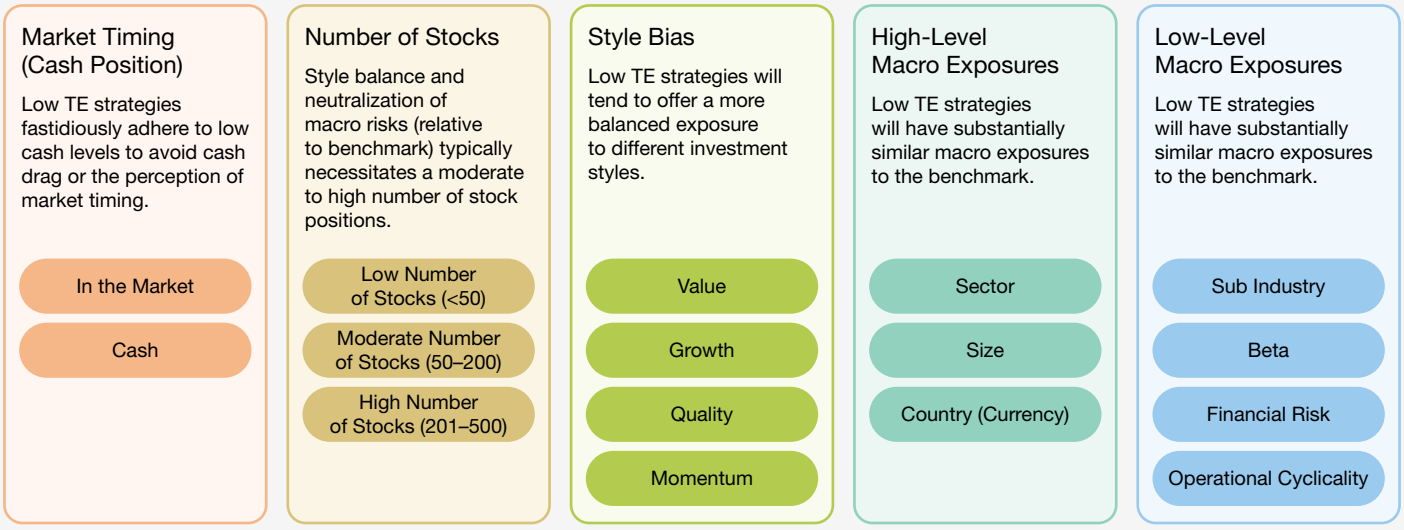
But relying on a single style bias, significant macro exposures, or a combination of both—an inherent feature of higher tracking error strategies—can be problematic for two reasons.

First, this approach draws from smaller opportunity sets, typically focusing on the categories of sector, size, or style. Statistics 101 would tell you that this increases the risks associated with being wrong: the smaller the pool of investment opportunities, the harder it is to get your average bet right.

Second, because these approaches tend to be based on macro predictions—e.g., predictions of long-term consumer behavior patterns or of a country's economic outlook—they can create an unintentional dependency on particular economic, geopolitical, or interest rate environments.

Exhibit 1

Drivers of Tracking Error (TE)



Source: Lazard. For illustrative purposes only.

We believe the risk of mistiming has become considerably higher in the era of the trillion-dollar company.

Recent Years Have Seen Style and Macro Divergences Grow Larger

In periods of heightened uncertainty, betting on the performance of a particular sector, style, or country can be particularly problematic. Most active managers know that change is inevitable: that investment styles fall in and out of favor or that bubbles eventually burst. But betting on *when* these rotations will occur is a notoriously difficult endeavor that has become even more so in recent years.

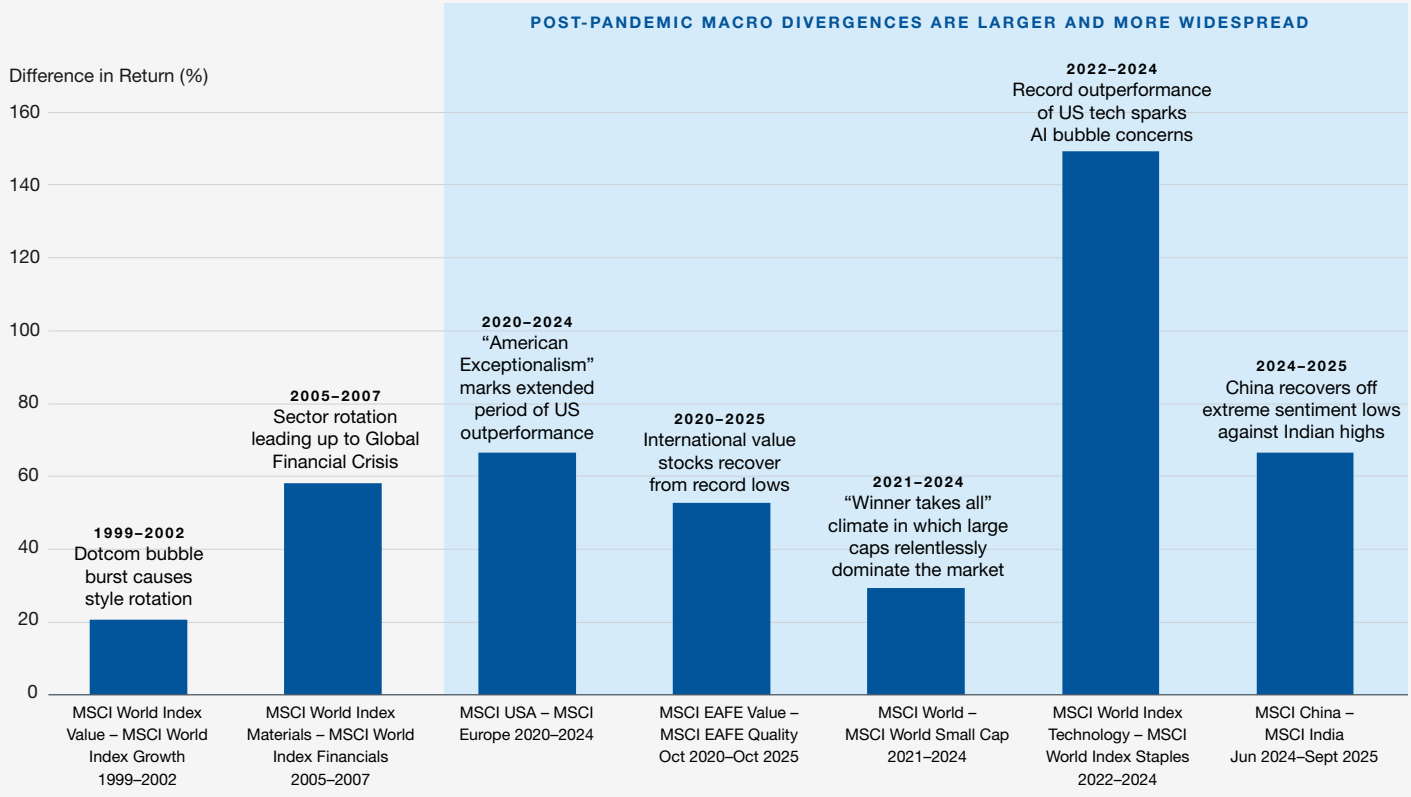
Exhibit 2 highlights the magnitude of performance gaps that can emerge when major style rotations take place. It also shows how much more frequent and extreme these rotations have become in the 2020s—a reality that we believe increases the risk of overweighting or underweighting certain investment styles in anticipation of a particular macro trend playing out.

The dotcom burst of the late 1990s is a prime example of the complications that can arise from adjusting portfolio weights in anticipation of a reversal. Plenty of active managers predicted in 1996–1998 that the valuations of high-growth internet companies were unsustainably high, making a flight to safety—toward tangible, "old economy" value stocks with stable cash flows—highly likely if not inevitable. This sharp sell-off of tech stocks did eventually happen in 2000, resulting in a 20% style performance gap seen between MSCI Growth and MSCI Value.

But as the saying goes: There is no difference between being early and wrong. Active managers who mistimed this shift and underweighted growth stocks too early—say, in 1997 as opposed to 1999—would likely have underperformed the benchmark or missed out on considerable tech-driven returns for that amount of time.

Exhibit 2

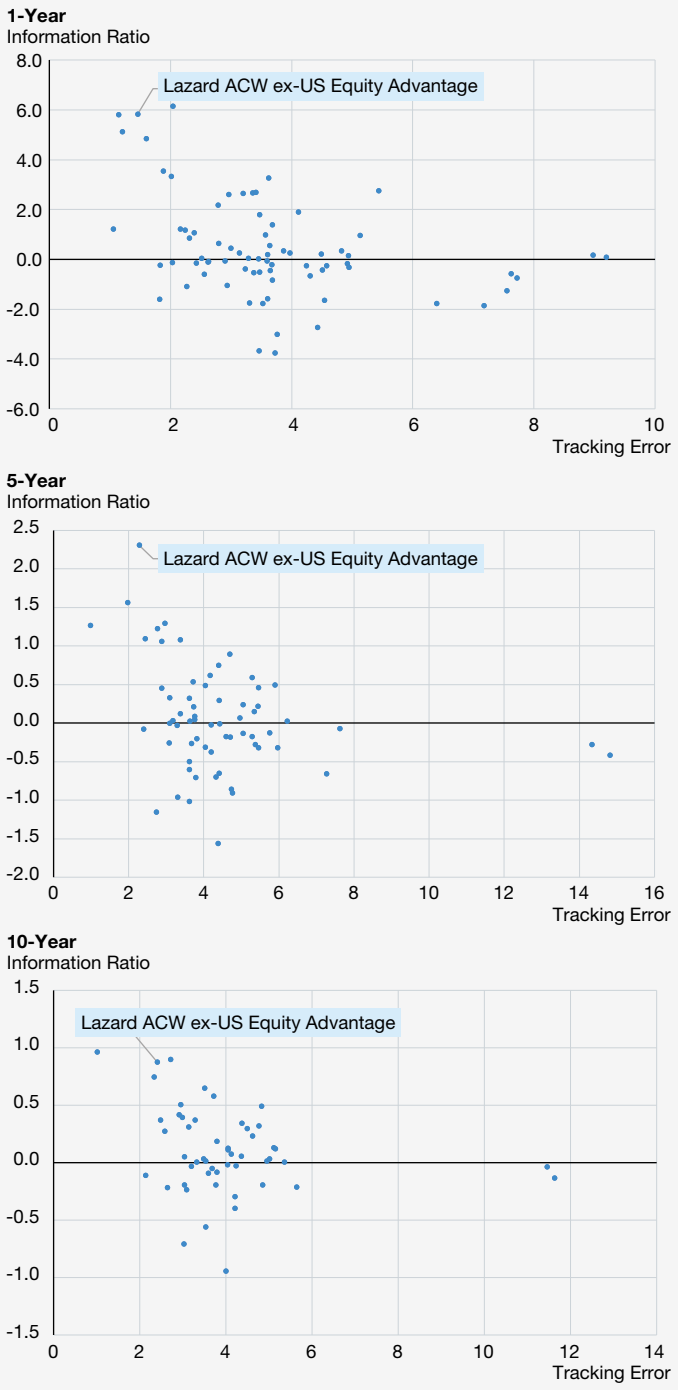
Major Style, Industry, and Country Rotations of Recent Decades



As of 15 November 2025
Source: MSCI. The divergences displayed here represent what we believe to be some of the most significant and well-known rotations of recent decades.

Exhibit 3

Tracking Error vs. Peers



As of 30 September 2025

Source: eVestment. All dots represent the eVestment Large Cap Core Universe. TE and IR are calculated vs. the MSCI ACWI ex-US-ND index and net returns are shown.

A quantitative investment strategy relies on quantitative models and quantitative filters, which, if incorrect, may adversely affect performance. Equity securities will fluctuate in price; the value of your investment will thus fluctuate, and this may result in a loss. Securities in certain non-domestic countries may be less liquid, more volatile, and less subject to governmental supervision than in one's home market. The values of these securities may be affected by changes in currency rates, application of a country's specific tax laws, changes in government administration, and economic and monetary policy. Emerging markets securities carry special risks, such as less developed or less efficient trading markets, a lack of company information, and differing auditing and legal standards. The securities markets of emerging markets countries can be extremely volatile; performance can also be influenced by political, social, and economic factors affecting companies in these countries.

We believe the risk of mistiming has become considerably higher in the era of the trillion-dollar company. The Magnificent Seven—the largest US tech companies, representing a single sector and particular types of stocks (growth, momentum)—now account for a quarter of the MSCI World Index and a third of the S&P 500. The sheer size of these market leaders is driving a 140+% gap between the MSCI World Technology Index (representing the highest-performing sector) and the MSCI World Staples Index (representing the lowest-performing sector)—a gap that is at least seven times larger than the growth vs. value performance gap of the dotcom era. Those who believe today's US tech outperformance represents a bubble may be right—but underweighting US tech in anticipation of that bubble bursting could have grave consequences for performance, depending on how long it takes for that burst to occur.

US tech tends to attract the most attention due the scale of its current outperformance. But we are seeing a similar performance divergence between China and India, the two emerging market behemoths. MSCI China recently experienced a significant turnaround after years of underperformance, while MSCI India has lagged to an extraordinary extent as investor enthusiasm dropped off.[1] For a portfolio tracking an emerging markets index, having a large India overweight and a China underweight from mid-2024 to today would have been costly.

Straying too far from a benchmark in terms of sector or style may drive tracking error higher—but it also increases the risk of losses if managers mistime style or macro trends.

Slow and Steady: An Alternative Approach

Active returns of high tracking error strategies tend to be driven by significant macro mis-weights. By contrast, our active returns are driven by thousands of stock weight differences.

We select investments to help ensure that from a country, sector, and size perspective, portfolios are shaped similarly to how the benchmark is shaped. For example, we will maintain the same country-weights or size-weights as the benchmark (i.e., small cap weight of 15% or US weight of 70%), but we will focus on evaluating specific stock properties—for example, cash flow robustness, nuanced valuation perspectives, textual sentiment analysis, and long-term growth potential—using a wide array of data and analytical techniques and tweaking portfolio positioning as needed. This approach allows us to apply our fundamental analysis and proprietary modeling to the largest possible opportunity set, the liquidity screened stock universe, while minimizing unintended macro exposures.

Lazard ACWI ex-US Equity Advantage—one of our longest-running strategies, investing in international developed markets outside the United States—has shown strong long-term performance with relatively low tracking error, driven primarily by stock-picking rather than macro exposures. While the strategy's tracking error has trended lower compared

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to peers, this relatively low tracking error comes with *higher* information ratios—a measure of returns per unit of active risk taken—reflecting our deliberate decision to only "spend" active risk in areas where we believe our investment insights to have the highest likelihood of success.

The combination of low tracking error and high information ratios makes clear that low tracking error does not necessarily hamper an investor's ability to deliver strong results. In our view, low tracking error indicates a judicious use of active risk and has historically supported relatively stable return characteristics over time.

End Result

Our lower tracking error reflects a deliberate, calibrated use of the active risk budget. By using multi-dimensional risk models that seek to minimize macro risk, and focusing on more rewarding sources of returns, we seek to generate stable, active returns in different market environments.

We may not deliver dramatic short-term outperformance, but we seek to avoid the volatility and drawdowns that often accompany high tracking error strategies. For investors seeking stable returns over the long term, we believe this approach is the ideal path forward.

Important Information

Notes

1. Indian equities underperform peers by widest margin in three decades (Financial Times, 3 December 2025)

Dislclaimers

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The MSCI World Value Index captures large and mid cap securities exhibiting overall value style characteristics across Developed Markets countries. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward earnings to price, and dividend yield.

The MSCI World Growth Index captures large and mid cap securities exhibiting overall growth style characteristics across Developed Markets countries. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend, and long-term historical sales per share growth trend.

The MSCI World Materials Index is designed to capture the large and mid cap segments across Developed Markets countries. All securities in the index are classified in the Materials sector as per the Global Industry Classification Standard (GICS®).

The MSCI World Financials Index captures large and mid cap representation across Developed Markets countries. All securities in the index are classified in the Financials sector as per the Global Industry Classification Standard (GICS®).

The MSCI World ex USA Index captures large and mid cap representation across 22 of 23 Developed Markets (DM) countries--excluding the United States. The index covers approximately 85% of the free-float-adjusted market capitalization in each country.

The MSCI Europe Index captures large and mid cap representation across Developed Markets (DM) countries in Europe. The index covers approximately 85% of the free-float-adjusted market capitalization across the European Developed Markets equity universe.

The MSCI World Value Index captures large and mid cap securities exhibiting overall value style characteristics across 23 Developed Markets countries.

The MSCI World Quality Index is based on MSCI World, its parent index, which includes large and mid-cap stocks across 23 Developed Market countries. The index aims to capture the performance of quality growth stocks by identifying stocks with high quality scores based on three main fundamental variables: high return on equity (ROE), stable year-over-year earnings growth and low financial leverage.

The MSCI World Index is a free-float-adjusted market capitalization index that is designed to measure global developed market equity performance comprised of developed market country indices.

The MSCI World Small Cap Index captures small cap representation across Developed Markets countries. The index covers approximately 14% of the free-float-adjusted market capitalization in each country.

The MSCI World Information Technology Index is designed to capture the large and mid cap segments across Developed Markets countries. All securities in the index are classified in the Information Technology sector as per the Global Industry Classification Standard (GICS®).

The MSCI World Consumer Staples Index is designed to capture the large and mid cap segments across Developed Markets (DM) around the world. All securities in the index are classified in the Consumer Staples sector as per the Global Industry Classification Standard (GICS®).

The MSCI China Index is constructed based on the integrated China equity universe included in the MSCI Emerging Markets Index, providing a standardized definition of the China equity opportunity set. The index aims to represent the performance of large- and mid-cap segments with H shares, B shares, red chips, P chips and foreign listings (e.g., ADRs) of Chinese stocks.

The MSCI India Index is designed to measure the performance of the large and mid cap segments of the Indian market. The index covers approximately 85% of the Indian equity universe.

The indices are unmanaged and have no fees. One cannot invest directly in an index.

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