PIMCO

Emerging Markets: The Biggest, Fastest Growing, and Arguably Least Understood Pool of Credit in the World

AUTHORS

Pramol Dhawan
Managing Director
Portfolio Manager

Michael Story
EVP, Fixed
Income Strategist

Learn why emerging market debt is best used to reduce risk rather than chase yields.

KEY TAKEAWAYS:

- Emerging market (EM) debt's composition, risk, return, and correlation characteristics have transformed over the years. Yet many investors today use EM debt for the wrong reasons, manage it imprudently, or overlook the best parts.
- EM debt used to be characterized by a higher distribution of more extreme outcomes. But now its distribution of returns resembles that of more mainstream asset classes such as U.S. corporate debt.
- The main reason to consider EM debt is for its diversification benefits relative to other spread sectors such as U.S. corporate debt, in our view, rather than as a way to hunt for high returns.
- Macro risk in EM has shifted from economic complexity, which can be modeled, toward political uncertainty, which can be impossible to predict. Thus, taking only a macro-driven approach toward alpha generation is more likely to backfire today than in years past.

In amateur tennis, fully 80% of points scored are the result of an errant shot, such as hitting the ball out of bounds. This was the insight that Charles Ellis used to characterize investing in his classic "The Loser's Game." It is not what investors get right that defines success, it is what they do not get wrong.

While he was writing in 1975, this idea captures a lot of what happened to emerging market (EM) debt during the mid-2000s. Investors who were leaning into risk and trying to time the market around macro events started to play a loser's game. The winner's game, in contrast, shifted toward bottom-up trades that are uncorrelated to election cycles, geopolitical events, and other systemic macro events – areas where it has become more difficult to have an edge as an investor.

EM debt has become the largest pool of credit in the world, according to the Bank for International Settlements, surpassing the U.S. over the past decade. Along the way, many of

EM's fundamental attributes have been transformed. As the market has evolved, so too must investment strategies adapt.

The best countries or regions are generally not those being hyped as the next success stories. In contrast to conventional wisdom, EM often rewards investors who minimize losses rather than maximize gains, and who avoid concentrated positions in high-yielding countries. We believe EM debt should be used primarily as a diversification tool – rather than a source of seeking high returns – prioritizing lower-risk countries and senior debt structures.

EM debt has similar default and recovery rates to U.S. corporate debt but also more volatility, especially for lower-quality issuers. That's one reason why we believe bottom-up relative-value analysis and portfolio construction are more important to EM today than top-down macro analysis. In addition, active management in EM debt has consistently outperformed passive investing, according to Morningstar data.

Rapid economic growth through the early 2000s masked many underlying complexities in EM, but growth has slowed. In this piece, we attempt to unmask the asset class, identifying universal features of EM and how they can help in achieving broader investment objectives.

STORYTELLING VERSUS HYPOTHESIS TESTING

The optimistic stories told by EM investors for decades revolved around demographics, urbanization, a rising middle class, and GDP growth catching up to developed market (DM) levels. Today's stories are more nuanced. Catch-up growth continues, but at a slower pace. Policymakers are better at business cycle stabilization, but there is greater political and geopolitical uncertainty than before.

These stories aren't inaccurate, but they have not always mattered for investment returns. EM equities should have been the biggest beneficiary from stronger growth, for example, but fared worse than both DM equities and EM debt.

Here, rather than storytelling, we take a more scientific approach. The investment hypothesis for EM debt is as follows. It should be used primarily as a means to reduce concentrations to other domestic risks without sacrificing yield.

Investors should not treat EM as a space to hunt for high returns. It may sound counterintuitive, but the case for EM debt should not be anchored on spreads, yields, or some other valuation metric. It should be based primarily on diversification benefits, in our view.

Therefore, investors should consider taking a page from Warren Buffett's book: 1) prioritize lower-risk countries with reasonable valuations over high-risk countries with great valuations, and 2) move to more senior parts of the capital structure (from equity to debt).

Of course, there are exceptions. But this is the top-level hypothesis that seems best supported by the data.

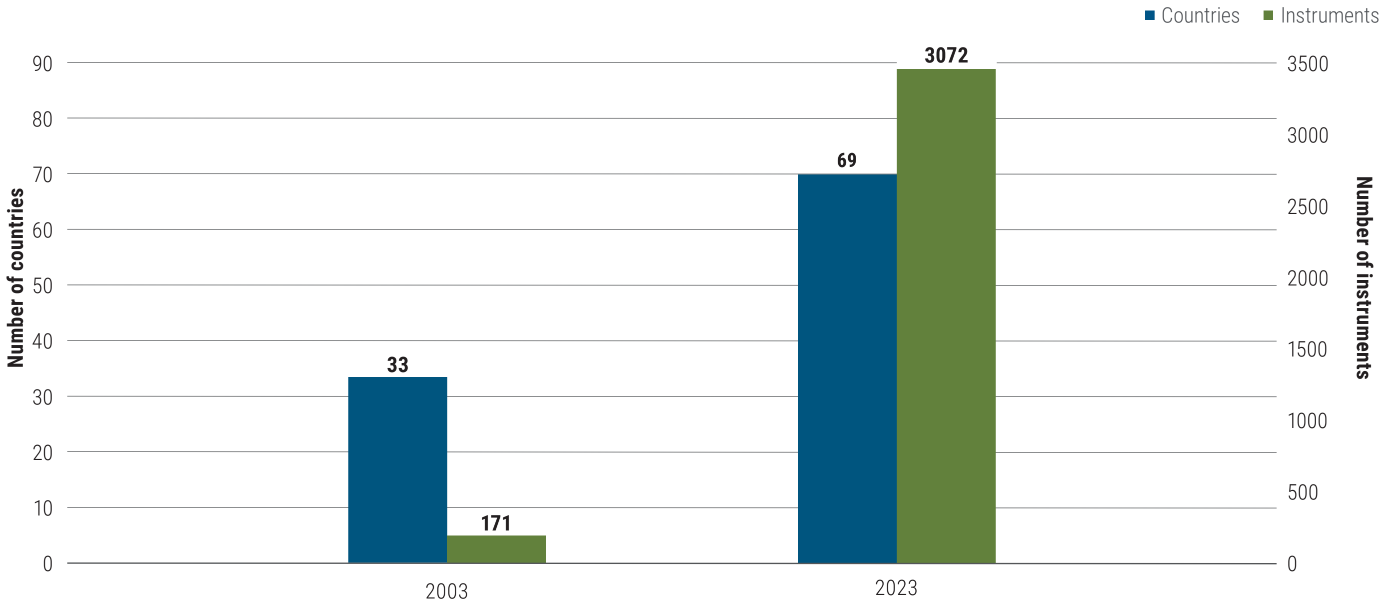
AN ANATOMY OF THE ASSET CLASS

The number of investable EM countries has more than doubled in the past 20 years. We now model about 200 individual macro risk factors (such as foreign exchange, rates, and spreads) across about 85 countries. Correlations across this matrix range from 0.8 to -0.7, according to data going back 20 years, calculated by PIMCO. So there is extreme diversity within the asset class.

Moreover, some factors are "risk-on" while others are "risk-off," i.e., positively or negatively correlated to global systemic factors such as oil or equities. There are now about 12 sovereign bond issuers that have provided similar portfolio ballast during risk-off events over the past 15 years as U.S. Treasuries, the perceived ultimate risk-off asset. During this 15-year period, a basket of EM local bonds hedged to U.S. dollars (as gauged by 5-year swaps) generated higher returns than comparable U.S. Treasuries (also as gauged by 5-year swaps) and had a similar success rate in hedging equity drawdowns but less of a payout when drawdowns occurred.

This increase in the number of countries has been overshadowed by the rise in available instruments, which has grown nearly 20-fold (see Figure 1) in the past two decades. Investors can now disaggregate country-level macro risk factors into fine granularity.

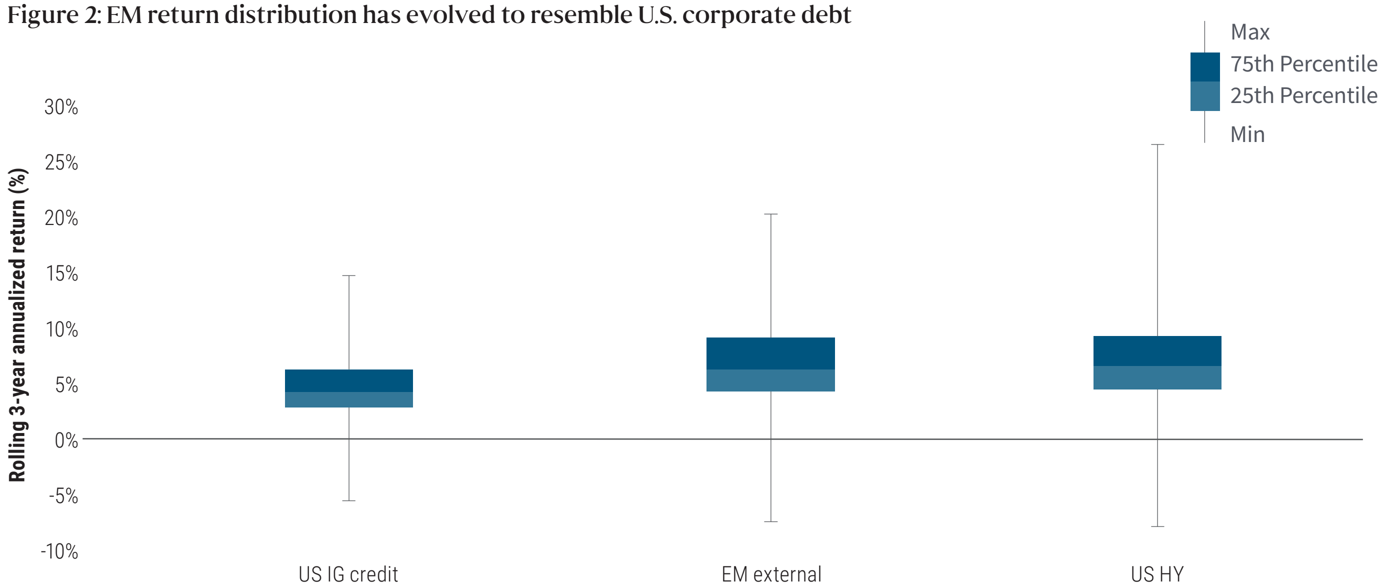
Figure 1: Growth in the number of investable EM instruments has outpaced growth in investable EM countries



Source: J.P. Morgan as of 31 December 2023. Number of countries refers to the JPM EMBI Global Diversified Index; number of instruments is an aggregate of the three flagship JPM indices: JPM EMBI Global Diversified, JPM CEMBI Broad Diversified, and GBI-EM Global Diversified.

This is positive for the asset class. EM debt used to be characterized by fat tails – i.e., a higher distribution of more extreme outcomes. But now its distribution of returns resembles that of more mainstream asset classes such as U.S. corporate debt (see Figure 2).

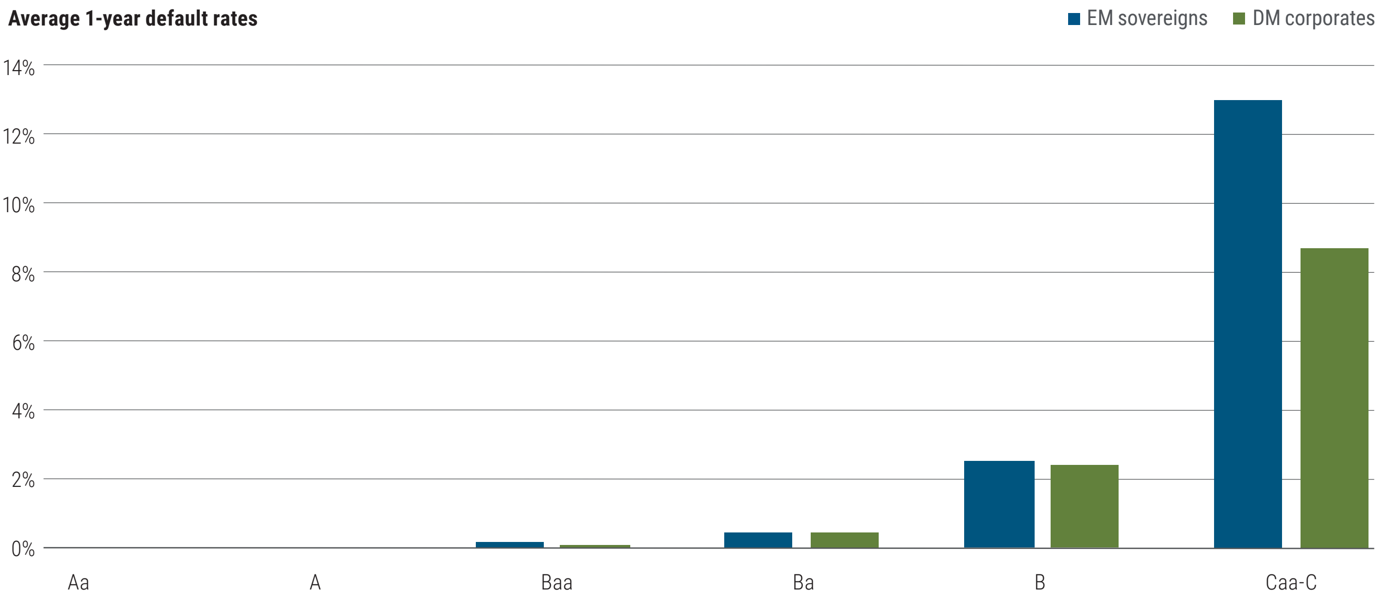
Figure 2: EM return distribution has evolved to resemble U.S. corporate debt



Source: Bloomberg and PIMCO as of 29 February 2024. Chart shows rolling 3-year annualized returns starting monthly from 31 December 2005 through 29 February 2024. **Past performance is not a guarantee or a reliable indicator of future results**. U.S. investment grade (IG) credit is represented using the Bloomberg US Credit Index; U.S. high yield (HY) is represented by the Bloomberg US Corporate High Yield Index; EM External is represented by the JP Morgan EMBI Global Diversified Composite Index. Note EM external is roughly 60% IG rated and 40% high yield rated.

Fundamental credit risk is also similar. Defaults along much of the credit ratings quality spectrum, from AA to single B, are in line with U.S. corporate issuers (see Figure 3).

Figure 3: EM default distribution resembles corporate issuers at higher credit rating levels



Source: Moody's as of 31 December 2023. Default rates are based on Moody's analysis of the asset classes.

Recovery values (and loss-given-default) are also nearly identical, at about 40%. However, there are three nuances to note.

1. Default probabilities for issuers rated CCC are higher for EM than for U.S. corporates. (Spreads are wider too, so we are not commenting on whether this cohort is relatively rich or cheap.) This is because the rules of the game can get rewritten for the lowest-quality EM issuers because of political upheaval, whereas U.S. corporate issuers rated CCC operate within a more defined system of stable rules and bankruptcy law.
2. While the EM and U.S. corporate default data share a similar mean, the EM data has a wider standard deviation. Default events in EM have a wider range of outcomes.
3. Workouts can take longer in EM. A U.S. corporate restructuring may take months to work through a court system. By contrast, it may take years to negotiate terms among international creditors, the International Monetary Fund, and other bilateral lenders. All else equal, this means that the present value of a nonperforming EM debt instrument undergoing a restructuring will be lower (even if the ultimate recovery value is the same).

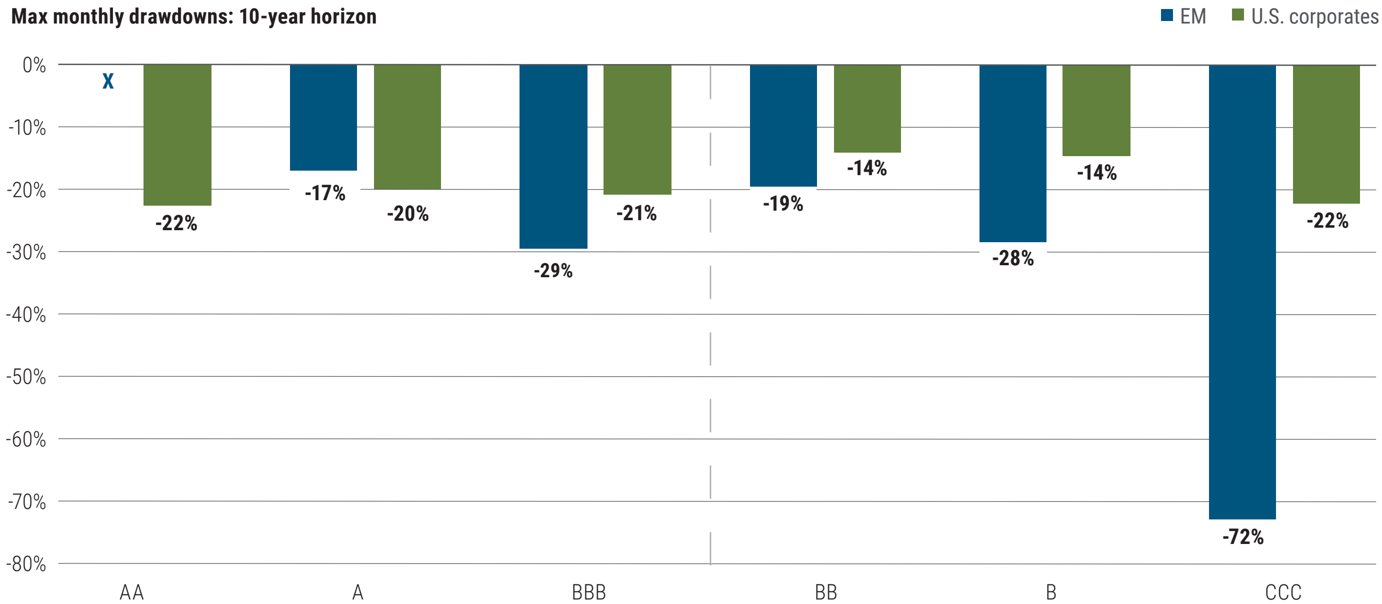
ASYMMETRY OF CERTAIN RISKS

There is an additional empirical nuance, perhaps the most important one of all: the mark-to-market efficiency of returns along the quality spectrum, as captured by metrics such as the Sharpe ratio, a gauge of risk-adjusted return. Similar to fundamental credit risk, measures of mark-to-market volatility increase much more on the lowest-quality bonds in EM than in U.S. corporate debt, rendering a lower Sharpe ratio for EM debt rated single B and CCC.

Drawdowns are also disproportionately deeper during times of acute stress for EM (see Figure 4). Worst of all, the sensitivity to market-based returns, or betas, becomes asymmetric, meaning the downside capture during a market sell-off is larger than the upside capture during a rally.

None of this means that there cannot be compelling value in EM debt rated single B and CCC. But it does explain why too many investors have been seduced by the siren song of high-yielding, low quality frontier markets. The bonds may be cheap, but the efficiency of the resulting returns is poor for investors with anything short of a very long time horizon.

Figure 4: EM drawdowns have been deeper at lower rating levels



Source: Bloomberg, J.P. Morgan, PIMCO as of 30 April 2023. **Past performance is not a guarantee or a reliable indicator of future results.** U.S. corporates refers to Bloomberg US High Yield Index and Bloomberg US Credit Index. EM refers to JPMorgan EMBI Global Diversified Index.

This explains why EM debt offers higher spreads compared with U.S. corporates despite similar fundamental credit risk – about 70 basis points on average on a risk-neutral basis over the past five years. The additional spread is not a sign of market inefficiency. It is compensation for other burdens, such as unfamiliarity (i.e., the need to explain newspaper headlines to one's investment board), wider bid-ask spreads in secondary markets, and additional mark-to-market volatility, especially on lower-quality bonds. In theory, these additional burdens shouldn't matter to long-term value investors. But in practice they do.

INVESTMENT APPROACH

This siren song also explains why some investors say they've been on a roller coaster ride with EM in the past. Beyond general asset class volatility, many have been exposed to 1) poor sizing of the asset class in their broader portfolio, and 2) imprudent risk scaling within the EM debt allocation. Let's look more closely at both.

Strategic asset allocation (sizing the beta)

If diversification is the main objective, then the correlation of EM debt to a broader portfolio is the most important metric. This is true for any asset class, but it is especially important for satellite exposures that play a more peripheral role in portfolio construction.

An asset inclusion test offers a clear framework. It reduces the decision whether to include an asset class to an optimization function: Maximize a portfolio's Sharpe ratio subject to the constraints of risk, return, and correlations of the individual assets.

The result is a measure of each asset's marginal impact on the portfolio's overall Sharpe ratio. This will be fairly unique for each investor. But generally speaking, EM debt scores better than most other assets. It does so because of favorable correlation characteristics, not solely because of higher yields.

The correlation between EM debt and U.S. corporate debt is about 0.63 over the past 10 years, using J.P. Morgan data. This is relatively low within the world of fixed income spreads. And this is the point: EM debt must be assessed jointly by its risk, return, and diversification properties at the broader portfolio level, rather than narrowly on some rich/cheap valuation metric, and not independently from one's overall portfolio.

Abiding by these guidelines leads to a more sober assessment of sizing in strategic asset allocations. Many clients, ranging from insurance companies to pension funds, typically have chosen an allocation of 2% to 8%.

Risk scaling (seeking alpha)

Investors are always at the mercy of what the market offers. If markets evolve, so too must investment strategies.

Consider how the EM debt market has evolved. In the early years (1990s and early 2000s), there were few countries in EM. Most issuers readily overpaid to access international capital. Growth was booming but punctuated by homegrown shocks (e.g., 1994 in Mexico and 1997 in Asia). The key skill set was top-down macro analysis. Investors could beat the market by leaning into risk and harnessing excess yields, while hopefully sidestepping country-specific sell-offs.

Today, there are far more countries and instruments to consider. Growth is middling and recent shocks are mainly exogenous and systemic (e.g., the 2008 global financial crisis, 2013 Treasury taper tantrum, and 2020 pandemic).

It is difficult to have an edge in macro analysis. Not only is it a more crowded field, but the nature of risk has shifted – from economic complexity, which can be modeled, toward political uncertainty, which can be impossible to predict.

In our opinion, the key skill set for investing in EM debt today is bottom-up relative-value analysis and portfolio construction. It is the ability to identify small arbitrage opportunities, instrument by instrument, and then combine and scale each in a way that a basket of these trades is more efficient than any one is independently.

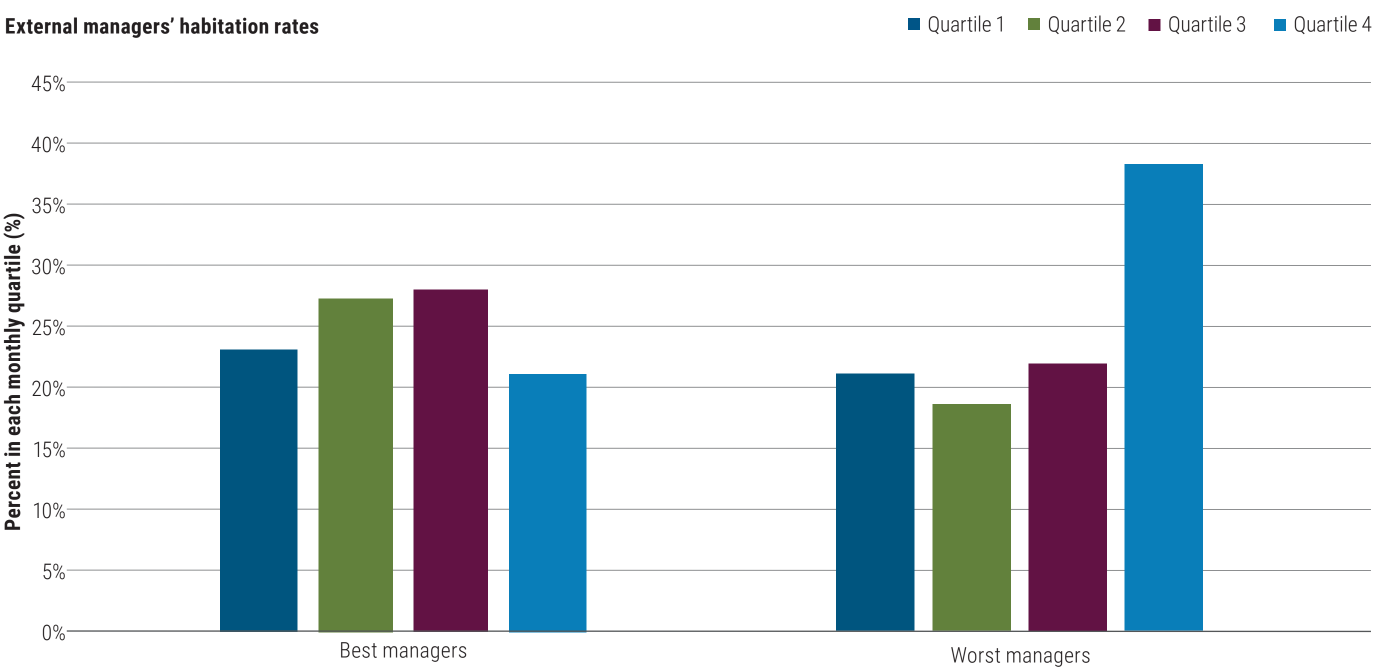
Convexity – or the nonlinear relationship between prices and yields – is key. It embeds downside cushion during market sell-offs – prices fall but decreasingly so. This is particularly important given the excess volatility and asymmetric beta sensitivities noted earlier, especially at the lower end of the quality spectrum.

Of course, top-down macro analysis remains critical – but as a starting point. It must be thoroughly mapped to create space for the bottom-up alpha process to flourish. We model and measure 10–15 distinct bottom-up trade types and scale them in portfolios based on their Sharpe ratios and correlations to the beta. This is an engineering challenge, which leads to much more bounded results than if it were a forecasting challenge.

PLAYING A WINNER'S GAME

The tennis analogy mentioned earlier – winning by limiting errors – is not just a metaphor. It comes through clearly in the data. Consider the best and worst EM debt investors over the past decade (see Figure 5), and compare the journey, month-by-month, of each along the way. Did the best investors achieve their status by maximizing victories or by minimizing defeats? The answer is clear.

Figure 5: Consistency and mitigating downside in the short term may breed better long-term outcomes



Source: PIMCO and Morningstar as of 31 August 2024. **Past performance is not a guarantee or a reliable indicator of future results.** Quartile data is sourced from Morningstar and represents Morningstar's Global Emerging Markets Bond category. Quartile of manager (e.g., "Best" – 1st Quartile, "Worst" – 4th Quartile) is determined by 10-year trailing total performance net of fees. Quartile habitation was determined by monthly total performance over the same time period. Habitation refers to the percentage of the strategy's 10-year total trailing performance in a designated quartile. Figure is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.

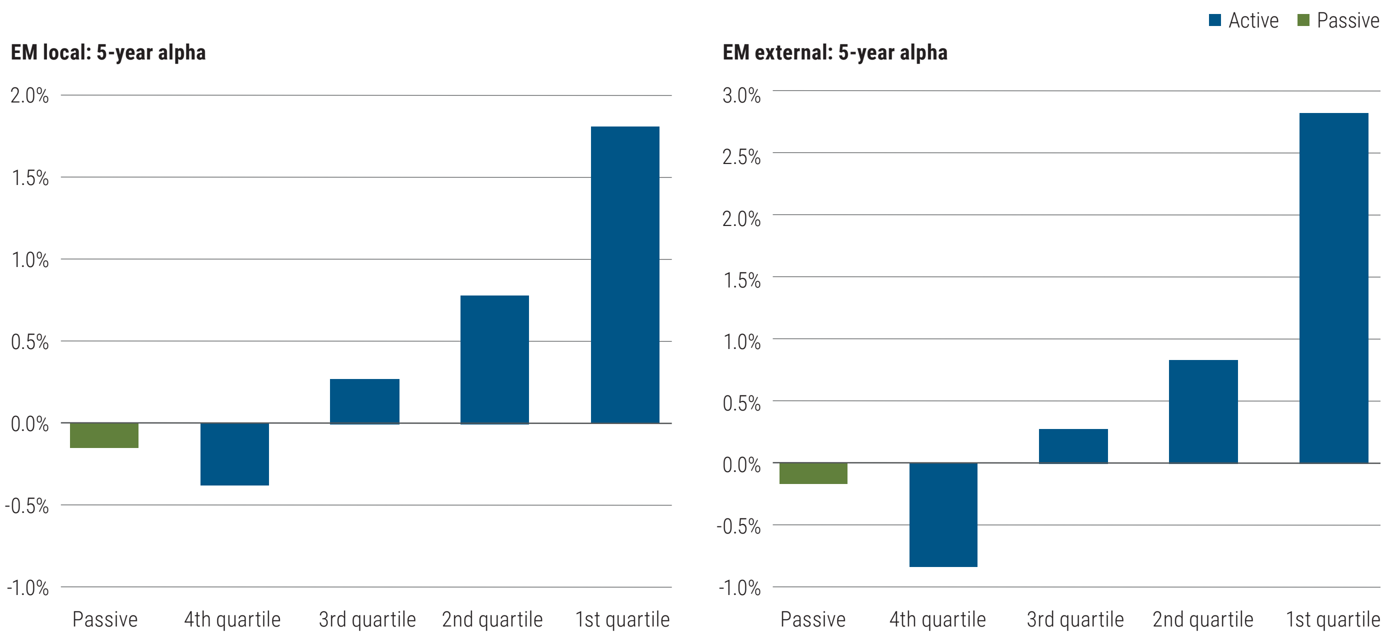
The best and worst investors had about the same frequency of 1st-quartile monthly returns (23% versus 21%, respectively). But the best investors had a dramatically lower frequency of bad months. They experienced 4th-quartile monthly returns 21% of the time, versus 38% for the worst managers.

This is consistent with the asymmetric return profile of the asset class discussed earlier. The efficiency of returns from higher-quality countries can be overshadowed by the inefficiency of returns from lower-quality countries. Likewise, years of positive alpha, or market outperformance, can be wiped out in a single drawdown episode.

Our process is explicitly designed around these empirical realities for the asset class. It is designed to minimize the incidence of 4th-quartile monthly returns. (Please reach out to your PIMCO representative for statistics specific to PIMCO.)

What about passive investing? It has been remarkably consistent, ranking at the lower end of the 3rd quartile year after year (see Figure 6).

Figure 6: Active management outside of the 4th quartile has added value versus passive management



Source: PIMCO, Morningstar as of 30 June 2024. **Past performance is not a guarantee or a reliable indicator of future results.** Figure is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product. Based on after-fee performance data for U.S. open-end mutual funds (institutional share class) and ETFs in the Morningstar Emerging-Markets Local-Currency Bond category with benchmarks of JPM GBI-EM Global Diversified or a comparable index and the Morningstar Emerging Markets Bond category with benchmarks of JPM EMBI Global Diversified or a comparable index. Q1-Q4: top 25% to bottom 25%.

The vast majority of active managers perform much better. Moreover, this better performance does not have to feel like a roller coaster.

Investors can treat EM debt as a structural allocation, used to de-concentrate from domestic sources of credit risk. They can size the allocation based on its effect on the Sharpe ratio of their overall portfolio. And, most importantly, investors should manage the EM allocation with caution. That can mean avoiding the temptation to migrate toward high-conviction, high-concentration positions in high-yielding countries, which can magnify macro-driven volatility. That game may have worked two decades ago. But it is a difficult game to win today.

PIMCO

Past performance is not a guarantee or a reliable indicator of future results.

Investing in foreign-denominated and/or -domiciled securities may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in **emerging markets**. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Equities** may decline in value due to both real and perceived general market, economic and industry conditions. **Management risk** is the risk that the investment techniques and risk analyses applied by an investment manager will not produce the desired results, and that certain policies or developments may affect the investment techniques available to the manager in connection with managing the strategy. **Diversification** does not ensure against loss.

Statements concerning financial market trends or portfolio strategies are based on current market conditions, which will fluctuate. There is no guarantee that these investment strategies will work under all market conditions or are appropriate for all investors and each investor should evaluate their ability to invest for the long term, especially during periods of downturn in the market. Investors should consult their investment professional prior to making an investment decision. Outlook and strategies are subject to change without notice.

The **credit quality** of a particular security or group of securities does not ensure the stability or safety of an overall portfolio. The quality ratings of individual issues/issuers are provided to indicate the credit-worthiness of such issues/issuer and generally range from AAA, Aaa, or AAA (highest) to D, C, or D (lowest) for S&P, Moody's, and Fitch respectively.

Alpha is a measure of performance on a risk-adjusted basis calculated by comparing the volatility (price risk) of a portfolio vs. its risk-adjusted performance to a benchmark index; the excess return relative to the benchmark is alpha. **Beta** is a measure of price sensitivity to market movements. Market beta is 1. **Convexity** is the curvature in the relationship between bond prices and interest rates. It reflects the rate at which the duration of a bond changes as interest rates change. **Correlation** is a statistical measure of how two securities move in relation to each other. The correlation of various indexes or securities against one another or against inflation is based upon data over a certain time period. These correlations may vary substantially in the future or over different time periods that can result in greater volatility. The **Sharpe Ratio** measures the risk-adjusted performance. The risk-free rate is subtracted from the rate of return for a portfolio and the result is divided by the standard deviation of the portfolio returns.

The terms **"cheap"** and **"rich"** as used herein generally refer to a security or asset class that is deemed to be substantially under- or overpriced compared to both its historical average as well as to the investment manager's future expectations. There is no guarantee of future results or that a security's valuation will ensure a profit or protect against a loss.

This material contains the current opinions of the manager such opinions are subject to change without notice. This material is distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. Information contained herein has been obtained from sources believed to be reliable, but not guaranteed.

PIMCO as a general matter provides services to qualified institutions, financial intermediaries and institutional investors. Individual investors should contact their own financial professional to determine the most appropriate investment options for their financial situation. This is not an offer to any person in any jurisdiction where unlawful or unauthorized. | **Pacific Investment Management Company LLC**, 650 Newport Center Drive, Newport Beach, CA 92660 is regulated by the United States Securities and Exchange Commission. | **PIMCO Europe Ltd (Company No. 2604517, 11 Baker Street, London W1U 3AH, United Kingdom)** is authorised and regulated by the Financial Conduct Authority (FCA) (12 Endeavour Square, London E20 1JN) in the UK. The services provided by PIMCO Europe Ltd are not available to retail investors, who should not rely on this communication but contact their financial adviser. . Since PIMCO Europe Ltd services and products are provided exclusively to professional clients, the appropriateness of such is always affirmed. | **PIMCO Europe GmbH (Company No. 192083, Seidlstr. 24-24a, 80335 Munich, Germany), PIMCO Europe GmbH Italian Branch (Company No. 10005170963, via Turati nn. 25/27 (angolo via Cavalieri n. 4), 20121 Milano, Italy), PIMCO Europe GmbH Irish Branch (Company No. 909462, 57B Harcourt Street Dublin D02 F721, Ireland), PIMCO Europe GmbH UK Branch (Company No. FC037712, 11 Baker Street, London W1U 3AH, UK), PIMCO Europe GmbH Spanish Branch (N.I.F. W2765338E, Paseo de la Castellana 43, Oficina 05-111, 28046 Madrid, Spain) and PIMCO Europe GmbH French Branch (Company No. 918745621 R.C.S. Paris, 50–52 Boulevard Haussmann, 75009 Paris, France)** are authorised and regulated by the German Federal Financial Supervisory Authority (BaFin) (Marie- Curie-Str. 24-28, 60439 Frankfurt am Main) in Germany in accordance with Section 15 of the German Securities Institutions Act (WpIG). The Italian Branch, Irish Branch, UK Branch, Spanish Branch and French Branch are additionally supervised by: (1) Italian Branch: the Commissione Nazionale per le Società e la Borsa (CONSOB) (Giovanni Battista Martini, 3 - 00198 Rome) in accordance with Article 27 of the Italian Consolidated Financial Act; (2) Irish Branch: the Central Bank of Ireland (New Wapping Street, North Wall Quay, Dublin 1 D01 F7X3) in accordance with Regulation 43 of the European Union (Markets in Financial Instruments) Regulations 2017, as amended; (3) UK Branch: the Financial Conduct Authority (FCA) (12 Endeavour Square, London E20 1JN); (4) Spanish Branch: the Comisión Nacional del Mercado de Valores (CNMV) (Edison, 4, 28006 Madrid) in accordance with obligations stipulated in articles 168 and 203 to 224, as well as obligations contained in Tile V, Section I of the Law on the Securities Market (LSM) and in articles 111, 114 and 117 of Royal Decree 217/2008, respectively and (5) French Branch: ACPR/Banque de France (4 Place de Budapest, CS 92459, 75436 Paris Cedex 09) in accordance with Art. 35 of Directive 2014/65/EU on markets in financial instruments and under the surveillance of ACPR and AMF. The services provided by PIMCO Europe GmbH are available only to professional clients as defined in Section 67 para. 2 German Securities Trading Act (WpHG). They are not available to individual investors, who should not rely on this communication. According to Art. 56 of Regulation (EU) 565/2017, an investment company is entitled to assume that professional clients possess the necessary knowledge and experience to understand the risks associated with the relevant investment services or transactions. Since PIMCO Europe GMBH services and products are provided exclusively to professional clients, the appropriateness of such is always affirmed. | **PIMCO (Schweiz) GmbH (registered in Switzerland, Company No. CH-020.4.038.582-2, Brandschenkestrasse 41 Zurich 8002, Switzerland)**. According to the Swiss Collective Investment Schemes Act of 23 June 2006 ("CISA"), an investment company is entitled to assume that professional clients possess the necessary knowledge and experience to understand the risks associated with the relevant investment services or transactions. Since PIMCO (Schweiz) GmbH services and products are provided exclusively to professional clients, the appropriateness of such is always affirmed. The services provided by PIMCO (Schweiz) GmbH are not available to retail investors, who should not rely on this communication but contact their financial adviser. | **PIMCO Asia Pte Ltd** (8 Marina View, #30-01, Asia Square Tower 1, Singapore 018960, Registration No. 199804652K) is regulated by the Monetary Authority of Singapore as a holder of a capital markets services licence and an exempt financial adviser. The asset management services and investment products are not available to persons where provision of such services and products is unauthorised. | **PIMCO Asia Limited** (Suite 2201, 22nd Floor, Two International Finance Centre, No. 8 Finance Street, Central, Hong Kong) is licensed by the Securities and Futures Commission for Types 1, 4 and 9 regulated activities under the Securities and Futures Ordinance. PIMCO Asia Limited is registered as a cross-border discretionary investment manager with the Financial Supervisory Commission of Korea (Registration No. 08-02-307). The asset management services and investment products are not available to persons where provision of such services and products is unauthorised. | **PIMCO Investment Management (Shanghai) Limited**. Office address: Suite 7204, Shanghai Tower, 479 Lujiazui Ring Road, Pudong, Shanghai 200120, China (Unified social credit code: 91310115MA1K41MU72) is registered with Asset Management Association of China as Private Fund Manager (Registration No. P1071502, Type: Other). | **PIMCO Australia Pty Ltd** ABN 54 084 280 508, AFSL 246862. This publication has been prepared without taking into account the objectives, financial situation or needs of investors. Before making an investment decision, investors should obtain professional advice and consider whether the information contained herein is appropriate having regard to their objectives, financial situation and needs. To the extent it involves Pacific Investment Management Co LLC (PIMCO LLC) providing financial services to wholesale clients, PIMCO LLC is exempt from the requirement to hold an Australian financial services licence in respect of financial services provided to wholesale clients in Australia. PIMCO LLC is regulated by the Securities and Exchange Commission under US laws, which differ from Australian laws. | **PIMCO Japan Ltd**, Financial Instruments Business Registration Number is Director of Kanto Local Finance Bureau (Financial Instruments Firm) No. 382. PIMCO Japan Ltd is a member of Japan Investment Advisers Association, The Investment Trusts Association, Japan and Type II Financial Instruments Firms Association. All investments contain risk. There is no guarantee that the principal amount of the investment will be preserved, or that a certain return will be realized; the investment could suffer a loss. All profits and losses incur to the investor. The amounts, maximum amounts and calculation methodologies of each type of fee and expense and their total amounts will vary depending on the investment strategy, the status of investment performance, period of management and outstanding balance of assets and thus such fees and expenses cannot be set forth herein. | PIMCO Taiwan Limited is an independently operated and managed company. The reference number of business license of the company approved by the competent authority is (112) Jin Guan Tou Gu Xin Zi No. 015 . The registered address of the company is 40F., No.68, Sec. 5, Zhongxiao East Rd., Xinyi District, Taipei City 110, Taiwan (R.O.C.), and the telephone number is +886 2 8729-5500. | **PIMCO Canada Corp.** (199 Bay Street, Suite 2050, Commerce Court Station, P.O. Box 363, Toronto, ON, M5L 1G2) services and products may only be available in certain provinces or territories of Canada and only through dealers authorized for that purpose. | **Note to Readers in Colombia:** This document is provided through the representative office of Pacific Investment Management Company LLC located at Carrera 7 No. 71-52 TB Piso 9, Bogota D.C. (Promoción y oferta de los negocios y servicios del mercado de valores por parte de Pacific Investment Management Company LLC, representada en Colombia.). **Note to Readers in Brazil:** PIMCO Latin America Administradora de Carteiras Ltda.Av. Brg. Faria Lima, 3477 Itaim Bibi, São Paulo - SP 04538-132 Brazil. **Note to Readers in Argentina:** This document may be provided through the representative office of PIMCO Global Advisors LLC AVENIDA CORRIENTES, 299, Buenos Aires, Argentina. |