

Frontier Market Debt: Making History Rhyme

EMERGING MARKET DEBT INSIGHTS – SEPTEMBER 2025



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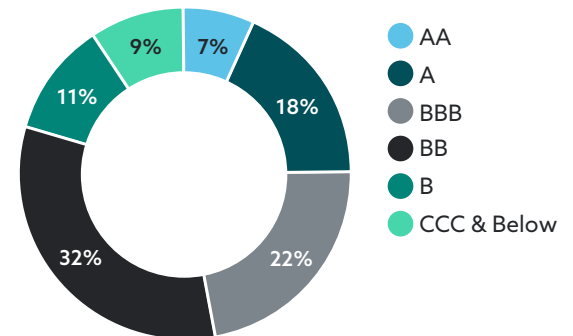
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Forged from stressed US bank balance sheets in the late 1980s, the Brady Bond market served as the genesis for emerging market (EM) debt as an asset class. At the time, EM debt paired elevated bond yields with reform-oriented country stories, leading to returns exceeding 300% in its first decade as a measurable asset class.¹ EM debt's early successes fueled optimism in an inevitable economic convergence story that has largely gone unmet. Yet EM has also seen real progress as exemplified by materially improved credit ratings for the standard EM index since inception.

THINKING BEYOND THE BENCHMARKS

EM debt has evolved considerably since its early days. Headline yields have moved lower as the average credit quality of core EM issuers has moved higher. At the same time, sovereign issuers have grown in number, broadening the credit ratings mix in major EM indices – from defaulted to nearly AAA – creating a bifurcated index structure that complicates asset allocation decisions. Case in point, 25% of the EM sovereign universe is either rated CCC or below or rated A or higher. As a result, EM debt benchmark returns have increasingly become a function of duration and carry. We believe investors seeking higher total returns do themselves a disservice by allocating to off-the-shelf, benchmark-oriented EM strategies.

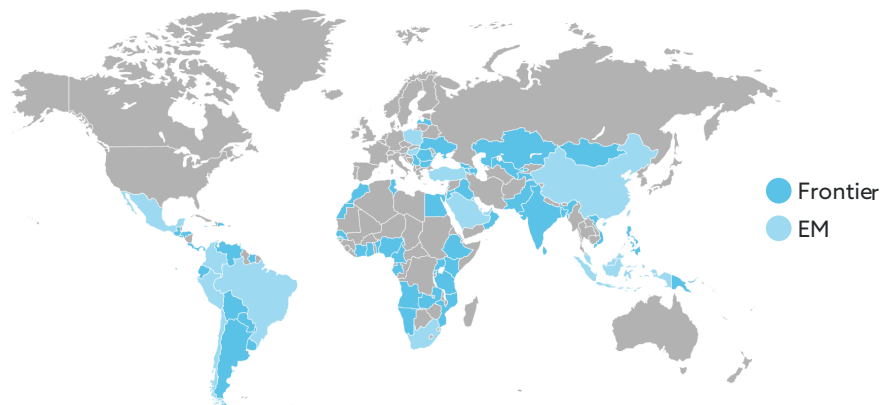
EM INDEX BY RATINGS CATEGORY²



ENTER FRONTIER MARKETS

Frontier Market debt (frontier), in some ways, looks like a throwback to the early days of EM debt as an asset class, offering both higher yields and greater potential for economic convergence across this subset of EM countries. The definition of frontier markets varies, both by market participant and index provider. PPM defines the opportunity set by focusing on countries at a lower level of economic development, which typically carry a below-investment grade credit rating or are classified by the World Bank as low- or lower-middle income.

PPM'S CLASSIFICATION OF EMERGING AND FRONTIER MARKETS³



As of 5 September 2025. Unless otherwise stated, the information presented has been prepared from market observations and other sources believed in good faith to be reliable. Information and opinions expressed by PPM are current as of the date indicated and are subject to change without notice. Past performance is no guarantee of future results. Forward-looking statements are subject to uncertainties that could cause actual developments and results to differ materially from the expectations expressed.

(1) J.P. Morgan. Returns on the J.P. Morgan EMBI Global Diversified Index from the end of 1994 to the end of 2004, the first ten years of the index's existence, were 309%, cumulatively. (2) J.P. Morgan. J.P. Morgan EMBI Global Diversified Index. As of 31 May 2025. (3) J.P. Morgan and PPM. As of 31 May 2025.

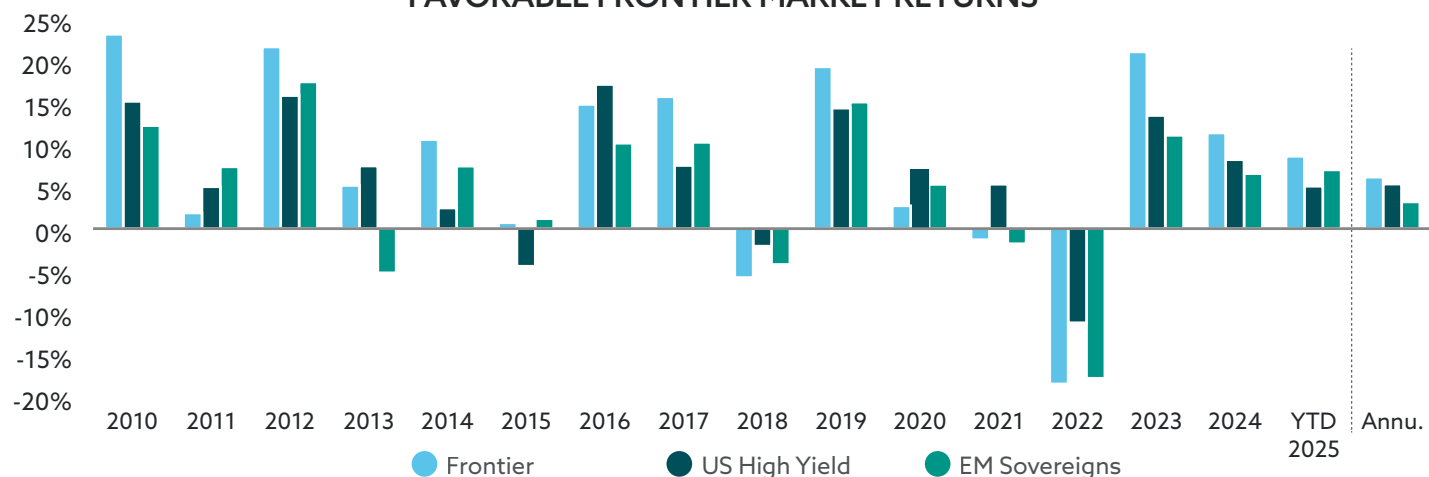
Despite a succession of macro challenges that have fueled market volatility, frontier bonds have posted attractive total returns over time. And, despite frontier's optically higher risk profile, drawdowns on frontier debt have moved roughly in line with the broader EM sovereign asset class during risk-off episodes. We attribute this largely to the potential for some frontier markets to graduate to higher income levels, which has helped generate longer-term capital appreciation in addition to frontier's relatively high carry (currently around 9%). Annualized total returns since 2010 have exceeded both US high yield and EM sovereigns even with many macro shocks along the way.

EVEN IF HISTORY DOES NOT REPEAT ITSELF, WE BELIEVE IT CAN STILL RHYME

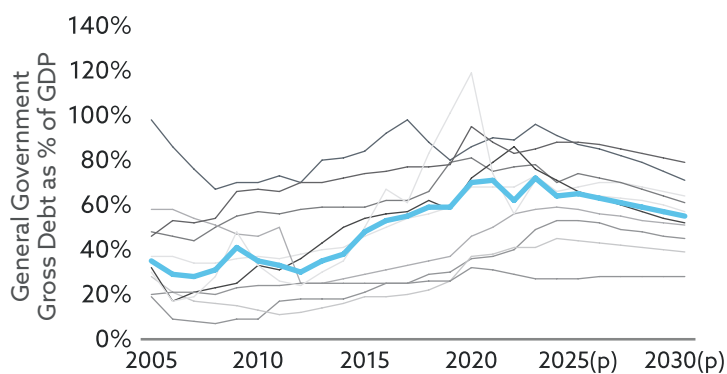
Clear parallels exist between today's frontier markets and the pioneer EM issuers of the late 1980s, but we think it is unlikely history will repeat itself. The starting point for frontier markets – in terms of both the level of economic development and credit ratings – is quite different. This implies that frontier issuers likely face a longer, less certain path to achieve the low credit spreads enjoyed by investment grade-rated sovereigns such as Peru and Philippines.

But there is potential, at least, for history to rhyme. In order to maintain – or in some cases regain – market access, frontier economies responded to the “triple shock” from 2020 to 2023 with a procyclical embrace of economic orthodoxy.^{5,6} Making those difficult decisions put a number of frontier sovereign balance sheets on an improving economic trajectory as the charts below illustrate.

FAVORABLE FRONTIER MARKET RETURNS⁴

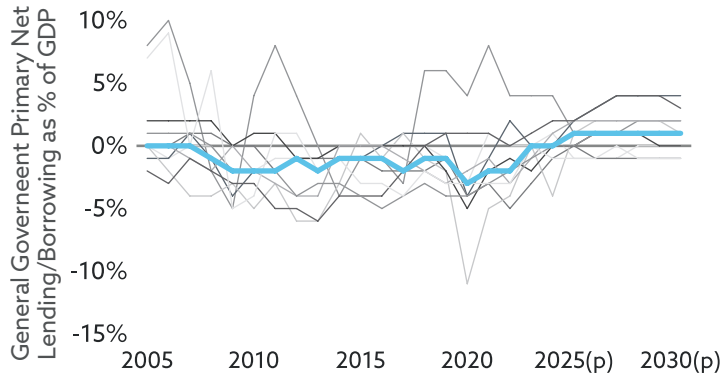


FRONTIER DEBT SIZE TRENDING LOWER⁷



● Median ● Angola ● Guatemala ● El Salvador
 ● Côte d'Ivoire ● Ghana ● Paraguay ● Pakistan
 ● Egypt ● Kenya ● Nigeria

PRIMARY FISCAL BALANCE MOVING IN THE RIGHT DIRECTION⁷



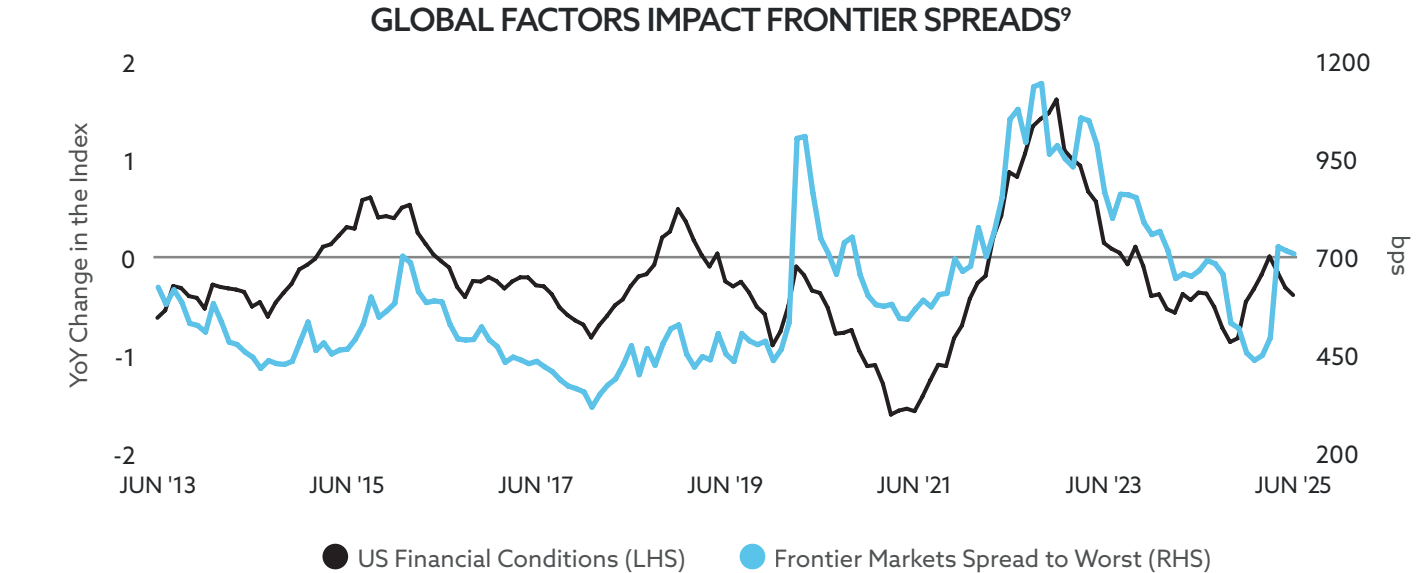
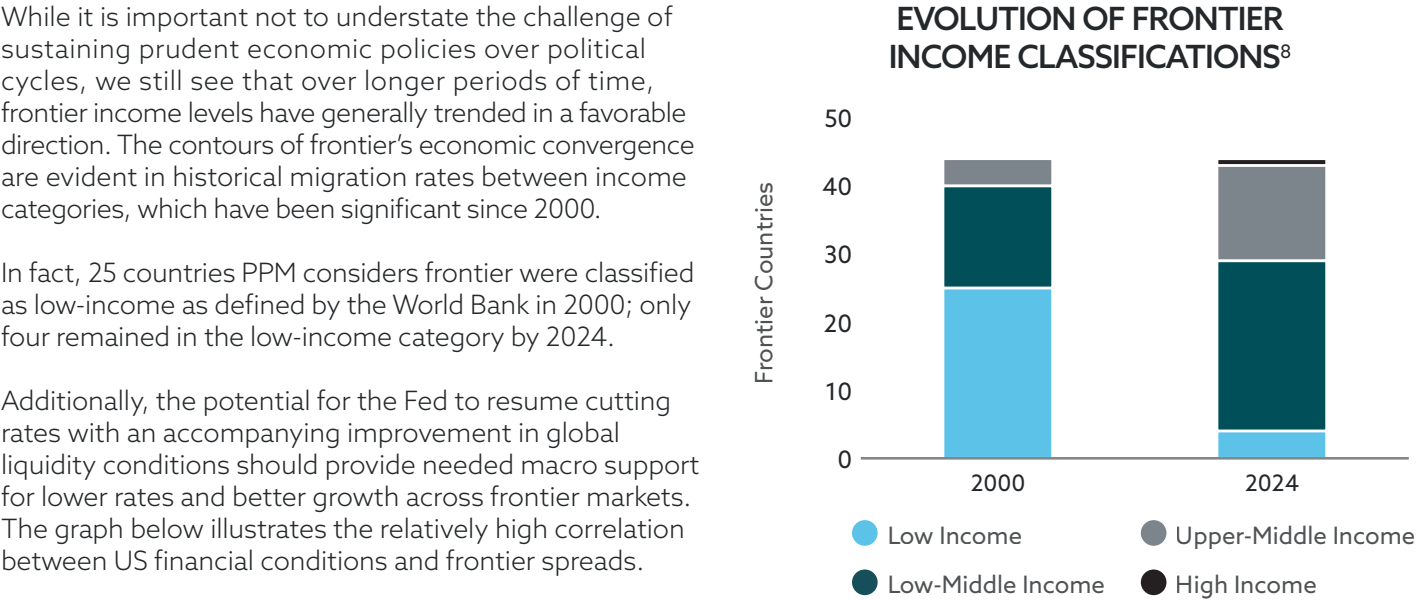
● Median ● Angola ● Guatemala ● El Salvador
 ● Côte d'Ivoire ● Ghana ● Paraguay ● Pakistan
 ● Egypt ● Kenya ● Nigeria

(4) Bloomberg and J.P. Morgan. US High Yield, EM Sovereigns and Frontier as represented by the Bloomberg US High Yield Index, the J.P. Morgan EMBI Global Diversified Index and the J. P. Morgan Next Generation Markets Index, respectively. As of 31 July 2025. (5) Including the pandemic, the Russian invasion of Ukraine, and the US Federal Reserve's (Fed) hiking cycle. (6) Not dissimilar to the constraints the “Washington Consensus” imposed on EM economies in an earlier era. (7) International Monetary Fund. World Economic Outlook. Years 2025 to 2030 are projected. April 2025.

While it is important not to understate the challenge of sustaining prudent economic policies over political cycles, we still see that over longer periods of time, frontier income levels have generally trended in a favorable direction. The contours of frontier's economic convergence are evident in historical migration rates between income categories, which have been significant since 2000.

In fact, 25 countries PPM considers frontier were classified as low-income as defined by the World Bank in 2000; only four remained in the low-income category by 2024.

Additionally, the potential for the Fed to resume cutting rates with an accompanying improvement in global liquidity conditions should provide needed macro support for lower rates and better growth across frontier markets. The graph below illustrates the relatively high correlation between US financial conditions and frontier spreads.



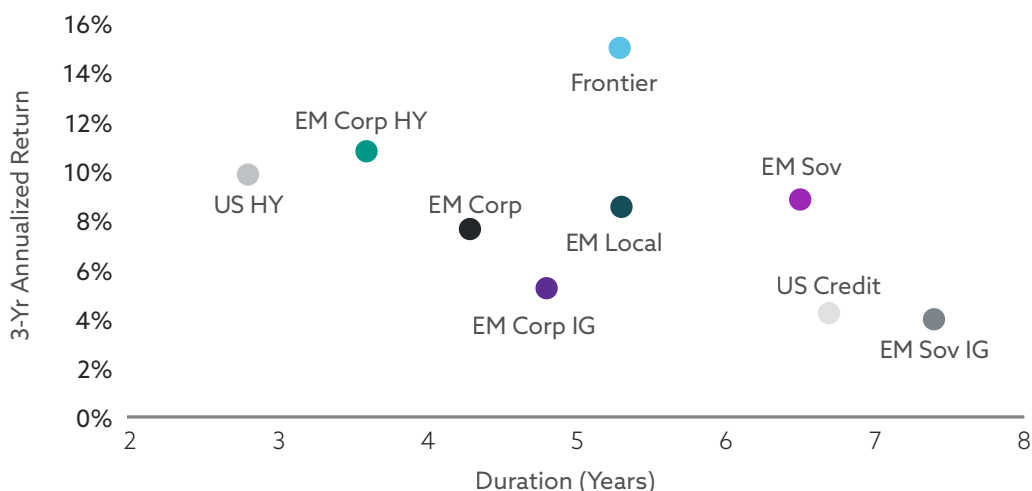
(8) World Bank. July 2025. (9) Bloomberg. Monthly data for the Financial Conditions Impulse on Growth Index (one-year lookback) and J.P. Morgan Next Generation Markets Index Z-spread to worst. 14 August 2025.

FRONTIER'S ADVANTAGES

Aside from its intriguing fundamentals and competitive total returns, frontier offers a shorter duration profile than the traditional EM bond index, which has allowed its carry to shine in recent years despite rising interest rates (see chart below).¹⁰ Given a murky inflation picture and rising debt/deficits in the US, we like the idea of investing in EM with lower headwinds from US rates. While they are

typically high yield-rated and certainly not without risk, frontier credits have firmly rebounded after drawdowns in 2008 and 2022 with 20-year cumulative returns of 310%, exceeding most fixed income asset classes that we track.¹¹ At the same time, the idiosyncratic nature of the frontier universe means that its low correlations can complement allocations to US equities and credit, optimizing portfolio -wide risk and returns (see chart below).

GLOBAL CREDIT RETURNS VS. INTEREST RATE DURATION¹²



FRONTIER'S LOW CORRELATIONS CAN BOOST DIVERSIFICATION¹³

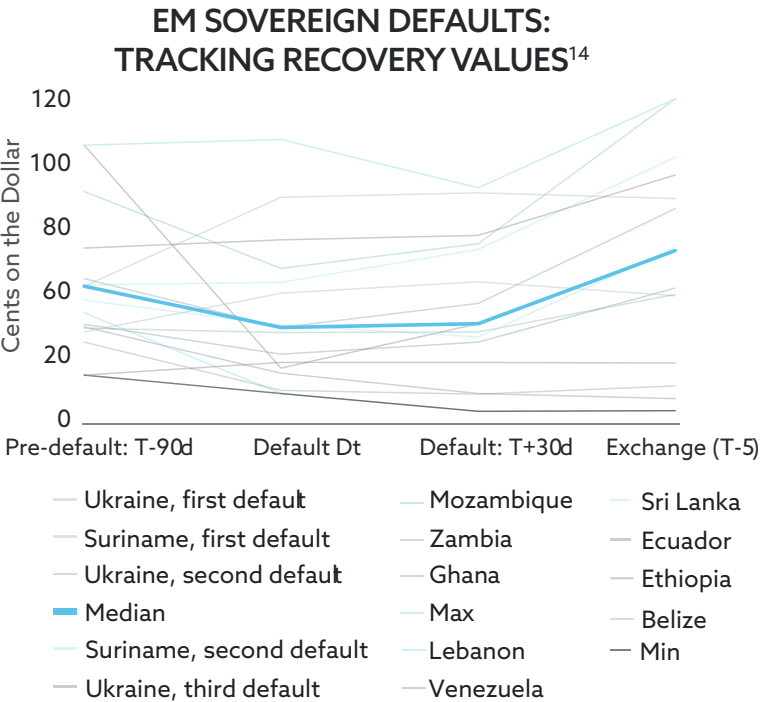
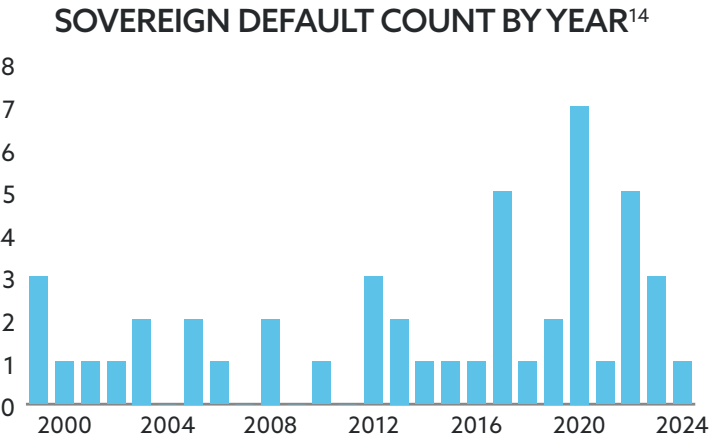
	US Equities	US Agg	US Credit	US HY	EM Corporates	EM Sovereigns	EM Local	EM Frontier
US Equities	1.00							
US Agg	0.27	1.00						
US Credit	0.36	0.98	1.00					
US HY	0.70	0.62	0.71	1.00				
EM Corporates	0.35	0.79	0.84	0.71	1.00			
EM Sovereigns	0.50	0.78	0.84	0.82	0.90	1.00		
EM Local	0.44	0.58	0.62	0.63	0.64	0.74	1.00	
EM Frontier	0.52	0.50	0.60	0.73	0.75	0.88	0.67	1.00

(10) J.P. Morgan. The J.P. Morgan Next Generation Markets Index has a duration of 5.3 years, compared to 6.5 years for the J.P. Morgan EMBI Global Diversified Index. As of 25 August 2025. (11) J.P. Morgan. The J.P. Morgan Next Generation Markets Index trailing 20-year returns. As of 28 August 2025. (12) Bloomberg. US Credit, US HY, EM Corp, EM Corp IG, EM Corp HY, EM Sov, EM Sov IG, EM Local and Frontier as represented by the Bloomberg US Credit Index, the Bloomberg US Corporate High Yield Index, the J.P. Morgan CEMBI Broad Diversified Index, the J.P. Morgan CEMBI Broad Diversified IG Index, the J.P. Morgan CEMBI Broad Diversified HY Index, the J.P. Morgan EMBI Global Diversified Index, the J.P. Morgan EMBI Global Diversified IG Index, the J.P. Morgan GBI EM Global Diversified Index and the J.P. Morgan Next Generation Markets Index, respectively. As of 25 August 2025. (13) Bloomberg and PPM. Three-year correlations through 30 April 2025. US Equities, US Agg, US Credit, US HY, EM Corporates, EM Sovereigns, EM Local and EM Frontier as represented by the S&P 500 Index, the Bloomberg US Aggregate Index, the Bloomberg US Credit Index, the Bloomberg US Corporate High Yield Index, the J.P. Morgan CEMBI Broad Diversified Index, the J.P. Morgan EMBI Global Diversified Index, the J.P. Morgan GBI EM Global Diversified Index and the J.P. Morgan Next Generation Markets Index, respectively.

MANAGING FRONTIER DOWNSIDE RISK

As with other higher-yielding sectors such as US high yield, investing in frontier involves assessing and mitigating default risk. Our approach to frontier default risk employs a robust sovereign investment process to get ahead of future credit problems, while being ready to pounce should bonds of selected issuers overreact – a scenario we have seen repeatedly. Sovereigns do not default frequently, but defaults can be influenced by both global credit conditions and idiosyncratic developments

at the country level (see chart below). We would note that sovereign recoveries over time have been similar to, if not better than, the typical 35 to 40 cent recoveries experienced by US high yield issuers with meaningful upside post restructuring (see chart below). Sovereign restructurings by necessity must be consensual given the lack of ability by bondholders to attach assets, but the unsecured nature of the sovereign debt stack can boost recoveries relative to the experience of subordinated creditors in the US.



(14) S&P Global Market Intelligence, J.P. Morgan and PPM. Estimates as of 31 December 2024.

PPM'S EXPERIENCE WITH FRONTIER

When allocating to frontier, we believe investors should consider a manager's experience, market presence and investment process. PPM's EM team has invested in frontier since the "inception" of the asset class in 2011 and has experience managing billions of dollars in frontier assets. Our team has a track record managing exposures through – and realizing value from – every phase of the credit cycle, including playing a lead role in several restructurings post-COVID. We have also established a thought-leadership position within the industry on sovereign debt innovations.

Our proprietary approach focuses on identifying inflection points in credit trajectories. We combine that with a value-investing mindset, which emphasizes the importance of price-implied scenarios and understanding the market-relevant range of outcomes (i.e., developments that actually impact prices). Furthermore, our team specifically identified the opportunity to launch a targeted frontier strategy in 2022 and funded separate account and commingled vehicles in 2023. We believe this experience will be critical as investors increasingly look to make dedicated allocations to frontier.

A DIFFERENTIATED APPROACH

While frontier has an existing "benchmark" in the J.P. Morgan Next Generation Markets Index (NEXGEM), investors, in our view, should take an approach that is more focused on generating low correlation total returns and less on tracking error or benchmark-relative positioning. That belief correlates with us sometimes allocating to issuers not in NEXGEM (e.g., Argentina or The Bahamas) or zero weighting a country often thought of as being "frontier."

Our focus on total return also means that we consider adjacent asset classes such as [EM corporates](#), EM local currency, [EM supranationals](#) and EM private debt as complements to core frontier sovereign holdings. As an institutional asset manager, we consider both return objectives and guidelines to ensure that our approach and a client's goals are aligned.

In terms of specific portfolio positioning, we believe structuring a frontier portfolio across multiple types of trades with independent drivers of risk/return will increase risk-adjusted returns over time. Our EM frontier strategy takes shape around four types of trades:

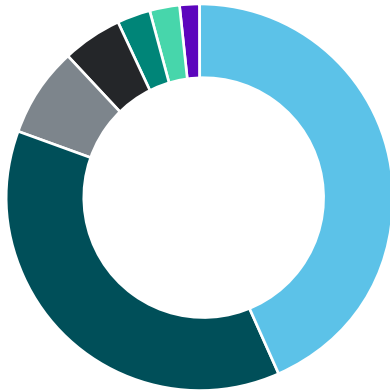
- > **Best-in-class.** We look for issuers with solid fundamentals and stable-to-improving stories.
- > **Event-driven.** We identify issuers trading at a discount with potential catalysts, which may include election outcomes, rating changes, IMF programs, or other types of liquidity events.
- > **Idiosyncratic.** Market inefficiencies will at times lead to issuers that trade at a discount inconsistent with underlying fundamentals. Recent examples include issuers in Argentina with investment grade fundamentals that trade at 'BB' to 'CCC' type yields given jurisdiction, as well as local market securities where foreign exchange levels appeared to have clearly overshot.
- > **Relative value.** At times, market technicals will drive divergences between issuers with similar risk characteristics, which we may look to take advantage of when perceived mispricings hit more extreme levels (90th percentile+).

CONCLUSION

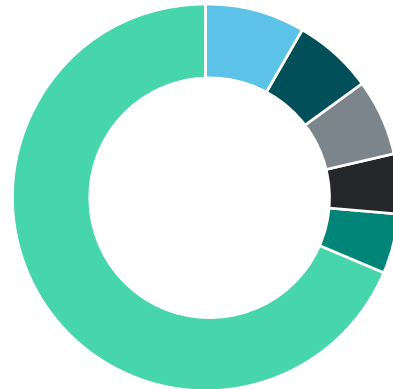
Frontier's relative level of economic development and still-high yields point toward a gradual but rewarding convergence story. By employing a patient investment approach – guided by a focus on governance, political institutions and economic policy – we believe investors can unlock this story in a risk-efficient way. While we expect the development of frontier markets to play out differently from the first "iteration" of EM, we think that experience can still serve as a guide – where despite a less certain journey, we have a clear understanding of the destination.

APPENDIX: PORTFOLIO CHARACTERISTICS¹⁵

Regional Positioning (%)



Country Positioning (%)



	Portfolio
● Africa	43.55
● Latin America	37.10
● Europe	7.67
● North America	4.89
● Supranational	2.82
● Asia	2.47
● Middle East	1.49

	Portfolio
● Argentina	8.52
● Ivory Coast	6.54
● Nigeria	6.37
● Kenya	5.13
● United States	4.89
● Other	68.55

Regional Positioning (%)

Number of Issuers	49
Average Rating (Moody's/S&P)	B1/B+
Effective Duration (years)	4.90
OAS (bps)	449
Yield to Worst (%)	8.97

Country Positioning (%)

USD	93.32
NGN	1.83
EUR	1.06
EGP	0.99
PYG	0.80
TRY	0.77
ZAR	0.74
JMD	0.27
UYU	0.21

(15) As of 30 June 2025. The positioning shown is specific to that of a representative account of this strategy. This positioning is provided solely for informational purposes and could vary substantially from that of a separately managed account or other mandate. Additional information is available upon request.

ABOUT PPM AMERICA

Our mission is to be seen by clients and their advisors as a consistently reliable partner to help them achieve their long-term value goals.

PPM is a US-based institutional asset manager with \$83.51 billion in assets under management as of 30 June 2025.¹⁶ Established in Chicago in 1990, PPM exists to consistently support institutional clients in achieving their long-term

value goals. We offer our Midwestern mentality of hard work, straight talk, full transparency and humility. Our success is supported by a team-based culture that encourages debate, collaboration and consistency. At the center of our belief is the fact that our best ideas to date have and can come from any team member anywhere in our firm. We believe the success of our investment culture is best demonstrated by the strong retention of our clients and investment professionals.

Past performance is no guarantee of future results. Investments involve varying degrees of risk and may lose value.

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Indices are unmanaged and are not available for direct investment. The index returns do not reflect management fees, transaction costs, or other expenses, with the exception of ICE indices that do reflect transaction costs. Performance of any index does not represent actual portfolio performance. A portfolio may differ significantly from the securities included in an index. Any index information provided is for comparison purposes only to reflect general market conditions for the period shown. The Bloomberg US Aggregate Index provides a broad measure of fixed- and floating-rate USD-denominated debt issued from sovereign, quasi-sovereign and corporate EM issuers.

The **Bloomberg US Corporate High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB+/BBB+ and below using the middle of Moody's, S&P and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

The **Bloomberg US Credit Index** measures the investment grade, US dollar-denominated, fixed-rate, taxable corporate and government related bond markets. It is composed of a corporate component and a non-corporate component that includes foreign agencies, sovereigns, supranationals and local authorities.

(16) AUM includes committed but unfunded capital for PPM's private equity and commercial real estate businesses. AUM includes both securities issued by PPM CLO vehicles held by PPM separately managed account clients and the underlying collateral assets of the CLO vehicles managed by PPM.

The **Financial Conditions Impulse on Growth Index** gauges broad financial conditions and assess how these conditions are related to future economic growth.

The **J.P. Morgan CEMBI Broad Diversified Index** tracks the performance of USD-denominated bonds issued by emerging market corporate entities.

The **J.P. Morgan CEMBI Broad Diversified HY Index** tracks the performance of USD-denominated, high yield bonds issued by emerging market corporate entities.

The **J.P. Morgan CEMBI Broad Diversified IG Index** tracks the performance of USD-denominated, investment grade bonds issued by emerging market corporate entities.

The **J.P. Morgan EMBI Global Diversified Index** tracks liquid, USD-denominated emerging market fixed- and floating-rate debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan EMBI Global Diversified IG Index** tracks liquid, USD-denominated, investment grade emerging market fixed and floating-rate debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan GBI EM Global Diversified Index** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **J.P. Morgan Next Generation Markets Index** tracks the performance of smaller emerging countries of lesser credit quality that are not a European Union member or engaged in the process of seeking EU membership.

The **S&P 500 Index** provides a broad, market capitalization-weighted measure of US large cap stocks. It includes approximately 500 publicly-traded stocks of the largest US companies.

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