

Disclaimer

This paper issued by Symbiotics¹ contains general information only. Symbiotics is not by means of this paper rendering any professional or financial advice or services. This document reflects the views of Symbiotics at the time of writing, which might evolve. The content of this paper is exclusively meant for research purposes, with an aim to broaden and deepen the understanding of microfinance investments. All information provided herein does not constitute an offer, a recommendation or an inducement to buy or sell financial instruments or services. This paper does not relieve the user of the need to form their own judgement and to examine this information with the help of an expert, particularly from the point of view of the suitability with the personal resources and their legal, regulatory and tax consequences. It is expressly stipulated that the information provided in this document is not intended for individuals or legal entities subject to legislation prohibiting them from accessing such information by virtue of their nationality, domicile or of any other reason. Symbiotics does not make representations or warranties expressed or implied, regarding the accuracy, completeness, or reliability of the information presented. On a few occasions, this paper refers to specific figures, outcomes and performances; such references are made for research purposes only. The information and opinions expressed in this paper have been obtained from sources believed to be reliable. The information and opinions reflect the view of the authors on the state of the industry or on the practice. Before making any decision or taking any action that may affect r finances or your business, you should consult a qualified professional adviser. This document is not intended for distribution, publication, or use in any jurisdiction where such distribution, publication, or use would be unlawful, nor is it aimed at any person or entity to whom it would be unlawful to address such a document. All content, including but not limited to videos, audio recordings, images and text is the intellectual property of Symbiotics unless otherwise stated. This paper may not be reproduced, transmitted, modified, or used (in whole or in part) for any public or commercial purpose without the prior written permission of Symbiotics. Symbiotics shall not be held responsible for any loss whatsoever.

Contact

info@symbioticsgroup.com

October 2025

¹ Symbiotics is the leading market access platform for impact investing, dedicated to private markets in emerging and frontier economies. The group offers investment services, via, Symbiotics Investment SA, asset management services, via, Symbiotics Asset Management SA, a Swiss asset manager regulated by FINMA) and capacity building services, via, Symbiotics Capacity Building SA.

CONTENTS

Executive Summary	4
Introduction	5
Evaluating the risk-return profile of unhedged strategies	7
Relative performance vs hedged strategies	7
Absolute return estimation with lending margin	8
The mechanics of diversification	13
Empirical FX correlation analysis	13
Volatility: a counterintuitive outcome	15
Implications for portfolio construction	16
Unique expertise in emerging markets	19
Research and strategic oversight	19
Execution infrastructure and risk management	20
Outperformance of local currency portfolios	21
Conclusion	22
External sources	23

EXECUTIVE SUMMARY

In traditional fixed income strategies, the currency risk is usually a liability to be hedged. However, in emerging and frontier markets in particular, this view overlooks two important factors: hedging is often prohibitively expensive and correlations between local currencies are unusually low. Managed systematically, unhedged exposure can boost returns and provide real diversification rather than uncompensated risk.

UNHEDGED
EXPOSURE CAN
BOOST RETURNS
AND PROVIDE
DIVERSIFICATION

Internal research from Symbiotics, a pioneer in emerging market investing, shows that diversified unhedged strategies have consistently delivered a measurable premium. A 17-year simulation of a 26-currency portfolio found that unhedged investing outperformed hedged approaches in 15 of those years – including during periods of market stress such as the global financial crisis and the 2014–15 commodity downturn – while containing losses and preserving upside potential.

Based on this analysis, the data also suggest that emerging and frontier market currencies tend to historically move independently, both from each other and from developed market currencies. With cross-market correlations averaging 0.12, a carefully designed currency exposure can act as a portfolio stabilizer rather than a source of volatility over investment cycles. These findings indicate that currency diversification is both practical and valuable.

Unhedged investing in emerging markets does not appear to be an outlier to be defended, but rather a structural, evidence-based strategy for long-term allocation. For investors seeking differentiated returns, broader diversification and scalable impact, this strategy may serve as a compelling proposition.

Symbiotics' strategy is to build a robust and data-driven framework for managing unhedged local currency portfolios. With over USD 11 billion deployed and access to more than 60 emerging and frontier market currencies, Symbiotics provides investors with a structured and scalable entry point into this underutilised market segment. The approach combines local origination, in-house research and strong operational infrastructure to deliver local currency investments with active oversight and portfolio-level risk control.

This white paper details the Symbiotics approach to local currency investing in emerging and frontier markets. It highlights the potential strategic advantages such as enhanced return potential, broader diversification and reduced portfolio volatility, alongside the institutional capabilities that support them, including proprietary tools, ongoing macroeconomic monitoring and a data-driven investment process to help manage FX risk effectively.

A CAREFULLY
DESIGNED
CURRENCY
EXPOSURE CAN ACT
AS A PORTFOLIO
STABILIZER

All analyses, figures, and observations in this paper are based on Symbiotics' internal data and its managed or advised products. The information is provided for research and informational purposes only and does not constitute investment advice.

INTRODUCTION

Emerging and frontier markets offer institutional investors compelling opportunities, not in spite of their relative inefficiencies, but thanks to them. Lower liquidity, limited transparency and uneven access to information create structural anomalies that lead to asset mispricing long since arbitraged away in developed markets.

As an industry rule-of-thumb goes:

Foreign currency equity portfolios are often left at least partly unhedged, while fixed income portfolios are typically hedged.

Financial Times, <u>To hedge or not to hedge</u> ☐ (March 2013)

The reasoning is simple: in equities, a negative correlation with stock movements can offset FX losses, but in fixed income, a currency crash often comes with rising interest rates – delivering a double hit. Since most fixed income investors hold only a handful of highly correlated currencies (USD, EUR, GBP, JPY), the lack of diversity usually strengthens the case for hedging.

Symbiotics offers a different perspective. The managed exposures are often inaccessible to traditional institutional investors and offer attractive yields with low correlation to mainstream markets. By systematically investing in under-researched segments and underserved markets, while managing currency and credit risks across diversified exposures, investors such as Symbiotics capitalize on persistent inefficiencies in emerging and frontier markets.

To better understand this balance, Symbiotics conducted a historical analysis of local currency returns, performance and hedging costs. Hedging currencies like the Tajik somoni or Cambodian riel is far from straightforward: it often requires specialized intermediaries and is priced using macroeconomic models rather than transparent market forces. In many cases, instruments are unavailable, costly or illiquid, making unhedged strategies not just reasonable, but operationally necessary.

Importantly, lending in local currency is associated with positive social impact. Symbiotics' analysis concludes that by assuming local currency risk, investors can help protect borrowers from volatile FX exposure, potentially supporting financial stability and sustainable development in underserved markets.

EVALUATING THE RISK-RETURN PROFILE OF UNHEDGED STRATEGIES

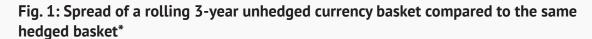
A closer look at empirical evidence illustrates the value of going unhedged in emerging and frontier markets: an analysis of a simulated, equally weighted basket of 26 emerging market currencies found that the annualized yield was 2.48% higher when unhedged, based on the specified assumptions and observation period. Higher returns compensate for market inefficiencies and asymmetrical access, while conventional investment frameworks teach that investors should hedge FX risk in fixed income portfolios.

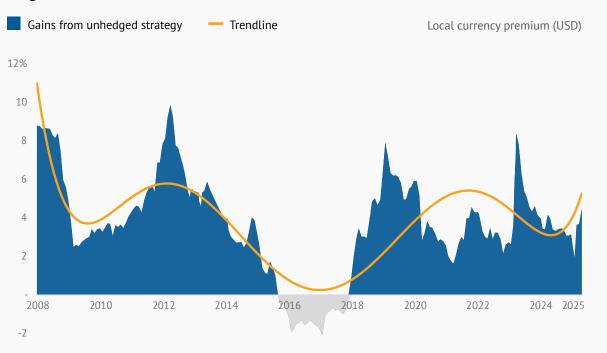
Relative performance vs hedged strategies

When considering an unhedged approach, two key questions naturally arise:

- > How much additional yield could be achieved by going unhedged?
- > What level of risk would need to be accepted in return?

To address these questions, Symbiotics analyzed historical data over a 17-year period, using an equally weighted basket of 26 emerging and frontier market currencies, measured against a hedged USD baseline. While the benefits of an unhedged strategy are not guaranteed, the analysis shows that gains tend to occur more frequently than losses. Moreover, when losses do arise, they are generally contained, whereas gains can be substantial.





^{*} Basket of currencies: AMD, AZN, BOB, CNY, COP, CRC, GEL, GHS, HNL, IDR, INR, KES, KGS, KHR, KZT, LKR, MNT, MXN, NGN, PEN, RWF, THB, TJS, TZS, UGX, ZMK

Source: Symbiotics Data

Key results

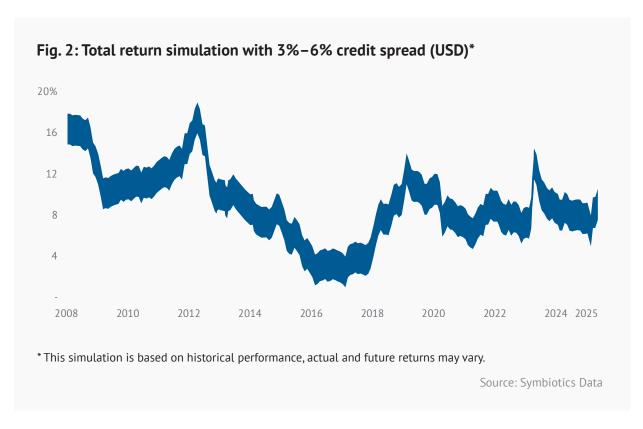
- Outperformance frequency: In 15 out of 17 years, the unhedged strategy delivered higher returns than the hedged strategy, demonstrating a persistent positive bias in outcomes.
- Limited downside: Even in the two years where the unhedged approach underperformed, the maximum observed shortfall was only about –2.5% relative to the hedged portfolio. There were no protracted multi-year drawdowns for the unhedged strategy.
- Significant upside in strong years: In the best years, excess returns for the unhedged portfolio reached up to +10% above the hedged equivalent, highlighting the meaningful return pickup available when local currencies appreciate or carry yields offset modest depreciations.

Absolute return estimation with lending margin

While the performance analysis focuses on the relative value of unhedged versus hedged strategies, it is equally important to understand the absolute return potential. The chart below estimates total performance by adding a lending margin of 3% to 6% – a typical range Symbiotics earns over local interest rate benchmarks, depending on credit risk and market conditions.

This margin reflects actual borrower pricing in local currency markets and illustrates the return that a fully hedged USD-based investor might expect before FX effects. When this spread is added to the unhedged premium discussed earlier, the resulting total return profile demonstrates resilience, with no sustained negative periods even through multiple global shocks.

As a result, this strategy would not have produced a single negative return over any rolling three-year period – even during major dislocations such as the 2008 financial crisis and the 2014–2015 commodity price collapse. Currency depreciation events in individual markets like Nigeria, Kazakhstan or Peru were absorbed at the portfolio level. This outcome illustrates the risk-mitigating effect of broad geographic and currency diversification.



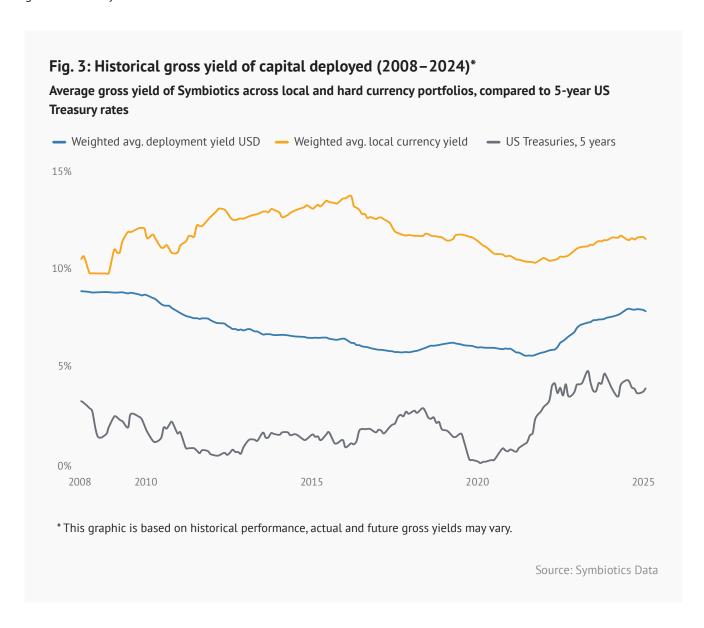
The estimated USD returns of an unhedged 26-currency portfolio reflect both the local interest rate premium (3–6% above local benchmarks) and currency movements, demonstrating the portfolio's resilient return profile through the combination of high local yields and diversified FX exposure.

The analysis suggests that high local interest rates act as a buffer against currency depreciation, allowing yields of 10% or more in local terms to offset moderate annual FX declines. Even when a few currencies experience sharper drops, the carry generated across the broader portfolio helps smooth USD returns, particularly over multi-year periods.

Realized yields and portfolio performance

This outperformance is supported by more than just simulations. The Symbiotics lending track record suggests repeatable results that underpin the total return model. Over the past 15 years and more, Symbiotics gross yields on deployed capital have consistently exceeded 10% in local currency for our mandates.

These results reflect the direct access of Symbiotics to high-yielding local markets and our ability to originate transactions in segments with limited competition, where pricing power remains strong even during periods of global volatility.





THE MECHANICS OF DIVERSIFICATION

Diversification can take many forms. A fundamental principle is the law of large numbers, which encourages investing across a wide range of asset classes, sectors, companies and geographies to reduce the negative effects of home bias and concentration.

However, true diversification is not simply about holding a large number of positions. A broad portfolio may appear diversified, but if the assets respond similarly under stress, the portfolio remains vulnerable to systemic risk. Genuine diversification requires that the underlying assets not be highly correlated.

This is especially important in managing currency risk. Any globally diversified portfolio is inherently exposed to foreign exchange movements. Effective risk management is therefore not always about eliminating currency exposure, but understanding and structuring it wisely.

Investing in highly correlated currencies can amplify exchange rate risk, while holding a diversified set of weakly correlated currencies can help moderate portfolio volatility by diluting idiosyncratic shocks.

Historically, no single currency decline has been able to significantly harm overall portfolio performance, as losses in one area are generally offset by stability or gains elsewhere. In this way, currency risk can serve as a strategic tool rather than just a threat.

Empirical FX correlation analysis

To evaluate this empirically, Symbiotics conducted a correlation analysis of emerging and developed market currencies against the USD. This approach allowed us to test the hypothesis that broadly diversified emerging market FX exposure behaves fundamentally differently from developed market currency risk.

Correlation analysis: emerging vs developed currencies

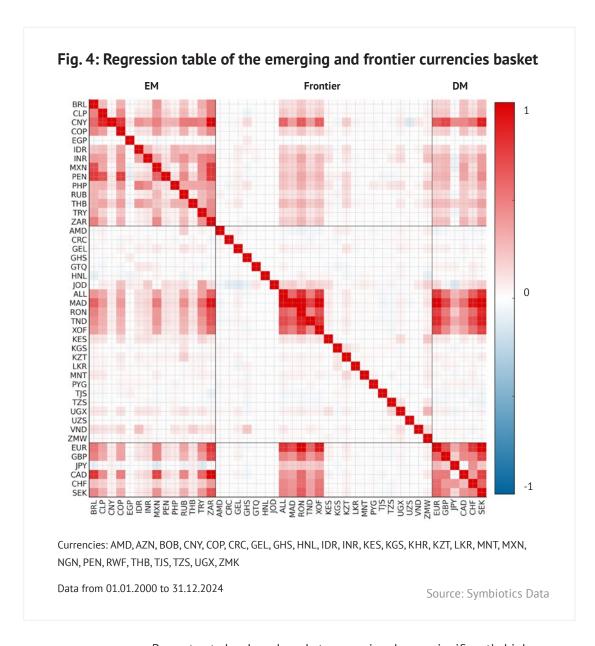
Symbiotics analyzed daily return data from 01.01.2012 to 31.12.2023, comparing 26 emerging market currencies and 8 developed market currencies (all vs USD), using Pearson correlation coefficients.

Currency group	No. of currencies	Avg. correlation (ρ)
Developed markets	8	0.5524
Emerging markets	26	0.1275
South America	8	0.1966
Africa	10	0.1580
Asia	10	0.2198

Data from 01.01.2012 to 31.12.2023

Source: Symbiotics Data

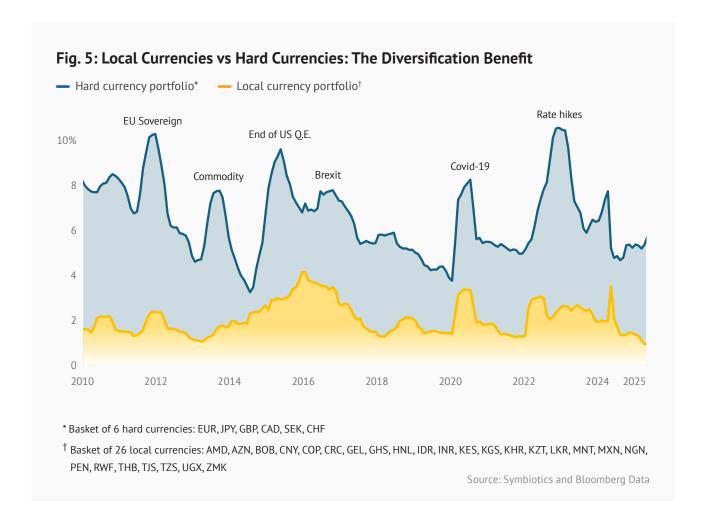
According to the analysis and research performed by Symbiotics, the overall correlation coefficient for emerging market currencies is only [0.1275], indicating that exchange rate movements across these markets are largely independent. A combination of country-specific monetary policies, distinct macroeconomic conditions and unaligned political cycles drive this low correlation, all of which differ from one market to another, as reflected in figure 4. As a result, broad exposure to a diversified set of emerging market currencies can help mitigate portfolio volatility, as shocks in one currency are unlikely to be mirrored across others.



By contrast, developed market currencies show a significantly higher average correlation [0.5524] reflecting tighter financial interconnections and more synchronized policy actions among economies, such as those for the EUR, CHF and GBP. This higher correlation means that diversification benefits in developed market FX are more limited, as currencies tend to move together during periods of global stress. The contrast between emerging and developed market FX underscores the value of a carefully diversified emerging market currency allocation in managing overall portfolio risk.

Volatility: a counterintuitive outcome

In addition to correlation, the volatility profile of local currency portfolios is also notably favorable. Historical analysis shows that a diversified local currency portfolio has consistently exhibited lower volatility than hard currency portfolios, particularly during global market stress.



Given the perceived riskiness of emerging currencies, this may appear counterintuitive at first, but the explanation lies in the correlation structure: hard currencies tend to move together, amplifying systemic volatility, while local currencies move more independently, smoothing shocks at the portfolio level.

Implications for portfolio construction

The structural and relative independence of emerging market currencies allows local currency exposure to serve as a true diversification engine rather than a source of concentration risk. Unlike developed market FX, where co-movements are stronger and drawdowns tend to occur in a more synchronized manner, emerging market currencies have historically moved largely independently.

From this perspective, exposure to emerging market currencies functions more like insurance than a risk amplifier. When allocated across regions, local currency exposure can absorb volatility through uncorrelated FX cycles, rather than magnifying it through simultaneous devaluations.

Portfolio construction at Symbiotics is guided by disciplined diversification and risk control principles. A key constraint is country exposure: currency allocations are carefully managed to avoid concentration when a currency is overweight in the overall portfolio, supporting balanced and resilient returns.



UNIQUE EXPERTISE IN EMERGING MARKETS

Implementing an unhedged local currency strategy requires more than investment conviction; it demands institutional-grade infrastructure, deep market access and informed decision-making. Over nearly two decades, Symbiotics has developed these capabilities, intended to support the scalable and efficient execution of local currency strategies across emerging markets.

Research and strategic oversight

The Symbiotics unhedged approach combines rigorous internal research and proprietary analytics with direct market access. Country-specific risk assessments, forward-looking FX scenario modeling and correlation studies across 50 currencies guide our investment decisions. This enables the continuous evaluation of hedging strategies and consideration of macroeconomic developments.

Through our local presence and origination platform in Latin America, Africa, Asia and Eastern Europe, Symbiotics can lend directly to markets that are often inaccessible via conventional instruments – investment opportunities that meet both financial and impact objectives. The integration of research and on-the-ground access allows for diversified regional allocations and effective portfolio-level FX management, providing capabilities generally beyond the reach of most investors in public markets. More than 90 analysts conduct regular field visits to assess both institutional and country risks, feeding their findings into the investment process. Portfolio managers work alongside FX and country analysts to help ensure that investment decisions reflect both macroeconomic context and on-the-ground realities.

To support decision-making under the Symbiotics unhedged local currency strategy, constant macroeconomic monitoring is conducted and up-to-date strategic insights are produced. Front-to-back exposure monitoring is implemented, featuring concentration controls and regional caps designed to help manage idiosyncratic risk across portfolios. Global and regional economic developments, FX and commodity indexes, central bank policies, and cross-asset indicators such as debt levels, yields, and Credit Default Swap (CDS) spreads are continuously tracked. This regular flow of analysis, combined with clear reporting and governance, helps to keep currency risk visible and within agreed limits.

Proprietary tools help guide hedging decisions in real time. Hedging costs are monitored closely, as they often reveal market expectations: when costs spike, it is usually a sign of higher uncertainty or anticipated volatility. Symbiotics uses a proprietary currency risk framework that guides investment decisions across portfolios. The framework combines baseline forecasts with stress-tested downside scenarios to gauge how currency movements could affect expected returns. The framework weighs the cost and benefit of hedging, the relative risk/reward of holding local currency and a range of macroeconomic signals. It brings together market forecasts, lessons from past stress events and country-specific factors such as inflation, monetary policy and external balances to shape currency positioning. Symbiotics developed a beta index as well to measure how sensitive a local currency is to movements in the USD. By quantifying a currency's responsiveness to USD fluctuations, the beta index helps identify which currencies are exposed to shifts in dollar dynamics. In practice, this framework allows Symbiotics to allocate capital where local currency exposure supports both performance and long-term portfolio resilience.

This disciplined framework is designed to support us to identify opportunities in less liquid markets while maintaining resilience to global currency fluctuations. It supports a consistent, research-based investment process intended to help navigate emerging and frontier markets based on data and analysis.

Execution infrastructure and risk management

The Symbiotics infrastructure is designed to operate within the fragmented and less liquid environments that characterize emerging and frontier markets. To face these complexities, Symbiotics has established operational partnerships with specialized providers such as TCX and MFX, intended to enable selective access to hedging instruments when available. In parallel, secure and efficient settlement, compliance, and reporting systems have been developed and integrated to support FXsensitive portfolios. Together, these capabilities help Symbiotics manage unhedged strategies systematically, with institutional standards of control, governance, and transparency.

Trusted providers









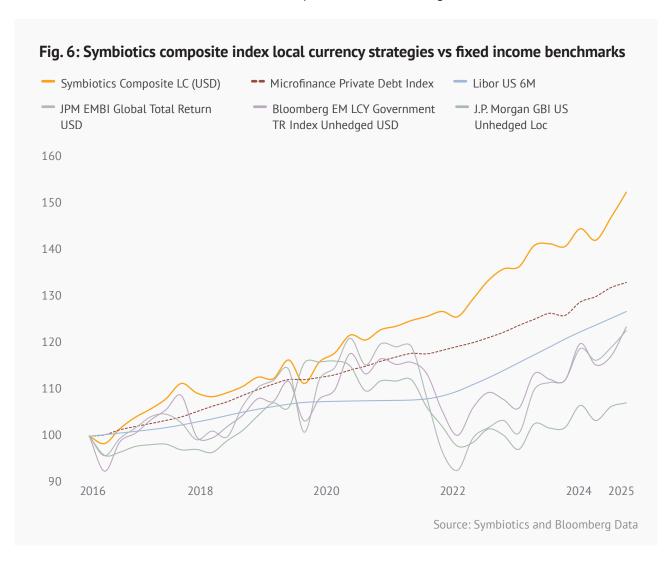




Outperformance of local currency portfolios

Building on the theoretical and operational framework established above, our portfolio-level results that empirically validate the case of potential benefits for unhedged investing in emerging and frontier markets.

At the portfolio level, this pricing advantage has historically translated into consistent net outperformance. The chart below shows the historical net returns of Symbiotics composite local and hard currency strategies across multiple mandates and vintages.



The results show that the unhedged local currency strategy has historically outperformed both its hard currency counterpart and key emerging market benchmarks, while maintaining lower correlations and distinct volatility characteristics. These observations suggest the role of unhedged local currency exposure as a viable long-term, strategic allocation within fixed income portfolios.

In summary, unhedged emerging market investing has historically delivered positive asymmetry – limited drawdowns paired with recurring upside for patient, well-diversified investors.

CONCLUSION

Local currency investing in emerging and frontier markets challenges the conventional assumption that FX risk is a liability to avoid. Symbiotics' research provides the evidence that, when managed systematically, unhedged exposure can be both feasible and advantageous. Low correlations across emerging market currencies, combined with structurally high local yields, create a return profile that has historically outperformed hedged approaches while containing downside risk.

Beyond portfolio metrics, unhedged strategies can bring added value by supporting financial stability in local economies, aligning investor returns with sustainable impact. For institutional investors seeking differentiated sources of yield, genuine diversification and scalable access to underused markets, this approach may serve as a complement to traditional fixed income allocations.

Symbiotics' track record, research depth, and execution capabilities enable the delivery of these benefits at institutional scale. By pairing local origination with disciplined risk management, investors are offered a structured pathway into a segment of the market that remains inefficient, resilient, and rich in long-term opportunity.

EXTERNAL SOURCES

Capital Group. (2024). Capturing opportunities in emerging markets with local currency bonds. https://www.capitalgroup.com/content/dam/cgc/tenants/eacg/documents/insights/en/2024/q2/ii-why-em-local-currency.pdf

J.P. Morgan Asset Management. (2025). Emerging market local currency debt: The hidden alpha opportunities. https://am.jpmorgan.com/gb/en/asset-management/adv/insights/etf-perspectives/emerging-market-local-currency-debt-hidden-alpha-opportunities/

El Ibrahimi, H., El Karkari, M., Létocart, P.-N., & Abonou, D. J.-E. (2025). Exploring Risk Premia in Frontier Markets. Projet de Statistiques Appliquées, ENSEA/IP Paris.

