GENERALI ASSET MANAGEMENT

CORE MATTERS

EM Fixed Income: quantitative tools for detecting opportunities in EM

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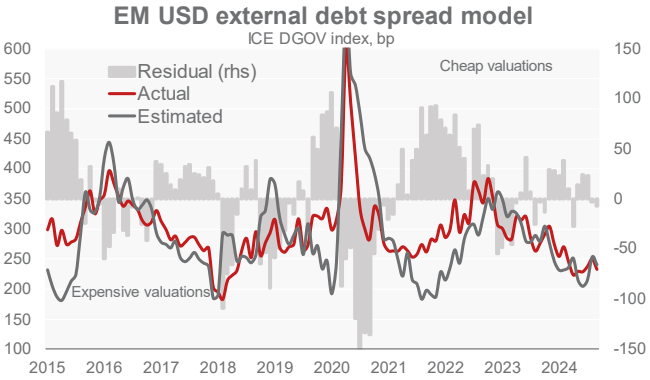
Our Core Matters series provides thematic research on macro, investment, and insurance topics

- Since late 2023, EM bond valuations have tightened, with external and local debt spreads close to all-time lows. Questions arises whether EM fixed income is expensive and where opportunities lay.
- EM sovereign fixed income is a heterogeneous asset class driven by global factors but also by relevant local determinants such as political risk, the fiscal outlook, or re-structuring discussion. The construction of a valuation framework to identify opportunities in EM can thus be approached from multiple angles.



Source: ICE, GenAM

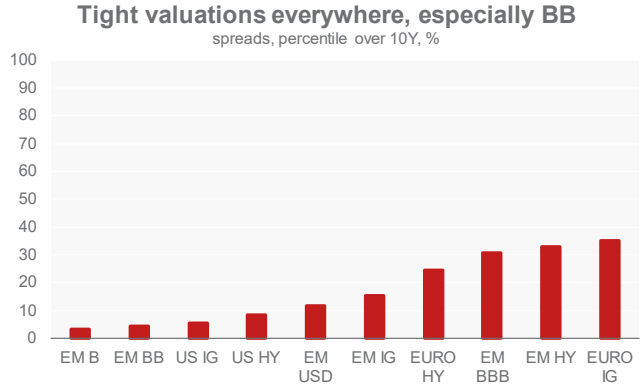
- For external debt, we model the spread of EM sovereign debt yields as a function of country-specific fundamentals and the risk appetite of global investors. We consider 66 countries included in the JP Morgan EMBIGD index and use a fixed effects panel specification. While EM USD and EUR spread were slightly cheap in late 2023/early 2024, current valuations are close to fair value especially for USD spread, but slightly expensive for EUR spread. At the rating level, after a period of expensiveness, EM IG spreads are close to fair value while EM HY are slightly expensive.
- For EM local debt, we focus on the local term premium for 13 key countries. Our estimated term premia have been rising since 2022 and stand at high levels on average, exhibiting historically the largest gap with the US term premium. Currently, South Africa, Peru, and Turkey offer the highest premium across the EM local debt complex and are close to their 10Y highs, highlighting their attractiveness.
- We show that the use of term premium in systematic strategies has to be careful. It is a relevant signal for EM bonds outperformance in local terms. However, when considering FX hedging costs for foreign investors, the return of those strategies is less appealing. Systematic strategies based on term premium must focus on countries with the highest/lowest levels of term premium to provide better returns than the benchmark.

EM sovereign fixed income is a heterogeneous asset class, whose returns are driven by global factors such as US interest rate and USD dynamics and global risk sentiment, but also by relevant local factors such as the business cycle and the political/fiscal outlook. The construction of a valuation framework to identify opportunities in the EM complex can be approached from multiple angles.

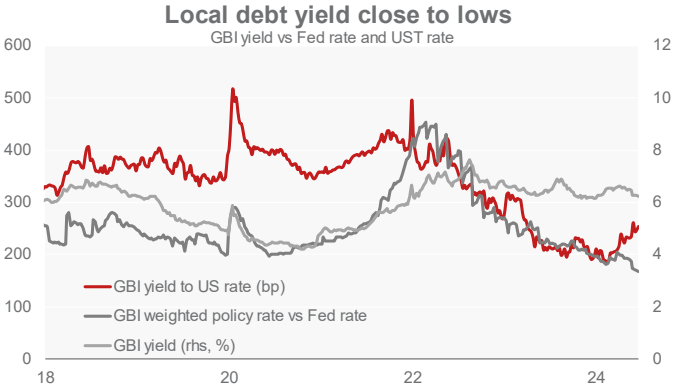
We present two quantitative methodologies for assessing investment opportunities in the EM fixed income space, one for external and one for local debt. First, we propose a model to estimate the fair value of the OAS (option adjusted spread) based on global market variables, and local macroeconomic indicators. Second, we estimate the level of the term premium in EM local debt markets and show the implications for systematic strategies.

1.Tight valuations across EM fixed income

Since Q4 23, EM bond valuations have tightened, with external and local debt spreads close to all-time lows. Historically, the EM IG external debt spread is in the 5th percentile of the past 10-year distribution. On the other hand, EM HY appears to offer value globally, but this is essentially due to the distressed part of the HY spectrum. Excluding distressed and defaulted countries, the JP Morgan EMBIGD spread is below its average and the EM BB spread is at an all-time low. For EM local debt the global GBI yield is close to its 10-year average but the spread to Treasury is at an all-time low. All these metrics raise the question of whether EM FI is expensive globally or whether US fixed income is cheap and offers attractive opportunities on a risk/reward basis.



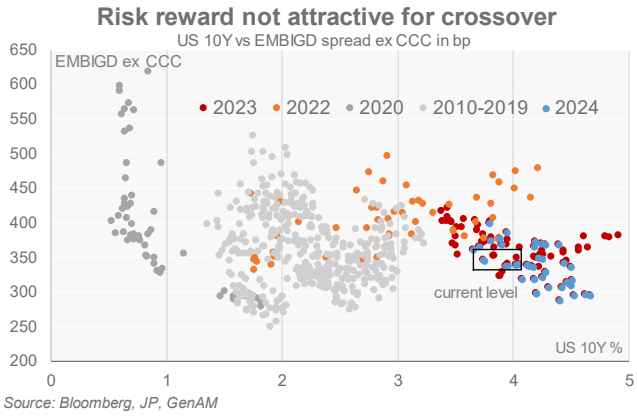
Source: Bloomberg, GIAM calcuations



Source: Bloomberg, JP, GenAM

Two elements can shed light on this question. First, EM fixed income remains an asset class driven by USD-based investors, and compared to US IG, EM IG external debt has been cheap on a relative basis. The year-to-date performance of EM IG has lagged that of USD IG.

Second, despite positive returns in 2023, inflows into the EM asset class have been sparse and appetite for EM fixed income has been limited, particularly from crossover funds. This suggests that investors perceive the risk/reward of investing in EM as not attractive. This is the first time since 2010 that both the 10Y UST is so high (push factor) and the EM spread offered is so low (pull factor).



Source: Bloomberg, JP, GenAM

In this context, it is particularly important to assess the fair value of EM fixed income to identify attractive investment opportunities. To this end, we develop two new valuation frameworks for both EM external and local debt.

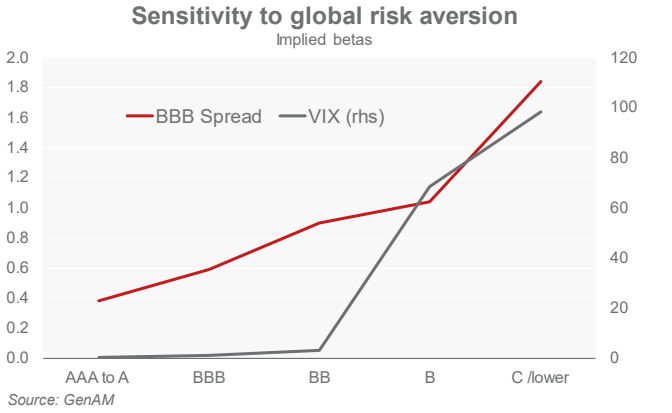
First, for EM external debt, we model the OAS spread at the global level for USD and EUR indices (ICE Bank of America DGOV and EGOV indices) to determine a fair value level based on market variables as well as global and local macroeconomic factors.

Second, we estimate the term premium for a selected number of EM local bond markets. The term premium can be seen as a proxy to efficiently capture idiosyncratic dynamics. Indeed, EM local debt markets, like external debt, are driven by global interest rates, but local factors such as central bank strategy, inflation, or political risk have more influence than for external debt.

2. Estimating EM external debt spread

2.1 A panel model estimation mixing local and global factors

We model the spread of EM sovereign debt yields as a function of country-specific fundamentals and the risk appetite of global investors. Risk appetite is particularly relevant in times of stress, as it could interact with domestic vulnerabilities to amplify the impact on borrowers if risk-averse investors are likely to shun those with weaker fundamentals. Specifically, we use as country-specific drivers the ratio of public debt to GDP, the one-year ahead Bloomberg consensus forecast for growth and inflation, and the year-on-year change in FX reserves. We consider two measures of global risk appetite, one related to equity market turbulence (the VIX) and the other more specific to the bond market (the spread of US BBB corporates over Treasuries). In the model specification each measure of global risk interacts with sovereign rating, as global shocks are likely to be felt more by weaker economies. The relationship is highly non-linear, with spreads for lower-rated countries being much more affected by global risk shocks.



Source: GenAM

We base our analysis on 66 countries included in the JP Morgan EMBIGD index. We model USD and EUR spreads separately. Due to data limitations that lead to uneven series length, and given the high correlation of spreads across countries, especially in times of stress, we use a fixed effects panel specification and estimate the equation below using monthly data over the 2015-2024 sample. We capture the non-linear relationship between rating and global risk aversion with a cubic function of rating. The estimated coefficients and the main statistics are shown in the appendix.

$$SPR_{it} = \alpha_i + \beta_1 DEBTtoGDP_{it} + \beta_2 \Delta_{12}\left(FX_{RES_{it}}\right) + \beta_3 (GROWH^e_{it}) + +\beta_4 (INFLATION^e_{it}) + \beta_5\ (VIX_t) \times f(RATING_{it}) + \beta_6 BBB_{SPREAD_t} \times f(RATING_{it})$$

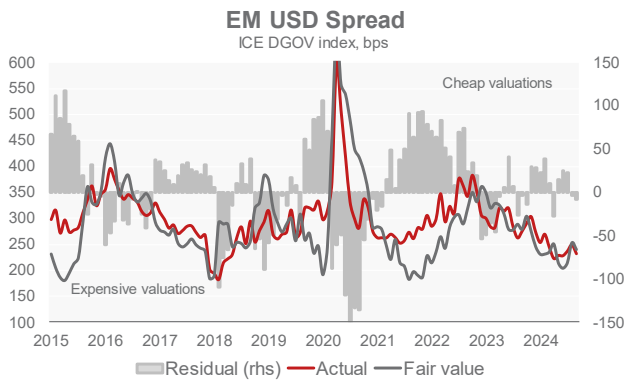
With $f(RATING_{it}) = \mu + \delta_1 RATING_{it} + \delta_2 RATING^2_{it} + \delta_3 RATING^3_{it}$

2.2 External debt spreads are not so expensive

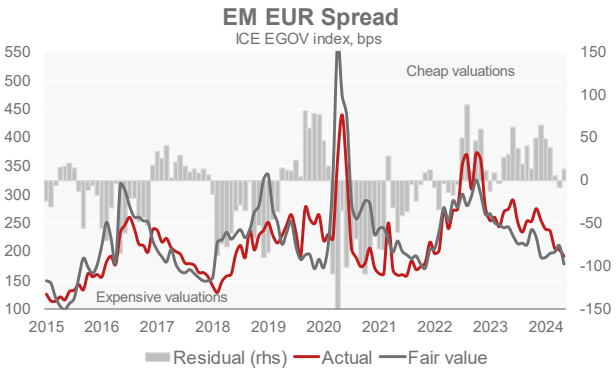
At the global index level, for both USD and EUR indices, the fit of the model is good, notwithstanding a significant overestimation of the spread during the post-COVID rally. This can be explained by the weak growth forecast at the time and the sharp rise in EM debt-to-GDP ratios.

Since 2023, the results are diverging. For the USD spread, the fit of the model has improved with an average residual close to 30 bp. Despite the low level of EM spread over the past six months, the model shows a limited expensiveness for USD spread and even cheapness for EUR spreads. Indeed, as of mid-September, the USD spread estimate is 8bp higher than the observed value. At the EUR level, the OAS spread was on the cheap side in 2022-2023 and early 2024

but it is now slightly above the estimated fair value by 21bp. This divergence in results for the two segments is probably related to the composition of the index. CEE countries have a higher weighting in the EUR index, and they underperformed in 2022-2, affected by the Ukraine invasion and higher energy prices.

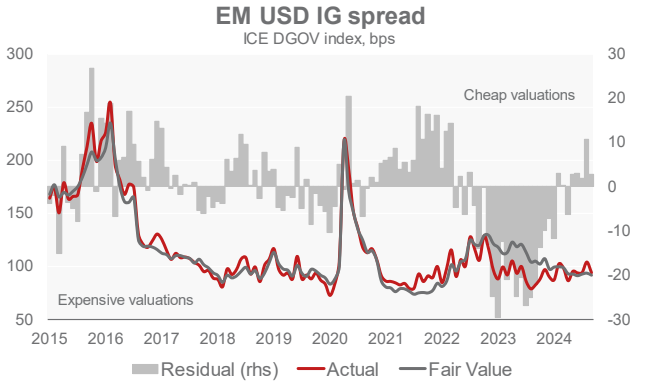


Source: ICE, GenAM

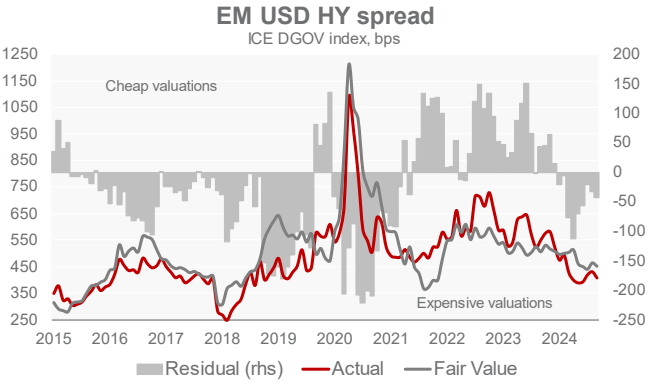


Source: ICE, GenAM

At the rating level, the fit of the model is slightly better for IG countries, with lower residuals and lower cross-country volatility. For HY countries, the tails of the residual distribution are thicker and asymmetric (see charts in appendix). These differences are related to the higher beta nature of IG countries, while EM HY countries are more driven by local factors that are difficult to predict, such as political risk, restructuring, or imminent default risk.



Source: ICE, GenAM



Source: ICE, GenAM

The model shows that most of the EM global index's expensiveness has been driven by EM IG between late 2022 and early 2024, but they now look cheap.

3. Estimating the EM local debt term premium

3.1 An ACM model for large EM countries

The term premium is defined as the difference between the long-term (in this case 10-year) rate and the average short-term rate over the life of the bond. For example, for a 10-year horizon (120 months), the term premium (TP) is defined as the 10-year rate minus the average of the expected one-year rate over the next ten years, which can be inferred from forward or, as in our case derived from an econometric model:

$$TP_t^{120} = y_t^{120} - \frac{1}{120}\sum_{j=0}^{120} E_t y_{t+j}^1$$

The term premium reflects the compensation investors demand for bearing duration risk by holding longer-term assets rather than rolling the investment in short-term instruments. The risk may be due to higher interest rates on competing securities (mainly DM bonds), higher credit or inflation risk, higher bond volatility, and lower liquidity.

The term premium is unobservable and there are various techniques for extracting it. We have chosen a popular one proposed by the NY Fed to calculate it from the US yield curve. It involves two steps: First, starting from the existing ZC yields for a given country, we construct the whole curve using the framework proposed by Diebold and Li[1]. Observed yields are modelled as a function of their maturities and three unobservable yield curve factors (Level, Slope, and Curvature), which are computed using maximum likelihood, by estimating the following system of equations:

$$y_t^3 = Level_t + Slope_t\left[\frac{1-e^{\frac{-3}{\tau}}}{\frac{3}{\tau}}\right] + Curvature_t\left[\frac{1-e^{\frac{-3}{\tau}}}{\frac{n}{\tau}} - e^{\frac{-3}{\tau}}\right]$$

$$\dots$$

$$y_t^{60} = Level_t + Slope_t\left[\frac{1-e^{\frac{-60}{\tau}}}{\frac{60}{\tau}}\right] + Curvature_t\left[\frac{1-e^{\frac{-60}{\tau}}}{\frac{60}{\tau}} - e^{\frac{-60}{\tau}}\right]$$

$$\dots$$

$$y_t^{120} = Level_t + Slope_t\left[\frac{1-e^{\frac{-120}{\tau}}}{\frac{120}{\tau}}\right] + Curvature_t\left[\frac{1-e^{\frac{-120}{\tau}}}{\frac{120}{\tau}} - e^{\frac{-120}{\tau}}\right]$$

Using the estimates of the factors we can derive a measure of the yields at any maturity as a function of the maturity itself and then populate the yield curve.

Second, using a series of factors extracted for this curve via principal components, it is possible, using linear regression, to obtain the series of instantaneous forwards for the short-term rate, and from them to obtain its average over the maturity of the bond. This is a proxy for the evolution of the risk-free rate linked to monetary policy and is called the risk-neutral component of the long-term yield. Subtracting it from the observed yield of the bond derived from the factor model gives the term premium[2].

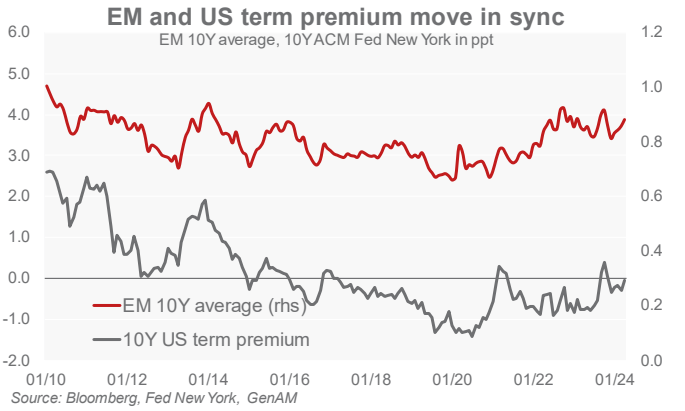
The estimated term premium shows a close correlation with i) proxies for the idiosyncratic risk associated with holding long-term local currency debt: credit risk (proxied by CDS), FX volatility and liquidity, ii) arbitrage opportunities in the sovereign debt space, proxied by the term premium on US or German bonds, iii) global risk aversion in the bond market, proxied by the MOVE index. Detailed results of the regressions can be found in the Appendix.

3.2 EM term premium at a high level

We estimate the term premium for 14 EM local markets that belong to the JP Morgan GBI index where data is available. Model estimates show that the average EM local term premium is close to its highest level since 2010. Its evolution has been heterogeneous across countries, but on average we see a gradual decline until 2021, as in the DM countries, and an increase since then to reach the current high level. The EM term premium has recently increased faster than in the US and is now much higher, exhibiting the largest gap to the US since 2010.

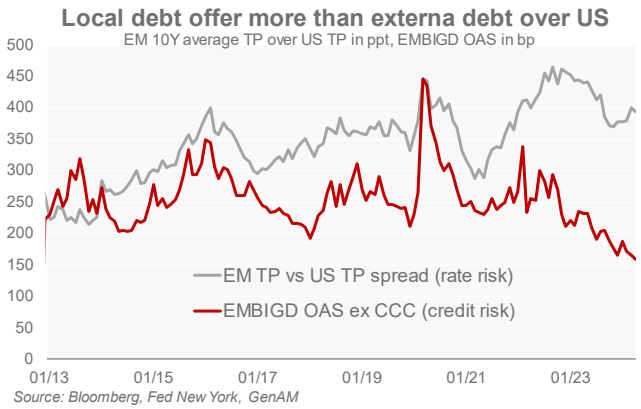
The correlation of the EM term premium with the US term premium is significant, or at least the co-movement between the two suggests an underlying global fixed income component. One explanation is the significant presence of USD-based investors in the local EM market and the weight of Fed policy on EM central banks' monetary policies. While EM central banks are independent, the impact of USD strength on their own FX and local inflation makes them sensitive to the Fed policy.

At the asset class level, EM local debt offers a better premium to the US than EM USD external debt. As a proxy, we compare the extra term premium offered by the EM local market with the OAS spread on external debt (see 2nd chart below). The former can be seen as a proxy for interest rate risk, while the OAS spread is a proxy for credit risk. The two show similar movements until 2022 when the term premium starts to rise while the OAS spread continues to tighten to all-time lows. A strict comparison between the two asset classes must be made with caution, but the recent divergence between the two metrics provides an early signal of the relatively cheaper val uation of EM local debt.

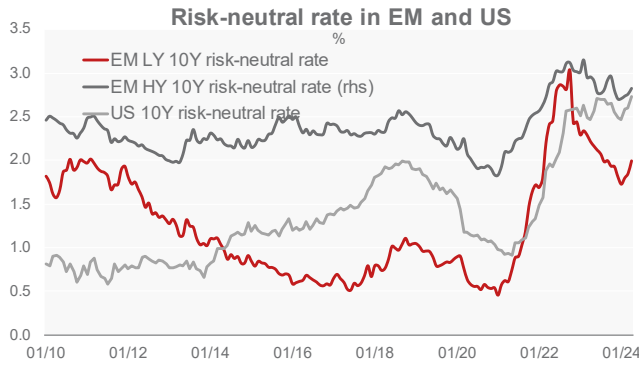


1 F. Diebold and C. Li "Forecasting the term structure of government bond yields", Journal of Econometrics, 2006

2 The full methodology is explained here.



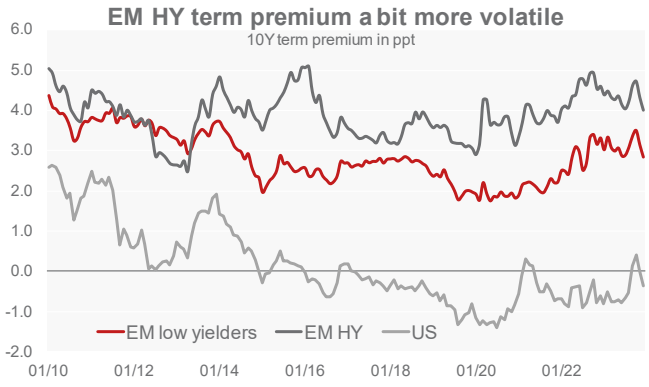
Source: Bloomberg, Fed New York, GenAM



Source: Bloomberg, GenAM, Fed of New York

Zooming in to the country level, the term premium trends for EM high yielders and low yielders are quite similar, with sometimes higher volatility for the former, which can be explained by a higher influence of idiosyncratic factors, while EM low yielders like CEE countries are more driven by DM rates. We note that the EM HY term premium spiked significantly during the 2013 taper tantrum and remained at high levels, while low yielders were more correlated to US dynamics at that time (chart below).

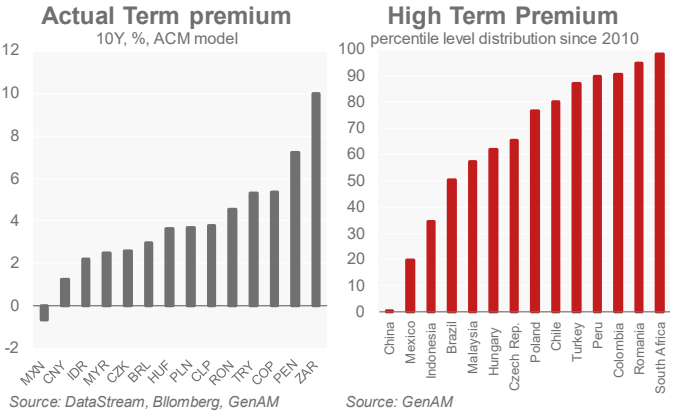
The recent divergence is also notable at the risk-neutral yield level. It has risen sharply for EM low yielders, before the US, as EM central banks started their hiking cycle earlier. Similarly, it has narrowed rapidly as EM central banks have cut early while the Fed is still on hold (second chart below).



Source: GenAM, Fed New York

At the country level, some discrepancies are striking, such as the persistently low level of the term premium in Mexico. We see several reasons to explain this anomaly. First, the correlation of Mexican rates with the US ones is high and the MXN term premium has been affected by the long-term decline in the US one. Second, real interest rates have remained historically high due to a hawkish Banxico and a strong peso. It is not surprising to see a low term premium in China, given the decline in the CGB yield and the low level of inflation.

On the other hand, it is not surprising to see countries like South Africa, Peru, Romania, or Turkey in the top quartile. In South Africa and Romania, fiscal concerns are high, as is political risk following the recent elections in South Africa and the usual unstable political environment in Romania. In Peru, we attribute a significant part of the term premium to the unstable political environment. In Turkey, the term premium has declined since the shift to a more orthodox monetary policy framework, but high inflation risks remain and there is no playbook yet to address the current macro imbalances.



Source: DataStream, Bllomberg, GenAM

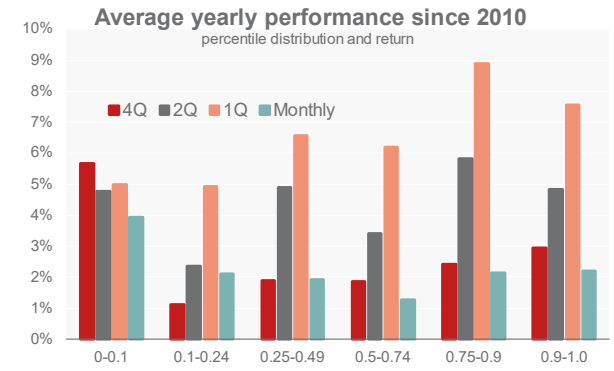
Source: GenAM

4 Term premium: a relevant strategy indicator

The term premium is a relevant indicator for EM bonds excess return and for future performance in local currency. In the following section, we develop several strategies based on our estimate of the EM term premium to evaluate the performance of EM bonds in local currency but also when considering FX hedging.

4.1 The term premium a good indicator for the future performance of EM bonds

In a first phase, we want to test the future performance of a bond based on its term premium. To do so, we select countries according to their ranking in the term premium distribution. We divide the distribution into six buckets: in the first strategy, we buy countries that stand in the first decile of the term premium distribution (low term premium). In the last strategy, we buy countries in the upper decile. We roll over the strategy every month, quarter, two quarters or every year. Importantly we do not consider FX hedging costs.

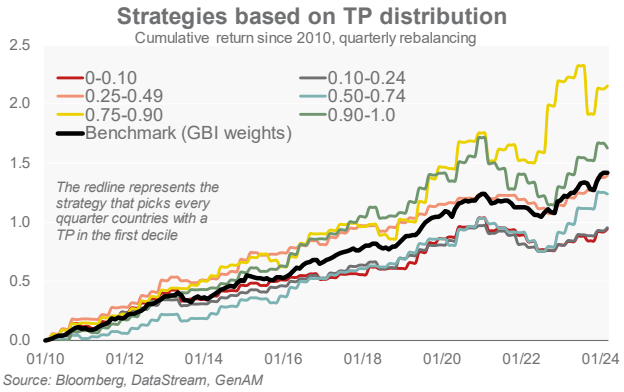


Source: DataStream, GenAM

First, for the period from 2010 to date we find that the average annual return is higher when the strategy is rebalanced every quarter. It also delivers the highest Sharpe Ratio on average (see appendix).

Second, and surprisingly, the strategy of investing in countries in the first decile of the distribution provides a relatively high return. This can be explained by the persistent presence of Mexico in this bucket, given its structurally low-term premium. The performance of Mbonos has been consistently positive. Without Mexico in the sample, the average return of the first decile falls by 1.5 percentage points.

If we rebalance quarterly the strategy, on a cumulative basis, investing in the 75-90th decile provides the best average return. Its performance beats the benchmark, and its Sharpe ratio is above 1. The performance of the upper decile is positive but lower. In fact, investing in countries with the highest term premium does not necessarily provide a higher return, as the term premium is also a proxy for uncertainty and risk associated with large fiscal, monetary, and external imbalances. Countries with large imbalances may therefore perform poorly. A strategy that picks countries in the last decile has positive returns and beats the benchmark, but volatility is more important as the drawdown in 2021-22 shows.



Source: Bloomberg, DataStream, GenAM

4.2 FX hedging costs affect systematic strategies return

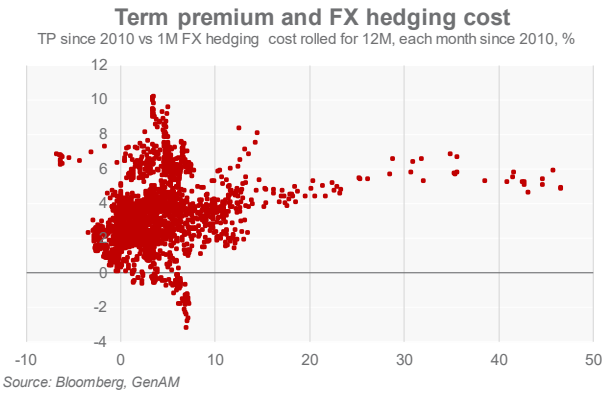
In a second phase, we position as a foreign USD investor, taking into account the FX hedging costs. If we rebalance quarterly the previous strategy based on the term premium distribution, the relationships between the position in the term premium distribution, and the strategy performance is disappointing. The FX hedging costs impact the performance. We see two explanatory reasons:

- Countries with large term premium tend to have high yields (see chart below) and so high hedging costs that affect the final performance.
- High term premium is a representation of local uncertainty and macro imbalances that could lead to FX depreciation. Picking countries with large high term premium also leads to pick risky countries that face macro disequilibrium.

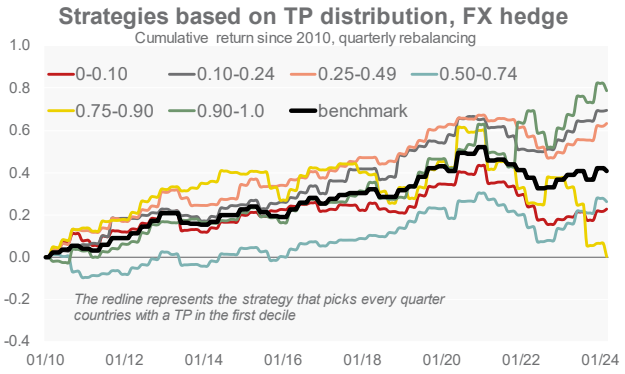
Beyond these limits, we note positive elements. Indeed, the strategies focusing on the countries with the highest term premium offer the best total return over the time horizon while the countries with the lowest term premium are close to provide the worst performance. In other words, the term premium does not completely fail to provide information on the best and worst performers. It is less an accurate signal

when the term premium is close to the median of the distribution.

Other factors come at play, like the FX risk. The term premium can provide an excellent view on the expected performance of a bond in local currency terms but local bond also carries an FX risk. Therefore, the investor still must run its own FX analysis and decide or not to hedge the FX risk before picking a bond.



Source: Bloomberg, GenAM



Source: Bloomberg, DataStream, GenAM

4.3 Term premium: a useful investment signal when at extreme levels

Taking into account the limits of the previous strategies, we refine our systematic approaches to focus on the extremes of the term premium distribution. We test new strategies that are rebalanced quarterly:

1. Top 3: long the three countries with the highest term premium. We affect a 60% weigh to the country with the largest term premium, 30% for the 2nd and 10% for the 3rd one
2. Short Bottom 3: short the three countries with the lowest term premium with a 60% weigh to the country with the smallest one, 30% for the 2nd and 10% for the 3rd
3. Long / Short: long the top 3 countries and short the bottom 3 countries
4. Active Diversified: long the 10 countries with the highest term premium

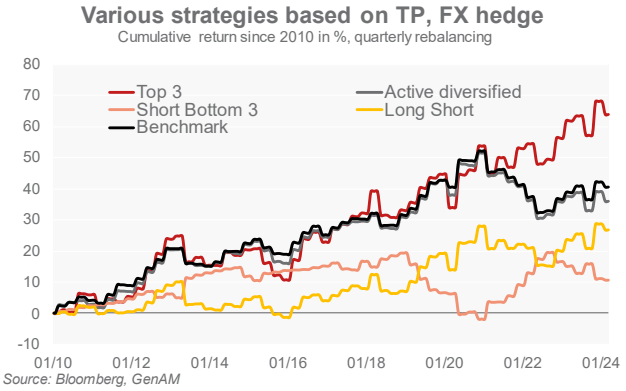
The results of these strategies (see overview table below) provides more consistent results than the previous strategies discussed above. It shows that the term premium must be used parsimoniously and can be a relevant indicator in the investment process when the term premium is at extreme high/low levels.

Indeed, the Top 3 strategy has the highest cumulative positive return, above the benchmark. This confirms the positive signal given by the term premium in terms of expected performance. The Sharpe ratio is not the highest as it is a more volatile strategy focusing on only three countries but still in line with the Sharpe ration of the benchmark.

The short Bottom 3 strategy also provides a positive return that is lower than the benchmark due to the significant loss of carry in shorting the bottom three countries. That said, the strategy is uncorrelated, and it generates a significant alpha.

The long/short strategy delivers a positive cumulative return but underperforms the benchmark. It remains a risky strategy with a beta above 1 but with a high alpha and higher volatility.

Finaly, the active diversified strategy is disappointing as it fails to beat the benchmark on all the fronts, having a negative alpha, a high beta and a lower Sharpe ratio. It does not provide a meaningful diversification compared to the benchmark.



Source: Bloomberg, GenAM

Statistics for several TP strategies, FX hedge

	Top 3	Active diversified	Short Bottom 3	Long Short	Benchmark
Beta	0.67	2.79	0.04	1.34	
Alpha	7.03	-4.90	7.48	13.59	
Sharpe ratio	0.58	0.51	0.21	0.13	0.61
Av. yearly return	3.98	2.52	0.90	1.90	2.67

Since 2010, quarterly returns, Benchmark: 13 equally-weighted GBI countries

Source: GenAM

5. Conclusion

Econometric models are relevant tools to assess the current valuations in EM fixed income. For EM external debt, signals have been mixed. While EM USD and EUR spread were slightly cheap in late 2023/early 2024, current valuations are more expensive, especially for USD spread, though less so for EUR spread. At the rating level, while EM IG has been expensive over the past 18 months, the models point to some value in the EM HY space. However, both at the rating and index levels, it remains that the discrepancy of valuations with estimations are far from being large.

For EM local debt, term premium stands at high level on average, exhibiting historically the largest gap with the US one. the use of term premium in systematic strategies has to be careful. It is a relevant signal for EM bonds outperformance in local terms. However, when considering FX hedging costs for foreign investors, the return of those strategies is less appealing. They must focus on countries with the extreme high/low levels of term premium to provide better returns than benchmark

6.APPENDIX- Results of the econometric modelling

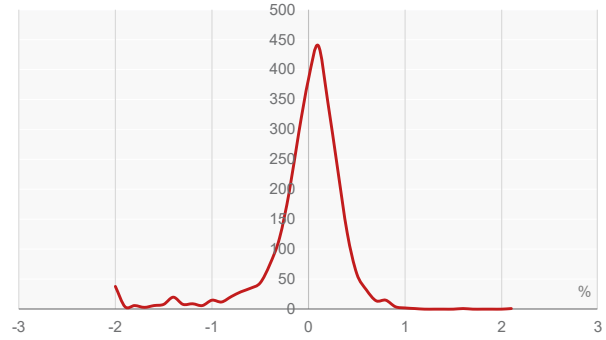
6.1 EM external debt spread model

Estimated coefficients

	USD Spreads				EUR Spreads			
	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.
Debt to GDP	5.13	0.74	6.91	0.00	11.02	1.06	10.37	0.00
FX res growth	-2.74	0.24	-11.26	0.00	-1.35	0.38	-3.52	0.00
Expected Growth	-39.18	4.94	-7.93	0.00	-6.94	1.01	-6.85	0.00
Expected Inflation	0.02	0.01	3.72	0.00				
VIX*F(Rating)	22.52	2.02	11.13	0.00	11.43	2.14	5.33	0.00
BBB_Spread*F(Rating)	0.05	0.02	2.28	0.02	0.11	0.02	5.83	0.00
Ad. R-squared	0.75				0.68			

USD IG spread estimation: residual distribution

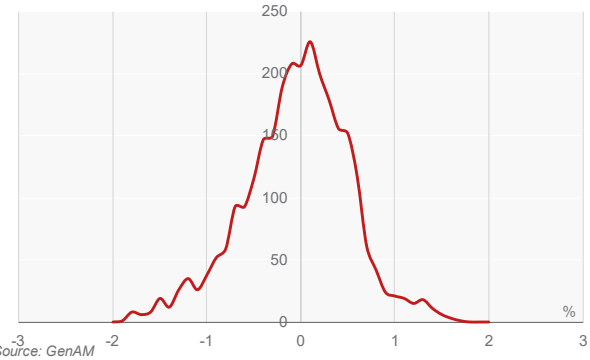
residual in % of country spreads since 2015



Source: GenAm

USD HY spread estimation: residual distribution

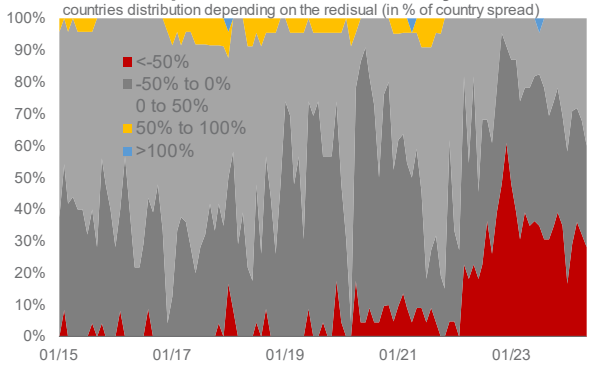
residual in % of country spreads since 2015



Source: GenAM

EM USD IG spread estimation: country distribution

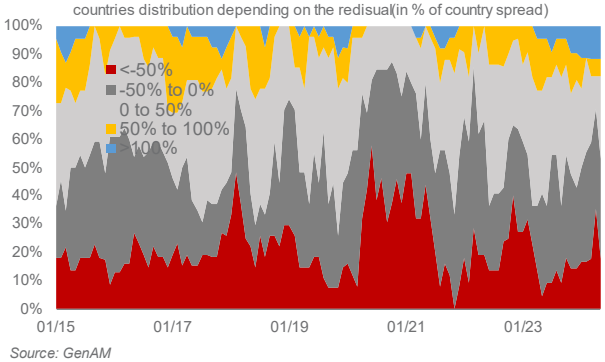
countries distribution depending on the redisual (in % of country spread)



Source: GenAM

EM USD HY spread estimation: country distribution

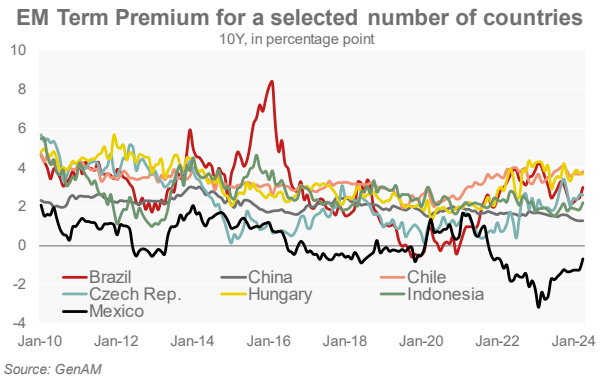
countries distribution depending on the redisual(in % of country spread)



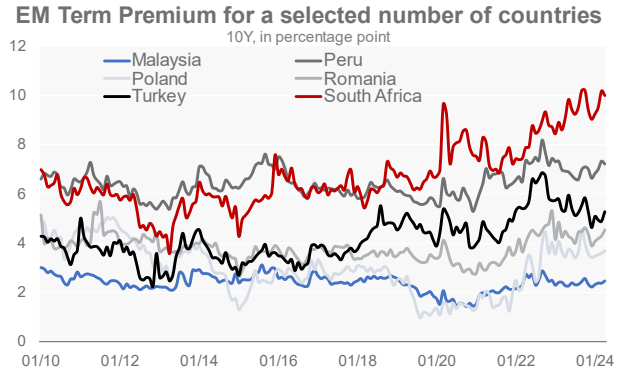
Source: GenAM

6.2 EM local debt term premium model

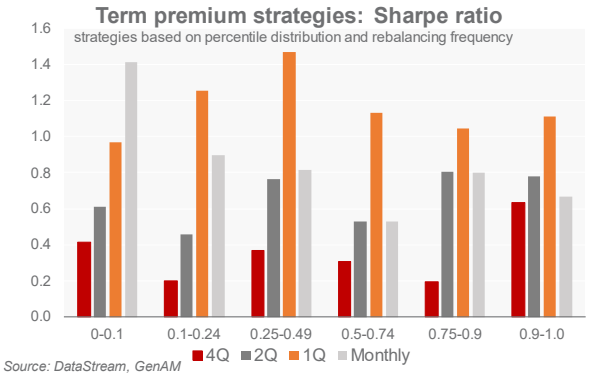
	Drivers of the 10 year Term Premium																			
	Czech Rep.				Hungary				Poland				Romania				Turkey			
	Coeff.	St. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.
C	-0.75	0.15	-5.17	0.00	1.16	0.15	7.82	0.00	0.03	0.19	0.19	0.85	2.20	0.12	18.27	0.00	1.30	0.09	13.77	0.00
Global TP	0.94	0.10	9.12	0.00	0.41	0.08	5.30	0.00	0.97	0.08	12.06	0.00	0.26	0.05	5.09	0.00	0.45	0.02	18.31	0.00
MOVEI3M					0.01	0.00	4.27	0.00					0.01	0.00	7.07	0.00				
CDS	0.02	0.00	10.11	0.00	0.01	0.00	17.66	0.00	0.01	0.00	5.18	0.00	0.00	0.00	7.75	0.00	0.01	0.00	35.69	0.00
FX vola									0.07	0.02	3.35	0.00								
Liquidity	8.54	1.07	7.95	0.00	0.66	0.42	1.58	0.12	6.07	1.06	5.72	0.00	0.74	0.12	6.00	0.00	1.03	0.21	4.99	0.00
R-squared	0.74				0.78								0.63				0.91			
	Brazil				Colombia				Chile				Peru				S. Africa			
	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.	Coeff.	Std. Err.	t-Stat.	Prob.
C	-1.65	0.28	-5.88	0.00	1.46	0.14	10.32	0.00	2.48	0.08	29.65	0.00	4.35	0.15	29.36	0.00	1.29	0.26	4.90	0.00
Global TP	1.20	0.07	17.05	0.00	0.29	0.04	7.59	0.00	0.38	0.03	13.97	0.00	0.08	0.05	1.70	0.09	0.76	0.06	12.66	0.00
MOVEI3M	0.02	0.00	5.55	0.00	0.01	0.00	4.15	0.00	0.01	0.00	9.30	0.00	0.01	0.00	8.42	0.00				
Infl. Surp.									0.00	0.00	3.56	0.00								
CDS	0.02	0.00	17.51	0.00	0.01	0.00	7.90	0.00					0.01	0.00	7.03	0.00	0.01	0.00	13.85	0.00
FX vola					0.03	0.01	2.44	0.02					0.03	0.01	2.60	0.01				
LIQ_CB					1.24	0.24	5.12	0.00	0.15	0.06	2.38	0.02	1.35	0.32	4.27	0.00	3.06	0.26	11.57	0.00
R-squared	0.76				0.84				0.71				0.73				0.76			



Source: GenAM



Source: GenAM



Source: DataStream, GenAM

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