GMO Emerging Debt Insights

4Q 2018

Quarterly Update on Valuation Metrics in Emerging Debt

Carl Ross and Victoria Courmes

Executive summary

As we enter 2019, our valuation metrics for external emerging debt reveal an asset class that is much more attractive than it has been in recent years, due in large part to a significant sell-off in sovereign credit spreads in the fourth quarter of 2018. Local market debt sharply outperformed external debt during the quarter, which impacted relative valuations between the two asset classes. However, emerging currencies remain at the cheap end of our neutral range. As for local rates, while the gap between the emerging and developed markets real yields remains wide, emerging real yields fell below their historical average, due to a sharp rally in the fourth quarter.

In this piece, we update our valuation charts, and provide our readers with some small changes in methodology that we have adopted. (See the Appendix for more detail.)

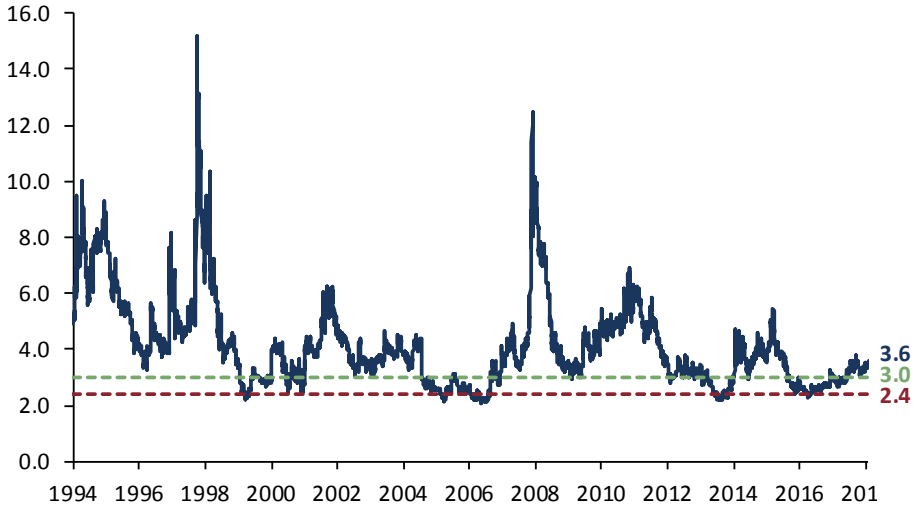
External debt valuation

As seen in Exhibit 1, the current multiple of the benchmark's credit spread over the spread that would be required to compensate for credit losses rose significantly in the fourth quarter. The multiple stood at 3.6x on December 31, 2018, higher than the 3.1x we saw at end-September 2018, or the 2.9x observed at the end of 2017. The ratio remains below historical averages, but it is well off its historical lows. The historical minimum ratio was 2.1 in April of 2007, when the spread on the EMBIG index was +161 bps and the 10-year Treasury yield was 5.0%, compared with +435 bps and 2.69%, respectively, at the end of the fourth quarter.

With this publication, we are introducing a new way of assessing richness and cheapness of the market. Previously, we implicitly assumed mean reversion in the series, and displayed the mean and median levels (both around 4x) of the spread multiple. We now offer a different methodology, explained in more detail in the appendix. This new framework considers "cheap" to be the spread multiple that, in the past 25 years, has been associated with positive credit spread returns in the index over the subsequent 24-month period 90% of the time. Conversely, "rich" would be the spread multiple

that, in the past, has resulted in negative spread returns over the subsequent similar period 90% of the time. These two levels for the multiple, depicted in the chart as the horizontal lines, are 3.0 and 2.4, respectively. By this measure, the year-end multiple of 3.6x is well within the region of cheapness.

Exhibit 1: Long-Term View of the "Fair Market Multiple" for Emerging External Debt

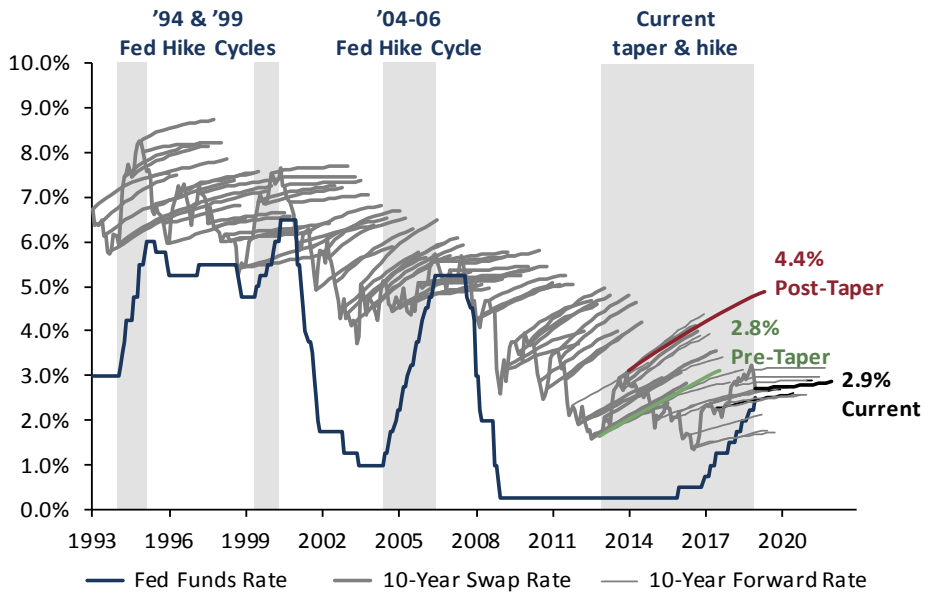


As of 12/31/18
Source: GMO calculations based on Bloomberg and J.P. Morgan data

There were a handful of rating changes during the quarter. Perhaps the most notable was the downgrading of Argentina in November, mostly on concerns that uneven implementation of new economic policies would impact growth, inflation, and fiscal outcomes, even as the sovereign's outlook improved from negative to stable. On the positive side, Poland was upgraded on stronger and more balanced growth, as well as continued fiscal discipline. Due to those changes and other rating moves and weighting changes in the benchmark, **our updated calculation of the "fair value" spread of the EMBIG that would be required to compensate for expected credit losses increased slightly, from 119 bps at end-September to 123 bps at end-December 2018.** This is an unfavorable move, to be sure, but it was far outweighed by the spread widening that occurred.

The preceding was a discussion of the level of spreads, or credit cushion. From a total return standpoint, the level and changes of the underlying risk-free rate also matters. Total returns on the EMBIG would have been significantly worse in the fourth quarter were it not for a rally in U.S. Treasuries. We measure the "cushion" in Treasuries by the slope of the forward curve of the 10-year swap rate, depicted by the highlighted lines in Exhibit 2. The interest rate cushion remains very low by historical standards, meaning a sharp rise in the 10-year Treasury yield would be a surprise, and therefore a threat to market confidence. The slope of the 10-year forward curve did steepen in the fourth quarter, but only to 14 bps (from 6 bps at the end of Q3).

Exhibit 2: 10-Year U.S. Treasury Swap Curves at Quarterly Intervals

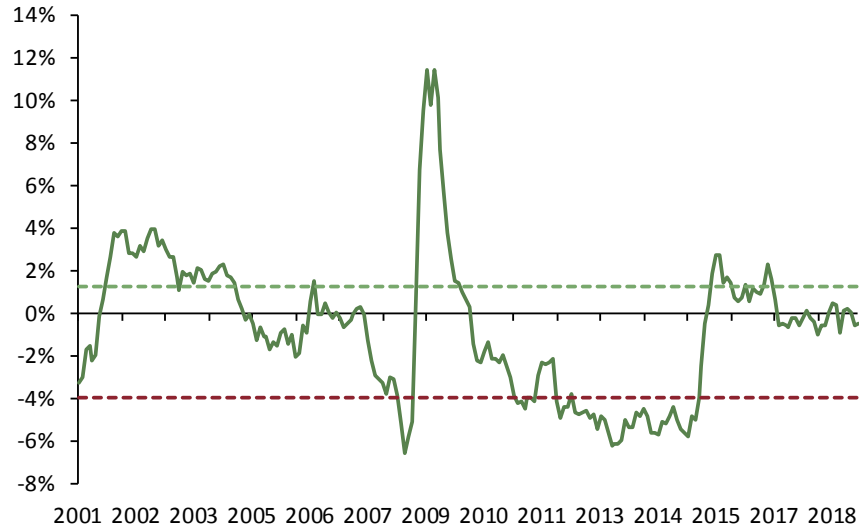


As of 12/31/18
Source: GMO
Note: Projections as of each date, including those that are beyond 2015, are future prices as determined by the market and are not a GMO projection.

Local debt markets valuation

Exhibit 3 provides a snapshot of our new currency valuation methodology introduced at the end of Q2 2018 (for more information please see the Appendix). The underlying model analyzes trends in macroeconomic fundamentals such as balance of payments composition and flows, valuation of the currency, and the economic cycle, via an econometric analysis, to come up with an estimate of total expected FX returns for each country in the GBI-EMGD benchmark. These are then combined into a single value of a total expected FX return using a weighted average of currencies in the GBI-EMGD. We then deduct the GBI-EMGD weighted carry from the estimated GBI-EMGD weighted value of total FX expected return to get to an expected EM FX spot return. Finally we estimate a neutral range based on the backtest of the overall model (see the Appendix for more information) to assess whether EM currencies are cheap, rich, or fairly valued. A value that is higher (lower) than the upper (lower) value of the neutral range could potentially indicate "cheap" ("rich") currencies. A value that is within the neutral range would be considered "fair." Based on the new methodology, EM currencies, while not outright cheap, are hovering close to the cheap end of the neutral range. EM FX valuation did not change much in spite of EM currencies depreciating during the fourth quarter of 2018. While the real effective exchange rate improved, other fundamental variables like the terms of trade deteriorated, which kept the overall fundamental picture the same. Because our methodology takes into account fundamental factors, EM currencies do not look as cheap (to us) as might be implied by narrower definitions of value based on the quarter's currency moves.

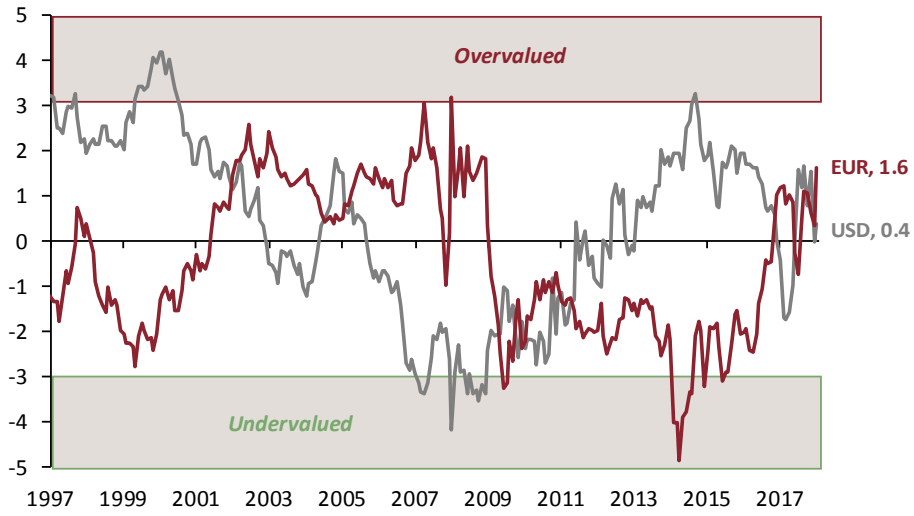
Exhibit 3: GBI-EMGD Expected Spot FX Return Given the Fundamentals



As of 12/31/18
Source: GMO
Note: The values shown above apply the GBI-EMGD weights to the emerging currencies. The expectations provided above are based upon the reasonable beliefs of the Emerging Country Debt team and are not a guarantee. Expectations speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update such expectations. Expectations are subject to numerous assumptions, risks, and uncertainties, which change over time. Actual results may differ materially from those anticipated in the expectations above.

Exhibit 4 provides a snapshot of our traditional currency valuation methodology, which combines trends in the balance of payments and the real effective exchange rate, via a z-score analysis, and measures how far away current values are from their long-term averages. We keep our traditional valuation model to look at the valuation of the USD and EUR. The EUR moved further into overvalued territory in the fourth quarter after the important shift in the third, which saw the EUR move from undervalued to overvalued territory. The value of the USD did not change and the USD still remains in "rich" territory according to this metric. Both USD and EUR remain in "rich" territory. For dollar-based and euro-based investors, investing in local currency emerging fixed income markets looks attractive from an outright valuation perspective as well.

Exhibit 4: Value Score USD and EUR



As of 12/31/18
Source: GMO
Note: The value scores shown above apply the GBI-EMGD weights to the emerging currencies. GMO calculates a currency's value score using a combination of the currency's trend real price and the country's trend current account balance.

As for emerging market local interest rates, we consider differentials in real yields to gauge the relative attractiveness of EM against developed markets (see Exhibit 5 below). In this regard, the story that has been in place for many quarters (years, actually) remains as we can still witness a substantial positive gap between EM and developed market real yields. Having said that, the gap decreased during the quarter as emerging real yields have fallen to 2.4% from 2.9% thanks to a rally in nominal yields. While the spread between EM and U.S. real yields continues to remain above the historical average (1.4%), it is now below the average spread since 2010 (2.0%), as seen in Exhibit 5. Real yields in the G-3 continue to be at or below zero. Japanese and Eurozone real yields remain negative by our calculations. Real yields in emerging markets are now slightly below the historical average (2.6%) and fell back within the tight range of 2.0% to 2.5% that had been established since the beginning of 2017.

Exhibit 5: Inflation-Adjusted Bond Yields

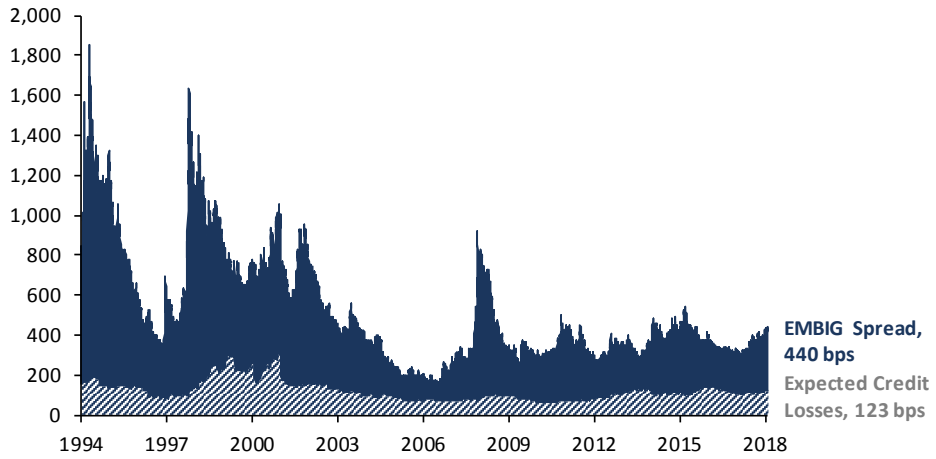
As of 12/31/18
Source: GMO
Note: Real yields are measured using the country subindices of the GBI-EMD and GBI Global, respectively, less Consensus Forecast CPI

Appendix

Explanation of the Methodology

External Debt Valuation

Exhibit 1 is created by first calculating a "fair" spread of the EMBIG over U.S. Treasuries, accounting for the credit rating profile of the EMBIG, default probabilities, and recovery values under default scenarios, based on rating agency studies of the historical default experience. In this way, the fair value spread of the EMBIG can move with time depending on upgrades and downgrades of sovereigns and their relative weightings within the index, ensuring that we are not biasing our measurement due to "rating creep." This fair value spread is the spread on a portfolio represented by the EMBIG that would be needed to compensate for expected credit losses, ignoring risk aversion, liquidity, and other considerations. The chart below shows the EMBIG spread and this fair value spread.



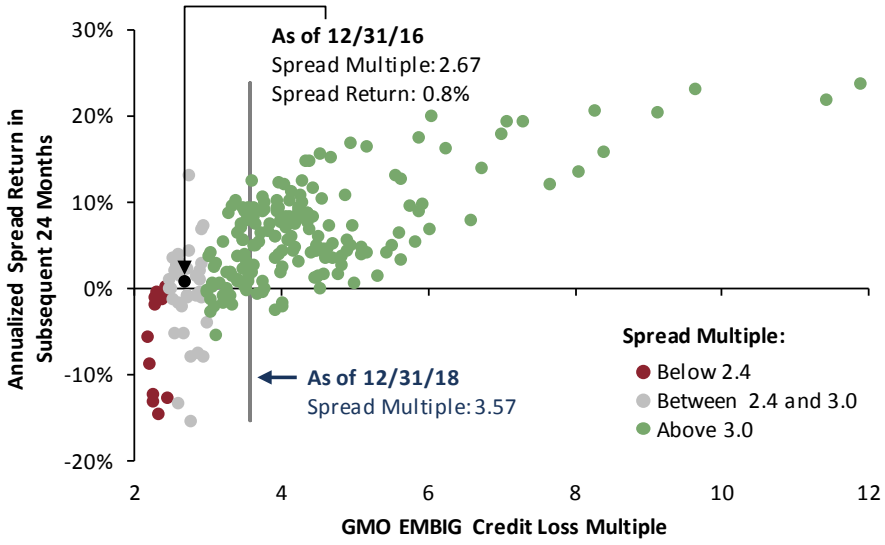
As of 12/31/18
Source: GMO calculations based on Bloomberg and J.P. Morgan data

The question then becomes one of determining the appropriate premium the market should demand over the fair value spread, as the chart shows varies widely over time. Our traditional answer to this question was to take the ratio of the two spreads (Actual EMBIG Spread/Fair Value Spread) and compare that ratio to its historical average and median (both of which are around 4.0x). This mean reversion approach implies that liquidity and risk aversion are stable over time, and we found it unsatisfying.

As an alternative approach, we asked what have been the benchmark's returns in the past under its varying credit multiples? In the chart below, we plot these multiples over the historical period since 1994 with the benchmark's corresponding 24-month spread return (annualized). That is, given a credit multiple of X, Y would be the subsequent annualized spread return over the following two years.[1] This plot can be seen in the chart below. We then calculate the credit multiple that, over the past 25 years, has been associated with positive spread returns on the benchmark over the subsequent 2 years, 90% of the time. These observations are in green in the chart below, and the multiple that delineates this sample is 3.0x. Thus, over the past 25 years, if one bought the benchmark whenever it was 3.0x its fair value, this would have yielded positive spread returns over the following 2 years 90% of the time.

[1] We chose two years because one year did not seem like quite enough, given our long-term, buy-and-hold philosophy to the asset class (and one year returns can be overly influenced by transitory shocks), and anything beyond two years begins to significantly reduce our number of observations.

We view this as a measure of cheapness. By contrast the observations in red mark those multiples in which an investment in the benchmark on those dates would have generated negative spread returns over the following 2 years 90% of the time. We view this condition as rich. The observations in grey fall in between.



As of 1/1/19
Source: GMO, S&P, J.P. Morgan

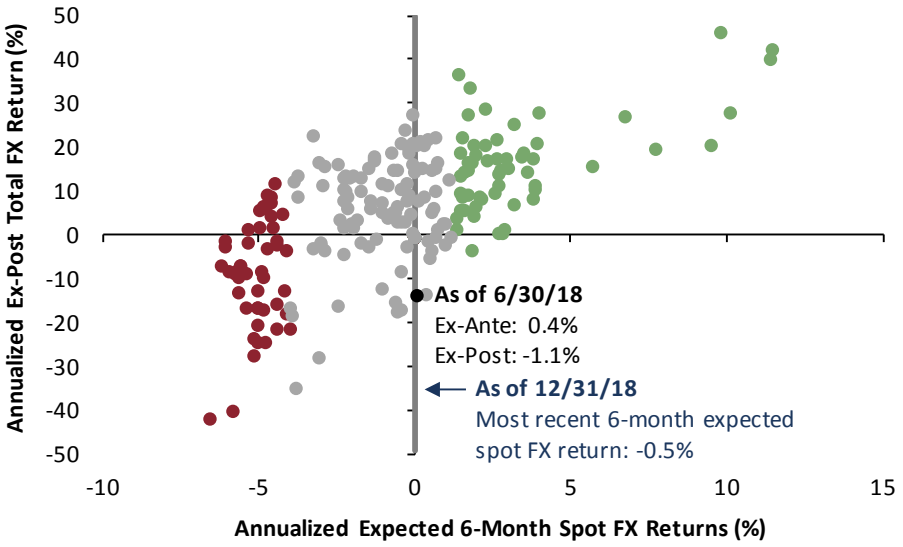
Whereas Exhibit 1 deals with credit spreads, **Exhibit 2** deals with the *level* of the underlying risk-free rate (in this case, U.S. Treasuries). In our hard currency portfolios, we manage the interest rate duration to be neutral to the EMBIG benchmark (duration of approximately 7). We do not take directional bets on U.S. rates in this portfolio, but we recognize it is an important determinant in the portfolio's total return. Exhibit 2 shows the history of the 10-year U.S. Treasury swap rate (heavy solid line), along with the forward curve (going out 3 years) for the 10-year swap rate (lighter lines) at each point in time (quarterly). In effect it tries to show three dimensions in a two-dimensional chart. Note that it also shows the path of the Fed funds target rate for a sense of where the Federal Reserve is in its policy cycle. We highlight two things in this chart. First, the level of the 10-year swap rate gives us an idea of the overall interest rate cycle relative to one's view of the natural rate of interest. If this number is very low, there may be more risk of higher rates over a medium-term horizon. The second is the market's pricing of the 3-year forward rate for the same swap. If this forward curve is very flat, there is also less cushion for a negative surprise (i.e., higher rates) on term rates. If there is some positive slope to the forward curve, it is an indication that the market has at least priced in some higher drift in term rates.

In **Exhibit 4**, we introduce a new framework to look at currency valuation for local currency debt. We use econometric models to estimate total expected returns for each country in the GBI-EMGD benchmark. We estimate two different models depending on whether the currencies are allowed to float freely or are more "managed." All regressions are estimated with country fixed effects. Expected total returns are a function of interest rate differentials and the underlying fundamentals of each economy. In determining the direction and magnitude of total returns, we find significant the following factors: balance of payment flows and composition; where a country stands within its economic cycle; and the over/undervaluation of the currency. The table below shows the fundamental variables included in the models.

"Floating" and "Peg" Currency Model Variables		
Currency Overvaluation	**Balance of Payment Flows**	**Economic Cycle**
▪ Real exchange rate estimate ▪ Term of trade	▪ Current Account ▪ Foreign direct investment ▪ FX Reserves ▪ Short-term External Debt	▪ Growth ▪ Inflation ▪ Credit

After estimating total expected return for each country, we aggregate those returns by the weight each country has in the GBI-EMGD. We then compare this aggregate total expected return to a GBI-EM weighted value for carry by subtracting the two, which gives us an estimate of a GBI-EM weighted spot FX return. With some assumptions, such as a long-term investment horizon, mean reversion, and little or no structural change in the market, the chart in **Exhibit 4** suggests that the market shows a signal of being attractive when the difference between total expected return and carry is above the upper end of the estimated historical neutral range, and unattractive when it lies below the lower end of that same range.

To estimate the neutral range, we look at how accurate our estimate of GBI-EM weighted spot FX return has been at predicting actual total FX returns on a 6-month horizon as represented in the scatter plot below. As the scatter plot shows, we minimize the false positives when the estimated FX spot return is approximating 1.2% (annualized term). Moreover, we minimize the false negatives when the estimated FX spot return is below -4% (annualized term). Any signals between 1.2% and -4% would be considered uncertain, hence within the neutral range.



As of 12/31/18
Source: GMO, Haver, J.P. Morgan

Carl Ross. Dr. Ross is engaged in research for GMO's Emerging Country Debt team. Prior to joining GMO in 2014, he was a managing director at Oppenheimer & Co. Inc. where he covered emerging debt markets. Previously, he was the Senior Managing Director and Head of Emerging Markets Fixed Income Research at Bear Stearns & Co. Dr. Ross earned his BA in Economics from Mount Allison University as well as his M.A. and PhD in Economics from Georgetown University.

Victoria Courmes. Ms. Courmes is engaged in research for GMO's Emerging Country Debt team. Prior to joining GMO full-time in 2016, she worked at Acadian Asset Management as an Associate Portfolio Manager in Emerging Markets Local Bond Funds. Previously, she worked at Lord Abbett as an International Economist and Currency/ Local Rates Strategist. Ms. Courmes earned her Bachelor of Science in Political Science from Barry University and her Master of Arts in International Relations from the School of Advanced International Studies at John Hopkins University.