



MPI Quantitative Analysis

Mario H. Aguilar, CFA
Director, EMEA Client Services
July 2011
Markov Processes International
Tel +1 908 608 1558
www.markovprocesses.com

ASSET CLASS ANALYSIS

BOND EMERGING MARKETS GLOBAL

Emerging Markets Global Bond funds' performances range from -11.25% to 15% over the last 52 weeks (ending July 1, 2011), in EUR terms. On average, the best 5% of the funds outperform the market (pegged to the JP Morgan EMBI Global Diversified Index) by approximately 15.08% and the worst 5% underperform by approximately 6.26%. The top funds also experienced lower volatility than the bottom funds and benchmark during this period.

We examine factors describing the best and worst performing funds on an aggregate basis. When funds are aggregated in a group, their common factors crystallize and specific bets are diversified away, which provides the basis for such an analysis. The analysis suggests that the top and bottom funds, on average, were exposed to different regional factors which can help explain their very diverse performance. Please note that our conclusions may change if a different timeframe is used to select the best/worst funds.

Universe Overview – RBSA Analysis

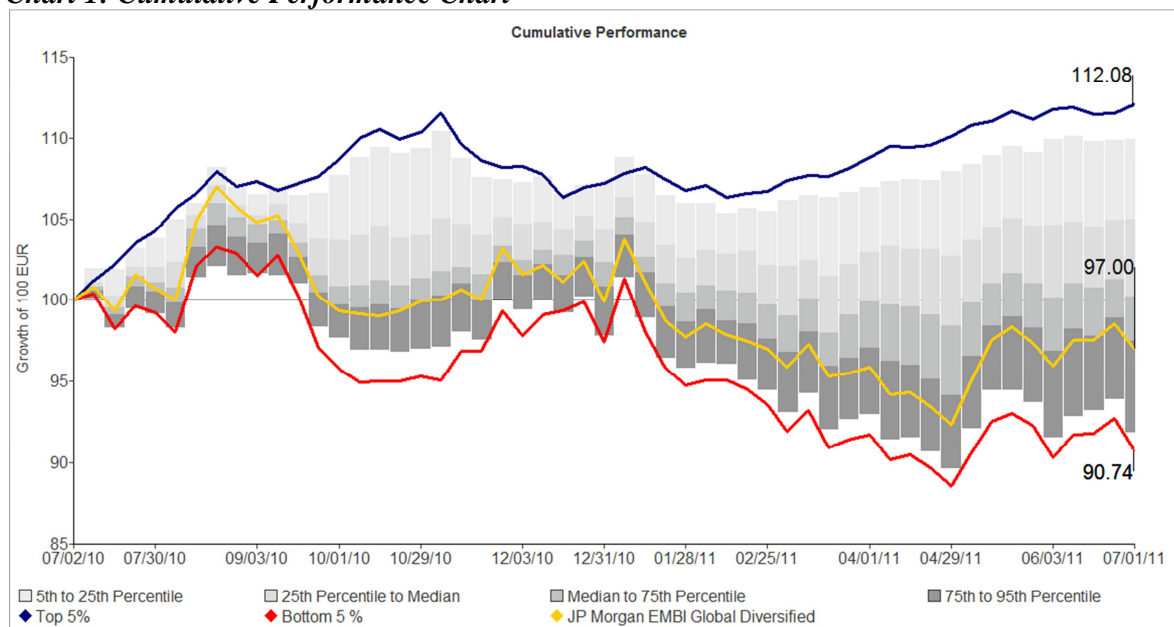
- The universe is comprised of 79 funds that are classified under Lipper Global: Bond Emerging Markets Global¹, with AUM of at least USD 10 million and denominated in EUR and USD. The analysis takes into account the performance of the Primary Share Class, as defined by Lipper.
- Using MPI's Locally Weighted Regression algorithm, we apply Returns Based Style Analysis (RBSA) using mpi Stylus Pro to estimate the average exposures using weekly observations for the period from July 5, 2010 ending on July 1, 2011. JP Morgan EMBI+ indices are used as Style Factors.
- The average RBSA style loadings show that the peer universe is diversified with exposures across all regions; the highest exposure to JP Morgan EMBI+ Europe is approximately 41%. The peer average displays a nearly 20% hedged exposure to the US dollar which suggests that the average fund in the peer group did the same.

1. Bond Emerging Markets Global, as classified by Lipper, are "Funds with the primary objective to invest in Bonds denominated in currencies of Emerging countries in the Global region and/or issued by government debtors in emerging countries of region: Global."

Selection of Top/Bottom Fund Groups

- Based on the universe of 79 funds, the total annualized performance is calculated during the last 52 weeks to rank the funds. Using the top 5% (4 funds) and bottom 5% (5 funds) equally weighted, daily rebalanced portfolios are created to try to identify why, on average, one group performed better in terms of style exposures.
- On a cumulative basis, over the period analyzed, the top 5% of funds outperform its peers, benchmark and the bottom 5%. Returns of the top 5% are approximately 15.08% above the JP Morgan EMBI Global Diversified Index while the returns of the bottom 5% are 6.26% below. The peer group's performance indicates large variations over this period.
- The top funds consistently outperformed their peers and the benchmark with an overall volatility, as defined by the annualized standard deviation, of 4.9%. This value is lower than that of the benchmark (12.04%) and bottom funds (12.05%). The Information Ratio is 1.24 for the top funds versus -1.66 for the bottom funds.

Chart 1: Cumulative Performance Chart



Created with mpil Style (Dow, Lippin)

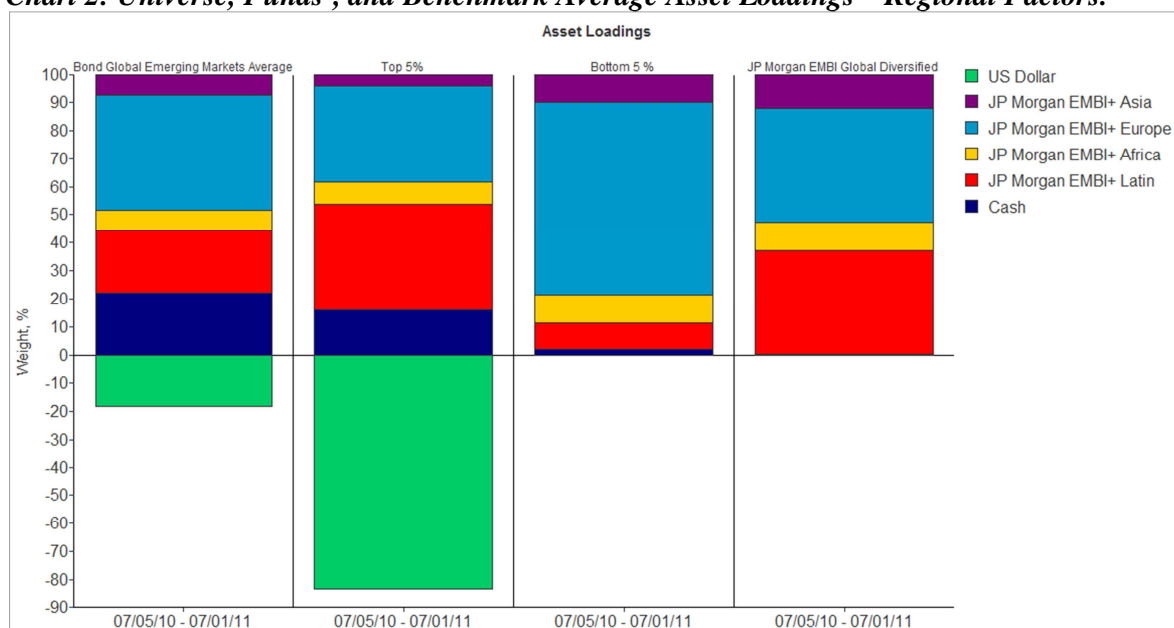
Returns-Based Style Analysis Highlights

- Using emerging market bond indices for different regions as factors and the US Dollar as a hedge instrument, our RBSA analysis, demonstrates that the top and bottom funds have different style exposures. The top funds' negative weight to the US Dollar indicates that these funds hedge up to 82% of their exposure to the US Dollar. This observation is reinforced after reviewing the funds' descriptions and factsheets. On the other hand, the bottom funds do not hedge their exposure to the US dollar, which is also reinforced after

reviewing the funds' factsheets. Given that the USD depreciated by approximately 13%² against the EUR, over the period analyzed, the top funds' hedges protected their performance while the bottom funds' performance was negatively impacted.

- We can verify that our returns based style analysis findings are in line with the holdings-based analysis. The top 10 holdings of the funds within the top 5% portfolio show that these funds are mostly exposed to debt from countries in emerging Europe (predominantly Russia, Hungary, Poland, Lithuania and Turkey) and in emerging Latin America (mostly Brazil, Mexico, Argentina, Peru, Colombia and Venezuela). A limited portion is invested in Africa (mainly South Africa) and Asia (mostly Malaysia, Philippines and Indonesia). The top funds are more diversified than the bottom, with exposures of 38% and 34% to Latin America and Europe, respectively, 16% to cash and cash equivalents, and the rest in Africa (8%) and Asia (4%). The bottom funds were mainly exposed to emerging Europe (68%) with the rest split evenly in Latin America, Asia and Africa.
- As expected, the benchmark displays no exposure to cash or cash equivalents, proxied by the EONIA Index. Comparing the portfolio's and benchmark's exposures helps us understand the excess performance sources for the top and bottom portfolios.

Chart 2: Universe, Funds', and Benchmark Average Asset Loadings – Regional Factors.

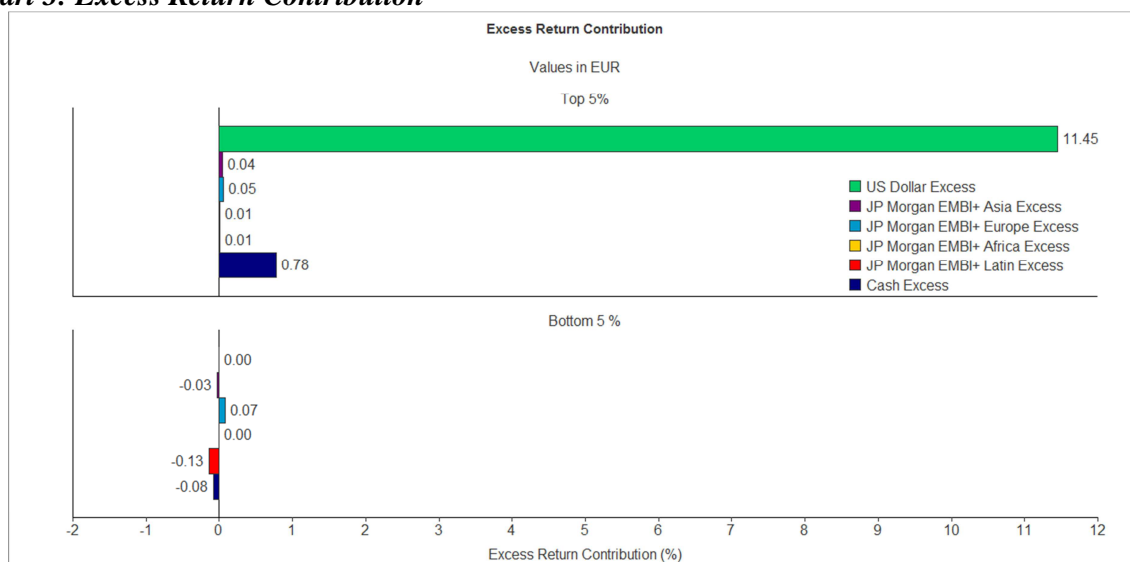


- The diversification effects of blending a large number of funds together in an equally-weighted portfolio result in high explanatory power with R-Squared values of close to 91% for the top 5%; 85% for the bottom 5%; 79% for the peer group average and 99.06% for the benchmark; providing credibility to the statistical exposures identified in this analysis.

² According to Oanda.com, on July 5, 2010, USD100 represented EUR79.55, on July 1, 2011 the same USD100 would only buy EUR69.02, representing a depreciation of 13.23%

- Style attribution analysis can clarify if over- and under-exposures to different styles (versus the benchmark) aided or hindered the funds. Overall, the over- and under-weight exposures suggest that if the bottom funds pursued a passive investment approach (with holdings in the same proportions as their style exposures) they should have underperformed the benchmark by approximately 15bps (not the given 6%). As depicted by Chart 3, the top funds' hedged exposure to the USD allowed them to outperform their peers. Being overexposed to Cash helped the group generate some excess return over the benchmark. The bottom funds' lack of hedging did not protect them from a depreciating USD.
- The bottom funds underperformance is partly due to their underweight exposure to Latin America. However, it should be noted that not hedging for USD currency risk hurt their overall performance denominated in EUR.
- As a group, the top 5% display positive selection (1.74%) and timing (13.59%) skills, whereas the bottom 5% show negative selection (-6.19%) and timing (-0.13). Selection and timing returns represent components of excess benchmark performance.

Chart 3: Excess Return Contribution



Created with mpil by/for (Date: 1/2/11)

Conclusions

Funds within the Bond Global Emerging Markets universe illustrate large dispersions in performance. This dispersion can be explained by the specific style bets of the managers and use of derivatives to limit currency and/or regional risks. The hedged exposure of the funds in the peer group ranges from funds with no hedged exposure to funds hedging close to 90%. The best performing funds tend to have a higher hedged exposure. During this period, the USD depreciated against the EUR, hedging for this risk allowed the best performing funds to avoid a drop in performance of their USD denominated holdings. The use of hedges also helped limit the top funds' volatility. The best performing funds did not deviate widely from the benchmark in terms of Style Exposures and still largely outperformed due to the use of hedges to limit the adverse effects of the depreciation in USD.

UNIVERSE DEFINITIONS & ASSUMPTIONS

- **Database provider:** Lipper, a Thomson Reuters Company
- **Registered for sale countries:** Austria, France, Germany, Italy, Netherlands, Offshore, Spain, Sweden, Switzerland, and the UK
- **Filters:** Primary share class, at least 1 year of performance history, Asset Type: Bond, Lipper Global Category: Bond Emerging Markets Global, AUM: minimum USD 10 Million, Denominated in EUR and USD.
- **Number of funds analyzed:** 79
- **Date interval:** Last 52 weeks starting on July 5, 2010 and ending on July 1, 2011
- **RBSA Model:** Locally Weighted Regression
- **Currency:** EUR
- **Analysis frequency:** Weekly (with compounded daily data)
- **Cash proxy (Risk Free Rate):** EONIA Index
- **Benchmark:** JP Morgan EMBI Global Diversified Index
- **Style factors:** JP Morgan EMBI+ Latin, JP Morgan EMBI+ Africa, JP Morgan EMBI+ Europe, and JP Morgan EMBI+ Asia. The USD is used as a Hedge Factor.
- **Analysis performed with mpi Stylus Pro™**

Style Return: Return of the Best Fit Portfolio for the Manager Series, where the holdings of the portfolio are the Style Indices.

Selection Return: Calculated as the Manager's Return subtracted by the Style Return. This is an indication of the Manager's Selection or Stock Picking abilities.

Timing Return: Calculated as the Manager's Style Return subtracted by the Benchmark's Style Return. This indicates whether the Manager's decisions, to over or under weight the style holdings, as compared to the benchmark, added to the portfolio's return or not.

Style R Squared (R2): Measure of the model's power in describing the Manager's past behaviour in terms of style. The higher the Style R Squared value, the better the model's explanatory power.

Predicted Style R Squared (PR2): Measure of the model's power in predicting the Manager's future behaviour in terms of style. The higher the Predicted Style R Squared value, the better the model's predictive power.

Style Map: Graphic representation of the results of the Style Analysis. The series being analyzed are mapped onto a Cartesian plane, in which the X and Y axis represent exposures to different Styles and Sizes.

Asset Loadings: Weights of the Style Indices, as holdings, of the Style Portfolio, as calculated by mpi Stylus Pro.

[Markov Processes International, LLC \(MPI\)](http://markovprocesses.com/company/research.htm) is a global provider of investment research and technology solutions. MPI's analytical tools and methodologies are employed by the finest institutions and financial services organizations to enhance their investment research, reporting, data integration and content distribution. MPI offers the most advanced platform available to analyze hedge funds, mutual funds, portfolios and other investment products, as well as asset allocation and portfolio optimization tools.

MPI's Stylus Pro software is utilized by alternative research groups, hedge fund of funds, family offices, institutional investors, consultants, private banks, asset managers, diversified financial services organizations as well as marketing, product development and IT departments around the world. MPI also offers solutions for investment advisors and private wealth professionals. For more information on past MPI research articles visit <http://markovprocesses.com/company/research.htm>