Fixed Income — Smart Beta
Factor Investing applied to Emerging Market Debt — Local Currency

Smart Beta is broadening the toolkit for investors and challenging the accepted wisdom of how to successfully invest in fixed income markets, including those of emerging markets.

Why Smart Beta?
- Factors are recognised as the underlying drivers of the risks and returns of an asset class
- We believe that capturing factor premia enables investors to better shape their investment outcomes
- Part of the “excess returns” generated by active managers can be attributed to factor exposure and capture
- We believe that a systematic, rules-based approach can successfully harvest the factor premia that exist in fixed income markets
- Smart Beta approaches can improve on some of the challenges that exist in traditional capitalisation-weighted benchmarks

Investment Approach
- The SSGA Multi-Factor Emerging Markets Bond Strategy employs a systematic, rules-based approach to capture the Quality factor premium associated with emerging market sovereigns.
- The strategy tilts towards countries that we have determined to have strong and improving Fundamentals and away from those with weak and deteriorating fundamentals.
- In this way, the strategy seeks to identify sovereign debt where credit risk is mispriced and the Quality factor premium can be captured.
- A Volatility Trigger is also employed to capture large shifts in market sentiment that often lead to loss of confidence in EM countries. Once triggered, the strategy accelerates the underweighting and removal of the affected country from the portfolio.
- This disciplined and systematic investment approach is employed to mitigate the behavioural biases inherent in active management.

Advantages of SSGA’s Smart Beta Investment Approach
- SSGA’s long heritage in Smart Beta investing across asset classes
- Combines our deep research insights with proven EM and Smart Beta investment expertise
- Leverages SSGA’s 20-year experience in factor-based research and investing
- SSGA’s established reputation using quantitative processes in investment management
- Systematic, rules-based approach, providing much needed transparency and discipline in the EMD arena
- Demonstrates strong return potential and performance consistency in varying market environments in our back-tests
- Attractive strategy option in a highly challenging arena where 90% of active managers are behind benchmark over the last 5 years

SSGA: A Pioneer of Indexed EM Debt Strategies
11 YEARS
experience with a proven and a highly effective investment process in indexed EMD

$6.5 BILLION
invested across 18 portfolios

FIRST
EMD Local Currency ETF globally
- Pooled and segregated strategies
- Local and Hard Currency
- Sovereign and Corporate

Source: State Street Global Advisors as of 31 March 2016.
Fixed Income — Smart Beta

Figure 1: Back Tested Performance — Annualised (USD Unhedged) 31/08/2008–31/12/2015

<table>
<thead>
<tr>
<th></th>
<th>Benchmark</th>
<th>Excess</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP Morgan GBI-EM</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Global Diversified</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Index (10% Capped)</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Barclays EM Local</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Currency Equally</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Weighted Government</td>
<td>2.0</td>
<td></td>
</tr>
<tr>
<td>Bond Index ( Liquidity Adjusted)</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>SSGA Multi-Factor</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>EM Bond Strategy</td>
<td>1.5</td>
<td></td>
</tr>
</tbody>
</table>

Source: SSGA FICC Quantitative Research. Performance figures are net of transaction cost of 25 bps round-trip. Total return is geometrical accumulated. Data is from 31 August 2008–31 December 2015. The data displayed is a hypothetical example of back-tested performance for illustrative purposes only and is not indicative of the past or future performance of any SSGA product. Back-tested performance does not represent the results of actual trading but is achieved by means of the retroactive application of a model designed with the benefit of hindsight. Actual performance results could differ substantially, and there is the potential for loss as well as profit. The performance may not take into account material economic and market factors that would impact the adviser’s actual decision-making. The performance does not reflect management fees and other fees expenses a client would have to pay, which would reduce returns. Please reference the back of this document for the backtested model methodology and other important disclosures. Past performance is not a guarantee of future results. The index returns are unmanaged and do not reflect the deduction of any fees or expenses. The index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income. The calculation method for value added returns may show rounding differences. The above information is considered supplemental to the GIPS presentation for this Composite, which was previously presented. A GIPS presentation is also available upon request.

Investment Process & Portfolio Construction

- We believe that fundamentals are important long-term drivers of investor returns in EM sovereigns
- We systematically evaluate sovereign quality based on key macro-fundamental factors which we believe determine debt sustainability
- A country score is calculated and then countries are ranked from highest to lowest
- The strategy tilts towards countries that we have determined to have strong and improving economic conditions and away from those with weak and deteriorating conditions

Volatility Trigger

- Investor sentiment can dominate market returns in EM sovereigns from time to time
- We seek to capture large shifts in investor confidence towards a country that may trigger a crisis
- Yield volatility ratio is used and once triggered, country exposure is reduced quickly in 2.5% increments
- Trigger mechanism acts as a backstop when yields are being driven by market sentiment rather than macro-economic fundamentals

Benchmark Considerations

- The JPM benchmark* in the EMD-LC arena covers approximately 40% of the available universe of bonds and countries
- SSGA favours a broader exposure to EM and utilizes the Barclays EM Local Currency Government Bond Index as its universe
- Furthermore, the EMD-LC universe is highly diverse as reflected in the significant dispersion in country returns
- Our approach takes an equal weighted approach with a liquidity adjustment for smaller countries
- This offers investors a more balanced and diversified exposure to EM debt

<table>
<thead>
<tr>
<th>&quot;Established&quot; Benchmark</th>
<th>Smart Beta Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>*JP Morgan GBI-EM Global Diversified Index (10% Capped)</td>
<td>Barclays EM Local Currency Equally Weighted Government Bond Index (Liquidity Adjusted)</td>
</tr>
<tr>
<td>Market Value (USD B)</td>
<td>674</td>
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<tr>
<td>Number of Issues</td>
<td>188</td>
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<tr>
<td>Number of Countries</td>
<td>15</td>
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<tr>
<td>Yield to Maturity (%)</td>
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<tr>
<td>Option Adjusted Duration</td>
<td>4.87</td>
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<tr>
<td>Coupon Market Weighted</td>
<td>6.23</td>
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<tr>
<td>Index Rating*</td>
<td>BAA1/BAA2</td>
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</tbody>
</table>

Source: SSGA, Barclays, JP Morgan as of 31 December 2015. Past performance is not a guarantee of future results. Index characteristics are as of the date indicated, are subject to change, and should not be relied upon as current thereafter. * Index Rating is the median of S&P, Moody’s and Fitch ratings.
SMART BETA IN ACTION: BRAZIL

Quality Factor Tilt
Brazil merited an underweight based on our evaluation of country’s fundamentals.

Volatility Trigger Active
As market sentiment deteriorated towards Brazil amid economic and political difficulties, the volatility trigger was activated.

Performance Contribution
The rapid reduction in Brazil exposure was met with a positive contribution relative to benchmark.

Figure 3: Quality Factor Underweight Accelerated Once Volatility Picks Up

Source: SSGA, Barclays POINT. As of 31 October 2015. For illustrative purposes only. Past performance is not a guarantee of future results.

Data is for the three-year period 31 October 2012–31 October 2015. The data displayed is a hypothetical example of back-tested performance for illustrative purposes only and is not indicative of the past or future performance of any SSGA product. Back-tested performance does not represent the results of actual trading but is achieved by means of the retroactive application of a model designed with the benefit of hindsight. Actual performance results could differ substantially, and there is the potential for loss as well as profit. The performance may not take into account material economic and market factors that would impact the adviser’s actual decision-making. The performance does not reflect management fees and other fees expenses a client would have to pay, which would reduce returns. Please reference the back of this document for the backtested model methodology and other important disclosures. Past performance is not a guarantee of future results. The calculation method for value added returns may show rounding differences.

What SSGA Smart Beta Fixed Income Offers You

- **Investment innovation**: Unlocking new approaches and strategies
- Combines deep research insights with proven EM and Smart Beta investment expertise
- **Systematic rules based approach** applied to Emerging Markets
- **Strong performance potential** in the challenging arena of EM Debt
- Emphasis on **collaboration** to give clients the desired outcome

The Smart Beta Emerging Markets Fixed Income Team

- **Ritirupa Samanta**: Global Head of Systematic Beta Fixed Income
- **David Furey**: Portfolio Strategist, Fixed Income
- **Stephen Yeats**: European Head of Fixed Income Index Investing
- **Adam Chrissis**: Quantitative Research Analyst

State Street Global Advisors
Fixed Income — Smart Beta

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State Street Global Advisors EMEA Entities

Belgium: State Street Global Advisors Belgium, Chaussee de La Hulpe 120, 1000 Brussels, Belgium. T: +32 2 663 2036, F: +32 2 672 2077. SSGA Belgium is a branch office of State Street Global Advisors Limited. State Street Global Advisors Limited is authorised and regulated by the Financial Conduct Authority in the United Kingdom.

Dubai: State Street Bank and Trust Company (Representative Office), Boulevard Plaza 1, 17th Floor, Office 1703 Near Dubai Mall & Burj Khalifa, P.O Box 28838, Dubai, United Arab Emirates. T: +971 (04) 4372800. F: +971 (04) 4372818. France: State Street Global Advisors France. Authorised and regulated by the Autorité des Marchés Financiers. Registered with the Register of Commerce and Companies of Nanterre under the number: 412 052 680. Registered Office: Immeuble Meublement Plaza, 23-25 rue Delaunay-Lefoulin, 92064 Paris La Défense Cedex, France. T: +33 1 44 45 40 00. Germany: State Street Global Advisors GmbH, Brienner Strasse 59, D-80333 Munich. T: +49 (0)89 55878 100. F: +49 (0)89 55878 440. Ireland: State Street Global Advisors Ireland Limited is regulated by the Central Bank of Ireland. Incorporated and registered in Ireland at Two Park Place, Upper Hatch Street, Dublin 2. Registered Number: 145221. Member of the Irish Association of Investment Managers. T: +353 (0)1 776 3000. F: +353 (0)1 776 3300. Italy: State Street Global Advisors Limited, Milan Branch (Sede Secondaria di Milano) is a branch of State Street Global Advisors Limited, a company registered in the UK, authorised and regulated by the Financial Conduct Authority (FCA), with a capital of GBP 71 950 000.00, and whose registered office is at 20 Churchill Place, London E14 5HL. State Street Global Advisors Limited, Milan Branch (Sede Secondaria di Milano), is registered in Italy with company number 06353340988 - R.E.A. 1870930 and VAT number 06353340988 and whose office is at Via dei Bosi, 4 - 20121 Milano, Italy. T: +39 02 32086 100. F: +39 02 32086 155. Netherlands: State Street Global Advisors Netherlands, Adam Smith Building, Thomas MALTHUSSTRAS 1-3, 1086 JR Amsterdam, Netherlands. T: +31 (0)20 7161701. State Street Global Advisors Netherlands is a branch office of State Street Global Advisors Limited. State Street Global Advisors Limited is authorised and regulated by the Financial Conduct Authority in the United Kingdom.


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The back-tested performance was compiled after the end of the period depicted and does not represent the actual investment decisions of the advisor. These results do not reflect the effect of material economic and market factors on decision making. In addition, back-tested performance results do not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risks associated with actual investing. No representation is being made that any client will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently significant differences between back-tested performance results subsequently achieved by following a particular strategy.

The back-tested performance data is reported on a gross of fees basis, but net of administrative costs. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualised gross return of 10% was achieved over a 5-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 54%.

The performance includes the reinvestment of dividends and other corporate earnings and is calculated in US dollars.

The Back-tested performance shown is not necessarily indicative of future performance, which could differ substantially.

The Back-tested methodology used an optimisation model to generate historical portfolios. The data used was only that data which would have been available at the time when the historical portfolios were generated, not what is available now. These processes help to eliminate various forms of survivorship bias, both in terms of a ‘smarter model’ and in terms of making decisions based on information that was not available at the time.

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Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates raise, bond prices usually fall), issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

This document provides summary information regarding the Strategy. This document should be read in conjunction with the Strategy’s Disclosure Document, which is available from SSGA. The Strategy Disclosure Document contains important information about the Strategy, including a description of a number of risks.

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