

GET SMART

EXTEND SMART BETA TO FIXED INCOME INVESTING

Before discussing Smart Beta and fixed income, let's be clear: A re-weighted index does not a Smart Beta strategy make. A re-weighted index is just that, a re-weighted index.

Our Smart Beta strategy is smarter.

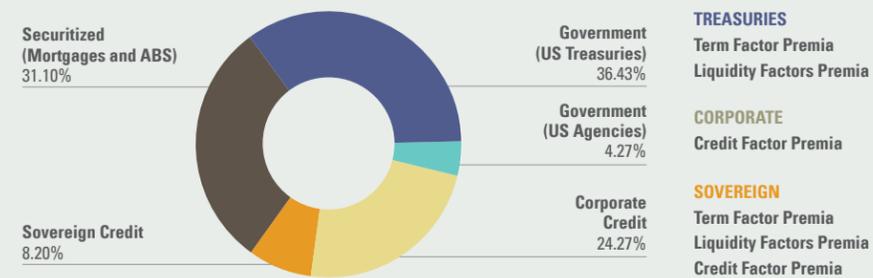
STATE STREET
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HERE'S HOW IT WORKS WITH FIXED INCOME

Fixed income investments generate returns due to exposure to credit factor premia (default risk), term factor premia (higher risk as maturity is increased), or liquidity factor premia (risks surrounding the ability to freely trade an instrument).

So, let's think of a broad investment grade bond index like the US Aggregate not simply as an amalgam of fixed-income sectors, but also as a combination of factor or risk premia.

Figure 1: A Breakdown of Factor Premia Embedded in the Barclays US Aggregate Bond Index



Source: Barclays, as of December 31, 2015.

Allocations are as of the data indicated, are subject to change, and should not be relied upon as current thereafter.

If we extract those premia in an effective way, we can improve risk-adjusted returns while remaining within benchmark weights.

So, our Smart Beta becomes a non-market-cap-weighted, premia-driven systematic and transparent strategy designed to improve returns and/or lower volatility compared to a market-cap index itself.

SSGA's Fixed Income Smart Beta is a systematic and transparent strategy that can both improve returns and decrease volatility.

WHY NOW IN FIXED INCOME?

An effective bridge between passive market-cap weighted indices and higher cost active management, Smart Beta has been employed for decades with equities to pursue better risk-adjusted returns. Yet, while investors are comfortable capturing equity returns by tilting toward historically rewarding factors such as value, quality, or low volatility, they have been slower to implement Smart Beta strategies on the fixed income side of the portfolio.

Yet, ironically, the case against the market-cap-weighted paradigm appears even stronger for fixed income.

That's because as nearly all bond indices are issuance weighted, companies or governments that issue more debt acquire a larger role in the index—and, ultimately, in the portfolios of index-benchmarked investors. And, of course, a willingness to issue debt does not neatly translate into improved returns.

Moving away from traditionally weighted benchmarks also allows you the freedom to more precisely express your policy objectives. That is, often neither passive (with index concentrations and hardwired exposures) nor active (with opaque, non-systematic exposures) strategies mesh with issuance-based fixed income investment objectives.

Simply, if you know the extent to which you want to be exposed to a credit or term premium, then why not build that directly into your portfolio? Alternatively weighted Smart Beta strategies provide a discipline way to implement your views on market segments such as high yield or specific factors, such as value, quality, low volatility and size.

Finally, transitioning to a potential period of rising interest rates, and the volatility that has historically accompanied such a move, provides additional incentive to move beyond the traditional, market-weighted fixed income core.

Since Smart Beta, in our view, can bridge the gap between market-weighted passive strategies and less transparent active strategies, now is the time to consider the strategy. Historically low yields have pushed institutional investors toward active management, yet active fixed income managers continue to underperform with active strategies that suffer from a herd mentality where many managers frequently make the same trades. But how should you re-weight indices to implement your views on certain market segments or factors?

SSGA's innovative Smart Beta Fixed Income strategies may be the solution in a period of rising interest rates and increased fixed income volatility.

RESEARCH FUELS INNOVATION

SSGA's Smart Beta Strategies Re-write Index Rules

The academic evidence for factor based investing in fixed income is long and varied. This coupled with the fixed income investor naturally positioning around duration, credit, term and liquidity in every investment makes fixed income a natural place to apply systematic, factor based investing. Below we can see that starting with the original Fama French papers, there is

a rich history in identifying the systematic sources of variation in fixed income returns.

As illustrated in Figure 2, additional studies have mapped these premia to factor exposures related to quality, value, momentum and size in corporate and sovereign credit.

Figure 2: Smart Beta Fixed Income:
Firmly Grounded in Academic Research

<p>1972 Black, Jensen and Scholes, "The Capital Asset Pricing Model: Some Empirical Tests"</p> <p>1985 Rosenberg, Reid & Lanstein "Persuasive Evidence of Market Inefficiency"</p> <p>1980s Cap-weighted e.g., S&P 500</p>	<p>1992 Fama & French, "Common risk factors in the returns on stocks and bonds"</p> <p>1995 Erb, Campbell, Viskanta, "Country Risk and Global Equity Selection"</p> <p>2001 Elton, Gruber, Agrawal and Mann, "Explaining the rate spread on corporate bonds"</p> <p>1990s Style aware e.g., Value, Growth, Small</p>	<p>2005 Gebhardt, Hvidkjaer and Swaminathan, "The cross section of expected bond returns: betas or characteristics."</p> <p>2008 Asness, Moskowitz and Pedersen, "Value and Momentum Everywhere"</p> <p>2011 Ling, Wan, Wu. "Liquidity risk and expected corporate bond returns"</p> <p>2007 Kozhemakian, "Risk Premium of corporate bonds"</p> <p>2000s Alternative Weighting e.g., Fundamental</p>	<p>2010 Popisil and Zhang, "Momentum and reversal effects in corporate bond prices and credit cycles"</p> <p>2012 Correia, Richardson, Tuna. "Value investing in Credit markets"</p> <p>2014 Franzzini and Pedersen, "Betting Against Beta"</p> <p>2014 Carvalho, Dugnonne, Lu and Moulin. "Low risk anomalies in global fixed income"</p> <p>2010s Factor-targeted e.g., 'Smart Beta'</p>
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Source: SSGA.

NOTE: BEWARE THE BASIS OF THE REWEIGHT

Reweighted indices may address concentration risk, but don't necessarily deliver your preferred factor exposures.

Suppose, for example, you are concerned about sovereign credit risk and Debt to GDP is the factor you use to reweight the index. Russia with a debt to GDP of 8% will appear in better sovereign health than South Korea at a level of 35%. Clearly, a single factor reweight would not provide the exposure you desire.

As illustrated in Figure 3, SSGA's third generation approach has evolved from alternate to fundamental to dynamic weightings. In fact, we have identified four key risk premia, quality, value, momentum and volatility in fixed income markets. Because issues of market fragmentation and liquidity considerations present limitations to translating the factor premia to an investible strategy, SSGA focuses on extracting a value/quality factor premia from both sovereign and corporate credit.

Figure 3: Evolution of SSGA's Smart Beta Fixed Income Products

Methodologies

ORIGINAL APPROACH	NEXT METHODOLOGY	CURRENT METHODOLOGY
<ul style="list-style-type: none"> • Issuer Caps • Country Caps 	<ul style="list-style-type: none"> • Fundamental Weights • Static approach • Screening based on factors 	<ul style="list-style-type: none"> • Research based factor definitions • Dynamic weighting • Continuous portfolio reweighting as factor exposures change

Strategies

FACTOR PREMIA	SMART BETA 1.0	SMART BETA 2.0
Quality — Corporate	Issuer Scored Credit Index (ISCI)	<ul style="list-style-type: none"> • High Quality US Corporate Strategy • IG US Corporate Strategy • HY US Corporate Strategy • Global Investment Grade
Quality — Sovereign	Fundamentally Weighted ETF	<p>SMART BETA SOVEREIGN STRATEGY</p> <ul style="list-style-type: none"> • Global Treasuries • Eurozone Treasuries • EM Sovereigns
Liquidity	Liquidity Screened Strategies	Incorporate Liquidity Cost Scores (LCS) and other measures of liquidity within premia strategies

Source: SSGA.

Our Smart Beta strategies, evolved from one-factor screens to a multi-factor framework, seek to harvest the premium present in bonds that are mispriced relative to the quality implied by the state of a company or a country's fundamentals.

SMART BETA SOVEREIGN & CORPORATE CREDIT STRATEGIES

Sovereign Credit

Combined factor approach that tilts towards higher quality Sovereigns with embedded volatility trigger

Sovereign Bonds	Approach	Benefits
Quality	Sovereigns are scored and ranked based on six fundamental factors: Fiscal Balance, level of indebtedness, Net foreign assets, GDP expectations, External debt/GDP, Governance indicator (WGI)*	The scoring method allocates away from weak/deteriorating economies towards strong/improving economies in a continuous fashion
Volatility	We apply a market confidence measure based on yield volatility ratio to capture shifts in market sentiment that often trigger the sovereign crisis event	Keeps portfolio invested until a sentiment shift occurs then moves to aggressively underweight

Source: SSGA.

Sovereigns

In the sovereign space, the high degree of concentration in market capitalization weighted indices (Japan and the United States currently make up over 50% of the Barclays Global Treasury Bond Index) create an implied level of market exposure and sovereign credit risk that may not be consistent with your preferences. SSGA's Smart Beta strategy in sovereign credit reweights traditional market indices toward those markets with stronger and improving fundamentals and reduces weight to those with poor and worsening conditions.

Sovereign risk depends both on the state of macroeconomic fundamentals and on market confidence. Therefore, the strategy also incorporates a measure of market sentiment, as countries have been known to sustain poor fundamentals for long periods of time

until market sentiment takes a sharp and dramatic turn. By linking the yields countries offer to the dynamics of their macroeconomic conditions, the strategy extracts fair compensation for sovereign credit risk while providing drawdown protection in markets that are compelled to offer exorbitant yields unsupported by economic conditions. During times such as the euro crisis or in emerging markets where sovereign credit risk has often been a "priced risk," these Smart Beta strategies outperform the index while providing attractive risk/reward terms. Also by being quality tilted portfolios, during times of crises there are 'flights to quality' that also create a general negative correlation between the portfolio and the benchmark. These smart beta, factor based strategies can then offer an important source of diversification in an investor's portfolio.

Corporate Bonds

Quality

Approach

Expected Default Frequency (EDF) / probability determined for each issuer

Benefits

Applies an industry standard default risk measure
Creates a quality tilt within each rating sleeve

Corporate Credit

Combined factor approach that tilts towards higher quality and lower default risk

Value

Fair Value Spread (FVS) calculated based on intrinsic default probability and then compared to Option Adjusted Spread (OAS) of issuer in market

Identifies bonds where default risk is mispriced relative to fundamentals

Source: SSGA.

Corporates

Our corporate credit strategy weights names in the benchmark not by their outstanding debt, but around the ability of those issuers to pay that debt over the longer term. Quality in corporate credit is keenly tied to the idea of default risk, however credit agency ratings provide a stale measure of this risk that often lags the downgrade of market event. Therefore, we instead measure this risk by the distance to default given a firm's asset value, liabilities and volatility. Using Merton-based option pricing models, we are able to measure the level of default risk consistent with firm fundamentals. We then compare this to the default risk priced in the market and identify quality adjusted for value based on this mispricing. SSGA's high quality funds use this methodology to identify this quality premium in the A and above sleeve of the US IG universe. We find that this premium is more heavily compensated as one goes down the capital structure, with

greater compensation for quality/value among BBBs relative to the A and above category. We are currently launching strategies in each of the major IG and HY categories applying this methodology.

Active managers often use a similar methodology to screen bonds, we use this technique both to tilt toward bonds with lower default frequencies but also to earn the quality risk premium in corporate credit when it is being fairly compensated.

An earlier generation of corporate credit in Smart Beta applied this concept of value/quality by weighting issuers based on fundamentals. Our Issuer Scored Corporate Index (ISCI) focuses on the fundamental health of bond issuers and can help you capture market like returns, while reducing volatility and avoiding some of the idiosyncratic risks associated with the most indebted companies issuing bonds in the broader market.

MORE SMART BETA FOR THE SMART MONEY

Today, Smart Beta strategies play a more influential role in portfolios of some of the world's largest institutional investors. In 2014, 59% of those surveyed used more than one strategy; in 2015, 71% are using more than one strategy. And 22% of those respondents use four or more strategies.¹

And, according to SSGA's 2014 study, "Beyond Active and Passive, Smart Beta Comes of Age," forty-two percent of investors currently use Smart Beta and another 24 percent plan to do so over the next three years.²

A COST-EFFECTIVE SOLUTION

SSGA's Smart Beta strategies are designed to capture gains in improving markets while at the same time mitigating risk during periods of market volatility, all at a fraction of the cost of active management. One of the key challenges in investing in fixed income is liquidity and fragmented markets. As dealer inventories continue to shrink, our market leading position managing \$350bn in passive global fixed income allows us to manage through constrained liquidity and issuance environments. These capabilities are brought to bear in the management of Smart Beta fixed income strategies.

SSGA's large size and scale results in significant investment in technology and automation, which can further control costs. For example, SSGA has a highly automated trading desks in three regions of the world — Boston, London and Hong Kong. Having traders in the same time zones as the instruments they trade allows for enhanced and cost-effective interaction with the markets.



As of 31 March 2016.

¹ Beyond Active and Passive, Smart Beta Comes of Age, 2014 SSGA study.

² Beyond Active and Passive, Smart Beta Comes of Age, 2014 SSGA study.

SO, HOW DO YOU INTEGRATE SMART BETA?

Smart Beta can be used as a replacement for passive or active strategies. Consider the examples that follow.

CASE 1

Improve Performance Potential of Fixed-Income Assets for DB Matching While Preserving Credit Constraints

Investor Profile

- Well-funded US defined benefit (DB) pension scheme
- Due to the regulatory environment, the plan faced investment policy constraints with respect to credit ratings
- Implemented Smart Beta fixed income approach to improve the performance potential of a portfolio designated to match assets and liabilities (a matching portfolio), which was primarily invested in US corporate bonds

Scenario

A well-funded US DB scheme with 85% in matching assets and 15% in growth assets approached SSGA to help redesign their fixed-income investment strategy.

The plan's funding status was highly dependent on credit spread. As a result, the plan's board wished to explore ways to improve the performance on their assets relative to their liabilities, without jeopardising their well-funded status. For regulatory reasons, credit ratings were explicitly constrained in the plan's investment policy. The plan was already well-funded. Therefore, the investor did not want to materially deviate from the core universe of investment grade corporate bonds or employ a strategy that could expose them to significant short-fall risk.

SSGA's smart beta fixed income team tailored a corporate bond strategy designed to extract the credit risk premium to fit the investor's specific requirements. The strategy is applied only to A-rated names from the investment grade bond universe, and targeted securities in the 5-20 year maturity range. The team applied the Smart Beta approach to this subset while maintaining the duration target and credit constraints of the plan.

In general, Smart Beta quantifies the portion of the credit premium related to default risk for each issuer. The strategy then compares each issuer's fair value spread (FVS) based on its fundamentals and probability of default, with the current spread in the market. This way, the strategy can identify bonds where default risk is mispriced relative to fundamentals, and can create a credit portfolio tilted towards bonds priced most cheaply relative to fundamental risk.

Quality-tilted portfolios typically tilt towards the 50 to 100 most attractive bonds in the universe with the overweight being funded from the rest of the portfolio on a pro-rated basis.

Factor Selection and Rationale

The investor appreciated that the portfolio's excess return potential founded on a quantitative estimation of credit risk (default probability), as well as on a market-based estimation of value. The combination of these factors in the methodology provided comfort that the systematic, Smart Beta approach could deliver upside potential while not exposing the matching portfolio to undue short-fall risk.

We selected the factors quality and value based on the following:

- The investor's belief in the intuition behind the quality and value factors to capture the mispricing of credit risk.
- The performance expectations of these factors aligned with the investor's goal to improve return potential while continuing to match assets and liabilities.

Notable Observations

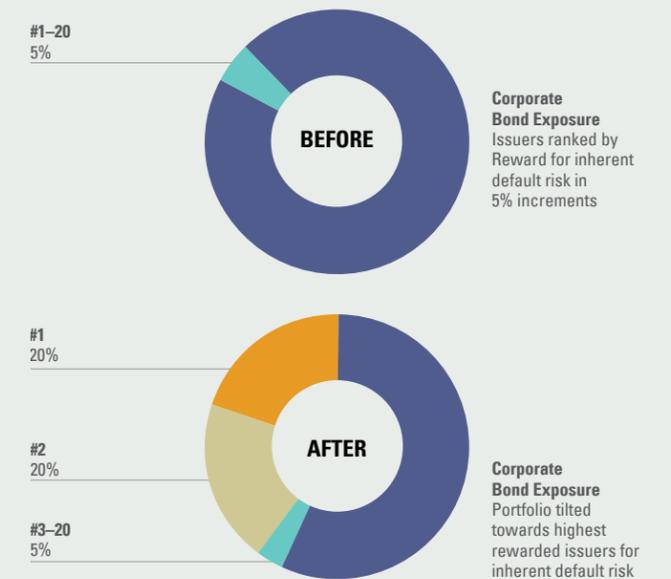
- Consistently positive excess returns, very important feature for matching portfolios
- Strong relative returns in 2015 during difficult credit market conditions
- Combined Quality and Value delivering well for conservative credit investors

Next Steps/SSGA Recommendations

The SSGA Smart Beta Corporate approach is a flexible approach that can be applied to most credit sectors and benchmarks. While the approach determines its own estimates of credit quality for each issuer, the methodology can be applied in conjunction with standard issuer credit ratings that are typically referenced in clients' investment guidelines. For example, the approach could also include parameters that the portfolio is 20% A-rated, or 10% BBB-rated.

In this example SSGA worked very closely with the DB Pension scheme to design and implement the Smart Beta methodology to meet its specific investment goals and guidelines. The flexibility of the approach and the intuition of the quality and value factors allow for significant opportunities to apply this strategy for other investors right across the full corporate bond universe.

Figure 5: Corporate Bond Issuers
Ranked by Reward for Inherent Default Risk



Source: SSGA, as of March 31, 2015.

Allocations are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

For illustrative purposes only.

CASE 2

Deliver Preferred Exposure to Fixed-Income Markets

Investor Profile

- Large global investment consultant
- Seeking to manage Emerging Market (EM) sovereign exposure more effectively given disappointment on cost and performance of active managers
- Interested in exploring a systematic, factor-based approach potentially with a quality factor tilt.
- Ultimate goal to improve EM beta exposure with some performance potential over passive but without a material increase in management fee

Scenario

A large global investment consultant approached SSGA to assist them in designing their EM local currency debt strategy. Emerging market investors face volatile markets due to geopolitical risks and the wide dispersion in performance across EM countries. The inherent complexities have made it a very challenging arena for Active managers to deliver consistent returns. Nonetheless, EM beta exposure remains an attractive strategic investment for longer term investors who can best understand the sector and how to navigate it. The consultant was looking for a transparent, systematic and cost-effective approach that also had the potential to deliver excess returns relative to a purely passive approach. SSGA developed an EM smart beta strategy that would systematically extract the sovereign credit risk premium in local currency emerging debt markets. One of the challenges of active managers in this space is the idiosyncratic risk within the sector. This risk is often exaggerated by well known behavioral biases of loss aversion and chasing trends. Instead SSGA's factor based approach is a disciplined, well diversified approach that invests methodically across all markets in the benchmark, with more pronounced overweights in countries with stronger and improving quality and away from those with weaker and worsening quality. By defining quality as a mix of transparent fundamentals a tilt is applied to the benchmark that deviates away from benchmark weights in a manner consistent with the quality factor that drives the sovereign credit risk premium in emerging markets.

Approach

Sovereign quality is determined based on six key fundamental factors. The strategy then allocates away from weak/deteriorating economies towards strong/improving economies in a continuous fashion. The approach also incorporates a volatility trigger which keeps the strategy invested until a volatility threshold is breached. It then accelerates the underweight to the affected countries. Importantly, this feature avoids the persistent yield drag of only investing in higher quality sovereigns within the EM universe, while also providing a systematic way to exit countries which are becoming distressed.

Notable Observations

- The broader EM universe used in the approach delivered improved returns on both absolute and risk adjusted basis versus the established EM benchmark*
- The Smart Beta strategy also delivered excess returns versus the comparable Barclays EM Treasury Index on both an absolute and risk-adjusted basis
- The strategy demonstrated strong relative returns during stress periods while performing in line during normal periods

Next Steps/SSGA Recommendations

SSGA's Global Systematic Fixed Income team successfully developed the strategy and launched a fund in collaboration with the consultant once they approved this internally as their flagship. SSGA has been through the product implementation phase and has established a fund vehicle for the strategy in partnership with the consultant. This will enable the consultant to offer the strategy to both their fiduciary and advisory clients.

*JP Morgan GBI-EM Global Diversified Index

CASE 3

Deliver more investor friendly exposure to corporate bond markets

Investor Profile

- Corporate bond investors
- Looking to remain fully invested in corporate bond markets but seeking to mitigate some of the concentration and tail risks inherent in traditional corporate bond index exposures.
- Open to alternative index weighting methodology than standard market-capitalization weighted approach used by most bond indices.
- Wanted index construction methodology that was based more on issuers' ability to repay rather than simply on their ability to borrow.
- Ultimate goal was to devise a corporate bond index methodology which was more fundamentally driven and therefore investor friendly

Scenario

A number of institutional investors approached SSGA a result of the crisis, dissatisfied with the performance of their corporate bond portfolios during the crisis. They had become uncomfortable in accepting the concentration of risk exposure of standard corporate bond indices and sought a more thoughtful approach. The asymmetric returns inherent in subordinated financials during stress periods was also a concern. Added to these concerns, investors began to also question why their exposure within traditional corporate bond index funds was effectively based on issuers' ability to borrow (amount outstanding) rather than on their ability to repay. SSGA took these concerns onboard and our fixed income research team sought to devise an alternative approach to Corporate bond index construction that prioritized investors' interests over borrowers'.

Approach

The key elements which were examined were the concentration risks inherent on Corporate bond indices where the largest 20 or so issuers can make up a disproportionate size of the exposure. We sought to take a different approach by evaluating each issuer based on their fundamental credit quality and then reweighting the index based on this ranking. Using a concept and analysis developed by our portfolio management and credit research team, the Barclays Issuer Scored Corporate Bond Indices (ISCI) reweights index constituents based on simple but powerful financial measures that are relevant to bond investors. Specifically, these metrics rank bonds on the rate of change in an issuer's capital efficiency and also the issuer's ability to repay the debt.

At the heart of the alternative approach to cap-weighted indices is the redistribution of issuers by measures of fundamental financial health — specifically the rate of change in several key investor ratios:

1. Return on Assets is a powerful measure of how efficiently a company is using its assets to generate earnings that will be used to return bond investors' capital.
2. Interest Coverage is a widely used measure of a company's ability to continue paying its interest obligations
3. Current Ratio – used for utilities - measures available cash on the balance sheet relative to short-term liabilities

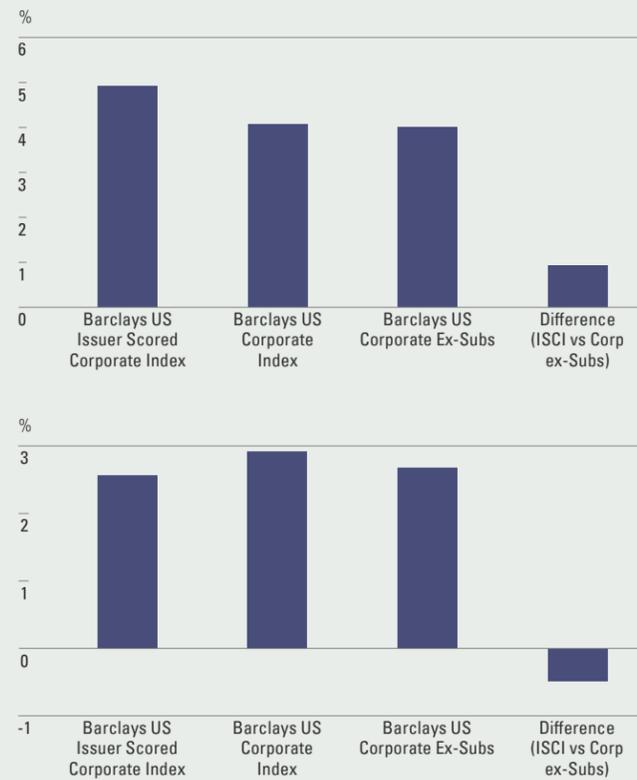
In order to preserve the original characteristics of the standard benchmark, the broad sector exposure of the ISCI indices are designed to approximately match those of the relevant cap-weighted counterpart. However, companies within a given sector effectively compete for investors' capital on the basis of the financial ratios above, measures that are more important to bond investors than the amount of issuance. In this way greater capital is allocated to companies with improving financial health. The portfolio is then rebalanced on these measures on a six-monthly basis to ensure continuity of the approach, exploit mean reversion and to further reduce individual issuer risk.

Extend Smart Beta to Fixed Income Investing

Notable Observations

- A fundamentally derived, investor friendly exposure to credit markets
- Reduced issuer concentration risks, resulting in better diversification and ultimately much improved risk-adjusted returns (higher sharpe ratios)
- Cost-effective diversification using a systematic rules based investment approach.

Figure 4: Gross Annualized Returns for the Period Ending December 31, 2015 (USD)



From Dec. 2008 to March 2016	Barclays US Issuer Scored Corporate Index	Barclays US Corporate Index
Max monthly perf. (%)	4.08	6.80
Min monthly perf. (%)	-2.58	-2.76
Monthly Avg perf. (%)	0.70	0.68
Standard Deviation (monthly performance) (%)	1.30	1.50
Sharpe Ratio	1.84	1.53

From Dec. 2008 to March 2016	Barclays Euro Issuer Scored Corporate Index	Barclays Euro Corporate Index
Max monthly perf. (%)	2.25	3.45
Min monthly perf. (%)	-1.56	-3.06
Monthly Avg perf. (%)	0.47	0.53
Standard Deviation (monthly performance) (%)	0.78	1.09
Sharpe Ratio	1.96	1.58

Source: Barclays, Bloomberg, SSGA.

Barclays POINT/Global Family of Indices. © 2016 Barclays. Used with permission.

Past performance is not a guarantee of future results. All data in local currency. As at 31 March 2016.

Since October 2010, Barclays publishes the Barclays Issuer Scored Corporate Index; historical data is available since March 2008. Index returns reflect capital gains and losses, income, and the reinvestment of dividends. The calculation method for value added returns may show rounding differences.

Standard deviation is a historical measure of the volatility of returns. If a portfolio has a high standard deviation, its returns have been volatile; a low standard deviation indicates returns have been less volatile. This may not depict a true historical measure, and shouldn't be relied upon as an accurate assessment of volatility.

Next Steps/ SSGA Recommendations

SSGA then partnered with Barclays to create both a USD and EUR Issuer Scored Corporate Indices. We now manage a variety of client portfolios and funds against these Indices on both a comingled and segregated basis.

A total of \$1.4Bn of client assets are currently invested in ISCI strategies as at 31-Mar-2016.

Extend Smart Beta to Fixed Income Investing

Glossary

JP Morgan GBI-EM Global Diversified Index An investable benchmark that includes only those countries that are directly accessible by most of the international investor base.

Barclays US Issuer Scored Corporate Index The index is designed to measure the performance of the U.S. corporate bond market. The Index includes publicly issued U.S. dollar denominated corporate issues that are rated investment grade (Baa3/BBB- or higher) by at least two of Moody's Investors Service, Inc., Fitch Inc., or Standard & Poor's, Inc., and have \$250 million or more of par amount outstanding.

Barclays US Corporate Index Index of Investment Grade Corporate bonds issued in US Dollars.

Barclays US Corporate Ex-Subs Index of Investment Grade Corporate bonds issued in US dollars excluding subordinated bonds.

About Us

As one of the largest providers of index and rules-based strategies in the world, we manage more than \$1 trillion¹ in traditional and Smart Beta assets. Our Smart Beta strategies alone represent more than \$70 billion of assets, making us a valued and experienced partner for institutions pursuing rules-based investment opportunities related to specific investment characteristics.

Notably, SSGA manages \$318 billion (as of 3/31/2016) in passive fixed income across investment grade credit, high yield, emerging and developed market sovereigns — experience we leverage in executing our Smart Beta strategies. Particularly in fixed income, the challenges of liquidity, issuance in fragmented markets and segmented markets means that this level of expertise is key to successfully delivering the factor exposures in the Smart Beta strategies.

We are proud to translate the theoretical presence of factor premia in fixed income markets into tangible and potentially profitable investment processes. In addition to managing assets in high quality corporate Smart Beta strategies, we are launching funds based on an extension of this methodology to BBBs and through the investment grade credit universe. Further, in sovereign credit, we have a BUY rating from a leading global consultant on the emerging markets sovereign credit AB strategy and plan to launch a fund based on this Smart Beta strategy later this year.

Extend Smart Beta to Fixed Income Investing

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Investing involves risk including the risk of loss of principal.

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Actively managed funds do not seek to replicate the performance of a specified index

The Strategy/fund is actively managed and may underperform its benchmarks. An investment in the strategy/Fund is not appropriate for all investors and is not intended to be a complete investment program. Investing in the strategy/Fund involves risks, including the risk that investors may receive little or no return on the investment or that investors may lose part or even all of the investment.

Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns.

Diversification does not ensure a profit or guarantee against loss.

All the index performance results referred to are provided exclusively for comparison purposes only. It should not be assumed that they represent the performance of any particular investment.

Among the factors that the strategy considers is momentum. This emphasizes investing in securities that have had higher recent price performance compared to other securities, which is subject to the risk that these securities may be more volatile and can turn quickly and cause significant variation from other types of investments. Factor-based investing also consider the value factor. A value style of investing emphasizes undervalued companies with characteristics for improved valuations, which may never improve and may actually have lower returns than other styles of investing or the overall stock market.

A Smart Beta strategy does not seek to replicate the performance of a specified cap-weighted index and as such may underperform such an index. The factors to which a Smart Beta strategy seeks to deliver exposure may themselves undergo cyclical performance. As such, a Smart Beta strategy may underperform the market or other Smart Beta strategies exposed to similar or other targeted factors. In fact, we believe that factor premia accrue over the long term (5-10 years), and investors must keep that long time horizon in mind when investing.