A Next-Generation Fixed Income Credit Risk Model for Axioma Risk™

Powered by Axioma's proprietary methodology for modeling issuer credit spread returns, our next generation granular risk models provide Axioma Risk™ users with a more accurate way to view, deconstruct and aggregate risk measures across portfolios for corporate, emerging market and credit-risky assets.

Our Approach

We've spent years cleansing and organizing underlying fixed income data so that you don't have to. Our methodology transforms raw bond price data into stable, robust, issuer-level term structures of credit risk factors, based on highly accurate issuer credit spread curves. In addition, our methodology extends to rating curves — "cluster" curves — that accurately capture credit spread levels across currencies, regions, sectors and notch-level ratings. To reach this level of granularity and accuracy, great care has been taken to construct bond-to-issuer, country and industry mappings, and to leverage peer data and incorporate sophisticated outlier detection to extract signals—all while reducing noise for thousands of curves.

Curve Counts by Currency, May 21, 2019

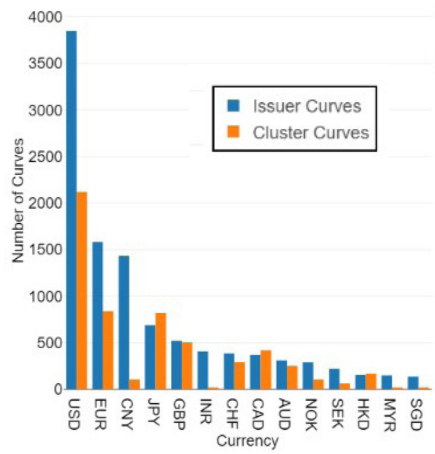

Figure 1

Figure 1, right, shows the issuer and cluster curve count across the largest currencies.

The Axioma Risk Model Advantage

Breadth and depth – risk models constructed from:

- Over 12,000 full term structure issuer curves across approximately 6,000 issuers, 30 currencies and multiple subordination tiers
- Over 6,000 full term structure cluster curves across 30 currencies, 9 regions, 21 ratings and multiple sector/industry levels

DTS model: instrument level duration-times-spread risk exposure to proportional credit risk factor returns

Extensive history: more than 15-year history of granular fixed income risk factors with daily frequency

Stability: stochastic time series smoothing algorithms employed to balance granularity with data quality

Flexible and accurate analytics

- A range of cash-flow based analytics that leverages the curves
- Risk analytics that encompass historical and Monte Carlo simulations, parametric risk models and stress tests
- Market-consistent pricing and analytics of illiquid instruments
- Granular risk factors that accurately capture risk across different investment strategies
- Consistent sector and country classifications of debt from same issuer

Axioma's methodology solves inherent challenges found in other fixed income risk models

Axioma issuer-specific risk factors:

- Minimize the distortion of risk signals that can arise from mapping dissimilar bonds to the same entity or risk factors
- Easily match the most liquid instruments to improve the alignment between the term structure and market liquidity
- Efficiently harness peer information to support term structures for many issuers, even when issuer-specific data is thin

Axioma rating risk factors:

- Reduce sensitivity to rating migrations that cause artificial volatility in rules-based methodologies
- Improve coverage to ensure complete data across maturities and credit qualities

In addition, Axioma risk factors incorporate full term structures rather than single tenor factors, exhibit improved stability and robustness through time, and are less sensitive to noisy fixed income data.

Examples

Figures 2 and 3 illustrate issuer and cluster credit spread behaviors for General Electric (Figure 2); and for EUR sovereign rating spreads during the European sovereign crisis (Figure 3). These examples demonstrate the robustness and granularity of the Axioma fixed-income risk factor library.

GE Credit Deterioration

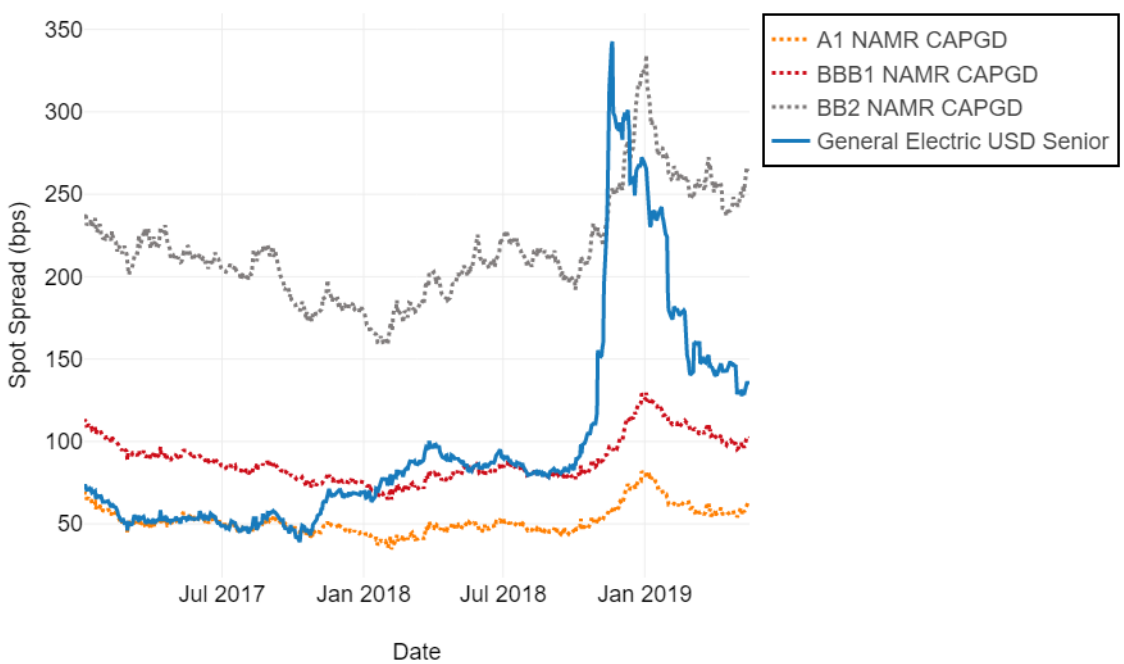

Figure 2: Axioma's time series of 5-year USD senior spread for GE Co alongside Axioma's rating spread curves for North American Capital Goods issuers. The issuer spread signals the markets concern about future downgrades and deteriorating credit quality.

EUR-GLOBAL-SV Cluster Curves

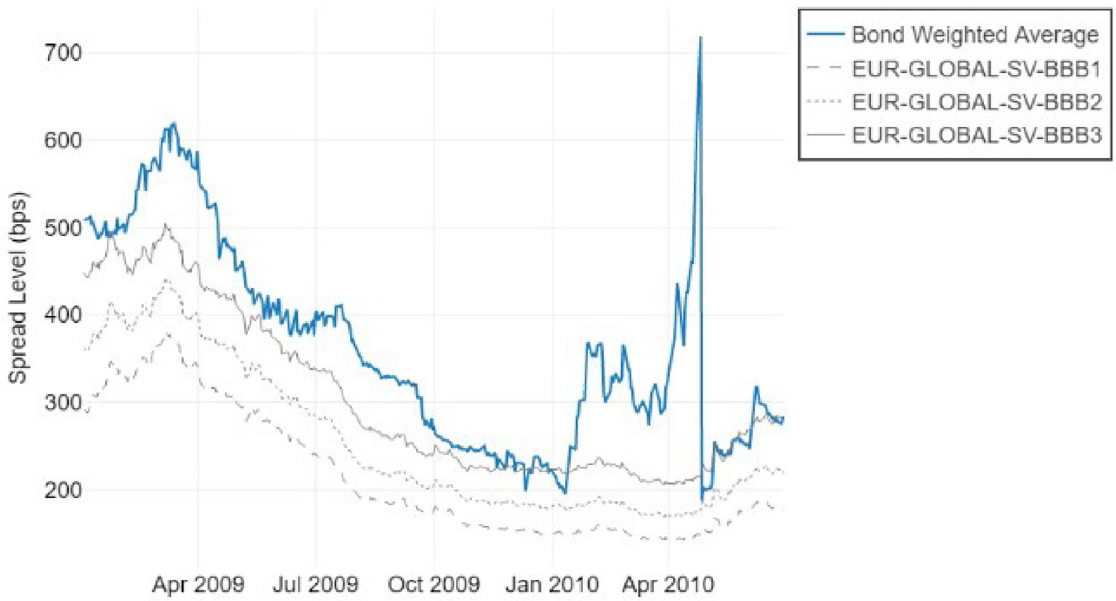

Figure 3: Granular EUR sovereign curves (shown in grey) exhibit stability through time compared with a simpler bond weighted average across the major letter rating. The spike in the average is caused by the downgrade of Greece from BBB to BB.

Axioma Risk Models are for

- Portfolio Managers
- Risk Managers
- Central Risk Book Owners
- Asset Owners
- Actuarial Teams
- Strategy Research Teams

Getting Access

The new model will be released to run in parallel with the existing model, enabling current clients to validate and test before switching. New clients will be automatically enabled for this new best-in-class risk model.

Axioma at a Glance

Founded in 1998

Headquartered in New York with 12 regional offices

280+ employees

7000+ professional users

Awards

- Best Buy-Side Market Risk Management Product of the Year 2019 (Risk.net)
- Axioma Achieves Best-of-Breed Status (Aite Group)
- Buy-Side Market Risk Management Product of the Year – Risk.net Market Technology Awards 2018
- Named to the Chartis RiskTech100® 2018

Contact us to learn more about how Axioma can help you better manage risk and enhance your investment process.

Americas: 1-800-558-7145
EMEA: +44-203-621-8241
APAC: +852-5819-5359

Sales: Sales@axioma.com
Client Support: Support@axioma.com
Careers: Careers@axioma.com