Yield Book **ESG Analytics for the fixed income universe**

ESG analytics for the fixed income universe in a single integrated solution

Sustainable Investment principles in Fixed Income are rapidly being adopted by market participants as enhanced risk management, demand for positive impact, and increasing regulation drive uptake.

Despite the complexities of the asset class, ~40% of the ~$53trn AUM managed according to SI and ESG principles is within fixed income, with double digit growth over the last decade.[1]

As a trusted source for in-depth fixed income risk analytics and complex portfolio analysis for over 30 years, Yield Book introduces our integrated analytics solution for assessing ESG impact across sub-asset classes of the fixed income universe. Combining Beyond Ratings' market-leading climate and ESG data on sovereigns, with Refinitiv's ESG scores and metrics on corporate bonds, Yield Book enables you to easily ans flexibly incorporate sustainability into your decision-making.

530+
Access to over 530 ESG and climate metrics across corporates and sovereigns

~500K
Securities with ESG scores and underlying metrics

20 years
Up to 20 years of historical data available dependent on model

Integrate corporate and sovereign ESG fixed income metrics into your investment process

Yield Book's solution offers an unprecedented level of customization and precision. Clients can leverage climate and ESG portfolio-level analytics to understand the driving underlying factors behind their position and enhance asset allocation in line with ESG principles.

Clients can access ESG metrics at the single security level and portfolio level, providing the unique ability to leverage Yield Book analytics to truly define a full picture of the impact of ESG on their portfolios. Yield Book's analytical library spans over 2800 keywords allowing clients to conduct fixed income analysis such as yields, durations, spreads, and convexities alongside Sustainable Investment principles with ease.

Key use cases include:

- Conduct augmented credit risk analysis with systemic integration of 330+ ESG metrics on 170+ sovereigns, and 200+ metrics on 390,000 corporate bonds alongside traditional financial analytics
- Conduct ESG-adjusted portfolio analytics on-demand through the Yield Book Add-In and API, with transparency into underlying Environment, Social and Governance drivers
- Alignment of portfolios to climate objectives, including carbon footprint of your fixed income portfolios, current temperature trajectories and gap to 2-degree scenarios
- Automate customized reports for snapshotting climate and ESG performance and for fulfilment of numerous international disclosure standards such as TCFD, SFDR, GRI and SASB

1 Sources: World Bank, Incorporating ESG Factors into Fixed Income Investment, Celent ESG in Portfolio Management, GSIA Global Sustainable

Yield Book **ESG Analytics for the fixed income universe**

Leading ESG data providers

With Beyond Ratings and Refinitiv, Yield Book brings clients two industry leading ESG data providers in one integrated solution. Beyond Ratings provides 330+ ESG, climate metrics and KPIs on over 170 sovereigns across 130,000 securities, to facilitate incorporation of sustainability into investment decision-making, including projected gap to 2° scenario based on the proprietary Climate Liabilities Assessment Integrated Methodology (CLAIM) model, and credit risk scores that systematically incorporate ESG factors alongside standard financial considerations.

Refinitiv offers one of the most comprehensive ESG databases in the industry on corporate bonds, covering over >80% of the global market cap, with a history going back to 2002. Refinitiv has ESG data coverage for over 10,000 global companies, across 76 countries, spanning major global and regional indices. The Refinitiv corporate bond ESG dataset measures a company's relative ESG performance, commitment and effectiveness across 10 main themes.

	REFINITIV	BEYOND RATINGS
COVERAGE	~400,000 fixed income instruments, global spread of corporates	~130,000 securities across 170+ sovereign entities
HISTORY	2002 (for 10,000 companies)	1999 (data model dependent)
DATA POINTS	200+	330+

Access to four ESG and Climate models across sovereigns and corporates

CORPORATES

Environmental | Social | Governance

ESG Combined Score

< CONTROVERSIES OVERLAY >

ESG Score

185+ indicators across 10 themes with coverage of 390,000 bond securities on 10,000 global issuers and a 20 year history

Environmental: 65+ indicators and 3 themes:
- Resource Use
- Emissions
- Innovation

Social: 60+ indicators and 4 themes:
- Workforce
- Human rights
- Community
- Product responsibility

Governance: 55+ indicators and 3 themes:
- Management
- Shareholders
- CSR strategy

Climate KPIs

30+ Climate indicators and carbon footprint metrics on 3,000 issuers, such as:
- CO_2 and equivalents emissions relative to revenue
- NOX and SOX emissions relative to revenue
- Energy use and renewable energy production

SOVEREIGNS

Environmental | Social | Governance

ESG Score

220+ indicators across 31 themes chosen for their explicative capacity on GDP, with coverage of 175 countries and a 20 year history

Environmental: 80+ indicators and 12 themes, such as:
- Climate Change
- Pollution
- Transport infrastructure

Social: 110+ indicators across 12 themes, such as:
- Health infrastructure
- Gender inequality
- Education

Governance: 20+ indicators across 12 themes, such as:
- Business Rights
- Corruption
- Political Stability

Climate KPIs

25+ transition and physical climate indicators and carbon footprint metrics on 170 countries, for 130,000 bonds:
- Scope 1, 2 and 3 equivalents
- 2 degree alignment and portfolio temperature through the CLAIM model
- Public-sector GHG consumption, GHG/GDP, green & brown proxies

Sovereign Risk Monitor

Quantitative-implied credit risk scores for 146 countries based on economic/financial and sustainability profile, with 20 year quarterly history. 45+ themes and indicators include:
- Climate & Resources
- Human Capital
- Rule of Law
- Debt Burden
- Control of Corruption

Yield Book **ESG Analytics for the fixed income universe**

Integrated workflow processes with Yield Book API and Add-In

A core component of Yield Book's capabilities is its inherent open architecture, whereby users can specify custom inputs and outputs for truly bespoke analytics. Clients can access ESG metrics interactively using the Yield Book API or Microsoft Excel® Add-in, with the ability to flexibly define and output portfolio analytics or reports.

Yield Book BEYOND RATINGS REFINITIV

ESG and Climate Portfolios

Pricing Setup	
Curve Type:	TsyModel
Curve Date:	1/1/2020
Settle Date:	Market

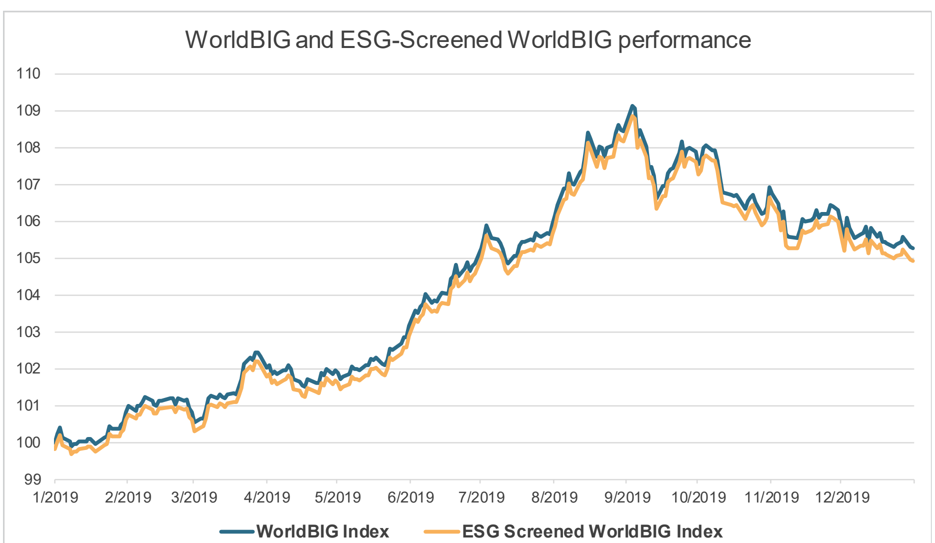
Standard Calculations	
Portfolio Definition:	YBPF_ESG_1
Price/Yield Calculation:	ESG(PY)_1
DataID:	ESG(BONDDATA)_1

Portfolio level metrics

Yield Book Analytics	
Issues	50
Mkt Val (M)	714
Index Rating	AA
Price	130.75
Coupon	1.53
Yield	0.50
Effective Duration	13.64
Effective Convexity	4.456
WAL	10.06

ESG and climate metrics	
BR Credit Risk Score	70.9
ESG Global Score	82.7
Environmental Score	82.9
Social Score	82.9
Governance Score	81.5
ESGSustainableGDP	57,082.3
CarbonGHGGDPRatio	297.7

											ESG			
Identifier	Par Amt (M)	Price	Base Market Value	Country	Cpn	Yield	Eff Dur	Eff Cnvx ty	WAL	S&P	ESG Score	Environmental	Social	Governance
912796D55	108	100.0	108	US	0.0	0.01	0.50	0.01	0.5	AA+	86.8	86.6	87.0	86.4
912796L23	35	100.0	35	US	0.0	0.02	0.32	0.00	0.3	AA+	86.8	86.6	87.0	86.4
CN1833398	5	99.2	5	CHI	2.2	2.51	2.88	0.11	3.0	A+	61.8	58.6	61.8	64.1
ES0262562	34	115.0	40	SP	2.0	0.49	9.52	1.06	10.6	A	78.0	78.0	77.4	78.0
3135G0W66	2	104.0	2	US	1.6	0.77	4.58	0.24	4.8	AA+	40.3	17.1	51.7	33.9
172967KY6	3	108.9	3	US	3.2	1.81	5.98	0.31	6.8	BBB+	85.1	93.8	80.8	87.5
DE3782048	33	102.3	34	GER	0.0	-0.48	4.79	0.28	4.8	AAA	85.4	85.4	86.2	84.3
LU1032987	2	105.6	2	LUX	1.1	0.33	6.72	0.35	7.2	A	65.3	77.9	88.7	28.7



Index analytics and historical backtesting can be performed to assess the impact of ESG on portfolios, including tracking error and price. This graph shows relative performance of the World Broad Investment-Grade Bond Index (WorldBIG) and a rebased equivalent with a negative screen on the lowest decile of ESG scores, with coverage of ~75% by notional outstanding.

Source: Yield Book. For illustrative purposes only.

Trusted by the Market. Driven by You.

www.yieldbook.com

Yield Book **ESG Analytics for the fixed income universe**

For more information contact us at sales@yieldbook.com or visit our website: www.yieldbook.com

Americas +1 646 989 2200 | Europe +44 20 7334 8963 | Asia Pacific +852 2164 3288, +65 6818 6291 | Japan +81 3 6441 1440