Ground Rules

February 2023

FTSE Goldman Sachs High Yield Corporate Bond Index

v1.5



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Section 1 Introduction

1. Introduction

1.1 FTSE Goldman Sachs High Yield Corporate Bond Index

- 1.2 The FTSE Goldman Sachs High Yield Corporate Bond Index is a US Dollar-denominated index that measures the performance of high-yield debt issued by corporations domiciled in the US or Canada. The index aims to provide a broad measure of the North American high-yield market while excluding issuers with the highest debt service and leverage.
- 1.2.1 The index is created from the FTSE US High-Yield Market Index, which includes cash-pay, deferred-interest securities and debt issued under rule 144A in unregistered form. The bond universe is screened for larger issues based on amount outstanding and large issuers representing the more liquid portion of the market. Maturity and rating constraints are applied. The bonds are divided into two maturity buckets: one to five years and five+ years. The weights of the maturity buckets are adjusted to match the weighted average effective duration of the FTSE US High-Yield Market Index. Within each maturity bucket, constituents are assigned weights in proportion to their market capitalisation¹. Issuer weights are capped at 3% for issuers with fundamental indicators and 2% for issuers where fundamental indicators are not observable².
- 1.2.2 The universe is then ranked within their respective industries based on fundamental indicators. Bonds from the lowest ranked 15% of issuers are excluded. The index is formed by the remaining bonds from the 85% of issuers with high operating margin and low leverage. The remaining bond subset, along with bonds of issuers that satisfy the size, rating and maturity screening criteria, but have neither fundamental indicator available are included in the final bond subset. Furthermore, a final issuer capping is performed to help manage the concentration risk.
- 1.3 The FTSE Goldman Sachs High Yield Corporate Bond Index does not take account of ESG factors in its design.

1.4 FTSE Russell

FTSE Russell is a trading name of FTSE International Limited, Frank Russell Company, FTSE Global Debt Capital Markets Limited (and its subsidiaries FTSE Global Debt Capital Markets Inc. and FTSE Fixed Income Europe Limited), FTSE Fixed Income LLC, The Yield Book Inc. and Beyond Ratings.

1.5 FTSE Russell hereby notifies users of the index that it is possible that factors, including external factors beyond the control of FTSE Russell, may necessitate changes to, or the cessation, of the index and therefore, any financial contracts or other financial instruments that reference the index or investment funds which use the index to measure their performance should be able to withstand, or otherwise address the possibility of changes to, or cessation of, the index.

¹ Duration matching methodology first implemented in the 1 June 2018 index.

² Dual tier capping first implemented in the 1 July 2018 index.

- 1.5.1 Index users who choose to follow this index or to buy products that claim to follow this index should assess the merits of the index's rules-based methodology and take independent investment advice before investing their own or client funds. No liability whether as a result of negligence or otherwise is accepted by FTSE Russell or any members of the FTSE Russell Policy Advisory Board (or any person concerned with the preparation or publication of these Ground Rules) for any losses, damages, claims and expenses suffered by any person as a result of:
 - any reliance on these Ground Rules;
 - any inaccuracies in these Ground Rules;
 - any non-application or misapplication of the policies or procedures described in these Ground Rules; and/or
 - any inaccuracies in the compilation of the Index or any constituent data.

Section 2 Management responsibilities

2. Management responsibilities

2.1 FTSE Fixed Income LLC (FTSE)

- 2.1.1 FTSE is the benchmark administrator of the index³.
- 2.1.2 FTSE is responsible for the daily calculation, production and operation of the index series, and will:
 - maintain records of all the constituents;
 - be responsible for the addition and deletion of bonds and changes of nominal amounts, in accordance with the Ground Rules; and
 - disseminate the indexes.

2.2 Amendments to these Ground Rules

- 2.2.1 These Ground Rules shall be subject to regular review (at least once a year) by FTSE Russell to ensure that they best reflect the aim of the index series. Any proposals for significant amendments to these Ground Rules will be subject to consultation with FTSE Russell advisory committees and other stakeholders if appropriate. The feedback from these consultations will be considered by the FTSE Russell Index Governance Board before approval is granted.
- 2.2.2 As provided for in the Statement of Principles for FTSE Russell Fixed Income Indices, where FTSE Russell determines that the Ground Rules are silent or do not specifically and unambiguously apply to the subject matter of any decision, any decision shall be based as far as practical on the Statement of Principles. After making any such determination, FTSE Russell shall advise the market of its decision at the earliest opportunity. Any such treatment will not be considered as an exception or change to the Ground Rules, or to set a precedent for future action, but FTSE Russell will consider whether the Ground Rules should subsequently be updated to provide greater clarity.

³ The term administrator is used in this document in the same sense as it is defined in Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds (the European Benchmark Regulation) and <u>The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019</u> (the UK Benchmark Regulation). FTSE Fixed Income LLC administers the Index Series in line with the third country transitional provisions contained within Article 51(5) of the European Benchmark Regulation and the third country transitional provisions as amended by Article 42(5) of the UK Benchmark Regulation.

Section 3 FTSE Russell index policies

3. FTSE Russell index policies

These Ground Rules should be read in conjunction with the following policy documents, which can be accessed using the links below or by contacting <u>info@ftserussell.com</u>. These policies are reviewed annually and any changes are approved by the FTSE Russell Index Governance Board.

3.1 Statement of Principles for FTSE Fixed Income Indices (the Statement of Principles)

Indices need to keep abreast of changing markets and the Ground Rules cannot anticipate every eventuality. Where the Ground Rules do not fully cover a specific event or development, FTSE Russell will determine the appropriate treatment by reference to the Statement of Principles for FTSE Fixed Income Indices, which summarises the ethos underlying FTSE Russell's approach to index construction. The Statement of Principles is reviewed annually and any changes proposed by FTSE Russell are presented to the FTSE Russell Policy Advisory Board for discussion before approval by the FTSE Russell Index Governance Board.

The Statement of Principles for Fixed Income Indices can be accessed using the following link:

Statement of Principles Fixed Income Indices.pdf

3.2 Queries and Complaints

FTSE Russell's complaints procedure can be accessed using the following link:

Benchmark Determination Complaints Handling Policy.pdf

3.3 Recalculation Policy and Guidelines

The Recalculation Policy and Guidelines for Fixed Income Indices document is available from the FTSE Russell website using the link below or by contacting <u>info@ftserussell.com</u>.

Fixed Income Recalculation Policy and Guidelines.pdf

3.4 Index Policy in the Event Clients are Unable to Trade a Market or a Security

Details of FTSE Russell's treatment can be accessed using the following link:

Index_Policy_in_the_Event_Clients_are_Unable_to_Trade_a_Market_or_a_Security.pdf

3.5 Policy for Benchmark Methodology Changes

Details of FTSE Russell's policy for making benchmark methodology changes can be accessed using the following link:

Policy_for_Benchmark_Methodology_Changes.pdf

3.6 FTSE Russell Governance Framework

3.6.1 To oversee its indices, FTSE Russell employs a governance framework that encompasses product, service and technology governance. The framework incorporates the London Stock Exchange Group's three lines of defence risk management framework and is designed to meet the requirements of the IOSCO Principles for Financial Benchmarks⁴, the European benchmark regulation⁵ and the UK benchmark regulation⁶. The FTSE Russell Governance Framework can be accessed using the following link:

FTSE Russell Governance Framework.pdf

3.7 Real Time Status Definitions

3.7.1 Please refer to the following guide for details of real time status definitions for indices that are calculated in real time.

Real Time Status Definitions.pdf

⁴ IOSCO Principles for Financial Benchmarks Final Report, FR07/13 July 2013.

⁵ Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds.

⁶ The Benchmarks (Amendment and Transitional Provision) (EU Exit) Regulations 2019.

Section 4 Composition and design criteria

Composition and design criteria 4.

4.1.1 Figure one details the design criteria and calculation assumptions for the FTSE US High-Yield Market Index. Additional design criteria and calculation assumptions for the FTSE Goldman Sachs High Yield Corporate Bond Index are outlined in figure two.

Figure one: design criteria and calculation assumptions for the FTSE US High-Yield Market Index

Coupon	Fixed rate, fixed-to-floating rate and zero coupon					
Currency	USD					
Minimum maturity	At least one year.					
	Fixed-to-floating rate bonds are removed one year prior to the fixed-to-floating rate start date.					
Composition	Cash-pay, zero-to-full (ZTF), pay-in-kind (PIK), step-coupon bonds and rule 144A bonds issued by orporations domiciled in the United States or Canada only.					
Weighting	Market capitalisation					
Rebalancing	Once a month at the end of the month.					
Reinvestment of cash flows	Intra-month cash flows from interest and principal payments are not reinvested as part of monthly index total return calculations ⁷ .					
Calculation frequency	Daily					
Settlement date	Monthly: settlement is on the last calendar day of the month.					
	Daily: same-day settlement except if the last business day of the month is not the last calendar day of the month; then, settlement is on the last calendar day of the month.					
Fixing date	Each month, the upcoming month's index constituents are fixed on the profile fixing date ⁸ . Each year's scheduled fixing dates are published on the website.					

Figure two: additional design criteria and calculation assumptions for the FTSE Goldman Sachs **High Yield Corporate Bond Index**

Maximum maturity	15 years				
Minimum issue size	USD 400 million minimum outstanding per issue.				
Minimum issuer size	USD one billion minimum total qualifying outstanding debt.				

Prior to 1 November 2022, reinvestment income was included in the total return calculation.

Fixing dates provide a clear reference point for index users to know in advance of any changes to the composition of the index for the upcoming month. On each fixing date, publicly available securities information is used to determine index eligibility and indicative values for the following month's index profile.

Minimum credit quality	Maximum quality: BB+ by S&P and Ba1 by Moody's					
	<u>Minimum quality</u> :					
	CCC+ by S&P or Caa1 by Moody's if not rated by S&P					
	C by S&P or Ca by Moody's if not rated by S&P					
	(with observable fundamental indicators) ⁹					
Pricing	Refinitiv 16:00 E.T. mid-market price					
	Secondary pricing source, FTSE index price					
	FTSE prices used for historical calculations (from 28 February 2007 to 30 June 2017).					
Reconstitution	Each month, after filtering for minimum issue and issuer size, credit rating and maximum maturity, the bonds are divided into two maturity buckets: one to five years and five+ years. The weights of the maturity buckets are adjusted to match the weighted average effective duration of the FTSE US High-Yield Market Index. Within each maturity bucket, constituents are assigned weights in proportion to their market capitalisation. Issuer weights are capped at 3% for issuers with fundamental indicators and 2% for issuers where fundamental indicators are not observable.					
	The bond universe is then screened by two fundamental indicators reported by the issuers: (1) debt service and (2) leverage, both determined quarterly at the end of February, May, August and November. Debt service is measured by debt to earnings before interest, tax, depreciation and amortisation (debt to EBITDA ¹⁰), while leverage is measured by debt to enterprise value (debt to EV) ¹¹ . The issuers are ranked within their respective industry (finance, industrial and utility) negatively by debt service and leverage, accounting for market capitalisation. The percentile rankings of individual indicators are combined to calculate each issuer's composite rank. When only a single indicator is available, that single indicator will be used to calculate the issuer's composite rank. The issuers within the lowest 15% composite rank are excluded and the index is formed by the remaining 85% of bonds.					
	The remaining bond subset, along with bonds of issuers that satisfy the size, rating and maturity screening criteria but have neither fundamental indicator available are included in the final bond subset. Finally, issuer weights are once again capped at 3% for issuers with fundamental indicators and 2% for issuers where fundamental indicators are not observable. The final bond subset is market capitalisation weighted to form the index.					
	For the non-quarter-end months, bonds that no longer meet the liquidity, rating or maturity requirements are removed from the profile. Newly issued bonds from the qualified issuers of the most recent quarterly rebalancing will be included. The monthly profiles will reflect the latest par amount and market value of all included bonds.					
Capping	3% for issuers with fundamental indicators.					
	2% for issuers where fundamental indicators are not observable.					
Index base date ¹²	28 February 2007					

Figure three: example of governance composite ranking, issuer reconstitution and index weighting

Description	Company market value (\$Bn)	Debt service percentile ranking*	Leverage percentile ranking*	Average ranking*	Composite decile ranking	Inclusion	Index market value (\$Bn)	Market capitalisation weight
Company A	4.75	2%	18%	10%	0.5	Included	4.75	5% [4.75/90]
Company B	5.20	18%	13%	16%	1	Included	5.20	6% [5.2/90]
Company C	4.60	27%	8%	17%	1.5	Included	4.60	5% [4.6/90]
Company D	5.60	56%	3%	29%	2	Included	5.60	6% [5.6/90]
Company E	3.95	44%	22%	33%	2.5	Included	3.95	4% [3.95/90]
Company F	6.25	12%	60%	36%	3	Included	6.25	7% [6.25/90]
Company G	6.40	39%	47%	43%	3.5	Included	6.40	7% [6.4/90]

⁹ Issuers with ratings below CCC+ by S&P or Caa1 by Moody's (if not rated by S&P) and with at least one fundamental indicator available, first included in the 1 September 2018 index.

¹⁰ Pre-tax income is used instead of EBITDA when calculating the debt service ratio for financial institution issuers.

¹¹ Effective 30 November 2020 rebalance the source data for fundamental indicators will use Worldscope from Refinitv.

¹² Back-tested data from 28 February 2007 through 26 August 2018. Live data from 27 August 2018 through present.

Description	Company market value (\$Bn)	Debt service percentile ranking*	Leverage percentile ranking*	Average ranking*	Composite decile ranking	Inclusion	Index market value (\$Bn)	Market capitalisation weight
Company H	4.60	61%	32%	46%	4	Included	4.60	5% [4.6/90]
Company I	3.75	23%	74%	48%	4.5	Included	3.75	4% [3.75/90]
Company J	4.35	7%	98%	52%	5	Included	4.35	5% [4.35/90]
Company K	4.95	70%	41%	56%	5.5	Included	4.95	6% [4.95/90]
Company L	6.10	32%	85%	58%	6	Included	6.10	7% [6.1/90]
Company M	3.80	48%	71%	59%	6.5	Included	3.80	4% [3.8/90]
Company N	4.55	87%	36%	61%	7	Included	4.55	5% [4.55/90]
Company O	5.15	97%	27%	62%	7.5	Included	5.15	6% [5.15/90]
Company P	6.20	82%	53%	68%	8	Included	6.20	7% [6.2/90]
Company Q	5.80	76%	66%	71%	8.5	Included	5.80	6% [5.8/90]
Company R	3.40	51%	94%	73%	9	Excluded		
Company S	4.50	66%	90%	78%	9.5	Excluded		
Company T	5.20	92%	79%	86%	10	Excluded		
Company U	4.00	NA	NA	NA	NA	Included	4.00	4% [4/90]
Total	103.10						90.00	100% [90/90]

*Lower percentile rankings represent better fundamental rankings.

4.2 Timing

4.2.1 Indices are calculated Monday through Friday except Christmas Day (observed) and New Year's Day (observed). When a market observes a holiday, the closing prices from the previous available day are used as the closing prices for index calculations on such holiday for that market.

4.3 Index quality

4.3.1 An index quality is assigned to each index bond as of profile fixing. The quality is first mapped to the Standard & Poor's Financial Services LLC (S&P) rating. If a bond is not rated by S&P but it is rated by Moody's Investors Service, Inc (Moody's), the S&P equivalent of the Moody's rating is assigned to the index quality. If a bond is rated by neither S&P nor Moody's, the bond is not assigned an index quality. If a bond is rated as investment grade by one rating agency and high yield by the other, the S&P equivalent of the investment-grade rating is assigned to the index quality. These ratings remain unchanged for the entire performance month.

4.4 Defaults

4.4.1 When an issuer defaults, is assigned a D rating by S&P regardless of whether that issuer has filed for bankruptcy protection or enters into chapter 7 or chapter 11 bankruptcy protection in the US (or equivalent in its local market), its bonds remain in the index until the end of the month. The bonds will be included in the calculation of the current month's average profile statistics of the index. The returns are calculated without coupon payment or accrued interest, where applicable.

4.5 Return computation

4.5.1 Total returns are computed on the assumption that each security is purchased at the beginning of the period and sold at the end of the period. An issue's total rate of return is the percentage change in its total value over the measurement period. The components of total return are price change, principal payments, coupon payments and accrued interest. The total returns are market capitalisation weighted using the security's beginning-of-period market value (see figure four).

Figure four: total rate of return calculation methodology

Beginning-of-period value

(Beginning Price + Beginning Accrued) x Beginning Par Amount Outstanding

End-of-period value

[(Ending Price + Ending Accrued) x (Beginning Par Amount Outstanding - Principal Payments)] + Coupon Payments + Principal Payments

Total rate of return (%)

 $\left[\left(\frac{\text{End-of-Period Value}}{\text{Beginning-of-Period Value}}\right) - 1\right] \times 100$

A note on precision: returns are computed to at least six decimal places but reported to a maximum of five. In addition, owing to rounding errors inherent in computer floating-point arithmetic, the last digit in any reported value may sometimes be off by one from its true value.

Ticker for the FTSE Goldman Sachs High Yield Corporate Bond Index

Ticker	Index
CFIIGHYB	FTSE Goldman Sachs High Yield Corporate Bond Index, in USD terms

Chronological summary of events

FTSE Goldman Sachs High Yield Corporate Bond Index summary of event

Year	Monthly highlights
2022	November: intra-month cash flows from interest and principal payments are not reinvested as part of monthly index total return calculations.
2021	June: change in timing of pricing used in index.

Appendix A Further information

A Glossary of Terms used in FTSE Russell's ground rule documents can be found using the following link:

<u>Glossary_of_terms_FTSE_Fixed_Income.pdf (ftserussell.com)</u>

For contact details, please visit the FTSE Russell website or contact FTSE Russell client services at info@ftserussell.com.

Website: www.lseg.com/en/ftse-russell/

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