

Index Guide

FTSE Fixed Income Index Guide



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FTSE Russell: A global index leader

FTSE Russell is a leading global index provider creating and managing a wide range of indexes, data and analytic solutions to meet client needs across asset classes, style and strategies. FTSE Russell indexes offer a true picture of global markets, incorporating specialist knowledge gained from developing local benchmarks around the world. FTSE Russell index expertise and products are used extensively by institutional and retail investors across the world.

New additions to the FTSE Russell index family

On August 31, 2017, London Stock Exchange Group completed the acquisition of the Citi Fixed Income Indexes and The Yield Book software platform from Citi¹. As part of the acquisition, a team of over 200 individuals across the globe joined FTSE Russell bringing a wealth of experience in the global fixed income markets that significantly boosts our ability to service clients across the range of investments. Combined capabilities under the FTSE Russell franchise now offer clients a comprehensive set of equity and fixed income indexes, broader multi-asset capabilities, and a deeper data and analytics service.

¹ For more information, visit ftserussell.com/announcement/

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Introduction

The purpose of this publication is to familiarize the reader with the global fixed income indexes that joined the FTSE Russell index family as part of the Citi acquisition in August 2017. It is intended to provide the philosophy behind the creation of these indexes, explain how they are constructed, and highlight why they can be a measure of the performance of fixed income markets across security types and geographies.

The publication begins with an overview of this range of fixed income indexes, explaining their characteristics, rules, and general construction methodology applicable to this range of indexes. The subsequent sections provide a detailed description of the major indexes and sub-indexes. These sections detail each individual index's scope, design criteria and calculation assumptions, related indexes, and access information. The publication continues with a section dedicated to alternative-weighted methodologies. These are rules-based, passively managed approaches that are designed to deliver an alternative to traditional market value-weighted indexes.

The publication concludes with an appendix covering calculation methodologies, formulae, terminology, and questions that are frequently asked by clients, to provide the reader with a thorough understanding of this range of fixed income indexes.

The key global benchmarks that are covered in this publication are listed in the below table. Related indexes and sub-indexes are also discussed in subsequent chapters. As part of the transition to FTSE Russell, the names of these indexes have changed from "Citi [Name of Index]" to "FTSE [Name of Index]". The index naming conventions, and common abbreviations and acronyms, such as WGBI, will continue to be used. For more information, please refer to the latest information on the website at www.ftserussell.com/announcement/.

Additions to the fixed income family

Global
FTSE World Government Bond Index (WGBI)
FTSE World Broad Investment-Grade Bond Index (WorldBIG [®])
FTSE World Inflation-Linked Securities Index (WorldILSI)
FTSE Eurobond Indexes
FTSE World Money Market Indexes (WMMI)
Americas
FTSE US Broad Investment-Grade Bond Index (USBIG [®])
FTSE US High-Yield Market Index
FTSE US Treasury STRIPS Index
FTSE US Large Pension Fund Baseline Bond Index (USLPF)
FTSE Latin American Government Bond Index (LATAMGBI)
Europe, Middle East, and Africa
FTSE Euro Broad Investment-Grade Bond Index (EuroBIG [®])
FTSE European High-Yield Market Index
FTSE Central, Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI)
FTSE Middle East and North Africa Broad Bond Index (MENABBI)
Asia Pacific and Japan
FTSE Asian Government Bond Index (AGBI)
FTSE Asian Government Bond Index – Capped (AGBI-Capped)
FTSE Asian Broad Bond Index (ABBI)
FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI)
FTSE Chinese Government and Policy Bank Bond Index (CNGPBI)
FTSE Dim Sum (Offshore CNY) Bond Index
FTSE Australian Broad Investment-Grade Bond Index (AusBIG [®])
Emerging Markets
FTSE Emerging Markets Government Bond Index (EMGBI)
FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped)
FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI)
FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI)
FTSE Emerging Markets Broad Bond Index (EMUSDBBI)
FTSE Sukuk Index
Alternatively Weighted
FTSE Debt Capacity Government Bond Index (DCWGBI)
FTSE Time-Weighted US Fallen Angel Bond Index
FTSE RAFI Sovereign Developed Markets Bond Index Series
FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index
FTSE RAFI World Corporate Investment-Grade Bond Index

Local and domestic focused benchmarks

In addition to the benchmarks described in this publication, FTSE Russell's fixed income index coverage also includes several widely used local and domestic focused index series. Other major fixed income index series offered by FTSE Russell include:

- **FTSE Canada Bond Indexes**— the predominant benchmark family for fixed income indexes in Canada, including the flagship FTSE Canada Universe Bond Index. The FTSE Canada Bond Indexes are used as benchmarks for approximately US \$2 trillion in assets globally, invested across ETFs, mutual funds and segregated mandates.
- **FTSE Actuaries UK Gilt Indexes**— a comprehensive family of indexes and analytics covering the conventional Gilt and index-linked Gilt markets. The indexes are the premier benchmarks for eligible British Government Securities.
- **FTSE MTS Indexes** — the first independent total return indexes measuring the performance of the largest and most widely-traded securities in the eurobond market. The data underlying MTS Indexes is drawn from real-time tradable prices on MTS, the first and leading electronic marketplace for cash bond trading across Europe, enabling a level of transparency and replicability that is unique in the bond markets.
- **FTSE SBI Bond Indexes**— a recently launched family of Indian bond indexes developed in partnership with the State Bank of India.

This publication does not pertain to the local and domestic focused benchmarks described above². For more information specific to these indexes, please visit the website at www.ftserussell.com.

Multi asset benchmarking

The addition of the Citi global fixed income indexes is transformational for FTSE Russell, as it pairs deep and broad equity index capabilities with comprehensive debt market coverage to uncover the value of having a single provider across an entire asset allocation framework. A true multi asset benchmarking approach affords users the opportunity to express investment themes, such as peer-to-peer relative value views, ESG and smart beta, through a common lens across a broader range of investment vehicles.

Please visit ftserussell.com for additional details on FTSE Russell equity benchmarks.

² This publication also does not cover: the FTSE Global Bond Index Series, FTSE ORB Index Series, FTSE NSE Kenya Shilling Government Bond Index Series, FTSE-BOCHK Offshore RMB Bond Index Series, FTSE ASFA Australia Bond Index Series, FTSE China Onshore Bond Index Series.

Overview

The investment community values the addition of this range of fixed income indexes to FTSE Russell's benchmark offering because of their long history, coverage, ease of customization, accessibility, and other desirable benchmark qualities.

History

The foundation of this range of indexes commenced over 30 years ago and since then, a variety of regional benchmarks have been introduced. They have been used by leading financial institutions in the creation of ETFs, structured products, and swaps and have become the benchmarks of choice for a wide range of asset owners and asset managers.

Coverage

This comprehensive range of indexes offer broad coverage in terms of currency, region, asset class, and credit quality.

Desirable benchmark qualities

Based on transparent and objective rules, these indexes strike a balance between comprehensiveness and replicability, making them appealing to portfolio managers, asset owners, ETF issuers, and sponsors.

Ease of customization

A unified methodology across markets enables investors to use these indexes as building blocks for customized benchmarks to meet investment objectives.

Accessibility

These indexes are broadly published and widely followed. Multiple channels of distribution are employed to ensure easy access to data. Through our Web site (www.yieldbook.com/m/indices), users can access index information, profiles, analytics and returns, and historical data by subscription or on demand. The Web site also provides access to index-related publications, such as announcements about composition or calculation changes on specific indexes. Access to index publications, as well as sector-level and basic issue-level data, is available on demand.

Finally, information on this range of fixed income indexes is made available through financial news organizations and data and analytic vendors. For a comprehensive list of all financial news organizations and vendors publishing information about these fixed income indexes, please see appendix.

Licensing

This range of fixed income indexes are designed, calculated, and published by FTSE Fixed Income LLC and may be licensed for use as underlying indexes for OTC or exchange-traded investment products, including ETFs, swaps, structured products, warrants, and certificates. Leading financial institutions that issue these instruments depend on these indexes for the creation of their index-based investment products.

Compliance with IOSCO principles

FTSE Russell acknowledges the importance of integrity of benchmarks in financial markets and is committed to operating its business in accordance with the IOSCO principles and other relevant industry standards. For more information, please visit www.yieldbook.com/m/indices/announcements.shtml?view=rq

Characteristics of a benchmark

The fixed income benchmarks described in the publication are designed to be relatively stable and easily replicable, with the following desirable index characteristics to help achieve this goal.

Relevance

An index should be relevant to investors. At a minimum, it should track those markets and market segments of most interest to investors.

Comprehensiveness

An index should include opportunities in its target sectors that are realistically available to market participants under normal market conditions.

Replicability

The total returns reported for an index should be replicable by market participants, such as investment managers who are measured against it and sponsors who pay fees or award management assignments based on performance relative to it. Furthermore, over time, an index must represent a realistic baseline strategy that a passive investor could follow. Accordingly, information about index composition and historical returns should be readily available.

Stability

An index should not change criteria often. Additionally, changes should be easily understood and changes to constituents should be highly predictable. It should not be subject to opinions about which bonds to include on any particular day. However, index criteria must change occasionally to ensure that the index accurately reflects the structure of the market. A key virtue of an index is to serve as a passive benchmark; investors should not be forced to execute a significant number of transactions just to keep pace.

Barriers to entry

The markets or market segments included in an index should not contain significant barriers to entry. This guideline is especially applicable to an international index, in which a potentially eligible country should encourage foreign ownership of its bonds, allow investment-related participation in its currency markets, support the potential currency hedging needs of investors, and facilitate repatriation of investors' capital. Other factors such as tax, regulation stability and ease of operations are also considered when reviewing eligible markets.

Expenses

In the normal course of investing, expenses related to withholding tax, safekeeping, and transactions are incurred. For a market or market segment to be included, these ancillary expenses should be well understood by market participants and should not be excessive. For example, if expenses are unpredictable or inconsistently levied, an index cannot hope to measure market performance fairly.

Simple and objective selection criteria

A clear set of rules should govern the inclusion of bonds or markets in an index, and investors should be able to forecast changes in composition.

This list of desirable characteristics may not be exhaustive, and different investors may place a different emphasis on each. In constructing indexes, some desirable characteristics may have to be sacrificed to ensure that others are met. However, it is critical that an index follows objective rules that are well defined, so that all interested parties can understand how to apply the information to their particular situation.

Figure 1. Historical summary of index introductions

Year	Index Name	Base Date
1978	FTSE US Treasury-Bill Indexes	December 31, 1977
1978	FTSE Certificate-of Deposit Indexes ³	December 31, 1977
1981	FTSE World Bond Index ⁴	December 31, 1977
	FTSE World Money Market Index (WMMI) ⁵	December 31, 1977
1985	FTSE US Broad Investment-Grade Bond Index (USBIG)	December 31, 1979
	FTSE US Treasury Benchmark (On-the-Run) Indexes	December 31, 1979
1986	FTSE World Government Bond Index (WGBI)	December 31, 1984
	FTSE US Large Pension Fund Baseline Bond Index (USLPF)	December 31, 1979
	FTSE Long-Term High-Yield Index	December 31, 1979
1987	FTSE Targeted Index Matrix Series (TIMS) ⁶	December 31, 1983
1988	FTSE Currency-Hedged World Government Bond Index	December 31, 1984
	FTSE High-Yield 7+ Year Index (Formerly the High-Yield Composite Index)	December 31, 1984
	FTSE Core+3 and Core+5 Indexes	December 31, 1979
	FTSE US Treasury Yield Curve Average Indexes	December 31, 1986
1990	FTSE US High-Yield Market Index	December 31, 1988
1991	FTSE Extended High-Yield Market Index ⁷	December 31, 1990
	FTSE Brady Bond Index ⁸	March 31, 1990
1992	FTSE Group-of-Seven (G-7) Government Bond Index	December 31, 1984
	FTSE Group-of-Five (G-5) Government Bond Index	December 31, 1984
	FTSE Global Government Composite Bond Index ⁹	September 30, 1992
1994	FTSE Eurodollar Bond Index	June 30, 1993
	FTSE US (New) Large Pension Fund Baseline Bond Index ¹⁰	December 31, 1979
	FTSE Emerging Markets Mutual Fund (EMMF) Debt Index ¹¹	December 31, 1993
1995	FTSE Euro-DeutscheMark ¹² , Eurosterling, and Euroyen Bond Indexes	December 31, 1994
1996	FTSE ECU Bond Index ¹²	December 31, 1995
	FTSE Government and Eurobond Composite Index (GECI) ¹³	December 31, 1995
1997	FTSE US Inflation-Linked Securities Index	February 28, 1997
	FTSE Jumbo Pfandbrief Index	June 30, 1997
1998	FTSE US Treasury STRIPS Index	December 31, 1991
1999	FTSE EMU Government Bond Index (EGBI)	December 31, 1998
	FTSE Euro Broad Investment-Grade Bond Index (EuroBIG)	December 31, 1998
	FTSE Mortgage Float-Adjusted Index	June 30, 1999

³ Discontinued as of March 31, 2018

⁴ Discontinued as of December 31, 1995.

⁵ Redefined as of January 1999, with history dating to January 1978.

⁶ Discontinued as of March 31, 2005.

⁷ Discontinued as of December 31, 1998.

⁸ Market coverage of Brady bonds was migrated to the EMUSDGBI Index. Brady bond performance and characteristics are available via the Brady bond sector of the EMUSDGBI family of indexes.

⁹ Discontinued as of August 31, 2006.

¹⁰ Redefined as of May 1994, with history dating back to 1980. Replaced the old Large Pension Fund Baseline Bond Index in July 1995.

¹¹ Discontinued as of June 30, 2003. An alternative to the EMMF Index is the EMUSDGBI Capped Index, which limits exposure to any one country by placing a ceiling on the par value contribution of each country.

¹² The Euro-DeutscheMark and ECU Bond Indexes were discontinued as of December 31, 1998. Most members of these indexes are now included in the EuroBIG Index.

¹³ Discontinued as of December 31, 2001.

Figure 1. Historical summary of index introductions, cont'd

2000	FTSE World Broad Investment-Grade Bond Index (WorldBIG)	December 31, 1998
	FTSE Australian Broad Investment-Grade Bond Index (AusBIG)	June 30, 2000
	FTSE US Agency Zero 10+ Index ¹⁴	July 31, 2000
2002	FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI) ¹⁵	December 31, 1995
	FTSE US High-Yield Market Capped Index	December 31, 2001
	FTSE Polish Government Bond Index	December 31, 1999
2003	FTSE Singapore Government Bond Index	December 31, 1999
2005	FTSE Korean Government Bond Index	December 31, 2004
	FTSE Malaysian Government Bond Index	December 31, 2004
	FTSE Taiwan Government Bond Index	December 31, 2004
	FTSE Japanese Inflation-Linked Securities Index	June 30, 2004
2006	FTSE Sukuk Index ¹⁶	September 30, 2005
2007	FTSE World Government Bond Index – Japanese Investment Trust (WGBI-JIT)	December 31, 1996
2008	FTSE Asian Government Bond Index (AGBI)	December 31, 2007
	FTSE World Inflation-Linked Securities Index (WorldILSI)	April 30, 2007
	FTSE Mexican Government Bond Index	December 31, 2003
2010	FTSE Asian Broad Bond Index (ABBI)	September 30, 2008
2011	FTSE Middle East and North Africa Broad Bond Index (MENABBI)	December 31, 2010
	FTSE Chinese Government Bond Index	February 28, 2009
	FTSE Sri Lankan Government Bond Index	June 30, 2010
	FTSE Asian Government Extended Bond Index (AGBI Extended)	February 28, 2009
	FTSE Asia Pacific Government Bond Index (APGBI)	December 31, 2007
	FTSE Dim Sum (Offshore CNY) Bond Index	December 31, 2010
	FTSE CEEMEA Government Bond Index (CEEMEAGBI)	March 31, 2011
	FTSE Czech Republic Government Bond Index	March 31, 2011
	FTSE Hungarian Government Bond Index	March 31, 2011
	FTSE Israeli Government Bond Index	March 31, 2011
	FTSE South African Government Bond Index	March 31, 2011
	FTSE Turkish Government Bond Index	March 31, 2011
	FTSE LATAM Government Bond Index (LATAMGBI)	March 31, 2011
	FTSE Brazilian Government Bond Index	December 30, 2010
	FTSE Chilean Government Bond Index	March 31, 2011
	FTSE Colombian Government Bond Index	March 31, 2011
	FTSE Peruvian Government Bond Index	March 31, 2011
2012	FTSE RAFI Sovereign Developed Markets Bond Index Series	September 30, 2001
	FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index ¹⁷	September 30, 2011
	FTSE Hong Kong Government Bond Index	December 31, 2011
	FTSE Indian Government Bond Index	July 31, 2010
	FTSE Asian Government Bond Investable Index (AGBI Investable)	December 31, 2011

¹⁴ Discontinued as of December 31, 2012.

¹⁵ Entitled Global Emerging Market Sovereign Bond Index (ESBI) until November 2013.

¹⁶ Rebranded from Dow Jones Citigroup Sukuk Index as of April 2012.

¹⁷ Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Liquid discontinued as of September 30, 2016.

Figure 1. Historical summary of index introductions, cont'd

2012	FTSE Russian Government Bond Index	December 31, 2011
2013	FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI)	March 31, 2008
	FTSE WorldILSI Additional Markets Indexes	March 31, 2008
	FTSE Israeli Inflation-Linked Securities Index	March 31, 2008
	FTSE Korean Inflation-Linked Securities Index	March 31, 2008
	FTSE Emerging Markets Government Bond Index (EMGBI)	December 31, 2007
	FTSE Emerging Markets Government Bond Index – Japanese Investment Trust (EMGBI-JIT)	December 31, 2007
	FTSE Emerging Markets Government Bond Index Additional Markets Indexes	Varies by market
	FTSE Australian Inflation-Linked Securities Index	December 31, 2010
	FTSE RAFI World Corporate Investment-Grade Bond Index	March 31, 2012
2014	FTSE Chinese Government and Policy Bank Bond Index (CNGPBI)	December 31, 2010
	FTSE Debt Capacity World Government Bond Index (DCWGBI)	May 31, 2004
2015	FTSE European High-Yield Market Index	December 31, 2012
	FTSE Emerging Markets Broad Bond Index (EMUSDBBI)	December 31, 2012
	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index (EMUSDBBI Corp Capped Extended)	December 31, 2012
2016	FTSE Time-Weighted US Fallen Angel Bond Index	December 31, 2001
	FTSE Canadian Inflation-Linked Securities Index	December 31, 2010
	FTSE Colombian Inflation-Linked Securities Index	March 31, 2011
	FTSE New Zealand Inflation-Linked Securities Index	December 31, 2012
	FTSE Spanish Inflation-Linked Securities Index	May 31, 2014
	FTSE MPF World Government Bond Index	December 31, 2015
2017	FTSE World Government Bond Index – Developed Markets (WGBI-DM)	December 31, 1984
	FTSE World Government Bond Index – Extended (WGBI Extended)	December 31, 1984
	FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI)	December 31, 2013
	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank (CNYBBI – Interbank)	December 31, 2013
2018	Emerging Markets Government Bond Index – Capped (EMGBI-Capped)	December 31, 2007
	Asian Government Bond Index – Capped (AGBI-Capped)	December 31, 2007
	Romanian Government Bond Index	December 31, 2012

Highlights of major index launches and changes since January 2017

FTSE World Government Bond Index – Developed Markets

The FTSE World Government Bond Index - Developed Markets (WGBI-DM) was launched in July 2017. It measures the performance of fixed-rate, local currency, investment-grade sovereign bonds issued in developed markets. The Index composition is based on the global sovereign markets and constituents of the FTSE World Government Bond Index (WGBI), excluding any markets that are classified as emerging. A country is classified to be “emerging” if it is defined by the International Monetary Fund (IMF) World Economic Outlook to be among “emerging and developing economies” or if it is defined by the World Bank (WB) to be among “low-income economies” or “lower middle-income economies” or “upper-middle-income economies”.

A new developed market entering the WGBI will also enter the WGBI-DM at the same time. Markets being removed from the WGBI because they have met WGBI's exit criteria will also be removed from the WGBI-DM.

FTSE World Government Bond Index – Extended

The FTSE World Government Bond Index – Extended (WGBI-Extended) was launched in July 2017. It measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI-Extended includes any market that meets the size and credit criteria of the World Government Bond Index (WGBI) and is also a market already present in or eligible to be in one of the four regional government bond indexes. These regional indexes are the Asia Pacific Government Bond Index (APGBI), Central Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI), Emerging Markets Government Bond Index (EMGBI) and Latin American Government Bond Index (LATAMGBI).

FTSE Chinese (Onshore CNY) Broad Bond Index

The FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI) was launched in August 2017. It measures the performance of the onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt issued in mainland China. The CNYBBI provides a comprehensive measure of the Chinese onshore market by expanding our current coverage of government and policy banks issues to other governments, agencies, regional governments, and corporations.

FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank

The FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank (CNYBBI-Interbank) was launched in September 2017. It measures the performance of a subset of bonds from the Chinese (Onshore CNY) Broad Bond Index which tracks onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt settled and traded in the interbank market issued in mainland China.

FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped)

The FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped) was launched in February 2018. It is designed to limit individual markets exposure in the Emerging Markets Government Bond Index by imposing a maximum country weight of 10%.

FTSE Asian Government Bond Index – Capped (AGBI-Capped)

The FTSE Asian Government Bond Index – Capped (AGBI-Capped) was launched in February 2018. It is designed to limit individual markets exposure in the Asian Government Bond Index by imposing a maximum country weight of 20%.

FTSE RAFI World Corporate Investment-Grade Bond Index

Starting with the 2017 annual rebalancing, fundamental weights are calculated for publicly-traded companies only. Any issues, either a public or a private, that are linked to a publicly-traded company will receive a fundamental weight.

Data source changes for several local currency indexes

Effective November 17, 2017, the reinvestment rate for the Chinese onshore currency bonds had changed from 1-month deposit rate to the savings deposit rate published by the People's Bank of China. The Chinese Government Bond Index, the Chinese Broad Bond Index, and the Chinese Government and Policy Bank Bond Index (CNGPBI) adopted the use of the new reinvestment rate as of November 1, 2017.

Effective with the December 2017 profile, the issue size criteria for Indian government bonds changed from "Outstanding Amount in Market" to "Outstanding Amount" updated on a weekly basis on Reserve Bank of India (RBI) website. The RBI conducts market operation to repurchase/resale government bonds in the secondary market. However, these operations are not fully transparent as the exact bond amounts held are not published. Since there is no official reference to confirm the correctness of "Outstanding Amount in Market", the outstanding amount on the RBI website will be used for the size criteria.

China joined Emerging Markets and Regional Government Bond Indexes

Effective with the February 2018 profile, China joined the FTSE Emerging Markets Government Bond Index, FTSE Asian Government Bond Index and Asia Pacific Government Bond Index.

Romania joined the Emerging Markets and Regional Government Bond Indexes

Effective with the May 2018 profile, Romania joined the Emerging Markets Government Bond Index and CEEMEA Government Bond Index.

Pricing Source Changes

As part of our initiatives to ensure independence of data inputs, the pricing source was changed for the following between January 2017 and July 2018:

Effective February 17, 2017, the pricing source for the local currency Swiss government bonds changed from Swiss Exchange to bid-side pricing from Citi trader.

Effective June 12, 2017, the pricing source for the bonds in the FTSE Euro Broad Investment-Grade Bond (EuroBIG) Index, excluding domestic sovereign bonds, changed from Citi trader pricing to Thomson Reuters.

Effective August 14, 2017, the pricing source for the bonds in the Chinese Government and Policy Bank Bond Index and for the local currency Brazilian, Colombian, and Peruvian government bonds changed from Citi trader pricing to Thomson Reuters.

Effective November 17, 2017, the pricing source for the local currency Hong Kong government bonds changed from Citi trader pricing to Thomson Reuters.

Effective December 11, 2017, the pricing source for the government bonds in the Dim Sum Index changed from Citi trader pricing to Thomson Reuters.

Effective January 25, 2018, the pricing source for the local currency Hungarian government bonds and for the Eurodollar Euro Bond, Eurosterling Bond, Euroyen Bond Indexes changed from Citi trader pricing to Thomson Reuters.

Origination Year Generic Construction Change (August 2018)

Effective with the August 2018 profile, Freddie Mac 15-Year and 30-Year Fixed Rate Cash Issuance Gold PCs, pool prefix V6 and V8, respectively, will be eligible for inclusion in the US Broad Investment-Grade Bond Index (USBIG) and its related indexes and in the Mortgage Float-Adjusted Index.

Upcoming Changes to Price Source, Data Delivery and Holiday Calendars (Announced June 29, 2018)¹⁸

On June 29, 2018, FTSE Russell announced several changes to the pricing sources and methodologies used for the US credit and securitized indexes, and government bond indexes. When these changes are implemented, publication of monthly data for the FTSE US credit indexes will be made available on the last business day of the month, rather than the following business day. Additionally, local holiday calendars will be used in index production as part of these changes. Further details are provided below.

1. Price Source Changes

Effective from September 17, 2018, the pricing sources and snap times for the credit and securitized indexes will change. Bid-side prices will continue to be used as inputs to the calculation of the indexes.

Current and New Pricing Sources and Snap Times for the Credit and Securitized Indexes

Index	Current		New	
	Source	Time	Source	Time
US Broad Investment-Grade Bond Index (USBIG)				
Agency	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
ABS	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
Credit	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
Eurodollar Bond Index	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
Emerging Markets USD Broad Bond Index				
Corporate	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
Asian Broad Bond Index (ABBI)	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
MENA Broad Bond Index (MENABBI)	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)
Sukuk Index	Citi	Local Market Close	Thomson Reuters	4:00 p.m. (New York)

¹⁸ The full index announcement is available on www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Effective from November 12, 2018, the pricing sources and snap times will change for the government bond indexes. Additionally, the quote convention for Japanese government bond prices will change from mid-side to bid-side.

Current and New Pricing Sources and Snap Times for the Government Bond Indexes

Index	Current		New	
	Source	Time	Source	Time
World Government Bond Index (WGBI)				
Australia	Citi	4:30 p.m. (Sydney)	Thomson Reuters	6:00 p.m. (Tokyo)
Austria	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Belgium	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Canada	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
Denmark	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Finland	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
France	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Germany	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Ireland	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Italy	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Japan	Citi	3:00 p.m. (Tokyo)	Thomson Reuters	6:00 p.m. (Tokyo)
Netherlands	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Norway	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
South Africa	Citi	5:00 pm (Johannesburg)	Johannesburg Stock Exchange	5:00 pm (Johannesburg)
Spain	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Sweden	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Switzerland	Citi	5:00 p.m. (Zurich)	Thomson Reuters	4:15 p.m. (London)
United Kingdom	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
United States	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
World Inflation-Linked Securities Index (WorldILSI)				
Australia	Citi	4:30 p.m. (Sydney)	Thomson Reuters	6:00 p.m. (Tokyo)
France	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Germany	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Italy	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Japan	Citi	3:00 p.m. (Tokyo)	Thomson Reuters	6:00 p.m. (Tokyo)
Spain	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Sweden	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
United Kingdom	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
United States	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
EM Inflation-Linked Securities Index				
Turkey	Citi	5:00 p.m. (Istanbul)	Thomson Reuters	2:00 p.m. (London)
CEEMEA Government Bond Index				
Czech Republic	Citi	5:00 p.m. (Prague)	Thomson Reuters	4:15 p.m. (London)
Turkey	Citi	5:00 p.m. (Istanbul)	Thomson Reuters	2:00 p.m. (London)
Russia	Citi	6:45p.m. (Moscow)	Thomson Reuters	4:15 p.m. (London)
Greek Government Bond Index	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
New Zealand Government Bond Index	Citi	4:30 p.m. (Sydney)	Thomson Reuters	6:00 p.m. (Tokyo)
Portuguese Government Bond Index	Citi	4:15 p.m. (London)	Thomson Reuters	4:15 p.m. (London)
Taiwan Government Bond Index	Citi	1:30 p.m. (Taipei)	Thomson Reuters	6:00 p.m. (Tokyo)

Index	Current		New	
	Source	Time	Source	Time
US Treasury STRIPS	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
US Treasury Benchmark (On-the-Run) Indexes	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
US Treasury Bill Indexes	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)
US Treasury 0-1 Year Index	Citi	3:00 p.m. (New York)	Thomson Reuters	3:00 p.m. (New York)

2. Holiday Pricing Calendars

At present, the prices for several local markets come from “trading centers”. As a consequence, prices for a local market are unavailable if its associated trading center is closed, even if the local market is open. Effective from November 12, 2018, each local market will observe its own holiday calendar: if a local market is on holiday, the closing prices used for that day will be the closing prices from the previous day.

The table below lists the local currency markets where the holiday calendar will change to the local calendar. Other markets that are currently priced by third-party pricing sources will continue to follow the local market holiday calendar.

Current “Trading Center”	Local Currency Market	Current Holiday Pricing Calendar	New Holiday Pricing Calendar
Sydney	Australia New Zealand	Australia Australia	Australia New Zealand
London	Austria Belgium Denmark Finland Germany Greece Ireland Italy Netherlands Norway Portugal Spain Sweden United Kingdom	UK UK UK UK UK UK UK UK UK UK UK UK UK UK	Euro Euro Denmark Euro Euro Euro Euro Euro Euro Euro Norway Euro Euro Sweden UK
New York	Canada United States	United States United States	Canada United States

3. **Delivery Time Changes**

The change in pricing sources will allow the monthly data for the FTSE fixed income US credit indexes to be published on the last business day of the month. The change to same-day publication will be effective from September 28, 2018. Further details on timing of index data distribution can be found in the remainder of this document.

Additional details of changes are noted in the applicable section for each index.

General Methodology

The fixed income indexes covered in this publication follow the general methodology outlined in this section. When necessary, more detailed information is provided in a separate section on each index.

Index profile – monthly rebalancing

With the growing importance of global indexes to investors and portfolio managers throughout the world, it is important to communicate the new index preliminary profile on a timetable that will give investors sufficient time to respond to changes in their benchmarks within their own time zone.

To give investors time to prepare rebalancing transactions, a profile fixing date is set ahead of each month-end to freeze the index constituents.

Fixing dates

The annual schedule of fixing dates is made available on the website at www.yieldbook.com/m/indices. Index fixing dates provide a clear reference point for index users to know in advance of any changes to the composition of the indexes for the upcoming month. On each index fixing date, publicly available securities information is used to determine index eligibility and indicative values for the following month's index profile. A preliminary profile setting out the anticipated composition of each index is announced via the website one (1) US business day following the index fixing date. Between announcement of the preliminary profile and calendar month-end, the index team continues to track market activities and will remove issues that are called, tendered, or defaulted.

This process enables those tracking these indexes to anticipate changes to index composition, providing sufficient clarity and time to effect any consequent portfolio rebalancing.

Index rules stipulate that there must be a minimum of four (4) business days following each index fixing date and before calendar month-end in all of the following business regions: US, UK, Eurozone, Japan, and Australia. Index fixing dates are subject to change if unforeseen circumstances arise affecting these business days, such as catastrophic natural disasters or regional political conflicts.

Issues' eligibility

For an issue to be eligible for inclusion in an index, all information on the issue must be publicly available on or before the fixing date, and the first settlement and interest accrual date of the issue must be on or before the end of the month. While Treasury auctions may be announced prior to the fixing date, the results must be final by the fixing date in order to be considered for inclusion.

At the same time, bonds that no longer meet the maturity (that is, bonds with an average life of less than one year from the last calendar day of the profile month), criteria for amount outstanding, or rating are removed from the index. Any buyback or reverse auction occurring on or before the fixing date may also cause the bond to be removed from the index.

Between fixing dates

Index constituents remain the same for the calendar month, and interim returns are calculated based on the index composition. Reconstitution on a monthly basis, together with the large number of bonds in the indexes, provide a reasonable compromise between stability and comprehensiveness.

Maturity and issue size

The total rate of return is calculated for issues with a remaining maturity of at least one year. In addition, each market has minimum size criteria designed to include only those bonds that are "reasonably available" for

institutional investors under normal market circumstances. The specific size criterion will be discussed in the individual index sections.

Money market indexes measure the performance of instruments with maturities of 12 months or less.

Terms and conditions data

The primary source for indicative bond data is Thomson Reuters, unless otherwise noted in the details of a specific index section.

Calculations and analytics

Calculations and analytics are provided by The Yield Book Inc. and/or FTSE Fixed Income LLC unless otherwise specified.

Pricing

Pricing Source

A combination of pricing providers that vary based on asset class are used to price the indexes. A robust validation process is applied to pricing inputs to ensure that the quality of valuations within the benchmarks remains high. The remainder of this document provides further details on specific sources.

The indexes are calculated Monday through Friday except Christmas Day (observed) and New Year's Day (observed).

Pricing for local markets

Effective from November 12, 2018, each local market will observe its own holiday calendar: if a local market is on holiday, the closing prices used for that day will be the closing prices from the previous day.

Under the methodology effective through November 11, 2018, in order to determine whether a holiday is applicable for index determination purposes, the local market where the bond is domiciled is considered as well as the location of the trading hub ("Trading Center") for that sector. A market is considered to be on holiday if either that market or its defined Trading Center is observing a holiday. Figure 2 shows the local markets, Trading Centers (in parentheses), and local times used to determine the closing prices for the indexes.

As an example, New York is the Trading Center for U.S. and Canada; as such, when the U.S. is observing a holiday, the closing prices used for the bonds in both U.S. and Canadian markets for that day are the closing prices from the previous day irrespective of whether the Canadian market is open or not on such day. If Canada is observing a holiday but New York (its Trading Center) is not, the closing prices for the Canadian bonds for that day are from the previous day.

Hong Kong and London are two additional Trading Centers where related markets follow the observed holidays of these defined Trading Centers and for which the closing prices used on such holiday for those related markets are the previously available closing prices: 1) China (Offshore) market is related to the Hong Kong Trading Center; and 2) Eurozone and Scandinavia markets are the related local markets to the London Trading Center.

For example, if London is observing a holiday, the closing prices used for the bonds in Germany, France, Italy, and other Eurozone countries, Denmark, Norway and Sweden are the prices from the previous available day irrespective of whether these related local markets are open or not on such day¹⁹.

Eurozone countries are considered as a single bloc and they use the European Central Bank's Trans-European Automated Real Time Gross Settlement Express Transfer (TARGET) calendar in place of the local market

¹⁹ To be clear, although an individual local market may be open for trading when its defined Trading Center is closed, the closing prices will not be updated for such day for this related local market and previously available closing prices are used for index calculation.

calendars to determine holidays. As such, the closing prices used for all Eurozone countries on any holiday under the TARGET closing days calendar are the previously available closing prices of the respective countries. Figure 2 shows the local market times used for the pricing of the fixed income indexes. The closing time for US indexes and the Canadian Government Bond Index is that of the futures market. In the event of an early close of the cash or futures markets, the futures' market close is used to time the pricing. Effective November 12, 2018, the pricing sources and snap times will change for the government bond indexes, see pages 16-17.

Prices are bid-side with the exception of Japanese and Mexican government bonds for which, mid-prices are used in order to conform to market conventions. Effective November 12, 2018, the quote convention for Japanese government bond prices will change to bid-side.

Figure 2. Local markets with local closing times and defined trading centers²⁰

Americas		Europe, Middle East, and Africa, continued	
Brazil	2:30 p.m. (Sao Paolo)	Poland	4:30 p.m. (Warsaw)
Canada	3:00 p.m. (New York)	Russia	6:45 p.m. (Moscow)
Chile	1:30 p.m. (Santiago)	South Africa	5:00 p.m. (Johannesburg)
Colombia	1:00 p.m. (Bogota)	Sweden	4:15 p.m. (London)
Mexico	2:00 p.m. (Mexico City)	Switzerland	5:00 p.m. (Zurich)
Peru	1:30 p.m. (Lima)	Turkey	5:00 p.m. (Istanbul)
United States	3:00 p.m. (New York)	United Kingdom	4:15 p.m. (London)
Europe, Middle East, and Africa		Asia Pacific and Japan	
Austria*	4:15 p.m. (London)	Australia	4:30 p.m. (Sydney)
Belgium*	4:15 p.m. (London)	China	4:30 p.m. (Shanghai)
Finland*	4:15 p.m. (London)	China (Offshore)	6:00 p.m. (Hong Kong)
France*	4:15 p.m. (London)	Hong Kong	4:30 p.m. (Hong Kong)
Germany*	4:15 p.m. (London)	India	5:00 p.m. (Mumbai)
Greece*	4:15 p.m. (London)	Indonesia	4:30 p.m. (Jakarta)
Ireland*	4:15 p.m. (London)	Japan	3:00 p.m. (Tokyo)
Italy*	4:15 p.m. (London)	Malaysia	5:00 p.m. (Kuala Lumpur)
Netherlands*	4:15 p.m. (London)	New Zealand	4:30 p.m. (Sydney)
Portugal*	4:15 p.m. (London)	Philippines	4:00 p.m. (Makati City)
Spain*	4:15 p.m. (London)	Singapore	4:30 p.m. (Singapore)
Czech Republic	5:00 p.m. (Prague)	South Korea	3:30 p.m. (Seoul)
Denmark	4:15 p.m. (London)	Sri Lanka	4:00 p.m. (Colombo)
Hungary	5:00 p.m. (Budapest)	Taiwan	1:30 p.m. (Taipei)
Israel	5:25 p.m. (Tel Aviv)	Thailand	4:30 p.m. (Bangkok)

* Eurozone member state

²⁰ Defined Trading Center is shown in bracket e.g. (London) for Germany, France, Italy, and other Eurozone countries.

Pricing for non-local markets

Effective from November 12, 2018, each local market will observe its own holiday calendar. Under the methodology effective prior to this date, non-local market bonds and indexes denominated in USD, EUR and JPY use New York, TARGET and London, and Tokyo respectively to determine if a holiday is applicable. On any day that is deemed a holiday, the closing prices used will be the previously available closing prices.

To be more precise, for EUR denominated non-local bonds follow both TARGET and Trading Center (London) holiday calendars as these prices also come from London (which is the same as local market EUR bonds).

For example, USD-denominated indexes such as the Asian Broad Bond Index, Middle East and North Africa Broad Bond Index, Eurodollar Bond Index, Sukuk Index, and Emerging Markets US Dollar Government Bond Index follow the holiday calendar applicable to New York. On any day where U.S. observes a holiday, the closing prices used for these indexes are the prices from the previous available day.

Verification

Reliable pricing of each security is necessary to ensure reliable index values and returns, thus third-party pricing sources and statistical techniques may be used to identify pricing anomalies.

The prices are provided as indications only. Price challenges are reviewed by the index team which may, at its discretion, adjust prices and update pricing models.

Settlement

For daily calculations, it is assumed that indexes settle on a same-day basis 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. The last business day of the month is based on the Trading Center's holiday calendar and is used for its respective related markets. Monthly holding periods, therefore, are exactly one calendar month. For example, the January return period would run from the close on December 31 to the close on January 31, regardless of the last business day.

Index sectors classification

Maturity

In addition to the broad categories published, sub-sector breakdowns are also provided for many of the fixed income indexes. One such sub-division is based on the remaining maturity of the underlying securities. The maturity sector buckets are defined by including all underlying issues with a remaining average life at least equal to the lower bound, but less than the upper bound of the particular category. For example, the one- to three-year sector of the World Government Bond Index (WGBI) includes all securities in the WGBI with a remaining average life of at least one year, but less than three years. The set of bonds is then held constant for the calculation month, even if the average life drops below the lower bound of the maturity bucket. The only exception to this rule is the mortgage sector, which is included in its entirety in the one- to ten-year sector.

Country of issuer

The nationality of an issuer is used as another method of sub-dividing an index. In general, the country of issuer is based on the domicile of the parent company. With global consolidation being an everyday part of business, the country of issuer classification can become complex. For this classification, the following approach has been adopted.

An overseas operating subsidiary assumes the nationality of its parent if it is guaranteed by its parent; otherwise, it retains its own nationality. For example, Toyota Motor Credit Corporation, an operating subsidiary of Toyota Motor Company (registered in Japan), assumes its own nationality of the United States as it is not guaranteed by its parent.

A special purpose, offshore, debt-issuing subsidiary typically assumes the nationality of its parent, whether or not guaranteed by the parent. For example, Diageo Finance BV (a financing vehicle registered in the Netherlands) assumes the nationality of its ultimate parent, Diageo PLC (registered in the United Kingdom).

If any ambiguity exists, an evaluation process will take place to determine the appropriate classification.

Index quality

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.

For certain indexes, implied rating is applied as supplement. If an individual issue is not rated by S&P or Moody's but its issuer has a S&P and/or Moody's rating, the issuer's rating is assigned to the issue as its implied rating as determined by the method stated above.

Defaults

When an issuer defaults, or 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. However, the bonds will not 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.

Exchange rates

The World Markets Company Plc ("WM")/Reuters closing spot and forward rates are used²¹. WM takes several snapshots at regular intervals centered on the fixing time of 4:00 p.m. London time and selects the median rate for each currency. All rates are mid-market quotations and appear on Reuters (see WMRSPOT01).

Return computation

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 for each security are price change, principal payments, coupon payments, accrued interest, and reinvestment income on intra-month cash flows. The total returns are market capitalization weighted using the security's beginning-of-period market value (see [Figure 3](#)). In the case of multi-currency or non-base indexes, the total return also includes currency movement (see [Figure 4](#)).

²¹ The World Government Bond Index – Japanese Investment Trust (WGBI-JIT) and Emerging Markets Government Bond Index – Japanese Investment Trust (EMGBI-JIT) use the telegraphic transfer middle (TTM) exchange rates provided by Bank of Tokyo-Mitsubishi UFJ.

Figure 3. 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 + Reinvestment Income

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.

Figure 4. Total rate of return calculation methodology for base currency returns, unhedged

Total Rate of Return (%)

$$\left\{ \left[1 + \left(\frac{\text{Local Currency Return}}{100} \right) \right] \times \left(\frac{\text{End-of-Month Spot Rate}}{\text{Beginning-of-Month Spot Rate}} \right) - 1 \right\} \times 100$$

This equation holds true only if the spot rates are quoted as base currency per unit of foreign currency.

The monthly currency-hedged return is calculated by using a rolling one-month forward exchange contract as a hedging instrument. The face value of the contract is equal to the estimated end-of-month full market value. To calculate this value, the bond's yield is assumed to be unchanged from the beginning of the month. Any known cash flows are then taken into account, such as coupon or principal payments, and interest expected to accrue for the period is also added in. This calculation leaves the intra-month changes in bond prices from yield movements unhedged. Any principal movement resulting from yield change is then settled at end-of-month spot exchange rates. [Figure 5](#) gives an example of the calculation formula from the point of view of a US investor.

Figure 5. Total rate of return calculation methodology, currency hedged

Beginning-of-Period Value

$$[(\text{Beginning Price} + \text{Beginning Accrued}) \times \text{Beginning Par Outstanding}] \times \left[\left(\frac{\text{Beginning-of-Period}}{\text{Spot Exchange Rate}} \right) \left(\frac{\text{US Dollar}}{\text{Local Currency}} \right) \right]$$

End-of-Period Value

$$\left[\left(\frac{\text{End-of-Period Local Currency Value, Assuming Unchanged Yield}}{\text{Known Intra-Month Cash Flows and Interest Expected to Accrue}} \right) + \left[\left(\frac{\text{Beginning-of-Period One-Month Forward Exchange Rate}}{\text{US Dollar}} \right) \left(\frac{\text{Local Currency}}{\text{Local Currency}} \right) \right] + \left[\left(\frac{\text{Change in Market Value of Principal Amount Due to Yield Change}}{\text{End-of-Period Spot Exchange Rate}} \right) \left(\frac{\text{US Dollar}}{\text{Local Currency}} \right) \right]$$

This equation holds true only if the spot rates are quoted as base currency per unit of foreign currency.

Index data distribution

For the World Government Bond Index (WGBI), World Government Bond Index – Japanese Investment Trust (WGBI-JIT), Debt Capacity World Government Bond Index (DCWGBI), and the Asian Government Bond Index (AGBI)

- Daily (except last business day) reports, issue-level and sector-level data: 6:30 p.m. E.T., same day
- Final last business day daily and monthly reports, sector-level and issue-level data: 11:45 p.m. E.T., same day

When New York is observing Daylight Saving Time (DST), the daily delivery of WGBI data may be delayed until 7:30 p.m. DST.²²

For the Emerging Markets Government Bond Index (EMGBI) and Emerging Markets Government Bond Index – Japanese Investment Trust (EMGBI-JIT)

- Daily (except last business day) reports, issue-level and sector-level data: 7:30 p.m. E.T., same day
- Final last business day daily and monthly reports, sector-level and issue-level data: 11:45 p.m. E.T., same day

For the Australian Broad Investment-Grade Bond Index (AusBIG)²³

- Daily (except last business day) reports, issue-level and sector-level data: 6:30 p.m. E.T., same day
- Estimate last business day daily reports and sector-level data: 11:45 p.m. E.T., same day
- Final last business day daily and monthly reports, sector-level and issue-level data: 9:00 p.m. E.T., first business day US calendar

²² In observance of the Daylight Saving Time period between the US and Mexico, Mexican government prices will come in one hour late during the following time transition periods, thus delaying delivery by one hour. Transition periods for 2018 are March 12-March 30 and October 29-November 2.

²³ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

For all other indexes²³

- Daily (except last business day) report, sector-level and issue-level data: 11:45 p.m. E.T., same day
- Estimate last business day daily reports and sector-level data: 11:45 p.m. E.T., same day
- Final last business day daily and monthly reports, sector-level and issue-level data: 9:00 p.m. E.T., first business day US calendar

Notifications

Under extenuating circumstances, index production may be delayed. If index production is delayed beyond its normally scheduled times, a notice will be posted to www.yieldbook.com/m/indices and delivered to subscribers of Production News. Additionally, revisions to the data delivery schedule due to US holidays are also posted in advance on the website.

Subscribers to Index Production News will automatically receive notifications relating to the data delivery schedule via email.

Data correction

The index team strives to produce error-free indexes; however, there are occasions when erroneous data is published. These circumstances may be caused by, but not limited to, calculation or pricing errors, missing data, or incorrect indicative data. On rare occasions, and only in extreme cases, the index team may conclude that restatement is required. When determining if restatement is necessary, factors such as the magnitude of the error, the overall impact on the data, the sector affected, and whether the error affects daily and/or monthly results are taken into consideration.

If the index team finds it necessary to restate, an announcement will be posted on the website at www.yieldbook.com/m/indices and the data will be redistributed. Subscribers to Index Production News will automatically receive all correction notifications via email.

Changes in index methodology

The index team reviews its indexes periodically to ensure that their composition and methodologies adequately represents the intended universe. If any changes are required (including changes to pricing, design criteria and calculation assumptions), an announcement will be posted on the website at www.yieldbook.com/m/indices.

During the Index review process, the index team may determine that an Index is no longer required due to market structure change, definition change or other conditions which may make an index no longer representative of its intended interest. In such case, the index team will, where feasible, maintain the index for a defined period of time to accommodate an orderly transition. The rationale for the cessation of the index, termination procedures and the relevant effective dates will be publicly announced via the website at www.yieldbook.com/m/indices. Users of a terminated index should consider the impact that the termination of the index may have on their business. Index users are encouraged to contact FTSE Russell for additional information on available benchmarks.

Index users should be aware that various factors, including factors beyond the control of the index team, might necessitate material changes or termination of an index.

Expert judgment

The indexes are governed by a predefined, transparent set of design criteria which can be found in this publication. The exercise of expert judgment is at times necessary to ensure the complete and accurate determination and production of the indexes.

During the normal course of producing the indexes, data from primary sources may be missing or incorrect. The index team reserves the right to exercise expert judgment to ensure the data quality of the index is maintained. Actions include, but are not limited to, rolling data, modeling data, or using alternative data sources.

Extraordinary events or periods of market disruption may also facilitate the use of expert judgment by the index team in order to continue the production of its indexes. In the case of extraordinary events or periods of market disruption, information about the event and actions taken will be posted on the website at www.yieldbook.com/m/indices.

Qualified analysts are trained on index construction rules, systems and support tools for the purpose of price validation and index determination. The training covers the exercise of expert judgment. The index team oversees the activities of data analysts including the exercise of expert judgment.

Global indexes

Index range

Global indexes

Global indexes
FTSE World Government Bond Index (WGBI)
FTSE EMU Government Bond Index (EGBI)
FTSE G5 and G7 Government Bond Indexes
FTSE European World Government Bond Index
FTSE Non-Base Currency Government Bond Indexes
Related indexes
FTSE WGBI Additional Markets Indexes
FTSE World Government Bond Index – Developed Markets (WGBI-DM)
FTSE World Government Bond Index – Extended (WGBI-Extended)
FTSE World Government Bond Index – Japanese Investment Trust (WGBI-JIT)
FTSE Debt Capacity World Government Bond Index (DCWGBI)
FTSE MPF World Government Bond Index (MPF WGBI)
FTSE After-Tax Bond Indexes
FTSE World Broad Investment-Grade Bond Index (WorldBIG)
Related indexes
FTSE World Government Bond Index (WGBI)
FTSE US Broad Investment-Grade Bond Index (USBIG)
FTSE Euro Broad Investment-Grade Bond Index (EuroBIG)
FTSE Eurodollar, Eurosterling, Euroyen Bond Indexes
FTSE World Inflation-Linked Securities Index (WorldILSI)
FTSE Euro Inflation-Linked Securities Index (EuroILSI)
Related indexes
FTSE WorldILSI Additional Markets Indexes
FTSE Eurobond Indexes
FTSE World Money Market Indexes (WMMI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 30 years of history available. The WGBI is a broad benchmark providing exposure to the global sovereign fixed income market.

The FTSE World Broad Investment-Grade Bond Index (WorldBIG) is a multi-asset, multi-currency benchmark which provides a broad-based measure of the global fixed income markets. The inclusion of government, government-sponsored/supranational, collateralized, and corporate debt makes the WorldBIG a comprehensive representation of the global, investment-grade universe.

The FTSE World Inflation-Linked Securities Index (WorldILSI) measures the returns of inflation-linked sovereign bonds with fixed-rate coupon payments that are linked to an inflation index. The WorldILSI tracks debt from thirteen countries denominated in ten currencies and is a valuable benchmark for investors who are concerned with real returns, rather than notional.

The FTSE Eurobond Indexes provide a comprehensive and relevant measure of performance for Eurodollar, Eurosterling, and Euroyen bonds. These indexes comprise investment-grade issues with at least one year until maturity.

The FTSE World Money Market Indexes (WMMI) measure the performance of money market instruments in 18 currencies. The indexes track one-, two-, three-, six-, and twelve-month Eurodeposits, offering investors a good measure of short-term markets.

Global indexes

FTSE World Government Bond Index (WGBI)

Sovereign | Multi-currency

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 30 years of history available. The WGBI is a broad benchmark providing coverage of the global sovereign fixed income market.

The index covers a broad array of countries. Sub-indexes are available in any combination of currency, maturity, and rating.

FTSE World Government Bond Index	
Americas	Asia Pacific and Japan
Canada	Australia
Mexico	Japan
United States	Malaysia
	Singapore
EMEA	
FTSE EMU Government Bond Index (EGBI)	Denmark
Austria	Norway
Belgium	Poland
Finland	South Africa
France	Sweden
Germany	Switzerland
Ireland	United Kingdom
Italy	
Netherlands	
Spain	

Design criteria and calculation methodology

To join the WGBI, a market must satisfy the market size and credit criteria set out in Figure 6. The lack of barriers-to-entry into a market is an additional requirement. Once a market has met all three requirements, an announcement will be made that this market is eligible for inclusion into the WGBI. If it continues to meet all three requirements for three consecutive months after the announcement, the market will join the WGBI at the end of the three months that follow. Note that, any new market inclusion due the month of January will be postponed by one month and the market will join the respective index in February.

If an announced market meets any of the exit criteria in Figure 6 it will not be included in WGBI.

Markets meeting any of the exit criteria will be removed from the index and will be added to the FTSE WGBI Additional Markets Indexes.²⁴

Figure 6. FTSE World Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ²⁵
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile and added to the FTSE WGBI Additional Markets Indexes.

²⁴ For more information on FTSE WGBI Additional Markets Indexes, please see page 37.

²⁵ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

Figure 6. FTSE World Government Bond Index design criteria, cont'd

Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Mexico: MXN 10 billion United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Norway: NOK 20 billion Poland: PLN 5 billion South Africa: ZAR 10 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Malaysia: MYR 4 billion Singapore: SGD 1.5 billion
Minimum credit quality²⁶	Entry: A- by S&P and A3 by Moody's, for all new markets. Exit: Below BBB- by S&P and Baa3 by Moody's.
Barriers-to-entry	Entry: A market being considered for inclusion should actively encourage foreign investor participation and show a commitment to its own policies. Exit: Circumstances can change over time and a country may find that revising its policies makes sense for its national welfare. However, it is possible that new policies, including but not limited to ownership restrictions and capital controls, can have the effect of limiting investors' ability to replicate that country's portion of the index. In that case, it may be necessary to remove that country from the WGBI. If barriers to entry are identified, an announcement will be made that the particular market has become ineligible, stating the reasons. That market will then be removed from the following month's profile and moved to the FTSE WGBI Additional Markets Indexes.

²⁶ Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. The credit qualifications of the index are treated as provisional, in order to give market participants time to react to last-minute downgrades. A market will be removed from the index after the fixing if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. Removal from the index, on or after the fixing date, is not reversible except by qualifying for the index once again, which takes a minimum of six months. There is no specific rule concerning default or what constitutes default. Conceivably, a market could technically default, but an immediate rescue could leave its existing bonds in the investment-grade category. Only a downgrade to below investment-grade would trigger a credit-related expulsion from the index.

Figure 6. FTSE World Government Bond Index design criteria, cont'd

Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 7. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 7.
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Figure 7. FTSE World Government Bond Index composition

WGBI markets	Security type
Australia	Excludes tax rebate bonds
Austria	Includes Bundesanleihen Excludes Bundesobligationen bonds
Belgium	N/A
Canada	N/A
Denmark	Excludes mortgage credit bonds
Finland	Excludes sinking fund, putable, extendable, housing fund and yield bonds
France	Includes Obligations Assimilables du Trésor (OATs) and Bons du Trésor à Intérêt Annuel Normalisé (BTANs)
Germany	Includes Bundesrepublik, Schatzanweisungen, Bundesobligationen, Unity bonds, Treuhandanstalt, and Treuhandobligationen Excludes Schuldscheine, Unverzinsliche, Bundespost, Bundesbahn, and European Recovery Program Bonds
Ireland	N/A
Italy	Includes Buoni del Tesoro Poliennale (BTPs)
Japan	Includes callable bonds Excludes JGBs for individuals and discount bonds
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
Mexico	Excludes bonds issued prior to January 1, 2003
Netherlands	N/A
Norway	Includes benchmark bonds Excludes loans and lottery loans issued before 1991
Poland	N/A
Singapore	N/A
South Africa	Excludes zero-coupon bonds
Spain	Includes Bonos and Obligaciones del Estado Excludes discount bonds (Letras and Pagares del Tesoro)
Sweden	Includes Riksoptioner
Switzerland	Includes callable bonds Excludes book liabilities
United Kingdom	Includes callable, partly paid, and convertible (into other gilt issues) bonds Excludes rump gilts and perpetuals (undated)
United States	Includes callable bonds

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 8. FTSE World Government Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing²⁷	Citi trader pricing except for: • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close. For more information on local market close, see Figure 2 “Local Markets with Local Closing Times and Defined Trading Centers.”
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. Each year's scheduled fixing dates are published on the website. .
Base date	December 31, 1984

²⁷ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Global indexes

FTSE WGBI Additional Markets Indexes

The FTSE WGBI Additional Markets Indexes include markets that are being tracked, but do not, at present, qualify for inclusion in the WGBI based on the criteria outlined previously. A market may remain as a FTSE WGBI Additional Markets Index because it discourages foreign ownership, for example, even if it meets the size and credit criteria. Once a market has met all the requirements, an announcement will be made that this market is eligible for inclusion in the WGBI. If it continues to meet all the requirements for three consecutive months after the announcement, then the market will be included in the WGBI at the end of the three months that follow and will no longer be part of the FTSE WGBI Additional Markets Indexes. Note that, any new market inclusion due the month of January will be postponed by one month and the market will join the respective index in February.

If an announced market meets any of the exit criteria in Figure 6, it will not be included in WGBI and will remain in the FTSE WGBI Additional Markets Indexes.

FTSE WGBI Additional Markets Indexes		
Americas	Asia Pacific and Japan	EMEA
Brazil	China	Czech Republic
Chile	Hong Kong	Greece
Colombia	India	Hungary
Peru	Indonesia	Israel
	Korea	Portugal
	New Zealand	Romania
	Philippines	Russia
	Sri Lanka	Turkey
	Taiwan	
	Thailand	

Figure 9. FTSE WGBI Additional Markets Indexes design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	Americas Brazil: BRL 5 billion Chile: CLP 100 billion Colombia: COP 2 trillion Peru: PEN 2 billion Europe, Middle East, and Africa Czech Republic: CZK 15 billion Greece: EUR 2.5 billion Hungary: HUF 200 billion Israel: ILS 5 billion Portugal: EUR 2.5 billion Romania: RON 500 million Russia: RUB 25 billion Turkey: TRY 2 billion Asia Pacific and Japan China: CNY 20 billion Hong Kong: HKD 800 million India: INR 250 billion (except Benchmark bonds, which are included regardless of size) Indonesia: IDR 7.5 trillion Korea: KRW 1 trillion New Zealand: NZD 750 million Philippines: PHP 25 billion Sri Lanka: LKR 50 billion Taiwan: TWD 40 billion Thailand: THB 25 billion
Minimum credit quality	C by S&P and Ca by Moody's
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed rate non-callable bonds – unless otherwise stated in Figure 10. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 10.
Redemption features	Bullet, sinking fund, putable, extendable, or callable

Figure 10. Composition of the FTSE WGBI Additional Markets Indexes

Additional markets	Security type
Brazil	Excludes LTNs
Chile	N/A
China	Excludes zero-coupon bonds, special government bonds, bonds with maturity greater than 30 years from issuance and bonds issued prior to January 1, 2005
Colombia	Excludes Tes Control Monetario (TCM) bonds
Czech Republic	Excludes zero-coupon bonds
Greece	N/A
Hong Kong	Excludes zero-coupon bonds
Hungary	N/A
India	Includes benchmark bonds
Indonesia	Excludes Recapitalization bonds and Sukuk bonds
Israel	N/A
Korea	Excludes Monetary Stabilization bonds and 10-Years securities issued prior to January 1, 2003
New Zealand	N/A
Peru	N/A
Philippines	Excludes zero-coupon bonds and special purpose bonds
Portugal	Includes Obrigações do Tesouro (OTs)
Romania	N/A
Russia	Includes fixed-rate bullet federal government bonds (OFZ-PD) only
Sri Lanka	Excludes zero-coupon bonds and bonds with maturity equal to or greater than 10 years from issuance
Taiwan	N/A
Thailand	Excludes bonds with maturity greater than 30 years from issuance
Turkey	N/A

The FTSE WGBI Additional Markets Indexes follow the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the indexes.

Figure 11. FTSE WGBI Additional Markets Indexes calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate except for China, where the savings deposit rate published by the People's Bank of China is used, and Philippines, where the Thomson Reuters one-month offshore implied deposit rate is used. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing²⁸	Citi trader pricing except for: • Brazil, Chile, China, Colombia, Hong Kong, Hungary, India, Indonesia, Peru, Romania, and Sri Lanka (provided by Thomson Reuters) • Israel (provided by Tel Aviv Stock Exchange) • Korea (provided by KAP) • Philippines (provided by The Philippines Dealing & Exchange Corp. "PDEX") • Thailand (provided by the Thai Bond Market Association "ThaiBMA"). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of the local market close.
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. Each year's scheduled fixing dates are published on the website.

²⁸ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Chronological summary of events

Figure 12. FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes

Year	Monthly highlights
2018	January: The pricing source for local currency Hungarian government bonds changes from Citi trader to Thomson Reuters.
2017	February: The pricing source for local currency Swiss government bonds changes to reflect bid side Citi trader pricing. August: The pricing source for local currency Brazilian, Chinese, Colombian, and Peruvian government bonds and Chinese Policy Bank bonds change from Citi trader to Thomson Reuters. September: The indexes are rebranded to FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes following their acquisition by the London Stock Exchange Group. November: The pricing source for local currency Hong Kong government bonds changed from Citi trader to Thomson Reuters. The reinvestment rate for the Chinese onshore currency bonds changed from 1-month deposit rate to the savings deposit rate published by the People's Bank of China. December: The issue size criteria for Indian government bonds changed from "Outstanding Amount in Market" to "Outstanding Amount" updated on a weekly basis on Reserve Bank of India (RBI) website.
2016	March: The pricing source for Indian government bonds changes to reflect bid-market pricing from Thomson Reuters. Previously, the Indian government bonds were priced using local market Citi trader bid-market pricing. Additionally, the rate used for calculating reinvestment return on Philippines government bonds changes from Thomson Reuters one-month Eurodeposit rate to Thomson Reuters one-month offshore implied deposit rate for Philippines currency. April: The pricing source for Chilean government bonds changed to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds. May: The minimum size criteria for the Philippines Government Bond Index changes from PHP 45 billion to PHP 25 billion. Additionally, the pricing source for the Philippines government bonds changes from Citi's trader prices to prices published by The Philippines Dealing & Exchange Corp. (PDEx), which is the official pricing source for the Philippines market. June: The pricing source for the Indonesian and Sri Lankan government bonds changes to reflect bid-market pricing from Thomson Reuters. Additionally, the pricing source for the Thai government bonds changes to reflect bid-market pricing from the Thai Bond Market Association (ThaiBMA).
2014	May: The Greek Government resumes in April its bond issuance with an auction of a 4.75% 5-year bond. The new issuance meets the eligibility criteria for the Greek Government Bond Index which is reported as one of the WGBI Additional Markets Indexes in May's profile. October: The pricing source and closing time for Malaysian, Polish and Singapore government bonds become the following: • Malaysia, 5:00 p.m. (Kuala Lumpur), average bid price from brokers Amanah Butler and Affin • Poland, 4:30 p.m. (Warsaw), 2nd fixing bid price from BondSpot • Singapore, 4:30 p.m. (Singapore), bid price from Monetary Authority of Singapore

Figure 12. FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes, cont'd

2013	January: On December 17, 2012, the Hellenic Republic announced the acceptance of offers to exchange designated securities. As a result of the exchange, the outstanding amount for each of the 20 Greek government bonds in the Greek Government Bond Index falls below the inclusion size criteria of EUR 2.5 billion; therefore, as of the January 2013 profile, the Greek Government Bond Index is not reported as part of the WGBI Additional Markets Indexes as there is no qualifying bonds for the index. July: The timing for inclusion of new eligible markets into the WGBI changes to six calendar months after the announcement of eligibility, provided that during the first three months of that time period all requirements for inclusion are met. November: Thai government bonds with maturity greater than 30 years at issuance are excluded from the Thai Government Bond Index
2012	February: Portugal is removed from the WGBI, due to credit downgrade, and is included in the WGBI Additional Markets Indexes. April: Hong Kong and India are included in the WGBI Additional Markets Indexes. September: The closing level switches from mid-yield to bid-yield evaluation and the closing level time changes from 4:30 p.m. to 5:00 p.m. for the South African Government Bond Index. October: South Africa is included in the WGBI and removed from the WGBI Additional Markets Indices. December: Russia is included in the WGBI Additional Markets Indexes.
2011	April: China and Sri Lanka are included in the WGBI Additional Markets Indexes. October: Czech Republic, Hungary, Turkey, Israel, South Africa, Brazil, Chile, Colombia, and Peru are included in the WGBI Additional Markets Indexes.
2010	January: The outstanding amount of Canadian Government Bonds excludes the purchases made via the Government of Canada Cash Management Bond Buyback Program. March: 10-year Korean Treasury Bonds issued prior to January 2003 are excluded from the Korean Government Bond Index. April: A market will be removed from the WGBI after the fixing date if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. July: Greece is removed from the WGBI due to credit downgrade and included in the WGBI Additional Markets Indexes. October: Mexico is included in the WGBI and removed from the WGBI Additional Markets Indexes. November: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion or JPY 5 trillion. The minimum credit quality is raised to A- by S&P and A3 by Moody's. A market will be removed from the index if the outstanding amount of its eligible issues falls below half of all the entry-level market size criteria for three consecutive months. The new market size for exit is USD 25 billion, EUR 20 billion or JPY 2.5 trillion.
2009	March: The outstanding amount of US Treasury and UK Gilts excludes the purchases made by the Federal Reserve and the Bank of England, respectively. December: Individual EMU government debt markets are subject to WGBI's market size criteria. The outstanding amount of the JGBs excludes the repurchases made by the Ministry of Finance.

Figure 12. FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes, cont'd

2008	May: Indonesia, Philippines, Thailand, and Mexico are included in the WGBI Additional Markets Indexes.
2007	April: The minimum issue size criteria increase as follows: • EMU markets: EUR 2.5 billion • United Kingdom: GBP 2 billion (exclude perpetuals) • United States: USD 5 billion • Japan: Exclude Bank of Japan holdings July: Malaysia is included in the WGBI. The minimum issue size criteria increase as follows: • Australia: AUD 750 million (net of LCIR amounts) • Canada: CAD 2.5 billion • Denmark: DKK 20 billion • New Zealand: NZD 750 million • Poland: PLN 5 billion • Sweden: SEK 25 billion • Switzerland: CHF 4 billion
2006	September: Korea, Malaysia, and Taiwan are included in the WGBI Additional Markets Indexes
2005	January: Singapore is included in the WGBI and removed from the WGBI Additional Markets Indexes
2003	May: Poland is included in the WGBI and removed from the WGBI Additional Markets Indexes. Singapore is included in the WGBI Additional Markets Indexes. September: Norway is included in the WGBI and removed from the WGBI Additional Markets Indexes.
2002	October: Poland is included in the WGBI Additional Markets Indexes.
2001	January: Greece enters EMU. April: A laddered inclusion rule for the Japan Government Bond Index is introduced that lowers minimum amount outstanding of JGBs with a maturity equal to or greater than 20 years to JPY 450 billion from JPY 500 billion. August: The minimum entry size for gilts is changed to GBP 410 million.

Figure 12. FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes, cont'd

2000	January: The minimum entry size for gilts changes to GBP 400 million. Rump gilts are no longer eligible for inclusion. April: Greece is included in the WGBI Additional Markets Indexes. Market inclusion rule changes to shorten time to include or exclude a market based on its size. A minimum credit criterion of either BBB- by S&P or Baa3 by Moody's is introduced for a market to be included in the WGBI. July: Greece is included in the WGBI and removed from the WGBI Additional Markets Indexes. The minimum issue size entry criteria increase as follows: • Canada: CAD 1 billion • Denmark: DKK 10 billion • Japan: JPY 500 billion • Norway: NOK 20 billion • Sweden: SEK 10 billion • Switzerland: CHF 1 billion
1999	January: The WGBI market size entry/exit criteria change to EUR 15/EUR 7.5 billion from DM 30/DM 15 billion. Market inclusion rule changes to currency-based rule. All domestic fixed-rate bonds larger than the issue size threshold issued by EMU sovereigns will qualify for inclusion. German agency debt is excluded and moved to the Euro Broad Investment-Grade Bond Index.²⁹ June: The outstanding amount of the Australian market excludes Loan Consolidation and Investment Reserve (LCIR) holdings.
1998	July: Portugal is included in the WGBI and removed from the WGBI Additional Markets Indexes.
1997	April: Ireland is included in the WGBI and removed from the WGBI Additional Markets Indexes. Monthly pricing of US and Canada changes to 3:00 p.m. E.T. time (futures close) from 5:00 p.m.
1996	April: Switzerland is included in the WGBI. July: Finland is included in the WGBI and removed from the WGBI Additional Markets Indexes.
1995	January: The minimum issue size entry criteria increase as follows: • United States: USD 1 billion • Spain: ESP 100 billion • France: Ffr 10 billion Settlement date changes to same day for daily calculations and last calendar day for monthly calculations. Issuance cut-off for profile changes to the twenty-fifth day of the calendar month. Finland, Norway, and Portugal are included in the WGBI Additional Markets Indexes.
1993	April: Austria is included in the WGBI and removed from the WGBI Additional Markets Indexes. December: Currency spot exchange rates switch to the WM/Reuters standard.

²⁹ For more information on the Euro Broad Investment-Grade Bond Index, please see page 118.

Figure 12. FTSE World Government Bond Index and FTSE WGBI Additional Markets Indexes, cont'd

1992	October: Belgium, Italy, Spain, and Sweden are included in the WGBI. Switzerland is excluded from the WGBI. Multiple composite indexes are introduced. WGBI Additional Markets Indexes are introduced including Austria, Ireland, and New Zealand. The minimum issue size eligibility criterion changes to a local currency standard.
1991	July: The minimum issue size eligibility increases to USD 100 million.
1989	April: Denmark is included in the WGBI. Currency-Hedged After-Tax Indexes are introduced.
1988	March: Currency-Hedged Indexes are introduced. May: BTANs are included in the French market. November: Bundesobligationen are included in the German market.
1987	May: After-Tax Indexes are introduced.
1986	November: The World Government Bond Index is introduced.

Related indexes

FTSE World Government Bond Index – Developed Markets (WGBI-DM)

The FTSE World Government Bond Index - Developed Markets (WGBI-DM) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds issued in developed markets. The index composition is based on the global sovereign markets and constituents of the FTSE World Government Bond Index (WGBI), excluding any markets that are classified as emerging. A country is classified to be “emerging” if it is defined by the International Monetary Fund (IMF) World Economic Outlook to be among “emerging and developing economies” or if it is defined by the World Bank (WB) to be among “low-income economies” or “lower middle-income economies” or “upper-middle-income economies”.

FTSE World Government Bond Index – Extended (WGBI-Extended)

The FTSE World Government Bond Index – Extended (WGBI-Extended) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI-Extended includes any market that meets the size and credit criteria of the FTSE World Government Bond Index (WGBI) and is also a market already present in or eligible to be in one of the four regional government bond indexes. These regional indexes are the Asia Pacific Government Bond Index (APGBI), Central Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI), Emerging Markets Government Bond Index (EMGBI) and Latin American Government Bond Index (LATAMGBI).

FTSE World Government Bond Index – Japanese Investment Trust (WGBI-JIT)

The FTSE World Government Bond Index - Japanese Investment Trust (WGBI-JIT) is designed to serve as a benchmark for performance evaluation by Japanese investment trusts. The calculation methodology is based on the evaluation standards of the Investment Trusts Association of Japan.

FTSE MPF World Government Bond Index

The FTSE MPF World Government Bond Index is designed to comply with the regulatory requirements governing investments in debt securities by Hong Kong Mandatory Provident Fund schemes. The index is based on the

FTSE World Government Bond Index (WGBI) and incorporates additional criteria³⁰ as stipulated by the Mandatory Provident Fund Schemes (General) Regulation and Guidelines on Debt Securities. FTSE Russell worked closely with the Hong Kong Investment Funds Association (HKIFA) and Willis Towers Watson to ensure that the index appropriately reflects Hong Kong Mandatory Provident Fund Schemes Authority (MPFA) rules.

FTSE EMU Government Bond Index (EGBI)

The FTSE EMU Government Bond Index (EGBI) consists of the Eurozone-participating countries that meet the WGBI criteria. Current Eurozone-participating countries include: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain. Of these markets, only those that satisfy the WGBI criteria for market inclusion are included in the EGBI, namely: Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, and Spain.

FTSE Group-of-Five (G5) Government Bond Index

The FTSE Group-of-Five (G5) Government Bond Index includes France, Germany, Japan, the United Kingdom, and the United States. This index is designed to provide broad international exposure using a small number of markets. It covers approximately 75% of the market value of the WGBI (as of July 2018).

FTSE Group-of-Seven (G7) Government Bond Index

The FTSE Group-of-Seven (G7) Government Bond Index includes Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. This index covers approximately 84% of the market value of the WGBI (as of July 2018).

FTSE European World Government Bond Index

The FTSE European World Government Bond Index consists of those 15 markets of the WGBI that are geographically located in Europe, namely Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Spain, Sweden, Switzerland, and the United Kingdom.

FTSE Non-Base Currency Government Bond Indexes

The indexes of non-base currency sectors exclude respective base currency bond markets from the calculation and, in turn, are stated in terms of the base currency. For example, the non-US Dollar WGBI includes all WGBI markets except the United States and is stated in USD terms. Returns can be stated in any base currency.

FTSE Debt Capacity World Government Bond Index (DCWGBI)

The FTSE Debt Capacity World Government Bond Index (DCWGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds with a focus on countries with lower debt issuance relative to their gross domestic product (GDP) and stronger debt servicing capabilities. The index comprises sovereign debt from over 20 countries, denominated in a variety of currencies.

Unlike traditional indexes where country weights are solely based on the market capitalization of an issuer's outstanding debt, the index also accounts for the countries' capacity to repay their debt. It is rebalanced monthly with weights based on each country's market value adjusted by scores derived from its actual Debt-to-GDP and calculated Debt Service-to-GDP ratios, both determined annually in May.³¹ These factors aim to reweight the index to provide higher weights to countries that have stronger fiscal health and greater capacity to service their debt based on those two factors as proxy indicators.

³⁰ http://www.mpfa.org.hk/eng/legislation_regulations/legulations_ordinance/index.jsp.

³¹ The actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO).

FTSE After-Tax Bond Indexes

After-tax returns are computed from the point of view of a US pension account and attempt to approximate the effect on the total return of withholding tax on coupon income.

Figure 13. Withholding tax assumptions for the FTSE After-Tax Bond Indexes³²

Market	Tax rate	Calculation assumption
Switzerland	35.00	5% non-refundable, 30% refundable three months following the January 1 or July 1 after the coupon payment date

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 14. Tickers* for the FTSE World Government Bond Index and selected related indexes

Ticker	Index
SBWGU	FTSE World Government Bond Index, in USD terms
SBWGEU	FTSE World Government Bond Index, in EUR terms
SBWGJYU	FTSE World Government Bond Index, in JPY terms
SBWGUKU	FTSE World Government Bond Index, in GBP terms
SBEGEU	FTSE EMU Government Bond Index, in EUR terms
SBG5U	FTSE Group-of-Five Government Bond Index, in USD terms
SBG5EU	FTSE Group-of-Five Government Bond Index, in EUR terms
SBG5YU	FTSE Group-of-Five Government Bond Index, in JPY terms
SBG7U	FTSE Group-of-Seven Government Bond Index, in USD terms
SBG7EU	FTSE Group-of-Seven Government Bond Index, in EUR terms
SBG7YU	FTSE Group-of-Seven Government Bond Index, in JPY terms
SBEUEU	FTSE European World Government Bond Index, in EUR terms
SBNUU	FTSE Non-USD World Government Bond Index, in USD terms
SBNMEU	FTSE Non-EUR World Government Bond Index, in EUR terms
SBWGNJYU	FTSE Non-JPY World Government Bond Index, in JPY terms
SBWGNUMU	FTSE Non-GBP World Government Bond Index, in GBP terms
SBWGAXUU	FTSE After-Tax World Government Bond Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

³² Effective July 1, 1997, all Italian bonds accrue and pay interest on a gross basis. Effective April 6, 1998, all UK gilt securities accrue and pay interest on a gross basis. Although for the index it is assumed that Australian government bonds pay interest on a gross basis, under certain circumstances, some US pension funds may be subject to withholding tax on these investments. Effective April 1, 2010, all JGBs accrue and pay interest on a gross basis.

FTSE World Government Bond Index – Developed Markets (WGBI-DM)

Sovereign | Multi-currency

The FTSE World Government Bond Index - Developed Markets (WGBI-DM) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds issued in developed markets. The Index composition is based on the global sovereign markets and constituents of the FTSE World Government Bond Index (WGBI), excluding any markets that are classified as emerging. A country is classified to be “emerging” if it is defined by the International Monetary Fund (IMF) World Economic Outlook to be among “emerging and developing economies” or if it is defined by the World Bank (WB) to be among “low-income economies” or “lower middle-income economies” or “upper-middle-income economies”.

A new developed market entering the WGBI will also enter the WGBI-DM at the same time. Markets being removed from the WGBI because they have met WGBI's exit criteria will also be removed from the WGBI-DM.

The index covers a broad array of countries. Sub-indexes are available in any combination of currency, maturity, and rating.

FTSE World Government Bond Index – Developed Markets	
Americas	Asia Pacific and Japan
Canada	Australia
United States	Japan
	Singapore
EMEA	
FTSE EMU Government Bond Index (EGBI)	Denmark
Austria	Norway
Belgium	Sweden
Finland	Switzerland
France	United Kingdom
Germany	Denmark
Ireland	
Italy	
Netherlands	
Spain	

Design criteria and calculation methodology

Figure 15. FTSE World Government Bond Index – Developed Markets design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile.
Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Norway: NOK 20 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Singapore: SGD 1.5 billion
Minimum credit quality ³³	Entry: A- by S&P and A3 by Moody's, for all new markets. Exit: Below BBB- by S&P and Baa3 by Moody's.

³³ Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. The credit qualifications of the index are treated as provisional, in order to give market participants time to react to last-minute downgrades. A market will be removed from the index after the fixing if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. Removal from the index, on or after the fixing date, is not reversible except by qualifying for the index once again, which takes a minimum of six months. There is no specific rule concerning default or what constitutes default. Conceivably, a market could technically default, but an immediate rescue could leave its existing bonds in the investment-grade category. Only a downgrade to below investment-grade would trigger a credit-related expulsion from the index.

Figure 15. FTSE World Government Bond Index – Developed Markets design criteria, cont'd

Barriers-to-entry	Entry: A market being considered for inclusion should actively encourage foreign investor participation and show a commitment to its own policies. Exit: Circumstances can change over time and a country may find that revising its policies makes sense for its national welfare. However, it is possible that new policies, including but not limited to ownership restrictions and capital controls, can have the effect of limiting investors' ability to replicate that country's portion of the index. In that case, it may be necessary to remove that country from the index.
Country eligibility	All markets that are included in the WGBI, excluding any emerging markets
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 16. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 16.

Figure 16. FTSE World Government Bond Index – Developed Markets composition

WGBI-DM markets	Security type
Australia	Excludes tax rebate bonds
Austria	Includes Bundesanleihen Excludes Bundesobligationen bonds
Belgium	N/A
Canada	N/A
Denmark	Excludes mortgage credit bonds
Finland	Excludes sinking fund, putable, extendable, housing fund and yield bonds
France	Includes Obligations Assimilables du Trésor (OATs) and Bons du Trésor à Intérêt Annuel Normalisé (BTANs)
Germany	Includes Bundesrepublik, Schatzanweisungen, Bundesobligationen, Unity bonds, Treuhandanstalt, and Treuhandobligationen Excludes Schuldscheine, Unverzinsliche, Bundespost, Bundesbahn, and European Recovery Program Bonds
Ireland	N/A
Italy	Includes Buoni del Tesoro Poliennale (BTPs)
Japan	Includes callable bonds Excludes JGBs for individuals and discount bonds

Figure 16. FTSE World Government Bond Index – Developed Markets composition, cont'd

Netherlands	N/A
Norway	Includes benchmark bonds Excludes loans and lottery loans issued before 1991
Singapore	N/A
Spain	Includes Bonos and Obligaciones del Estado Excludes discount bonds (Letras and Pagares del Tesoro)
Sweden	Includes Riksobligationer
Switzerland	Includes callable bonds Excludes book liabilities
United Kingdom	Includes callable, partly paid, and convertible (into other gilt issues) bonds Excludes rump gilts and perpetuals (undated)
United States	Includes callable bonds

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 17. FTSE World Government Bond Index – Developed Markets calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing³⁴	Citi trader pricing except for Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of local market close. For more information on local market close, see Figure 2 “Local Markets with Local Closing Times and Defined Trading Centers.”
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.

³⁴ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 17. FTSE World Government Bond Index – Developed Markets calculation methodology, cont'd

Fixing date	Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1984

Chronological summary of events

The construction of WGBI-DM is driven by the same events that mark the WGBI. For more details, please refer to Figure 12.

Related indexes

FTSE World Government Bond Index (WGBI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. It consists of countries that meet specific criteria for market size, credit quality, and barriers-to-entry. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies. The index provides a broad market value weighted benchmark for the global sovereign fixed income market.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 18. Tickers* for the FTSE World Government Bond Index – Developed Markets

Ticker	Index
SBWDML	FTSE World Government Bond Index – Developed Markets, in LCL terms
SBWDMUU	FTSE World Government Bond Index – Developed Markets, in USD terms
SBWDMEU	FTSE World Government Bond Index – Developed Markets, in EUR terms
SBWDMGU	FTSE World Government Bond Index – Developed Markets, in GBP terms
SBWDMYU	FTSE World Government Bond Index – Developed Markets, in JPY terms
SBWDMSZU	FTSE World Government Bond Index – Developed Markets, in CHF terms
SBWDMUC	FTSE World Government Bond Index – Developed Markets, currency-hedged in USD terms
SBWDMEC	FTSE World Government Bond Index – Developed Markets, currency-hedged in EUR terms
SBWDMGC	FTSE World Government Bond Index – Developed Markets, currency-hedged in GBP terms
SBWDMYC	FTSE World Government Bond Index – Developed Markets, currency-hedged in JPY terms
SBWDMSZC	FTSE World Government Bond Index – Developed Markets, currency-hedged in CHF terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE World Government Bond Index – Extended (WGBI-Extended)

Sovereign | Multi-currency

The FTSE World Government Bond Index – Extended (WGBI-Extended) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI-Extended includes any market that meets the size and credit criteria of the FTSE World Government Bond Index (WGBI) and is also a market already present in or eligible to be in one of the four regional government bond indexes. These regional indexes are the FTSE Asia Pacific Government Bond Index (APGBI), FTSE Central Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI), FTSE Emerging Markets Government Bond Index (EMGBI) and FTSE Latin American Government Bond Index (LATAMGBI).

The index covers a broad array of countries. Sub-indexes are available in any combination of currency, maturity, and rating.

FTSE World Government Bond Index – Extended	
Americas	Asia Pacific and Japan
Canada	Australia
Mexico	China
United States	Korea
	Japan
	Malaysia
	Singapore
EMEA	
FTSE EMU Government Bond Index (EGBI)	Denmark
Austria	Israel
Belgium	Norway
Finland	Poland
France	South Africa
Germany	Sweden
Ireland	Switzerland
Italy	United Kingdom
Netherlands	
Spain	

Design criteria and calculation methodology

Figure 19. FTSE World Government Bond Index – Extended design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ³⁵
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile.
Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Mexico: MXN 10 billion United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Israel: ILS 5 billion Norway: NOK 20 billion Poland: PLN 5 billion South Africa: ZAR 10 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million China: CNY 20 billion Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Korea: KRW 1 trillion Malaysia: MYR 4 billion Singapore: SGD 1.5 billion
Minimum credit quality ³⁶	Entry: A- by S&P and A3 by Moody's, for all new markets. Exit: Below BBB- by S&P and Baa3 by Moody's.

³⁵ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.5%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

³⁶ Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. The credit qualifications of the index are treated as provisional, in order to give market participants time to react to last-minute downgrades. A market will be removed from the index after the fixing if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. Removal from the index, on or after the fixing date, is not reversible except by qualifying for the index once again, which takes a minimum of six months. There is no specific rule concerning default or what constitutes default. Conceivably, a market could technically default, but an immediate rescue could leave its existing bonds in the investment-grade category. Only a downgrade to below investment-grade would trigger a credit-related expulsion from the index.

Figure 19. FTSE World Government Bond Index – Extended design criteria, cont'd

Country eligibility	Any market that meets the size and credit criteria of the FTSE World Government Bond Index (WGBI) and is also present in or eligible to be in one of the four regional government bond indexes, namely: • FTSE Asia Pacific Government Bond Index (APGBI) • FTSE Central Eastern Europe, Middle East and Africa Government Bond Index (CEEMEAGBI) • FTSE Emerging Markets Government Bond Index (EMGBI) • FTSE Latin American Government Bond Index (LATAMGBI)
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 20. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 20.

Figure 20. FTSE World Government Bond Index – Extended composition

WGBI-Extended markets	Security type
Australia	Excludes tax rebate bonds
Austria	Includes Bundesanleihen Excludes Bundesobligationen bonds
Belgium	N/A
Canada	N/A
China	Excludes zero-coupon bonds, special government bonds, bonds with maturity greater than 30 years from issuance and bonds issued prior to January 1, 2005
Denmark	Excludes mortgage credit bonds
Finland	Excludes sinking fund, putable, extendable, housing fund and yield bonds
France	Includes Obligations Assimilables du Trésor (OATs) and Bons du Trésor à Intérêt Annuel Normalisé (BTANs)
Germany	Includes Bundesrepublik, Schatzanweisungen, Bundesobligationen, Unity bonds, Treuhandanstalt, and Treuhandobligationen Excludes Schuldscheine, Unverzinsliche, Bundespost, Bundesbahn, and European Recovery Program Bonds
Ireland	N/A
Israel	N/A
Italy	Includes Buoni del Tesoro Poliennale (BTPs)

Figure 20. FTSE World Government Bond Index – Extended composition, cont'd

Japan	Includes callable bonds Excludes JGBs for individuals and discount bonds
Korea	Excludes Monetary Stabilization bonds and 10-Years securities issued prior to January 1, 2003
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
Mexico	Excludes bonds issued prior to January 1, 2003
Netherlands	N/A
Norway	Includes benchmark bonds Excludes loans and lottery loans issued before 1991
Poland	N/A
Singapore	N/A
South Africa	Excludes zero-coupon bonds
Spain	Includes Bonos and Obligaciones del Estado Excludes discount bonds (Letras and Pagares del Tesoro)
Sweden	Includes Riksobligationer
Switzerland	Includes callable bonds Excludes book liabilities
United Kingdom	Includes callable, partly paid, and convertible (into other gilt issues) bonds Excludes rump gilts and perpetuals (undated)
United States	Includes callable bonds

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 21. FTSE World Government Bond Index – Extended calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, except for China, where savings deposit rate published by the People's Bank of China is used. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 21. FTSE World Government Bond Index – Extended calculation methodology, cont'd

Pricing³⁷	Citi trader pricing except for: • China (provided by Thomson Reuters) • Israel (provided by Tel Aviv Stock Exchange) • Korea (provided by KAP) • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close. For more information on local market close, see Figure 2 “Local Markets with Local Closing Times and Defined Trading Centers.”
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1984

Chronological summary of events

In addition to the following events, the construction of WGBI-Extended is driven by the same events that mark the WGBI. For more details, please refer to Figure 12.

Figure 22. FTSE World Government Bond Index – Extended

Year	Monthly highlights
2017	July: The FTSE World Government Bond Index – Extended is introduced and includes the markets in the FTSE World Government Bond Index plus China and Korea. August: Israel is added to the WGBI-Extended.

Related indexes

FTSE World Government Bond Index (WGBI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. It consists of countries that meet specific criteria for market size, credit quality, and barriers-to-entry. The WGBI is a widely used benchmark that currently comprises sovereign debt from

³⁷ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

over 20 countries, denominated in a variety of currencies. The index provides a broad market value weighted benchmark for the global sovereign fixed income market.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 23. Tickers* for the FTSE World Government Bond Index – Extended

Ticker	Index
SBWGEL	FTSE World Government Bond Index – Extended, in LCL terms
SBWGEUU	FTSE World Government Bond Index – Extended, in USD terms
SBWGEEU	FTSE World Government Bond Index – Extended, in EUR terms
SBWGEГУ	FTSE World Government Bond Index – Extended, in GBP terms
SBWGEYU	FTSE World Government Bond Index – Extended, in JPY terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE World Government Bond Index – Japanese Investment Trust (WGBI-JIT)

Sovereign | Multi-currency

The FTSE World Government Bond Index - Japanese Investment Trust (WGBI-JIT) is designed to serve as a benchmark for performance evaluation by Japanese investment trusts. The calculation methodology is based on the evaluation standards of the Investment Trusts Association of Japan.

The WGBI-JIT satisfies the benchmark needs of domestic Japanese investment trusts. There are four distinguishing features of WGBI-JIT. Japanese government bonds are priced as of today's market close; non-Japanese government bonds are priced as of yesterday's market close; WGBI-JIT uses the telegraphic transfer middle (TTM) exchange rates provided by Bank of Tokyo-Mitsubishi UFJ as of mid-morning, 10:00 a.m. Tokyo time, in compliance with Investment Trusts Association of Japan; and finally, WGBI-JIT return and market value calculations for non-yen securities, described in detail in the appendix³⁸, are unique to WGBI-JIT.

If a currency is not among the ones for which Bank of Tokyo Mitsubishi UFJ provides TTM quotes, rates from WM/Reuters are used. This satisfies the consistency stipulation on alternate rates of the Business Management Committee of Investment Trusts.

On rare occasions, the Japanese Ministry of Finance intervenes in foreign exchange markets. If such event occurs on the last business day after 10:00 a.m. Tokyo and Bank of Tokyo-Mitsubishi UFJ officially revises the 10:00 a.m. rates, FTSE Russell will restate the last business day WGBI-JIT returns and monthly returns if they differ significantly from the originally published returns.

Design criteria and calculation methodology

Figure 24. FTSE World Government Bond Index – Japanese Investment Trust design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ³⁹
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile and added to the FTSE WGBI Additional Markets Indexes.

³⁸ For a detailed description of the market value and return calculations for non-yen sectors of the WGBI-JIT, please see page 221 of the appendix.

³⁹ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

Figure 24. FTSE World Government Bond Index – Japanese Investment Trust design criteria, cont'd

Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Mexico: MXN 10 billion United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Norway: NOK 20 billion Poland: PLN 5 billion South Africa: ZAR 10 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Malaysia: MYR 4 billion Singapore: SGD 1.5 billion
Minimum credit quality⁴⁰	Entry: A- by S&P and A3 by Moody's, for all new markets. Exit: Below BBB- by S&P and Baa3 by Moody's.
Barriers-to-entry	Entry: A market being considered for inclusion should actively encourage foreign investor participation and show a commitment to its own policies. Exit: Circumstances can change over time and a country may find that revising its policies makes sense for its national welfare. However, it is possible that new policies, including but not limited to ownership restrictions and capital controls, can have the effect of limiting investors' ability to replicate that country's portion of the index. In that case, it may be necessary to remove that country from the WGBI. If barriers to entry are identified, an announcement will be made that the particular market has become ineligible, stating the reasons. That market will then be removed from the following month's profile and moved to the FTSE WGBI Additional Markets Indexes.

⁴⁰ Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. The credit qualifications of the index are treated as provisional, in order to give market participants time to react to last-minute downgrades. A market will be removed from the index after the fixing if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. Removal from the index, on or after the fixing date, is not reversible except by qualifying for the index once again, which takes a minimum of six months. There is no specific rule concerning default or what constitutes default. Conceivably, a market could technically default, but an immediate rescue could leave its existing bonds in the investment-grade category. Only a downgrade to below investment-grade would trigger a credit-related expulsion from the index.

Figure 24. FTSE World Government Bond Index – Japanese Investment Trust design criteria, cont’d

Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 7. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 7
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Figure 25. FTSE World Government Bond Index – Japanese Investment Trust calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
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. Each year’s scheduled fixing dates are published on the website.

Although WGBI-JIT's construction is largely based on WGBI's design criteria and calculation methodology, there are some differences which are highlighted in the following figure.

Figure 26. FTSE World Government Bond Index – Japanese Investment Trust and World Government Bond Index design criteria and calculation methodology comparison

	WGBI-JIT	WGBI
Exchange rate	Bank of Tokyo-Mitsubishi UFJ telegraphic transfer spot middle rate (TTM) as quoted at 10:00 a.m. Tokyo time ⁴¹	WM/Reuters — Median rate based on snapshots taken of 4:00 p.m. London time
Pricing	Japan: same day market close. Other markets: previous trading day's local market close.	All markets: same day local market close.
Base date	December 31, 1996	December 31, 1984

Chronological summary of events

The construction of WGBI-JIT is driven by the same events that mark the WGBI. For more details, please refer to Figure 12.

Related indexes

FTSE World Government Bond Index (WGBI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. It consists of countries that meet specific criteria for market size, credit quality, and barriers-to-entry. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies. The index provides a broad market value weighted benchmark for the global sovereign fixed income market.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 27. Tickers* for the FTSE World Government Bond Index – Japanese Investment Trust

Ticker	Index
SBWGJL	FTSE World Government Bond Index – Japanese Investment Trust, in local currency terms
SBWGJJYU	FTSE World Government Bond Index – Japanese Investment Trust, in JPY terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

⁴¹ WM/Reuters quotes are used for currencies during periods in which Bank of Tokyo-Mitsubishi UFJ quotes are not available. Historically, WM/Reuters rates were used for Greek drachma (April–December 2000), Polish zloty (prior to December 2003), Malaysian Ringgit and Taiwanese Dollar (prior to January 2007).

FTSE MPF World Government Bond Index

Sovereign | Multi-currency

The FTSE MPF World Government Bond Index is designed to comply with the regulatory requirements governing investments in debt securities by Hong Kong Mandatory Provident Fund schemes. The index is based on the FTSE World Government Bond Index (WGBI) which measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 30 years of history available.

The FTSE MPF World Government Bond Index incorporates additional criteria⁴² as stipulated by the Mandatory Provident Fund Schemes (General) Regulation and Guidelines on Debt Securities. FTSE Russell worked closely with the Hong Kong Investment Funds Association (HKIFA) and Willis Towers Watson to ensure that the index appropriately reflects Hong Kong Mandatory Provident Fund Schemes Authority (MPFA) rules.

Design criteria and calculation methodology

Figure 28. FTSE MPF World Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ⁴³
Market size	The following market size criteria apply to the WGBI-portion of the index. For the remainder of the index components, there are no market size constraints. Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion, and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile.

⁴² http://www.mpfa.org.hk/eng/legislation_regulations/legulations_ordinance/index.jsp.

⁴³ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

Figure 28. FTSE MPF World Government Bond Index design criteria, cont'd

Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Mexico: MXN 10 billion United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Norway: NOK 20 billion Poland: PLN 5 billion South Africa: ZAR 10 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Malaysia: MYR 4 billion Singapore: SGD 1.5 billion
Minimum credit quality	Minimum credit quality as per Mandatory Provident Fund Schemes (General) Regulation and III.1 Guidelines on Debt Securities. Bond level rating is required per Mandatory Provident Fund Schemes (General) Regulation and III.1 Guidelines on Debt Securities.³¹
Barriers-to-entry	Entry: A market being considered for inclusion should actively encourage foreign investor participation and show a commitment to its own policies. Exit: Circumstances can change over time and a country may find that revising its policies makes sense for its national welfare. However, it is possible that new policies, including but not limited to ownership restrictions and capital controls, can have the effect of limiting investors' ability to replicate that country's portion of the index. In that case, it may be necessary to remove that country from the FTSE MPF World Government Bond Index.

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 29. FTSE MPF World Government Bond Index calculation methodology

Weighting	Market capitalization
Capping	Maximum 9% for non-exempt authority (issuer) as per Mandatory Provident Fund Schemes (General) Regulation and III.1 Guidelines on Debt Securities' definition of exempt authority ⁴⁴

⁴⁴ http://www.mpfa.org.hk/eng/legislation_regulations/legulations_ordinance/index.jsp.

Figure 29. FTSE MPF World Government Bond Index calculation methodology, cont'd

Hedging	100% hedged in HKD
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁴⁵	Citi trader pricing except for: • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close. For more information on local market close, see Figure 2 “Local Markets with Local Closing Times and Defined Trading Centers.”
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2015

Chronological summary of events

Figure 30. FTSE MPF World Government Bond Index

Year	Monthly highlights
2017	January: The maximum weight of a non-exempt authority (issuer) in the MPF WGBI is reduced from 9.5% to 9.0%. February: The pricing source for local currency Swiss government bonds changes to reflect bid side Citi trader pricing. September: The index is rebranded to FTSE MPF World Government Bond Index following its acquisition by the London Stock Exchange Group.
2016	August: The MPF World Government Bond Index is introduced.

⁴⁵ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Related indexes

FTSE World Government Bond Index (WGBI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. It consists of countries that meet specific criteria for market size, credit quality, and barriers-to-entry. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies. The index provides a broad market value weighted benchmark for the global sovereign fixed income market.

FTSE World Broad Investment-Grade Bond Index (WorldBIG®)

Multi-asset | Multi-currency

The FTSE World Broad Investment-Grade Bond Index (WorldBIG) is a multi-asset, multi-currency benchmark which provides a broad-based measure of the global fixed income markets. The inclusion of government, government-sponsored/supranational, collateralized, and corporate debt makes the WorldBIG a comprehensive representation of the global, investment-grade universe.

The index covers a broad array of asset classes and sub-indexes are available in any combination of currency, maturity, and rating.

FTSE World Broad Investment-Grade Bond Index	
Government / Government-Sponsored	
Sovereign	Domestic
	Foreign
Sovereign Guaranteed	
Agency	Corporate
Government-Sponsored / Regional Government	
Agency	Regional Government
	Regional Government Guaranteed / Sponsored
	Supranational
	Other Government-Sponsored
Collateralized	
MBS	
	ABS
	Covered
Jumbo Pfandbrief	Other Covered
Corporate	
Industrial	
	Utility
	Finance

Design criteria and calculation methodology

In constructing the WorldBIG, the FTSE World Government Bond Index (WGBI) has been used as the core. The WGBI serves as sovereign exposure and also defines the sovereign geographic coverage of the two indexes. Markets are subject to the same entry criteria already established for the WGBI.

In addition, the WorldBIG includes credit market coverage for the four largest currency sectors, namely the US Dollar (USD), Euro (EUR), Japanese Yen (JPY), and UK Sterling (GBP). Other credit sectors may be added as market coverage expands.

Domestic credit issuance in some markets may be intended for domestic investors. As a result, either the market or the issue is not a fit for a global benchmark. Therefore, larger minimum issue sizes have been imposed and this criterion results in an index that is focused on the large issuers that are of most interest to the institutional investor base.

Figure 31. FTSE World Broad Investment-Grade Bond Index design criteria⁴⁶

Coupon	Fixed-rate, no zero-coupon bonds except for domestic sovereign bonds (WGBI)
Minimum maturity	At least one year ⁴⁷
Market size	The following market size criteria apply to the WGBI-portion of the index. For the remainder of the index components there are no market size constraints. Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion, and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile and moved to the FTSE WGBI Additional Markets Indexes.

⁴⁶ All the Design Criteria that apply to the WGBI are also applicable to the WGBI portion of the WorldBIG. For more information on those criteria please see Figure 6 "WGBI Design Criteria."

⁴⁷ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

Figure 31. FTSE World Broad Investment-Grade Bond Index design criteria, cont'd

Minimum issue size	Issue Size by Currency: US Dollar Domestic sovereign: USD 5 billion public amount outstanding (excludes Federal Reserve purchases) US agency/supranational: USD 1 billion Credit/asset-backed: USD 500 million Mortgage coupon: USD 5 billion (Origination year minimum: USD 1 billion) Eurodollar: US agency and supranationals: USD 1 billion; other: USD 500 million Japanese Yen Domestic sovereign: JPY 500 billion for bonds with maturity less than 20 years; JPY 450 billion for bonds with maturities equal to or greater than 20 years (excludes Bank of Japan and Ministry of Finance Holdings) Euroyen: JPY 50 billion Euro Eurozone sovereign: EUR 2.5 billion or the equivalent for non-redenominated bonds Other: EUR 500 million or the equivalent for non-redenominated bonds UK Sterling Domestic sovereign: GBP 2 billion (excludes perpetual and Bank of England purchases) Eurosterling: GBP 300 million Australian Dollar: Domestic sovereign: AUD 750 million Canadian Dollar: Domestic sovereign: CAD 2.5 billion Danish Krone: Domestic sovereign: DKK 20 billion Malaysian Ringgit: Domestic sovereign: MYR 4 billion Mexican Peso: Domestic sovereign: MXN 10 billion Norwegian Krone: Domestic sovereign: NOK 20 billion Polish Zloty: Domestic sovereign: PLN 5 billion Singapore Dollar: Domestic sovereign: SGD 1.5 billion South African Rand: Domestic sovereign: ZAR 10 billion Swedish Krona: Domestic sovereign: SEK 25 billion Swiss Franc: Domestic sovereign: CHF 4 billion
Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Composition	WGBI (entire index) USBIG (minimum issue size for credit/asset-backed: USD 500 million; no zero-coupon bonds) EuroBIG (entire index) Euroyen (entire index) Eurodollar (minimum issue size: corporate/financial/asset-backed: USD 500 million; no zero-coupon bonds) Eurosterling (minimum issue size: GBP 300 million)
Redemption features	Bullet, sinking fund, putable, extendable, or callable

The WorldBIG is divided into three main asset classes: (1) government/government-sponsored; (2) collateralized; and (3) corporate. In addition, all Pfandbrief and Pfandbrief-like securities, which are predominant in the euro region, are classified as covered bonds. This classification scheme differs from that used in most existing stand-alone indexes.

Figure 32. FTSE World Broad Investment-Grade Bond Index sector classification

Sovereign / Sovereign-Guaranteed	Government-Sponsored / Regional Government	Collateralized
Domestic Sovereign (WGBI)	Agency	Asset-Backed Securities
Foreign Sovereign	Regional Government	Covered
Sovereign-Guaranteed	Regional Government-Guaranteed	- Jumbo Pfandbrief
	Regional Government-Sponsored	- Other Covered
	Supranational	Mortgage-Backed Securities
	Other Sovereign-Sponsored	
Corporate – Utility	Corporate – Industrial	Corporate – Finance
Electric	Consumer	Banks
Gas	Energy	Independent Finance
Telecommunication	Manufacturing	Insurance
Other Utility	Service	Other Finance
	Transportation	
	Other Industrial	

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 33. FTSE World Broad Investment-Grade Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 33. FTSE World Broad Investment-Grade Bond Index calculation methodology, cont'd

Pricing⁴⁸	Pricing For the WGBI portion of the index: Citi trader pricing except for: • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. For the non-WGBI portion of the index: Citi trader pricing except for the bonds in the EuroBIG, Eurodollar Euro, Eurosterling, Euroyen, and Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Effective September 17, 2018, Citi trader prices in the non-WGBI portion of the index will be replaced by Thomson Reuters prices, including US Agency, US ABS, US Credit, and Eurodollar bonds. All pricing is generally taken as of local market close. Third-party pricing sources are used as a supplement. Pricing Adjustments Mortgages: Carry-adjusted to reflect the difference between index settlement dates and standard Securities and Financial Markets Association (SIFMA) settlement dates.
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. Each year's scheduled fixing dates are published on the website.
Volatility	US Non-mortgages: 10% single volatility; US Mortgages: Market-implied volatility (LMM skew model)
Base date	December 31, 1998

Chronological summary of events

The construction of WorldBIG is driven by the same events that mark the individual indexes from which the WorldBIG is composed of. For more details, please refer to those index's respective sections.

⁴⁸ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Related indexes

FTSE World Government Bond Index (WGBI)

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies, and has more than 30 years of history available. The WGBI provides a broad benchmark for the global sovereign fixed income market.

FTSE US Broad Investment-Grade Bond Index (USBIG)

The FTSE US Broad Investment-Grade Bond Index (USBIG) tracks the performance of US Dollar-denominated bonds issued in the US investment-grade bond market. Introduced in 1985, the index includes US Treasury, government-sponsored, collateralized, and corporate debt and provides a reliable representation of the US investment-grade bond market.

While the minimum issue size for the USBIG stand-alone index is USD 250 million for corporate and asset-backed securities and USD 500 million for non-US sovereign and provincial, the WorldBIG composition differs: the minimum issue size for corporate, asset-backed, and non-US sovereign and provincial securities is USD 500 million and no zero-coupon bonds are included.

FTSE Euro Broad Investment-Grade Bond Index (EuroBIG)

The FTSE Euro Broad Investment-Grade Bond Index (EuroBIG) provides a benchmark for euro-based fixed income portfolios, covering most sectors of the European investment-grade fixed income markets that are accessible to institutional investors.

FTSE Eurodollar Bond Index

The FTSE Eurodollar Bond Index includes fixed-rate (including zero-coupon) eurodollar, global, Dragon bonds, certain asset-backed, and euro medium-term notes. Rule 144A corporate securities are included only if they have registration rights. Returns on the subset of bonds issued by non-US entities are also published.

While the minimum size criteria for the stand-alone FTSE Eurodollar Bond Index is USD 250 million for corporate, financial, and asset-backed securities, that amount is USD 500 million for the WorldBIG.

FTSE Eurosterling Bond Index

The FTSE Eurosterling Bond Index includes fixed-rate eurosterling, global, Dragon bonds, and certain asset-backed and euro medium-term notes. While the minimum size criteria for the stand-alone FTSE Eurosterling Bond Index is GBP 200 million, the amount is GBP 300 million for the WorldBIG.

FTSE Euroyen Bond Index

The FTSE Euroyen Bond Index includes fixed-rate euroyen, global, Dragon bonds, and certain asset-backed and euro medium-term notes.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 34. Tickers* for the FTSE World Broad Investment-Grade Bond Index and selected related indexes

Ticker	Index
SBWAU	FTSE World Broad Investment-Grade Bond Index, in USD terms
SBWEU	FTSE World Broad Investment-Grade Bond Index, in EUR terms
SBWPU	FTSE World Broad Investment-Grade Bond Index, in JPY terms
SBWKU	FTSE World Broad Investment-Grade Bond Index, in GBP terms
SBWAAGU	FTSE WorldBIG Agency Index, in USD terms
SBWACPU	FTSE WorldBIG Corporate Index, in USD terms
SBWACOU	FTSE WorldBIG Collateralized Index, in USD terms
SBWGU	FTSE World Government Bond Index, in USD terms
SBBIG	FTSE US Broad Investment-Grade Bond Index, in USD terms
SBEB	FTSE Euro Broad Investment-Grade Bond Index, in EUR terms
SBEID	FTSE Eurodollar Bond Index, in USD terms
SBEIS	FTSE Eurosterling Bond Index, in GBP terms
SBEIY	FTSE Euroyen Bond Index, in JPY terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE World Inflation-Linked Securities Index (WorldILSI)

Sovereign | Multi-currency

The FTSE World Inflation-Linked Securities Index (WorldILSI) measures the returns of inflation-linked sovereign bonds with fixed-rate coupon payments that are linked to an inflation index. The WorldILSI tracks debt from thirteen countries denominated in ten currencies and is a valuable benchmark for investors who are concerned with real returns, rather than notional.

The index covers a broad array of countries and sub-indexes are available in any combination of country, currency, and maturity.

FTSE World Inflation-Linked Securities Index	
Americas	Asia Pacific and Japan
Canada	Australia
Mexico	Japan
United States	
EMEA	
EuroILSI	Poland
France	South Africa
Germany	Sweden
Italy	United Kingdom
Spain	

Design criteria and calculation methodology

FTSE Russell monitors a universe of markets with inflation-linked securities. Of these markets, only those that are included in the FTSE World Government Bond Index (WGBI) are also included in the WorldILSI.

Figure 35. FTSE World Inflation-Linked Securities Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year

Figure 35. FTSE World Inflation-Linked Securities Index design criteria, cont'd

Minimum issue size	Americas Canada: CAD 1 billion Mexico: MXV 5 billion United States: USD 5 billion Europe, Middle East, and Africa Poland: PLN 5 billion Eurozone Markets: EUR 2.5 billion South Africa: ZAR 500 million Sweden: SEK 10 billion United Kingdom: GBP 2 billion Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 250 billion (excludes Bank of Japan and Ministry of Finance holdings)
Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Composition	Inflation-linked bonds

Figure 36. FTSE World Inflation-Linked Securities Index composition

Country	Inflation-linked securities	Inflation index
Australia	Treasury Indexed Bonds	Consumer Price Index (CPI), published by the Australian Bureau of Statistics (ABS)
Canada	N/A	Consumer Price Index (62-001-X, free), published by Statistics Canada
France	OATi, OAT€i, BTAN€i	OATi: Consumer Price Index (CPI) ex-tobacco, published by National Institute of Statistics and Economic Studies (INSEE). OAT€i and BTAN€i: EU Harmonized Index of Consumer Prices (HICP) ex-tobacco, published by Eurostat
Germany	BUND€i, BOBL€i	EU HICP ex-tobacco, published by Eurostat
Italy	BTP€i	EU HICP ex-tobacco, published by Eurostat
Japan	Inflation-Indexed Bonds (JGBi)	CPI, published by the Statistics Bureau and the Director-General for Policy Planning of Japan

Figure 36. FTSE World Inflation-Linked Securities Index composition, cont'd

Mexico	UDIBONOS (Federal Government Bonds UDIS: Unidades de Inversion - value based on Consumer Price denominated in UDI)	Index, currently published by Instituto Nacional de Estadística y Geografía (INEGI) and published by Banco de Mexico prior to July 14, 2011
Poland	IZ- Series T-Bonds	Consumer Price Index (CPI): published by Central Statistical Office (CSO)
South Africa	Inflation-Linked Bonds	Headline CPI: All items Consumer Price Index for all urban areas, published by Statistics South Africa (Stats SA)
Spain	OBL€I, BONEi	EU HICP ex-tobacco, published by Eurostat
Sweden	Inflation-Linked Bonds	CPI, published by Statistics Sweden (Statistiska centralbyran- SCB)
United Kingdom	Index-Linked GILTs (ILG)	Retail Price Index (RPI), published by Office for National Statistics (ONS)
United States	Treasury Inflation-Protected Securities (TIPS)	CPI, published by US Department of Labor, Bureau of Labor Statistics (BLS)

The index follows the general methodology as outlined in Section 2 of this publication. In addition, the price of each issue in the index is adjusted by using an index ratio. In general, this ratio is the current index level⁴⁹ divided by the inflation index level at the time of issue of the security. If the inflation index is published monthly, then the intra-month index ratio is calculated using linear interpolation. The calculation of an index ratio, if any, follows individual market convention.

Figure 37. FTSE World Inflation-Linked Securities Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

⁴⁹ The current index level is equal to a previous value; the “look-back” period is specified at the time of issuance for each individual bond.

Figure 37. FTSE World Inflation-Linked Securities Index calculation methodology, cont'd

Pricing⁵⁰	Citi trader pricing except for: • Canada (provided by Thomson Reuters) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • South Africa (provided by Johannesburg Stock Exchange). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	April 30, 2007

Chronological summary of events

Figure 38. FTSE World Inflation-Linked Securities Index and related indexes event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE World Inflation-Linked Securities Index following its acquisition by the London Stock Exchange Group.
2016	April: The pricing source for Chilean government bonds changes to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds. June: The World Inflation-Linked Securities Index (WorldILSI) – Additional Markets Indexes family expands to include single-market inflation-linked indexes from the following markets: Canada, Colombia, New Zealand, and Spain. September: Canada and Spain are added to the WorldILSI.
2015	August: The pricing convention for the Australian inflation-linked bonds changes to reflect bid-side pricing from mid-side pricing.
2014	February: The outstanding amount of Polish inflation-linked bonds drops below the minimum size criteria for inclusion and therefore, the bonds are removed from the March 2014 index profile. The coverage for the Polish inflation-linked securities will resume when the bonds satisfy the inclusion criteria.

⁵⁰ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 38. FTSE World Inflation-Linked Securities Index and related indexes event summary, cont'd

2013	April: The World Inflation-Linked Securities Index Additional Markets are introduced. The following markets are included: Brazil, Chile, Israel, Korea, Mexico, Poland, South Africa, and Turkey. August: Australia joins the WorldILSI Additional Markets Indexes. December: Australia, Mexico, Poland, and South Africa join the WorldILSI and are removed from the WorldILSI Additional Markets Indexes.
2010	April: The outstanding amount of the Japanese Inflation-Linked Securities Index excludes the Ministry of Finance buybacks and Bank of Japan holdings. July: Greece is excluded from the WorldILSI due to credit downgrade.
2008	May: The World Inflation-Linked Securities Index is introduced and includes: France, Germany, Greece, Japan, Italy, Sweden, United Kingdom, and United States. The index is introduced with 1 year of history. These markets have been part of the index since its base date (April 30, 2007).

Related indexes

FTSE Euro Inflation-Linked Securities Index (EuroILSI)

The FTSE Euro Inflation-Linked Securities Index (EuroILSI) measures the returns of French, German, Italian and Spanish inflation-linked bonds with fixed-rate coupon payments that are linked to the EU Harmonized Index of Consumer Prices (HICP) ex-tobacco and the Consumer Price Index (CPI) ex-tobacco.

FTSE Emerging Markets Inflation-Linked Securities Index

The FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI) measures the returns of inflation-linked bonds with fixed-rate coupon payments that are linked to an inflation index. The EMILSI tracks debt from seven emerging market countries, namely Brazil, Chile, Colombia, Mexico, Poland, South Africa, and Turkey, denominated in their respective currencies. The index is a valuable benchmark for investors who are concerned with real, rather than notional, returns.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 39. Tickers* for the FTSE World Inflation-Linked Securities Index and selected related indexes

Ticker	Index
SBILUU	FTSE World Inflation-Linked Securities Index, in USD terms
SBILEU	FTSE World Inflation-Linked Securities Index, in EUR terms
SBILJU	FTSE World Inflation-Linked Securities Index, in JPY terms
SBILGU	FTSE World Inflation-Linked Securities Index, in GBP terms
SBLAL	FTSE Australian Inflation-Linked Securities Index, in AUD terms
SBILCAL	FTSE Canadian Inflation-Linked Securities Index, in CAD terms
SBELEU	FTSE Euro Inflation-Linked Securities Index, in EUR terms
SBFRILSI	FTSE French Inflation-Linked Securities Index, in EUR terms
SBDEILSI	FTSE German Inflation-Linked Securities Index, in EUR terms
SBITILSI	FTSE Italian Inflation-Linked Securities Index, in EUR terms
SBJILSI	FTSE Japanese Inflation-Linked Securities Index, in JPY terms
SBLML	FTSE Mexican Inflation-Linked Securities Index, in MXN terms
SBPSL	FTSE Polish Inflation-Linked Securities Index, in PLN terms
SBILESL	FTSE Spanish Inflation-Linked Securities index, in EUR terms
SBLZL	FTSE South African Inflation-Linked Securities Index, in ZAR terms
SBSEILSI	FTSE Swedish Inflation-Linked Securities Index, in SEK terms
SBGBILSI	FTSE UK Inflation-Linked Securities Index, in GBP terms
SBUSILSI	FTSE US Inflation-Linked Securities Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Global indexes

FTSE WorldILSI Additional Markets Indexes

The following seven inflation-linked government bond markets constitute the FTSE WorldILSI Additional Markets Indexes.

FTSE WorldILSI Additional Markets Indexes	
Americas	Asia Pacific and Japan
Brazil	Korea
Chile	New Zealand
Colombia	
EMEA	
Israel	
Turkey	

Design criteria and calculation methodology

Figure 40. FTSE WorldILSI Additional Markets Indexes design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum outstanding	Brazil: BRL 1 billion Chile: CLF 5 million Colombia: COU 3 billion Israel: ILS 5 billion Korea: KRW 1 trillion New Zealand: NZD 750 million Turkey: TRL 2 billion
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted issues)
Composition	Inflation-linked bonds

Figure 41. Types of Inflation-Linked Securities and Inflation Indexes

Country	Inflation-linked securities	Inflation index
Brazil	NTN-B (National Treasury Notes, Series B)	IPCA: Extended Consumer Price Index, published by Instituto Brasileiro de Geografia e Estatística (IBGE)
Chile	BCU, BTU	IPC: Índice de Precios al Consumidor, published by Central Bank of Chile
Colombia	TES UVR	CPI: published by Central Bank of Colombia
Israel	GALIL, CPI-Linked Government Bonds	CPI: published by the Central Bureau of Statistics (CBS)
Korea	KTBi – Inflation-linked KTB	KRCPI: published by the Statistics Korea
New Zealand	Inflation-Indexed Bonds (IIB)	CPI: measured and published quarterly by Statistics New Zealand
Turkey	CPI Indexed Bonds	CPI: General Consumer Price Index, published by Turkish Statistical Institute (TURKSTAT)

The FTSE WorldILSI Additional Markets Indexes follow the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the indexes.

Figure 42. FTSE WorldILSI Additional Markets Indexes calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁵¹	Citi trader pricing except for: • Brazil, Chile, Colombia, New Zealand (provided by Thomson Reuters) • Israel (provided by Tel Aviv Stock Exchange) • Korea (provided by KAP). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of the local market close.
Calculation frequency	Daily

⁵¹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 42. FTSE WorldILSI Additional Markets Indexes calculation methodology, cont'd

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. Each year's scheduled fixing dates are published on the website.
Base date	March 31, 2008

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 43. Tickers* for the FTSE WorldILSI Additional Markets Indexes

Ticker	Index
SBLBL	FTSE Brazilian Inflation-Linked Securities Index, in BRL terms
SBLCL	FTSE Chilean Inflation-Linked Securities Index, in CLP terms
SBILCOL	FTSE Colombian Inflation-Linked Securities Index, in COU terms
SBLILI	FTSE Israeli Inflation-Linked Securities Index, in ILS terms
SBKLL	FTSE Korean Inflation-Linked Securities Index, in KRW terms
SBILNZL	FTSE New Zealand Inflation-Linked Securities Index, in NZD terms
SBLTL	FTSE Turkish Inflation-Linked Securities Index, in TRL terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Global indexes

FTSE Eurobond Indexes

Multi-asset | Multi-currency

The FTSE Eurobond Indexes provide a comprehensive and relevant measure of performance for Eurodollar, Eurosterling, and Euroyen bonds. These indexes comprise investment-grade issues with at least one year until maturity.

FTSE Eurobond Indexes
Eurodollar Bond Index
Eurosterling Bond Index
Euroyen Bond Index

Design criteria and calculation methodology

The FTSE Eurodollar Bond Index includes fixed-rate (including zero-coupon) eurodollar, global, Dragon bonds, certain asset-backed, and euro medium-term notes. Rule 144A corporate securities are included only if they have registration rights. Returns on the subset of bonds issued by non-US entities are also published.

The FTSE Eurosterling Bond Index includes fixed-rate eurosterling, global, Dragon bonds, and certain asset-backed and euro medium-term notes.

The FTSE Euroyen Bond Index includes fixed-rate euroyen, global, Dragon bonds, and certain asset-backed and euro medium-term notes.

Figure 44. FTSE Eurobond Indexes design criteria

Coupon	Fixed-rate Zero-coupon bonds are included in the FTSE Eurodollar Bond Index only
Minimum maturity	At least one year
Minimum issue size	Eurodollar: • US agency/supranational: USD 1 billion • Government/government-guaranteed/government-sponsored: USD 500 million • Corporate/financial/asset-backed: USD 250 million Eurosterling: GBP 200 million Euroyen: JPY 50 billion
Denomination limit	Eurodollar: USD 100,000 Eurosterling: GBP 100,000 Euroyen: JPY 10 million
Minimum credit quality	BBB- by S&P or Baa3 by Moody's

Figure 44. FTSE Eurobond Indexes design criteria, cont'd

Seasoning	Both seasoned and unseasoned bonds are included
Composition	Eurobonds, global bonds, Dragon bonds, certain asset-backed, and euro medium-term notes ⁵²
Redemption features	Bullet, sinking fund, putable, extendable, or callable

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 45. FTSE Eurobond Indexes calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁵³	Eurodollar Index: Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds, Eurodollar Euro bonds (provided by Thomson Reuters). Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Eurosterling and Euroyen Indexes: Thomson Reuters. Prices are generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	Eurodollar: June 30, 1993 Eurosterling: December 31, 1994 Euroyen: December 31, 1994

⁵² For a medium-term note to be included, it must meet all other criteria and be publicly announced. For self-led deals, FTSE Fixed Income Indexes requires the issue to be managed by a syndicate with a minimum of five members; for all other deals, FTSE Fixed Income Indexes requires a minimum of three syndicate members. For the purposes of determining the amount outstanding of such an issue, all fungible issues will be combined.

⁵³ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Chronological summary of events

Figure 46. FTSE Eurobond Indexes event summary

Year	Monthly highlights
2018	January: The pricing source for the Eurodollar Euro, Eurosterling and Euroyen Bond Indexes changes from Citi trader pricing to Thomson Reuters.
2017	September: The indexes are rebranded to FTSE Eurobond Indexes following their acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters.
2012	July: Non-corporate securities issued under Rule 144A without registration rights are eligible for inclusion. Any sukuk in the FTSE Sukuk Index that meet the minimum quality, maturity, and outstanding amount entry criteria are eligible for inclusion.
2007	April: Rule 144A securities without registration rights are excluded from the Eurodollar Bond Index. Pfandbrief and asset-backed securities are re-classified into the collateralized sector. Unrated or shadow-rated bonds are excluded from all three Eurobond Indexes.
2004	July: The minimum amounts outstanding increase as follows: Eurodollar: - US agency/supranational: USD 1 billion - Government/government-guaranteed/government-sponsored: USD 500 million - Corporate/financial/asset-backed: USD 250 million Eurosterling: GBP 200 million Euroyen: JPY 50 billion
2000	July: The minimum amounts outstanding increase as follows: Eurodollar: USD 250 million Eurosterling: GBP 200 million Euroyen: JPY 50 billion
1999	January: Euro-Deutschemark Index is discontinued. Most issues have been included in the EuroBIG index.
1995	January: The settlement date changes to same day for daily calculations and last calendar day for monthly calculations for the Eurodollar Bond Index. The issuance cut-off for profile changes to the twenty-fifth day of the calendar month for the Eurodollar Bond Index. The Eurosterling, Euroyen, and Euro-Deutschemark Bond Indexes are introduced.
1994	January: The Eurodollar Bond Index is introduced.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 47. Tickers* for the FTSE Eurobond Indexes

Ticker	Index
SBEID	FTSE Eurodollar Bond Index, in USD terms
SBEIS	FTSE Eurosterling Bond Index, in GBP terms
SBEIY	FTSE Euroyen Bond Index, in JPY terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Global indexes

FTSE World Money Market Indexes (WMMI)

Sovereign | Multi-currency

The FTSE World Money Market Indexes (WMMI) measure the performance of money market instruments in 18 currencies. The indexes track one-, two-, three-, six-, and twelve-month Eurodeposits, offering investors a good measure of short-term markets.

FTSE World Money Market Indexes (1m, 2m, 3m, 6m, 12m Eurodeposits)		
Americas	Asia Pacific and Japan	EMEA
Canadian Dollar	Australian Dollar	Czech Koruna
US Dollar	Hong Kong Dollar	Danish Krone
	Japanese Yen	Euro
	Malaysian Ringgit	Hungarian Forint
	New Zealand Dollar	Norwegian Krone
	Singapore Dollar	Polish Zloty
		South African Rand
		Swedish Krona
		Swiss Franc
		UK Sterling

Design criteria and calculation methodology

Figure 48. FTSE World Money Market Indexes design criteria

Maturity	One, two, three, six and twelve months. All Eurodeposits are held to maturity. Index names are descriptive. For example, the three-month US Dollar Money Market Index comprises only three-month US Dollar Eurodeposits, and the six-month Japanese Yen Index comprises only six-month Japanese Yen Eurodeposits
Composition	Eurodeposits in the following currencies: Australian Dollar, Canadian Dollar, Czech Koruna, Danish Krone, Euro, Hong Kong Dollar, Hungarian Forint, Japanese Yen, Malaysian Ringgit, New Zealand Dollar, Norwegian Krone, Polish Zloty, Singapore Dollar, South African Rand, Swedish Krona, Swiss Franc, UK Sterling, and US Dollar

Figure 49. FTSE World Money Market Indexes calculation methodology

Pricing	Monthly yields (bid) obtained from Thomson Reuters, 4:00 p.m. London time
Calculation frequency	Daily

The daily and monthly returns are calculated for each instrument in its local currency and in USD terms, using the following assumptions:

- For each index, at the beginning of each month, a fraction of the index matures and is rolled over into a new Eurodeposit of the same maturity. In any given month, a three-month index comprises three three-month Eurodeposits one maturing this month, one maturing next month and one maturing in month three. Each month, one three-month Eurodeposit matures and one three-month Eurodeposit is added. Similar logic applies to one-month, two-month, six-month, and twelve-month indexes.
- The returns for any given maturity index are computed from the actual Eurodeposits that constitute the index in that particular month. For example, the October return for the three-month indexes includes the return of a laddered investment with securities maturing in July, August, and September. At the end of October, the July 31 Eurodeposit matures and a new Eurodeposit is added as of October 31, to continue the ladder for future returns. More details of return computation can be found in the following sections.
- For one-month Eurodeposits, a new Eurodeposit replaces the matured Eurodeposit at the beginning of every month, and the return is the return of the maturing one-month Eurodeposit.

Local Currency Rate Computation

The return computation methodology is consistent across maturities. The steps for computing returns on three-month Eurodeposits for a given month, m are detailed below.

Step 1

Obtain the nominal three-month Eurodeposit rates (quoted on an annual basis), y_{m-i} , as of the end of the months $m-1$, $m-2$, and $m-3$.

Step 2

Convert y_{m-i} into an effective term yield (equivalent to the three-month return), e_{m-i} , for the three-month term starting on the last calendar day of month $m-1$ and ending on the last calendar date of month $m-1+3$, using the actual number of days in the term and the day-count convention of the quoted rate (360 days per year for most, but not all, Eurodeposit rates):

$$e_{m-i} = y_{m-i} \times \left(\frac{\text{Actual days in term}}{360} \right), i = 1, 2, 3$$

Step 3

Calculate the effective monthly return, r_{m-1} , which, when compounded through the length of the three-month term, equals in the effective term yield computed in Step 2:

$$r_{m-1} = (1 + e_{m-1})^{\text{Days in } m / \text{Days in 3-month term}} - 1, i = 1, 2, 3$$

Step 4

Calculate an average of the three monthly yields derived in Step 3. This is the return on three-month deposits for the month m . The same method is used to compute month-to-date returns on three-month

Eurodeposits; the number of days used in Step 3 is appropriately modified.

For calculating returns for any other maturity, similar methodology is used. For example, to calculate returns for the six-month Eurodeposits for a given month m, the average of the six effective monthly returns is calculated using the six six-month Eurodeposit rates as of the end of months m-1, m-2, m-3, m-4, m-5, and m-6.

For one-month Eurodeposits, since a new Eurodeposit replaces a matured Eurodeposit at the beginning of every month, the averaging in Step 4 is omitted for calculating returns

Base currency rate computation

The following example illustrates the computation steps for local and US Dollar-based returns on a three-month Sterling Eurodeposit.

Figure 50. FTSE World Money Market Indexes – Assumed conventions and data

Conventions	Data	
Month for which returns are being computed	July 2007	
Quote convention	Yield (% / annum)	
Day-count basis	ACT/365	
Yield	April 30	5.61% (y)
	May 31	5.71% (y)
	June 30	5.86% (y)
US Dollar/UK Sterling Spot Exchange Rates	June 29	2.00635
	July 31	2.03205

I. Compute local currency return

Step 1

Calculate the effective term yield:

$${}^e\text{April} = 5.61\% \times \left(\frac{31+30+31}{365} \right) = 1.4140\%$$

$${}^e\text{May} = 5.71\% \times \left(\frac{30+31+30}{365} \right) = 1.4392\%$$

$${}^e\text{June} = 5.86\% \times \left(\frac{31+30+31}{365} \right) = 1.4770\%$$

where ${}^e\text{month}$ should be interpreted as the effective yield for the three-month return. In this case, the Eurodeposit that yielded 5.61% per annum on April 30 returns 1.4140% for the three-month term (92 days).

Step 2

Calculate the effective monthly returns:

$$r_{\text{April}} = (1 + 1.4140\%)^{\left(\frac{31}{92}\right)} - 1 = 0.4743\%$$

$$r_{\text{May}} = (1 + 1.4392\%)^{\left(\frac{31}{92}\right)} - 1 = 0.4827\%$$

$$r_{\text{June}} = (1 + 1.4770\%)^{\left(\frac{31}{92}\right)} - 1 = 0.4953\%$$

where r_{month} is the Eurodeposit return for the 31-day month of July. For example, the April 30 Eurodeposit returned 0.4743% for the month of July. This return, in turn, compounds over 92 days to yield r_{month} , or 1.4140%.

Step 3

Compute the average of the monthly returns from above. This is the sector return for the month in local (sterling) terms.

$$r_{\text{avg}} = \left(\frac{r_{\text{April}} + r_{\text{May}} + r_{\text{June}}}{3} \right) = 0.4841\%$$

II. Compute local currency return

$$c_{\text{UK}} = \frac{(2.03205 - 2.00635)}{2.00635} = 1.2809\%$$

III. Compute total return (in US Dollar terms)

$$R_{\text{USD}} = [(1 + 0.4841\%) \times (1 + 1.2809\%)] - 1 = 1.7712\%$$

Figure 51. FTSE World Money Market Indexes – Reuters Instrument Codes (RICs) used to obtain monthly yields (bid) for Eurodeposits⁵⁴

Currency	1-Month	2-Month	3-Month	6-Month	12-Month
Australian Dollar	AUD1MD	AUD2MD	AUD3MD	AUD6MD	AUD1YD
Canadian Dollar	CAD1MD	CAD2MD	CAD3MD	CAD6MD	CAD1YD
Czech Koruna	CZK1MD	CZK2MD	CZK3MD	CZK6MD	CZK1YD
Danish Krone	DKK1MD	DKK2MD	DKK3MD	DKK6MD	DKK1YD
Euro	EUR1MD	EUR2MD	EUR3MD	EUR6MD	EUR1YD
Hong Kong Dollar	HKD1MD	HKD2MD	HKD3MD	HKD6MD	HKD1YD
Hungarian Forint	HUF1MD	HUF2MD	HUF3MD	HUF6MD	HUF1YD
Japanese Yen	JPY1MD	JPY2MD	JPY3MD	JPY6MD	JPY1YD
Norwegian Krone	NOK1MD	NOK2MD	NOK3MD	NOK6MD	NOK1YD
Polish Zloty	PLN1MD	PLN2MD	PLN3MD	PLN6MD	PLN1YD
Swedish Krona	SEK1MD	SEK2MD	SEK3MD	SEK6MD	SEK1YD

⁵⁴ Note: In the event of incorrect or missing rates, previous values will be rolled or an alternative source will be used, if available. Source: Thomson Reuters.

Figure 51. FTSE World Money Market Indexes – Reuters Instrument Codes (RICs) used to obtain monthly yields (bid) for Eurodeposits, cont'd

Swiss Franc	CHF1MD	CHF2MD	CHF3MD	CHF6MD	CHF1YD
New Zealand Dollar	NZD1MD	NZD2MD	NZD3MD	NZD6MD	NZD1YD
Malaysian Ringgit	MYR1MD	MYR2MD	MYR3MD	MYR6MD	MYR1YD
Singapore Dollar	SGD1MD	SGD2MD	SGD3MD	SGD6MD	SGD1YD
South African Rand	ZAR1MD	ZAR2MD	ZAR3MD	ZAR6MD	ZAR1YD
UK Sterling	GBP1MD	GBP2MD	GBP3MD	GBP6MD	GBP1YD
US Dollar	USD1MD	USD2MD	USD3MD	USD6MD	USD1YD

Chronological summary of events

Figure 52. FTSE World Money Market Indexes event summary

Year	Monthly highlights
2017	September: The indexes are rebranded to FTSE World Money Market Indexes following their acquisition by the London Stock Exchange Group.
2007	July: Currency coverage of WMMI is expanded to include Malaysian Ringgit.
2001	January: Composite World Money Market Index is discontinued. Greek Drachma indexes are discontinued as Greece joins the EMU.
2000	April: Greek Drachma one- and three- month indexes are introduced. Greek Drachma is also included within the equally weighted composite World Money Market Index. November: Currency coverage of WMMI is expanded to include six new currencies (Czech Koruna, Hong Kong Dollar, Hungarian Forint, Polish Zloty, Singapore Dollar, and South African Rand). Maturity coverage of money market instruments is expanded to include one-, two-, three-, six-, and twelve- month Eurodeposits in each of the 18 currencies. (Expansion in coverage does not affect the composite World Money Market Index).
1999	January: Currency coverage of WMMI expands to include Australian Dollar, New Zealand Dollar, Danish Krone, Euro, Norwegian Krone, and Swedish Krona. Deutschemark, Dutch Guilder, and French Franc indexes are discontinued (all EMU currencies are folded into the Euro). Composition changes to cover one- and three-month Eurodeposits for each currency.
1978	January: Original Money Market Index is introduced: An equally weighted composite of three-month deposits in eight currencies (US Dollar, Canadian Dollar, Deutschemark, Dutch Guilder, French Franc, Japanese Yen, Swiss Franc, and UK Sterling).

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 53. Tickers* for selected FTSE World Money Market Indexes

Ticker	Index
SBTMADL	FTSE 12-Month Australian Dollar Eurodeposit, in AUD terms
SBTMCDL	FTSE 12-Month Canadian Dollar Eurodeposit, in CAD terms
SBTMCKL	FTSE 12-Month Czech Koruna Eurodeposit, in CZK terms
SBTMDKL	FTSE 12-Month Danish Krone Eurodeposit, in DKK terms
SBTMEUL	FTSE 12-Month Euro Eurodeposit, in EUR terms
SBTMHDL	FTSE 12-Month Hong Kong Dollar Eurodeposit, in HKD terms
SBTMHFL	FTSE 12-Month Hungarian Forint Eurodeposit, in HUF terms
SBTMJYL	FTSE 12-Month Japanese Yen Eurodeposit, in JPY terms
SBTMMYRL	FTSE 12-Month Malaysian Ringgit Eurodeposit, in MYR terms
SBTMNDL	FTSE 12-Month New Zealand Dollar Eurodeposit, in NZD terms
SBTMNKL	FTSE 12-Month Norwegian Krone Eurodeposit, in NOK terms
SBTMPZL	FTSE 12-Month Polish Zloty Eurodeposit, in PLN terms
SBTMSDL	FTSE 12-Month Singapore Dollar Eurodeposit, in SGD terms
SBTMSRL	FTSE 12-Month South African Rand Eurodeposit, in ZAR terms
SBTMSKL	FTSE 12-Month Swedish Krona Eurodeposit, in SEK terms
SBTMSFL	FTSE 12-Month Swiss Franc Eurodeposit, in CHF terms
SBTMBPL	FTSE 12-Month UK Sterling Eurodeposit, in GBP terms
SBTMUDL	FTSE 12-Month US Dollar Eurodeposit, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Americas indexes

Index range

Americas indexes

Americas indexes
FTSE US Broad Investment-Grade Bond Index (USBIG®)
FTSE USBIG Mortgage Index
FTSE USBIG Credit Index
FTSE USBIG High-Grade Credit Index
FTSE USBIG Corporate Index
FTSE USBIG Collateralized Index
FTSE USBIG Treasury Index
FTSE Core +5 and Core +3 Indexes
Related indexes
FTSE Mortgage Float-Adjusted Index
FTSE US Benchmark STRIPS Indexes
FTSE US Treasury Benchmark (On-the-Run) indexes
FTSE US Treasury Benchmark Yield Curve Average Indexes
FTSE US Treasury Bill Indexes
FTSE US High-Yield Market Index
FTSE US High-Yield Cash Pay Index
FTSE US High-Yield Deferred-Interest Index
Related indexes
FTSE US High-Yield Market Capped Index
FTSE Bankrupt/Default Index
FTSE European High-Yield Market Index
FTSE Time-Weighted US Fallen Angel Bond Index
FTSE US Treasury STRIPS Index
FTSE US Large Pension Fund Baseline Bond Index (USLPF)
FTSE Latin American Government Bond Index (LATAMGBI)

The FTSE US Broad Investment-Grade Bond Index (USBIG) tracks the performance of US Dollar-denominated bonds issued in the US investment-grade bond market. Introduced in 1985, the index includes US Treasury, government-sponsored, collateralized, and corporate debt and provides a reliable representation of the US investment-grade bond market.

The FTSE US High-Yield Market Index is a US Dollar-denominated index which measures the performance of high-yield debt issued by corporations domiciled in the US or Canada. Recognized as a broad measure of the North American high-yield market, the index includes cash-pay, deferred-interest securities, and debt issued under Rule 144A in unregistered form.

The FTSE US Treasury STRIPS Index represents a comprehensive selection of long-duration market sectors and thereby improves on the customization possibilities otherwise available. The FTSE US Treasury STRIPS Index offers a wider range of duration choices and can also be combined with a range of USBIG sectors, if a core spread product exposure is desired.

The FTSE US Large Pension Fund Baseline Bond Index (USLPF) provides a benchmark for pension funds seeking to establish long-term core portfolios that more closely match the longer duration of their nominal dollar liabilities.

The FTSE Latin American Government Bond Index (LATAMGBI) comprises government bonds from five Latin American markets, denominated in local currencies. The index is a broad benchmark for Latin American markets.

FTSE US Broad Investment-Grade Bond Index (USBIG®)

Multi-asset | US Dollar

The FTSE US Broad Investment-Grade Bond Index (USBIG) tracks the performance of US Dollar-denominated bonds issued in the US investment-grade bond market. Introduced in 1985, the index includes US Treasury, government-sponsored, collateralized, and corporate debt and provides a reliable representation of the US investment-grade bond market.

The index covers a broad array of asset classes and sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE US Broad Investment-Grade Bond Index	
US Treasury	Government-Sponsored
	Agency
	Supranational
Collateralized	Credit
Mortgage	Non-US Sovereign & Provincial
Asset-Backed	US Sovereign Guaranteed
	Corporate (Industrial, Utility, and Finance)

Design criteria and calculation methodology

The index includes institutionally traded US Treasury, government-sponsored (US agency and supranational), mortgage, asset-backed, and corporate investment-grade securities.

Figure 54. FTSE US Broad Investment-Grade Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	US Treasuries: USD 5 billion public amount outstanding US agencies and supranationals: USD 1 billion Corporate and asset-backed: USD 250 million Non-US sovereign and provincial: USD 500 million Mortgage: Entry: USD 1 billion minimum amount outstanding per origination year generic when the coupon has a minimum amount outstanding of USD 5 billion. Exit: An origination year generic will exit when its amount outstanding falls below USD 1 billion. If the amount outstanding for the coupon falls below USD 2.5 billion, all corresponding origination year generics will be removed from the index.

Figure 54. FTSE US Broad Investment-Grade Index design criteria, cont'd

Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Minimum denomination	Par value: USD 1,000
Composition	US Treasuries (excluding Federal Reserve purchases, inflation-indexed securities and STRIPS); US agencies (excluding callable zeros and bonds callable less than one year from issue date); supranationals; mortgage pass-throughs; asset-backed; credit (excluding bonds callable less than one year from issue date); Yankees, globals, and corporate securities issued under Rule 144A with registration rights
Redemption features	Bullet, sinking fund, putable, extendable, or callable

Figure 55. USBIG Corporate sector classification

Industrial Manufacturing	Aerospace/Defense, Auto Manufacturers, Building Products, Chemicals, Conglomerate/Diversified Manufacturing, Electronics, Information/Data Technology, Machinery, Metals/Mining, Paper/Forest Products, Textiles/Apparel/Shoes, Vehicle Parts, and Manufacturing - Other
Industrial Energy	Gas – Pipelines, Oil and Gas, and Oilfield Machinery and Services
Industrial Service	Cable/Media, Gaming/Lodging/Leisure, Healthcare Supply, Pharmaceuticals, Publishing, Restaurants, Retail – Food/Drugs, Retail Stores – Other, and Service – Other
Industrial Transportation	Airlines, Railroads, and Transportation – Other
Industrial Consumer	Beverage/Bottling, Consumer Products, Food Processors, and Tobacco
Industrial Other	Industrial – Other
Utility	Electric, Power, Telecommunications, Gas – Local Distribution, and Utility – Other
Finance	Banking, Independent Finance, Life Insurance, Mortgage Banking, Property and Casualty, REITs, Securities, and Finance – Other

Figure 56. USBIG calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Interest	Fully taxable (federal)
Yield curve	Citi Treasury Model (off-the-run) Curve
Volatility	Non-mortgages: 10% single volatility Mortgages: Market-implied volatility (LMM Skew model)
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 56. USBIG calculation methodology, cont'd

Pricing⁵⁵	Primary source is Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Prices are generally taken as of local market close. Third-party pricing is used as a supplement. Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices for Agency, ABS and Credit bonds. Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices for Treasury bonds.
Pricing adjustments	Mortgages: Carry-adjusted to reflect the difference between the index settlement dates and standard SIFMA settlement dates
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1979

Chronological summary of events

Figure 57. FTSE US Broad Investment-Grade Bond Index event summary

Year	Monthly highlights
2018	August: Freddie Mac 15-Year and 30-Year fixed rate cash issuance Gold PCs, pool prefix v6 and V8, respectively, are included in the US Broad Investment-Grade Mortgage Index.
2017	September: The index is rebranded to FTSE US Broad Investment-Grade Bond Index following its acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters.
2012	July: Non-corporate securities issued under Rule 144A without registration rights are eligible for inclusion. Any sukuk in the Sukuk Index that meet the minimum quality, maturity, and outstanding amount entry criteria are also eligible for inclusion.
2011	June: A new mortgage prepayment model is incorporated which computes option-adjusted values using a LMM Skew model with market-implied volatilities.

⁵⁵ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 57. FTSE US Broad Investment-Grade Bond Index event summary, cont'd

2010	April: For Mortgage securities, the calculation for carry adjustment prices will use a short-term prepayment estimate provided by Citi's Mortgage Research in place of the most recent one-month speeds. If the short-term estimate is not available for a particular vintage, the most recently published one-month speed will be used.
2007	April: The minimum entry size increases as follows: - US Treasuries from USD 1 billion to USD 5 billion - Non-US sovereign and provincial from USD 250 million to USD 500 million
2004	July: The minimum entry size increases as follows: - Agency and supranational from USD 200 million to USD 1 billion - Credit and asset-backed bonds from USD 200 million to USD 250 million - Mortgage: Entry: USD 1 billion minimum amount outstanding per origination year generic when the coupon has a minimum amount outstanding of USD 5 billion. Exit: An origination year generic will exit when its amount outstanding falls below USD 1 billion. If the amount outstanding for the coupon falls below USD 2.5 billion, all corresponding origination year generics will be removed from the index.
2003	May: A new mortgage prepayment model is incorporated which computes option-adjusted values using a two-factor model with market-implied volatilities.
2001	April: The minimum entry size increases as follows: - Agency, supranational, corporate, and asset-backed bonds from USD 100 million to USD 200 million - Mortgage origination year generics from USD 250 million to USD 500 million Bonds with call dates less than one year from issue date are no longer included. Rule 144A securities with registration rights are added to the Credit sector. Sector classifications change to Treasury, government-sponsored, collateralized, and credit. July: The issuance cut-off for profile changes to four (4) global business days before month-end. November: The stranded asset sector is reclassified from utility sector to collateralized asset-backed sector.
1999	January: The exit amount for corporate and government-sponsored bonds increases from USD 75 million to USD 100 million. Returns no longer reflect transaction costs for new issues. July: The minimum entry size for a mortgage coupon increases to USD 5 billion and the origination year minimum increases to USD 250 million. GNMA-IIs are added to the USBIG Mortgage Index. Callable zeros are removed from the USBIG Agency Index.
1998	July: A new mortgage prepayment model is incorporated which computes option-adjusted values using a two-factor model with market-implied volatilities.
1997	April: All securities pricing switches to 3:00 p.m. E.T. (US Treasury futures close) from 5:00 p.m. November: Origination year generics replace seasoning categories for the USBIG Mortgage Index. The minimum size per origination year generic is set at USD 100 million.

Figure 57. FTSE US Broad Investment-Grade Bond Index event summary, cont'd

1996	July: Pricing for mortgages switches to origination year-based. The USBIG Mortgage Index is reclassified to include a “super-seasoned” category. The minimum size per seasoning category is reduced from USD 500 million to USD 250 million. December: Minimum denomination and fully taxable (federal) interest are added as inclusion criteria to include certain preferred security structures (for example, Trust Pass-Through Securities, or TRUPS).
1995	January: The minimum entry/exit issue size increases as follows: - US Treasuries: USD 1 billion/USD 1 billion public amount outstanding - Corporates and government-sponsored: USD 100 million/USD 75 million - Mortgages: USD 1 billion/USD 1 billion The settlement date becomes same day for daily calculations and last calendar day for monthly calculations. The issuance cut-off for profile changes to the twenty-fifth day of the calendar month. Price adjustment for mortgages is implemented. Multi-family project loans are eliminated from the USBIG Mortgage Index. September: Citi’s Treasury Model (off-the-run) curve is used to compute option-adjusted values. A new mortgage prepayment model is incorporated which computes option-adjusted values using a two-factor model with fixed historical volatilities. Volatility assumptions on non-mortgages are reduced from 13% to 10%.
1994	January: Corporate industry sectors expand to include additional security types.
1993	July: FHLMC and FNMA balloons are included in USBIG.
1992	July: Mortgage seasoning expands to include moderately seasoned 15-year pass-throughs. The minimum entry/exit issue size for mortgage securities increases to USD 200 million.
1991	July: FHLMC Gold pass-throughs are included in USBIG.
1990	January: The government-sponsored sector is introduced in USBIG, including agencies and supranationals. February: Credit cards are included in the index. July: Moderately seasoned 30-year pass-through generic mortgages are included.
1989	January: Returns reflect transaction costs on new issues. August: The volatility assumption changes from 16% to 13%.
1988	January: Investment-grade ratings are assigned by S&P or Moody’s. The minimum outstanding for corporate securities increases from USD 25 million to USD 50 million. Yankees other than Canadian and World Bank issues are included in USBIG.
1987	September: The 30-year mortgage seasoning expands to include new and seasoned.
1986	January: 15-year mortgages are included in USBIG.
1985	October: The US Broad Investment-Grade Bond Index is introduced.

Related indexes

FTSE USBIG Mortgage Index

The FTSE USBIG Mortgage Index comprises 30- and 15-year GNMA, FNMA, and FHLMC securities, and FNMA and FHLMC balloon mortgages and is reconstituted each month to reflect new issuance and principal pay-downs. All mortgage pools are aggregated by coupon within agency and product type. In addition, each coupon sector may be further divided into distinct origination year generics provided that each of these origination year generics meets a minimum amount outstanding criterion.

Each month, “factor” information for all outstanding agency-guaranteed mortgage pools is provided by GNMA, FNMA, and FHLMC for all of their respective pools and represents the most current information available in the market place. Each mortgage pool has a factor that represents the fraction of the original pool still outstanding. The outstanding amounts are aggregated, and the difference between the original and current outstanding is used to calculate the pay-down for a coupon sector. To calculate monthly pay-downs, the latest factor for the pool is subtracted from the appropriate factor from the prior tape.

FTSE USBIG Mortgage Index Pricing

Each day, mortgage TBAs (to-be-announced) receive a trader price quoted for standard SIFMA settlement dates, which occur on a variety of dates throughout the month depending on the type of security. Because the index uses cash settlement, it is necessary to adjust the prices for carry. With a positively sloped yield curve, the actual market price for end-of-month settlement would be higher than the SIFMA settlement price to account for the difference between the current yield on the mortgage security and the money market rate over the time between settlement dates (the cost of carry). The price adjustment also accounts for the effect of principal pay-downs on the mortgage security's current yield. When calculating the carry-adjusted price, the short-term prepayment estimate and the one-month LIBOR rate are used.

Since July 1996, the pricing of mortgage securities has reflected the origination year of the loans. The WALA (weighted average loan age) provided by GNMA, FNMA, and FHLMC is used to calculate the origination year. For any particular coupon, Citi traders provide the TBA price plus additional pricing points for specific origination years. Prices for origination years with relatively lower amounts outstanding are interpolated. This pricing methodology ensures that the index return more fairly represents the results of a realistic baseline strategy that a passive investor could have followed.

FTSE USBIG Mortgage Index Return Methodology

The principal payment component of the total rate-of-return computation for the FTSE USBIG Mortgage Index includes both scheduled principal amortization and unscheduled principal prepayment. The FTSE USBIG Mortgage Index accounts for all mortgage payments (principal plus interest) at the end of each month to reflect the monthly cash flow characteristics inherent in the instruments.

For example, during the January measurement period, most mortgage securities generate cash flow (principal and interest). The index assumes that cash flow is reinvested at the monthly average of the daily one-month Eurodeposit rate. For the January returns, information on the January pay-down, applicable to a December 31–January 31 holding period is available by the third week of January. The return computation for mortgage securities is given in Figure 58.

Definition of Current Coupon

Each month the current coupon origination year generic for the 30-year GNMA, FNMA and FHLMC is selected based on the carry-adjusted price in the preliminary profile, pricing as of the fixing date and settlement as of the last calendar day of the month. Each of the three chosen current coupon origination year generics must be in the

upcoming profile and is priced closest to \$100 (100% of par). If there are multiple origination year generics within a program and coupon, with the carry-adjusted price within \$0.10 of each other, the most recent origination year generic is selected as the current coupon origination year generic.

Figure 58. Return calculation for mortgage securities

Total rate of return (%)

$$\left[\frac{(C+X) \times \left(1 + \frac{\left(\frac{R_m}{200} \right) \times N}{180} \right) + (EP+EA) \times \left(1 - \frac{X}{100} \right)}{(BP+BA)} - 1 \right] \times 100$$

BP: Beginning price

EP: Ending price

BA: Beginning accrued interest

EA: Ending accrued interest

X: Principal payment as percent of beginning balance

C: Coupon rate/12

R_m : Reinvestment rate on intra-month payment (average of daily one-month Eurodeposit rate)

N: Number of days between date of receipt of coupon and principal payment and calendar month-end

FTSE USBIG Credit Index

This index includes US and non-US corporate securities, US government-guaranteed securities, and non-US sovereign and provincial securities.

FTSE USBIG High Grade Credit Index

This index includes those issues from the USBIG Credit Index that have at least ten years to maturity (long-term) and a minimum credit rating of AA-/Aa3.

FTSE USBIG Corporate Index

This index includes US and non-US corporate securities (excludes US government-guaranteed and non-US sovereign and provincial securities).

FTSE USBIG Collateralized Index

This index includes mortgage pass-throughs and asset-backed securities.

FTSE USBIG Treasury Index

This index includes fixed rate US Treasury bonds with USD 5 billion public amount outstanding and greater than one year to maturity. The index excludes Federal Reserve purchases, inflation-indexed securities and STRIPS.

FTSE Core +5 Index

This index is the USBIG Index excluding Treasury and government-sponsored securities with less than five years to maturity.

FTSE Core +3 Index

This index is the USBIG Index excluding Treasury and government-sponsored securities with less than three years to maturity.

FTSE Mortgage Float-Adjusted Index

This index measures the mortgage component of the USBIG Index excluding all pass-throughs currently backing CMOs.

FTSE US Benchmark STRIPS Indexes

These indexes measure the total returns of the current one-, two-, three-, five-, seven-, ten-, fifteen-, twenty-, twenty-five- and thirty-year STRIPS. These benchmarks change every three months based on their February, May, August, and November cycles. For example, benchmarks maturing in the February cycle will be used for January, February, and March returns. Due to liquidity constraints, long-term benchmark STRIPS may not change every three months.

FTSE US Treasury Benchmark (on-the-run) Indexes

These indexes measure total returns for the current two-, three-, five-, seven-, ten-, and thirty-year on-the-run Treasuries that settle by the end of the calendar month. As a result of the reduced auction schedule for one-year Treasury bills, as of May 2000, the index team selects an existing coupon bond with approximately one year to maturity to use as the one-year benchmark. In most cases, this is an old two-year security.

FTSE US Treasury Benchmark Yield Curve Average Indexes

These indexes measure total returns for the current two-, three-, five-, seven-, and ten-year on-the-run Treasuries that settle by the end of the calendar month and the two shorter and two longer issues in the Treasury Index nearest each respective benchmark maturity. The thirty-year US Treasury Benchmark Yield Curve Average Index measures total returns for the thirty-year on-the-run Treasury that has been in existence for the entire month and the four shorter issues in the Treasury Index. Callable bonds are excluded from these indexes.

FTSE US Treasury Bill Indexes

These indexes measure return equivalents of yield averages. The instruments are not marked to market. For example, the US Six-Month Treasury Bill Index is an average of the last six six-month Treasury bill month-end rates. Similarly, the US One-Month and Three-Month Treasury Bill Indexes consist of the last one one-month and three three-month Treasury bill month-end rates, respectively.

Example of return computation of a three-month treasury bill

Step 1

Obtain discount yields for the three previous month-end dates.

Step 2

Convert the discount rates to bond-equivalent yields.

Step 3

Compute the simple average of the bond-equivalent yields.

Step 4

De-compound to a monthly frequency using the actual number of days in the month and a 365-day year.

Conventions	Data	
Month for which returns are being computed	July 2007	
Quote convention	Discount yield converted to a bond equivalent yield	
Day-count basis	ACT/365	
Yield	April 30	4.8596%
	May 31	4.7194%
	June 29	4.8024%
Simple average of bond equivalent yields	Average	4.7938%

De-compound to a monthly frequency using the actual number of days in the return month and a 365-day year.

$$R = \left(\left(1 + \frac{4.7938}{200} \right)^{2 \times \left(\frac{31}{365} \right)} - 1 \right) \times 100 = 0.4032$$

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 59. Tickers* for the FTSE US Broad Investment-Grade Bond Index and selected related indexes

Ticker	Index
SBBIG	FTSE US Broad Investment-Grade Bond Index, in USD terms
SBMT	FTSE USBIG Mortgage Index, in USD terms
SBCT	FTSE USBIG Credit Index, in USD terms
SBC2A10P	FTSE USBIG High-Grade Credit Index, in USD terms
SBCRP	FTSE USBIG Corporate Index, in USD terms
SBCOLL	FTSE USBIG Collateralized Index, in USD terms
SBCORE5	FTSE Core+5 Index, in USD terms
SBCORE3	FTSE Core+3 Index, in USD terms
SBST	FTSE US Benchmark STRIPS Indexes, in USD terms
SBTSY1	FTSE 1-Year US Treasury Benchmark (On-the-Run) Index, in USD terms
SBYC5	FTSE 5-Year US Treasury Benchmark Yield Curve Average Index, in USD terms
SBMMTB1	FTSE 1-Month US Treasury Bill Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Americas indexes

FTSE US High-Yield Market Index

Credit | US Dollar

The FTSE US High-Yield Market Index is a US Dollar-denominated index which measures the performance of high-yield debt issued by corporations domiciled in the US or Canada. Recognized as a broad measure of the North American high-yield market, the index includes cash-pay, deferred-interest securities, and debt issued under Rule 144A in unregistered form.

Sub-indexes are available in any combination of corporate sector, maturity, and rating.

FTSE US High-Yield Market Index	
Industrial	Utility
Consumer	Electric
Energy	Gas
Manufacturing	Power
Service	Telecom
Transportation	Utility – Other
Industrial – Other	
Finance	
Banking	
Finance – Other	

Design criteria and calculation methodology

The US High-Yield Market Index includes cash-pay and deferred-interest securities. All the bonds are publicly placed, have a fixed coupon, and are non-convertible. Bonds issued under Rule 144A are included in their unregistered form.

Figure 60. FTSE US High-Yield Market Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	USD 250 million
Credit quality ⁵⁶	Maximum quality: BB+ by S&P and Ba1 by Moody's Minimum quality: C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Cash-pay, Zero-to-Full (ZTF), Pay-in-Kind (PIK), step-coupon bonds, and Rule 144A bonds issued by corporations domiciled in the United States or Canada only

⁵⁶ For defaulted bonds, please see page 23.

Figure 61. FTSE US High-Yield Index industry sector classification

Industrial Manufacturing	Aerospace, Auto-Manufacturers/Vehicle Parts, Building Products, Home Builders, Capital Goods, Chemicals, Containers, Metals/Mining, Paper/Forest Products, Technology, and Textiles/Apparel/Shoes
Industrial Energy	Secondary Oil and Gas Producers, Oil Equipment, and Energy – Other
Industrial Service	Cable, Broadcast/Outdoor, Satellite, Publishing, Gaming, Leisure, Lodging, Healthcare Facilities/Supplies, Pharmaceuticals, Restaurants, Retail Stores – Food and Drugs, Retail Stores – Other, Environmental Services, Tower, and Service - Other
Industrial Transportation	Airlines and Transportation – Rail and Other
Industrial Consumer	Consumer Products/Tobacco and Food Processors/Beverage/Bottling
Industrial Other	Industrial – Other
Utility	Telecommunications (Broadband, Competitive Local Exchange Company, Diversified Telecommunications, ISP/ Data, Paging, Wireless), Electric, Power, Gas, and Utility – Other
Finance	Banking, and Finance – Other

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 62. FTSE US High-Yield Market Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Primarily external pricing source
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1988

Chronological summary of events

Figure 63. FTSE US High-Yield Market Index and related indexes event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE US High Yield Market Index following its acquisition by the London Stock Exchange Group.
2014	December: The minimum issue size for the US High-Yield Market Index becomes USD 250 million. The cap on the total debt of any individual issuer increases to USD 15 billion from USD 10 billion for the US High-Yield Market Capped Index.
2011	October: The cap on the total debt of any individual issuer increases to USD 10 billion from USD 5 billion for the US High-Yield Market Capped Index.
2002	July: The US High-Yield Market Capped Index is introduced.
2001	April: The minimum issue size changes as follows: Entry Criteria: USD 100 million minimum size outstanding per issue when the issuer has a minimum of USD 400 million total outstanding debt that qualifies for inclusion in the US High-Yield Market Index; or USD 200 million minimum outstanding per issue when the issuer does not meet the USD 400 million requirement. Exit Criteria: A bond will exit the US High-Yield Market Index when its amount outstanding falls below USD 100 million par amount. An issuer that has already satisfied the USD 400 million will remain in the index – even if the total par amount outstanding of its bonds drops below the USD 400 million.
1999	January: Rule 144A bonds are included at issuance. Securities are limited to those issued by US- or Canadian-domiciled issuers only. The minimum credit quality is raised to C by S&P or Moody's from none.
1998	January: The maximum rating changes to speculative-grade by both S&P and Moody's. The minimum issue size exit criterion increases to USD 100 million from USD 75 million. Industry sectors change as follows: - Conglomerate/Diversified Manufacturing and Machinery are combined to form Capital Goods. - Electronics/Information/Data Technology name changes to Technology.
1997	January: The minimum issue size entry criterion increases to USD 100 million from USD 50 million. The minimum issue size exit criterion increases to USD 75 million from USD 50 million.
1991	January: Deferred-interest securities are added to applicable indexes.
1990	The US High-Yield Market Index is introduced.

Average Spread to Worst and Average Treasury Benchmark

The average yield-to-worst is the lower of the yield-to-worst call and yield-to-maturity. The spread-to-worst is the difference between the yield-to-worst and the yield-to-maturity at the average life point on the interpolated Treasury model curve. The yield-to-worst is capped at 35% and the spread-to-worst is capped at 3,500bp.

Related indexes

FTSE US High-Yield Cash Pay Index

The FTSE US High-Yield Cash-Pay Index is created by removing the bonds in the Deferred-Interest Index from the FTSE US High-Yield Market Index. It includes only cash-pay bonds (both registered and Rule 144A) with at least one year to maturity and at least USD 250 million outstanding. (Base Date: December 31, 1988)

FTSE US High-Yield Deferred-Interest Index

The FTSE US High-Yield Deferred-Interest Index includes pay-in-kind bonds (PIKs), PIK toggle bonds, zero-to-full coupon bonds (ZTFs), zero-to-maturity bonds, step-up coupon bonds, and credit sensitive notes. (Base Date: December 31, 1990)

FTSE US High-Yield Market Capped Index

The FTSE US High-Yield Market Capped Index uses the FTSE US High-Yield Market Index as its foundation. The index uses the same design criteria and calculation methodology as the FTSE US High-Yield Market Index (see Figures 60 - 62), but caps the total debt of any single issuer at USD 15 billion of par amount outstanding and also delays the entry of fallen angels for a minimum of one month after their downgrade to high-yield status.

When the total eligible par amount from one issuer exceeds USD 15 billion, the par amount of each bond from this issuer is scaled pro-rata to reduce the total to USD 15 billion. Capping the par amount outstanding of large issuers helps limit the exposure that these issuers have on the FTSE US High-Yield Market Capped Index, while retaining the characteristics of the issuer's distribution across different maturities.

The FTSE US High-Yield Market Capped Index addresses the disproportionate influence that a recently downgraded issuer can have on the index's characteristics upon entry. This is accomplished by delaying the entry of a fallen angel issuer's debt for a minimum of one month from its downgrade to high-yield status. Specifically, if both S&P and Moody's downgrade an issuer's debt to BB+ and Ba1 respectively, or below, it will be eligible for the US High-Yield Market Capped Index after a waiting period of one full calendar month. For example, if an issuer's debt is downgraded to high-yield status any day during the calendar month of May, it will be eligible for inclusion in the July FTSE US High-Yield Market Capped Index. This aspect of the criteria provides time for the market to evaluate and adjust to any credit events associated with the fallen angels. In addition, it allows investors time to assess the value and risk of fallen angels without being underweighted in any sectors in which they are included. (Base Date: December 31, 2001).

FTSE Bankrupt/Default Index

The FTSE Bankrupt/Default Index only includes securities of companies previously in the FTSE US High-Yield Market Index or FTSE US Broad Investment-Grade Bond Index that have announced bankruptcy or filed for Chapter 7 or Chapter 11 bankruptcy protection. The FTSE Bankrupt/Default Index also includes bonds that have defaulted or that are expected to default on required interest payments, and bonds that are assigned a D rating by S&P, regardless of whether that issuer has filed for bankruptcy protection.

A bond exits the FTSE Bankrupt/Default Index when reorganization is completed or exchanged for other securities, or upon liquidation, or when neither S&P nor Moody's rate the bonds. (Base Date: December 31, 1990)

FTSE European High-Yield Market Index

The FTSE European High-Yield Market Index measures the performance of high-yield corporate debt denominated in Euro (EUR), Swiss Franc (CHF), and UK Sterling (GBP). The index comprises cash-pay, zero-to-full (ZTF), pay-in-kind (PIK), and step-coupon bonds.

FTSE Time-Weighted US Fallen Angel Bond Index

The FTSE Time-Weighted US Fallen Angel Bond Index measures the performance of “fallen angels” (high-yield debt that was previously rated investment-grade) and includes US Dollar-denominated bonds issued by corporations domiciled in the US or Canada.

Unlike traditional indexes, where constituent weights are based on market value, the index’s constituent weights are determined based on the time from inclusion in the index, with higher weights assigned to bonds that have more recently become “fallen angels.” This time-based weighting approach aims to capture the price rebound effect that fallen angels tend to experience soon after their initial downgrade to high-yield. An additional capping mechanism is in place to help manage concentration risk.

The index provides an alternatively-weighted benchmark for the North American high-yield bond market.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 64. Tickers* for the FTSE US High-Yield Market Index and selected related indexes

Ticker	Index
SBHYMI	FTSE US High-Yield Market Index, in USD terms
SBHYCP	FTSE US High-Yield Cash Pay Index, in USD terms
SBHYDI	FTSE US High-Yield Deferred-Interest Index, in USD terms
SBHCMCAP	FTSE US High-Yield Market Capped Index, in USD terms
SBHYBKRT	FTSE Bankrupt/Default Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE US Treasury STRIPS Index

Sovereign | US Dollar

The FTSE US Treasury STRIPS Index represents a comprehensive selection of long-duration market sectors. The FTSE US Treasury STRIPS Index offers a wider range of duration choices and can also be combined with a range of USBIG sectors if a core spread product exposure is desired. It has been increasingly difficult to construct long-duration benchmarks using a core that combines the FTSE USBIG Credit and Collateralized Indexes, since the effective duration of the FTSE USBIG Mortgage Index is significantly shorter than that of the FTSE USBIG Credit Index. The greater choice of long-duration sectors allows investors to opt for any core holding and combine it with the appropriate STRIPS sector to reach their target durations.

Figure 65. FTSE US Treasury STRIPS Index design criteria and calculation methodology

Coupon	Zero coupon
Minimum maturity ⁵⁷	None, but derived from bonds with a remaining maturity of at least one year.
Minimum issue size ⁵⁸	None, but derived from bonds with at least USD 5 billion amount outstanding.
Composition	Only those STRIPS derived from bonds in the FTSE US Treasury Index are included. The coupon STRIPS with less than one year remaining to maturity, which have been derived from this set of Treasury bonds, are also included. (The FTSE US Treasury Index tracks those issues with at least USD 5 billion public amount outstanding and a remaining maturity of at least one year.) In addition, only those STRIPS from Treasury bonds maturing in the February, May, August, and November 15 cycles are included ⁵⁸ .
Weighting	Market capitalization
Rebalancing	Once a month at the end of the month. The first week of each month, the Bureau of Public Debt makes available the Treasury market debt outstanding held in stripped form as of the previous month-end. These figures are used along with the current FTSE US Treasury Index profile to arrive at the amounts outstanding for the following month's STRIPS Index. For example, during the first week of January, the Bureau of Public Debt announced the amounts held in stripped form as of December 31. These amounts were applied to the February Index profile fixing and they were then fixed for the calendar month, and all interim returns were calculated based on its composition.
Cycles	Only those STRIPS derived from bonds within the February-August 15 or May-November 15 cycles

⁵⁷ Neither an amount outstanding cut-off nor a minimum maturity screen is imposed on the FTSE US Treasury STRIPS Index. The goal is to maintain a relatively stable universe that accommodates the broadest measure of available securities. By including coupon STRIPS with less than one year remaining to maturity, the full FTSE US Treasury STRIPS Index cash flows can be replicated closely by using bonds in the FTSE US Treasury Index.

⁵⁸ The bond stripping of eligible monthly Treasury auctions, along with the stripping of Treasury Inflation Protected Securities, has not created a deep enough market to ensure availability to institutional investors; therefore, these STRIPS are excluded from the index.

Figure 65. FTSE US Treasury STRIPS Index design criteria and calculation methodology, cont'd

Reinvestment of cash flow	Maturing interest STRIPS are reinvested at the daily average of the one-month Eurodeposit, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing ⁵⁹	Citi trader pricing generally taken as of the local market close. Prices from third-party pricing sources and transaction-related information supplement Citi trader prices for completeness. Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1991

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

The ticker for the FTSE US Treasury STRIPS Index (in USD terms) is SBST.

⁵⁹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

FTSE US Large Pension Fund Baseline Bond Index (USLPF)

Multi-asset | US Dollar

The FTSE US Large Pension Fund Baseline Bond Index (USLPF) provides a benchmark for pension funds seeking to establish long-term core portfolios that more closely match the longer duration of their nominal dollar liabilities. These portfolios might normally be benchmarked to the USBIG, but the USLPF improves on that structure by using fixed sector weights and a minimum maturity of seven years for non-mortgage issues. These design characteristics help satisfy the longer duration goal of pension fund portfolios, while emphasizing the traditionally higher yielding longer-term securities.

The USLPF index employs the calculation assumptions previously outlined for the USBIG. Figure 66 details the design criteria of this index.

Figure 66. FTSE US Large Pension Fund Baseline Bond Index design criteria and calculation methodology

Coupon	Fixed-rate
Minimum maturity	Non-mortgage: Seven years Mortgage: One year
Minimum issue size	US Treasuries: USD 5 billion public amount outstanding US agencies and supranationals: USD 1 billion Corporate and asset-backed: USD 250 million Non-US sovereign and provincial: USD 500 million Mortgage: Entry: USD 1 billion minimum amount outstanding per origination year generic when the coupon has a minimum amount outstanding of USD 5 billion. Exit: An origination year generic will exit when its amount outstanding falls below USD 1 billion. If the amount outstanding for the coupon falls below USD 2.5 billion, all corresponding origination year generics will be removed from the index.
Minimum denomination	Par value: USD 1,000
Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Composition	Treasuries (excluding inflation-indexed securities); agencies (excluding callable zeros and bonds callable less than one year from issue date); mortgage pass-throughs; asset-backed; supranationals; credit (excluding bonds callable less than one year from issue date); Yankees, globals, and securities issued under Rule 144A with registration rights
Redemption features	Bullet, sinking fund, putable, extendable, or callable
Weighting	Issues: market capitalization Sectors: fixed weight as follows • Treasury/Government-Sponsored: 40% • Collateralized: 30% • Credit: 30%

Figure 66. FTSE US Large Pension Fund Baseline Bond Index design criteria and calculation methodology, cont'd

Calculation frequency	Daily
Rebalancing	Once a month at the end of the month
Fixing date	Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1979

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

The ticker for the FTSE US Large Pension Fund Baseline Bond Index (in USD terms) is SBNLPF.

Americas indexes

FTSE Latin American Government Bond Index (LATAMGBI)

Sovereign | Multi-currency

The FTSE Latin American Government Bond Index (LATAMGBI) comprises government bonds from five Latin American markets, denominated in local currencies. The index is a broad benchmark for sovereign Latin American markets.

Sub-indexes are available in any combination of currency, maturity, and rating.

FTSE Latin American Government Bond Index	
Brazil	
Chile	
Colombia	
Mexico	
Peru	

Design criteria and calculation methodology

Figure 67. FTSE Latin American Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	Brazil: BRL 5 billion (excludes Holdings of the Central Bank of Brazil) Chile: CLP 100 billion Colombia: COP 2 trillion Mexico: MXN 10 billion Peru: PEN 2 billion
Minimum credit quality	C by S&P or Ca by Moody's (excludes defaulted bonds)
Composition	Latin American sovereign debt denominated in the domestic currencies. Securities included: Fixed-rate and zero-coupon bonds – unless otherwise stated in Figure 68. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 68.

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 68. FTSE Latin American Government Bond Index composition

LATAMGBI markets	Security type
Brazil	Excludes LTNs
Chile	N/A
Colombia	Excludes Tes Control Monetario (TCM) bonds
Mexico	Excludes bonds issued prior to January 1, 2003
Peru	N/A

Figure 69. FTSE Latin American Government Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Brazil, Chile, Colombia, and Peru provided by Thomson Reuters and Mexico provided by Proveedor Integral de Precios S.A. de C.V. All pricing is generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	March 31, 2011

Chronological summary of events

Figure 70. FTSE Latin American Government Bond Index event summary

Year	Monthly highlights
2017	August: The pricing source for local currency government bonds issued by Brazil, Colombia, and Peru is changed from Citi trader to Thomson Reuters. September: The index is rebranded to FTSE Latin American Government Bond Index following its acquisition by the London Stock Exchange Group.

Figure 70. FTSE Latin American Government Bond Index event summary, cont'd

2016	April: The pricing source for Chilean government bonds changes to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds.
2012	July: The outstanding amount of the Brazilian government bonds excludes the holdings of the Central Bank of Brazil.
2011	September: The Latin American Government Bond Index is introduced and includes Brazil, Chile, Colombia, Mexico, and Peru. The index is introduced with 5 months of history. These markets have been part of the index since its base date (March 31, 2011).

Related indexes and sub-indexes

Each of the countries included in the FTSE Latin America Government Bond Index (LATAMGBI) is also available as a stand-alone index.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 71. Tickers* for the FTSE Latin American Government Bond Index and selected related indexes

Ticker	Index
SBLGBIL	FTSE Latin American Government Bond Index, in local currency terms
SBLGBIU	FTSE Latin American Government Bond Index, in USD terms
SBLGBIE	FTSE Latin American Government Bond Index, in EUR terms
SBBRL	FTSE Brazilian Government Bond Index, in BRL terms
SBCLL	FTSE Chilean Government Bond Index, in CLP terms
SBCOL	FTSE Colombian Government Bond Index, in COP terms
SBMXL	FTSE Mexican Government Bond Index, in MXN terms
SBPUL	FTSE Peruvian Government Bond Index, in PEN terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Europe, Middle East, and Africa indexes

Index range

Europe, Middle East, and Africa indexes

Europe, Middle East, and Africa indexes
FTSE Euro Broad Investment-Grade Bond Index (EuroBIG®)
FTSE EMU Government Bond Index (EGBI)
FTSE Jumbo Pfandbrief Index
FTSE European High-Yield Market Index
FTSE European High-Yield Cash-Pay Index
FTSE European High-Yield Deferred-Interest Index
Related Indexes
FTSE US High-Yield Market Index
FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI)
FTSE Middle East and North Africa Broad Bond Index (MENABBI)

The FTSE Euro Broad Investment-Grade Bond Index (EuroBIG) is a multi-asset benchmark for investment-grade, Euro-denominated, fixed income bonds. Introduced in 1998, the EuroBIG includes government, government-sponsored, collateralized, and corporate debt.

The FTSE European High-Yield Market Index measures the performance of high-yield corporate debt denominated in Euro (EUR), Swiss Franc (CHF), and UK Sterling (GBP). The index comprises cash-pay, zero-to-full (ZTF), pay-in-kind (PIK), and step-coupon bonds.

The FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI) comprises government bonds from seven CEEMEA markets, denominated in local currencies. The index provides a broad benchmark for portfolio managers looking for a measure of sovereign CEEMEA markets.

The FTSE Middle East and North Africa Broad Bond Index (MENABBI) measures the performance of both investment-grade and high-yield US Dollar-denominated debt issued by governments, agencies, and corporations domiciled in the Middle East and North Africa.

FTSE Euro Broad Investment-Grade Bond Index (EuroBIG[®])

Multi-asset | Euro

The FTSE Euro Broad Investment-Grade Bond Index (EuroBIG) is a multi-asset benchmark for investment-grade, Euro-denominated, fixed income bonds. Introduced in 1998, the EuroBIG includes government, government-sponsored, collateralized, and corporate debt.

The index covers a broad array of asset classes and sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE Euro Broad Investment-Grade Bond Index		
Government / Government-Sponsored	Collateralized	Corporate
Sovereign / Sovereign-Guaranteed	Covered	Industrial
Government-Sponsored / Regional Government	Asset-Backed	Utility
		Finance

Design criteria and calculation methodology

The FTSE Euro Broad Investment-Grade Bond Index covers all sectors of the Euro-denominated, investment-grade, fixed income market that are accessible to institutional investors.

Figure 72. FTSE Euro Broad Investment-Grade Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	Eurozone sovereign issues: EUR 2.5 billion or the equivalent for non-redenominated bonds Other: EUR 500 million or the equivalent for non-redenominated bonds
Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Seasoning	Both seasoned and unseasoned bonds are included
Composition	Issues denominated in EUR, or NCU, and Euro medium-term notes
Redemption features	Bullet, sinking fund, putable, extendable, or callable

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 73. FTSE Euro Broad Investment-Grade Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁶⁰	Domestic sovereign bonds: Citi trader pricing Others: Thomson Reuters Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices for domestic sovereign bonds. All pricing is generally taken as of the local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 1998

The asset classification of the EuroBIG reflects the current structure of the market and is in line with the structure of the FTSE World Broad Investment-Grade Bond Index (WorldBIG).

Figure 74. FTSE Euro Broad Investment-Grade Bond Index sector classification

Sovereign / Sovereign-Guaranteed	Government-Sponsored / Regional Government	Collateralized
Domestic Sovereign (EGBI)	Agency	Asset-Backed Securities
Foreign Sovereign	Regional Government	Covered
Sovereign-Guaranteed	Regional Government-Guaranteed	- Jumbo Pfandbrief
	Regional Government-Sponsored	- Other Covered
	Supranational	
	Other Sovereign-Sponsored	

⁶⁰ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 74. FTSE Euro Broad Investment-Grade Bond Index sector classification, cont'd

Corporate – Utility	Corporate – Industrial	Corporate – Finance
Electric	Consumer	Banks
Gas	Energy	Independent Finance
Telecommunication	Manufacturing	Insurance
Other Utility	Service	Other Finance
	Transportation	
	Other Industrial	

Chronological summary of events

The table below highlights events that have marked the construction of the index⁶¹.

Figure 75. FTSE Euro Broad Investment-Grade Bond Index event summary

Year	Monthly highlights
2017	June: The pricing source for the bonds in the index, excluding domestic sovereign bonds, changed from Citi trader pricing to Thomson Reuters. September: The index is rebranded to FTSE Euro Broad Investment-Grade Bond Index following its acquisition by the London Stock Exchange Group.
1999	January: The Euro Broad Investment-Grade Bond Index is introduced.

Related indexes

FTSE EMU Government Bond Index (EGBI)

The Eurozone sovereign sector of the EuroBIG is the FTSE EMU Government Bond Index (EGBI). This index is also the euro sector of the FTSE World Government Bond Index (WGBI). The EGBI consists of the Eurozone-participating countries that meet the WGBI design criteria, namely Austria, Belgium, Finland, France, Germany, Ireland, Italy, the Netherlands, and Spain.

FTSE Jumbo Pfandbrief Index

The FTSE Jumbo Pfandbrief Index is an integral part of the EuroBIG and represents a significant component of the German collateralized bond market. By definition, a Jumbo Pfandbrief is a Pfandbrief with at least EUR 1 billion outstanding, a fixed-rate coupon, and at least five market makers prepared to quote two-way prices during normal trading hours. Owing to their collateralization, these are high-quality securities.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

⁶¹ Also see EGBI-related events from the WGBI chronological summary of events.

Figure 76. Tickers* for the Euro Broad Investment-Grade Bond Index and selected related indexes

Ticker	Index
SBEB	FTSE Euro Broad Investment-Grade Bond Index, in EUR terms
SBEBGGSP	FTSE EuroBIG Government/Government-Sponsored Index, in EUR terms
SBEBCOLL	FTSE EuroBIG Collateralized Index, in EUR terms
SBEB COP	FTSE EuroBIG Corporate Index, in EUR terms
SBEGEU	FTSE EMU Government Bond Index (EGBI), in EUR terms
SBNBEB	FTSE Non-EGBI EuroBIG Index, in EUR terms
SBPFNDE	FTSE Jumbo Pfandbrief Index, in EUR terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Europe, Middle East, and Africa indexes

FTSE European High-Yield Market Index

Credit | Multi-currency

The FTSE European High-Yield Market Index measures the performance of high-yield corporate debt denominated in Euro (EUR), Swiss Franc (CHF), and UK Sterling (GBP). The index comprises cash-pay, zero-to-full (ZTF), pay-in-kind (PIK), and step-coupon bonds.

Sub-indexes are available in any combination of corporate sector, maturity and rating.

FTSE European High-Yield Market Index		
Industrial	Utility	Finance
Consumer	Electric	Bank
Energy	Gas	Independent
Manufacturing	Telecom	Insurance
Service	Utility – Other	Finance – Other
Transportation		
Industrial – Other		

Design criteria and calculation methodology

Figure 77. FTSE European High-Yield Market Index design criteria

Coupon	Fixed-rate, fixed-to-floating rate bonds
Currency	CHF, EUR, GBP
Minimum maturity	At least one year Fixed-to-floating rate bonds are removed one year prior to the fixed-to-floating rate start date.
Minimum market size	EUR 5 billion
Minimum issue size	CHF: 100 million EUR: 200 million GBP: 150 million
Credit quality	Maximum quality: BB+ by S&P and Ba1 by Moody's Minimum quality: C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Securities included: Cash-pay, Zero-to-Full (ZTF), Pay-in-Kind (PIK), step-coupon bonds Securities excluded: Convertible bonds

Figure 78. FTSE European High-Yield Market Index industry sector classification

Industrial Manufacturing	Aerospace, Auto-Manufacturers/Vehicle Parts, Building Products, Home Builders, Capital Goods, Chemicals, Containers, Metals/Mining, Paper/Forest Products, Technology, and Textiles/Apparel/Shoes
Industrial Energy	Secondary Oil and Gas Producers, Oil Equipment, and Energy – Other
Industrial Service	Cable, Broadcast/Outdoor, Satellite, Publishing, Gaming, Leisure, Lodging, Healthcare Facilities/Supplies, Pharmaceuticals, Restaurants, Retail Stores – Food and Drugs, Retail Stores – Other, Environmental Services, Tower, and Service - Other
Industrial Transportation	Airlines and Transportation – Rail and Other
Industrial Consumer	Consumer Products/Tobacco and Food Processors/Beverage/Bottling
Industrial Other	Industrial – Other
Utility	Telecommunications (Broadband, Competitive Local Exchange Company, Diversified Telecommunications, ISP/ Data, Paging, Wireless), Electric, Power, Gas, and Utility – Other
Finance	Banks, Independent Finance, Life Insurance, Property & Casualty Insurance, Leasing, Mortgage Banking, Securities, Real Estate Investment Trust and Other Finance

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 79. FTSE European High-Yield Market Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Thomson Reuters
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2012

Chronological summary of events

Figure 80. FTSE European High-Yield Market Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE European High-Yield Market Index following its acquisition by the London Stock Exchange Group.
2015	April: The European High-Yield Market Index is introduced.

Related indexes

FTSE European High-Yield Cash Pay Index

The FTSE European High-Yield Cash-Pay Index is created by removing the deferred-interest bonds from the FTSE European High-Yield Market Index, so that it includes only cash-pay bonds.

FTSE European High-Yield Deferred-Interest Index

The FTSE European High-Yield Deferred-Interest Index is a subset of the FTSE European High-Yield Market Index which includes pay-in-kind bonds (PIKs), PIK toggle bonds, zero-to-full coupon bonds (ZTFs), zero-to-maturity bonds, step-up coupon bonds, and credit sensitive notes.

FTSE US High-Yield Market Index

The FTSE US High-Yield Market Index is a US Dollar-denominated index which measures the performance of high-yield debt issued by corporations domiciled in the US or Canada. Recognized as a broad measure of the North American high-yield market, the index includes cash-pay, deferred-interest securities, and debt issued under Rule 144A in unregistered form.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 81. Tickers* for the FTSE European High-Yield Market Index and selected related indexes

Ticker	Index
SBHESZU	FTSE European High-Yield Market Index, in CHF terms
SBHEEUU	FTSE European High-Yield Market Index, in EUR terms
SBHEGBU	FTSE European High-Yield Market Index, in GBP terms
SBHECPZU	FTSE European High-Yield Cash Pay Index, in CHF terms
SBHECPEU	FTSE European High-Yield Cash Pay Index, in EUR terms
SBHECPGU	FTSE European High-Yield Cash Pay Index, in GBP terms
SBHEDIZU	FTSE European High-Yield Deferred-Interest Index, in CHF terms
SBHEDIEU	FTSE European High-Yield Deferred-Interest Index, in EUR terms
SBHEDIGU	FTSE European High-Yield Deferred-Interest Index, in GBP terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI)

Sovereign | Multi-currency

The FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI) comprises government bonds from eight CEEMEA markets, denominated in local currencies. The index provides a broad benchmark for portfolio managers looking for a measure of sovereign CEEMEA markets.

The index covers a broad array of countries and sub-indexes are available in any combination of currency, maturity, and rating.

FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index		
Central and Eastern Europe	Middle East	Africa
Czech Republic	Israel	South Africa
Hungary		
Poland		
Romania		
Russia		
Turkey		

Design criteria and calculation methodology

Figure 82. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ⁶²
Minimum issue size	Czech Republic: CZK 15 billion Hungary: HUF 200 billion Poland: PLN 5 billion Romania: RON 500 million Russia: RUB 25 billion Turkey: TRY 2 billion Israel: ILS 5 billion South Africa: ZAR 10 billion

⁶² Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date

Figure 82. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index design criteria, cont'd

Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Central and Eastern European, Middle Eastern, and African sovereign debt denominated in the domestic currencies. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 83. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 83.

Figure 83. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index composition

CEEMEAGBI markets	Security type
Czech Republic	Excludes zero-coupon bonds
Hungary	N/A
Israel	N/A
Poland	N/A
Romania	N/A
Russia	Includes fixed-rate bullet federal government bonds (OFZ-PD) only
South Africa	Excludes zero-coupon bonds
Turkey	N/A

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 84. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 84. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index calculation methodology, cont'd

Pricing⁶³	Citi trader pricing, except for Hungary and Romania (provided by Thomson Reuters), Israel (provided by Tel Aviv Stock Exchange) and Poland (provided by BondSpot). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close⁶⁴.
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. Each year's scheduled fixing dates are published on the website.
Base date	March 31, 2011

Chronological summary of events

Figure 85. FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index event summary

Year	Monthly highlights
2018	January: The pricing source for local currency Hungary government bonds changed from Citi trader pricing to Thomson Reuters. May: Romania enters the index.
2017	September: The index is rebranded to FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index following its acquisition by the London Stock Exchange Group.
2014	October: The pricing source and closing time for Polish government bonds become the following: Poland, 4:30 p.m. (Warsaw), 2nd fixing bid price from BondSpot
2013	March: Russia enters the index.
2011	September: The Central and Eastern Europe, Middle East, and Africa Government Bond Index is introduced and includes: Czech Republic, Hungary, Israel, Poland, South Africa and Turkey. The index is introduced with 5 months of history. These markets have been part of the index since its base date (March 31, 2011).

⁶³ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

⁶⁴ Trading calendar for Israel is Sunday-Tuesday. Since index performance is calculated based on a Monday-Friday calendar, Friday pricing will be rolled from Thursday's closes. If Israel's last trading day of the month is a Sunday, the end-of-month pricing will be rolled from Thursday's closes.

Related indexes

Each of the countries included in the FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index (CEEMEAGBI) is also available as a stand-alone index.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 86. Tickers* for the FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index and selected related indexes

Ticker	Index
SBCGBIL	FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index, in local currency terms
SBCGBIU	FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index, in USD terms
SBCGBIE	FTSE Central and Eastern Europe, Middle East, and Africa Government Bond Index, in EUR terms
SBCZL	FTSE Czech Republic Government Bond Index, in CZK terms
SBHUL	FTSE Hungarian Government Bond Index, in HUF terms
SBPLL	FTSE Polish Government Bond Index, in PLN terms
SBRUL	FTSE Russian Government Bond Index, in RUB terms
SBISL	FTSE Israeli Government Bond Index, in ILS terms
SBTRL	FTSE Turkish Government Bond Index, in TRY terms
SBZAL	FTSE South African Government Bond Index, in ZAR terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Middle East and North Africa Broad Bond Index (MENABBI)

Multi-asset | US Dollar

The FTSE Middle East and North Africa Broad Bond Index (MENABBI) measures the performance of both investment-grade and high-yield US Dollar-denominated debt issued by governments, agencies, and corporations domiciled in the Middle East and North Africa.

Sub-indexes are available in any combination of country, asset class, maturity, and rating.

FTSE Middle East and North Africa Broad Bond Index	
Government	Corporate
Sovereign	Finance
Sovereign-Guaranteed	Non-Finance
Government-Sponsored	
Regional Government	

Design criteria and calculation methodology

Figure 87. FTSE Middle East and North Africa Broad Bond Index design criteria

Coupon	Fixed-rate (excludes zero-coupons)
Minimum maturity	At least one year
Minimum issue size	USD 250 million
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted issues)
Accessibility	Limited to bonds and markets that are fully accessible to foreign investors.
Composition	Investment-grade and high-yield, US Dollar-denominated debt issued by governments, agencies and corporations domiciled in the Middle East and North Africa. Israel Saving, Income, and Jubilee series bonds are excluded.

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 88. FTSE Middle East and North Africa Broad Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁶⁵	Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2010

Chronological summary of events

Figure 89. FTSE Middle East and North Africa Broad Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Middle East and North Africa Broad Bond Index following its acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign sovereign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters.
2011	February: The Middle East and North Africa Broad Bond Index is introduced.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

⁶⁵ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indices/index-changes-20180629.shtml.

Figure 90. Tickers* for the FTSE Middle East and North Africa Broad Bond Index and selected related indexes

Ticker	Index
SBMENA	FTSE Middle East and North Africa Broad Bond Index, in USD terms
SBMENAGV	FTSE Middle East and North Africa Broad Bond Index, Government, in USD terms
SBMENACP	FTSE Middle East and North Africa Broad Bond Index, Corporate, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms

Index range

Asia Pacific and Japan indexes

Asia Pacific and Japan indexes
FTSE Asian Government Bond Index (AGBI)
FTSE Asian Government Bond Index – Capped (AGBI-Capped)
Related Indexes
FTSE Asian Government Extended Bond Index (AGBI Extended)
FTSE Asian Government Bond Investable Index (AGBI Investable)
FTSE Asia Pacific Government Bond Index (APGBI)
FTSE Asian Broad Bond Index (ABBI)
FTSE ABBI Investment-Grade
FTSE ABBI High-Yield
FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI)
FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank (CNYBBI – Interbank)
FTSE Chinese Government and Policy Bank Bond Index (CNGPBI)
FTSE Chinese Government Bond Index
FTSE Chinese Policy Bank Bond Index
FTSE Dim Sum (Offshore CNY) Bond Index
FTSE Dim Sum Investment-Grade Bond Index
FTSE Dim Sum High-Yield Bond Index
FTSE Dim Sum Not Rated Bond Index
FTSE Australia Broad Investment-Grade Bond Index (AusBIG®)

The FTSE Asian Government Bond Index (AGBI) comprises local currency Asian government bonds, excluding Japanese government bonds, providing a broad benchmark for the Asian sovereign market. The AGBI rules and methodologies are consistent with those of the FTSE World Government Bond Index (WGBI), to enable performance comparisons across sovereign debt markets.

The FTSE Asian Broad Bond Index (ABBI) measures the performance of both investment-grade and high-yield US Dollar-denominated debt issued by governments, agencies, and corporations domiciled in Asia (excluding Japan). The index provides a comprehensive measure of the Asian fixed income market across various asset classes and credit sectors.

The FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI) measures the performance of the onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt issued in mainland China. The CNYBBI provides a comprehensive measure of the Chinese onshore market by expanding our current coverage of government and policy banks issues to other governments, agencies, regional governments, and corporations.

The FTSE Chinese Government and Policy Bank Bond Index (CNGPBI) comprises Yuan-denominated fixed-rate government bonds and policy bank bonds issued in mainland China. The eligible Chinese policy bank bonds are those issued by the China Development Bank, the Agricultural Development Bank of China, and the Export-Import Bank of China. These policy banks are state-owned and their objectives typically include providing social benefit, stimulating the economy, and supporting growing local industries. Another version of the index is also available where eligibility of securities is limited to government and policy bank bonds issued within the last 12 months.

The FTSE Dim Sum (Offshore CNY) Bond Index measures the performance of RMB-denominated “Dim Sum” bonds issued and settled outside mainland China. The index includes fixed-rate securities issued by governments, agencies, supranationals, and corporations.

The FTSE Australian Broad Investment-Grade Bond Index (AusBIG) is designed to represent the Australian fixed-coupon bond market, including government, semi-government, and credit markets. It covers most sectors of the investment-grade, Australian Dollar-denominated fixed income market that are accessible to Australian institutional investors.

FTSE Asian Government Bond Index (AGBI)

Sovereign | Multi-currency

The FTSE Asian Government Bond Index (AGBI) comprises local currency Asian government bonds, excluding Japanese government bonds, providing a broad benchmark for the Asian sovereign market. The AGBI rules and methodologies are consistent with those of the FTSE World Government Bond Index (WGBI), to enable performance comparisons across sovereign debt markets.

The index covers a broad array of countries and sub-indexes are available in any combination of currency, maturity, and rating.

FTSE Asian Government Bond Index	
China	Malaysia
Hong Kong	Philippines
Indonesia	Singapore
Korea	Thailand

Design criteria and calculation methodology

For a market to be considered for inclusion into the AGBI it must satisfy the market size, credit quality and accessibility requirements set out in the table below.

For an issue to be eligible for inclusion in the index it must meet the maturity, amount outstanding, and credit quality requirements outlined in the design criteria table. Once a market has met all the requirements, an announcement will be made that this market is eligible for inclusion into the AGBI. If it continues to meet all requirements for three consecutive months after the announcement, the market will join the AGBI at the end of the three months that follow. Note that any new market inclusion due the month of January will be postponed by one month and the market will join the respective index in February.

If an announced market meets any of the exit criteria in Figure 91, it will not be included in the AGBI.

Figure 91. FTSE Asian Government Bond Index and related indexes design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 5 billion and each market must be fully accessible to foreign investors. Exit: A market is removed if the outstanding amount of its eligible issues falls below USD 2.5 billion, half of the entry-level market size criteria, for three consecutive months, or if the market is no longer fully accessible to foreign investors.

Figure 91. FTSE Asian Government Bond Index and related indexes design criteria, cont'd

Minimum issue size	FTSE Asian Government Bond Index China: CNY 20 billion Hong Kong: HKD 800 million Indonesia: IDR 7.5 trillion Korea: KRW 1 trillion Malaysia: MYR 4 billion Philippines: PHP 25 billion Singapore: SGD 1.5 billion Thailand: THB 25 billion FTSE Asian Government Extended Bond Index India: INR 250 billion (except Benchmark bonds, which are included regardless of size) Sri Lanka: LKR 50 billion Taiwan: TWD 40 billion For China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand, please see AGBI criteria. FTSE Asian Government Bond Investable Index China (offshore): RMB 1 billion For Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand, please see AGBI criteria. FTSE Asia Pacific Government Bond Index (APGBI) Australia: AUD 750 million New Zealand: NZD 750 million For China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand, please see AGBI criteria.
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Accessibility	FTSE Asian Government Bond Index: Limited to bonds and markets that are fully accessible to foreign investors
Composition	Sovereign debt from Asian countries (excluding Japan) denominated in their domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 92. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 92.

Figure 92. AGBI, AGBI Extended, AGBI Investable, and APGBI composition

AGBI markets	Security type
Australia	Excludes tax rebate bonds
China	Excludes zero-coupon bonds, special government bonds, bonds with maturity greater than 30 years from issuance and bonds issued prior to January 1, 2005
China (Offshore)	Excludes zero-coupon bonds
Hong Kong	Excludes zero-coupon bonds
India	Includes benchmark bonds
Indonesia	Excludes Recapitalization bonds and Sukuk bonds
Korea	Excludes Monetary Stabilization bonds and 10-Years securities issued prior to January 1, 2003
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
New Zealand	N/A
Philippines	Excludes zero-coupon bonds and special purpose bonds
Singapore	N/A
Sri Lanka	Excludes zero-coupon bonds and bonds with maturity equal to or greater than 10 years from issuance
Taiwan	N/A
Thailand	Excludes bonds with maturity greater than 30 years from issuance

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 93. AGBI and related indexes calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, except for China, where savings deposit rate published by the People's Bank of China is used, and Philippines, where the Thomson Reuters one-month offshore implied deposit rate is used. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 93. AGBI and related indexes calculation methodology, cont'd

Pricing⁶⁶	• Australia, New Zealand, and Taiwan (provided by Citi trader) • China, Hong Kong, India, Indonesia and Sri Lanka (provided by Thomson Reuters) • Korea (provided by KAP) • Malaysia (provided by Amanah Butler and Affin) • Philippines (provided by The Philippines Dealing & Exchange Corp. "PDEX") • Thailand (provided by the Thai Bond Market Association "ThaiBMA") • Singapore (provided by Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Prices are generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2007

Chronological summary of events

Figure 94. AGBI, AGBI Extended, AGBI Investable, and APGBI event summary

Year	Monthly highlights
2018	February: China joins the FTSE Asian Government Bond Index, and FTSE Asia Pacific Government Bond Index. Asian Government Bond Index – Capped is introduced. It imposes a maximum country weight of 20% to limit individual market exposure in the Asian Government Bond Index.
2017	August: The pricing source for local currency Chinese government bonds changed from Citi trader to Thomson Reuters. September: The indexes are rebranded to FTSE Asian Government Bond Index, FTSE Asian Government Extended Bond Index, FTSE Asian Government Bond Investable Index, and FTSE Asian Pacific Government Bond Index following their acquisition by the London Stock Exchange Group. November: The pricing source for local currency Hong Kong government bonds changed from Citi trader to Thomson Reuters.

⁶⁶ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 94. AGBI, AGBI Extended, AGBI Investable, and APGBI event summary, cont'd

2016	March: The pricing source for Indian government bonds changes to reflect bid-market pricing from Thomson Reuters. Previously, the Indian government bonds were priced using local market Citi trader bid-market pricing. Additionally, the rate used for calculating reinvestment return on Philippines government bonds changes from the Thomson Reuters one-month Eurodeposit rate to the Thomson Reuters one-month offshore implied deposit rate for Philippines currency. May: The minimum size criteria for the Philippines Government Bond Index changes from PHP 45 billion to PHP 25 billion. Additionally, the pricing source for the Philippines government bonds changes from Citi's trader prices to prices published by The Philippines Dealing & Exchange Corp. (PDEx), which is the official pricing source for the Philippines market. June: The pricing source for the Indonesian and Sri Lankan government bonds changes to reflect bid-market pricing from Thomson Reuters. Additionally, the pricing source for the Thai government bonds changes to reflect bid-market pricing from the Thai Bond Market Association (ThaiBMA).
2014	October: The pricing source and closing time for Malaysian and Singapore government bonds become the following: Malaysia, 5:00 p.m. (Kuala Lumpur), average bid price from brokers Amanah Butler and Affin Singapore, 4:30 p.m. (Singapore), bid price from Monetary Authority of Singapore
2013	July: The timing for inclusion of new eligible markets into the index changes to six calendar months after the announcement of eligibility, provided that during the first three months of that time period all requirements for inclusion are met.
2012	January: The AGBI market size criteria for inclusion and exclusion are defined as follows: Entry: The outstanding amount of a market's eligible issues must total at least USD 5 billion and each market must be fully accessible to foreign investors. Exit: A market is removed if the outstanding amount of its eligible issues falls below USD 2.5 billion, half of the entry-level market size criteria, for three consecutive months, or if the market is no longer fully accessible to foreign investors. February: Taiwan and Sri Lanka are excluded from the AGBI and APGBI and included in the AGBI Extended. April: Hong Kong and India are included in the AGBI Extended. May: The Asian Government Bond Investable Index is introduced. October: Hong Kong is included in the AGBI and APGBI.
2011	March: The following indexes are introduced: - Chinese Government Bond Index - Sri Lankan Government Bond Index - Asian Government Extended Bond Index (AGBI Extended): The index is introduced with 2 years of history. All markets, namely China, Indonesia, Korea, Philippines, Singapore, Taiwan, and Thailand, have been part of the index since its base date (February 28, 2009) - Asia Pacific Government Bond Index (APGBI): The index is introduced with over 3 years of history. All markets, namely Australia, New Zealand, Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand, have been part of the index since its base date (December 31, 2007) April: Sri Lanka joins the AGBI and APGBI. China joins the AGBI Extended.
2010	March: 10-year Korean Treasury Bonds issued prior to January 2003 are excluded from the Korean Government Bond Index.

Figure 94. AGBI, AGBI Extended, AGBI Investable, and APGBI event summary, cont'd

2008	May: The Asian Government Bond Index (AGBI) is introduced and includes Indonesia, Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand. The index is introduced with 3 months of history. These markets have been part of the index since its base date (December 31, 2007).
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Related indexes

FTSE Asian Government Bond Index – Capped (AGBI-Capped)

The FTSE Asian Government Bond Index – Capped (AGBI-Capped) imposes a maximum country weight of 20% to limit individual market exposure in the FTSE Asian Government Bond Index.

FTSE Asian Government Extended Bond Index (AGBI Extended)

The FTSE Asian Government Extended Bond Index (AGBI Extended) includes the AGBI markets – China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand – with the addition of India, Sri Lanka, and Taiwan.

FTSE Asian Government Bond Investable Index (AGBI Investable)

The FTSE Asian Government Bond Investable Index (AGBI Investable) includes the AGBI markets - Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand – except China but includes offshore Chinese government bonds. To limit the exposure to any one sovereign market, an individual cap of 20% is applied to market weights.

FTSE Asian Pacific Government Bond Index (APGBI)

The FTSE Asia Pacific Government Bond Index (APGBI) includes the AGBI markets – China, Hong Kong, Indonesia, Korea, Malaysia, Philippines, Singapore, and Thailand - with the addition of Australia and New Zealand.

These indexes provide broad benchmarks of the Asian and Asian Pacific sovereign markets.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 95. Tickers* for FTSE Asian Government Bond Index and selected related indexes

Ticker	Index
SBAGBIU	FTSE Asian Government Bond Index, in USD terms
SBAGBIE	FTSE Asian Government Bond Index, in EUR terms
SBAGBIY	FTSE Asian Government Bond Index, in JPY terms
SBAGBIG	FTSE Asian Government Bond Index, in GBP terms
SBAGBIL	FTSE Asian Government Bond Index, in local currency terms
SBAGBEU	FTSE Asian Government Extended Bond Index, in USD terms
SBAGBEE	FTSE Asian Government Extended Bond Index, in EUR terms
SBAGBEY	FTSE Asian Government Extended Bond Index, in JPY terms
SBAGBEG	FTSE Asian Government Extended Bond Index, in GBP terms

Figure 95. Tickers* for FTSE Asian Government Bond Index and selected related indexes, cont'd

Ticker	Index
SBAGBEL	FTSE Asian Government Extended Bond Index, in local currency terms
SBAIU	FTSE Asian Government Bond Investable Index, in USD terms
SBAIE	FTSE Asian Government Bond Investable Index, in EUR terms
SBAIY	FTSE Asian Government Bond Investable Index, in JPY terms
SBAIG	FTSE Asian Government Bond Investable Index, in GBP terms
SBAIL	FTSE Asian Government Bond Investable Index, in local currency terms
SBAPGBU	FTSE Asia Pacific Government Bond Index, in USD terms
SBAPGBE	FTSE Asia Pacific Government Bond Index, in EUR terms
SBAPGBY	FTSE Asia Pacific Government Bond Index, in JPY terms
SBAPGBG	FTSE Asia Pacific Government Bond Index, in GBP terms
SBAPGBL	FTSE Asia Pacific Government Bond Index, in local currency terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Asia Pacific and Japan indexes

FTSE Asian Broad Bond Index (ABBI)

Multi-Asset | US Dollar

The FTSE Asian Broad Bond Index (ABBI) measures the performance of both investment-grade and high-yield US Dollar-denominated debt issued by governments, agencies, and corporations domiciled in Asia (excluding Japan). The ABBI provides a comprehensive measure of the Asian fixed income market across various asset classes and credit sectors.

Sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE Asian Broad Bond Index		
Government	Covered	Corporate
Foreign Sovereign		Industrial
Sovereign-Guaranteed		Utility
Government-Sponsored		Finance
Regional Government		
Regional Government-Sponsored		

Design criteria and calculation methodology

Figure 96. FTSE Asian Broad Bond Index design criteria

Coupon	Fixed-rate and fixed-to-floating bonds
Minimum maturity	At least one year Fixed-to-floating bonds are removed one year prior to the fixed-to-floating rate start date.
Minimum issue size	Government ⁶⁷ : USD 500 million Collateralized/Corporate: USD 200 million
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Investment-grade and high-yield US Dollar-denominated debt issued by governments, agencies, and corporations domiciled in Asia (excluding Japan)

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

⁶⁷ Government includes foreign sovereign, sovereign-guaranteed, government-sponsored, regional government-guaranteed, and regional government-sponsored.

Figure 97. FTSE Asian Broad Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁶⁸	Primary source is Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Prices are generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	September 30, 2008

Chronological summary of events

Figure 98. FTSE Asian Broad Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Asian Broad Bond Index following its acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign sovereign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters
2010	November: The Asian Broad Bond Index is introduced.

Related indexes

FTSE ABBI Investment-Grade

The FTSE ABBI Investment-Grade measures the performance of the investment-grade bonds included in the ABBI.

FTSE ABBI High-Yield

The FTSE ABBI High-Yield measures the performance of the high-yield bonds included in the ABBI.

⁶⁸ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 99. Tickers* for FTSE Asian Broad Bond Index and selected related indexes

Ticker	Index
SBABBI	FTSE Asian Broad Bond Index, in USD terms
SBABBIE	FTSE Asian Broad Bond Index, in EUR terms
SBABBIY	FTSE Asian Broad Bond Index, in JPY terms
SBABBIG	FTSE Asian Broad Bond Index, in GBP terms
SBABBIIG	FTSE ABBI Investment-Grade, in USD terms
SBABIGE	FTSE ABBI Investment-Grade, in EUR terms
SBABIGY	FTSE ABBI Investment-Grade, in JPY terms
SBABIGG	FTSE ABBI Investment-Grade, in GBP terms
SBABBIHY	FTSE ABBI High-Yield, in USD terms
SBABHYE	FTSE ABBI High-Yield, in EUR terms
SBABHYY	FTSE ABBI High-Yield, in JPY terms
SBABHYG	FTSE ABBI High-Yield, in GBP terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Chinese (Onshore CNY) Broad Bond Index

Multi-asset | Renminbi

The FTSE Chinese (Onshore CNY) Broad Bond Index (CNYBBI) measures the performance of the onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt issued in mainland China. The CNYBBI provides a comprehensive measure of the Chinese onshore market by expanding our current coverage of government and policy banks issues to other governments, agencies, regional governments, and corporations.

The index covers a broad array of asset classes and sub-indexes are available in any combination of asset class, maturity, and rating.

Design criteria and calculation methodology

Figure 100. FTSE Chinese (Onshore CNY) Broad Bond Index design criteria

Coupon	Fixed-rate
Currency	CNY
Minimum maturity	At least one year
Minimum issue size	Government: CNY 20 billions Policy Bank: CNY 15 billions Regional Government and other Government Sponsored: CNY 10 billions Others (including Panda bonds): CNY 3 billions
Minimum credit quality	No minimum S&P or Moody's rating requirements, defaulted bonds are excluded
Composition	Securities included: Fixed-rate government bonds, government sponsored bonds, regional government bonds, and corporate bonds Policy Bank: bonds issued by the China Development Bank, the Agricultural Development Bank of China, and the Export-Import Bank of China Other Chinese government sponsored: bonds issued by China Railway and Central Huijin Investment Securities excluded: Bonds with maturity greater than 30 years from issuance, and bonds issued prior to January 1, 2005. Chinese regional government bonds issued prior to April 1, 2015. Government: zero-coupon bonds, saving bonds, special government bonds Policy Bank: central bank bills, private placements, callable and putable bonds Others: asset-backed and mortgage-backed securities, private placements, zero-coupon, callable, putable, convertible

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 101. FTSE Chinese (Onshore CNY) Broad Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the savings deposit rate published by the People's Bank of China, calculated from actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Thomson Reuters
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2013

Chronological summary of events

Figure 102. FTSE Chinese (Onshore CNY) Broad Bond Index event summary

Year	Monthly highlights
2017	August: The Chinese (Onshore CNY) Broad Bond Index is introduced. September: The Chinese (Onshore CNY) Broad Bond Index – Interbank is introduced. The indexes are rebranded to FTSE Chinese (Onshore CNY) Broad Bond Index and FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank following their acquisition by the London Stock Exchange Group.

Related indexes

FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank

The FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank (CNYBBI-Interbank) measures the performance of a subset of bonds from the FTSE Chinese (Onshore CNY) Broad Bond Index which tracks onshore Chinese yuan-denominated fixed-rate governments, agencies, and corporations debt issued in mainland China. The CNYBBI – Interbank includes bonds that are traded on the China Interbank Bond Market (CIBM). This market represents the largest trading venue by volume for onshore bonds. The Chinese (Onshore CNY) Broad Bond Index – Interbank provides a market benchmark for investors looking to establish their exposure to Chinese onshore bonds through either CIBM direct access or the Bond Connect program.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 103. Tickers* for the FTSE Chinese (Onshore CNY) Broad Bond Index and selected related indexes

Ticker	Index
SBCNBBL	FTSE Chinese (Onshore CNY) Broad Bond Index
SBCNSVL	FTSE Chinese (Onshore CNY) Broad Bond Index, Sovereign
SBCNSPAL	FTSE Chinese (Onshore CNY) Broad Bond Index, Sovereign Sponsored, Agency
SBCNCPL	FTSE Chinese (Onshore CNY) Broad Bond Index, Corporate
SBCNCBL	FTSE Chinese (Onshore CNY) Broad Bond Index, China
SBCNCSVL	FTSE Chinese (Onshore CNY) Broad Bond Index, China, Sovereign
SBCNCSPA	FTSE Chinese (Onshore CNY) Broad Bond Index, China, Sovereign Sponsored, Agency
SBCNCCPL	FTSE Chinese (Onshore CNY) Broad Bond Index, China, Corporate
SBCNBIBL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank
SBCISVL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, Sovereign
SBCISPAL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, Sovereign Sponsored, Agency
SBCICPL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, Corporate
SBCICBL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, China
SBCICSVL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, China, Sovereign
SBCICSPA	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, China, Sovereign Sponsored, Agency (Policy Bank)
SBCICCPL	FTSE Chinese (Onshore CNY) Broad Bond Index – Interbank, China, Corporate

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Chinese Government and Policy Bank Bond Index (CNGPBI)

Multi-asset | Chinese Yuan

The FTSE Chinese Government and Policy Bank Bond Index (CNGPBI) comprises Yuan-denominated fixed-rate government bonds and policy bank bonds issued in mainland China. The eligible Chinese policy bank bonds are those issued by the China Development Bank, the Agricultural Development Bank of China, and the Export-Import Bank of China. These policy banks are state-owned and their objectives typically include providing social benefit, stimulating the economy, and supporting growing local industries. Another version of the index is also available where eligibility of securities is limited to government and policy bank bonds issued within the last 12 months.

FTSE Chinese Government and Policy Bank Bond Index

Government

Policy Bank

Design criteria and calculation methodology

Figure 104. FTSE Chinese Government and Policy Bank Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	Government: CNY 20 billion; Policy Bank: CNY 15 billion
Composition	Securities included: Government: fixed-rate government bonds Policy Bank: bonds issued by the China Development Bank, the Agricultural Development Bank of China, and the Export-Import Bank of China Securities excluded: Government: zero-coupon bonds, saving bonds, special government bonds, bonds with maturity greater than 30 years from issuance, and bonds issued prior to January 1, 2005 Policy Bank: central bank bills, private placements, callable and putable bonds, bonds with maturity greater than 30 years from issuance, and bonds issued prior to January 1, 2005

Figure 105. FTSE Chinese Government and Policy Bank Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the savings deposit rate published by the People's Bank of China, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Thomson Reuters
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2010

Chronological summary of events

Figure 106. FTSE Chinese Government and Policy Bank Bond Index event summary

Year	Monthly highlights
2017	August: The pricing source for the bonds in the Chinese Government and Policy Bank Bond Index changed from Citi trader to Thomson Reuters. September: The index is rebranded to FTSE Chinese Government and Policy Bank Bond Index following its acquisition by the London Stock Exchange Group. November: The reinvestment rate for the Chinese onshore currency bonds changed from 1-month deposit rate to the savings deposit rate published by the People's Bank of China.
2014	February: The Chinese Government and Policy Bank Bond Index is introduced.

Related indexes

FTSE Chinese Government Bond Index

The FTSE Chinese Government Bond Index comprises fixed-rate government bonds issued in mainland China. To improve liquidity, any bonds with maturity greater than 30 years from issuance are excluded from the index.

Another version of the index is also available where eligibility of securities is limited to government bonds issued within the last 12 months.

FTSE Chinese Policy Bank Bond Index

The FTSE Chinese Policy Bank Bond Index comprises fixed-rate policy bank bonds issued in mainland China. The eligible Chinese policy banks are state-owned and their objectives typically include providing social benefit, stimulating the economy, and supporting growing local industries. To improve liquidity, any bonds with maturity greater than 30 years from issuance are excluded from the index.

Another version of the index is also available where eligibility of securities is limited to policy bank bonds issued within the last 12 months.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 107. Tickers* for Chinese Government and Policy Bank Bond Index and selected related indexes

Ticker	Index
SBCNGL	FTSE Chinese Government and Policy Bank Bond Index, in CNY terms
SBCNGU	FTSE Chinese Government and Policy Bank Bond Index, in USD terms
SBCNL	FTSE Chinese Government Bond Index, in CNY terms
SBCNU	FTSE Chinese Government Bond Index, in USD terms
SBCNPL	FTSE Chinese Policy Bank Bond Index, in CNY terms
SBCNPU	FTSE Chinese Policy Bank Bond Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Dim Sum (Offshore CNY) Bond Index

Multi-asset | Renminbi

The FTSE Dim Sum (Offshore CNY) Bond Index measures the performance of RMB-denominated “Dim Sum” bonds issued and settled outside mainland China. The index includes fixed-rate securities issued by governments, agencies, supranationals, and corporations.

The index covers a broad array of asset classes and sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE Dim Sum (Offshore CNY) Bond Index			
Sovereign	Agency	Supranational	Corporate
Domestic			Industrial
Foreign			Utility
Regional Government			Finance

Design criteria and calculation methodology

Figure 108 outlines the design criteria for the index. In the securities selection, RMB-denominated but non-RMB-settled (typically USD-settled) synthetic securities and convertible bonds are excluded from the FTSE Dim Sum (Offshore CNY) Bond Index. Retail securities, mainly issued by the Chinese government and financial institutions for retail customers, and certificates of deposits (CDs) with a limited potential issuer universe and less onerous disclosure requirements, are also excluded from the index.

Figure 108. FTSE Dim Sum (Offshore CNY) Bond Index design criteria

Coupon	Fixed-rate (excludes zero-coupon)
Minimum maturity	At least one year
Minimum issue size	RMB 1 billion
Minimum credit quality	No minimum S&P or Moody's rating requirement, defaulted bonds are excluded. If an individual issue is rated by neither S&P nor Moody's but its issuer has an S&P or Moody's rating, the issuer's rating is assigned to the issue as its implied rating.
Composition	RMB-denominated governments, agencies, supranationals, and credit securities excluding synthetics, convertible bonds, retail bonds (RTBs), and certificates of deposits.

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 109. FTSE Dim Sum index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Government bonds: Thomson Reuters All other bonds: third-party pricing sources
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2010

Chronological summary of events

Figure 110. FTSE Dim Sum (Offshore CNY) Bond Index event summary

Year	Monthly highlights
2017	December: The pricing source for the government bonds changed from Citi trader pricing to Thomson Reuters. September: The index is rebranded to FTSE Dim Sum (Offshore CNY) Bond Index following its acquisition by the London Stock Exchange Group.
2011	April: The Dim Sum (Offshore CNY) Bond Index is introduced.

Related indexes

FTSE Dim Sum (Offshore CNY) Investment-Grade Bond Index

The Dim Sum Investment-Grade Bond Index measures the performance of investment-grade bonds in the FTSE Dim Sum (Offshore CNY) Bond Index.

FTSE Dim Sum (Offshore CNY) High-Yield Bond Index

The FTSE Dim Sum High-Yield Bond Index measures the performance of high-yield bonds in the FTSE Dim Sum (Offshore CNY) Bond Index.

FTSE Dim Sum (Offshore CNY) Not Rated Bond Index

The FTSE Dim Sum Not Rated Bond Index measures the performance of bonds in the FTSE Dim Sum (Offshore CNY) Bond Index that are unrated by S&P and Moody's.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 111. Tickers* for the FTSE Dim Sum (Offshore CNY) Bond Index and selected related indexes

Ticker	Index
SBDSBIL	FTSE Dim Sum (Offshore CNY) Bond Index, in RMB terms
SBDSBIU	FTSE Dim Sum (Offshore CNY) Bond Index, in USD terms
SBDSBIE	FTSE Dim Sum (Offshore CNY) Bond Index, in EUR terms
SBDSBIH	FTSE Dim Sum (Offshore CNY) Bond Index, in HKD terms
SBDSBIS	FTSE Dim Sum (Offshore CNY) Bond Index, in SGD terms
SBDSBIY	FTSE Dim Sum (Offshore CNY) Bond Index, in JPY terms
SBDSIGL	FTSE Dim Sum (Offshore CNY) Investment-Grade Bond Index, in RMB terms
SBDSIGU	FTSE Dim Sum (Offshore CNY) Investment-Grade Bond Index, in USD terms
SBDSHYL	FTSE Dim Sum (Offshore CNY) High-Yield Bond Index, in RMB terms
SBDSHYU	FTSE Dim Sum (Offshore CNY) High-Yield Bond Index, in USD terms
SBDSNRL	FTSE Dim Sum (Offshore CNY) Not Rated Bond Index, in RMB terms
SBDSNRU	FTSE Dim Sum (Offshore CNY) Not Rated Bond Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Australian Broad Investment-Grade Bond Index (AusBIG®)

Multi-asset | Australian Dollar

The FTSE Australian Broad Investment-Grade Bond Index (AusBIG) is designed to represent the Australian fixed-coupon bond market, including government, semi-government, and credit markets. It covers most sectors of the investment-grade Australian Dollar-denominated fixed income market that are accessible to Australian institutional investors.

The index covers a broad array of asset classes and sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE Australian Broad Investment-Grade Bond Index
Sovereign
Commonwealth Government
Foreign Sovereign
Regional Government
Semi-Governments
Other
Sovereign-Guaranteed / Government-Sponsored
Supranational
Agency
Collateralized
Corporate

Design criteria and calculation methodology

The index includes any fixed-coupon, investment-grade bonds issued in the Australian market or semi-government bonds issued in the global market that meet specific amount outstanding criteria and matures in more than one year.

Figure 112. FTSE Australian Broad Investment-Grade Bond Index design criteria

Coupon	Fixed-rate and fixed-to-floating bonds
Minimum maturity	At least one year Fixed-to-floating bonds are removed one year prior to the fixed-to-floating rate start date
Minimum issue size	Government: AUD 750 million Semi-government: AUD 250 million, including amounts issued under interest-withholding tax-free formats ⁶⁹ Corporate, supranational, agency, and collateralized: AUD 100 million
Minimum credit quality	BBB- by S&P or Baa3 by Moody's or bonds guaranteed by the Commonwealth of Australia
Redemption features	Bullet, callable, putable, and extendable

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 113. FTSE Australian Broad Investment-Grade Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁷⁰	Government bonds: Citi trader pricing, generally taken as of local market close All other bonds: Thomson Reuters Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices.
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. Each year's scheduled fixing dates are published on the website.
Base date	June 30, 2000

⁶⁹ Such as Queensland Treasury Corporation's Global Bond Program and New South Wales Treasury Corporation's Exchangeable Program. These bonds may be exchanged at any time for ordinary bonds from the issuer.

⁷⁰ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Chronological summary of events

Figure 114. FTSE Australian Broad Investment-Grade Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Australian Broad Investment-Grade Bond Index following its acquisition by the London Stock Exchange Group.
2007	July: The minimum issue size criteria for government issues increase to AUD 750 million, net of Loan Consolidation and Investment Reserve (LCIR) amounts, from AUD 250 million.
2000	June: The Australian Broad Investment-Grade Bond Index is introduced.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 115. Tickers* for FTSE Australian Broad Investment-Grade Bond Index and selected related indexes

Ticker	Index
SBABIG	FTSE Australian Broad Investment-Grade Bond Index, in AUD terms
SBABCOL	FTSE AusBIG Collateralized Index, in AUD terms
SBABCRP	FTSE AusBIG Corporate Index, in AUD terms
SBABSEM	FTSE AusBIG Semi-Government Index, in AUD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Emerging markets indexes

Index range

Emerging markets indexes

Emerging markets indexes
FTSE Emerging Markets Government Bond Index (EMGBI)
Related Indexes
FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped)
FTSE Emerging Markets Government Bond Index – Japanese Investment Trust (EMGBI-JIT)
FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI)
Related Indexes
FTSE World Inflation-Linked Securities Index (WorldILSI)
FTSE Euro Inflation-Linked Securities Index (EuroILSI)
FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI)
Related Indexes
FTSE EMUSDGBI Capped
FTSE EMUSDGBI Extended
FTSE EMUSDGBI Capped Extended
FTSE Emerging Markets Broad Bond Index (EMUSDBBI)
Related Indexes
FTSE Emerging Markets Corporate Capped Extended Broad Bond Index
FTSE Sukuk Index

A country is classified to be “emerging” if it is defined by the International Monetary Fund (IMF) World Economic Outlook to be among “emerging and developing economies”⁷¹ or if it is defined by the World Bank (WB) to be among “low-income economies” or “lower-middle income economies” or “upper-middle-income economies”⁷².

The FTSE Emerging Markets Government Bond Index (EMGBI) comprises local currency government bonds from 16 countries, providing a broad benchmark for portfolio managers looking for a measure of sovereign emerging markets. The EMGBI rules and methodologies are consistent with those of the FTSE World Government Bond Index (WGBI) to enable performance comparisons across sovereign debt markets.

⁷¹ <http://www.imf.org/external/ns/cs.aspx?id=28>

⁷² <http://data.worldbank.org/about/country-classifications/>

The FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI) measures the returns of inflation-linked bonds with fixed-rate coupon payments that are linked to an inflation index. The EMILSI tracks debt from seven countries denominated in seven currencies and is a valuable benchmark for investors who are concerned with real, rather than notional, returns.

The FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI) includes US Dollar-denominated emerging market sovereign debt issued in the global, Yankee, and Eurodollar markets. The index comprises debt of more than 50 countries from Latin America, Eastern Europe, Middle East, Africa, and Asia and offers geographical diversification without exposure to local currency fluctuations.

The FTSE Emerging Markets Broad Bond Index (EMUSDBBI) measures the performance of both investment-grade and high-yield US dollar denominated debt issued by governments, regional governments, government-sponsored entities, and corporations domiciled in over 60 emerging markets.

The FTSE Sukuk Index measures the performance of global Islamic fixed income securities, also known as sukuk. The index includes US Dollar-denominated, investment-grade sukuk that are Sharia-compliant and issued in the global markets.

FTSE Emerging Markets Government Bond Index (EMGBI)

Sovereign | Multi-currency

The FTSE Emerging Markets Government Bond Index (EMGBI) comprises local currency government bonds from 16 countries, providing a broad benchmark for portfolio managers looking for a measure of sovereign emerging markets⁷³. The EMGBI rules and methodologies are consistent with those of the World Government Bond Index (WGBI) to enable performance comparisons across sovereign debt markets.

The index covers a broad array of countries, and sub-indexes are available in any combination of currency, maturity, and rating.

FTSE Emerging Markets Government Bond Index		
Americas	EMEA	Asia Pacific & Japan
Brazil	Hungary	China
Chile	Poland	Indonesia
Colombia	Romania	Malaysia
Mexico	Russia	Philippines
Peru	South Africa	Thailand
	Turkey	

Design criteria and calculation methodology

To join the EMGBI, a market must satisfy the market size and credit criteria set out in Figure 116. Accessibility of bonds and markets, and replicability of returns are additional requirements. Once a market has met all the requirements, an announcement will be made that this market is eligible for inclusion into the EMGBI. If it continues to meet all three requirements for three consecutive months after the announcement, the market will join the EMGBI at the end of the three months that follow. Note that, any new market inclusion due the month of January will be postponed by one month and the market will join the respective index in February.

If an announced market meets any of the exit criteria in Figure 116 it will not be included in EMGBI.

Markets meeting the exit criteria or markets erecting significant accessibility or replicability barriers will be removed from the index. Markets removed are added to the FTSE EMGBI Additional Markets Indexes⁷⁴.

⁷³ For more information on methodology of classifying a country to be “emerging”, please see page 158.

⁷⁴ For more information on FTSE EMGBI Additional Markets Indexes, please see page 167.

Figure 116. FTSE Emerging Markets Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 10 billion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of the entry-level market size criteria, namely USD 5 billion, for three consecutive months, the market will be removed from the next month's profile and added to the EMGBI Additional Markets Indexes.
Minimum issue size	Americas Brazil: BRL 5 billion Chile: CLP 100 billion Colombia: COP 2 trillion Mexico: MXN 10 billion Peru: PEN 2 billion Europe, Middle East, and Africa Hungary: HUF 200 billion Poland: PLN 5 billion Romania: RON 500 million Russia: RUB 25 billion South Africa: ZAR 10 billion Turkey: TRY 2 billion Asia Pacific and Japan China: CNY 20 billion Indonesia: IDR 7.5 trillion Malaysia: MYR 4 billion Philippines: PHP 25 billion Thailand: THB 25 billion
Minimum credit quality	C by S&P and Ca by Moody's
Accessibility	Limited to bonds and markets that foreign investors can fully access and easily replicate.
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 117. Securities excluded: Variable-rate, floating-rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 117.

Figure 117. FTSE Emerging Markets Government Bond Index composition

EMGBI markets	Security type
Brazil	Excludes LTNs
Chile	N/A
China	Excludes zero-coupon bonds, special government bonds, bonds with maturity greater than 30 years from issuance and bonds issued prior to January 1, 2005
Colombia	Excludes Tes Control Monetario (TCM) bonds
Hungary	N/A
Indonesia	Excludes Recapitalization bonds and Sukuk bonds
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
Mexico	Excludes bonds issued prior to January 1, 2003
Peru	N/A
Philippines	Excludes zero-coupon bonds and special purpose bonds
Poland	N/A
Romania	N/A
Russia	Includes fixed-rate bullet federal government bonds (OFZ-PD) only
South Africa	Excludes zero-coupon bonds
Thailand	Excludes bonds with maturity greater than 30 years from issuance
Turkey	N/A

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 118. FTSE Emerging Markets Government Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate except for China, where savings deposit rate published by the People's Bank of China is used, and Philippines, where the Thomson Reuters one-month offshore implied deposit rate is used. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

Figure 118. FTSE Emerging Markets Government Bond Index calculation methodology, cont'd

Pricing⁷⁵	Citi trader pricing except for: • Brazil, Chile, China, Colombia, Hungary, Indonesia, Peru, and Romania (provided by Thomson Reuters) • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Philippines (provided by The Philippines Dealing & Exchange Corp."PDEX") • Poland (provided by BondSpot) • Thailand (provided by the Thai Bond Market Association "ThaiBMA"). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2007

Chronological summary of events

Figure 119. FTSE Emerging Markets Government Bond Index and related indexes event summary

Year	Monthly highlights
2018	January: The pricing source for local currency Hungarian government bonds changed from Citi trader to Thomson Reuters. February: China joins the Emerging Markets Government Bond Index. Emerging Markets Government Bond Index – Capped is introduced. It imposes a maximum country weight of 10% to limit individual market exposure in the Emerging Markets Government Bond Index. May: Romania joins the Emerging Markets Government Bond Index.
2017	August: The pricing source for local currency government bonds issued by Brazil, Colombia, and Peru in the index changed from Citi trader to Thomson Reuters. September: The index is rebranded to FTSE Emerging Markets Government Bond Index following its acquisition by the London Stock Exchange Group. November: The reinvestment rate for the Chinese onshore currency bonds changed from 1-month deposit rate to the savings deposit rate published by the People's Bank of China.

⁷⁵ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 119. FTSE Emerging Markets Government Bond Index and related indexes event summary, cont'd

2016	March: The rate used for calculating reinvestment return on Philippines government bonds changes from Thomson Reuters one-month Eurodeposit rate to Thomson Reuters one-month offshore implied deposit rate for Philippines currency. April: The pricing source for Chilean government bonds changed to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds. May: The minimum size criteria for the Philippines Government Bond Index changes from PHP 45 billion to PHP 25 billion. Additionally, the pricing source for the Philippines government bonds changes from Citi's trader prices to prices published by The Philippines Dealing & Exchange Corp. (PDEX), which is the official pricing source for the Philippines market. June: The pricing source for the Indonesian and Sri Lankan government bonds changes to reflect bid-market pricing from Thomson Reuters. Additionally, the pricing source for the Thai government bonds changes to reflect bid-market pricing from the Thai Bond Market Association (ThaiBMA)
2014	October: The pricing source and closing time for Malaysian and Polish government bonds become the following: Malaysia, 5:00 p.m. (Kuala Lumpur), average bid price from brokers Amanah Butler and Affin Poland, 4:30 p.m. (Warsaw), 2nd fixing bid price from BondSpot
2013	July: The Emerging Markets Government Bond Index (EMGBI) is introduced and includes: Brazil, Chile, Colombia, Mexico, Peru, Hungary, Poland, Russia, South Africa, Turkey, Indonesia, Malaysia, Philippines, and Thailand. The Emerging Markets Government Bond Index – Japanese Investment Trust (EMGBI-JIT) is introduced. The index includes the same markets as the EMGBI, but the calculation methodology is adapted to the evaluation standards of the Investment Trusts Association of Japan. The EMGBI Additional Markets Indexes are introduced. These are indexes of markets that do not, at present, qualify for inclusion in the EMGBI based on the latter's design criteria. Those markets are: China, India, and Sri Lanka. November: The "Global Emerging Market Sovereign Bond Index (ESBI)" was renamed to "Emerging Markets US Dollar Government Bond Index (EMUSDGBI)". In addition, the index's design criteria have been modified to reflect the new methodology of classifying a country to be "emerging." Thai government bonds with maturity greater than 30 years at issuance are excluded from the Thai Government Bond Index

The EMGBI is introduced in June 2013 with over 5 years of history. Since the index's base date (December 31, 2007) the following events marked its history:

2013	April: Peru joins the Index.
2012	January: Russia joins the index. August: Chile joins the index.
2011	January: Brazil joins the index. April: Colombia, Hungary, Turkey, and South Africa join the index.
2008	January: Indonesia, Malaysia, Mexico, Philippines, Poland, and Thailand join the index.

Related indexes

FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped)

The FTSE Emerging Markets Government Bond Index – Capped (EMGBI-Capped) imposes a maximum country weight of 10% to limit individual market exposure in the FTSE Emerging Markets Government Bond Index.

FTSE Emerging Markets Government Extended Bond Index – Japanese Investment Trust (EMGBI-JIT)

The FTSE Emerging Markets Government Bond Index - Japanese Investment Trust (EMGBI-JIT) is designed to serve as a benchmark for performance evaluation by Japanese investment trusts. The calculation methodology is based on the evaluation standards of the Investment Trusts Association of Japan.

Following standards of the Investment Trusts Association of Japan, EMGBI-JIT uses the telegraphic transfer middle (TTM) exchange rates provided by Bank of Tokyo-Mitsubishi UFJ as of mid-morning, 10:00 a.m. Tokyo time. The bonds in the EMGBI-JIT are priced as of yesterday's market close and EMGBI-JIT's return and market value calculations are the same as the non-yen securities of the World Government Bond Index – Japanese Investment Trust Index, described in detail in the appendix⁷⁶.

If a currency is not among the ones for which Bank of Tokyo Mitsubishi UFJ provides TTM quotes, rates from Citi FX are used. This follows the consistency stipulation on alternate rates of the Business Management Committee of Investment Trusts.

On rare occasions, the Japanese Ministry of Finance intervenes in foreign exchange markets. If such event occurs on the last business day after 10:00 a.m. Tokyo time and Bank of Tokyo-Mitsubishi UFJ officially revises the 10:00 a.m. rates, FTSE Russell will restate the last business day EMGBI-JIT returns and monthly returns if they differ significantly from the originally published returns.

Figure 120. Comparison of calculation assumptions for the EMGBI-JIT and EMGBI

	EMGBI-JIT	EMGBI
Exchange rate	Bank of Tokyo-Mitsubishi UFJ telegraphic transfer WM/Reuters — Median rate based on snapshots taken at spot middle rate (TTM) as quoted at 10:00 a.m. Tokyo regular intervals centered on fixing time of 4:00 p.m. time ⁷⁷ . In the event that TTM rates are unavailable, London time. rates from Citi FX are used.	WM/Reuters — Median rate based on snapshots taken at regular intervals centered on fixing time of 4:00 p.m. London time
Pricing	Markets ex. Japan: previous trading day's local market All markets: Same day local market close.	All markets: same day local market close.

⁷⁶ For a detailed description of the market value and return calculations for non-yen sectors of the WGBI-JIT, please see page 221 of the appendix.

⁷⁷ WM/Reuters quotes are used for currencies during periods in which Bank of Tokyo-Mitsubishi UFJ quotes are not available. Historically, WM/Reuters rates were used for Polish zloty (prior to December 2003) and Malaysian Ringgit (prior to January 2007).

Figure 120. Comparison of calculation assumptions for the EMGBI-JIT and EMGBI, cont'd

	EMGBI-JIT	EMGBI
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.	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.
Base date	December 31, 2007	December 31, 2007

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 121. Tickers* for FTSE Emerging Markets Government Bond Index and selected related indexes

Ticker	Index
SBEMGBU	FTSE Emerging Markets Government Bond Index, in USD terms
SBEMGBE	FTSE Emerging Markets Government Bond Index, in EUR terms
SBEMGBY	FTSE Emerging Markets Government Bond Index, in JPY terms
SBEMGBG	FTSE Emerging Markets Government Bond Index, in GBP terms
SBEMGJL	FTSE Emerging Markets Government Bond Index – Japanese Investment Trust, in local currency terms
SBEMGJYU	FTSE Emerging Markets Government Bond Index – Japanese Investment Trust, in JPY terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Emerging markets indexes

FTSE EMGBI Additional Markets Indexes

The FTSE EMGBI Additional Markets Indexes include markets that are being tracked, but do not, at present, qualify for inclusion in the EMGBI based on the criteria outlined previously. A market may remain as an EMGBI Additional Markets Index because it discourages foreign ownership, for example, even if it meets the size and credit criteria. Once a market has met all the requirements, an announcement will be made that this market is eligible for inclusion in the EMGBI. If it continues to meet all the requirements for three consecutive months after the announcement, then the market will no longer be part of the FTSE EMGBI Additional Markets Indexes and will be included in the EMGBI at the end of the three months that follow. If, and only if, an announced market meets the exit criteria set out in Figure 122 will it fail to be included in the EMGBI.

FTSE EMGBI Additional Markets Indexes
Asia Pacific & Japan
India
Sri Lanka

Design criteria and calculation methodology

Figure 122. FTSE EMGBI Additional Markets Indexes design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum issue size	India: INR 250 billion Sri Lanka: LKR 50 billion
Minimum credit quality	C by S&P and Ca by Moody's
Accessibility	Bonds and markets are not fully accessible to foreign investors and thus do not qualify for inclusion to the EMGBI
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 123. Securities excluded: Variable-rate, floating-rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 123.

Figure 123. FTSE EMGBI Additional Markets Indexes composition

Additional markets	Security type
India	Includes benchmark bonds
Sri Lanka	Excludes zero-coupon bonds, and bonds with maturity equal to or greater than 10 years from issuance

The FTSE EMGBI Additional Markets Indexes follow the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the indexes.

Figure 124. FTSE EMGBI Additional Markets Indexes calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Thomson Reuters.
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. Each year's scheduled fixing dates are published on the website.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 125. Tickers* for the FTSE EMGBI Additional Indexes

Ticker	Index
SBINL	FTSE Indian Government Bond Index, in INR terms
SBLKL	FTSE Sri Lankan Government Bond Index, in LKR terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI)

Sovereign | Multi-currency

The FTSE Emerging Markets Inflation-Linked Securities Index (EMILSI) measures the returns of inflation-linked sovereign bonds with fixed-rate coupon payments that are linked to an inflation index. The EMILSI tracks debt from seven countries denominated in seven currencies and is a valuable benchmark for investors who are concerned with real, rather than notional, returns.

The index covers a broad array of countries and sub-indexes are available in any combination of country, currency, and maturity.

FTSE Emerging Markets Inflation-Linked Securities Index	
Americas	EMEA
Brazil	Poland
Chile	South Africa
Colombia	Turkey
Mexico	

Design criteria and calculation methodology

Figure 126. FTSE Emerging Markets Inflation-Linked Securities Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year
Minimum outstanding	Brazil: BRL 1 billion Chile: CLF 5 million Colombia: COU 3 billion Mexico: MXV 5 billion Poland: PLN 5 billion South Africa: ZAR 500 million Turkey: TRL 2 billion
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted issues)
Composition	Inflation-linked bonds

Figure 127. Types of inflation-linked securities and inflation indexes

Country	Inflation-linked securities	Inflation index
Brazil	NTN-B (National Treasury Notes, Series B)	IPCA: Extended Consumer Price Index, published by Instituto Brasileiro de Geografia e Estatística (IBGE)
Chile	BCU, BTU	IPC: Índice de Precios al Consumidor, published by Central Bank of Chile
Colombia	TES UVR	CPI: published by Central Bank of Colombia
Mexico	UDIBONOS (Federal Government Bonds denominated in UDI)	UDIS: Unidades de Inversión - value based on Consumer denominated in UDI) Price Index, currently published by Instituto Nacional de Estadística y Geografía (INEGI) and published by Banco de México prior to July 14, 2011
Poland	IZ- Series T-Bonds	Consumer Price Index (CPI): published by Central Statistical Office (CSO)
South Africa	Inflation-Linked bonds	Headline CPI: All items Consumer Price Index for all urban areas, published by Statistics South Africa (Stats SA)
Turkey	CPI Indexed Bonds	CPI: General Consumer Price Index, published by Turkish Statistical Institute (TURKSTAT)

The index follows the general methodology as outlined in Section 2 of this publication. In addition, the price of each issue in the index is adjusted by using an index ratio. In general, this ratio is the current index level⁷⁸ divided by the inflation index level at the time of issue of the security. If the inflation index is published monthly, then the intra-month index ratio is calculated using linear interpolation. The calculation of an index ratio, if any, follows individual market convention.

Figure 128. FTSE Emerging Markets Inflation-Linked Securities Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month onshore deposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.

⁷⁸ The current index level is set equal to previous value; the “look-back” period is specified at the time of issuance for each individual bond.

Figure 128. FTSE Emerging Markets Inflation-Linked Securities Index calculation methodology, cont'd

Pricing ⁷⁹	• Brazil, Chile, and Colombia provided by Thomson Reuters • Mexico provided by Proveedor Integral de Precios S.A. de C.V. • Poland provided by BondSpot • South Africa provided by Johannesburg Stock Exchange • Turkey provided by Citi trader Effective November 2018, Turkey prices will be provided by Thomson Reuters. Prices are generally taken as of the local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	March 31, 2008

Chronological summary of events

Figure 129. FTSE Emerging Markets Inflation-Linked Securities Index event summary

Year	Monthly highlights
2017	August: The pricing source for local currency government bonds issued by Brazil, Colombia, and Peru in the index changed from Citi trader to Thomson Reuters. September: The index is rebranded to FTSE Emerging Markets Inflation-Linked Securities Index following its acquisition by the London Stock Exchange Group.
2016	April: The pricing source for Chilean government bonds changed to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds. September: Colombia joins the EMILSI.
2014	February: The outstanding amount of Polish inflation-linked bonds drops below the minimum size criteria for inclusion and therefore, the bonds are removed from the March 2014 index profile. The coverage for the Polish inflation-linked securities will resume when the bonds satisfy the inclusion criteria.
2013	April: The Emerging Markets Inflation-Linked Securities Index is introduced and includes Brazil, Chile, Mexico, Poland, South Africa, and Turkey. The index is introduced with 5 years of history. These markets have been part of the index since its base date (March 31, 2008).

⁷⁹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Related indexes

FTSE World Inflation-Linked Securities Index (WorldILSI)

The FTSE World Inflation-Linked Securities Index (WorldILSI) measures the returns of inflation-linked bonds with fixed-rate coupon payments that are linked to an inflation index. The WorldILSI tracks debt from thirteen countries, namely Australia, Canada, France, Germany, Italy, Japan, Mexico, Poland, South Africa, Spain, Sweden, the United Kingdom, and the United States denominated in their respective currencies. This index is a valuable benchmark for investors who are concerned with real, rather than notional, returns.

FTSE Euro Inflation-Linked Securities Index (EuroILSI)

The FTSE Euro Inflation-Linked Securities Index (EuroILSI) measures the returns of French, German, and Italian inflation-linked bonds with fixed-rate coupon payments that are linked to the EU Harmonized Index of Consumer Prices (HICP) ex-tobacco and the Consumer Price Index (CPI) ex-tobacco.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 130. Tickers* for the FTSE Emerging Markets Inflation-Linked Securities Index and selected related indexes

Ticker	Index
SBLEUU	FTSE Emerging Markets Inflation-Linked Securities Index, in USD terms
SBLEEU	FTSE Emerging Markets Inflation-Linked Securities Index, in EUR terms
SBLEJU	FTSE Emerging Markets Inflation-Linked Securities Index, in JPY terms
SBLEGU	FTSE Emerging Markets Inflation-Linked Securities Index, in GBP terms
SBLBL	FTSE Brazilian Inflation-Linked Securities Index, in BRL terms
SBLCL	FTSE Chilean Inflation-Linked Securities Index, in CLP terms
SBILCOL	FTSE Colombian Inflation-Linked Securities Index, in COU terms
SBLML	FTSE Mexican Inflation-Linked Securities Index, in MXN terms
SBPSL	FTSE Polish Inflation-Linked Securities Index, in PLN terms
SBLZL	FTSE South African Inflation-Linked Securities Index, in ZAR terms
SBLTL	FTSE Turkish Inflation-Linked Securities Index, in TRL terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI)

Sovereign | US Dollar

The FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI) includes US Dollar-denominated emerging market sovereign debt issued in the global, Yankee, and Eurodollar markets. The index comprises debt of more than 50 countries from Latin America, Eastern Europe, Middle East, Africa, and Asia and offers geographical diversification without exposure to local currency fluctuations.

The index covers a broad array of countries and sub-indexes are available in any combination of country, maturity, and rating.

FTSE Emerging Markets US Dollar Government Bond Index
Latin America
Eastern Europe
Middle East and Africa
Asia

Design criteria and calculation methodology

Figure 131. FTSE Emerging Markets US Dollar Government Bond Index design criteria

Coupon	Fixed-rate (excludes zero-coupon bonds)
Minimum maturity	At least one year
Minimum issue size	USD 500 million
Minimum credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Redemption features	Bullet, sinking fund, puttable, or callable
Composition	US Dollar-denominated sovereign debt issued in the global, Yankee, and Eurodollar markets.

Defaults

A country's bonds are placed in the Extended Indexes⁸⁰ if the sovereign government meets the following default criteria:

1. Failure to pay: The sovereign has failed to make a full principal or interest payment by the due date (including any applicable grace period).
2. Repudiation/moratorium: The sovereign repudiates or challenges the validity of its bonds or declares a moratorium or standstill applicable to the bond payments.
3. Acceleration: The sovereign bonds become due and payable in full or eligible for acceleration by meeting the conditions of acceleration specified in their terms.
4. Restructuring: The sovereign, because of deterioration in financial conditions or creditworthiness, changes the financial terms or causes subordination of its bonds not provided for in its terms and imposes such changes on bondholders.

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 132. FTSE Emerging Markets US Dollar Government Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁸¹	Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Prices are generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	March 31, 1995

⁸⁰ For more information on Extended Indexes, please see page 176.

⁸¹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Sector-level spread computation

Sector level spreads are computed by weighting the spreads with dollar duration as follows:

$$\text{sprd}_{\text{sector}} = \frac{\sum_{i=1}^n \text{sprd}_i \times \text{mkv}_i \times \text{spddur}_i}{\sum_{j=1}^n \text{mkv}_j \times \text{spddur}_j}$$

In this equation, n is the number of issues in the sector and for each issue; sprd is the stripped spread; mkv is the market value; and spddur is the spread duration. The product of the market value and the spread duration is referred to as the spread-dollar duration.

This methodology will calculate the average spread of a sector according to both the market value and the duration of the underlying issues within the sector. Weighting by spread-dollar duration helps to more accurately reflect changes to the value of the portfolio associated with spread curve movement by assigning a larger weight to securities with larger spread duration. For example, given two bonds of the same market value, the spread of the long-duration bond will have a larger weight in the sector-level spread than the spread of the short-duration bond.

Chronological summary of events

Figure 133. FTSE Emerging Markets US Dollar Government Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Emerging Markets US Dollar Government Bond Index following its acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters.
2014	August: Due to technical default and S&P's downgrade to CCC-, Argentinean sovereign bonds exited the EMUSDGBI and joined the EMUSDGBI Extended.
2013	November: The index is renamed from "Global Emerging Market Sovereign Bond Index (ESBI)" to "Emerging Markets US Dollar Government Bond Index (EMUSDGBI)". Related indexes are also renamed: the "Global Emerging Market Sovereign Capped Bond Index (ESBI Capped)", the "Global Emerging Markets Sovereign Extended Bond Index (ESBI Extended)", and the "Global Emerging Market Sovereign Capped Extended Bond Index (ESBI Capped Extended)" are renamed to "Emerging Markets US Dollar Government Capped Bond Index (EMUSDGBI Capped)", "Emerging Markets US Dollar Government Extended Bond Index (EMUSDGBI Extended)", and "Emerging Markets US Dollar Government Capped Extended Bond Index (EMUSDGBI Capped Extended)", respectively.
2003	July: The Brady Bond Index is migrated to the Global Emerging Market Sovereign Index.
2002	January: The Global Emerging Market Sovereign Bond Index is introduced.

Related indexes

FTSE Emerging Markets US Dollar Government Capped Bond Index (EMUSDGBI Capped)

The FTSE Emerging Markets US Dollar Government Capped Bond Index (EMUSDGBI Capped) represents a modified version of the EMUSDGBI. It imposes a maximum par amount of USD 15 billion per country, thereby limiting the effect of debt-burdened countries on index characteristics and performance.

FTSE Emerging Markets US Dollar Government Extended Bond Index (EMUSDGBI Extended) and FTSE Emerging Markets US Dollar Government Capped Extended Bond Index (EMUSDGBI Capped Extended)

The FTSE Emerging Markets US Dollar Government Extended Bond Index (EMUSDGBI Extended) and the FTSE Emerging Markets US Dollar Government Capped Extended Bond Index (EMUSDGBI Capped Extended) capture the bonds that are excluded from the EMUSDGBI and EMUSDGBI Capped because of default by the issuer. For a country to be moved to the Extended Indexes, at least one foreign currency debt that is a direct obligation of the sovereign government in the EMUSDGBI and EMUSDGBI Capped meets the default criteria stated on page 174. In the event that a country defaults, all of its issues in the EMUSDGBI and EMUSDGBI Capped, including its Brady bonds, are moved to the Extended Indexes. The returns for the bonds are also adjusted to reflect the loss of coupon payments or accrued interest, where applicable. The adjustment occurs at the month-end following the default of the issuer. The return calculation for the default issues reflects only principal gains or losses.

The FTSE Emerging Markets Broad Bond Index (EMUSDBBI) measures the performance of both investment-grade and high-yield US dollar denominated debt issued by governments, regional governments, government-sponsored entities, and corporations domiciled in over 60 emerging markets. The EMUSDBBI provides a comprehensive measure of the emerging fixed income markets across various asset classes and credit sectors.

Additional Definitions

Spread Duration

The spread duration is a measure of relative changes in the full price because of changes in the stripped spread.

Stripped Yield

The stripped yield is calculated on cash flows reduced by any guaranteed payments of principal and interest and with the price reduced by the present value of the guaranteed payments.

Stripped Spread

The stripped spread (in basis points) over the pricing yield curve for the unguaranteed portion of a security's cash flows, is equal to the amount that when added to each of the yield curve's spot rates, makes the present value of the unguaranteed portion of the cash flows equal to the price reduced by the present value of the guaranteed payments.

Blended Yield

The blended yield is obtained from discounting both the sovereign and collateral component of future cash flows.

Blended Spread

The blended spread is the security's blended yield minus the point on the pricing yield curve at the point of the security's weighted average life, in basis points.

Cash Flow Yield

The cash flow yield is indicated by the security's full price, settlement date, and assumed cash flows.

Cash Flow Spread

The cash flow spread is the security's cash flow yield minus the yield of a suitable benchmark security, in basis points.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 134. Tickers* for Emerging Markets US Dollar Government Bond Index and selected related indexes

Ticker	Index
SBGIMS	FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI), in USD terms
SBCGMS	FTSE EMUSDGBI Capped, in USD terms
SBEVMS	FTSE EMUSDGBI Extended, in USD terms
SBEWMS	FTSE EMUSDGBI Capped Extended, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Emerging markets indexes

FTSE Emerging Markets Broad Bond Index (EMUSDBBI)

Multi-asset | US Dollar

The FTSE Emerging Markets Broad Bond Index (EMUSDBBI) measures the performance of both investment-grade and high-yield US dollar denominated debt issued by governments, regional governments, government-sponsored entities, and corporations domiciled in over 60 emerging markets. The EMUSDBBI provides a comprehensive measure of the emerging fixed income markets across various asset classes and credit sectors.

Sub-indexes are available in any combination of asset class, maturity, and rating.

FTSE Emerging Markets Broad Bond Index	
Government	Corporate
Foreign Sovereign	Industrial
Sovereign Guaranteed	Utility
Government Sponsored	Finance
Regional Government	
Regional Government Guaranteed	

Design criteria and calculation methodology

Figure 135. FTSE Emerging Markets Broad Bond Index design criteria

Coupon	Fixed-rate and fixed-to-floating bonds
Currency	USD
Minimum maturity	At least one year Fixed-to-floating bonds are removed one year prior to the fixed-to-floating rate start date
Minimum issue size	Foreign Sovereign: USD 500 million Sovereign Guaranteed/Government Sponsored/Regional Governments/Corporate: USD 250 million
Credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Securities included: Investment-grade and high-yield US Dollar-denominated debt issued by governments, regional governments, government-sponsored entities, and corporations domiciled in emerging markets. Securities excluded: Callable zero-coupon bonds

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 136. FTSE Emerging Markets Broad Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁸²	Citi trader pricing except for Foreign Sovereign US Dollar denominated bonds (provided by Thomson Reuters). Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Prices are generally taken as of local market close.
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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2012

Chronological summary of events

Figure 137. FTSE Emerging Markets Broad Bond Index and related indexes event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Emerging Markets Broad Bond Index following its acquisition by the London Stock Exchange Group.
2016	October: The pricing source for the foreign sovereign US dollar denominated bonds changes to reflect bid-market pricing from Thomson Reuters.
2015	October: The Emerging Markets Broad Bond Index and the Emerging Markets Corporate Capped Extended Broad Bond Index are introduced.

⁸² On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Related indexes

FTSE Emerging Markets Corporate Capped Extended Broad Bond Index (EMUSDBBI Corporate Capped Ext)

The FTSE Emerging Markets Corporate Capped Extended Broad Bond Index (EMUSDBBI Corp Capped Ext) includes all the bonds in the corporate sector of the EMUSDBBI with the addition of investment-grade and high-yield debt issued by corporations domiciled in Israel and Korea. It also caps the par amount of any single issuer at USD 10 billion in order to limit exposure to any single issuer.

Figure 138. FTSE Emerging Markets Corporate Capped Extended Broad Bond Index design criteria

Coupon	Fixed-rate and fixed-to-floating bonds
Currency	USD
Minimum maturity	At least one year Fixed-to-floating bonds are removed one year prior to the fixed-to-floating rate start date
Maximum issue size	USD 10 billion
Minimum issue size	USD 250 million
Credit quality	C by S&P and Ca by Moody's (excludes defaulted bonds)
Composition	Securities included: Investment-grade and high-yield US Dollar-denominated debt issued by corporations domiciled in emerging markets, Israel and Korea Securities excluded: Callable zero-coupon bonds

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 139. FTSE Emerging Markets Corporate Capped Extended Broad Bond Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁸³	Citi trader pricing and third-party pricing sources Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices.
Calculation frequency	Daily

⁸³ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 139. FTSE Emerging Markets Corporate Capped Extended Broad Bond Index calculation methodology, cont'd

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. Each year's scheduled fixing dates are published on the website.
Base date	December 31, 2012

FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI)

The FTSE Emerging Markets US Dollar Government Bond Index (EMUSDGBI) includes US Dollar-denominated emerging market sovereign debt issued in the global, Yankee, and Eurodollar markets. The index comprises debt of more than 50 countries from Latin America, Eastern Europe, Middle East, Africa, and Asia and offers geographical diversification without exposure to local currency fluctuations.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 140. Tickers* for the FTSE Emerging Markets Corporate Capped Extended Broad Bond Index and selected related indexes

Ticker	Index
SBEKBBI	FTSE Emerging Markets Broad Bond Index
SBEKBIG	FTSE Emerging Markets Broad Bond Index, Investment-Grade
SBEKBHY	FTSE Emerging Markets Broad Bond Index, High-Yield
SBEKFSOV	FTSE Emerging Markets Broad Bond Index, Sovereign Guaranteed
SBEKSGSP	FTSE Emerging Markets Broad Bond Index, Government Sponsored
SBEKRGOV	FTSE Emerging Markets Broad Bond Index, Regional Government
SBEKRGTD	FTSE Emerging Markets Broad Bond Index, Regional Government Guaranteed
SBEKRGSP	FTSE Emerging Markets Broad Bond Index, Regional Government Sponsored
SBEKCORP	FTSE Emerging Markets Broad Bond Index, Corporate
SBEOCCE	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index
SBEOCIG	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index, Investment-Grade
SBEPOCHY	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index, High-Yield
SBEOINDU	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index, Industrial
SBEOUTIL	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index, Utility
SBEOFIN	FTSE Emerging Markets Corporate Capped Extended Broad Bond Index, Finance

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Emerging markets indexes

FTSE Sukuk Index

Multi-asset | US Dollar

The FTSE Sukuk Index measures the performance of global Islamic fixed income securities, also known as sukuk. The index includes US Dollar-denominated, investment-grade sukuk that are Sharia-compliant and issued in the global markets.

Design criteria and calculation methodology

Figure 141. FTSE Sukuk Index design criteria

Coupon	Fixed-rate or step, floating-rate
Minimum maturity	At least one year
Minimum issue size	USD 200 million
Minimum credit quality	BBB- by S&P or Baa3 by Moody's.
Composition	Global Islamic fixed income investment-grade, US Dollar-denominated securities (Sukuk)

The index follows the general methodology as outlined in Section 2 of this publication. More specifically, the following calculation rules apply to the index.

Figure 142. FTSE Sukuk Index calculation methodology

Weighting	Market capitalization
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁸⁴	Citi trader pricing, generally taken as of local market close ⁸⁵ . Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices.
Calculation frequency	Daily

⁸⁴ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

⁸⁵ Bid-side prices are collected at the close of the local market for use in calculating monthly returns. However, because of the illiquid nature of the bonds, the valuations placed on the bonds by traders are based more on their estimate of where the bonds might trade rather than an observation of where they actually trade.

Figure 142. FTSE Sukuk Index calculation methodology, cont'd

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. Each year's scheduled fixing dates are published on the website.
Base date	September 30, 2005

Chronological summary of events

Figure 143. FTSE Sukuk Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Sukuk Index following its acquisition by the London Stock Exchange Group.
2012	April: The Dow Jones Citigroup Sukuk Index is rebranded to Citi Sukuk Index.
2009	October: The minimum issue size eligibility decreases from USD 250 million to USD 200 million.
2006	April: The Dow Jones Citigroup Sukuk Index is introduced.

Sharia Compliance

Sukuk are essentially asset-backed bonds, neither equity nor debt from the perspective of conventional capital markets. As such, the content and structure of sukuk must be examined carefully to assure that they are Sharia-compliant. While it is possible for an index to stipulate criteria relating to the nature of the underlying assets of sukuk to determine whether or not sukuk are Sharia-compliant, the structure of sukuk presents a far more complicated picture. First, given the complexities involved when structuring such instruments for assets held in one jurisdiction by special purpose vehicles (SPVs), or trusts domiciled in other jurisdictions, or held by investors in still other jurisdictions, certification of compliance by an internationally recognized Sharia supervisory board (SSB) must be established. Second, the basic structure of sukuk must fall under one of the categories specified by the Auditing and Accounting Organization of Islamic Financial Institutions (AAOIFI). After these two criteria are established, the final Sharia screening criteria will deal exclusively with the nature of the underlying assets. To summarize, the Sharia screening criteria are:

1. Certification by a recognized Sharia supervisory board.
2. Compliance with AAOIFI standards for tradable sukuk.
3. Compliance of the underlying assets with Sharia principles.

The First Screen

The first criterion for considering sukuk is to ensure that the issuance is certified by a reputable SSB. In many cases, a sukuk will be certified not only by the issuer's SSB, or the arranger, but also by the investor's SSB as well. To address the potential problem of differing SSB interpretations, the screen will be passed only if the sukuk

has been certified by a Sharia supervisory board with international membership or if more than one SSB from different geographic regions have certified the sukuk.

The Second Screen

The second criterion is the most complex of all. Because of the standards for sukuk issued by the AAOIFI in 2004, a diverse range of instruments has been identified, and their acceptance by Islamic banks and financial institutions has been universal.

The Third Screen

The underlying assets to be securitized in sukuk must comply with Sharia principles, similar to the way stocks are screened for compliance of the primary business, so as not to permit companies that are engaged in any of the so-called prohibited industries.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 144. Tickers* for the FTSE Sukuk Index

Ticker	Index
SBKU	FTSE Sukuk Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Alternatively-weighted indexes

Index range

Alternatively-weighted indexes

Alternatively-weighted indexes
FTSE Debt Capacity World Government Bond Index (DCWGBI)
FTSE Time-Weighted US Fallen Angel Bond Index
FTSE RAFI Sovereign Developed Markets Bond Index Series
Master
Liquid
FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index
FTSE RAFI World Corporate Investment-Grade Bond Index

The FTSE Debt Capacity World Government Bond Index (DCWGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds with a focus on countries with lower debt issuance relative to their gross domestic product (GDP) and stronger debt servicing capabilities. The index comprises sovereign debt from over 20 countries, denominated in a variety of currencies.

Unlike traditional indexes where country weights are solely based on the market capitalization of an issuer's outstanding debt, the index also accounts for the countries' capacity to repay their debt. It is rebalanced monthly with weights based on each country's market value adjusted by scores derived from its actual Debt-to-GDP and calculated Debt Service-to-GDP ratios, both determined annually in May⁸⁶. These factors aim to reweight the index to provide higher weights to countries that have stronger fiscal health and greater capacity to service their debt based on those two factors as proxy indicators. The DCWGBI provides an alternatively weighted broad benchmark for the global sovereign fixed income market.

The FTSE Time-Weighted US Fallen Angel Bond Index measures the performance of "fallen angels" (high-yield debt that was previously rated investment-grade) and includes US Dollar-denominated bonds issued by corporations domiciled in the US or Canada.

Unlike traditional indexes, where constituent weights are based on market value, the index's constituent weights are determined based on the time from inclusion in the index, with higher weights assigned to bonds that have more recently become "fallen angels". This time-based weighting approach aims to capture the price rebound effect that fallen angels tend to experience soon after their initial downgrade to high-yield. An additional capping mechanism is in place to help manage concentration risk.

The index provides an alternatively-weighted benchmark for the North American high-yield bond market.

FTSE Russell and Research Affiliates have developed a series of bond indexes based on the RAFI[®] methodology. The FTSE RAFI Bonds Index Series weights index components by measures of the issuer's

⁸⁶ The actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO).

economic size, which are correlated with the company's or country's debt service capacity. This approach provides an alternative to market capitalization weighting where index components are weighted by the issuer's amount of outstanding debt.

This is a strategic partnership between FTSE Russell and Research Affiliates, where FTSE Russell brings its expertise and experience in fixed income index related products and services to provide stable and replicable indexes, and where Research Affiliates brings its research strength, product development capabilities and pioneering proprietary methodology on securities selection and weighting based on fundamental measures.

While traditional fixed income indexes use market value weights, which tend to increase exposure to issuers as they become more indebted, Research Affiliates has developed an innovative methodology for constructing indexes, which determines component weights based on fundamental measures.

The essence of this approach is to focus on capturing the economic “footprint” of a sovereign or company, which is correlated with the issuer's ability to service its debt. Simultaneously, the RAFI methodology preserves the advantages of passive investing, namely: diversification, liquidity, transparency, broad economic representation, and limited transaction costs.

Holdings for both the FTSE RAFI Sovereign Developed Markets Bond Index Series and the FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index are weighted based on metrics that signify the importance of a country in the world economy: population, GDP, energy consumption, and rescaled land area.

FTSE RAFI World Corporate Investment-Grade Bond Index weights a company's debt according to fundamental measures of the company's debt service capacity rather than solely on the amount of debt outstanding. The measures used for weighting constituents are long-term assets and cash flow.

Alternatively-weighted indexes

FTSE Debt Capacity World Government Bond Index (DCWGBI)

Sovereign | Multi-currency

The FTSE Debt Capacity World Government Bond Index (DCWGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds with a focus on countries with lower debt issuance relative to their gross domestic product (GDP) and stronger debt servicing capabilities. The index comprises sovereign debt from over 20 countries, denominated in a variety of currencies.

Unlike traditional indexes where country weights are solely based on the market capitalization of an issuer's outstanding debt, the index also accounts for the countries' capacity to repay their debt. It is rebalanced monthly with weights based on each country's market value adjusted by scores derived from its actual Debt-to-GDP and calculated Debt Service-to-GDP ratios, both determined annually in May⁸⁷. These factors aim to reweight the index to provide higher weights to countries that have stronger fiscal health and greater capacity to service their debt based on those two factors as proxy indicators. The index offers an alternatively-weighted broad benchmark for the global sovereign fixed income market.

Design criteria and calculation methodology

The index composition is based on the global sovereign markets and constituents of the FTSE World Government Bond Index (WGBI). A new market entering the WGBI will also enter the DCWGBI at the same time. Markets being removed from the WGBI because they are subjected to WGBI's exit criteria will also be removed from the DCWGBI.

Figure 145. FTSE Debt Capacity World Government Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ⁸⁸
Market size	Entry: The outstanding amount of a market's eligible issues must total at least USD 50 billion, EUR 40 billion, and JPY 5 trillion for the market to be considered eligible for inclusion. Exit: When the outstanding amount of a market's eligible issues falls below half of all the entry-level market size criteria, namely USD 25 billion, EUR 20 billion, and JPY 2.5 trillion, for three consecutive months, the market will be removed from the next month's profile.

⁸⁷ The actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO).

⁸⁸ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 10.50%, 12/21/2026) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date.

Figure 145. FTSE Debt Capacity World Government Bond Index design criteria, cont'd

Minimum issue size	Americas Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Mexico: MXN 10 billion United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings) Europe, Middle East, and Africa Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Norway: NOK 20 billion Poland: PLN 5 billion South Africa: ZAR 10 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) Asia Pacific and Japan Australia: AUD 750 million Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Malaysia: MYR 4 billion Singapore: SGD 1.5 billion
Minimum credit quality⁸⁹	Entry: A- by S&P and A3 by Moody's, for all new markets Exit: Below BBB- by S&P and Baa3 by Moody's
Barriers-to-entry	Entry: A market being considered for inclusion should actively encourage foreign investor participation and show a commitment to its own policies. Exit: Circumstances can change over time and a country may find that revising its policies makes sense for its national welfare. However, it is possible that new policies, including but not limited to ownership restrictions and capital controls, can have the effect of limiting investors' ability to replicate that country's portion of the index. In that case, it may be necessary to remove that country from the index. If barriers-to-entry are identified, an announcement will be made that the particular market has become ineligible, stating the reasons. That market will then be removed from the following month's profile.

⁸⁹ Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. The credit qualifications of the index are treated as provisional, in order to give market participants time to react to last-minute downgrades. A market will be removed from the index after the fixing if it becomes rated below investment-grade by both S&P and Moody's. This exception window is kept open until 5:00 p.m. New York time on the second to last business day of the month for removal only. Removal from the index, on or after the fixing date, is not reversible except by qualifying for the index once again, which takes a minimum of six months. There is no specific rule concerning default or what constitutes default. Conceivably, a market could technically default, but an immediate rescue could leave its existing bonds in the investment-grade category. Only a downgrade to below investment-grade would trigger a credit-related expulsion from the index.

Figure 145. FTSE Debt Capacity World Government Bond Index design criteria, cont'd

Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate non-callable bonds – unless otherwise stated in Figure 146. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 147.
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Figure 146. FTSE Debt Capacity World Government Bond Index calculation methodology

Weighting	Individual country weights are determined monthly based on each country's market value adjusted by scores derived from its actual Debt-to-GDP and calculated Debt Service-to-GDP ratios, both determined annually in May ⁹⁰ . Within each country, constituents are assigned weights in proportion to their market capitalization.
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁹¹	Citi trader pricing except for: • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Poland (provided by BondSpot) • Singapore (provided by the Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of local market close.
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.

⁹⁰ The actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO).

⁹¹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Figure 146. FTSE Debt Capacity World Government Bond Index calculation methodology, cont'd

Fixing date	Each month, the upcoming month's index constituents are "fixed" on the profile fixing date. Each year's scheduled fixing dates are published on the website.
Base date	May 31, 2004

Weighting methodology

Individual country weights are determined monthly based on each country's market value adjusted by scores derived from its actual Debt-to-GDP and calculated Debt Service-to-GDP ratios, both determined annually in May⁹². Within each country, constituents are assigned weights in proportion to their market capitalization.

A country's actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO). The country's Debt Service-to-GDP ratio is computed by taking the forecasted debt payment, as represented by the principal and coupon payments due over the coming twelve months for the country's relevant bonds in the WGBI, and dividing such forecast by the country's GDP. The forecasted debt payment is computed every May by reviewing the twelve monthly index bond composition lists since last June, determining the principal and coupon payments corresponding to the bonds that were included in those twelve historical composition lists which are due to pay within the year to come and summing up such payments after converting each of them to USD terms at the prevailing FX rates. Both Debt-to-GDP and calculated Debt Service-to-GDP ratios are determined annually in May, following the IMF publication, and are used in the calculation of the index country weights in its twelve monthly profiles thereafter.

The Debt-to-GDP and calculated Debt Service-to-GDP ratios of each country are converted into weights with lower ones assigned to the country that is more heavily indebted or with higher expected payments to service outstanding debts as a percentage of its GDP. The final weight of each country is determined as the weighted average of: i) the country's market value weight; ii) its Debt-to-GDP based weight, and iii) its Debt Service-to-GDP based weight.

Figure 147. FTSE Debt Capacity World Government Bond Index composition

WGBI markets	Security type
Australia	Excludes tax rebate bonds
Austria	Includes Bundesanleihen Excludes Bundesobligationen bonds
Belgium	N/A
Canada	N/A
Denmark	Excludes mortgage credit bonds
Finland	Excludes sinking fund, putable, extendable, housing fund and yield bonds
France	Includes Obligations Assimilables du Trésor (OATs) and Bons du Trésor à Intérêt Annuel Normalisé (BTANs)

⁹² The actual GDP and Debt-to-GDP ratios for the previous calendar year are published each year, generally in April, by the International Monetary Fund (IMF) in its World Economic Outlook (WEO).

Figure 147. FTSE Debt Capacity World Government Bond Index composition, cont'd

Germany	Includes Bundesrepublik, Schatzanweisungen, Bundesobligationen, Unity bonds, Treuhandanstalt, and Treuhandobligationen Excludes Schuldscheine, Unverzinsliche, Bundespost, Bundesbahn, and European Recovery Program Bonds
Ireland	N/A
Italy	Includes Buoni del Tesoro Poliennale (BTPs)
Japan	Includes callable bonds Excludes JGBs for individuals and discount bonds
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
Mexico	Excludes bonds issued prior to January 1, 2003
Netherlands	N/A
Norway	Includes benchmark bonds Excludes loans and lottery loans issued before 1991
Poland	N/A
Singapore	N/A
South Africa	Excludes zero-coupon bonds
Spain	Includes Bonos and Obligaciones del Estado Excludes discount bonds (Letras and Pagares del Tesoro)
Sweden	Includes Riksobligationer
Switzerland	Includes callable bonds Excludes book liabilities
United Kingdom	Includes callable, partly paid, and convertible (into other gilt issues) bonds Excludes rump gilts and perpetuals (undated)
United States	Includes callable bonds

Chronological summary of events

Figure 148. FTSE Debt Capacity World Government Bond Index event summary

Year	Monthly highlights
2017	February: The pricing source for local currency Swiss government bonds changes to reflect bid side Citi trader pricing. September: The index is rebranded to FTSE Debt Capacity World Government Bond Index following its acquisition by the London Stock Exchange Group.
2014	October: The Debt Capacity World Government Bond Index is introduced and includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Malaysia, Mexico, Netherlands, Norway, Poland, Singapore, South Africa, Spain, Sweden, Switzerland, United Kingdom, United States.

The construction of DCWGBI is based on the same events that mark the FTSE World Government Bond Index (WGBI). For more details, please refer to Figure 12.

Related indexes

FTSE World Government Bond Index

The FTSE World Government Bond Index (WGBI) measures the performance of fixed-rate, local currency, investment-grade sovereign bonds. It consists of countries that meet specific criteria for market size, credit quality, and barriers-to-entry. The WGBI is a widely used benchmark that currently comprises sovereign debt from over 20 countries, denominated in a variety of currencies. The index provides a broad market value weighted benchmark for the global sovereign fixed income market.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 149. Tickers* for the FTSE Debt Capacity World Government Bond Index

Ticker	Index
SBDWU	FTSE Debt Capacity World Government Bond Index, in USD terms
SBDWE	FTSE Debt Capacity World Government Bond Index, in EUR terms
SBDWY	FTSE Debt Capacity World Government Bond Index, in JPY terms
SBDWG	FTSE Debt Capacity World Government Bond Index, in GBP terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Alternatively-weighted indexes

FTSE Time-Weighted US Fallen Angel Bond Index

Credit | US Dollar

The FTSE Time-Weighted US Fallen Angel Bond Index measures the performance of “fallen angels” – bonds which were previously rated investment-grade but were subsequently downgraded to high-yield⁹³. The index includes US Dollar-denominated bonds issued by corporations⁹⁴ domiciled in the US or Canada that meet the inclusion criteria described in Figure 150. Any such bonds, with a rating changed from investment-grade to high-yield in the previous month, are eligible for inclusion in the index and will be held in the index for a period of 60 months from inclusion provided they continue to meet the inclusion criteria. If a bond exits and then re-enters the index, the inclusion period is reset.

Unlike traditional indexes, where constituent weights are based on market value, the index's constituent weights are determined based on the time from inclusion in the index. Higher weights are assigned to bonds that have more recently become “fallen angels”. This time-based weighting approach aims to capture the price rebound effect that fallen angels tend to experience soon after their initial downgrade to high-yield. Furthermore, issuers' weights are capped at 15% and constituents' time-based weights are capped at 5 times their respective market value-based weights to help manage concentration risk.

The index provides an alternatively-weighted benchmark for the North American high-yield bond market.

Design criteria and calculation methodology

Figure 150. FTSE Time-Weighted US Fallen Angel Bond Index design criteria

Coupon	Fixed-rate
Currency	USD
Minimum maturity	At least one year
Maximum inclusion period	60 months ⁹⁵
Minimum issue size	USD 250 million
Minimum credit quality	Maximum Quality: BB+ by S&P and Ba1 by Moody's Minimum Quality: C by S&P and Ca by Moody's (excluding defaulted bonds)
Composition	Cash-pay, zero-to-full (ZTF), pay-in-kind (PIK), step-coupon bonds, and Rule 144A bonds issued by corporations domiciled in the United States or Canada

⁹³ The index also includes bonds that were originally rated high-yield, subsequently rated investment-grade, then downgraded again to high-yield.

⁹⁴ Includes Industrial, Utility and Finance sectors

⁹⁵ The inclusion period for each bond is measured in terms of consecutive months. The maximum inclusion period rule will be suspended should the number of issuers in the index falls below 10 to mitigate issuer concentration risk. Such suspension of the rule will be maintained until at least 10 issuers are eligible for inclusion in the index.

Figure 151. FTSE Time-Weighted US Fallen Angel Bond Index calculation methodology

Weighting	Constituent weights are based on the time from inclusion of the newly eligible bond in the index with higher weights assigned to bonds that have more recently become “fallen angels”. Please refer to the Weighting Methodology section for more details. Additionally, issuers’ weights are capped at 15% and individual bonds’ time-based weights are capped at 5 times their respective market-value based weights.
Rebalancing	Once a month at the end of the month
Reinvestment of cash flow	At daily average of the one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing	Third-party pricing source
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. Each year’s scheduled fixing dates are published on the website.
Base date	December 31, 2001

Weighting methodology

Unlike traditional indexes where constituent weights are based on market value, the index's constituent weights are determined based on the time from inclusion in the index. Any bond entering the index is given a predefined time score. Starting from the 13th month upon entering the index, the time score is gradually reduced. On each monthly rebalance, the time scores for all bonds in the index are normalized to weights that sum up to 100%. The time based weighting methodology aims to assign higher weights to bonds that have more recently become “fallen angels”. Furthermore, issuers’ weights are capped at 15% and individual bonds’ time-based weights are capped at 5 times their respective market value based weights to help manage concentration risk.

Chronological summary of events

Figure 152. FTSE Time-Weighted US Fallen Angel Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE Time-Weighted US Fallen Angel Bond Index following its acquisition by the London Stock Exchange Group.
2015	November: The Time-Weighted US Fallen Angel Bond Index is introduced.

Related indexes

FTSE US High-Yield Market Index

The FTSE US High-Yield Market Index is a US Dollar-denominated index which measures the performance of high-yield debt issued by corporations domiciled in the US or Canada. Recognized as a broad measure of the North America high-yield market, the index includes cash-pay, deferred-interest securities, and debt issued under Rule 144A in unregistered form.

Access information and related publications

Index data is available on the website (www.yieldbook.com/m/indices), The Yield Book, as well as data and analytic vendors and financial news organizations (for a full list, please see appendix).

Figure 153. Tickers* for the FTSE Time-Weighted US Fallen Angel Bond Index

Ticker	Index
SBUSTWFA	FTSE Time-Weighted US Fallen Angel Bond Index

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Alternatively-weighted indexes

FTSE RAFI Sovereign Developed Markets Bond Index Series

Sovereign | Multi-currency

The FTSE RAFI Sovereign Developed Markets Bond Index Series seeks to reflect exposure to the government securities of a universe of 23 developed markets. By weighting components by their fundamentals, the indexes aim to represent each country's economic footprint, which is correlated to the country's ability to service its debt.

The FTSE RAFI Sovereign Developed Markets Bond Index Master includes all debt instruments that qualify for inclusion under the index rules. Since the Master Index includes more securities than can be readily replicated in an investable portfolio, the FTSE RAFI Sovereign Developed Markets Bond Index Liquid selects a reduced number of bonds to provide the country and duration exposures of the Master Index in a replicable portfolio. The following describes the rules and processes to create and calculate these indexes.

FTSE RAFI Sovereign Developed Markets Bond Index Series	
Americas	Asia Pacific and Japan
Canada	Australia
United States	Japan
	Korea
	New Zealand
	Singapore
EMEA	
Eurozone markets	
Austria	Czech Republic
Belgium	Denmark
Finland	Israel
France	Norway
Germany	Sweden
Ireland	Switzerland
Italy	United Kingdom
Netherlands	
Spain	

Design criteria and calculation methodology

FTSE RAFI Sovereign Developed Markets Bond Index Master

The FTSE RAFI Sovereign Developed Markets Bond Index Master includes specific government markets tracked by FTSE Russell. To be included in the FTSE RAFI Sovereign Developed Markets Index Master, countries must have an investment-grade domestic sovereign debt rating by either S&P or Moody's. An individual country's removal from the index due to rating follows the methodology as outlined in section 2 of this publication.

The eligibility of the countries is verified annually in August based on the data available by July 31 (Country Selection Cut-Off Date). Changes become effective on September 30. The bond-specific eligibility rules for each country are outlined in figures 154 and 155.

Eligible countries as of September 30, 2017

Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, Korea, the Netherlands, New Zealand, Norway, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Figure 154. FTSE RAFI Sovereign Developed Markets Bond Index Master design criteria

Coupon	Fixed-rate and fixed-to-floating bonds
Minimum maturity	At least one year
Minimum issue size	Australia: AUD 750 million Canada: CAD 2.5 billion (excludes Bank of Canada Cash Management bond buybacks) Czech Republic: CZK 15 billion Denmark: DKK 20 billion Eurozone Markets: EUR 2.5 billion Israel: ILS 5 billion Japan: JPY 500 billion; 20+ year bonds: JPY 450 billion (excludes Bank of Japan holdings and Ministry of Finance buybacks) Korea: KRW 1 trillion New Zealand: NZD 750 million Norway: NOK 20 billion Singapore: SGD 1.5 billion Sweden: SEK 25 billion Switzerland: CHF 4 billion United Kingdom: GBP 2 billion (excludes Bank of England holdings) United States: USD 5 billion public amount outstanding (excludes Federal Reserve holdings)
Minimum credit quality	BBB- by S&P or Baa3 by Moody's

Figure 154. FTSE RAFI Sovereign Developed Markets Bond Index Master design criteria, cont'd

Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed rate non-callable bonds – unless otherwise stated in Figure 155. For Eurozone Markets, fixed-rate bonds originally issued in their euro-converting currency are included. Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index-linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements. For more information on market specific security types, refer to Figure 155.
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Figure 155. FTSE RAFI Sovereign Developed Markets Bond Index composition

Markets	Security type
Australia	Excludes tax rebate bonds
Austria	Includes Bundesanleihen Excludes Bundesobligationen bonds
Belgium	N/A
Canada	N/A
Czech Republic	Excludes zero-coupon bonds
Denmark	Excludes mortgage credit bonds
Finland	Excludes sinking fund, putable, extendable, housing fund and yield bonds
France	Includes Obligations Assimilables du Trésor (OATs) and Bons du Trésor à Intérêt Annuel Normalisé (BTANs)
Germany	Includes Bundesrepublik, Schatzanweisungen, Bundesobligationen, Unity bonds, Treuhandanstalt, and Treuhandobligationen Excludes Schuldscheine, Unverzinsliche, Bundespost, Bundesbahn, and European Recovery Program Bonds
Ireland	N/A
Israel	N/A
Italy	Includes Buoni del Tesoro Poliennale (BTPs)
Japan	Includes callable bonds Excludes JGBs for individuals and discount bonds
Korea	Excludes Monetary Stabilization Bonds and 10-Year securities issued prior to January 1, 2003
Netherlands	N/A
New Zealand	N/A
Norway	Includes benchmark bonds Excludes loans and lottery loans issued before 1991
Singapore	N/A
Spain	Includes Bonos and Obligaciones del Estado Excludes discount bonds (Letras and Pagares del Tesoro)

Figure 155. FTSE RAFI Sovereign Developed Markets Bond Index composition, cont'd

Sweden	Includes Riksoobligationer
Switzerland	Includes callable bonds Excludes book liabilities
United Kingdom	Includes callable, partly paid, and convertible (into other gilt issues) bonds Excludes rump gilts and perpetuals (undated)
United States	Includes callable bonds

Figure 156. FTSE RAFI Sovereign Developed Markets Bond Index Master calculation methodology

Weighting	The weights for each country are determined once per year based on the RAFI methodology. For more information, please see Weighting Methodology section.
Rebalancing	Monthly: See Monthly Reconstitution section.
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁹⁶	Citi trader pricing except for Israel (provided by Tel Aviv Stock Exchange), Korea (provided by KAP), and Singapore (provided by Monetary Authority of Singapore). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. All pricing is generally taken as of the local market close.
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.
Base date	September 30, 2001

Weighting methodology

The weights for each country are determined once per year based on the RAFI methodology. Weights are based on country fundamentals rather than the amount of debt outstanding. The weights for each country are determined on August 31 and become effective on September 30. The Master Index rebalances to these weights once per year on September 30.

⁹⁶ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

The eligible constituents for each country are defined on a monthly basis as indicated in the general methodology as outlined in Section 2 of this publication. The aggregate country weight, determined by the RAFI methodology, is applied to all bonds that qualify for inclusion from that country.

Each country is weighted by a combination of that country's GDP, population, land area, and energy use. Research Affiliates gathers data for GDP (converted to a common currency using purchasing power parity), population, and land area (scaled by taking the square root of each value) from the World Bank, and data for energy consumption from the British Petroleum Statistical Use of World Energy Report. Research Affiliates uses five-year lagged average values for each of these metrics as the input for the country weights and then constructs four series of weights, one for each metric.

The country weight in each of these is the proportion of that country's GDP (or population, land area, energy use) to the aggregate GDP (population, land area, energy use) across all countries in the index. The composite RAFI weight for each country is determined by taking the equally weighted average of each country's weights across the four metrics.

As a final step, portfolio weights are modified via exponentiation to reduce concentration risk. In particular, each weight is raised to the same exponent whose value is between 0 and 1 and resulting weights are renormalized so that their sum is again 1. If the exponent were 1, the weights would be unchanged. If the exponent were 0, every new weight would be 1 and the resulting index would be equally weighted. The current exponent has been fixed since inception of the FTSE RAFI Bond indexes and no change is expected unless there is a significant change in the number of issuers. If the number of issuers were to change, concentration may increase or decrease making it desirable to change the exponent from its current value.

Monthly reconstitution

Several events can trigger a monthly reconstitution of a country's bonds: coupon flows, new issuance of eligible bonds, bonds aging out of the index, and other events that eliminate certain bonds, like a drop in the amount outstanding below the index threshold caused by government buybacks.

At the end of every month, a country's market value is determined by multiplying the par amounts by the full prices of the bonds, and adding in any coupons received or other proceeds. The relative performance of the various countries likely results in a realignment of country weights away from the annually-specified RAFI weights. Unless this is an annual reconstitution, the ending market value of each country becomes the beginning market value for that country in the following month. The par amount and market value for the bonds in the country will be re-scaled based on its market capitalization weight to reflect the new weight of the country on a pro-rata basis.

Chronological summary of events

Figure 157. FTSE RAFI Sovereign Developed Markets Bond Index Master event summary

Year	Monthly highlights
2017	February: The pricing source for local currency Swiss government bonds changes to reflect bid side Citi trader pricing. September: The indexes are rebranded to FTSE RAFI Sovereign Markets Bond Index Series following their acquisition by the London Stock Exchange Group.
2014	October: Czech Republic joins the Citi RAFI Sovereign Developed Markets Bond Index Series. The pricing source and closing time for Singapore government bonds become the following: Singapore, 4:30 p.m. (Singapore), bid price from Monetary Authority of Singapore
2012	January: The Citi RAFI Sovereign Developed Markets Bond Index Series is introduced and includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, Korea, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom, and United States. October: Portugal exits the Citi RAFI Sovereign Developed Markets Bond Index Series.

The Citi RAFI Sovereign Developed Markets Bond Index Series is introduced in 2012 with over 10 years of history. Since the Series' base date (September 30, 2001) the following events marked its history:

2011	October: Israel joins the Series.
2010	October: Greece joins the Series.
2009	October: Korea joins the Series.
2005	October: Singapore joins the Series.
2001	October: Austria, Australia, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States join the Series.

Related indexes

FTSE RAFI Sovereign Developed Markets Bond Index Liquid

The Liquid Index is a subset of bonds and aims to replicate the return and duration of the FTSE RAFI Sovereign Developed Markets Bond Index Master. The Liquid Index follows the methodology previously outlined in the Master Index construction rules for pricing, settlement, exchange rates, and returns calculations. The Liquid Index differs from the Master Index in that it is reconstituted annually. FTSE Russell and Research Affiliates meet annually to review the bond selection criteria (and in unusual circumstances, select the specific bonds) that are announced on September 30.

Eligibility and selection criteria

An issue is eligible (both to enter and to remain in the index) if it satisfies the following criteria:

- It is a constituent of the FTSE RAFI Sovereign Developed Markets Bond Index Master.
- Its maturity exceeds 1 year and 11 months at the annual reconstitution.

Annual reconstitution – issue selection criteria

Group A: Canada, France, Germany, Italy, Japan, United Kingdom, United States

For each country in Group A, four bonds are selected from eligible bonds to match the weight of the 1-3 years, 3-7 years, and 7+ years maturity sectors in the Master Index. The weight is shifted between the two longest bonds such that the duration of the country in the Liquid Index equals to the duration of the country in the Master Index.

Group B: all other markets

For each country in Group B, one short- and one long-maturity bond are selected from the eligible bonds. The bonds are assigned weights such that the duration of the country in the Liquid Index equals to the duration of the country in the Master Index.

Monthly rebalance

At the end of each month, if the duration of the country in the Liquid Index differs from the duration of the country in the Master Index by more than 0.25, the appropriate weight is shifted between the shortest bond and the longest bond in the country in such a way as to make the duration of the country in the Liquid Index equal the duration of the country in the Master Index. If this would result in a negative weight assigned to one of the bonds, such bond is assigned a weight of zero, instead. Cash is invested in the bonds in proportion to their month-end values.

Weighting methodology

On an annual basis, the sum of the market values of the issues in each country, divided by the sum of the market values in all countries, is set to match the RAFI percentage weights defined on September 30 of each year.

Access information and related publications

For more information about the FTSE RAFI Bonds Index Series, please go the FTSE RAFI Bonds Index Series section of the website (www.yieldbook.com/m/indices) and The Yield Book.

Figure 158. Tickers* for the FTSE RAFI Sovereign Developed Markets Bond Index Master and Liquid

Ticker	Index
CRFDMU	FTSE RAFI Sovereign Developed Markets Bond Index Master, in USD terms
CRFDU	FTSE RAFI Sovereign Developed Markets Bond Index Liquid, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Alternatively-weighted indexes

FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index

Sovereign | Multi-currency

The FTSE RAFI Emerging Markets Local Currency Bond Index measures the performance of government securities of a universe of 14 emerging markets. By weighting components by their fundamentals, the index aims to represent each country's economic footprint, which is correlated to the country's ability to service its debt.

The FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index includes all debt instruments that qualify for inclusion under the index rules.

The design criteria reflect the methodology of classifying a country to be “emerging”. A country is classified to be “emerging” if it is defined by the International Monetary Fund (IMF) World Economic Outlook to be among “emerging and developing economies”, or if it is defined by the World Bank (WB) to be among “low-income economies” or “lower-middle income economies” or “upper-middle-income economies”.

The following describes the rules and processes to create and calculate this index.

FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index		
Americas	EMEA	Asia Pacific & Japan
Brazil	Hungary	Indonesia
Chile	Poland	Malaysia
Colombia	Russia	Philippines
Mexico	South Africa	Thailand
Peru	Turkey	

Design criteria and calculation methodology

FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index

The FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index includes specific government markets tracked by FTSE Russell. To be included in the FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index, countries must have a domestic sovereign debt rating of at least C by S&P and Ca by Moody's. An individual country's removal from the index due to rating follows the methodology for the fixed income indexes.

The eligibility of the countries is verified annually in August based on the data available by July 31 (Country Selection Cut-Off Date). Changes become effective on September 30. The bond specific eligibility rules for each country are outlined in Figures 159 and 160.

Eligible countries as of September 30, 2017

Brazil, Chile, Colombia, Hungary, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, Russia, South Africa, Thailand, and Turkey.

Figure 159. FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index design criteria

Coupon	Fixed-rate
Minimum maturity	At least one year ⁹⁷
Minimum outstanding	Brazil: BRL 5 billion Chile: CLP 100 billion Colombia: COP 2 trillion Hungary: HUF 200 billion Indonesia: IDR 7.5 trillion Malaysia: MYR 4 billion Mexico: MXN 10 billion Peru: PEN 2 billion Philippines: PHP 25 billion Poland: PLN 5 billion Russia: RUB 25 billion South Africa: ZAR 10 billion Thailand: THB 25 billion Turkey: TRY 2 billion
Minimum credit quality	C by S&P and Ca by Moody's
Composition	Sovereign debt denominated in the domestic currency. Securities included: Fixed-rate and non-callable bonds – unless otherwise stated in Figure 159 Securities excluded: Variable rate, floating rate, fixed-to-floating rate, index linked, retail directed, bills, stripped zero coupon, convertibles, savings, and private placements For more information on market specific security types, refer to Figure 160

Figure 160. FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index composition

Markets	Security type
Brazil	Excludes LTNs
Chile	N/A
Colombia	Excludes Tes Control Monetario (TCM) bonds
Hungary	N/A
Indonesia	Excludes Recapitalization bonds and Sukuk bonds
Malaysia	Includes callable bonds Excludes Government Investment Issues (GII)
Mexico	Excludes bonds issued prior to January 1, 2003

⁹⁷ Due to the structure of the South African three-legged instruments, the minimum maturity for such instruments (e.g. R186 (10.50%, 12/21/2026)) is one year based on the first maturity date and the three legs from the split of these instruments will not be eligible for index inclusion. By convention, the stated maturity date of a three-legged bond is the middle maturity date

Figure 160. FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index composition, cont'd

Peru	N/A
Philippines	Excludes zero-coupon bonds and special purpose bonds
Poland	N/A
Russia	Includes fixed-rate bullet federal government bonds (OFZ-PD) only
South Africa	Excludes zero-coupon bonds
Thailand	Excludes bonds with maturity greater than 30 years from issuance
Turkey	N/A

Figure 161. FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index calculation methodology

Weighting	The weights for each country are determined once per year based on the RAFI[®] methodology. For more information, please see Weighting Methodology section
Rebalancing	Monthly: See Monthly reconstitution section.
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate except for Philippines where the Thomson Reuters one-month offshore implied deposit rate is used. Calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁹⁸	Citi trader pricing except for: • Brazil, Chile, Colombia, Hungary, Indonesia, and Peru (provided by Thomson Reuters) • Malaysia (provided by Amanah Butler and Affin) • Mexico (provided by Proveedor Integral de Precios S.A. de C.V.) • Philippines (provided by The Philippines Dealing & Exchange Corp. "PDEX") • Poland (provided by BondSpot) • Thailand (provided by the Thai Bond Market Association "ThaiBMA"). Effective from November 12, 2018, Citi trader prices will be replaced by Thomson Reuters prices. Johannesburg Stock Exchange prices will be used for South Africa. All pricing is generally taken as of market close.
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.
Base date	September 30, 2011

⁹⁸ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

Weighting methodology

See weighting methodology and monthly reconstitution for FTSE RAFI Sovereign Developed Markets Bond Index Master.

Chronological summary of events

Figure 162. FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index event summary

Year	Monthly highlights
2018	January: The pricing source for local currency Hungarian government bonds changed from Citi trader to Thomson Reuters.
2017	August: The pricing source for local currency Brazilian, Colombian and Peruvian government bonds changed from Citi trader to Thomson Reuters. September: The index is rebranded to FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index following its acquisition by the London Stock Exchange Group.
2016	March: The rate used for calculating reinvestment return on Philippines government bonds changes from Thomson Reuters one-month Eurodeposit rate to Thomson Reuters one-month offshore implied deposit rate for Philippines currency. April: The pricing source for Chilean government bonds changed to reflect bid-market pricing from Thomson Reuters. Prices provided by Thomson Reuters are used for index calculations of both local currency nominal bonds and inflation-linked bonds. May: The minimum size criteria for the Philippines Government Bond Index changes from PHP 45 billion to PHP 25 billion. Additionally, the pricing source for the Philippines government bonds changes from Citi's trader prices to prices published by The Philippines Dealing & Exchange Corp. (PDEx), which is the official pricing source for the Philippines market. June: The pricing source for Indonesian government bonds changes to reflect bid-market pricing from Thomson Reuters. Additionally, the pricing source for Thai government bonds changes to reflect bid-market pricing from the Thai Bond Market Association (ThaiBMA). October: The Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Liquid is discontinued.
2014	October: Czech Republic is removed from the Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Series in accordance with Citi's new emerging market classification. The pricing source and closing time for Malaysian and Polish government bonds become the following: Malaysia, 5:00 p.m. (Kuala Lumpur), average bid price from brokers Amanah Butler and Affin Poland, 4:30 p.m. (Warsaw), 2nd fixing bid price from BondSpot.
2013	October: Russia joins the Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Series.
2012	January: The Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Series is introduced and includes Brazil, Chile, Colombia, Czech Republic, Hungary, Indonesia, Malaysia, Mexico, Peru, Philippines, Poland, South Africa, Thailand, and Turkey. The Series is introduced with 3 months of history. These markets have been part of the index since its base date (September 30, 2011)

Access information and related publications

For more information about the FTSE RAFI Bonds Index Series, please go the FTSE RAFI Bonds Index Series section of the website (www.yieldbook.com/m/indices) and The Yield Book.

Figure 163. Tickers* for the FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index

Ticker	Index
CRFELMU	FTSE RAFI Sovereign Emerging Markets Local Currency Bond Index, in USD terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

Alternatively-weighted indexes

FTSE RAFI World Corporate Investment-Grade Bond Index

Credit | Multi-currency

The FTSE RAFI World Corporate Investment-Grade Bond Index weights a company's debt according to fundamental measures of the company's debt service capacity rather than solely on the amount of debt outstanding, providing an alternative approach to investable fixed income indexes.

For the FTSE RAFI World Corporate Investment-Grade Bond Index, cash flow and long-term assets have been chosen as the basis for the fundamental size of a company's debt service capacity.

Cash flow is a direct measure of the funds available to service debt. Long-term assets are a measure of the value supporting the contingent claim underlying the long term debt issues. Relative to market value weighted indexes, cash flow weighting generally tilts an index toward higher debt coverage, and long-term assets weighting lowers an index's aggregate leverage.

The following describes the rules and processes to create and calculate the index.

FTSE RAFI World Corporate Investment-Grade Bond Index		
Industrial	Utility	Finance
Consumer	Electric	Bank
Energy	Gas	Independent
Manufacturing	Telecom	Insurance
Service	Utility – Other	Finance - Other
Transportation		
Industrial – Other		

Design criteria and calculation methodology

The FTSE RAFI World Corporate Investment-Grade Bond Index includes a subset of corporate bonds in the FTSE World Broad Investment-Grade Bond Index and FTSE Australian Broad Investment-Grade Bond Index.

The bond-specific design criteria and calculation assumptions are outlined in Figures 164 and 165.

Figure 164. FTSE RAFI World Corporate Investment-Grade Bond Index design criteria

Coupon	EUR, GBP, JPY, USD: Fixed-rate (excludes zero-coupon bonds) AUD: Fixed-rate and fixed-to-floating bonds
Currency	AUD, EUR, GBP, JPY, USD
Minimum maturity	At least one year

Figure 164. FTSE RAFI World Corporate Investment-Grade Bond Index design criteria, cont'd

Minimum outstanding	AUD: 100 million EUR: 500 million or the equivalent for non-denominated bonds GBP: 300 million JPY: 50 billion USD: 500 million
Minimum credit quality	BBB- by S&P or Baa3 by Moody's
Redemption features	Bullet, sinking fund, putable, extendable, or callable

Figure 165. FTSE RAFI World Corporate Investment-Grade Bond Index calculation methodology

Weighting	The weights of the issuers are determined once per year based on the RAFI methodology. For more information, please see Weighting Methodology section
Rebalancing	Monthly: See Monthly reconstitution section.
Reinvestment of cash flow	At daily average of the local currency one-month Eurodeposit rate, calculated from the actual scheduled payment date of the cash flow through the end of the reporting period.
Pricing⁹⁹	Primary: Citi trader pricing generally taken as of the local market close Supplementary: third-party sources, transaction-related information, proprietary pricing models. Effective from September 17, 2018, Citi trader prices will be replaced by Thomson Reuters prices.
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.
Base date	March 31, 2012

Weighting methodology

The weights of the issuers will be determined once per year based on the RAFI[®] methodology. Weights are based on company fundamentals rather than solely on the amount of debt outstanding and are calculated for publicly-traded companies only. Any issues, either a public or a private, that are linked to a publicly-traded company will receive a fundamental weight. The index rebalances to these weights once per year on September 30.

The eligible constituents are defined on a monthly basis as indicated in the general methodology for fixed income indexes, outlined in a subsequent section of this document. Each bond is matched with an issuer for the purpose of calculating fundamental size. Each issuer is weighted by a combination of that issuer's cash flow and long-term

⁹⁹ On June 29, 2018, changes to price source, data delivery, and holiday calendars were announced. For details, please visit www.yieldbook.com/m/indexes/index-changes-20180629.shtml.

assets, as described below. The aggregate issuer weight applies to all the issuer's bonds, which are individually weighted in proportion to the total market value of the securities that are determined to be constituents of that issuer.

The issuer's factor score for cash flow is calculated as the average cash flow from up to five of the most recently available annual reporting periods. The long-term assets factor reflects the ability of the issuer to repay its long term debt, measured as the firm value of assets less the liabilities with claims senior to those of long term bondholders. An aggregate fundamental weight is calculated for each issuer by averaging the company's normalized cash flow factor and normalized long-term assets factor. (Each factor has been normalized to sum to one across the company universe.) Research Affiliates also screens out issuers that are susceptible to downgrade risk from the starting universe of issuers, by allocating a weight of zero. Issuers that rank in the bottom 3% of companies by a combination of selected financial health ratios (working capital to total debt, cash flow to total debt, and sales to total debt) are considered more susceptible to downgrade risk.

As a final step, a capacity screen is applied whereby the fundamental weight of each issuer is reduced, if necessary, to maintain a maximum of 10% of the aggregate face value of the issuer when a notional value of \$100 billion is assumed to be invested in the index. The weights are then renormalized at the universe level to sum up to 100% by proportionately increasing the weights of the issuers which are not bound by the constraints. This process is repeated until the fundamental weights of all issuers in the index are within the maximum cap outlined above.

Monthly reconstitution

Several events can trigger a monthly reconstitution of a company's bonds: coupon flows, new issuance of eligible bonds, bonds aging out of the index, and other events that eliminate certain bonds or issuers.

At the end of every month, an issuer's market value is determined by multiplying the par amounts by the full prices of its bonds, and adding in any coupons received or other proceeds. The relative performance of the various issuers likely results in a realignment of issuers' weights away from the annually-specified RAFI weights. Unless this is an annual reconstitution, the ending market value of each issuer becomes the beginning market value for that issuer in the following month. The par amounts and market values of the issuer's bonds will be re-scaled proportionate to the securities' aggregate market value to reflect the issuer's new weight on a pro-rata basis.

The following four cases treat changes in security "ownership" and newly qualifying issues:

1. A newly qualifying security of an existing company: it will share the existing weight of the company by market value.
2. A newly qualifying security issued by a new company: it will be assigned an issuer's weight as outlined in the weighting methodology section.
3. An existing company that is merged with another company already in the index: the weights of the two companies will be combined and treated as one.
4. A company that is merged with a company that is not already in the index: it will maintain its weight in the index and be deemed not to have merged.

Chronological summary of events

Figure 166. FTSE RAFI World Corporate Investment-Grade Bond Index event summary

Year	Monthly highlights
2017	September: The index is rebranded to FTSE RAFI World Corporate Investment-Grade Bond Index following its acquisition by the London Stock Exchange Group. October: Fundamental weights are calculated for publicly-traded companies only. Any issues, either a public or a private, that are linked to a publicly-traded company will receive a fundamental weight.
2014	October: The weighting methodology for the Citi RAFI World Corporate Investment-Grade Bond Index is adjusted to account for capacity constraints of the bonds underlying the Index which, if and when triggered, could result in capping the weight of these bonds.
2013	November: The Citi RAFI World Corporate Investment-Grade Bond Index is introduced.

Access information and related publications

For more information about the FTSE RAFI Bonds Index Series, please go the FTSE RAFI Bonds Index Series section of the Website (www.yieldbook.com/m/indices) and The Yield Book.

Figure 167. Tickers* for the FTSE RAFI World Corporate Investment-Grade Bond Index

Ticker	Index
CRFWCIGU	FTSE RAFI World Corporate Investment-Grade Bond Index, in USD terms
CRFWCIGE	FTSE RAFI World Corporate Investment-Grade Bond Index, in EUR terms
CRFWCIGG	FTSE RAFI World Corporate Investment-Grade Bond Index, in GBP terms

* Tickers could be used to access data for these indexes on Bloomberg and other vendor platforms.

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Appendix

Appendix

Where to find the fixed income indexes

1. The fixed income indexes are widely followed and broadly published:

- Website (www.yieldbook.com/m/indices)
- The Yield Book

2. Data and Analytic Vendors, and Investor Service Providers

Albridge Solutions	Financial Express Holdings
Apex Fund Services Ltd.	FirstRate
The Bank of New York Mellon Corporation	Fiserv Solutions, Inc.
Banque Lombard Odier & Cie SA	FNZ (UK) Limited
Barclays Capital – POINT	GreenHill & Co., Inc.
Bats ETF.com	Haver Analytics, Inc.
BlackRock Financial Management, Inc.	HSBC Bank PLC
Bloomberg PolarLake Limited	IDS GmbH – Analysis and Reporting Services
BNP Paribas Securities Services	IIC Partners Co. Ltd
Citco Fund Services (Holdings) Limited	Imagine Software, Inc.
Citibank N.A. SFS	Informa Investment Solutions, Inc.
City-Yuwa Partners	Interactive Data Corporation
Complementa Investment – Controlling AG	Internationale Kapitalanlagegesellschaft mbH
Confluence Technologies Inc.	Investment Metrics, LLC
CoreOne Technologies - DeltaOne Solutions Inc.	Investor Force, Inc.
Credit Suisse Services Luxembourg	Japan Pension Navigator Co., Ltd.
Daiwa Fund Consulting Co., Ltd.	Japan Trustee Services Bank, Ltd.
Defined Contribution Plan Services Co., Ltd	Jiji Press Ltd.
DPG Deutsche Performancemessungs-Gesellschaft für Wertpapierportfolios mbH	JP Morgan Chase Bank
Envestnet, Inc.	KAS Bank N.V.
eVestment Alliance, LLC	Mercer Investment Consulting
FactSet Research Systems	Mitsubishi Asset Brains Co., Ltd.
fi360, Inc.	Mizuho Research Institute Ltd.
FinAnalytica Inc.	Mizuho Securities Co., Ltd.

Data and Analytic Vendors, and Investor Service Providers, cont'd

Mori Hamada & Matsumoto	SIX Financial Information Ltd.
Morningstar, Inc.	SMBC Nikko Securities Inc.
MSCI Inc.	Societe Generale Securities Services S.p.A.
Nikko Research Center, Inc.	Standard Chartered Bank
Nikko Global Wrap Ltd.	StatPro Group PLC
Nomura Funds Research & Technologies Co., Ltd.	Strategic Financial Solutions Inc.
Nomura Holdings Inc.	Sumitomo Trust and Banking Co., Ltd.
Nomura Research Institute, Ltd.	Sungard Frontier Analytics
The Northern Trust Custody Services	Sungard Shaw Data Services Inc.
NTT Data ABIC Co., Ltd	Tokio Marine & Nichido Ashin Consulting Co., Ltd.
Orion Advisor Services, LLC	Total Asset Design Co., Ltd.
Ortec Finance Holding B.V.	Towers Watson K.K.
QUICK Corporation	Trust & Custody Services Bank, Ltd.
Rating & Investments Information, Inc.	Vestmark, Inc.
RBC Investor Services Trust	vwd group Belgium NV
Reuters Limited	Wells Fargo Advisors, LLC
RIMES Technologies Corporation	Wilshire Associates Inc.
Rockit Solutions LLC	Windham Capital Management LLC
SGSS Deutschland KAG mbH	Zephyr Associates, Inc.

3. Financial News Organizations

Prominent financial news organizations, including Bloomberg and Reuters, publish detailed information on the fixed income indexes.

4. Independent Sources

One can also get extensive information from many independent sources. The level of data carried by these services varies from monthly sector level returns to details on the individual security holdings of each index. The level of detail and coverage is solely at the discretion of each representative vendor.

Appendix

Currency-hedged returns calculation

Currency-hedged returns calculation

In addition to returns expressed in local currency terms, the fixed income indexes returns are also computed in base currency terms, with and without the effects of currency hedging. The monthly currency-hedged returns are based on the assumption of a rolling strategy of buying the foreign currency at the beginning of each month and selling the foreign currency one-month forward. The source for spot and forward rates is the published

WM/Reuters closing rates

The convention used in the foreign exchange market for computing and quoting one-month forward rates results, from time to time, in a forward period that is longer (never shorter) than the actual number of calendar days in the month in question. This is inconsistent with the common index convention of using last-calendar-day settlement for the calculation of accrued and re-investment income in computing monthly returns.

Furthermore, the use of one-month forwards poses philosophical questions relating to the interpretation of intra-month currency-hedged returns.

To address and simplify both of these issues, FTSE Russell calculates monthly and intra-month currency-hedged returns.

Spot settlement convention

Spot rates quoted on the screen are for settlement on a day that is calculated using the following steps:

1. The date on which the quotes are displayed is taken to be the trade date;
2. Spot settlement date is two days after the trade date in the local (non-USD) currency. It must be a valid trading and settlement date for both currencies; furthermore, the intervening days must be valid trading and settlement dates for the local currency¹⁰⁰.

One-month forward settlement convention

One-month forward rates quoted on the screen are for settlement on a day that is calculated using the following steps:

1. The date on which the quotes are displayed is taken to be the trade date.
2. Spot settlement date is calculated as above.
3. Move forward from the spot settlement date to the same date in the following calendar month.
4. If this is a valid settlement date in BOTH currencies, then it is the forward settlement date.
5. If it is not, then the forward settlement date is the first date after that which is valid for both currencies.

Thus from step 5, it is clear that, from time to time, the number of calendar days between the spot settlement date and the forward settlement date will exceed (but never be less than) the number of calendar days in the month.

¹⁰⁰ Prior to February 1, 2011, the spot settlement date must be a valid trade and settlement date for both currencies but the intervening days only needs to be a valid trade date for the local currency, it does not have to be a valid settlement date.

Take the USD/CAD one-month forward contract for the month of August 2010 as an example. For the month-end currency forward rates quoted on July 31, 2010, the spot settlement date is August 4, 2010. Because September 4 and 5, 2010 is the weekend and September 6 is a Canadian holiday, the settlement date for the one-month forward contract is “bumped” to September 7, 2010. Thus, the number of calendar days between the spot settlement date and the forward settlement date is 34 days, in contrast to the 31 calendar days in August 2010.

Impact on monthly returns

The effect of this “bumping” of settlement dates is material because the difference between the quoted spot and forward rates (“the drop”) is calculated by applying the one-month interest rates in each currency, over the actual number of days between the two settlement dates and not over the number of calendar days in the month. The implicit assumption in the monthly currency-hedged returns is that the foreign currency is purchased spot at the beginning of the month and sold forward to the end of the month and, furthermore, that the following month’s spot purchase coincides with the previous month’s forward sale. Due to the incorporation of settlement day “bumping” into the calculation of the quoted forward rates, the forward drops will occasionally exaggerate the correct calendar-based premium or discount of a true calendar month hedge. The extent of this impact will depend on the number of instances when “bumping” occurs in any given year and the magnitude of the difference between the two currencies’ short-term interest rates. In any one month, however, the difference rarely exceeds 1-2 basis points.

Adjusting the forward rates

In order to correct for the “bumping” of settlement dates effect, the published forward drops will be adjusted for the US Dollar-based forward rates to reflect a drop that corresponds to the number of actual calendar days in the month. This will be achieved by determining the number of “convention” days used to calculate the published drops and then scaling the drops by the ratio of the number of days in the month to the number of “convention” days. This scaled drop will then be applied to the quoted spot rate to produce the adjusted one-month forward rate. The adjusted forward rates will also be used to derive adjusted forward cross rates. The following table illustrates this process.

Adjustment of USD/CAD one-month forward rate for August 2010	
Spot: 1.02995	Spot settlement date: August 4, 2010
Forward: 1.03032	Forward settlement date: September 7, 2010
Forward drop (%): -0.0359	Drop days: 34
Days in calendar month for August: 31	
Adjust forward drop = $-0.00037 \times 31/34 = -0.000337$	
Adjust forward rate = $1.02995 + 0.000337 = 1.030287$	
Adjust forward drop (%) = -0.03275	

Source: Currency rate were quoted from WM Company in conjunction with Reuters as of July 30, 2010

The spot and forward settlement dates and the adjustment factor are published monthly. They are available by subscription on the website, (www.yieldbook.com/m/indices).

Month-to-date and daily currency hedged returns

Intra-month index levels and returns are helpful for return attribution calculations when money enters or leaves the benchmarked portfolio but they pose the following philosophical dilemma:

- a. Should the month-to-date return on the 10th, for example, be calculated as if one had hedged only 10 days forward – as if planning to liquidate the fund on the 10th?
- b. Should the return from the 10th of the month to the end of the month reflect the effect of a forward hedge entered into on the 10th out to the end of the month – as if setting up the fund on the 10th?
- c. Should the daily currency-hedged return on the 10th of the month reflect only an overnight “forward” contract entered into on the 9th?

It is evident that a single time series of intra-month index levels cannot incorporate more than one of these.

The month-to-date returns and index levels are calculated to reflect approach (a) (e.g. for the 10th of the month, as if a 10-day forward had been entered into at the beginning of the month). Rather than derive the 10-day forward rate from the forward rate term structure at the end of the previous month, the one-month drop (adjusted when necessary to a calendar month, as described earlier) will simply be scaled to a 10-day drop and the 10-day forward rate will be computed using this. Thus, the intra-month forward rates will linearly converge to the rate used for the full month. This will have a minimal impact on the month-to-date returns and these will still converge to the monthly returns.

The daily currency-hedged returns are calculated simply as the ratio of successive daily month-to-date returns, as described in the previous paragraph. This, by construction, ensures consistency between successive month-to-date returns and the daily returns and that daily returns compound to the monthly return.

How much is hedged?

Clearly, one cannot know at the beginning of the period what the market value of a security holding will be at the end of the period. Instead, an assumption must be made: sell this amount forward and convert any end-of-period excess or shortfall at the end of period spot rate.

Below is a summary of the methodology determining the amount of foreign currency sold forward for each security:

1. Reduce the par amount of the bond by any sinking fund payments, calls, prepays, etc.
2. Allow for these cash receipts plus any re-investment income on these amounts to the end-of-period date.
3. Add any coupons that will be paid during the period, together with re-investment income.
4. Re-price the remaining par amount, using the beginning-of-month yield and the end-of-period date as the new settlement date, including Accrued Interest on this date.
5. The sum of these amounts (2, 3 and 4) will be the amount of foreign currency sold forward.
6. This amount, converted back to base currency at the appropriate forward rate to give the “assumed hedged value”, will be the predominant component of the end-of-period value in currency-hedged base-currency terms.

If the actual end-of-period price is higher than this assumed price, the excess in foreign currency is converted back to the base currency at the end-of-period spot rate and added to the assumed hedged value. If the price is lower, the shortfall is converted back to base currency at the end-of period spot rate and subtracted from the assumed hedged value. This gives the actual end-of-period hedged value.

The beginning-of-month value is the full market value of the security converted to the base currency at the beginning-of-month spot rate. The currency-hedged month-to-date return is the ratio of the end-of-period hedged value and beginning-of-month value, minus 1.

It is worth pointing out that the approach described in Step 4, on the previous page, does mean that the size of the hedge used in calculating the month-to-date currency-hedged return for, say, the 10th of the month is different from the size of hedge used in calculating the month-to-date currency-hedged return for the 20th of the month, and different again from that used for the full month. As noted earlier, the forward rate used for each of these dates is also different. Both of these effects are consistent with the idea that the month-to-date returns should reflect an intention to hedge only out to the date in question.

Appendix

Market value and return calculations for non-yen sectors of the WGBI-JIT

Market value and return calculations for non-yen sectors of the WGBI-JIT

Japanese yen sectors are calculated using current WGBI methodology. The following notations are used in the formulas. The WGBI and WJIT refer to the non-yen component of the index.

Figure 168. Notation

T	Today
M	Current month
E	Last business day of previous month
WGBI_MODDUR	WGBI modified duration
WGBI_RORP	WGBI daily principal return
WGBI_MTDROP	WGBI month-to-date principal return
WGBI_MTDROI	WGBI month-to-date income return
WJIT_RORP	WGBI-JIT daily principal return
WJIT_MTDROP	WGBI-JIT month-to-date principal return
WJIT_MTDROI	WGBI-JIT month-to-date income return
WJIT_MTDORT	WGBI-JIT month-to-date total return

Market value computation

For the WGBI, the current month's index profile market value is calculated using the prices of the last business day of the previous month for all its constituents. For the WGBI-JIT, the market value is adjusted by the principal returns and the modified duration.

$$WJIT_MKV(m) = \frac{WGBI_MKV(m)}{1 + \left(\frac{WGBI_RORP(e)}{100} \times \frac{WGBI_MODDUR(m)}{WGBI_MODDUR(e)} \right)}$$

Return computation

The returns are computed by modifying the previous day's principal return as well as the current day's income return.

Month-to-date returns in local currency terms

Step 1: Calculate the first business day principal return

The first business day principal return is calculated based on the last business day principal return of the previous month. The last business day principal return is adjusted by a duration ratio to account for the change in portfolio¹⁰¹¹⁰².

$$WJIT_RORP(1)=WGBI_RORP(e) \times \left(\frac{WGBI_MODDUR(m)}{WGBI_MODDUR(e)} \right)$$

Step 2: Calculate the month-to-date principal return

The month-to-date principal return is calculated by compounding the previous day's WGBI_MTDROP and the first business day's WJIT_RORP. This is equivalent to shifting the prices of all securities by one day.

$$WJIT_MTDRORP(t)=WJIT_RORP(1)+WGBI_MTDRORP(t-1) \times \left[1 + \left(\frac{WJIT_RORP(1)}{100} \right) \right]$$

Step 3: Calculate the month-to-date income return

The month-to-date income return is calculated based on the current month's market value at the beginning of the month. It is adjusted by the first business day principal return.

$$WJIT_MTDRORP(t)=WGBI_MTDRORI(t) \times \left[1 + \left(\frac{WJIT_RORP(1)}{100} \right) \right]$$

Step 4: Calculate the month-to-date total return

The total return is the sum of the month-to-date WGBI-JIT principal and income returns.

$$WJIT_MTDRORT(t)=WGBI_MTDRORP(t)+WJIT_MTDRORI(t)$$

Month-to-date total return in JPY terms

The WGBI-JIT uses the same standard calculation to convert the local currency returns to base currency returns. The exchange rates used are the telegraphic transfer middle (TTM) rates provided by Bank of Tokyo–Mitsubishi UFJ. If the TTM rates are not available, the WM/Reuters rates are used.

$$WJIT_MTDRORT(t)_{JPY} = \left\{ \left[1 + \left(\frac{WJIT_MTDRORT(t)_{LCL}}{100} \right) \right] \times \left[1 + \left(\frac{CRCY_RTN(t)_{TTM}}{100} \right) \right] - 1 \right\} \times 100$$

Daily total return in local currency terms

Daily total return is calculated using today's and the previous day's month-to-date returns.

$$WJIT_RORT(t) = \left\{ \frac{\left(1 + \frac{WJIT_MTDRORT(t)}{100} \right)}{\left(1 + \frac{WJIT_MTDRORT(t-1)}{100} \right)} - 1 \right\} \times 1$$

¹⁰¹ Prior to January 1999, WGBI_MODDUR(e) was not available, therefore the default ratio is set to 1.

¹⁰² If WGBI_RORP(e) is not available, WJIT_RORP(1) is set to 0.0. For example, the initial principal returns for PL_TSY and MY_TSY is set to 0.0 because these sectors start after the WGBI-JIT inception date of December 31, 1996.

Estimate daily return of the non-yen WGBI-JIT: calculation methodology

The Non-Yen WGBI-JIT estimate daily return is calculated based on the previous day's WGBI Month-to-Date Total Return and today's TTM exchange rates, provided by the Bank of Tokyo-Mitsubishi UFJ at 10:00 a.m. JST.

For the first business day estimate daily return calculation, the previous day's return is simply the WGBI principal return of the last business day of the previous month. For subsequent days, the previous day's return is the WGBI principal return of the last business day of the previous month plus the previous day's WGBI Month-to-Date Total Return.

Step 1: Calculate the currency return using 10:00 a.m. JST TTM rates

$$\text{Currency_Return}_{\text{Today,LCL:Base}} = \left(\frac{\text{TTM}_{\text{Today}} - \text{TTM}_{\text{BOM}}}{\text{TTM}_{\text{BOM}}} \right) \times 100$$

TTM_{BOM} = TTM rate as of the beginning of month

$\text{TTM}_{\text{Today}}$ = TTM rate as of 10:00 a.m. JST today

Step 2: Estimate month-to-date total return in JPY terms

For the first business day:

$$\text{EST_MTD_RORT}_{\text{Today,JPY,WJIT}} = \left[\left(1 + \frac{\text{RORT}_{\text{EOM,LCL,WGBI}}}{100} \right) \times \left(1 + \frac{\text{CRCY_RTN}_{\text{Today,LCL:Base}}}{100} \right) - 1 \right] \times 100$$

For second business day onward:

$$\text{EST_MTD_RORT}_{\text{Today,JPY,WJIT}} = \left[\left(1 + \frac{(\text{RORP}_{\text{EOM,LCL,WGBI}} + \text{MTD_RORT}_{\text{PrevDay,LCL,WGBI}})}{100} \right) \times \left(1 + \frac{(\text{CRCY_RTN}_{\text{Today,LCL:Base}})}{100} \right) - 1 \right] \times 100$$

$\text{RORP}_{\text{EOM,LCL,WGBI}}$ = WGBI previous month's last day principal return in local currency terms

$\text{MTD_RORT}_{\text{PrevDay,LCL,WGBI}}$ = WGBI previous day's month-to-date total return in local currency terms

$\text{CRCY_RTN}_{\text{Today,LCL:Base}}$ = from Step 1

Step 3: Estimate daily return in JPY terms

$$\text{EST_DAILY_RORT}_{\text{Today,JPY,WJIT}} = \left[\frac{\left(1 + \frac{\text{EST_MTD_RORT}_{\text{Today,JPY,WJIT}}}{100} \right)}{\left(1 + \frac{\text{MTD_RORT}_{\text{PrevDay,JPY,WJIT}}}{100} \right)} - 1 \right] \times 100$$

$\text{EST_MTD_RORT}_{\text{Today,JPY,WJIT}}$ = from step 2

$\text{MTD_RORT}_{\text{PrevDay,JPY,WJIT}}$ = WGBI-JIT previous day's month-to-date total return in JPY terms

Step 4: Estimate month-to-date return for the non-yen WGBI-JIT in JPY terms

$$\text{EST_MTD_RORT}_{\text{Today,JPY,WJIT}} = \frac{(\sum_{i=1}^N \text{EST_MTD_RORT}(i)_{\text{Today,JPY,WJIT}} \times \text{MKV}(i)_{\text{BOM}})}{\sum_{i=1}^N \text{MKV}(i)_{\text{BOM}}}$$

i = each country in the non-yen WGBI-JIT

$\text{MKV}(i)_{\text{BOM}}$ = Beginning-of-month market value of each country

Appendix

Industry classification

The fixed income indexes utilize two proprietary industry/asset classification codes: Global Industry Code (GLIC) and Corporate Bond Sector (COBS) code.

Figure 169. Global industry code (GLIC)

GLIC	Description
SVGN	Sovereign
SGTD	Sovereign Guaranteed
SGSP	Sovereign Government-Sponsored
RGTD	Regional Government Guaranteed
RGSP	Regional Government-Sponsored
RGOV	Regional Government
MBS	Collateralized – Mortgage
ABS	Collateralized – Asset-backed
PFBF	Collateralized – Covered
IMAN	Industrial – Manufacturing
ISRV	Industrial – Service
ICON	Industrial – Consumer

GLIC	Description
IEGY	Industrial - Energy
ITRN	Industrial – Transportation
IOTH	Industrial – Other
UELC	Utility – Electric
UGAS	Utility – Gas
UTEL	Utility – Telecom
UOTH	Utility – Other
FBNK	Finance – Bank
FIND	Finance – Independent
FINS	Finance – Insurance
FOTH	Finance – Other

Figure 170. Corporate bond sector (COBS) code

COBS	Description
Government / Government Sponsored	
DSOV	Domestic Sovereign
FSOV	Foreign Sovereign
RGOV	Regional Government
AGEN	Agency
SPRA	Supranational
Collateralized	
MTGE	Mortgage
CARD	Credit Cards
CARS	Cars
STRA	Stranded Asset
RMTR	Residential Mortgage Master Trust

COBS	Description
Collateralized, continued	
EQLS	Securitized Equipment Lease
WBUS	Whole Business Securitization
ABSO	ABS – Other
PFFF	Covered – Jumbo Pfandbrief Offentliche
PFHY	Covered – Jumbo Pfandbrief Hypotheken
PFOF	Covered – French
PFCE	Covered – Spanish
PFOT	Covered - Other

Figure 170. Corporate bond sector (COBS) code, cont'd

COBS	Description
Industrial - Manufacturing	
AERO	Aerospace
AUTO	Auto Manufacturing
VEHL	Vehicle Parts
BLDG	Building Materials
HOME	Home Builders
CSTR	Construction Business
CHEM	Chemicals
CONG	Capital Goods
INFO	Information & Data Technology
TRON	Electronics
MACH	Machinery
METL	Metals / Mining
PACK	Container / Packaging
PAPR	Paper & Forest Products
TEXT	Textiles
Industrial - Service	
BCAS	Broadcast / Outdoor
CBLE	Cable
SATE	Satellite
PUBL	Publishing
GAME	Gaming
FUNN	Leisure
LODG	Lodging
HEAL	Health Care Supply
HLCF	Health Care Facilities
PHRM	Pharmaceuticals
REST	Restaurants
FDRG	Retail Food & Drug
RETL	Retail
ENVS	Environmental Services
TWER	Tower

COBS	Description
Industrial – Service, continued	
PDEV	Property / Real Estate Developer
GTCO	General Trading Company (sogo shosha)
OTHS	Other Service
Industrial – Consumer	
CONS	Consumer Products
TOBC	Tobacco
FOOD	Food Processors
BEVG	Beverage / Bottling
FISH	Fishery
Industrial – Energy	
SOGP	Secondary Oil & Gas Producers
OILE	Oil Equipment
OILS	Oil Service
OILR	Oil Refining & Marketing
OILI	Integrated Oil
PPAN	Retail Propane Distributors
Industrial – Transportation	
AIRL	Airlines
RAIL	Railroads
OTHT	Other Transportation
Industrial – Other	
OTHI	Other Industrial
Utility – Telecommunication	
BBND	Broadband
CLEC	Competitive Local Exchange Company
DIVT	Diversified Telecom
ISPD	ISP / Data
PAGE	Paging
WLES	Wireless

Figure 170. Corporate bond sector (COBS) code, cont'd

COBS	Description
Utility – Gas	
GASL	Gas Utility – Local Distributors
Utility – Electric	
ELEC	Electric Utility
Utility – Other	
PWER	Power
WATR	Water
OTHU	Other Utility
Finance – Bank	
BANK	Banks
Finance – Independent	
IFIN	Independent Finance
Finance – Insurance	
LIFE	Life Insurance
PCAS	Property & Casualty Insurance
Finance – Other	
LEAS	Leasing
MTGB	Mortgage Banking
SECS	Securities
REIT	Real Estate Investment Trust
OTHF	Other Finance

Appendix

Glossary

Asset-backed

Financings that are backed purely by pools of assets and supporting credit enhancement structures, such as American Express Master Trust issues that are backed by credit card loans.

Corporate

Bonds issued by industrial companies, utilities, and financial service companies, including those that carry bank guarantees. In addition, special purpose debt-issuing subsidiaries of such corporations are included, as are subsidiaries whose primary purpose is to provide financing to customers for the purchase and/or lease of the parent companies' products.

Covered

All Pfandbrief and Pfandbrief-like securities predominant in the Euro region.

Eurodollar bond

A bond issued outside the boundaries of the United States that pays interest and principal in US Dollars.

Euro medium-term note

A facility for an issuer to issue debt in the Euromarkets in various currencies, maturities, and structures, using a single set of documentation.

European Economic and Monetary Union (EMU) member countries (as of July 2018)

All EU Member states form part of EMU, which can be described as an advanced stage of economic integration based on a single market.

European Union (EU) member states (as of July 2018)

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.

Eurozone member states (as of July 2018)

Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.

Eurosterling bond

A bond issued outside the boundaries of the United Kingdom that pays interest and principal in British pounds sterling.

Euroyen bond

A bond issued outside the boundaries of Japan that pays interest and principal in Japanese yen.

Financial

The issuer must be solely engaged in the financial sector. This includes commercial and investment banks, insurance companies, savings and loans, and building societies. It also includes the financial subsidiaries of conglomerates when the subsidiary does not operate for the primary benefit of the manufacturing arm (such as, General Electric Capital Corporation).

Global bond

Registered bonds issued simultaneously within and outside of the United States. These issues are traded across all markets and can settle through Cedel, Euroclear, and DTC.

Group-of-ten (G-10) countries

Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, the United Kingdom, and the United States (Switzerland is the honorary eleventh member of the G-10).

Industry code

- GLIC - Global Industry Code (GLIC) is a proprietary industry classification codes. It is a high level sectorization of industry and asset class.
- COBS - Corporate Bond Sector Code (COBS) is a proprietary industry classification codes. It provides detailed industry classifications of the GLIC code.

National Currency Unit (NCU)

The pre-Euro currencies of the Eurozone member countries (for example, French francs). These currencies continue to exist and circulate, but the intra-NCU exchange rates and the NCU exchange rates with the euro are irrevocably locked. Most Eurozone sovereign debt issued in NCUs has been redenominated into euros, but most other bonds remain denominated in NCUs. For index purposes, all NCU amounts are quoted in euro terms whether or not individual bonds have been redenominated, because there is no foreign exchange effect.

Official and agency

This includes all local government, provincial, and city debt as well as other agencies such as non-sovereign-guaranteed central and state banks and export credit agencies. Issues in this sector may have provincial or local government guarantees, but do not have sovereign-guarantees. Examples include Canadian provinces, Bank of Greece, Crédit Local de France, and the German Landesbanks.

Regulation S and Rule 144A

Securities issued under Reg S and sold initially to non-US investors may subsequently be sold to US investors in the secondary market after a brief “seasoning” period has elapsed, typically 40 days. However, a holding of securities issued under Reg S and sold initially to QIBs under Rule 144A cannot be sold to other US investors in the secondary market until a two-year seasoning period has elapsed.

Non-corporate securities issued under Rule 144A without registration rights are eligible for inclusion in the US Broad Investment-Grade Bond Index and the Eurodollar Index.

The High-Yield Market Index includes issues available for sale under Rule 144A immediately on satisfaction of the index's entry criteria. Before 1999, entry of these securities was delayed until the SEC registration process was completed.

Seasoning

The rules defining the length of time by which a bond is seasoned are complex and vary for different issuers. A simplifying rule is adopted for the purpose of determining when a bond becomes seasoned: An issue is to be deemed seasoned for the purposes of the Eurobond Indexes 40 calendar days after the initial payment date.

Sovereign and sovereign-guaranteed

These sectors include sovereign debt and any issues carrying an explicit sovereign-guarantee irrespective of the function of the issuer — for example, Qantas Airways and Kobe City.

Supranational

Supranationals are supported by the capital of more than one sovereign state, such as the World Bank and the Asian Development Bank.

Yankee bond

A bond denominated in US Dollars issued in the United States by foreign banks, sovereigns, other government entities, and corporations whose parent companies reside outside the United States. These bonds are registered with the SEC.

Index and Analytic Related Terminology

COBS code

Corporate Bond Sector Code (COBS) is a proprietary industry classification codes. It provides detailed industry classifications of the GLIC code.

Common frequency

A mathematical adjustment to report a duration measure according to a different assumed payment frequency. The methodology for common frequency is to use semi-annual compounding frequency for all securities.

Convexity

The degree of curvature of a security's price/yield curve. It numerically approximates the second derivative of the price/yield curve and is calculated using the same curve shift as effective duration. The higher degree of positive convexity, the more sensitive the bond price is to decreasing interest rates and the less sensitive the bond price is to increasing rates. The more negative the convexity, the more sensitive the bond price is to increasing interest rates and the less sensitive the bond price is to decreasing rates. The calculation permits the cash flows of securities with optionality to vary in each scenario.

$$\left(\frac{\text{Full Price Down} + \text{Full Price Up} - (2 \times \text{Full Price Base})}{\text{Full Price Base} \times \left(\frac{\text{shock}}{100}\right)^2} \right) \times 100$$

Effective duration

The percent price change if yield changes 100 basis points (1.0%). For most bonds there is an inverse relationship between prices and yields. To arrive at this, the yield curve is shifted up and down 25 basis points, recalculate the price assuming a constant option-adjusted spread, and use the following formula:

$$\left(\frac{\text{Full Price Down} - \text{Full Price Up}}{\text{Full Price Settle}} \right) \times 2 \times 100$$

GLIC code

GLIC - Global Industry Code (GLIC) is a proprietary industry classification codes. It is a high level sectorization of industry and asset class.

Gross spread

The spread between the yield-to-maturity of a security and the yield of the matching weighted average life point on the pricing yield curve.

Currency hedging methodology

Currency hedging in general is used to reduce or eliminate any foreign exchange rate risk. The methodology for monthly currency-hedged returns is based on the assumption of a rolling strategy of buying the foreign currency at the beginning of each month and selling the foreign currency one-month forward. The source for spot and forward rates is the Published WM/Reuters Closing Rates. Further modifications to the forward rates are needed to account for differences between foreign exchange market conventions and FTSE Fixed Income Indexes convention.

Index quality

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 split-rated (an investment-grade rating 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.

Index value

An accumulating value expressed over the time of the index. An index begins with an original value of 100 and adjusts based on daily nominal returns. The current index value can be found by multiplying the previous day's index value by 1 + nominal return.

Index weight

Weight of an individual issue as a percentage of the total index market value.

Maturity sector

Maturity sector buckets are defined by including all underlying issues with a remaining average life at least equal to the lower bound, but less than the upper bound of the particular category. For example, the one- to three-year sector of the WGBI includes all securities in the WGBI with a remaining average life of at least one year, but less than three years. The set of bonds is then held constant for the calculation month, even though the average life declines. The only exception to this rule is the mortgage sector, which is included in its entirety in the one- to ten-year sector.

Modified duration

The first derivative of price as a nominal function of yield expressed as a percent of full price change for 100 basis points.

$$\text{Modified Duration} = \frac{\text{Macaulay Duration}}{\left(1 + \frac{\text{YTM}}{\text{Compound Frequency} \times 100}\right)}$$

Option Adjusted Spread (OAS)

OAS is the single spread that when added to each path of the option model interest rate tree, will discount the cashflows such that the average of their present values (price per path) is equal to the current price. The OAS is not the average spread across the paths; rather it is based on average prices.

Appendix

Discontinued indexes

The indexes in this section have been discontinued.

Certificate of Deposit Indexes

The FTSE 1-Month CD Index, FTSE 3-Month CD Index, and FTSE 6-Month CD Index were discontinued as of March 31, 2018.

Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Liquid

The Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Liquid was discontinued as of September 30, 2016. The index comprised a subset of bonds from the Citi RAFI Sovereign Emerging Markets Local Currency Bond Index Master to provide the country and duration exposures of the Master Index in a replicable portfolio.

US Agency Zero 10+ Index

The US Agency Zero 10+ Index, discontinued on December 31, 2012, included non-callable, zero-coupon bonds issued by Fannie Mae and Freddie Mac, as well as interest and principal pieces created from stripping the Fannie Mae Benchmark and Freddie Mac Reference bonds. Also included were the zeros created by stripping Financing Corp (FICO) and Resolution Funding Corp (REFCORP) and bonds issued as serial zeros, such as those issued through the Agency of International Development — Israel (AID).

Global Government Bond Composite Index

The Global Government Bond Composite Index, discontinued in August 31, 2006, included all government bond markets that Citi tracked. In addition to the 22 countries included in the WGBI, New Zealand was included in this index.

European Government Bond Composite Index

The European Government Bond Composite Index, discontinued in August 31, 2006, included the 17 sectors of the Global Government Bond Composite Index that were geographically located in Europe, namely: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, and the United Kingdom.

Targeted Index Matrix Series (TIMS)

The Targeted Index Matrix Series (TIMS), discontinued on March 31, 2005, was designed to provide a generalized framework for constructing customized benchmarks that spanned the realm of duration and quality combinations available in the investment-grade fixed income market. The matrix was based on two fundamental variables: (1) a percentage core holding in the credit and collateralized component of the USBIG Index, which provided an approximate gauge of quality level; and (2) effective duration as a measure of interest-rate sensitivity. For a desired effective duration, an index “cell” was created by combining the credit/collateralized core with an appropriate sector of Treasury securities. The Treasury sector acted as the swing component required to attain the desired index duration.

Brady Bond Index

Market coverage of the Brady bonds was migrated to the EMUSDGBI Index. The performance and characteristics will be available via the Brady bond sector of the EMUSDGBI family of indexes.

The Brady Bond Index was designed to measure the performance of US Dollar emerging market debt that has been restructured under the Brady Plan and has a minimum of US \$500 million per issue amount outstanding. The index measured returns for all Brady bonds beginning with the first issue by Mexico in March 1990.

Emerging Markets Mutual Fund (EMMF) Debt Index

The Emerging Markets Mutual Fund (EMMF) Debt Index, discontinued on June 30, 2003, was designed to provide the managers of regulated mutual funds with a more appropriate benchmark than the Brady Bond Index. Regulated mutual funds face diversification rules that prevent the managers from matching the market weightings of the Brady Bond Index, which are concentrated in a few large credits. The EMMF Index was constructed to conform to mutual fund diversification regulations. Under these rules, half of a portfolio could have been invested in individual credits in amounts of less than 5% of the total portfolio size. The remaining half could have been invested in positions no greater than 25%.

An alternative to the EMMF Index is the EMUSDGBI-Capped Index, which limits exposure to any one country by placing a ceiling on the par value contribution of each country.

Safest of High-Yields Index

The Safest of High-Yields Index, discontinued on June 30, 2003, was a market capitalization weighted managed portfolio of high-yield securities selected by Citi credit research analysts for high-coupon income and stable or improving credit quality.

Government and Eurobond Composite Index (GECI)

The GECI was discontinued as of December 31, 2001. It was originally created to track the performance of the international investment-grade bond markets. With the launch of the World Broad Investment-Grade (WorldBIG) Bond Index in August 2000, the GECI benchmark grew obsolete. The WorldBIG Index is designed to be our broadest market measure for global investors.

World Money Market Index

The composite World Money Market Index, discontinued as of December 31, 2000, measured the performance of money market instruments of eleven currencies using one-month and three-month Eurodeposits. Daily and monthly returns were computed in their local currencies and in US dollar terms. The index was calculated using an equally-weighted average of these returns.

ECU Bond Index

The ECU Bond Index, discontinued on December 31, 1998, was a market-capitalization-weighted index of ECU-denominated bonds with at least one year remaining maturity.

Euro-Deutschemark Bond Index

The Euro-Deutschemark Bond Index, discontinued on December 31, 1998, was a market-capitalization-weighted index that included fixed-rate Euro-Deutschemark, Global, and Dragon bonds and certain asset-backed and Euro Medium-Term Notes.

Extended High-Yield Market Index

The Extended High-Yield Market Index, discontinued on December 31, 1998, consisted of cash pay, deferred-interest, bankrupt and/or defaulted securities.

World Bond Index

The World Bond Index was discontinued on December 31, 1995. This index served as a broad benchmark measuring the performance of government, Eurobonds, and foreign bonds in ten currencies. The index was sample-based and focused on the five-year and longer sectors of these markets. It was introduced in 1981 and had historical returns dating back to January 1978. The introduction of the World Government Bond Index in 1986 made the World Bond Index obsolete.

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