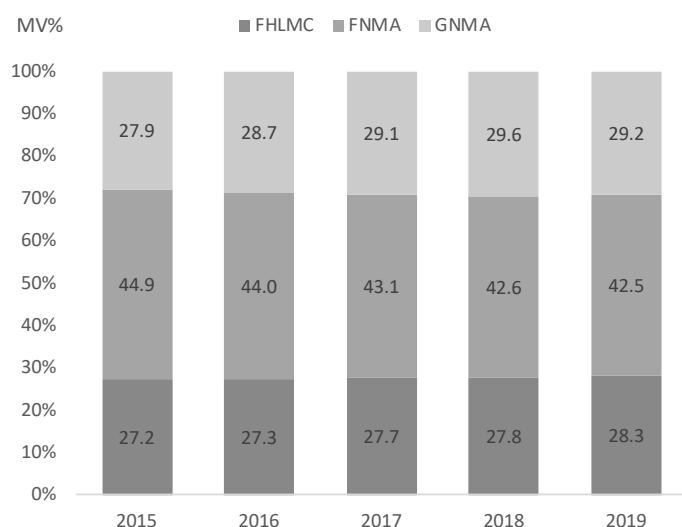


US MBS Index

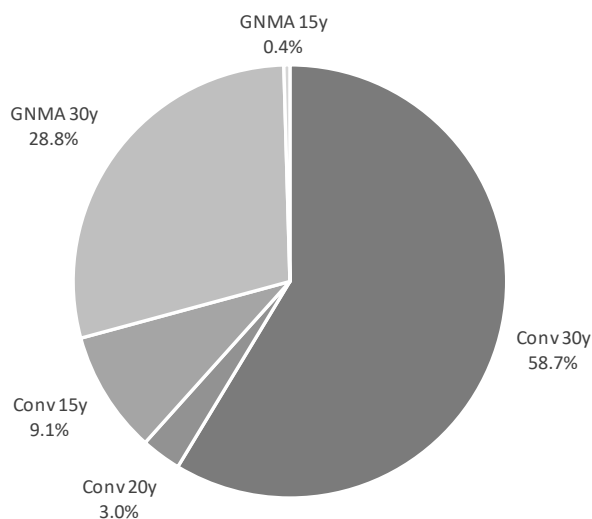
The Bloomberg Barclays US Mortgage Backed Securities (MBS) Index tracks fixed-rate agency mortgage backed pass-through securities guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage. Starting July 2019, Freddie pools are separated into 45-day and 55-day delay generics. Introduced in 1985, the GNMA, FHLMC and FNMA fixed-rate indices for 30- and 15-year securities were backdated to January 1976, May 1977, and November 1982, respectively.

Historical Composition by Agency (MV%) - Trailing 5 Years*



*Note: 2019 data are as of September 30, 2019.

Composition by Program (MV%) - as of September 30, 2019



Rules for Inclusion

Eligible Currencies	Principal and interest must be denominated in USD.
Pool Aggregate (Generic) Construction	Fixed-rate MBS pool aggregates, or generics, are formed by grouping individual fixed-rate MBS pools into aggregates based on program, coupon and vintage. Starting June 2019, Freddie Mac pools are separated into 45-day and 55-day delay generics.
Quality	<ul style="list-style-type: none"> Securities must be rated investment grade (Baa3/BBB-/BBB- or higher) using the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; when only one agency rates a bond, that rating is used. US Agency MBS is assigned the same rating as US government debt.
Amount Outstanding	Fixed-rate pool aggregates must have at least USD1bn outstanding.
Coupon	Fixed-rate programs are included in half-percent increments.
Maturity	Pool aggregates must have a weighted average maturity (WAM) of at least one year.
Taxability	Only fully taxable issues are eligible.
Market of Issue	SEC-registered securities, bonds exempt from registration at the time of issuance and SEC Rule 144A securities

Rules for Inclusion

with registration rights are eligible.

Security Types	Included	Excluded
	<ul style="list-style-type: none"> Agency MBS: GNMA, FHLMC, FNMA 30-year, 15-year and 20-year fixed-rate programs 	<ul style="list-style-type: none"> TBAs Collateralized Mortgage Obligations (CMOs) Non-agency (whole loan) collateral FNMA mega pools, FHLMC giant pools, GNMA platinum pools Floating-rate ARMs Jumbo pools Prepayment penalty mortgages 10-year fixed-rate programs Buydowns High LTV FNMA CR/CQ and FHLMC U6/U9 pools

Rebalancing Rules

Frequency	For each index, Bloomberg maintains two universes of securities: the Returns (Backward) and the Projected (Forward) Universes. The composition of the Returns Universe is rebalanced at each month-end and represents the fixed set of bonds on which index returns are calculated for the next month. The Projected Universe is a forward-looking projection that changes daily to reflect issues dropping out of and entering the index but is not used for return calculations. On the last business day of the month (the rebalancing date), the composition of the latest Projected Universe becomes the Returns Universe for the following month.
Index Changes	During the month, indicative changes to securities (credit rating change, sector reclassification, amount outstanding changes, corporate actions, and ticker changes) are reflected daily in the Projected and Returns Universes of the index. These changes may cause bonds to enter or fall out of the Projected Universe of the index on a daily basis, but will affect the composition of the Returns Universe at month-end only, when the index is next rebalanced.
Reinvestment of Cash Flows	Intra-month cash flows from interest and principal payments contribute to monthly index returns but are not reinvested at a short-term reinvestment rate between rebalance dates. At each rebalancing, cash is effectively reinvested into the Returns Universe for the following month so that index results over two or more months reflect monthly compounding.
New Issues	Qualifying securities issued, but not necessarily settled on or before the month-end rebalancing date, qualify for inclusion in the following month's index if the required security reference information and pricing are readily available.

Pricing and Related Issues

Sources & Frequency	MBS generics are priced daily based on a weighted average price of their respective underlying non-specified pools. The pools are priced by BVAL on a same-day settlement basis. ¹
Pricing Quotes	Bonds are quoted as a percentage of par.
Timing	<ul style="list-style-type: none"> 3pm (New York time). On early market closes, prices are taken as of 1pm (New York time), unless otherwise noted. If the last business day of the month is a public holiday, prices from the previous business day are used.

¹ For details on the US MBS Index pricing methodology, please refer to [US MBS Index Pricing Methodology and Source Changes](#).

Pricing and Related Issues

Bid or Offer Side	Bonds in the index are priced on the bid side.
Settlement Assumptions	Same-day settlement basis.
Verification	Daily price moves for each security are analyzed by the index pricing team to identify outliers. Index users may also challenge price levels, which are then reviewed and updated as needed.
Currency Hedging	Returns hedged to various non-USD currencies are published for the US MBS Index. The indices' FX hedging methodology takes rolling one-month forward contracts that are reset at the end of each month and hedges each non-reporting currency-denominated bond in the index into the reporting currency terms. No adjustment is made to the hedge during the month to account for price movements of constituent securities in the Returns Universe of the index.
Paydowns	Paydown estimates are made on the first business day of the month using the prior months' factors. Actual paydowns are updated on the 16 th business day of the month.
Calendar	The US MBS Index follows the US bond market holiday schedule.

Monthly Returns in USD, 2009-2019 (%)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD
2009	0.19	0.58	1.42	0.28	0.29	0.12	0.82	0.67	0.80	0.71	1.28	-1.41	5.89
2010	1.33	0.18	0.03	0.60	1.12	1.12	0.86	0.15	-0.38	0.98	-0.18	-0.55	5.37
2011	0.05	0.25	0.28	1.10	1.07	0.09	0.93	1.25	0.17	0.00	0.18	0.70	6.23
2012	0.41	0.09	0.06	0.65	0.32	0.12	0.80	0.11	0.21	-0.17	-0.17	0.14	2.59
2013	-0.50	0.34	0.12	0.53	-1.53	-0.96	-0.09	-0.29	1.41	0.68	-0.62	-0.47	-1.41
2014	1.56	0.34	-0.32	0.92	1.20	0.26	-0.59	0.94	-0.16	0.97	0.65	0.15	6.08
2015	0.85	-0.16	0.37	0.04	-0.02	-0.76	0.63	0.08	0.58	0.07	-0.14	-0.03	1.51
2016	1.30	0.37	0.30	0.16	0.13	0.81	0.20	0.12	0.28	-0.26	-1.71	0.00	1.67
2017	-0.03	0.48	0.03	0.65	0.62	-0.40	0.45	0.73	-0.22	-0.03	-0.14	0.33	2.47
2018	-1.17	-0.66	0.64	-0.50	0.70	0.05	-0.11	0.61	-0.61	-0.63	0.90	1.81	0.99
2019	0.79	-0.09	1.46	-0.06	1.29	0.72	0.40	0.89	0.07	-	-	-	5.60

Index History

June 1, 2017	Hybrid ARMs removed from the index.
April 1, 2014	Minimum liquidity for US MBS Index constituents raised from USD250mn to USD1bn.
January 1, 2008	US MBS fixed-rate balloons removed from the index.
April 1, 2007	Agency Hybrid Adjustable Rate Mortgage (ARM) securities added to the index, but not eligible for the Global Aggregate.
July 1, 2000	Fixed-rate 20-year securities added to the index.
January 1, 1999	Quarter coupon securities and adjustable-rate mortgages (ARMs) dropped.
January 1, 1995	Graduated-payment mortgages (GPMs) dropped for lack of liquidity.

October 16, 2019

January 1, 1992	MBS balloon issues added to the index.
January 1, 1986	Launch of US MBS Index with performance history backfilled to January 1, 1976.
November 1, 1982	FNMA 30-year and 15-year MBS included in index history.
May 1, 1977	FHLMC 30-year and 15-year MBS included in index history.
January 1, 1976	Inception date of US MBS Index with the inclusion of GNMA 30-year and 15-year MBS.

Sub-indices and Index Customizations

Bloomberg publishes numerous sub-indices of flagship indices and bespoke benchmarks created for specific index users. Several types of bespoke indices are available to select or customize the most appropriate benchmark for specific portfolio needs:

Sub-Index Type	Description	Examples
Enhanced Constraint	Applies a more or less stringent set of constraints to any existing index.	<ul style="list-style-type: none">US MBS Conventional 30 Year
Composites	Investors assign their own weights to sectors or other index sub-components within an overall index.	<ul style="list-style-type: none">50% US Government; 50% US MBS
Float Adjusted	Adjusts par amount outstanding of bonds for holdings of central governments that are publicly available.	<ul style="list-style-type: none">US MBS Float Adjusted
Mirror Futures Index (MFI)	An index consisting of 14 funded futures contracts weighted to match closely the beginning-of-month OAD of the index.	<ul style="list-style-type: none">US MBS Mirror Futures Index
Duration Hedged	Indices constructed to reflect the underlying return of an index with its duration fully or partially hedged using its MFI.	<ul style="list-style-type: none">US MBS Duration Hedged Index

Accessing Index Data

Bloomberg Terminal®	<p>Bloomberg benchmarks are the global standard for capital markets investors.</p> <ul style="list-style-type: none">INDEX<Go> – The Bloomberg Indices landing page is a dashboard for index-related information on the terminal. Find daily and monthly index returns for key indices from each index family as well as index publications including methodologies, factsheets, monthly reports, updates and alerts.IN<Go> – The Bloomberg Index Browser displays the latest performance results and statistics for the indices as well as history. IN presents the indices that make up Bloomberg's global, multi-asset class index families into a hierarchical view, facilitating navigation and comparisons. The "My Indices" tab allows a user to focus on a set of favorite indices.PORT<Go> – Bloomberg's Portfolio & Risk Analytics solution includes tools to analyze the risk, return, and current structure of indices. Analyze the performance of a portfolio versus a benchmark or use models for performance attribution, tracking error analysis, value-at-risk, scenario analysis, and optimization.DES<Go> – The index description page provides transparency into an individual index including membership information, aggregated characteristics and returns, and historical performance.
Bloomberg Indices Website (www.bloomberg.com/professional/product/indices)	<p>The index website makes available limited index information including:</p> <ul style="list-style-type: none">Index methodology and factsheetsCurrent performance numbers for select indices
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Accessing Index Data

- Index data is also available via authorized redistributors

Bloomberg Total Return Index Value Tickers: US MBS and Related Indices

Ticker (USD Unhedged)	Index	Ticker (USD Unhedged)	Index
LUMSTRUU	US MBS	BCMATRUU	US MBS Fixed-Rate FNMA
LD10TRUU	US MBS Fixed-Rate	BCM3TRUU	US MBS Fixed-Rate Conventional 30 Year
LD11TRUU	US MBS Hybrid ARM	LD17TRUU	US MBS Fixed-Rate GNMA 15 Year
LGNMTRUU	US MBS Fixed-Rate GNMA	LD16TRUU	US MBS Fixed-Rate GNMA 30 Year
BCMCTRUU	US MBS Fixed-Rate FHLMC	LBUSTRUU	US Aggregate Index

Total Return Index Values are available in other currencies and on a hedged basis. Attributes such as yield and duration, are also available. Please refer to Accessing Bloomberg Barclays Index Data Using Bloomberg Tickers for a full list of tickers and attributes that are available.

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