

Product Modification: Delivery Basket for 10-Year Treasury Futures

December 5, 2022

Executive summary

Based on extensive market validation and overwhelming support from a variety of participants including buy-side customers, sell-side dealers, and proprietary trading firms, CME Group will modify the delivery basket for 10-Year Note futures (TY) such that it ranges from 6 years, 6 months to 8 years. Background and details are provided below. This change will be implemented pending regulatory review and starting with the new quarterly listings beginning with the September 2023 contract month, all prior listings remain unimpacted.

Please direct any questions on this to your existing CME Group representatives or by contacting us at InterestRates@cmegroup.com

Background Leading to Modification

The U.S. Treasury futures deliverable basket design is time-tested since 1976 and has enabled strong liquidity development, with volumes growing nearly three-fold over the last 10 years. The deliverable contract uses a set of Treasury conversion factors to standardize eligible securities, based on an implied 6% notional coupon¹.

Ultra 10-Year futures were launched in 2016 with a basket ranging from 9y 5m to 10 years, partially overlapping the basket of the 'classic' 10-Year Note futures (TY), which spans 6y 6m to 10 years. Currently, the TY contract behaves as having an approximately 6.5-year maturity by tracking shortest duration security in the basket as the cheapest-to-deliver (CTD) along the 'left' side. In an environment of yields above 6%, the futures CTD tends toward the longest duration security in the basket. The implication is in that a higher yield environment, the Ultra 10 and TY contracts will likely track the same CTD near the 10-year point.

Over the years, discussions with numerous market participants indicate broad support for a change to the TY basket to avoid the outcome of identical CTDs, particularly now that Ultra 10 has become among the most successful new product launches, with open interest of 1.4 million contracts as of October 11, 2022.

Decision:

Based on input from the marketplace², CME Group is re-defining the longest maturity for TY futures to be 8 years. This is subject to regulatory review and only impacts new quarterly listings (beginning with the September 2023 contract month) and does not impact current listings.

This modification has the benefit that, in an environment when rates may be higher than 6%, TY will always be expected to have a CTD near the 7.75-year point while Ultra 10 is expected to track a CTD near the 10-year point; both would remain distinct contracts with both continuing to serve important risk management functions. When interest rates remain well below 6%, contracts are likely to continue tracking the shortest duration securities, 6.5 years for TY futures and 9.5 years for Ultra 10 futures. The Ultra 10 basket remains unchanged. The modified TY basket remains extremely large, estimated at \$792 billion of securities, much larger than typical quarterly deliveries of \$1 billion to \$5 billion.

PRODUCT	GLOBEX	BBG	ELIGIBLE REMAINING TERM TO MATURITY	SHORTEST MATURITY	LONGEST MATURITY
2-YR	ZT	TU	1y 9m to 2 years	1y 9m	2.0
3-YR	Z3N	3Y	2y 9m to 3 years	2y 9m	3.0
5-YR	ZF	FV	4y 2m to 5 years	4y 2m	5.0
10-YR	ZN	TY	6y 6m to 8y	6y 6m	8y
ULTRA 10	TN	UXY	9y 5m to 10 years	9y 5m	10.0
T-BOND	ZB	US	15 to < 25 years	15y	25.0
20-YEAR	TWE	TWE	19y 2m to 19y 11m	19y 2m	19y 11m
ULTRA-BOND	UB	WN	25+ to 30 years	25y	30.0

¹ Prior to the March 2000 expiry month, an 8% coupon was used.

² On October 17, 2022, CME Group published a discussion paper inviting the marketplace to provide input on this topic.

Context on basket definitions

The deliverable basket design enables a large amount of open interest build-up, far exceeding deliverable supply of any one security.

One result is that it creates an embedded 'quality option' that allows the short open interest holder to select which security to deliver. When yields are below the 6% notional coupon, the cheapest-to-deliver (CTD) tends to be the shortest duration security in the basket; vice versa, if yields rise above 6%, contracts will shift to tracking the longest duration security in the basket.

As of 2022, the classic 10-Year Note futures (TY) and the Ultra 10-Year Note (Ultra 10) share the same definition for maximum maturity of 10.0 years. Ultra 10 was launched in 2016 to bring the efficiencies of futures to the highly traded 10-year point. Ultra 10 has since become among the most successful products at CME Group, with average daily volume over 400K and open interest of 1.4 million as of October 11, 2022. This overlap in basket definitions is undesirable.

Following the capping of the TY basket, the basket will have 11 issues that are eligible for delivery (five 10-yr and six 7-yr notes) with projected cumulative issuance of about \$792B, giving it the largest basket size among the Treasury Note futures. Its 11 issues would match our 5-Year Note futures and would be similar to the 2-Year and 3-Year Notes which have 12 issues. The new TY deliverable grade will be robust and difficult to manipulate due to the breadth and depth of the basket.

PRODUCT	GLOBEX	BBG	ELIGIBLE REMAINING TERM TO MATURITY	SHORTEST MATURITY	LONGEST MATURITY	
2-YR	ZT	TU	1y 9m to 2 years	1y 9m	2.0	
3-YR	Z3N	3Y	2y 9m to 3 years	2y 9m	3.0	
5-YR	ZF	FV	4y 2m to 5 years	4y 2m	5.0	
10-YR	ZN	TY	6y 6m to 10 years	6y 6m	10.0	→ 8y
ULTRA 10	TN	UXY	9y 5m to 10 years	9y 5m	10.0	
T-BOND	ZB	US	15 years to 25 years	15y	25.0	
20-YEAR	TWE	TWE	19y 2m to 19y 11m	19y 2m	19y 11m	
ULTRA-BOND	UB	WN	25 years to 30 years	25y	30.0	

PRODUCT	BBG	AVG OPEN INTEREST 000'S	AVG. OPEN INTEREST IN BILLIONS	AVG. QUARTERLY DELIVERIES IN \$B	NUMBER OF ISSUES*	BASKET SIZE \$B*
2-YR	TU	2,169	\$433.8	\$3.9	12	\$574
3-YR	3Y	14	\$2.8	\$0.5	12	\$492
5-YR	FV	3,809	\$380.9	\$3.1	11	\$586
10-YR	TY	3,591	\$359.1	\$1.5	11	\$792
ULTRA 10	UXY	1,294	\$129.4	\$1.0	3	\$274
T-BOND	US	1,130	\$113.0	\$0.4	47	\$2,067
20-YEAR	TWE	2	\$0.2	\$0.0	6	\$285
ULTRA-BOND	WN	1,272	\$127.2	\$1.0	20	\$1,114
—	—	13,279	\$1,546.4	\$11.4	—	—

	DEC-2016	DEC-2021	AVERAGE 2012-2021	DEC-2023 TRIMMED†
TY BASKET SIZE \$B	\$1,060	\$1,622	\$1,140	\$792
TY DELIVERIES \$B	\$1.1	\$0.7	\$1.5	—
% OF TOTAL BASKET	0.10%	0.04%	0.13%	—
AVERAGE CUSIP SIZE \$B	\$53	\$80	—	\$71

*Current values based on Sep 2022 contract month, except for TY which is projected for Dec 2023.

†Projected value estimated based upon current issuance patterns at auction

Appendix

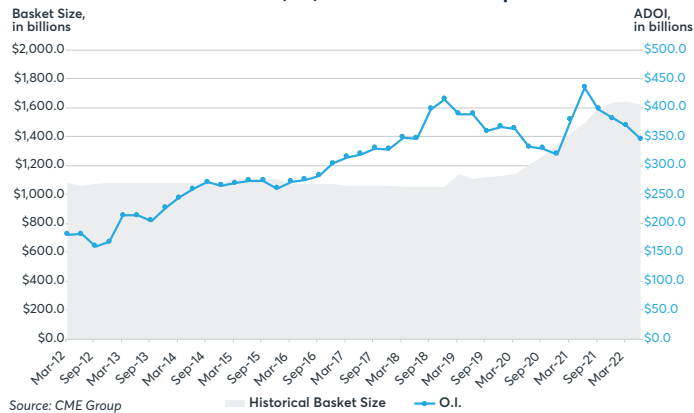
AVG. DAILY OPEN INTEREST IN 000'S	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
2-YR NOTE (TU)	959	918	1,197	1,213	1,047	1,380	2,066	3,490	2,426	2,065	2,087
5-YR NOTE (FV)	1,358	1,751	2,033	2,133	2,603	2,975	3,872	4,411	3,562	3,388	3,853
10-YR NOTE (TY)	1,765	2,179	2,633	2,693	2,769	3,134	3,769	3,817	3,353	3,877	3,628
ULTRA 10-YR (UXY)	1,765	2,179	2,633	2,693	2,769	3,134	3,769	3,817	3,353	3,877	3,628
ULTRA 10-YR (UXY)	–	–	–	–	151	375	582	748	908	1,376	1,233
T-BOND (US)	612	644	810	521	546	690	851	953	1,099	1,190	1,153
ULTRA T-BOND (WN)	370	410	517	573	617	775	990	1,153	1,065	1,167	1,287
ALL UST FUTURES	5,063	5,903	7,191	7,131	7,734	9,329	12,129	14,572	12,413	13,064	13,241
DELIVERIES QUARTERLY	75	62	24	55	55	78	141	157	106	87	84
% DELIVERED	1.5	1.0	0.3	0.8	0.7	0.8	1.1	1.1	0.9	0.7	0.6

AVG. DAILY VOLUME IN 000'S	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
2-YR NOTE (TU)	218	229	285	328	325	387	538	725	509	458	729
5-YR NOTE (FV)	527	696	779	754	801	902	1,140	1,168	968	1,117	1,402
10-YR NOTE (TY)	1,047	1,293	1,351	1,298	1,392	1,495	1,816	1,785	1,605	1,862	1,993
ULTRA 10-YR NOTE (TN)	–	–	–	–	67	117	188	230	255	372	410
T-BOND (US)	363	389	370	284	279	292	368	348	378	450	423
ULTRA T-BOND (WN)	65	84	101	115	113	134	185	190	207	229	246
ALL UST FUTURES	2,220	2,691	2,886	2,779	2,977	3,328	4,234	4,447	3,925	4,498	5,223

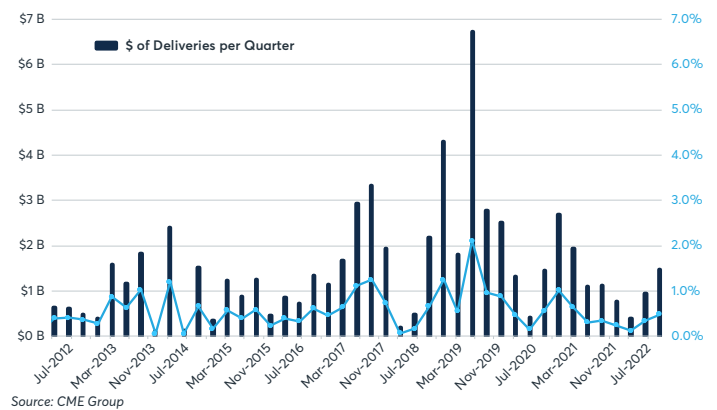
Naming conventions for U.S. Treasury futures

SHORT NAME	RULEBOOK NAME	BLOOMBERG	CME CLEARING	CME GLOBEX
2-YEAR	Short-Term U.S. Treasury Note (2-Year)	TU	26	ZT
3-YEAR	3-Year U.S. Treasury Note	3Y	3Y	Z3N
5-YEAR	Medium-Term U.S. Treasury Note (5-Year)	FV	25	ZF
10-YEAR	U.S. Treasury Note (6 ½ to 7 ¾ Year)	TY	21	ZN
ULTRA 10	Ultra 10-Year U.S. Treasury Note	UXY	TN	TN
T-BOND	U.S. Treasury Bond	US	17	ZB
20-YEAR	20-Year U.S. Treasury Bond	TWE	TWE	TWE
ULTRA T-BOND	Ultra U.S. Treasury Bond	WN	UBE	UB

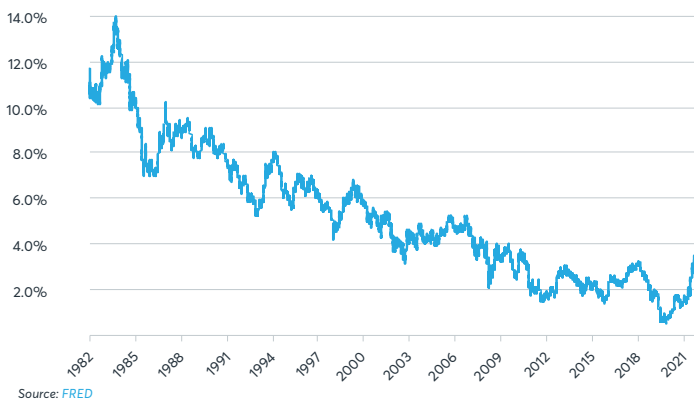
10-Year Note Futures (TY) Basket Size and Open Interest



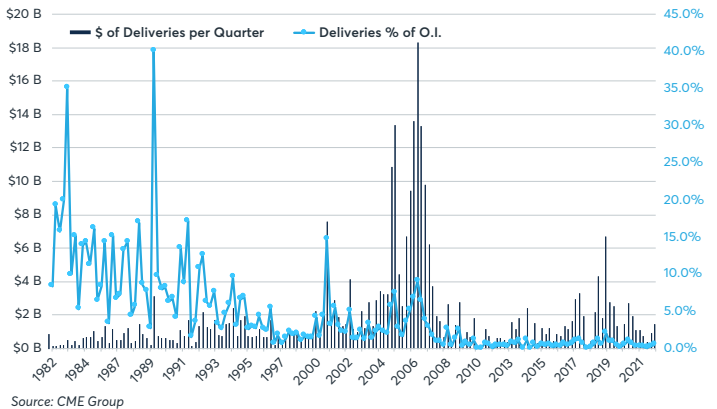
TY Futures Deliveries



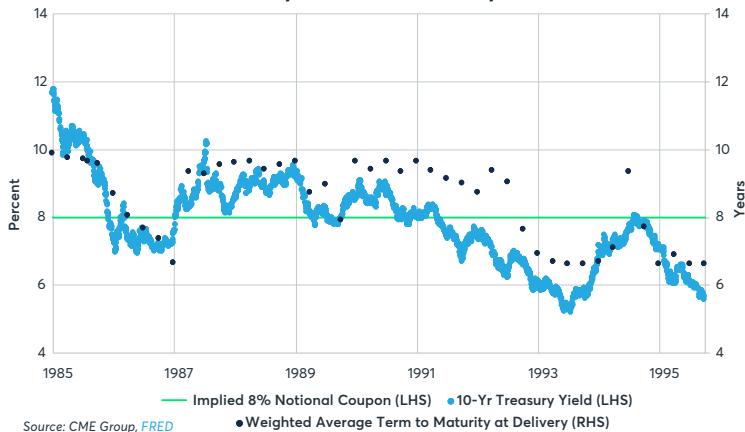
Yield of 10-Year Constant Maturity Treasury



TY Futures Deliveries



TY Delivery and 10-Yr Treasury Yields



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