

Homework Assignment: Yield Curve Bootstrapping

Course: Fixed Income Derivatives

Instructor: Jeff Greco

Bootstrap the USD SOFR forward rate curve using the following end of day market quotes from September 14, 2020. Assume matched discounting and ignore swap payment delays.

Instrument Type	Tenor	Accrual Begin	Accrual End	Quote
USD SOFR Rate	O/N	9/14/2020	9/15/2020	0.0900%
USD SOFR Fixed/Float Swap	1 Week	9/16/2020	9/23/2020	0.0770%
USD SOFR Fixed/Float Swap	2 Weeks	9/16/2020	9/30/2020	0.0758%
USD SOFR Fixed/Float Swap	3 Weeks	9/16/2020	10/7/2020	0.0769%
USD SOFR Fixed/Float Swap	1 Month	9/16/2020	10/16/2020	0.0780%
USD SOFR Fixed/Float Swap	2 Months	9/16/2020	11/16/2020	0.0766%
USD SOFR Fixed/Float Swap	3 Months	9/16/2020	12/16/2020	0.0766%
USD SOFR Fixed/Float Swap	4 Months	9/16/2020	1/19/2021	0.0811%
USD SOFR Fixed/Float Swap	5 Months	9/16/2020	2/16/2021	0.0775%
USD SOFR Fixed/Float Swap	6 Months	9/16/2020	3/16/2021	0.0750%
USD SOFR Fixed/Float Swap	7 Months	9/16/2020	4/16/2021	0.0730%
USD SOFR Fixed/Float Swap	8 Months	9/16/2020	5/17/2021	0.0679%
USD SOFR Fixed/Float Swap	9 Months	9/16/2020	6/16/2021	0.0646%
USD SOFR Fixed/Float Swap	10 Months	9/16/2020	7/16/2021	0.0615%
USD SOFR Fixed/Float Swap	11 Months	9/16/2020	8/16/2021	0.0586%
USD SOFR Fixed/Float Swap	1 Year	9/16/2020	9/16/2021	0.0564%
USD SOFR Fixed/Float Swap	18 Months	9/16/2020	3/16/2022	0.0451%
USD SOFR Fixed/Float Swap	2 Years	9/16/2020	9/16/2022	0.0325%
USD SOFR Fixed/Float Swap	3 Years	9/16/2020	9/18/2023	0.0324%
USD SOFR Fixed/Float Swap	4 Years	9/16/2020	9/16/2024	0.0643%
USD SOFR Fixed/Float Swap	5 Years	9/16/2020	9/16/2025	0.1183%
USD SOFR Fixed/Float Swap	6 Years	9/16/2020	9/16/2026	0.1851%
USD SOFR Fixed/Float Swap	7 Years	9/16/2020	9/16/2027	0.2566%
USD SOFR Fixed/Float Swap	8 Years	9/16/2020	9/18/2028	0.3274%
USD SOFR Fixed/Float Swap	9 Years	9/16/2020	9/17/2029	0.3912%
USD SOFR Fixed/Float Swap	10 Years	9/16/2020	9/16/2030	0.4520%
USD SOFR Fixed/Float Swap	12 Years	9/16/2020	9/16/2032	0.5470%
USD SOFR Fixed/Float Swap	15 Years	9/16/2020	9/17/2035	0.6500%
USD SOFR Fixed/Float Swap	20 Years	9/16/2020	9/17/2040	0.7445%
USD SOFR Fixed/Float Swap	25 Years	9/16/2020	9/18/2045	0.7876%
USD SOFR Fixed/Float Swap	30 Years	9/16/2020	9/16/2050	0.7910%
USD SOFR Fixed/Float Swap	40 Years	9/16/2020	9/16/2060	0.7503%
USD SOFR Fixed/Float Swap	50 Years	9/16/2020	9/16/2070	0.6717%