

## **Parallel-Shift Sensitivity Analysis for HLB-Option, Flipper, and Knockout Advances**

The Federal Home Loan Bank of Boston (Bank) is providing estimated valuations of the specific aforementioned advances for members' information and convenience only. The estimated valuations are generated by models obtained from external sources which are used for the Bank's own asset/liability management purposes. The models include the use of specific assumptions, for example, market volatility and discount curve adjusted for the Bank's spread, to estimate the value of the advance. The valuations represent theoretical market values only and should not be construed as a liquidation price for the aforementioned advances.

It is expressly understood that in providing this valuation information to members, the Bank is not performing any advisory service. The valuations are being provided without representation or warranty and the member shall be solely responsible for any decision it makes or actions it takes based on the valuations provided. It is recommended that institutions maintain independent capabilities to value their asset/liability positions, including the aforementioned advances.

The table depicts valuation estimates resulting from immediate, parallel interest-rate movements. In order to rule out negative interest rates, our model applies an effective floor of plus ten basis points to the yield curve for all down-rate scenarios. As a result, large down-rate shocks will reflect valuation at the floor rate of ten basis points in place of any negative interest rates that would otherwise be produced. Please note that the valuation estimates are from the Bank's perspective. Since the member holds the advance as a liability, positive price changes in the table correspond to the advance having a negative impact on the member's estimated market value of portfolio equity (and vice versa). The theoretical argument follows that as interest rates rise, the value of the advance to the Bank falls. In the case of an HLB-Option or a Flipper advance, the Bank would likely exercise its option to cancel the advance as the value falls below 100. In the case of a Knockout advance, the Bank is obligated to terminate the advance on any specified cancellation date if LIBOR is equal to or greater than the predetermined "strike rate." In either case, the member's cost to prepay the advance increases as interest rates fall.

To identify your advance, locate the appropriate start date and maturity date and then verify the coupon rate. The report is sorted in ascending order by start date, followed by coupon. Once the appropriate structure is determined, read across to view the sensitivity analysis that has been performed on the advance.

If you have any questions or would like further explanation of this analysis, contact Member Financial Strategies at 1-800-292-9644.

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
1/12/2007	1/12/2017	1/12/2017	4.420	100.14733	100.14733	100.14733	100.12839	100.09605	100.06375	100.03148	99.99925
1/16/2007	1/17/2017	1/17/2017	4.790	100.22618	100.22618	100.22618	100.19935	100.15353	100.10776	100.06206	100.01641
2/2/2007	2/2/2017	2/2/2017	4.690	100.42989	100.42989	100.42989	100.37725	100.28776	100.19844	100.10927	100.02028
2/20/2007	2/21/2017	2/21/2017	4.850	100.70052	100.70052	100.70052	100.61252	100.46633	100.32057	100.17525	100.03036
2/20/2007	2/21/2017	2/21/2017	4.390	100.63407	100.63407	100.63407	100.54612	100.40001	100.25433	100.10909	99.96428
2/23/2007	2/23/2017	2/23/2017	4.250	100.63746	100.63746	100.63746	100.54581	100.39376	100.24218	100.09107	99.94043
2/23/2007	2/23/2017	2/23/2017	4.350	100.65246	100.65246	100.65246	100.56080	100.40873	100.25714	100.10601	99.95534
3/16/2007	3/16/2017	3/16/2017	4.090	100.85203	100.85203	100.85203	100.71623	100.50630	100.29727	100.08912	99.88185
3/23/2007	3/23/2017	3/23/2017	4.290	100.97711	100.97711	100.97711	100.82600	100.59718	100.36942	100.14269	99.91700
4/9/2007	4/10/2017	1/9/2017	4.150	101.15271	101.15271	101.15271	100.95774	100.67971	100.40324	100.12829	99.99271
4/12/2007	4/12/2017	1/12/2017	4.250	101.20410	101.20410	101.20410	101.00380	100.72018	100.43816	100.15773	99.99361
4/13/2007	4/13/2017	1/13/2017	4.450	101.27312	101.27312	101.27312	101.07011	100.78360	100.49874	100.21549	100.01676
5/18/2007	5/18/2017	2/21/2017	4.190	101.60607	101.60607	101.60607	101.30401	100.92228	100.54344	100.19379	99.95289
5/29/2007	5/30/2017	2/28/2017	4.250	101.77073	101.77073	101.77073	101.43250	101.01859	100.60806	100.22835	99.95542
6/7/2007	6/7/2017	3/7/2017	4.820	102.11533	102.11533	102.11533	101.75020	101.31362	100.88089	100.46369	100.11704
6/8/2007	6/8/2017	3/8/2017	4.490	101.98297	101.98297	101.98297	101.61477	101.17580	100.74105	100.33555	100.01896
6/18/2007	6/19/2017	3/20/2017	4.500	102.12488	102.12488	102.12488	101.71986	101.25048	100.78601	100.35456	100.01299
6/19/2007	6/19/2017	3/20/2017	4.650	102.19571	102.19571	102.19571	101.79054	101.32097	100.85617	100.41677	100.05996
6/22/2007	6/22/2017	3/22/2017	4.500	102.16238	102.16238	102.16238	101.74732	101.26965	100.79709	100.35888	100.01200
6/28/2007	6/28/2017	3/28/2017	4.500	102.23737	102.23737	102.23737	101.80225	101.30801	100.81929	100.36744	100.00810
7/13/2007	7/13/2017	1/13/2017	4.290	102.31170	102.31170	102.31170	101.82301	101.28896	100.76755	100.29995	100.02336
7/20/2007	7/20/2017	1/20/2017	4.290	102.39511	102.39511	102.39511	101.88107	101.32839	100.78918	100.30478	100.02042
7/27/2007	7/27/2017	1/27/2017	4.250	102.45541	102.45541	102.45541	101.91608	101.34487	100.78868	100.29059	100.00752
7/30/2007	1/30/2019	1/30/2017	3.990	108.42279	108.42279	107.52632	105.43234	103.50426	101.88949	100.71738	100.09748
7/31/2007	7/31/2017	1/31/2017	3.990	102.34952	102.34952	102.34952	101.79612	101.21567	100.66080	100.19008	99.96162
7/31/2007	7/31/2017	1/31/2017	3.990	102.34952	102.34952	102.34952	101.79612	101.21567	100.66080	100.19008	99.96162
7/31/2007	7/31/2017	1/31/2017	4.060	102.39074	102.39074	102.39074	101.83723	101.25644	100.69922	100.21278	99.96763
8/2/2007	8/2/2017	2/2/2017	4.050	102.40735	102.40735	102.40725	101.84617	101.26014	100.69841	100.23328	99.98418
8/9/2007	8/9/2017	2/9/2017	3.990	102.44926	102.44926	102.44879	101.86127	101.25710	100.68020	100.21150	99.95793
8/16/2007	8/16/2017	2/16/2017	3.990	102.52684	102.52684	102.52600	101.91195	101.28936	100.69527	100.21352	99.94174
8/17/2007	8/17/2017	2/17/2017	4.000	102.54428	102.54428	102.54339	101.92554	101.30025	100.70331	100.21805	99.94151
9/4/2007	9/5/2017	3/6/2017	3.890	102.67961	102.67961	102.67189	101.98725	101.31376	100.68496	100.19518	99.89030
9/10/2007	9/11/2017	3/10/2017	3.690	102.60332	102.60332	102.58831	101.88736	101.19996	100.57208	100.11151	99.83019
9/11/2007	9/11/2017	3/13/2017	3.590	102.53277	102.53277	102.51775	101.81708	101.13127	100.51303	100.07097	99.79804
9/13/2007	9/13/2017	3/13/2017	3.990	102.83715	102.83715	102.81970	102.11239	101.41633	100.76185	100.23928	99.90281
9/27/2007	9/27/2017	3/27/2017	3.650	102.73731	102.73731	102.70284	101.95729	101.22786	100.56777	100.08536	99.77393
10/11/2007	10/11/2017	1/11/2017	3.990	103.14747	103.14747	103.09345	102.30874	101.53979	100.82714	100.25632	99.98622
10/15/2007	10/16/2017	1/17/2017	3.990	103.20288	103.20288	103.14165	102.34338	101.56139	100.83662	100.25400	99.97879
10/26/2007	10/26/2017	1/26/2017	3.390	102.81538	102.81538	102.73976	101.91700	101.12429	100.44446	100.04483	99.92455
11/5/2007	11/6/2017	2/6/2017	4.390	103.78006	103.78006	103.68842	102.83121	101.99063	101.19751	100.52273	100.09037
11/6/2007	11/6/2017	2/6/2017	3.480	102.99645	102.99645	102.90492	102.05193	101.23229	100.52645	100.07769	99.89722
11/19/2007	11/20/2017	11/19/2012	4.290	103.86077	103.86077	103.74882	102.85257	101.97030	101.10321	100.25091	99.41302
11/20/2007	11/20/2017	2/21/2017	3.740	103.36577	103.36577	103.25392	102.36043	101.49518	100.72343	100.16892	99.88838
11/23/2007	11/24/2017	11/23/2011	3.990	103.63510	103.63510	103.51741	102.61116	101.71938	100.84312	99.98199	99.13559
11/23/2007	11/24/2017	11/23/2011	3.990	103.63510	103.63510	103.51741	102.61116	101.71938	100.84312	99.98199	99.13559
11/29/2007	11/29/2017	2/28/2017	2.950	102.72852	102.72852	102.60380	101.69219	100.84994	100.21977	99.90046	99.71932
11/30/2007	11/30/2017	2/28/2017	3.190	102.95938	102.95938	102.83316	101.91588	101.05150	100.35669	99.96243	99.76015
12/10/2007	12/11/2017	3/10/2017	3.450	103.30601	103.30601	103.16224	102.21388	101.31155	100.55257	100.05877	99.78117
12/24/2007	12/26/2017	12/24/2012	3.990	103.98975	103.98975	103.82194	102.82847	101.85261	100.89531	99.95604	99.03429
1/7/2008	1/8/2018	1/9/2017	2.590	102.68327	102.68327	102.49696	101.49228	100.63041	100.09495	99.97800	99.95386
1/8/2008	1/8/2018	1/9/2017	2.570	102.66255	102.66255	102.47626	101.47230	100.61342	100.08750	99.97750	99.95336
1/8/2008	1/8/2018	1/9/2017	2.640	102.73507	102.73507	102.54871	101.54200	100.66945	100.10912	99.97925	99.95511
1/11/2008	1/11/2018	1/11/2017	2.720	102.84063	102.84063	102.64996	101.63220	100.73885	100.13586	99.97706	99.94756
1/14/2008	1/16/2018	1/17/2017	3.240	103.42873	103.42873	103.23066	102.18656	101.21334	100.44025	100.03109	99.94351
1/16/2008	1/16/2018	1/17/2017	2.380	102.51857	102.51857	102.32130	101.30457	100.47154	100.02868	99.94860	99.90305
1/17/2008	1/17/2018	1/17/2017	2.250	102.38724	102.38724	102.18879	101.17853	100.37872	99.99342	99.94247	99.89692
1/18/2008	1/18/2018	1/18/2017	2.290	102.43604	102.43604	102.23611	101.22015	100.40686	100.00307	99.94109	99.89286
2/14/2008	2/14/2018	2/14/2012	3.190	103.63277	103.63277	103.39609	102.26210	101.14466	100.04455	98.96140	97.89485
3/7/2008	3/7/2018	3/7/2017	3.550	104.24984	104.24984	103.98474	102.79216	101.67135	100.74504	100.14241	99.82197
3/14/2008	3/14/2018	3/14/2017	2.400	102.91969	102.91969	102.64563	101.47942	100.54255	100.01248	99.75010	99.54441
3/17/2008	3/19/2018	3/17/2017	3.300	104.06052	104.06052	103.77721	102.55673	101.42989	100.54520	100.01468	99.72525

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
4/28/2008	4/30/2018	1/30/2017	2.150	102.89619	102.89619	102.55394	101.29772	100.36845	99.97075	99.89036	99.81011
4/30/2008	4/30/2018	1/30/2017	3.740	105.03827	105.03827	104.69167	103.34098	102.01271	100.70760	99.42510	98.16467
5/23/2008	5/23/2018	2/23/2017	3.270	104.61398	104.61398	104.23121	102.83628	101.56632	100.58288	100.03472	99.79903
6/30/2008	7/2/2018	6/30/2011	3.690	105.61661	105.61661	105.16892	103.64269	102.14506	100.67651	99.23628	97.82363
7/11/2008	7/11/2018	7/11/2012	3.750	105.80169	105.80169	105.33815	103.78631	102.26381	100.77118	99.30763	97.87243
7/14/2008	7/16/2018	1/17/2017	2.500	103.90238	103.90238	103.43541	101.95593	100.77632	100.11029	99.95425	99.90869
7/14/2008	7/16/2018	1/17/2017	3.250	105.07322	105.07322	104.60255	103.06585	101.68623	100.63938	100.08073	99.94398
7/17/2008	7/17/2018	2/14/2017	3.750	105.86418	105.86418	105.39016	103.82172	102.28314	100.77494	99.29634	97.84658
8/15/2008	8/15/2018	2/15/2017	3.830	106.29780	106.29780	105.77166	104.13373	102.60482	101.31984	100.42133	99.96954
12/27/2011	12/27/2021	12/29/2014	3.550	117.96558	117.09852	111.90203	106.86963	102.09701	97.57021	93.27527	89.19911
5/15/2012	5/15/2017	11/17/2014	1.950	100.73116	100.73116	100.73116	100.43949	100.06773	99.69872	99.33245	98.96888
6/20/2012	6/20/2017	6/22/2015	1.630	100.77413	100.77413	100.77413	100.36865	99.90030	99.43632	98.97665	98.52124
7/16/2012	7/17/2017	7/16/2014	1.720	100.94586	100.94586	100.94586	100.44624	99.90593	99.37143	98.84265	98.31949
7/18/2012	7/18/2018	7/20/2015	2.720	104.26094	104.26094	103.78746	102.22892	100.70050	99.20235	97.73368	96.29374
7/19/2012	7/19/2017	7/21/2014	1.690	100.93875	100.93875	100.93875	100.43200	99.88650	99.34692	98.81317	98.28515
10/1/2012	10/1/2019	4/1/2015	2.250	106.27429	106.27429	104.59705	101.84533	99.17915	96.59607	94.09310	91.66735
10/5/2012	10/5/2017	10/6/2014	1.630	101.25853	101.25853	101.21328	100.45159	99.70074	98.96108	98.23235	97.51432
3/8/2013	3/8/2018	3/9/2015	1.780	102.13570	102.13570	101.87045	100.68248	99.51305	98.36238	97.23005	96.11567
5/7/2014	5/7/2018	5/7/2015	1.760	102.40499	102.40499	102.04979	100.69833	99.37037	98.06591	96.78436	95.52519
10/16/2014	10/16/2018	10/17/2016	2.480	104.50487	104.50487	103.86383	102.06167	100.29849	98.57404	96.88725	95.23709
10/24/2014	10/24/2018	10/26/2015	1.740	103.19921	103.19921	102.54434	100.73305	98.96169	97.22967	95.53590	93.87933
10/24/2014	10/24/2018	10/26/2015	1.740	103.19921	103.19921	102.54434	100.73305	98.96169	97.22967	95.53590	93.87933
2/20/2015	2/20/2019	2/22/2016	1.790	103.88276	103.88276	102.94591	100.80897	98.72610	96.69623	94.71776	92.78912
3/26/2015	3/26/2019	3/29/2016	1.610	103.64429	103.64429	102.61378	100.38896	98.22247	96.11297	94.05866	92.05783
3/26/2015	3/26/2020	3/29/2016	1.590	105.21525	105.21525	102.80048	99.61123	96.53644	93.57187	90.71303	87.95564
6/29/2015	7/1/2019	6/29/2017	0.717	105.67453	105.67453	104.32654	102.10695	100.43680	99.60571	99.22802	98.97024
7/30/2015	7/30/2019	8/1/2016	1.800	104.70434	104.70434	103.26469	100.69806	98.20750	95.79091	93.44573	91.16951
8/14/2015	8/14/2025	8/14/2020	1.850	116.17489	111.72393	106.25559	101.57945	97.51361	93.85668	90.48568	87.32755
8/19/2015	8/19/2025	8/21/2017	0.990	108.66851	105.80942	102.65225	100.57635	99.49027	98.77573	98.14762	97.53922
8/25/2015	8/25/2020	8/25/2017	0.950	103.51671	103.51671	101.73175	100.23056	99.37681	98.71309	98.08566	97.46907
8/26/2015	8/26/2025	8/26/2020	1.750	115.35878	111.01947	105.63727	101.02286	96.99428	93.35569	89.99110	86.83199
9/14/2015	9/14/2020	9/14/2017	1.050	103.94531	103.94531	102.00863	100.36624	99.39586	98.65899	97.97693	97.31069
9/15/2015	9/16/2019	9/15/2016	1.750	104.80694	104.80694	103.19251	100.50038	97.89119	95.36248	92.91138	90.53513
9/18/2015	9/18/2020	9/18/2017	1.090	104.10775	104.10775	102.11418	100.42154	99.41799	98.66402	97.97042	97.29407
9/29/2015	9/30/2019	9/29/2016	1.610	104.48494	104.48494	102.82098	100.09645	97.45697	94.89989	92.42223	90.02114
10/2/2015	10/2/2020	10/2/2017	0.890	103.38846	103.38846	101.61716	100.12327	99.18689	98.42229	97.69819	96.98889
10/2/2015	10/2/2025	10/2/2020	1.690	115.00579	110.65712	105.27041	100.62272	96.54191	92.84259	89.41514	86.19453
11/6/2015	11/6/2020	11/6/2017	1.050	104.09985	104.09985	102.04367	100.32297	99.21331	98.33234	97.51663	96.72362
11/6/2015	11/7/2022	11/6/2018	1.400	108.30903	107.12041	103.71058	100.89297	98.63863	96.68349	94.88308	93.16944
12/4/2015	12/4/2025	12/4/2018	1.360	112.31319	108.41387	104.31698	101.10985	98.61889	96.51215	94.60620	92.81118
12/8/2015	12/8/2020	3/8/2017	1.380	105.51132	105.51132	103.01115	101.00929	100.07313	99.76939	99.57791	99.39234
12/11/2015	12/12/2022	12/11/2017	0.463	109.81647	108.26866	104.19096	101.70743	100.12419	99.14388	98.48371	97.96894
12/15/2015	12/16/2019	3/15/2017	1.390	104.16924	104.16924	102.64639	100.86455	100.03423	99.74355	99.53595	99.33213
12/15/2015	12/15/2022	12/15/2017	0.463	109.80586	108.24693	104.16842	101.71005	100.23860	99.46248	99.05105	98.79111
12/18/2015	12/18/2020	12/18/2017	0.743	106.78962	106.78962	103.72297	101.69647	100.39292	99.66345	99.25541	98.98702
12/24/2015	12/24/2020	12/26/2017	1.250	105.04759	105.04759	102.62482	100.62693	99.28134	98.23011	97.27970	96.36661
12/24/2015	12/24/2025	12/24/2020	1.990	118.12866	112.98784	107.04000	101.96123	97.52152	93.52539	89.84922	86.41714
1/8/2016	1/8/2019	1/9/2017	1.120	102.29549	102.29549	101.60790	100.37921	99.98965	99.96548	99.94135	99.91724
1/12/2016	1/13/2020	1/12/2017	0.274	105.70146	105.70146	103.91284	101.72446	100.38096	99.92584	99.89369	99.86158
1/19/2016	1/19/2021	1/19/2018	1.150	104.72674	104.72674	102.35565	100.41769	99.06778	97.96650	96.95052	95.96762
1/19/2016	1/20/2026	1/22/2019	1.350	112.39885	108.39317	104.20924	100.79902	98.02513	95.60384	93.38049	91.27830
1/22/2016	1/22/2020	1/23/2017	0.282	104.45400	104.45400	102.79628	100.91512	100.01642	99.85842	99.79686	99.73538
1/29/2016	1/29/2021	1/30/2017	0.287	105.78178	105.78178	103.07666	100.99067	100.01139	99.81584	99.73559	99.65546
2/2/2016	2/2/2021	2/2/2018	0.284	106.17700	106.17646	103.03563	101.20797	100.08738	99.49420	99.19580	99.03240
2/17/2016	2/17/2021	2/17/2017	0.306	103.57053	103.56595	101.54279	100.19124	99.82996	99.69391	99.56109	99.42864
2/26/2016	2/26/2020	2/27/2017	0.337	103.85211	103.85211	102.22067	100.51950	99.83150	99.62986	99.46776	99.30618
2/26/2016	2/26/2021	2/26/2018	0.890	103.75177	103.74486	101.64532	99.88274	98.56041	97.39641	96.28558	95.19989
2/26/2016	2/26/2026	2/26/2021	1.490	113.83800	109.41985	103.85583	99.05255	94.76569	90.83843	87.17908	83.73365
3/8/2016	3/8/2023	3/8/2018	0.990	106.20791	105.06562	102.31212	100.20736	98.71246	97.46819	96.31492	95.19943
3/18/2016	3/18/2020	3/20/2017	0.393	105.01186	105.01186	103.12121	101.05407	99.93406	99.52140	99.29076	99.07402
4/5/2016	4/5/2021	4/2/2018	0.990	104.27791	104.17936	101.09707	99.70075	98.46449	97.24896	96.05368	94.87819

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
4/8/2016	4/8/2020	4/10/2017	0.276	103.56696	103.56696	101.86051	100.41266	99.92942	99.84720	99.81853	99.79265
4/12/2016	4/12/2021	4/12/2017	0.274	103.83526	103.75055	101.52634	100.22260	99.88550	99.82938	99.79677	99.76526
4/28/2016	4/28/2020	4/28/2017	0.290	104.16446	104.16446	102.26436	100.59810	99.90546	99.72722	99.64410	99.56818
4/28/2016	4/28/2021	4/28/2017	0.290	105.14736	105.03399	102.33541	100.57777	99.89495	99.72591	99.64406	99.56818
4/28/2016	4/28/2021	4/30/2018	0.290	106.13601	105.98219	102.23500	100.46184	99.58733	99.20991	99.03686	98.93762
5/2/2016	5/2/2023	5/4/2018	0.284	107.84153	106.07408	102.46448	100.69179	99.74031	99.27070	99.03172	98.89089
5/2/2016	5/4/2026	5/2/2017	0.284	108.00363	104.90412	101.93003	100.31900	99.82566	99.68791	99.59522	99.50600
5/5/2016	5/5/2021	5/7/2018	0.890	103.91984	103.82201	101.67409	99.77690	98.27181	96.92214	95.63440	94.37953
5/5/2016	5/5/2026	5/5/2021	1.490	114.11416	109.47740	103.77291	98.81973	94.38427	90.31607	86.52660	82.96260
5/6/2016	5/6/2026	5/8/2017	0.281	106.72100	104.02685	101.43590	100.12589	99.77048	99.64260	99.53629	99.43145
5/10/2016	5/11/2026	5/10/2017	0.490	104.63949	102.77166	100.96915	99.97511	99.54656	99.18895	98.83671	98.48701
5/12/2016	5/12/2026	5/12/2017	0.490	104.64013	102.77116	100.96767	99.97064	99.53797	99.17524	98.81788	98.46313
5/13/2016	5/13/2026	5/15/2017	0.302	107.08721	104.26593	101.55272	100.14942	99.74398	99.59265	99.46743	99.34411
5/17/2016	5/17/2021	5/17/2018	0.306	105.73821	105.53523	101.90370	100.24908	99.43567	99.05435	98.84635	98.69970
5/20/2016	5/20/2026	5/22/2017	0.590	105.59711	103.38963	101.26079	100.04451	99.53813	99.14607	98.76290	98.38285
6/3/2016	6/3/2026	6/5/2017	0.292	107.60970	104.60526	101.72599	100.18315	99.65905	99.43995	99.26492	99.09449
6/6/2016	6/8/2020	6/6/2017	0.296	104.82780	104.82780	102.69106	100.81595	99.85406	99.46597	99.25631	99.07905
6/6/2016	6/6/2031	6/6/2017	0.590	107.02172	103.96585	101.49279	100.05312	99.38423	98.88151	98.40054	97.92573
6/8/2016	6/8/2026	6/8/2017	0.590	105.60865	103.39775	101.28010	100.03628	99.47130	99.03097	98.60359	98.18032
6/14/2016	6/16/2031	6/14/2017	0.490	105.79056	103.20063	101.11676	99.94751	99.39623	98.94305	98.50031	98.06175
6/16/2016	6/16/2020	6/16/2017	0.320	104.61885	104.61885	101.87319	100.09463	99.58196	99.35345	99.15080	98.95072
6/16/2016	6/16/2026	6/18/2018	0.690	106.56627	104.02444	101.51862	99.43948	97.80773	96.34847	94.95951	93.60860
6/16/2016	6/16/2031	6/16/2021	1.210	114.90574	109.11558	102.86388	97.62602	93.02630	88.85382	84.99232	81.37474
6/24/2016	6/24/2026	6/26/2017	0.590	105.61683	103.38268	101.25848	99.99673	99.39178	98.90436	98.43001	97.96058
6/27/2016	6/27/2031	6/27/2018	0.690	108.27159	104.72275	101.78541	99.51341	97.79396	96.29062	94.87321	93.49940
6/27/2016	6/27/2031	6/27/2019	0.910	111.05307	106.53469	102.55205	99.21683	96.44516	93.96460	91.64732	89.43591
6/30/2016	6/30/2020	6/30/2017	0.398	104.48053	104.48053	101.69564	100.02552	99.53551	99.27544	99.03548	98.79788
6/30/2016	6/30/2021	6/30/2017	0.590	102.68992	102.55321	100.98157	99.93624	99.36953	98.87601	98.39150	97.91184
7/8/2016	7/8/2026	7/10/2017	0.450	104.29068	102.53239	100.86155	99.83766	99.25071	98.73158	98.22222	97.71831
7/14/2016	7/14/2021	7/14/2017	0.231	104.19001	103.97076	101.46211	100.15485	99.73053	99.62963	99.58981	99.55810
7/22/2016	7/22/2026	7/24/2017	0.550	105.26365	103.14714	101.13776	99.90769	99.24359	98.68383	98.13907	97.60081
7/22/2016	7/22/2026	7/24/2017	0.550	105.26365	103.14714	101.13776	99.90769	99.24359	98.68383	98.13907	97.60081
7/28/2016	7/28/2026	7/30/2018	0.190	109.69973	105.31919	101.68184	100.11489	99.34179	98.98059	98.80136	98.69662
8/1/2016	8/1/2031	8/1/2017	0.490	105.83327	103.22910	101.13462	99.87214	99.17492	98.59153	98.02659	97.46898
8/11/2016	8/11/2026	8/13/2018	0.810	107.78754	104.84513	101.96668	99.61966	97.77410	96.14264	94.60523	93.11875
8/12/2016	8/12/2021	8/14/2017	0.102	104.27931	104.02289	101.42278	100.05117	99.51350	99.31013	99.18125	99.06473
8/19/2016	8/19/2021	8/21/2017	0.111	104.44704	104.17710	101.50509	100.07250	99.48490	99.25070	99.09860	98.96057
9/2/2016	9/2/2026	9/5/2017	0.690	106.65070	104.07915	101.63298	100.04798	99.16095	98.46673	97.81154	97.16877
9/9/2016	9/9/2026	9/10/2018	0.800	107.71760	104.79317	101.92169	99.53241	97.62381	95.92390	94.31897	92.76744
9/9/2016	9/9/2031	9/11/2017	0.390	104.61076	102.49686	100.80536	99.64734	98.89119	98.20953	97.54374	96.88748
9/12/2016	9/12/2031	9/12/2017	0.390	104.60984	102.49250	100.80236	99.64381	98.88558	98.20142	97.53313	96.87442
9/15/2016	9/15/2026	9/16/2019	0.990	109.56785	106.07689	102.35101	99.01747	96.12809	93.48695	90.99913	88.62007
9/15/2016	9/15/2026	9/16/2019	0.990	109.56785	106.07689	102.35101	99.01747	96.12809	93.48695	90.99913	88.62007