

Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

The Federal Home Loan Bank of Boston (Bank) is providing estimated valuations of the specific HLB-Option and Knockout advances set forth below 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 HLB-Option or Knockout advance.

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 HLB-Option and Knockout advances.

The table depicts valuation estimates resulting from immediate parallel interest-rate movements of plus/minus 400 basis points in 100 basis point increments. 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 by the indicated basis point shocks. Please note that the valuation estimates are from the Federal Home Loan Bank of Boston's perspective. Since the advance is held by the member 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 advance, the Bank would be likely to exercise its option to cancel the advance as the value falls below 100. In the case of a Knockout advance, the Bank would automatically terminate the advance on any specified cancellation date if LIBOR is equal to or greater than a predetermined "strike rate" four London Business days prior to the scheduled cancellation date. In either case, the member's cost to prepay the advance increases as interest rates fall.

To identify your advance, locate the appropriate 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 the Money Desk at 1-800-357-3452.

As of: 7/31/2016 Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
8/25/2006	8/25/2016	8/25/2016	4.350	100.302	100.302	100.302	100.277	100.209	100.142	100.075	100.008
11/24/2006	11/25/2016	8/24/2016	4.190	101.362	101.362	101.362	101.188	100.868	100.550	100.234	100.002
12/1/2006	12/1/2016	9/1/2016	4.090	101.397	101.397	101.397	101.210	100.874	100.540	100.210	99.996
12/4/2006	12/5/2016	9/6/2016	4.080	101.439	101.439	101.439	101.242	100.895	100.550	100.214	99.990
12/5/2006	12/5/2016	9/6/2016	4.260	101.503	101.503	101.503	101.305	100.958	100.613	100.272	100.019
12/8/2006	12/8/2016	9/8/2016	3.990	101.441	101.441	101.441	101.236	100.881	100.528	100.189	99.975
12/12/2006	12/12/2016	9/12/2016	3.990	101.485	101.485	101.485	101.270	100.904	100.541	100.193	99.971
12/19/2006	12/19/2016	9/19/2016	4.190	101.641	101.641	101.641	101.408	101.023	100.641	100.265	100.000
12/28/2006	12/28/2016	9/28/2016	4.250	101.771	101.771	101.771	101.514	101.105	100.699	100.305	100.008
12/28/2006	12/28/2016	9/28/2016	4.400	101.833	101.833	101.833	101.577	101.167	100.761	100.361	100.043
1/12/2007	1/12/2017	10/12/2016	4.420	102.026	102.026	102.026	101.729	101.279	100.834	100.402	100.054
1/16/2007	1/17/2017	10/17/2016	4.790	102.262	102.262	102.262	101.951	101.488	101.028	100.576	100.176
2/2/2007	2/2/2017	8/20/2016	4.690	102.423	102.423	102.423	102.069	101.562	101.060	100.563	100.071
2/20/2007	2/21/2017	8/20/2016	4.850	102.762	102.762	102.762	102.356	101.793	101.235	100.684	100.139
2/20/2007	2/21/2017	8/22/2016	4.390	102.500	102.500	102.500	102.095	101.532	100.977	100.452	100.070
2/23/2007	2/23/2017	8/23/2016	4.250	102.444	102.444	102.444	102.034	101.465	100.905	100.384	100.036
2/23/2007	2/23/2017	8/23/2016	4.350	102.501	102.501	102.501	102.091	101.522	100.961	100.434	100.060
3/16/2007	3/16/2017	9/16/2016	4.090	102.590	102.590	102.590	102.123	101.497	100.886	100.332	99.997
3/16/2007	3/16/2017	9/16/2016	4.090	102.590	102.590	102.590	102.123	101.497	100.886	100.332	99.997
3/23/2007	3/23/2017	9/23/2016	4.290	102.800	102.800	102.800	102.313	101.668	101.035	100.448	100.043
3/23/2007	3/23/2017	9/23/2016	4.290	102.800	102.800	102.800	102.313	101.668	101.035	100.448	100.043
4/9/2007	4/10/2017	10/11/2016	4.150	102.916	102.916	102.916	102.379	101.686	101.011	100.409	100.004
4/12/2007	4/12/2017	10/12/2016	4.250	103.010	103.010	103.010	102.467	101.768	101.085	100.466	100.035
4/13/2007	4/13/2017	10/13/2016	4.450	103.164	103.164	103.164	102.618	101.915	101.227	100.585	100.105
5/18/2007	5/18/2017	8/18/2016	4.190	103.387	103.387	103.387	102.741	101.945	101.171	100.482	100.049
5/22/2007	5/22/2017	8/22/2016	4.750	103.892	103.892	103.892	103.234	102.425	101.630	100.876	100.249
5/29/2007	5/30/2017	8/29/2016	4.250	103.577	103.577	103.577	102.897	102.069	101.262	100.535	100.065
6/7/2007	6/7/2017	9/7/2016	4.820	104.164	104.164	104.164	103.459	102.606	101.770	100.978	100.322
6/8/2007	6/8/2017	9/8/2016	4.490	103.891	103.891	103.891	103.185	102.330	101.498	100.729	100.160
6/18/2007	6/19/2017	9/19/2016	4.500	104.037	104.037	104.037	103.299	102.414	101.553	100.756	100.164
6/19/2007	6/19/2017	9/19/2016	4.650	104.172	104.172	104.172	103.433	102.548	101.683	100.872	100.236
6/22/2007	6/22/2017	9/22/2016	4.500	104.075	104.075	104.075	103.328	102.435	101.565	100.761	100.164
6/28/2007	6/28/2017	9/28/2016	4.500	104.150	104.150	104.150	103.385	102.476	101.591	100.772	100.164
7/13/2007	7/13/2017	10/13/2016	4.290	104.135	104.135	104.135	103.328	102.380	101.465	100.650	100.088
7/20/2007	7/20/2017	10/20/2016	4.290	104.218	104.218	104.218	103.391	102.425	101.492	100.660	100.084
7/20/2007	7/20/2017	10/20/2016	4.290	104.218	104.218	104.218	103.391	102.425	101.492	100.660	100.084
7/27/2007	7/27/2017	10/27/2016	4.250	104.262	104.262	104.262	103.414	102.430	101.480	100.639	100.061
7/27/2007	7/27/2017	10/27/2016	4.250	104.262	104.262	104.262	103.414	102.430	101.480	100.639	100.061
7/30/2007	1/30/2019	10/31/2016	3.990	110.118	110.118	110.118	107.567	105.131	102.943	101.196	100.182
7/31/2007	7/31/2017	10/31/2016	3.990	104.045	104.045	104.045	103.188	102.196	101.252	100.455	100.026
7/31/2007	7/31/2017	10/31/2016	3.990	104.045	104.045	104.045	103.188	102.196	101.252	100.455	100.026
7/31/2007	7/31/2017	10/31/2016	4.060	104.116	104.116	104.116	103.258	102.266	101.317	100.505	100.044
8/2/2007	8/2/2017	11/2/2016	4.050	104.128	104.128	104.128	103.265	102.267	101.318	100.515	100.051
8/2/2007	8/2/2017	11/2/2016	4.050	104.128	104.128	104.128	103.265	102.267	101.318	100.515	100.051
8/9/2007	8/9/2017	8/9/2016	3.990	104.145	104.145	104.145	103.261	102.244	101.278	100.471	100.027
8/16/2007	8/16/2017	8/16/2016	3.990	104.222	104.222	104.222	103.319	102.281	101.295	100.469	100.020
8/16/2007	8/16/2017	8/16/2016	3.990	104.222	104.222	104.222	103.319	102.281	101.295	100.469	100.020
8/17/2007	8/17/2017	8/17/2016	4.000	104.244	104.244	104.244	103.338	102.297	101.307	100.476	100.021
9/4/2007	9/5/2017	9/6/2016	3.890	104.333	104.333	104.333	103.373	102.280	101.254	100.418	99.996
9/10/2007	9/11/2017	9/12/2016	3.690	104.171	104.171	104.171	103.196	102.092	101.073	100.295	99.943
9/11/2007	9/11/2017	9/12/2016	3.590	104.058	104.058	104.058	103.083	101.983	100.976	100.236	99.925
9/13/2007	9/13/2017	9/13/2016	3.990	104.533	104.533	104.533	103.549	102.432	101.375	100.495	100.012
9/27/2007	9/27/2017	9/27/2016	3.650	104.288	104.288	104.288	103.268	102.120	101.064	100.271	99.904
10/11/2007	10/11/2017	10/11/2016	3.990	104.843	104.843	104.843	103.780	102.588	101.464	100.541	99.997
10/15/2007	10/16/2017	10/17/2016	3.990	104.899	104.899	104.899	103.822	102.615	101.478	100.543	99.988
10/26/2007	10/26/2017	10/26/2016	3.390	104.256	104.256	104.256	103.156	101.946	100.873	100.139	99.777
11/5/2007	11/6/2017	8/5/2016	4.390	105.646	105.646	105.646	104.506	103.235	102.016	100.944	100.186
11/6/2007	11/6/2017	8/8/2016	3.480	104.475	104.475	104.475	103.344	102.103	100.997	100.207	99.983

As of: 7/31/2016 Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
11/19/2007	11/20/2017	11/19/2012	4.290	105.684	105.684	105.684	104.505	103.191	101.900	100.631	99.384
11/20/2007	11/20/2017	8/22/2016	3.740	104.955	104.955	104.955	103.781	102.489	101.299	100.375	99.970
11/23/2007	11/24/2017	11/23/2011	3.990	105.331	105.331	105.331	104.143	102.821	101.521	100.244	98.989
11/23/2007	11/24/2017	11/23/2011	3.990	105.331	105.331	105.331	104.143	102.821	101.521	100.244	98.989
11/29/2007	11/29/2017	8/29/2016	2.950	103.982	103.982	103.982	102.795	101.534	100.511	99.994	99.897
11/30/2007	11/30/2017	8/30/2016	3.190	104.315	104.315	104.315	103.120	101.833	100.732	100.080	99.913
12/10/2007	12/11/2017	9/12/2016	3.450	104.772	104.772	104.772	103.543	102.212	101.033	100.217	99.907
12/24/2007	12/26/2017	12/24/2012	3.990	105.685	105.685	105.685	104.406	102.997	101.613	100.255	98.920
1/7/2008	1/8/2018	10/7/2016	2.590	103.784	103.784	103.784	102.502	101.217	100.300	99.875	99.671
1/8/2008	1/8/2018	10/11/2016	2.570	103.755	103.755	103.755	102.473	101.193	100.283	99.860	99.647
1/8/2008	1/8/2018	10/11/2016	2.640	103.857	103.857	103.857	102.572	101.277	100.333	99.880	99.661
1/11/2008	1/11/2018	10/11/2016	2.720	103.997	103.997	103.997	102.700	101.382	100.394	99.904	99.677
1/14/2008	1/16/2018	10/14/2016	3.240	104.806	104.806	104.806	103.479	102.075	100.876	100.114	99.779
1/16/2008	1/16/2018	10/17/2016	2.380	103.530	103.530	103.530	102.237	100.985	100.158	99.794	99.575
1/17/2008	1/17/2018	10/17/2016	2.250	103.343	103.343	103.343	102.059	100.842	100.087	99.762	99.547
1/18/2008	1/18/2018	10/18/2016	2.290	103.409	103.409	103.409	102.118	100.887	100.107	99.769	99.550
2/14/2008	2/14/2018	2/14/2012	3.190	104.988	104.988	104.988	103.573	102.034	100.526	99.047	97.597
3/7/2008	3/7/2018	9/7/2016	3.550	105.758	105.758	105.758	104.284	102.724	101.342	100.350	99.943
3/14/2008	3/14/2018	9/14/2016	2.400	103.940	103.940	103.940	102.495	101.117	100.206	99.890	99.764
3/17/2008	3/19/2018	9/19/2016	3.300	105.463	105.463	105.463	103.959	102.391	101.048	100.177	99.865
4/28/2008	4/30/2018	10/28/2016	2.150	103.810	103.810	103.810	102.263	100.876	100.052	99.701	99.457
4/30/2008	4/30/2018	4/30/2013	3.740	106.628	106.628	106.628	104.985	103.229	101.511	99.829	98.183
5/23/2008	5/23/2018	8/23/2016	3.270	106.004	106.004	106.004	104.310	102.586	101.124	100.187	99.939
6/30/2008	7/2/2018	6/30/2011	3.690	107.185	107.185	107.185	105.348	103.420	101.536	99.696	97.898
7/11/2008	7/11/2018	7/11/2012	3.750	107.395	107.395	107.395	105.529	103.575	101.667	99.803	97.984
7/14/2008	7/16/2018	10/14/2016	2.500	104.965	104.965	104.965	103.165	101.503	100.357	99.847	99.617
7/14/2008	7/16/2018	10/14/2016	3.250	106.454	106.454	106.454	104.599	102.752	101.203	100.209	99.789
7/17/2008	7/17/2018	10/14/2016	3.750	107.458	107.458	107.458	105.572	103.602	101.678	99.800	97.966
8/15/2008	8/15/2018	8/15/2016	3.830	107.925	107.925	107.925	105.952	103.957	102.163	100.771	100.057
12/27/2011	12/27/2021	12/29/2014	3.550	119.474	119.474	117.249	111.575	106.207	101.136	96.343	91.812
5/15/2012	5/15/2017	11/17/2014	1.950	101.560	101.560	101.560	100.928	100.147	99.378	98.621	97.875
6/20/2012	6/20/2017	6/22/2015	1.630	101.467	101.467	101.467	100.734	99.859	98.999	98.154	97.323
7/16/2012	7/17/2017	7/16/2014	1.720	101.677	101.677	101.677	100.868	99.921	98.992	98.080	97.186
7/18/2012	7/18/2018	7/20/2015	2.720	105.417	105.417	105.417	103.546	101.593	99.687	97.827	96.010
7/19/2012	7/19/2017	7/21/2014	1.690	101.657	101.657	101.657	100.842	99.891	98.957	98.041	97.141
10/1/2012	10/1/2019	4/1/2015	2.250	107.230	107.230	107.001	103.782	100.670	97.668	94.771	91.974
10/5/2012	10/5/2017	10/6/2014	1.630	101.951	101.951	101.951	100.919	99.752	98.604	97.474	96.362
3/8/2013	3/8/2018	3/9/2015	1.780	102.892	102.892	102.892	101.429	99.846	98.295	96.775	95.286
5/7/2014	5/7/2018	5/7/2015	1.760	103.153	103.153	103.153	101.517	99.773	98.068	96.400	94.767
10/16/2014	10/16/2018	10/17/2016	0.459	105.127	105.127	105.127	102.968	100.907	99.734	99.379	99.167
10/24/2014	10/24/2018	10/26/2015	1.740	103.939	103.939	103.939	101.770	99.579	97.446	95.368	93.345
10/24/2014	10/24/2018	10/26/2015	1.740	103.939	103.939	103.939	101.770	99.579	97.446	95.368	93.345
2/20/2015	2/20/2019	2/22/2016	1.790	104.643	104.643	104.643	102.068	99.560	97.126	94.764	92.471
3/26/2015	3/26/2019	3/29/2016	1.610	104.328	104.328	104.305	101.637	99.046	96.533	94.096	91.733
3/26/2015	3/26/2020	3/29/2016	1.590	105.891	105.891	105.370	101.699	98.171	94.783	91.529	88.404
6/29/2015	7/1/2019	6/29/2017	0.347	105.558	105.558	105.443	103.122	101.312	100.131	99.547	99.281
7/30/2015	7/30/2019	8/1/2016	0.347	105.465	105.465	105.316	102.294	100.126	99.995	99.992	99.989
8/14/2015	8/14/2025	8/14/2020	1.850	116.961	116.961	111.534	105.452	100.319	95.861	91.889	88.262
8/19/2015	8/19/2025	8/21/2017	0.990	109.089	109.089	105.721	102.088	99.780	98.268	97.123	96.107
8/25/2015	8/25/2020	8/25/2017	0.950	103.920	103.920	103.472	101.045	99.360	98.100	97.025	96.014
8/26/2015	8/26/2025	8/26/2020	1.750	116.102	116.102	110.801	104.815	99.749	95.334	91.384	87.764
9/14/2015	9/14/2020	9/14/2017	1.050	104.391	104.391	103.890	101.324	99.500	98.131	96.978	95.905
9/15/2015	9/16/2019	9/15/2016	0.323	105.408	105.408	105.198	102.064	100.109	99.781	99.657	99.533
9/18/2015	9/18/2020	9/18/2017	1.090	104.571	104.571	104.052	101.430	99.561	98.164	96.994	95.909
9/29/2015	9/30/2019	9/29/2016	0.307	104.952	104.952	104.725	101.568	99.928	99.657	99.494	99.332
10/2/2015	10/2/2020	10/2/2017	0.890	103.767	103.767	103.302	100.910	99.178	97.826	96.648	95.535
10/2/2015	10/2/2025	10/2/2020	1.690	115.724	115.724	110.431	104.443	99.350	94.889	90.882	87.203
11/6/2015	11/6/2020	11/6/2017	1.050	104.546	104.546	103.987	101.338	99.392	97.879	96.582	95.375

As of: **7/31/2016** Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
11/6/2015	11/7/2022	11/6/2018	1.400	108.904	108.904	106.905	102.903	99.695	97.022	94.685	92.545
12/4/2015	12/4/2025	12/4/2018	1.360	112.891	112.891	108.355	103.566	99.899	96.959	94.462	92.220
12/8/2015	12/8/2020	12/8/2016	0.201	105.507	105.507	104.803	102.012	100.412	99.780	99.596	99.492
12/11/2015	12/12/2022	12/11/2017	0.166	109.500	109.500	106.920	103.389	101.102	99.651	98.779	98.236
12/15/2015	12/16/2019	12/15/2016	0.403	104.220	104.220	103.966	101.640	100.309	99.784	99.606	99.485
12/15/2015	12/15/2022	12/15/2017	0.153	109.480	109.480	106.888	103.372	101.155	99.850	99.180	98.860
12/18/2015	12/18/2020	12/18/2017	0.397	106.559	106.559	105.646	102.964	101.187	100.072	99.460	99.146
12/24/2015	12/24/2020	12/26/2017	1.250	105.579	105.579	104.886	101.923	99.700	97.968	96.503	95.160
12/24/2015	12/24/2025	12/24/2020	1.990	118.974	118.974	112.804	106.289	100.759	95.943	91.648	87.735
1/8/2016	1/8/2019	1/9/2017	1.120	102.771	102.771	102.771	101.024	99.960	99.365	98.917	98.489
1/12/2016	1/13/2020	1/12/2017	0.067	105.553	105.553	105.222	102.527	100.657	99.649	99.235	99.017
1/19/2016	1/19/2021	1/19/2018	1.150	105.215	105.215	104.524	101.630	99.438	97.694	96.190	94.796
1/19/2016	1/20/2026	1/22/2019	1.350	112.972	112.972	108.333	103.385	99.490	96.270	93.471	90.929
1/22/2016	1/22/2020	1/23/2017	0.102	104.305	104.305	103.996	101.577	100.103	99.420	99.117	98.896
1/29/2016	1/29/2021	1/30/2017	0.152	105.641	105.641	104.839	101.954	100.217	99.410	99.063	98.820
2/2/2016	2/2/2021	2/2/2018	0.037	105.843	105.843	104.849	102.311	100.722	99.778	99.311	99.127
2/17/2016	2/17/2021	2/17/2017	0.028	103.224	103.224	102.627	100.665	99.875	99.650	99.590	99.553
2/26/2016	2/26/2020	2/27/2017	0.065	103.494	103.494	103.178	101.082	100.016	99.621	99.499	99.432
2/26/2016	2/26/2021	2/26/2018	0.890	104.130	104.130	103.512	100.836	98.761	97.032	95.477	94.005
2/26/2016	2/26/2026	2/26/2021	1.490	114.471	114.471	109.051	102.994	97.769	93.131	88.919	85.026
3/8/2016	3/8/2023	3/8/2018	0.990	106.629	106.629	104.869	101.574	99.142	97.227	95.583	94.064
3/18/2016	3/18/2020	3/20/2017	0.047	104.633	104.633	104.241	101.800	100.306	99.570	99.276	99.120
4/5/2016	4/5/2021	4/2/2018	0.990	104.699	104.699	103.388	98.968	98.506	96.895	95.317	93.772
4/8/2016	4/8/2020	4/10/2017	0.061	103.417	103.417	103.054	100.970	99.844	99.323	99.067	98.879
4/12/2016	4/12/2021	4/12/2017	0.067	103.687	103.687	102.971	100.803	99.738	99.272	99.031	98.838
4/28/2016	4/28/2020	4/28/2017	0.143	104.024	104.024	103.603	101.282	99.922	99.238	98.893	98.646
4/28/2016	4/28/2021	4/28/2017	0.143	105.007	105.007	104.119	101.463	99.966	99.244	98.893	98.646
4/28/2016	4/28/2021	4/30/2018	0.143	105.995	105.995	104.618	101.746	99.945	98.906	98.339	97.999
5/2/2016	5/2/2023	5/4/2018	0.037	107.508	107.508	104.815	101.937	100.334	99.478	99.089	98.947
5/2/2016	5/4/2026	5/2/2017	0.037	107.674	107.605	104.152	101.312	100.070	99.659	99.575	99.572
5/5/2016	5/5/2021	5/7/2018	0.890	104.298	104.298	103.609	100.817	98.575	96.661	94.926	93.283
5/5/2016	5/5/2026	5/5/2021	1.490	114.753	114.662	109.106	102.904	97.530	92.748	88.401	84.385
5/6/2016	5/6/2026	5/8/2017	0.034	106.391	106.330	103.328	100.870	99.883	99.579	99.514	99.501
5/6/2016	5/6/2026	5/8/2017	0.341	106.396	106.335	103.333	100.875	99.888	99.584	99.520	99.506
5/10/2016	5/11/2026	5/10/2017	0.490	104.858	104.812	102.729	100.451	99.156	98.277	97.518	96.787
5/12/2016	5/12/2026	5/12/2017	0.490	104.859	104.813	102.728	100.446	99.147	98.264	97.500	96.765
5/13/2016	5/13/2026	5/15/2017	0.027	106.757	106.689	103.538	100.961	99.889	99.538	99.447	99.414
5/17/2016	5/17/2021	5/17/2018	0.028	105.392	105.392	103.971	101.381	99.923	99.181	98.862	98.738
5/20/2016	5/20/2026	5/22/2017	0.590	105.865	105.809	103.338	100.731	99.252	98.292	97.493	96.732
6/3/2016	6/3/2026	6/5/2017	0.031	107.271	107.190	103.832	101.088	99.855	99.381	99.209	99.115
6/6/2016	6/8/2020	6/6/2017	0.030	104.452	104.452	103.951	101.592	100.210	99.513	99.228	99.101
6/6/2016	6/6/2031	6/6/2017	0.590	108.884	107.242	103.974	100.952	99.207	98.075	97.156	96.296
6/8/2016	6/8/2026	6/8/2017	0.590	105.896	105.836	103.361	100.742	99.211	98.192	97.345	96.543
6/14/2016	6/16/2031	6/14/2017	0.490	107.391	105.994	103.211	100.576	99.069	98.059	97.204	96.389
6/16/2016	6/16/2020	6/16/2017	0.005	104.227	104.227	103.549	100.909	99.694	99.253	99.079	98.961
6/16/2016	6/16/2026	6/18/2018	0.690	106.911	106.840	103.986	100.663	98.150	96.080	94.230	92.490
6/16/2016	6/16/2031	6/16/2021	1.210	118.257	115.196	108.590	101.853	96.202	91.270	86.835	82.762
6/24/2016	6/24/2026	6/26/2017	0.590	105.922	105.860	103.343	100.697	99.133	98.075	97.185	96.340
6/27/2016	6/27/2031	6/27/2018	0.690	110.430	108.519	104.711	100.948	98.226	96.059	94.163	92.394
6/27/2016	6/27/2031	6/27/2019	0.910	113.757	111.329	106.465	101.543	97.712	94.509	91.669	89.045
6/30/2016	6/30/2020	6/30/2017	0.031	104.086	104.086	103.381	100.781	99.612	99.174	98.973	98.818
6/30/2016	6/30/2021	6/30/2017	0.590	102.941	102.941	102.378	100.351	99.028	98.033	97.148	96.295
7/8/2016	7/8/2026	7/10/2017	0.450	104.534	104.463	102.503	100.268	98.872	97.842	96.931	96.056
7/14/2016	7/14/2021	7/14/2017	0.023	104.020	104.020	103.110	100.840	99.662	99.094	98.805	98.602
7/22/2016	7/22/2026	7/24/2017	0.550	105.563	105.461	103.105	100.545	98.975	97.862	96.905	95.996
7/22/2016	7/22/2026	7/24/2017	0.550	105.563	105.461	103.105	100.545	98.975	97.862	96.905	95.996
7/28/2016	7/28/2026	7/30/2018	0.043	109.644	109.440	104.533	101.340	99.556	98.557	97.999	97.655
8/1/2016	8/1/2031	8/1/2017	0.490	107.452	106.008	103.240	100.547	98.910	97.757	96.775	95.846