

HLB Option 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
3/7/2008	3/7/2018	12/7/2017	3.55000	100.95641	100.95641	100.79160	100.52646	100.26336	100.00218	99.98337	99.96465
3/14/2008	3/14/2018	12/14/2017	2.40000	100.69321	100.69321	100.51372	100.23004	99.99750	99.95972	99.92213	99.88474
3/17/2008	3/19/2018	12/18/2017	3.30000	100.99904	100.99904	100.80831	100.51050	100.21504	99.99312	99.94479	99.89671
12/24/2015	12/24/2020	12/26/2017	1.25000	103.88820	102.89744	100.71445	99.98232	99.91146	99.84100	99.77093	99.70125
7/14/2008	7/16/2018	1/16/2018	2.50000	101.58312	101.58312	101.09076	100.46952	100.00268	99.87522	99.74857	99.62269
7/14/2008	7/16/2018	1/16/2018	3.25000	102.05812	102.05812	101.56459	100.94169	100.32590	99.97279	99.84604	99.72007
1/19/2016	1/19/2021	1/19/2018	1.15000	103.66014	102.65645	100.56420	99.94953	99.81300	99.67741	99.54250	99.40852
1/20/2017	1/20/2032	1/22/2018	0.93000	109.95417	104.65126	101.06631	99.91886	99.76949	99.62591	99.48304	99.34116
4/28/2008	4/30/2018	1/29/2018	2.15000	100.90167	100.90167	100.61327	100.20184	99.94457	99.78417	99.62490	99.46661
7/30/2007	1/30/2019	1/30/2018	3.99000	104.72117	104.72055	103.57416	102.40616	101.25813	100.23662	99.92844	99.76714
8/15/2008	8/15/2018	2/15/2018	3.83000	102.74461	102.74461	102.16324	101.45680	100.75873	100.10253	99.86455	99.66028
5/23/2008	5/23/2018	2/23/2018	3.27000	101.58034	101.58034	101.23309	100.75767	100.28682	99.94387	99.71695	99.49177
2/26/2016	2/26/2021	2/26/2018	0.89000	102.92640	101.97579	100.23571	99.83327	99.59561	99.35960	99.12546	98.89294
3/8/2016	3/8/2023	3/8/2018	0.99000	105.29001	103.07574	100.57158	99.83729	99.57166	99.30862	99.04763	98.78862
3/20/2017	3/22/2032	3/20/2018	1.04000	111.29945	105.44644	101.43692	99.88159	99.52806	99.23292	98.94003	98.64944
4/13/2017	4/13/2032	4/13/2018	0.99000	110.72494	105.09465	101.26435	99.81039	99.40048	99.04384	98.69006	98.33925
5/5/2016	5/5/2021	5/7/2018	0.89000	103.09445	102.04236	100.24105	99.65721	99.23226	98.81115	98.39393	97.98048
5/8/2016	5/10/2027	5/8/2018	1.30000	111.35626	105.97083	101.87949	99.97160	99.40729	98.98261	98.56234	98.14589
5/8/2017	5/10/2032	5/8/2018	1.15000	112.60795	106.27804	101.86364	99.91304	99.34180	98.91697	98.49687	98.08058
5/22/2017	5/24/2027	5/22/2018	1.09000	109.50642	104.71554	101.19746	99.76370	99.24581	98.78463	98.32794	97.87557
6/1/2017	6/7/2032	6/5/2018	0.99000	110.78600	105.11602	101.26903	99.70667	99.12310	98.62424	98.13081	97.64224
6/2/2017	6/7/2032	6/5/2018	0.99000	110.78622	105.11903	101.27094	99.70681	99.12310	98.62424	98.13081	97.64224
6/5/2017	6/7/2032	6/5/2018	0.99000	110.78763	105.11833	101.27580	99.70837	99.12313	98.62424	98.13081	97.64224
6/16/2016	6/16/2026	6/18/2018	0.69000	105.64570	102.43125	100.23136	99.43046	98.88808	98.35589	97.82915	97.30778
6/27/2016	6/27/2031	6/27/2018	0.69000	107.10165	103.01126	100.37582	99.41248	98.83986	98.28643	97.73883	97.19692
8/11/2016	8/11/2026	8/13/2018	0.81000	106.68544	103.02339	100.42511	99.33170	98.62839	97.95138	97.28240	96.62123
9/9/2016	9/9/2026	9/10/2018	0.80000	106.65019	102.98812	100.39206	99.23477	98.45705	97.70941	96.97124	96.24221
9/22/2016	9/22/2031	9/24/2018	0.65000	106.73744	102.79847	100.22939	99.06199	98.24646	97.46264	96.68916	95.92554
11/6/2015	11/7/2022	11/6/2018	1.40000	107.01060	104.60552	101.39580	99.65597	98.65917	97.75974	96.87439	96.00135
12/4/2015	12/4/2025	12/4/2018	1.36000	110.78339	105.81584	101.87421	99.69557	98.50232	97.52422	96.57110	95.63206
1/13/2017	1/13/2027	1/14/2019	1.31000	111.22120	105.92403	101.84306	99.55595	98.23844	97.15145	96.09602	95.05749
1/19/2016	1/20/2026	1/22/2019	1.35000	110.79388	105.80401	101.83787	99.57212	98.24174	97.13500	96.05978	95.00194
3/7/2017	3/8/2027	3/7/2019	1.50000	113.02903	107.16906	102.57833	99.82917	98.22818	96.98456	95.80087	94.63871
3/20/2017	3/20/2024	3/20/2019	1.55000	109.91006	106.07546	102.16302	99.72163	98.20876	96.95162	95.73690	94.54384
4/13/2017	4/15/2024	4/15/2019	1.45000	109.37534	105.59545	101.82890	99.47878	97.94110	96.62549	95.35001	94.09804
4/28/2017	4/28/2022	4/29/2019	1.59000	107.11001	105.02458	101.74387	99.56326	98.05523	96.71165	95.40164	94.11589
6/14/2017	6/14/2022	6/14/2019	1.59000	107.31757	105.12603	101.76215	99.46361	97.82227	96.36069	94.93968	93.54681
6/27/2016	6/27/2031	6/27/2019	0.91000	109.49402	104.37463	100.64202	98.36582	96.70952	95.22108	93.77871	92.36596
6/27/2017	6/27/2022	6/27/2019	1.60000	107.42129	105.19518	101.79687	99.46025	97.77954	96.28598	94.83563	93.41453
7/14/2017	7/14/2022	7/15/2019	1.62000	107.59049	105.31467	101.86019	99.45812	97.72227	96.18308	94.69010	93.22798
7/24/2017	7/25/2022	7/24/2019	1.63000	107.68713	105.37970	101.89473	99.45955	97.69138	96.12766	94.61261	93.12933
7/28/2017	7/28/2022	7/29/2019	1.60000	107.55895	105.26010	101.80133	99.38440	97.61571	96.04154	94.51524	93.02110
8/11/2017	8/11/2022	8/12/2019	1.59000	107.57353	105.24735	101.77295	99.33150	97.52819	95.91976	94.36091	92.83550
8/25/2017	8/25/2022	8/26/2019	1.55000	107.44325	105.10632	101.65275	99.21236	97.38336	95.74133	94.14979	92.59298
9/5/2017	9/6/2022	9/5/2019	1.55000	107.49491	105.12880	101.65272	99.18736	97.33143	95.66472	94.04998	92.47094
9/12/2017	9/12/2022	9/12/2019	1.49000	107.22958	104.88605	101.46956	99.04492	97.19271	95.51364	93.88524	92.29305
9/15/2016	9/15/2026	9/16/2019	0.99000	108.27009	103.95785	100.46368	98.12092	96.28591	94.60574	92.97573	91.38246
9/18/2017	9/19/2022	9/18/2019	1.62000	107.89194	105.45556	101.88000	99.31594	97.39798	95.69562	94.05099	92.44349
9/22/2017	9/22/2022	9/23/2019	1.65000	108.05185	105.59253	101.97650	99.37215	97.42825	95.71144	94.05463	92.43559
10/10/2017	10/11/2022	10/10/2019	1.75000	108.63226	106.07170	102.31367	99.56799	97.53416	95.76350	94.06429	92.40534
10/23/2017	10/24/2022	10/23/2019	1.79000	108.89423	106.27910	102.45752	99.64139	97.55233	95.74476	94.01459	92.32633
11/6/2017	11/7/2022	11/6/2019	1.82000	109.11409	106.44708	102.56951	99.69229	97.54750	95.69912	93.93499	92.21475
11/17/2017	11/17/2022	11/18/2019	1.88000	109.46680	106.74404	102.78799	99.82433	97.61746	95.73121	93.93783	92.19022
12/4/2017	12/5/2022	12/4/2019	2.00000	110.14900	107.34596	103.27970	100.16902	97.83558	95.88541	94.05829	92.28354
8/14/2015	8/14/2025	8/14/2020	1.85000	114.33244	108.52337	103.47088	99.59266	96.52347	93.90299	91.48288	89.16364
8/26/2015	8/26/2025	8/26/2020	1.75000	113.59723	107.92861	103.00063	99.20669	96.17768	93.55540	91.11863	88.77960
10/2/2015	10/2/2025	10/2/2020	1.69000	113.24390	107.61215	102.71262	98.90917	95.83461	93.14200	90.63108	88.22118
12/24/2015	12/24/2025	12/24/2020	1.99000	115.92247	109.65830	104.20228	99.91023	96.44178	93.46668	90.74220	88.15152
2/26/2016	2/26/2026	2/26/2021	1.49000	112.02814	106.57883	101.70054	97.78240	94.46266	91.47995	88.67767	85.99299
5/5/2016	5/5/2026	5/5/2021	1.49000	112.18529	106.62862	101.62217	97.55702	94.08686	90.95678	88.01804	85.20814
6/16/2016	6/16/2031	6/16/2021	1.21000	112.83257	106.24837	100.76326	96.48803	92.90052	89.68738	86.67932	83.80739

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
1/17/2008	12/6/2017	12/6/2017	2.25000	100.03750	100.03750	100.02908	100.01271	99.99643	99.98023	99.96411	99.94807
12/24/2007	12/26/2017	12/26/2017	3.99000	100.28809	100.28809	100.25160	100.18057	100.10994	100.03971	99.96987	99.90043
1/7/2008	1/8/2018	1/8/2018	2.59000	100.28046	100.28046	100.22490	100.11845	100.01264	99.90750	99.80291	99.69897
1/11/2008	1/11/2018	1/11/2018	2.72000	100.31721	100.31721	100.25687	100.14222	100.02827	99.91505	99.80244	99.69053
1/14/2008	1/16/2018	1/16/2018	3.24000	100.42288	100.42288	100.35411	100.22575	100.09819	99.97143	99.84542	99.72020
1/16/2008	1/16/2018	1/16/2018	2.38000	100.31060	100.31060	100.24190	100.11365	99.98620	99.85955	99.73365	99.60854
1/17/2008	1/17/2018	1/17/2018	2.25000	100.29988	100.29988	100.22950	100.09855	99.96840	99.83908	99.71054	99.58280
1/18/2008	1/18/2018	1/18/2018	2.29000	100.31157	100.31157	100.23952	100.10583	99.97297	99.84096	99.70974	99.57935
2/14/2008	2/14/2018	2/24/2012	3.19000	100.67332	100.67332	100.55153	100.34394	100.13781	99.93308	99.72982	99.52794
4/30/2008	4/30/2018	4/30/2013	3.74000	101.56859	101.56859	101.27914	100.86607	100.45670	100.05102	99.64895	99.25046
6/30/2008	7/2/2018	6/30/2011	3.69000	102.19330	102.19330	101.73832	101.15276	100.57346	100.00032	99.43325	98.87215
7/11/2008	7/11/2018	7/11/2012	3.75000	102.32271	102.32271	101.84240	101.23194	100.62815	100.03093	99.44017	98.85578
7/17/2008	7/17/2018	7/17/2013	3.75000	102.38520	102.38520	101.88806	101.26131	100.64151	100.02855	99.42232	98.82271
12/10/2007	12/11/2017	12/11/2017	3.45000	100.10541	100.10541	100.08997	100.05995	100.03009	100.00039	99.97084	99.94144
1/8/2008	1/8/2018	1/8/2018	2.57000	100.27830	100.27830	100.22273	100.11628	100.01048	99.90534	99.80075	99.69682
1/8/2008	1/8/2018	1/8/2018	2.64000	100.28588	100.28588	100.23031	100.12386	100.01804	99.91290	99.80830	99.70436
6/6/2016	6/8/2020	12/6/2017	1.62000	104.14396	103.40130	101.20056	100.02239	99.98591	99.96970	99.95358	99.93754
12/8/2015	12/8/2020	12/8/2017	1.38000	104.23132	103.23778	100.93310	99.99761	99.97589	99.95429	99.93280	99.91141
12/11/2015	12/12/2022	12/11/2017	0.82722	110.12358	107.30860	103.30037	100.65372	99.95006	99.92038	99.89085	99.86147
12/15/2015	12/15/2022	12/15/2017	0.82000	110.13113	107.30772	103.29587	100.64707	99.93576	99.89530	99.85504	99.81500
12/18/2015	12/18/2020	12/18/2017	1.07111	106.87866	105.77908	102.88827	100.69202	99.93660	99.88804	99.83975	99.79171
3/18/2016	3/18/2020	12/18/2017	1.62000	103.77496	103.16553	101.13099	100.01647	99.95777	99.90920	99.86088	99.81282
9/16/2016	9/16/2021	12/18/2017	1.32000	105.08117	103.57599	100.95966	99.99164	99.94281	99.89425	99.84595	99.79790
1/12/2016	1/13/2020	1/12/2018	1.87000	104.01997	103.51043	101.51236	100.15995	99.92714	99.81051	99.69458	99.57935
1/13/2017	1/16/2022	1/16/2018	0.33861	108.45233	106.44593	102.91430	100.51175	99.82440	99.78102	99.73802	99.69538
2/2/2016	2/2/2021	2/2/2018	0.78122	106.65905	105.46684	102.57487	100.50394	99.89218	99.88875	99.88587	99.88320
2/17/2017	2/20/2022	2/20/2018	0.42190	108.98300	106.85731	103.20698	100.64026	99.72231	99.66428	99.61246	99.56129
3/7/2017	3/7/2022	3/7/2018	0.31722	109.09121	106.91669	103.24986	100.67420	99.71996	99.68788	99.67094	99.65450
3/27/2017	3/29/2021	3/27/2018	0.17972	107.38589	106.05868	103.00631	100.64269	99.56517	99.46454	99.39363	99.32349
3/31/2017	3/31/2022	4/2/2018	0.33500	108.65161	106.42464	102.82466	100.36859	99.53683	99.51691	99.50968	99.50253
4/10/2017	4/11/2022	4/10/2018	0.35028	108.40124	106.16797	102.60590	100.28350	99.60411	99.57443	99.55193	99.53002
4/13/2017	4/13/2022	4/13/2018	0.35861	108.24122	106.01219	102.48070	100.21456	99.58899	99.55337	99.52290	99.49309
4/28/2016	4/30/2021	4/30/2018	0.77796	106.75201	105.33695	102.13707	99.84747	99.65466	99.57700	99.50014	99.42423
4/28/2017	4/30/2021	4/30/2018	0.37796	106.88867	105.49421	102.49010	100.30746	99.50005	99.41065	99.33420	99.25869
5/2/2016	5/4/2023	5/4/2018	0.78122	108.32829	105.28409	101.73764	99.96280	99.71862	99.71090	99.70429	99.69836
5/17/2016	5/17/2021	5/17/2018	0.82190	106.24153	104.78611	101.61266	99.75302	99.65651	99.61358	99.57153	99.53035
5/19/2017	5/21/2022	5/21/2018	0.43567	108.12878	105.80488	102.28833	100.07869	99.45870	99.39594	99.34374	99.29245
5/22/2017	5/24/2021	5/22/2018	0.44594	106.33922	104.89924	101.97635	100.01167	99.44175	99.38054	99.32557	99.27150
6/5/2017	6/6/2022	6/5/2018	0.31611	107.94166	105.58255	102.11591	100.00620	99.45554	99.43341	99.42416	99.41570
6/22/2017	6/22/2022	6/22/2018	0.32306	108.12555	105.71316	102.20259	100.01165	99.36867	99.29508	99.24029	99.18658
6/27/2017	6/27/2022	6/27/2018	0.32972	107.93014	105.51958	102.04799	99.93079	99.34349	99.26259	99.19673	99.13199
7/3/2017	7/6/2021	7/3/2018	0.33389	106.57145	105.01521	102.07127	100.05622	99.38738	99.36309	99.36199	99.36169
7/3/2017	7/3/2020	7/3/2018	0.33389	104.71369	103.90391	101.74412	100.09412	99.40352	99.37548	99.37463	99.37465
7/14/2017	7/16/2022	7/16/2018	0.05917	108.53314	106.01102	102.39025	100.00280	99.16009	99.07814	99.04287	99.00877
7/21/2017	7/23/2022	7/23/2018	0.06250	108.53780	105.99640	102.37081	99.97487	99.11685	99.01310	98.95889	98.90600
7/28/2016	7/30/2026	7/30/2018	0.67796	109.87814	104.67998	101.10557	99.67814	99.42492	99.34587	99.27150	99.19843
7/28/2017	7/30/2022	7/30/2018	0.07796	108.58328	106.01970	102.38001	99.96044	99.07465	98.94779	98.87464	98.80301
7/28/2017	7/30/2022	7/30/2018	0.37796	108.21678	105.69050	102.16196	99.94947	99.25108	99.14669	99.07297	99.00062
7/31/2017	7/31/2020	7/31/2018	0.33009	104.82017	103.96246	101.75397	100.01715	99.22137	99.10472	99.02852	98.95365
7/31/2017	7/31/2021	7/31/2018	0.33009	106.60349	104.98350	102.01080	99.95069	99.21139	99.10482	99.02861	98.95374
7/31/2017	1/31/2021	7/31/2018	0.33009	105.77290	104.57293	101.95353	100.02401	99.22542	99.10482	99.02857	98.95370
7/31/2017	1/31/2022	7/31/2018	0.33009	107.52528	105.44568	102.16835	99.99512	99.22369	99.10496	99.02864	98.95377
7/31/2017	7/31/2022	7/31/2018	0.33009	108.22497	105.69320	102.15547	99.92661	99.21325	99.10493	99.02867	98.95380
8/1/2017	8/1/2022	8/1/2018	0.07678	108.45597	105.88713	102.28915	99.95189	99.14559	99.09734	99.09734	99.09734
8/1/2017	8/1/2020	8/1/2018	0.07678	104.78757	103.92707	101.74679	100.02245	99.16333	99.09707	99.09707	99.09707
8/11/2017	8/13/2022	8/13/2018	0.41289	107.86159	105.31623	101.87931	99.82606	99.24801	99.19540	99.16776	99.14132
8/17/2017	8/17/2022	8/17/2018	0.12190	108.30004	105.69656	102.12212	99.82369	99.03657	98.94702	98.90905	98.87254
8/18/2017	8/20/2022	8/20/2018	0.43567	107.99309	105.41907	101.95091	99.84401	99.21272	99.13541	99.08879	99.04355
8/25/2017	8/27/2022	8/27/2018	0.46206	107.67944	105.11403	101.71485	99.72322	99.16477	99.07618	99.01071	98.94669
9/12/2017	9/12/2022	9/12/2018	0.31033	107.08442	104.52033	101.28347	99.55344	99.15615	99.11918	99.09708	99.07622
9/22/2017	9/24/2022	9/24/2018	0.32306	107.99456	105.31760	101.86195	99.76675	99.11064	99.01613	98.96131	98.90815

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
10/10/2017	10/11/2022	10/10/2018	0.59861	108.11152	105.38591	101.96536	99.92953	99.31481	99.25486	99.23705	99.22085
10/10/2017	10/11/2022	10/10/2018	0.00861	108.69101	105.88705	102.24754	99.82312	98.86802	98.74783	98.73104	98.71716
10/10/2017	10/11/2022	10/10/2018	0.34861	108.69101	105.88705	102.24754	99.82312	98.86802	98.74783	98.73104	98.71716
10/23/2017	10/24/2022	10/23/2018	0.61250	108.17959	105.41371	101.98286	99.91250	99.25248	99.15376	99.10100	99.05016
10/25/2017	10/25/2022	10/25/2018	0.36742	108.60311	105.78434	102.21414	99.90902	99.05222	98.91564	98.85768	98.80247
11/6/2017	11/7/2022	11/6/2018	0.39139	108.53228	105.67230	102.13450	99.88314	99.06708	98.97703	98.97023	98.96622
11/17/2017	11/19/2022	11/19/2018	0.42190	108.66974	105.76456	102.19857	99.88970	99.01217	98.88069	98.84137	98.80538
12/4/2017	12/4/2022	12/4/2018	0.48738	109.29346	106.31205	102.68783	100.23096	99.13304	98.95443	98.95443	98.95443
1/24/2017	1/24/2024	1/24/2019	0.32476	113.03485	108.41130	104.00526	100.85130	99.14158	98.63692	98.54460	98.49657
4/28/2017	4/29/2024	4/29/2019	0.37796	112.39010	107.39964	103.21941	100.31977	98.81534	98.35098	98.24814	98.19405
6/5/2017	6/5/2024	6/5/2019	0.31611	111.73074	106.63606	102.64535	99.98714	98.69007	98.33998	98.30573	98.30573
7/3/2017	7/3/2022	7/3/2019	0.33389	107.71581	105.10456	102.18218	99.96004	98.67134	98.26921	98.23305	98.23305
1/30/2017	2/1/2027	1/30/2020	0.34796	118.73949	110.13092	104.86915	101.10248	98.83352	97.80656	97.51479	97.50168
10/24/2014	10/24/2018	10/26/2015	1.74000	101.58511	101.58511	100.79325	99.90405	99.02707	98.16208	97.30885	96.46717
7/18/2012	7/18/2018	7/20/2015	2.72000	101.73756	101.73756	101.23919	100.61198	99.99174	99.37836	98.77174	98.17177
10/1/2012	10/1/2019	4/1/2015	2.25000	104.18711	103.85793	102.01389	100.20939	98.44588	96.72224	95.03737	93.39021
3/8/2013	3/8/2018	3/9/2015	1.78000	100.48443	100.48443	100.31798	100.05092	99.78592	99.52287	99.26182	99.00273
5/7/2014	5/7/2018	5/7/2015	1.76000	100.77231	100.77231	100.46682	100.03674	99.61070	99.18852	98.77019	98.35565
10/16/2014	10/16/2018	10/17/2016	2.48000	102.20422	102.20422	101.43554	100.56473	99.70568	98.85819	98.02204	97.19703
2/20/2015	2/20/2019	2/22/2016	1.79000	102.22224	102.22034	101.00898	99.80096	98.61334	97.44567	96.29754	95.16851
3/26/2015	3/26/2019	3/29/2016	1.61000	102.15078	102.12354	100.80508	99.50827	98.23453	96.98328	95.75418	94.54658
3/26/2015	3/26/2020	3/29/2016	1.59000	103.74038	103.10118	100.78807	98.53674	96.34701	94.21691	92.14452	90.12801
6/29/2015	7/1/2019	6/29/2017	2.74000	104.39884	104.22848	102.63162	101.06416	99.52849	98.02384	96.54944	95.10452
7/30/2015	7/30/2019	8/1/2016	1.80000	103.03462	102.81632	101.15161	99.52012	97.92303	96.35947	94.82857	93.32950
9/15/2015	9/16/2019	9/15/2016	1.75000	103.18364	102.88172	101.08683	99.33022	97.61288	95.93374	94.29176	92.68595
9/29/2015	9/30/2019	9/29/2016	1.61000	102.99153	102.66479	100.83404	99.04328	97.29320	95.58271	93.91071	92.27614
1/20/2017	1/22/2024	1/22/2019	0.33261	112.13077	107.60582	103.36119	100.45102	99.01456	98.64680	98.57785	98.53571
4/5/2016	4/5/2021	4/2/2018	0.99000	103.35982	101.54450	100.12882	99.71238	99.30051	98.89235	98.48785	98.08697
12/27/2011	12/27/2021	12/29/2014	3.55000	114.67246	112.56698	108.37892	104.36906	100.53271	96.86151	93.34752	89.98322