

## **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
7/30/2007	1/30/2019	1/30/2018	3.99000	105.05370	105.05370	104.13880	102.88262	101.64828	100.48223	99.95604	99.71380
11/5/2007	11/6/2017	11/6/2017	4.39000	100.07316	100.07316	100.07054	100.05413	100.03780	100.02156	100.00540	99.98932
11/6/2007	11/6/2017	11/6/2017	3.48000	100.05800	100.05800	100.05538	100.03897	100.02265	100.00641	99.99025	99.97418
11/19/2007	11/20/2017	11/20/2017	4.29000	100.23831	100.23831	100.22945	100.17396	100.11877	100.06389	100.00931	99.95502
11/20/2007	11/20/2017	11/20/2017	3.74000	100.20775	100.20775	100.19890	100.14343	100.08826	100.03339	99.97883	99.92455
11/23/2007	11/24/2017	11/24/2017	3.99000	100.26595	100.26595	100.25548	100.18980	100.12448	100.05953	99.99493	99.93070
11/29/2007	11/29/2017	11/29/2017	2.95000	100.23756	100.23756	100.22493	100.14560	100.06672	99.98829	99.91030	99.83276
11/30/2007	11/30/2017	11/30/2017	3.19000	100.26575	100.26575	100.25250	100.16928	100.08652	100.00424	99.92244	99.84110
12/10/2007	12/11/2017	12/11/2017	3.45000	100.39283	100.39283	100.37388	100.26291	100.15256	100.04287	99.93390	99.82547
12/24/2007	12/26/2017	12/26/2017	3.99000	100.62056	100.62056	100.59007	100.43664	100.28419	100.13272	99.98222	99.83273
1/7/2008	1/8/2018	1/8/2018	2.59000	100.49631	100.49631	100.45425	100.26549	100.07801	99.89180	99.70684	99.52314
1/8/2008	1/8/2018	1/8/2018	2.57000	100.49247	100.49247	100.45042	100.26166	100.07418	99.88798	99.70303	99.51933
1/8/2008	1/8/2018	1/8/2018	2.64000	100.50589	100.50589	100.46383	100.27506	100.08756	99.90134	99.71637	99.53266
1/11/2008	1/11/2018	1/11/2018	2.72000	100.54389	100.54389	100.49888	100.30187	100.10622	99.91192	99.71893	99.52727
1/14/2008	1/16/2018	1/16/2018	3.24000	100.69289	100.69289	100.64248	100.43164	100.22227	100.01437	99.80791	99.60290
1/16/2008	1/16/2018	1/16/2018	2.38000	100.50895	100.50895	100.45859	100.24801	100.03891	99.83127	99.62507	99.42031
1/17/2008	1/17/2018	1/17/2018	2.25000	100.48739	100.48739	100.43597	100.22270	100.01092	99.80064	99.59182	99.38447
1/18/2008	1/18/2018	1/18/2018	2.29000	100.50242	100.50242	100.44993	100.23391	100.01941	99.80643	99.59494	99.38493
2/14/2008	2/14/2018	2/24/2012	3.19000	100.93915	100.93915	100.85037	100.56007	100.27204	99.98624	99.70266	99.42127
3/7/2008	3/7/2018	12/7/2017	3.55000	101.25221	101.25221	101.12631	100.77822	100.43305	100.09075	99.94394	99.84429
3/14/2008	3/14/2018	12/14/2017	2.40000	100.89318	100.89318	100.75361	100.38729	100.03601	99.91005	99.79087	99.67228
3/17/2008	3/19/2018	12/18/2017	3.30000	101.27401	101.27401	101.12371	100.74296	100.36552	100.02239	99.89152	99.76217
4/28/2008	4/30/2018	1/29/2018	2.15000	101.08078	101.08078	100.83217	100.33802	99.98299	99.74062	99.50002	99.26117
4/30/2008	4/30/2018	4/30/2013	3.74000	101.88019	101.88019	101.63073	101.13428	100.64284	100.15612	99.67415	99.19684
5/23/2008	5/23/2018	11/24/2017	3.27000	101.85280	101.85280	101.54648	100.98782	100.43498	100.01282	99.94706	99.88286
6/30/2008	7/2/2018	6/30/2011	3.69000	102.50080	102.50080	102.09736	101.42806	100.76645	100.11242	99.46583	98.82657
7/11/2008	7/11/2018	7/11/2012	3.75000	102.63522	102.63522	102.20964	101.51419	100.82691	100.14767	99.47633	98.81277
7/14/2008	7/16/2018	1/16/2018	2.50000	101.79147	101.79147	101.35716	100.65273	100.07192	99.86220	99.65676	99.45261
7/14/2008	7/16/2018	1/16/2018	3.25000	102.32897	102.32897	101.89365	101.18711	100.48941	100.02190	99.81622	99.61185
7/17/2008	7/17/2018	7/17/2013	3.75000	102.69772	102.69772	102.25944	101.54875	100.84651	100.15259	99.46684	98.78913
8/15/2008	8/15/2018	11/15/2017	3.83000	103.06380	103.06380	102.56035	101.76951	100.98869	100.23739	99.99023	99.95007
12/27/2011	12/27/2021	12/29/2014	3.55000	114.96827	114.09245	109.77375	105.62927	101.66748	97.87942	94.25659	90.79098
7/18/2012	7/18/2018	7/20/2015	2.72000	101.96425	101.96425	101.52505	100.81449	100.11240	99.41865	98.73309	98.05560
10/1/2012	10/1/2019	4/1/2015	2.25000	104.37452	104.37455	102.56353	100.66819	98.81745	97.01004	95.24474	93.52036
3/8/2013	3/8/2018	3/9/2015	1.78000	100.63274	100.63274	100.50526	100.15576	99.80920	99.46554	99.12474	98.78677
5/7/2014	5/7/2018	5/7/2015	1.76000	100.91892	100.91892	100.65322	100.14056	99.63326	99.13092	98.63356	98.14110
10/16/2014	10/16/2018	10/17/2016	2.48000	102.41090	102.41090	101.77665	100.82126	99.87965	98.95143	98.03637	97.13429
10/24/2014	10/24/2018	10/26/2015	1.74000	101.73012	101.73012	101.08033	100.10699	99.14796	98.20274	97.27114	96.35290
2/20/2015	2/20/2019	2/22/2016	1.79000	102.37145	102.37145	101.40370	100.10940	98.83801	97.58902	96.36193	95.15625
3/26/2015	3/26/2019	3/29/2016	1.61000	102.28499	102.28499	101.20837	99.82489	98.46713	97.13451	95.82644	94.54236
3/26/2015	3/26/2020	3/29/2016	1.59000	103.87296	103.78538	101.37987	99.03469	96.75560	94.54040	92.38701	90.29340
6/29/2015	7/1/2019	6/29/2017	2.74000	104.62717	104.62717	103.18295	101.52473	99.90153	98.31239	96.75656	95.23306
7/30/2015	7/30/2019	8/1/2016	1.80000	103.18459	103.18459	101.63621	99.91567	98.23290	96.58666	94.97621	93.40053
8/14/2015	8/14/2025	8/14/2020	1.85000	114.61323	110.69585	105.08993	100.72507	97.28150	94.42290	91.86471	89.45368
8/26/2015	8/26/2025	8/26/2020	1.75000	113.88156	110.04481	104.56068	100.29423	96.91036	94.06515	91.49802	89.06962
9/15/2015	9/16/2019	9/15/2016	1.75000	103.32938	103.32942	101.58696	99.74060	97.93700	96.17499	94.45339	92.77109
9/29/2015	9/30/2019	9/29/2016	1.61000	103.12560	103.12564	101.32792	99.44737	97.61110	95.81783	94.06637	92.35553
10/2/2015	10/2/2025	10/2/2020	1.69000	113.57924	109.70881	104.25282	99.98723	96.56823	93.65957	91.01887	88.51763
11/6/2015	11/6/2017	11/6/2017	1.05000	100.01750	100.01750	100.01488	99.99849	99.98218	99.96596	99.94982	99.93376
11/6/2015	11/7/2022	11/6/2018	1.40000	107.12721	105.98563	102.34956	100.09396	98.79663	97.79210	96.82937	95.88143
12/4/2015	12/4/2025	12/4/2018	1.36000	111.16544	107.66505	103.08904	100.27819	98.69435	97.57268	96.53696	95.52093
12/8/2015	12/8/2020	12/8/2017	1.38000	104.34641	104.05637	101.51021	100.08919	99.92035	99.81700	99.71426	99.61213
12/11/2015	12/12/2022	12/11/2017	0.82722	110.08071	108.72002	104.37558	101.30528	99.95740	99.90720	99.87732	99.84772
12/15/2015	12/15/2022	12/15/2017	0.82000	110.08648	108.72104	104.37239	101.29730	99.95000	99.88207	99.84116	99.80046
12/18/2015	12/18/2020	12/18/2017	1.07111	106.85376	106.53065	103.53346	101.15524	99.97187	99.89758	99.84860	99.79985
12/24/2015	12/24/2020	12/26/2017	1.25000	103.99246	103.69803	101.24681	100.03422	99.86232	99.71253	99.56367	99.41593
12/24/2015	12/24/2025	12/24/2020	1.99000	116.44895	111.98620	106.00015	101.22677	97.36907	94.12424	91.23282	88.53441
1/12/2016	1/13/2020	1/12/2018	1.87000	104.17588	104.16531	102.05658	100.43273	99.93896	99.74298	99.54835	99.35494
1/19/2016	1/19/2021	1/19/2018	1.15000	103.75605	103.44566	101.05886	99.99420	99.76899	99.55413	99.34078	99.12894
1/19/2016	1/20/2026	1/22/2019	1.35000	111.25957	107.66139	103.06155	100.19143	98.48805	97.23519	96.07799	94.94532
2/2/2016	2/2/2021	2/2/2018	0.71056	106.60882	106.23381	103.21382	100.94265	99.91829	99.88849	99.88472	99.88134

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
2/26/2016	2/26/2021	2/26/2018	0.89000	103.00062	102.68501	100.59981	99.86213	99.54073	99.22323	98.90830	98.59589
2/26/2016	2/26/2026	2/26/2021	1.49000	112.58053	108.61852	103.22678	98.89492	95.27326	92.09059	89.15838	86.37859
3/8/2016	3/8/2023	3/8/2018	0.99000	105.37235	104.24956	101.21068	99.91590	99.53418	99.19236	98.85339	98.51723
3/18/2016	3/18/2020	12/18/2017	1.62000	103.91004	103.83188	101.65633	100.19391	99.92882	99.79814	99.66836	99.53921
4/5/2016	4/5/2021	4/2/2018	0.99000	103.44230	102.90861	100.52487	99.75572	99.25942	98.77136	98.28809	97.80952
4/28/2016	4/30/2021	4/30/2018	0.77796	106.69282	106.19741	102.90601	100.25122	99.65425	99.57305	99.49551	99.41886
5/2/2016	5/4/2023	5/4/2018	0.71056	108.28508	106.71725	102.72167	100.41885	99.73771	99.69370	99.68107	99.66903
5/5/2016	5/5/2021	5/7/2018	0.89000	103.16864	102.79177	100.62286	99.69391	99.17935	98.67741	98.18045	97.68839
5/5/2016	5/5/2026	5/5/2021	1.49000	112.86176	108.70771	103.19574	98.72451	94.95359	91.62168	88.54889	85.64025
5/17/2016	5/17/2021	5/17/2018	0.71417	106.18762	105.66855	102.38924	100.03838	99.64905	99.60389	99.56111	99.51933
6/6/2016	6/8/2020	12/6/2017	1.62000	104.27902	104.12775	101.76288	100.20857	99.94841	99.85042	99.75302	99.65618
6/16/2016	6/16/2026	6/18/2018	0.69000	106.03566	103.62204	100.76647	99.50581	98.83364	98.22280	97.61950	97.02283
6/16/2016	6/16/2031	6/16/2021	1.21000	115.01703	108.60095	102.50521	97.75387	93.83255	90.39652	87.24498	84.27169
6/27/2016	6/27/2031	6/27/2018	0.69000	108.48529	104.46737	101.07560	99.54053	98.78363	98.14609	97.51944	96.89984
6/27/2016	6/27/2031	6/27/2019	0.91000	111.24648	106.18525	101.75267	98.94858	96.99828	95.36829	93.83790	92.34825
7/28/2016	7/30/2026	7/30/2018	0.67796	110.46041	106.41214	102.14975	100.06942	99.45144	99.32671	99.25068	99.17707
8/11/2016	8/11/2026	8/13/2018	0.81000	107.21164	104.37889	101.10781	99.49719	98.61632	97.85697	97.11174	96.37583
9/9/2016	9/9/2026	9/10/2018	0.80000	107.18703	104.33592	101.07323	99.41953	98.46063	97.62698	96.81010	96.00407
9/15/2016	9/15/2026	9/16/2019	0.99000	108.91087	105.55275	101.46938	98.68655	96.59799	94.78803	93.07238	91.40249
9/16/2016	9/16/2021	12/18/2017	1.32000	105.19116	104.59072	101.62628	100.07632	99.88893	99.75829	99.62856	99.49946
9/22/2016	9/22/2031	9/24/2018	0.65000	108.05115	104.19423	100.91498	99.25577	98.25422	97.38149	96.52927	95.68883
1/13/2017	1/16/2022	1/16/2018	0.33861	108.37530	107.52319	103.76257	101.02703	99.81618	99.74809	99.70701	99.66628
1/13/2017	1/13/2027	1/14/2019	1.31000	112.22833	107.85793	103.10245	100.18274	98.47999	97.24215	96.10435	94.99102
1/20/2017	1/22/2024	1/22/2019	0.33261	112.03919	109.46892	104.75044	101.45141	99.51533	98.79804	98.63632	98.58731
1/20/2017	1/20/2032	1/22/2018	0.93000	111.73133	106.46887	102.08362	100.07556	99.70899	99.48611	99.26488	99.04523
1/24/2017	1/24/2024	1/24/2019	0.32476	112.94177	110.31570	105.45752	101.93857	99.74372	98.83183	98.61010	98.54867
1/30/2017	2/1/2027	1/30/2020	0.34796	120.16314	112.89956	106.92598	102.69783	99.92312	98.42476	97.82004	97.67276
2/17/2017	2/20/2022	2/20/2018	0.31417	108.90757	107.99142	104.11811	101.24082	99.79398	99.63941	99.58688	99.53501
3/7/2017	3/7/2022	3/7/2018	0.31722	109.00688	108.06740	104.17671	101.30056	99.82308	99.67347	99.65830	99.64380
3/7/2017	3/8/2027	3/7/2019	1.50000	114.22716	109.28952	104.03389	100.63131	98.57044	97.12817	95.84921	94.60913
3/20/2017	3/20/2024	3/20/2019	1.55000	110.03926	107.82170	103.37624	100.39582	98.51753	97.10355	95.80371	94.53476
3/20/2017	3/22/2032	3/20/2018	1.04000	113.25850	107.43663	102.61307	100.20557	99.50141	99.12260	98.75184	98.38427
3/27/2017	3/29/2021	3/27/2018	0.17972	107.28218	106.83432	103.66428	101.14281	99.67923	99.43739	99.36815	99.29998
3/31/2017	3/31/2022	4/2/2018	0.33500	108.55518	107.58364	103.74333	100.97077	99.62634	99.49816	99.49505	99.49217
4/10/2017	4/11/2022	4/10/2018	0.35028	108.31603	107.33712	103.51948	100.84971	99.65835	99.54548	99.52224	99.49964
4/13/2017	4/13/2022	4/13/2018	0.35861	108.15550	107.17755	103.38308	100.75924	99.62936	99.52408	99.49294	99.46243
4/13/2017	4/15/2024	4/15/2019	1.45000	109.49620	107.29284	102.97589	100.10823	98.23580	96.77767	95.41647	94.08721
4/13/2017	4/13/2032	4/13/2018	0.99000	112.62149	107.01729	102.37369	100.09504	99.36353	98.91958	98.48578	98.05573
4/28/2017	4/30/2021	4/30/2018	0.37796	106.79616	106.30755	103.15894	100.78107	99.56495	99.37417	99.29694	99.22084
4/28/2017	4/28/2022	4/29/2019	1.59000	107.24235	106.31828	102.68649	100.11443	98.34121	96.87953	95.48753	94.12446
4/28/2017	4/29/2024	4/29/2019	0.37796	112.29845	109.36854	104.66769	101.37253	99.38856	98.55642	98.32871	98.25548
5/8/2017	5/10/2027	5/8/2018	1.30000	112.55746	107.92470	103.13526	100.43347	99.41058	98.88264	98.38237	97.88716
5/8/2017	5/10/2032	5/8/2018	1.15000	114.75103	108.42244	103.18757	100.38619	99.33823	98.80477	98.30464	97.80965
5/19/2017	5/21/2022	5/21/2018	0.31639	108.05190	107.01415	103.20855	100.62464	99.50676	99.35298	99.29965	99.24797
5/22/2017	5/24/2021	5/22/2018	0.31472	106.24944	105.73111	102.63480	100.43722	99.46303	99.33583	99.28013	99.22562
5/22/2017	5/24/2027	5/22/2018	1.09000	110.57104	106.45891	102.22784	100.04789	99.21910	98.66810	98.13176	97.60097
6/1/2017	6/7/2032	6/5/2018	0.99000	112.68915	107.05230	102.39117	100.03630	99.10722	98.51381	97.94375	97.37989
6/2/2017	6/7/2032	6/5/2018	0.99000	112.68908	107.05118	102.38976	100.03567	99.10715	98.51381	97.94375	97.37989
6/5/2017	6/6/2022	6/5/2018	0.31611	107.85736	106.79992	103.02750	100.53555	99.50406	99.39735	99.38979	99.38385
6/5/2017	6/5/2024	6/5/2019	0.31611	111.64677	108.62024	104.06504	101.00132	99.22941	98.54920	98.40316	98.39932
6/5/2017	6/7/2032	6/5/2018	0.99000	112.69088	107.04819	102.38843	100.03636	99.10728	98.51381	97.94375	97.37989
6/14/2017	6/14/2022	6/14/2019	1.59000	107.44988	106.46098	102.73408	100.05080	98.14603	96.56325	95.06139	93.59351
6/22/2017	6/22/2022	6/22/2018	0.32306	108.03629	106.94929	103.13260	100.56512	99.43872	99.25751	99.20324	99.15172
6/27/2017	6/27/2022	6/27/2018	0.32972	107.83942	106.75068	102.96521	100.45881	99.39312	99.21527	99.14754	99.08246
6/27/2017	6/27/2022	6/27/2019	1.60000	107.55450	106.54514	102.78241	100.05569	98.10375	96.48375	94.94957	93.45123
7/3/2017	7/3/2020	7/3/2018	0.33389	104.63003	104.45492	102.17653	100.43520	99.46373	99.32536	99.32329	99.32302
7/3/2017	7/6/2021	7/3/2018	0.33389	106.48735	105.90429	102.76074	100.52685	99.45597	99.31326	99.31011	99.30948
7/3/2017	7/3/2022	7/3/2019	0.33389	107.64899	106.47363	103.17683	100.75625	99.16402	98.47358	98.32301	98.32301
7/14/2017	7/14/2022	7/15/2019	1.62000	107.72543	106.68652	102.86504	100.07240	98.05991	96.39116	94.81374	93.27434
7/14/2017	7/16/2022	7/16/2018	0.05917	108.43385	107.28540	103.35598	100.62257	99.27129	99.01090	98.96958	98.93534
7/21/2017	7/23/2022	7/23/2018	0.06250	108.43955	107.28019	103.34385	100.59756	99.23065	98.94315	98.87929	98.82355

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
7/24/2017	7/25/2022	7/24/2019	1.63000	107.82292	106.76565	102.91450	100.08592	98.03690	96.34056	94.74016	93.17957
7/28/2017	7/28/2022	7/29/2019	1.60000	107.69225	106.63756	102.81013	100.00281	97.95867	96.25365	94.64244	93.07105
7/28/2017	7/30/2022	7/30/2018	0.07796	108.45932	107.29163	103.34988	100.58942	99.19916	98.88680	98.80560	98.73375
7/28/2017	7/30/2022	7/30/2018	0.37796	108.11821	106.96523	103.11650	100.52665	99.34628	99.10622	99.02812	98.95541
7/31/2017	7/31/2020	7/31/2018	0.33009	104.71977	104.52132	102.19522	100.37023	99.30600	99.06457	98.98847	98.91595
7/31/2017	1/31/2021	7/31/2018	0.33009	105.65862	105.28495	102.52150	100.45514	99.32920	99.06711	98.98850	98.91597
7/31/2017	7/31/2021	7/31/2018	0.33009	106.49647	105.87764	102.70494	100.42729	99.29785	99.06537	98.98850	98.91597
7/31/2017	1/31/2022	7/31/2018	0.33009	107.42473	106.53916	103.00931	100.54817	99.33681	99.06821	98.98849	98.91596
7/31/2017	7/31/2022	7/31/2018	0.33009	108.11242	106.95804	103.10447	100.50671	99.31183	99.06665	98.98851	98.91597
8/1/2017	8/1/2020	8/1/2018	0.01056	104.69467	104.49360	102.18021	100.37672	99.26531	99.03174	99.03214	99.03214
8/1/2017	8/1/2022	8/1/2018	0.01056	108.34748	107.17459	103.25951	100.57980	99.26961	99.03517	99.03217	99.03217
8/11/2017	8/11/2022	8/12/2019	1.59000	107.70600	106.63191	102.78601	99.95837	97.88226	96.14357	94.50095	92.89976
8/11/2017	8/13/2022	8/13/2018	0.30917	107.78765	106.61401	102.82558	100.37694	99.33673	99.16899	99.13994	99.11560
8/17/2017	8/17/2022	8/17/2018	0.01417	108.18776	106.99123	103.08922	100.43504	99.15910	98.90271	98.85935	98.82506
8/18/2017	8/20/2022	8/20/2018	0.31667	107.91707	106.72700	102.91016	100.41053	99.31518	99.11358	99.06467	99.02145
8/25/2017	8/25/2022	8/26/2019	1.55000	107.57239	106.48654	102.65151	99.82990	97.74042	95.97130	94.29719	92.66539
8/25/2017	8/27/2022	8/27/2018	0.31722	107.59742	106.40676	102.64584	100.24458	99.24548	99.05402	98.98723	98.92523
9/5/2017	9/6/2022	9/5/2019	1.55000	107.62405	106.51981	102.66153	99.81330	97.69167	95.89462	94.19603	92.54124
9/12/2017	9/12/2022	9/12/2018	0.31033	106.99918	105.80398	102.17175	100.00970	99.20964	99.09505	99.07014	99.04876
9/12/2017	9/12/2022	9/12/2019	1.49000	107.35372	106.25747	102.44791	99.64466	97.53884	95.73291	94.02017	92.35093
9/18/2017	9/19/2022	9/18/2019	1.62000	108.02691	106.88623	102.92914	99.97351	97.77202	95.93065	94.19874	92.51388
9/22/2017	9/22/2022	9/23/2019	1.65000	108.18933	107.03689	103.04251	100.04432	97.81204	95.95170	94.20672	92.51022
9/22/2017	9/24/2022	9/24/2018	0.32306	107.91669	106.66232	102.83748	100.34959	99.23703	99.00372	98.94126	98.88742
10/10/2017	10/11/2022	10/10/2018	0.59861	108.04726	106.76501	102.96403	100.53555	99.47202	99.27185	99.24558	99.22840
10/10/2017	10/11/2022	10/10/2018	0.00861	108.57759	107.26269	103.27938	100.51808	99.08084	98.73079	98.69252	98.67787
10/10/2017	10/11/2022	10/10/2018	0.34861	108.57759	107.26269	103.27938	100.51808	99.08084	98.73079	98.69252	98.67787
10/10/2017	10/11/2022	10/10/2019	1.75000	108.77807	107.56847	103.43995	100.29265	97.95261	96.02214	94.23127	92.49440
10/23/2017	10/24/2022	10/23/2018	0.61250	108.11062	106.80253	102.98563	100.52487	99.42643	99.18914	99.12968	99.08013
10/23/2017	10/24/2022	10/23/2019	1.79000	109.04338	107.80240	103.60975	100.39677	97.99579	96.02134	94.19918	92.43409
10/25/2017	10/25/2022	10/25/2018	0.36742	108.51264	107.18186	103.25051	100.58551	99.26433	98.93958	98.86794	98.81406