

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	1/30/2019	3.99000	100.67596	100.55681	100.39064	100.22557	100.06158	99.89866	99.73679	99.57597
12/27/2011	12/27/2021	12/29/2014	3.55000	110.04475	106.88731	103.83655	100.89015	98.04403	95.29429	92.63719	90.06917
10/1/2012	10/1/2019	4/1/2015	2.25000	101.90599	101.11241	100.28403	99.46663	98.65984	97.86353	97.07751	96.30160
2/20/2015	2/20/2019	2/22/2016	1.79000	100.40760	100.24150	100.01822	99.79652	99.57640	99.35784	99.14083	98.92534
3/26/2015	3/26/2019	3/29/2016	1.61000	100.51863	100.27172	99.95614	99.64316	99.33267	99.02466	98.71910	98.41596
3/26/2015	3/26/2020	3/29/2016	1.59000	102.00139	100.68109	99.38355	98.10911	96.85729	95.62753	94.41935	93.23228
6/29/2015	7/1/2019	6/29/2017	2.74000	101.62098	101.11397	100.53386	99.95988	99.39202	98.83015	98.27418	97.72402
7/30/2015	7/30/2019	6/29/2017	1.80000	101.20979	100.61811	99.96120	99.31190	98.66994	98.03526	97.40773	96.78724
8/14/2015	8/14/2025	8/14/2020	1.85000	109.03036	104.00926	100.42237	98.02949	96.26400	94.67791	93.14221	91.63975
8/26/2015	8/26/2025	8/26/2020	1.75000	108.45225	103.55445	100.09542	97.77682	96.00830	94.40016	92.83922	91.31232
9/15/2015	9/16/2019	9/15/2016	1.75000	101.40946	100.66691	99.88080	99.10474	98.33849	97.58188	96.83476	96.09696
9/29/2015	9/30/2019	9/29/2016	1.61000	101.35929	100.57065	99.74697	98.93420	98.13196	97.34013	96.55852	95.78696
10/2/2015	10/2/2025	10/2/2020	1.69000	108.16332	103.30239	99.85980	97.49812	95.64674	93.95391	92.31220	90.70795
12/4/2015	12/4/2018	12/4/2018	1.36000	100.01511	100.00764	99.99674	99.98589	99.97510	99.96437	99.95368	99.94305
12/24/2015	12/24/2025	12/24/2020	1.99000	110.18927	104.77692	100.74897	97.87881	95.69760	93.77846	91.94608	90.16231
1/19/2016	1/20/2026	1/22/2019	1.35000	106.29729	102.05791	100.03803	99.80767	99.66386	99.52117	99.37938	99.23848
2/26/2016	2/26/2026	2/26/2021	1.49000	107.18731	102.41523	98.95775	96.36464	94.18779	92.16459	90.20878	88.30536
5/5/2016	5/5/2026	5/5/2021	1.49000	107.29172	102.41016	98.80721	96.04476	93.70161	91.52577	89.42793	87.39027
6/16/2016	6/16/2031	6/16/2021	1.21000	107.72481	102.00924	98.07980	95.16451	92.71518	90.45064	88.27258	86.16008
6/27/2016	6/27/2031	6/27/2019	0.91000	105.30574	101.12810	99.53447	98.91265	98.35911	97.81166	97.26990	96.73375
9/15/2016	9/15/2026	9/16/2019	0.99000	104.43801	100.93004	99.34652	98.50539	97.74177	96.98870	96.24508	95.51073
1/13/2017	1/13/2027	1/14/2019	1.31000	106.55985	102.11801	100.03192	99.83360	99.71181	99.59077	99.47046	99.35088
1/20/2017	1/22/2024	1/22/2019	1.43900	111.02548	106.25393	102.43112	100.14134	99.80430	99.74489	99.68594	99.62744
1/24/2017	1/24/2024	1/24/2019	1.44738	111.92058	107.04775	103.02470	100.39272	99.79422	99.72942	99.66515	99.60138
1/30/2017	1/30/2027	1/30/2020	1.49038	115.17762	108.85064	103.90316	100.57809	99.01706	98.61656	98.52422	98.46278
3/7/2017	3/8/2027	3/7/2019	1.50000	107.88676	102.95675	100.27005	99.67716	99.41638	99.15809	98.90172	98.64726
3/20/2017	3/20/2024	3/20/2019	1.55000	106.24722	102.31862	100.14319	99.64377	99.34849	99.05563	98.76505	98.47672
4/13/2017	4/15/2024	4/15/2019	1.45000	105.80648	101.99583	100.02392	99.51769	99.15507	98.79570	98.43938	98.08606
4/28/2017	4/28/2022	4/29/2019	1.59000	104.39014	101.59684	100.02303	99.51972	99.11967	98.72329	98.33042	97.94100
4/28/2017	4/29/2024	4/29/2019	1.50925	111.01685	106.22580	102.39906	100.08435	99.56185	99.48336	99.41023	99.33801
6/5/2017	6/5/2024	6/5/2019	1.31563	110.18411	105.50552	101.90488	99.89073	99.50248	99.48662	99.47804	99.47026
6/14/2017	6/14/2022	6/14/2019	1.59000	104.53918	101.65568	99.99751	99.34632	98.82295	98.30554	97.79336	97.28631
6/27/2017	6/27/2022	6/27/2019	1.60000	104.61450	101.69716	100.00147	99.31021	98.75479	98.20607	97.66307	97.12568
7/3/2017	7/3/2022	7/3/2019	1.39813	107.45925	104.36867	101.73120	99.95085	99.44382	99.42494	99.42472	99.42472
7/14/2017	7/14/2022	7/15/2019	1.62000	104.73863	101.76741	100.00832	99.25382	98.65053	98.05521	97.46636	96.88389
7/24/2017	7/25/2022	7/24/2019	1.63000	104.80932	101.80611	100.01335	99.22506	98.59751	97.97878	97.36693	96.76184
7/28/2017	7/28/2022	7/29/2019	1.60000	104.71266	101.73384	99.97499	99.18446	98.54366	97.91187	97.28719	96.66950
8/1/2017	8/3/2020	2/1/2019	2.79000	104.42508	102.73595	101.14744	100.07452	99.85779	99.69034	99.52434	99.35925
8/11/2017	8/11/2022	8/12/2019	1.59000	104.72061	101.72553	99.95060	99.12163	98.44377	97.77596	97.11592	96.46351
8/25/2017	8/25/2022	8/26/2019	1.55000	104.61981	101.63711	99.88893	99.03298	98.31808	97.61412	96.91860	96.23140
9/5/2017	9/6/2022	9/5/2019	1.55000	104.65620	101.65479	99.88399	98.99863	98.25963	97.53248	96.81424	96.10474
9/12/2017	9/12/2022	9/12/2019	1.49000	104.45549	101.50455	99.80307	98.92161	98.16551	97.42086	96.68546	95.95916
9/18/2017	9/19/2022	9/18/2019	1.62000	104.95270	101.85044	99.95773	99.00023	98.22542	97.46484	96.71383	95.97224
9/22/2017	9/22/2022	9/23/2019	1.65000	105.07362	101.93498	99.99335	99.00563	98.21675	97.44343	96.67996	95.92615
10/10/2017	10/11/2022	10/10/2019	1.75000	105.51170	102.24298	100.12696	99.02570	98.18647	97.36923	96.56282	95.76697
10/23/2017	10/24/2022	10/23/2019	1.79000	105.70994	102.38108	100.18183	99.01434	98.13744	97.28700	96.44816	95.62061
11/6/2017	11/7/2022	11/6/2019	1.82000	105.87618	102.49385	100.22509	98.99089	98.07286	97.18646	96.31257	95.45075
11/17/2017	11/17/2022	11/18/2019	1.88000	106.14672	102.69528	100.32606	99.01813	98.06450	97.14982	96.24845	95.35979
12/4/2017	12/5/2022	12/4/2018	1.32075	108.85189	104.98665	101.84496	100.07684	99.98816	99.97741	99.96671	99.95606
12/4/2017	12/5/2022	12/4/2019	2.00000	106.69327	103.11443	100.55870	99.10068	98.08502	97.12887	96.18764	95.26008
12/14/2017	12/14/2022	12/16/2019	2.04000	106.89037	103.26575	100.63772	99.10897	98.05158	97.06421	96.09302	95.13626
12/18/2017	12/19/2022	12/18/2018	1.75000	105.75579	102.35490	100.26380	99.95604	99.90753	99.85928	99.81129	99.76355
1/12/2018	1/14/2023	1/14/2019	1.42519	109.37493	105.41713	102.13658	100.12870	99.84636	99.80872	99.77141	99.73442
1/19/2018	1/19/2023	1/21/2020	2.26000	107.94638	104.10531	101.14452	99.30112	98.08844	97.00557	95.94542	94.90204
1/29/2018	1/30/2023	1/29/2019	2.05000	107.13105	103.39742	100.76121	99.90354	99.74234	99.58305	99.42511	99.26802
2/2/2018	2/4/2023	2/4/2019	0.80850	111.12218	107.04368	103.45032	100.75113	99.70749	99.68747	99.67993	99.67248
2/2/2018	2/4/2023	2/4/2019	1.55850	109.97346	105.97601	102.58628	100.32546	99.83280	99.82416	99.81644	99.80882
2/9/2018	2/9/2023	2/10/2020	2.33000	108.33935	104.40969	101.33509	99.36672	98.07333	96.93934	95.83225	94.74331
2/9/2018	2/9/2023	2/9/2022	2.77000	110.18320	106.01028	102.19589	98.76687	95.67104	92.80370	90.07970	87.46045
2/16/2018	2/19/2023	2/19/2019	1.62900	110.40287	106.35501	102.86621	100.44559	99.76148	99.70975	99.66114	99.61305
2/20/2018	2/21/2023	2/20/2020	2.44000	108.86287	104.85093	101.63938	99.52201	98.15931	96.99505	95.86311	94.75015

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
2/20/2018	2/21/2023	2/22/2022	2.87000	110.68133	106.45400	102.57786	99.08726	95.93927	93.03021	90.27342	87.62494
3/5/2018	3/6/2023	3/5/2019	1.06563	110.59373	106.54266	103.03269	100.52605	99.70093	99.67836	99.66720	99.65647
3/15/2018	3/15/2023	3/15/2019	1.08413	110.85654	106.77643	103.21073	100.60628	99.65636	99.59785	99.55977	99.52227
3/20/2018	3/20/2023	3/20/2019	0.33750	111.76533	107.61537	103.88961	100.95315	99.48362	99.32867	99.27772	99.22745
3/21/2018	3/21/2023	3/21/2019	0.35338	111.76690	107.61479	103.88669	100.94783	99.47686	99.31938	99.26578	99.21288
3/29/2018	3/29/2023	3/29/2019	1.14600	111.33804	107.20341	103.54389	100.77641	99.60517	99.48132	99.40577	99.33104
4/5/2018	4/5/2023	4/5/2019	0.10825	112.07766	107.92176	104.17636	101.13235	99.44690	99.22706	99.21878	99.21151
4/13/2018	4/15/2023	4/15/2019	0.13631	112.27232	108.08664	104.29729	101.19126	99.40531	99.11061	99.07491	99.04098
4/27/2018	4/29/2023	4/29/2019	0.50925	113.03879	108.79177	104.91200	101.64906	99.57542	99.07634	98.99924	98.92800
5/4/2018	5/4/2023	5/6/2019	2.63000	110.07878	105.80716	102.30239	100.19149	99.52532	99.10772	98.69539	98.28677
5/4/2018	5/6/2023	5/6/2019	0.58150	112.81049	108.60398	104.78989	101.59698	99.59519	99.15232	99.13572	99.12607
5/8/2018	5/8/2023	5/8/2019	1.29125	111.83257	107.67829	103.98676	101.07944	99.60669	99.43064	99.41369	99.39801
5/17/2018	5/17/2023	5/17/2019	1.34000	112.09285	107.90675	104.16756	101.18203	99.59210	99.34792	99.30618	99.26645
5/17/2018	5/17/2023	5/18/2020	2.84000	111.09019	106.70474	102.96267	100.19103	98.34329	96.90355	95.55510	94.23610
5/24/2018	5/24/2021	5/24/2019	1.28925	107.04464	104.87816	102.82367	100.93975	99.59585	99.24021	99.17902	99.12103
5/24/2018	5/24/2023	5/26/2020	1.68925	109.41233	106.26059	103.37646	100.91313	99.19289	98.42449	98.26828	98.26828
6/5/2018	6/5/2023	6/5/2019	1.01563	111.17872	107.04375	103.43277	100.69936	99.46234	99.33351	99.32475	99.31742
6/5/2018	6/5/2023	6/5/2020	2.72000	110.66596	106.27695	102.59095	99.90372	98.07163	96.60251	95.21343	93.85438
6/25/2018	6/25/2021	6/25/2019	1.87263	105.98664	103.83060	101.85237	100.30039	99.70019	99.61778	99.55717	99.49764
6/25/2018	6/26/2023	6/25/2020	1.87263	108.36338	105.21977	102.47317	100.40338	99.28772	98.92555	98.83788	98.79395
6/25/2018	6/26/2023	6/25/2020	0.07263	110.12478	106.80273	103.70955	100.89664	98.54082	96.95497	96.25858	96.08886
6/27/2018	6/27/2023	6/27/2019	2.53000	109.92757	105.57411	102.07786	100.04958	99.29028	98.73768	98.19299	97.65393
7/2/2018	7/2/2023	7/2/2019	0.39838	111.59987	107.41390	103.70858	100.74073	99.12826	98.85249	98.85204	98.85204
7/2/2018	7/2/2023	7/2/2019	1.39838	110.50796	106.41714	102.93130	100.43590	99.49977	99.43320	99.43320	99.43320
7/2/2018	7/3/2023	7/2/2020	2.71000	110.78401	106.33021	102.59277	99.84970	97.94825	96.41110	94.96039	93.54241
7/30/2018	7/31/2023	7/30/2019	0.52038	112.33769	108.06177	104.21731	101.04046	99.08812	98.56150	98.47327	98.40423
7/30/2018	7/31/2023	7/30/2019	1.77038	110.96836	106.81149	103.23180	100.62672	99.54262	99.37010	99.29597	99.22403
8/23/2018	8/23/2023	8/23/2019	0.67694	111.45036	107.22585	103.48007	100.49011	98.83222	98.45238	98.39058	98.34121
8/28/2018	8/28/2023	8/28/2019	0.70681	111.45118	107.21649	103.45964	100.46380	98.79647	98.39679	98.32048	98.25778
9/4/2018	9/7/2021	9/4/2019	1.82075	105.55337	103.43067	101.52691	100.11759	99.63100	99.59825	99.59411	99.59109
9/25/2018	9/27/2021	9/25/2019	2.69000	106.80400	103.98372	101.53346	99.94258	99.05193	98.26814	97.49572	96.73311
9/25/2018	9/27/2021	9/25/2020	2.99000	107.66088	104.80269	102.14857	99.88964	98.01750	96.31517	94.66879	93.05965
10/3/2018	10/3/2023	10/3/2019	1.39813	111.19982	107.05101	103.45957	100.73140	99.39456	99.15956	99.15477	99.15477
10/26/2018	10/28/2023	10/28/2019	0.50800	111.98730	107.70978	103.88241	100.72343	98.73735	98.08836	97.97788	97.91954
10/29/2018	10/30/2023	10/29/2020	1.50925	109.00505	105.73705	102.81363	100.37662	98.68747	97.85554	97.58833	97.51964
11/6/2018	11/8/2021	11/6/2019	2.09238	105.47960	103.35375	101.45040	100.05098	99.53350	99.47805	99.47080	99.46549