

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	100.33240	100.26923	100.18623	100.10371	100.02166	99.94008	99.85896	99.77830
12/27/2011	12/27/2021	12/29/2014	3.55000	110.76770	107.70744	104.70684	101.80670	99.00318	96.29258	93.67137	91.13618
10/1/2012	10/1/2019	4/1/2015	2.25000	101.71226	101.05994	100.31555	99.58030	98.85405	98.13663	97.42790	96.72771
2/20/2015	2/20/2019	2/22/2016	1.79000	100.25346	100.14688	100.00881	99.87161	99.73528	99.59979	99.46515	99.33135
3/26/2015	3/26/2019	3/29/2016	1.61000	100.38001	100.19584	99.96453	99.73493	99.50697	99.28063	99.05592	98.83279
3/26/2015	3/26/2020	3/29/2016	1.59000	101.99164	100.90209	99.68269	98.48402	97.30564	96.14711	95.00800	93.88788
6/29/2015	7/1/2019	6/29/2017	2.74000	101.38506	100.95925	100.46198	99.96956	99.48197	98.99913	98.52098	98.04745
7/30/2015	7/30/2019	6/29/2017	1.80000	101.05483	100.55830	99.98512	99.41804	98.85696	98.30177	97.75239	97.20872
8/14/2015	8/14/2025	8/14/2020	1.85000	110.53297	105.29338	101.39905	98.74598	96.90376	95.35383	93.87942	92.43804
8/26/2015	8/26/2025	8/26/2020	1.75000	109.94106	104.81038	101.04857	98.49199	96.66176	95.09210	93.59122	92.12391
9/15/2015	9/16/2019	9/15/2016	1.75000	101.25881	100.64367	99.94072	99.24613	98.55977	97.88150	97.21117	96.54867
9/29/2015	9/30/2019	9/29/2016	1.61000	101.22068	100.57189	99.83154	99.10027	98.37793	97.66437	96.95944	96.26300
10/2/2015	10/2/2025	10/2/2020	1.69000	109.65326	104.55570	100.82104	98.24266	96.33705	94.68140	93.09609	91.54786
12/24/2015	12/24/2025	12/24/2020	1.99000	111.76455	106.17906	101.89404	98.78871	96.49227	94.58165	92.79649	91.06518
1/19/2016	1/20/2026	1/22/2019	1.35000	107.72301	103.06196	100.30795	99.91727	99.85803	99.79911	99.74051	99.68224
2/26/2016	2/26/2026	2/26/2021	1.49000	108.66638	103.64484	99.96177	97.23869	95.03807	93.04825	91.13998	89.28370
5/5/2016	5/5/2026	5/5/2021	1.49000	108.79077	103.67922	99.87173	96.98717	94.61558	92.46618	90.41031	88.41495
6/16/2016	6/16/2031	6/16/2021	1.21000	109.47220	103.39933	99.21644	96.17344	93.69644	91.45842	89.32108	87.24964
6/27/2016	6/27/2031	6/27/2019	0.91000	106.82333	101.99278	99.75907	99.07756	98.60188	98.13267	97.66798	97.20772
9/15/2016	9/15/2026	9/16/2019	0.99000	105.76575	101.69715	99.61199	98.70952	98.01897	97.34229	96.67357	96.01266
1/13/2017	1/14/2019	1/14/2019	1.31000	100.05093	100.02183	99.98371	99.94579	99.90808	99.87056	99.83324	99.79611
1/20/2017	1/22/2024	1/22/2019	1.43900	112.64742	107.70853	103.55206	100.63058	99.88435	99.82540	99.76676	99.70844
1/24/2017	1/24/2024	1/24/2019	1.44738	113.55743	108.53622	104.22615	101.02635	99.87320	99.80890	99.74495	99.68136
1/30/2017	1/30/2027	1/30/2020	1.49038	117.29882	110.49388	105.25899	101.50491	99.42238	98.71625	98.56105	98.49480
3/7/2017	3/8/2027	3/7/2019	1.50000	109.40846	104.10051	100.76258	99.78126	99.60233	99.42711	99.25304	99.08013
3/20/2017	3/20/2024	3/20/2019	1.55000	107.51747	103.26607	100.48034	99.74341	99.53147	99.32146	99.11292	98.90582
4/13/2017	4/15/2024	4/15/2019	1.45000	107.07108	102.89983	100.29783	99.62160	99.33912	99.05953	98.78209	98.50676
4/28/2017	4/28/2022	4/29/2019	1.59000	105.35323	102.32322	100.25131	99.61366	99.29353	98.97674	98.66250	98.35077
4/28/2017	4/29/2024	4/29/2019	1.50925	112.68762	107.67999	103.53889	100.62068	99.60489	99.51102	99.43562	99.36102
6/5/2017	6/5/2024	6/5/2019	1.75125	111.86118	106.93920	102.99324	100.35097	99.54926	99.52034	99.51236	99.50504
6/14/2017	6/14/2022	6/14/2019	1.59000	105.53796	102.40590	100.26042	99.46080	99.01714	98.58146	98.14981	97.72213
6/27/2017	6/27/2022	6/27/2019	1.60000	105.62404	102.45858	100.28127	99.42082	98.93940	98.46926	98.00363	97.54245
7/3/2017	7/5/2022	7/3/2019	1.39813	108.79255	105.56638	102.74676	100.53141	99.51604	99.42864	99.42577	99.42386
7/14/2017	7/14/2022	7/15/2019	1.62000	105.76284	102.54748	100.31215	99.37113	98.83890	98.32182	97.80995	97.30322
7/24/2017	7/25/2022	7/24/2019	1.63000	105.84113	102.59593	100.33139	99.34805	98.78909	98.24840	97.71331	97.18370
7/28/2017	7/28/2022	7/29/2019	1.60000	105.74433	102.51266	100.28400	99.31982	98.75082	98.19949	97.65393	97.11403
8/1/2017	8/3/2020	2/1/2019	2.79000	104.50234	103.03090	101.46266	100.17189	99.91972	99.83361	99.74799	99.66287
8/11/2017	8/11/2022	8/12/2019	1.59000	105.76144	102.50639	100.26849	99.26683	98.65901	98.07134	97.49003	96.91498
8/25/2017	8/25/2022	8/26/2019	1.55000	105.66642	102.40998	100.20238	99.19112	98.54565	97.92145	97.30425	96.69391
9/5/2017	9/6/2022	9/5/2019	1.55000	105.71034	102.42988	100.20396	99.15752	98.48308	97.83292	97.19024	96.55489
9/12/2017	9/12/2022	9/12/2019	1.49000	105.50819	102.25926	100.10440	99.08670	98.39843	97.73056	97.07050	96.41808
9/18/2017	9/19/2022	9/18/2019	1.62000	106.02105	102.66684	100.32386	99.17017	98.45258	97.76860	97.09283	96.42498
9/22/2017	9/22/2022	9/23/2019	1.65000	106.14574	102.76630	100.37670	99.17938	98.44494	97.74808	97.05971	96.37951
10/10/2017	10/11/2022	10/10/2019	1.75000	106.60176	103.12250	100.57906	99.22884	98.43183	97.69286	96.96353	96.24316
10/23/2017	10/24/2022	10/23/2019	1.79000	106.80912	103.27979	100.66365	99.23453	98.39177	97.61891	96.85675	96.10421
11/6/2017	11/7/2022	11/6/2019	1.82000	106.98481	103.40938	100.73260	99.23246	98.33996	97.53021	96.73250	95.94517
11/17/2017	11/17/2022	11/18/2019	1.88000	107.26253	103.63225	100.87048	99.27180	98.32897	97.48739	96.65941	95.84247
12/4/2017	12/5/2022	3/4/2019	2.54000	109.96592	106.04777	102.66451	100.32766	99.80370	99.63655	99.47050	99.30553
12/4/2017	12/5/2022	12/4/2019	2.00000	107.81835	104.08894	101.16788	99.39137	98.35908	97.47367	96.60532	95.74893
12/14/2017	12/14/2022	12/16/2019	2.04000	108.02074	104.25259	101.27486	99.42929	98.34886	97.43289	96.53653	95.65280
1/12/2018	1/14/2023	1/14/2019	1.42519	110.83174	106.77349	103.21546	100.61656	99.92701	99.88946	99.85210	99.81494
1/19/2018	1/19/2023	1/21/2020	2.26000	109.09506	105.15590	101.91039	99.72479	98.42252	97.39757	96.41042	95.43848
1/29/2018	1/30/2023	1/29/2019	2.05000	108.28737	104.41328	101.37655	99.94876	99.86769	99.78966	99.71207	99.63491
2/2/2018	2/4/2023	2/4/2019	0.80850	112.66897	108.51547	104.74695	101.64527	99.87385	99.80579	99.79562	99.78563
2/2/2018	2/4/2023	2/4/2019	1.55850	111.44462	107.35003	103.72675	100.94786	99.88886	99.87840	99.86816	99.85811
2/9/2018	2/9/2023	2/10/2020	2.33000	109.49767	105.48322	102.14147	99.82876	98.42230	97.33696	96.29927	95.27865
2/9/2018	2/9/2023	2/9/2022	2.77000	111.32795	107.16118	103.32596	99.86545	96.74889	93.88598	91.18288	88.58916
2/16/2018	2/19/2023	2/19/2019	1.62900	111.89201	107.74177	104.03839	101.13349	99.82592	99.76063	99.70972	99.65920
2/20/2018	2/21/2023	2/20/2020	2.44000	110.02450	105.94353	102.49116	100.02999	98.52254	97.39622	96.33277	95.28777
2/20/2018	2/21/2023	2/22/2022	2.87000	111.82792	107.61066	103.71718	100.19549	97.02464	94.11740	91.37944	88.75544
3/5/2018	3/6/2023	3/5/2019	1.50125	112.11196	107.95849	104.24919	101.29157	99.81542	99.75543	99.74491	99.73469

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
3/15/2018	3/15/2023	3/15/2019	1.53819	112.38522	108.19928	104.44504	101.41350	99.79999	99.67404	99.63657	99.59955
3/20/2018	3/20/2023	3/20/2019	0.79200	113.37315	109.12858	105.25564	101.97959	99.84987	99.46704	99.41601	99.36568
3/21/2018	3/21/2023	3/21/2019	0.78963	113.37422	109.12694	105.25158	101.97367	99.84183	99.45637	99.40268	99.34972
3/29/2018	3/29/2023	3/29/2019	1.55300	112.87669	108.63467	104.80369	101.64830	99.80504	99.54983	99.47448	99.39986
4/5/2018	4/5/2023	4/5/2019	0.10825	113.71793	109.46696	105.58901	102.25351	99.95101	99.37049	99.35690	99.34687
4/13/2018	4/15/2023	4/15/2019	0.13631	113.92380	109.63901	105.72280	102.33598	99.95117	99.25786	99.21353	99.17683
4/27/2018	4/29/2023	4/29/2019	0.50925	114.67561	110.32887	106.33491	102.82670	100.21760	99.21145	99.10875	99.03480
5/4/2018	5/4/2023	5/6/2019	2.63000	111.27022	106.94932	103.22591	100.58711	99.62978	99.28729	98.95639	98.62820
5/4/2018	5/6/2023	5/6/2019	0.58150	114.44834	110.14017	106.21106	102.77078	100.23461	99.29895	99.25781	99.24795
5/8/2018	5/8/2023	5/8/2019	1.29125	113.40178	109.13412	105.29693	102.06298	99.96311	99.49736	99.47682	99.46119
5/17/2018	5/17/2023	5/17/2019	1.34000	113.67237	109.37009	105.49140	102.19788	99.99701	99.41874	99.37042	99.33071
5/17/2018	5/17/2023	5/18/2020	2.84000	112.27946	107.86562	103.97402	100.92203	98.86236	97.40282	96.11297	94.85998
5/24/2018	5/24/2021	5/24/2019	1.28925	107.93211	105.77329	103.68949	101.71038	100.04992	99.33519	99.24963	99.19162
5/24/2018	5/24/2023	5/26/2020	1.68925	110.99221	107.33119	104.36356	101.74826	99.73946	98.63161	98.30385	98.28790
6/5/2018	6/5/2023	6/5/2019	1.45125	112.75677	108.49102	104.71921	101.61852	99.75170	99.39529	99.38415	99.37715
6/5/2018	6/5/2023	6/5/2020	2.72000	111.86902	107.43964	103.58341	100.61553	98.60374	97.13521	95.80736	94.51405
6/25/2018	6/25/2021	6/25/2019	2.32163	106.83411	104.65891	102.61263	100.81044	99.76890	99.59313	99.53005	99.46838
6/25/2018	6/26/2023	6/25/2020	2.32163	109.89523	106.22452	103.34737	101.02817	99.57128	98.98837	98.84101	98.79051
6/25/2018	6/26/2023	6/25/2020	0.52163	111.85952	108.02473	104.86415	101.95948	99.43653	97.55575	96.55749	96.24760
6/27/2018	6/27/2023	6/27/2019	2.53000	111.14634	106.72550	102.98308	100.42036	99.40939	98.92293	98.45603	97.99361
7/2/2018	7/2/2023	7/2/2019	0.39838	113.25861	108.93464	105.09374	101.83680	99.63712	98.96928	98.94333	98.94333
7/2/2018	7/2/2023	7/2/2019	1.39838	112.06531	107.81799	104.14364	101.23502	99.68056	99.44592	99.44342	99.44342
7/2/2018	7/3/2023	7/2/2020	2.71000	112.00001	107.50275	103.59872	100.58607	98.50366	96.96038	95.56459	94.20792
7/30/2018	7/31/2023	7/30/2019	0.52038	114.02191	109.58993	105.62457	102.19594	99.72187	98.72408	98.57572	98.50580
7/30/2018	7/31/2023	7/30/2019	1.77038	112.52485	108.19089	104.43060	101.42909	99.74457	99.37395	99.29449	99.22280
8/23/2018	8/23/2023	8/23/2019	0.67694	113.14200	108.73452	104.85243	101.57526	99.35902	98.59072	98.48876	98.43859
8/28/2018	8/28/2023	8/28/2019	0.70681	113.14461	108.72272	104.82868	101.54277	99.32173	98.53714	98.41816	98.35456
9/4/2018	9/7/2021	9/4/2019	2.23613	106.48835	104.27810	102.29212	100.59990	99.68924	99.56591	99.56141	99.55886
9/25/2018	9/27/2021	9/25/2019	2.69000	107.47919	104.74399	102.17340	100.22525	99.20432	98.48906	97.79234	97.10393
9/25/2018	9/27/2021	9/25/2020	2.99000	108.31336	105.55956	102.89453	100.54101	98.60782	96.93311	95.34328	93.79156
10/3/2018	10/3/2023	10/3/2019	1.39813	112.81267	108.43950	104.69208	101.63480	99.74195	99.18764	99.14826	99.14826
10/26/2018	10/26/2023	10/28/2019	0.50800	113.21413	108.76550	104.90802	101.60315	99.23390	98.21359	98.07227	98.07227
10/29/2018	10/30/2023	10/29/2020	1.50925	110.66482	106.71250	103.69739	101.10964	99.17453	98.08105	97.67004	97.56302
11/6/2018	11/8/2021	11/6/2019	2.09238	106.49129	104.21165	102.22357	100.53952	99.61950	99.45231	99.44243	99.43739
12/17/2018	12/17/2021	12/17/2019	2.28819	106.08135	103.75050	101.77385	100.20653	99.47276	99.33808	99.30285	99.27161
12/24/2018	12/24/2021	12/24/2019	2.32375	105.82216	103.47734	101.51342	100.02999	99.40810	99.29009	99.23766	99.18807