

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	10/30/2018	3.99000	101.68450	101.46020	101.04328	100.63013	100.22070	99.95397	99.79516	99.63725
12/27/2011	12/27/2021	12/29/2014	3.55000	111.50500	108.07029	104.74947	101.54996	98.46674	95.49501	92.63019	89.86792
10/1/2012	10/1/2019	4/1/2015	2.25000	102.47474	101.67533	100.59706	99.53555	98.49047	97.46148	96.44825	95.45047
10/16/2014	10/16/2018	10/17/2016	2.48000	100.31678	100.26871	100.14302	100.01811	99.89396	99.77059	99.64797	99.52606
10/24/2014	10/24/2018	10/26/2015	1.74000	100.26089	100.20250	100.05509	99.90863	99.76311	99.61851	99.47483	99.33200
2/20/2015	2/20/2019	2/22/2016	1.79000	100.86001	100.59548	100.12395	99.65696	99.19443	98.73630	98.28251	97.83300
3/26/2015	3/26/2019	3/29/2016	1.61000	100.92555	100.59107	100.02750	99.46985	98.91804	98.37198	97.83158	97.29676
3/26/2015	3/26/2020	3/29/2016	1.59000	102.53036	101.09965	99.55424	98.04010	96.55647	95.10251	93.67755	92.28087
6/29/2015	7/1/2019	6/29/2017	2.74000	102.31356	101.75870	100.92765	100.10749	99.29803	98.49907	97.71043	96.93192
7/30/2015	7/30/2019	6/29/2017	1.80000	101.66476	101.04075	100.13535	99.24239	98.36182	97.49337	96.63680	95.79188
8/14/2015	8/14/2025	8/14/2020	1.85000	110.24660	104.86410	100.89150	98.12409	96.05088	94.22681	92.47871	90.77413
8/26/2015	8/26/2025	8/26/2020	1.75000	109.63842	104.37906	100.53866	97.83925	95.77907	93.93700	92.16628	90.43970
9/15/2015	9/16/2019	9/15/2016	1.75000	101.85184	101.09821	100.06347	99.04441	98.04073	97.05211	96.07826	95.11888
9/29/2015	9/30/2019	9/29/2016	1.61000	101.76627	100.97247	99.90093	98.84604	97.80746	96.78485	95.77789	94.78627
10/2/2015	10/2/2025	10/2/2020	1.69000	109.35544	104.14633	100.32362	97.56804	95.41031	93.47839	91.62639	89.82328
11/6/2015	11/7/2022	11/6/2018	1.40000	105.23025	101.97025	100.15008	99.82231	99.64281	99.46453	99.28743	99.11154
12/4/2015	12/4/2025	12/4/2018	1.36000	107.38658	102.80563	100.30121	99.72493	99.46932	99.21603	98.96474	98.71530
12/24/2015	12/24/2025	12/24/2020	1.99000	111.52010	105.76744	101.36796	98.10972	95.58985	93.41372	91.36672	89.38530
1/19/2016	1/20/2026	1/22/2019	1.35000	107.40128	102.79277	100.28336	99.55777	99.17001	98.78892	98.41115	98.03665
2/26/2016	2/26/2026	2/26/2021	1.49000	108.36296	103.22681	99.38505	96.43923	93.97683	91.72282	89.56271	87.46793
5/5/2016	5/5/2026	5/5/2021	1.49000	108.49476	103.25239	99.27489	96.16518	93.53771	91.12983	88.82812	86.60079
6/16/2016	6/16/2031	6/16/2021	1.21000	109.28452	102.97362	98.55853	95.26151	92.52720	90.03435	87.65693	85.35953
6/27/2016	6/27/2031	6/27/2019	0.91000	106.57877	101.80143	99.59901	98.60900	97.81161	97.03017	96.25878	95.49724
9/9/2016	9/10/2018	9/10/2018	0.80000	100.02222	100.01214	99.98448	99.95696	99.92959	99.90236	99.87527	99.84832
9/15/2016	9/15/2026	9/16/2019	0.99000	105.43249	101.49322	99.43770	98.26305	97.25604	96.27197	95.30270	94.34786
9/22/2016	9/22/2031	9/24/2018	0.65000	104.43179	100.82595	99.95349	99.88801	99.82291	99.75816	99.69377	99.62974
1/13/2017	1/13/2027	1/14/2019	1.31000	107.73696	102.86290	100.27702	99.57124	99.20608	98.84632	98.48961	98.13591
1/20/2017	1/22/2024	1/22/2019	1.31750	111.48447	106.50517	102.62139	100.19156	99.54339	99.47854	99.42438	99.37103
1/24/2017	1/24/2024	1/24/2019	1.30156	112.37995	107.30125	103.22420	100.49046	99.54838	99.45882	99.39937	99.34075
1/30/2017	1/30/2027	1/30/2020	1.30888	116.09056	109.36456	104.27423	100.76974	98.99031	98.43236	98.30901	98.25130
3/7/2017	9/7/2018	9/7/2018	2.30000	100.04472	100.03775	100.01862	99.99959	99.98065	99.96181	99.94307	99.92442
3/7/2017	3/8/2027	3/7/2019	1.50000	109.18243	103.80147	100.63791	99.49179	98.96474	98.46708	97.97439	97.48654
3/20/2017	3/20/2024	3/20/2019	1.55000	107.32350	103.06131	100.47095	99.46516	98.91408	98.38235	97.85608	97.33516
3/27/2017	3/29/2021	9/27/2018	2.51000	106.26442	103.69898	101.47405	100.10604	99.94005	99.86716	99.79468	99.72261
4/13/2017	4/15/2024	4/15/2019	1.45000	106.84892	102.70184	100.29380	99.32224	98.70614	98.10902	97.51844	96.93427
4/28/2017	4/28/2022	4/29/2019	1.59000	105.35105	102.22742	100.24776	99.35718	98.71149	98.07775	97.45116	96.83159
4/28/2017	4/29/2024	4/29/2019	1.33888	111.47727	106.44120	102.56008	100.12486	99.32258	99.19698	99.12625	99.05725
6/5/2017	6/5/2024	6/5/2019	1.31781	110.67449	105.72812	102.06820	99.90707	99.28154	99.22628	99.22055	99.21655
6/14/2017	6/14/2022	6/14/2019	1.59000	105.51251	102.29562	100.23740	99.21668	98.44893	97.69876	96.95796	96.22636
6/27/2017	6/27/2022	6/27/2019	1.60000	105.59562	102.34591	100.25115	99.18161	98.37749	97.59355	96.81970	96.05572
7/3/2017	7/3/2020	10/3/2018	2.61000	104.86263	103.01973	101.30704	100.12684	99.93619	99.84721	99.75875	99.67080
7/3/2017	7/3/2022	7/3/2019	1.33575	107.82589	104.49035	101.81569	99.94412	99.24184	99.17302	99.17302	99.17302
7/14/2017	7/14/2022	10/15/2018	2.29000	108.32898	104.61064	101.64535	100.04802	99.87234	99.75091	99.63022	99.51026
7/14/2017	7/14/2022	7/15/2019	1.62000	105.73077	102.42967	100.27287	99.14088	98.28759	97.45764	96.63878	95.83075
7/24/2017	7/25/2022	7/24/2019	1.63000	105.80756	102.47560	100.28771	99.12068	98.24192	97.38883	96.54738	95.71725
7/28/2017	7/28/2022	10/29/2018	2.16000	107.89099	104.19847	101.34875	99.99244	99.81344	99.65660	99.50079	99.34586
7/28/2017	7/28/2022	7/29/2019	1.60000	105.70144	102.38919	100.23504	99.07451	98.18342	97.31751	96.46353	95.62116
7/31/2017	7/31/2020	10/31/2018	2.66000	105.12636	103.19954	101.41550	100.16746	99.89105	99.72878	99.56758	99.40730
7/31/2017	2/1/2021	10/31/2018	2.50000	105.88784	103.47760	101.38191	100.09483	99.86407	99.70183	99.54067	99.38042
8/1/2017	8/3/2020	11/1/2018	2.79000	105.39734	103.45753	101.63524	100.27680	99.91135	99.74638	99.58251	99.41957
8/11/2017	8/11/2022	8/12/2019	1.59000	105.70994	102.38034	100.21276	99.01682	98.08846	97.18702	96.29836	95.42212
8/25/2017	8/25/2022	8/26/2019	1.55000	105.59945	102.27729	100.14043	98.93221	97.97039	97.03585	96.11488	95.20710
9/5/2017	9/6/2022	9/5/2019	1.55000	105.64232	102.32511	100.16966	98.90280	97.90615	96.94597	96.00030	95.06842
9/12/2017	9/12/2018	9/12/2018	1.32631	100.06432	100.05238	100.01960	99.98700	99.95456	99.92229	99.89019	99.85826
9/12/2017	9/12/2022	9/12/2019	1.49000	105.42367	102.15438	100.05833	98.81023	97.80058	96.82340	95.86104	94.91288
9/18/2017	9/19/2022	9/18/2019	1.62000	105.96718	102.55740	100.27977	98.93206	97.89433	96.90076	95.92281	94.95945
9/22/2017	9/22/2022	9/23/2019	1.65000	106.09884	102.65656	100.33105	98.94884	97.89516	96.88883	95.89858	94.92323
9/22/2017	9/24/2022	9/24/2018	1.33188	108.08152	104.27674	101.37153	99.94652	99.86723	99.80244	99.73800	99.67393
10/10/2017	10/11/2022	10/10/2018	0.99144	108.97897	105.03694	101.89411	100.04246	99.81830	99.79134	99.76465	99.73822
10/10/2017	10/11/2022	10/10/2018	1.58144	107.96060	104.14490	101.29696	99.93763	99.88603	99.85900	99.83224	99.80574
10/10/2017	10/11/2022	10/10/2019	1.75000	106.57533	103.00302	100.51244	99.01137	97.89599	96.84516	95.81241	94.79568

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
10/23/2017	10/24/2022	10/23/2018	1.59706	108.04349	104.19665	101.31285	99.92304	99.82510	99.76291	99.70114	99.63983
10/23/2017	10/24/2022	10/23/2019	1.79000	106.79043	103.15645	100.58667	99.02013	97.86383	96.78005	95.71570	94.66823
10/25/2017	10/25/2022	10/25/2018	1.33531	108.65134	104.72433	101.66133	99.96932	99.78489	99.71963	99.65488	99.59051
11/6/2017	11/7/2022	11/6/2018	1.34050	108.52597	104.59508	101.58449	99.94470	99.79727	99.78329	99.76962	99.75630
11/6/2017	11/7/2022	11/6/2019	1.82000	106.97079	103.28217	100.64984	99.02069	97.82111	96.70354	95.60695	94.52813
11/17/2017	11/17/2022	11/18/2019	1.88000	107.26276	103.50678	100.77731	99.06572	97.82277	96.67415	95.54839	94.44124
11/17/2017	11/19/2022	11/19/2018	1.31175	108.67630	104.70975	101.64590	99.93809	99.72786	99.67886	99.63022	99.58210
12/4/2017	12/5/2022	12/4/2018	1.32125	109.24887	105.20013	102.00840	100.06883	99.72141	99.71246	99.70429	99.69654
12/4/2017	12/5/2022	12/4/2019	2.00000	107.84892	103.97070	101.06309	99.19286	97.87577	96.68257	95.51685	94.37100
12/14/2017	12/14/2022	12/16/2019	2.04000	108.06122	104.13482	101.15800	99.22133	97.86068	96.63629	95.44166	94.26780
12/18/2017	12/19/2022	12/18/2018	1.75000	106.84060	103.12808	100.65327	99.79577	99.49910	99.20809	98.91935	98.63285
1/12/2018	1/14/2023	1/14/2019	1.33744	109.79473	105.65104	102.32822	100.17315	99.59554	99.55636	99.52377	99.49186
1/19/2018	1/19/2023	1/21/2020	2.26000	109.19263	105.05164	101.76259	99.51694	97.97058	96.64444	95.36279	94.10528
1/29/2018	1/30/2023	1/29/2019	2.05000	108.32034	104.28429	101.30721	99.87497	99.41605	99.01558	98.61869	98.22532
2/2/2018	2/4/2023	2/4/2019	0.59856	111.37856	107.08735	103.46221	100.70479	99.36597	99.22621	99.22116	99.21702
2/2/2018	2/4/2023	2/4/2019	1.34856	110.41397	106.20389	102.77835	100.41415	99.58615	99.54950	99.54389	99.53894
2/9/2018	2/9/2023	2/10/2020	2.33000	109.61282	105.38663	101.98253	99.60554	97.96947	96.58409	95.25336	93.94897
2/9/2018	2/9/2023	2/9/2022	2.77000	111.57956	107.11624	103.01896	99.31358	95.95443	92.85009	89.91588	87.10648
2/16/2018	2/19/2023	2/19/2019	1.31519	110.83545	106.57805	103.05616	100.54342	99.53527	99.42762	99.38134	99.33603
2/20/2018	2/21/2023	2/20/2020	2.44000	110.17136	105.86176	102.32516	99.81170	98.09085	96.66753	95.31140	93.98319
2/20/2018	2/21/2023	2/22/2022	2.87000	112.10914	107.59074	103.43304	99.66622	96.25168	93.10474	90.13599	87.29658
3/5/2018	3/6/2023	3/5/2019	1.06781	110.98403	106.70016	103.15739	100.56154	99.44545	99.33038	99.32157	99.31402
3/15/2018	3/15/2023	3/15/2019	1.09063	111.24103	106.93122	103.33201	100.65336	99.42462	99.24838	99.21203	99.17783
3/20/2018	3/20/2023	3/20/2019	0.32469	111.96119	107.58365	103.83084	100.84073	99.16732	98.79810	98.74411	98.69801
3/21/2018	3/21/2023	3/21/2019	0.33025	111.96077	107.58164	103.82630	100.83355	99.15880	98.78760	98.73095	98.68223
3/29/2018	3/29/2023	3/29/2019	1.08438	111.70830	107.35207	103.66072	100.83720	99.41022	99.14008	99.06725	98.99839
4/5/2018	4/5/2023	4/5/2019	0.03725	112.22117	107.81473	104.04084	100.96279	99.10838	98.63579	98.61337	98.61078
4/13/2018	4/15/2023	4/15/2019	0.03700	112.40947	107.98106	104.16434	101.02485	99.08076	98.52921	98.47179	98.44259
4/27/2018	4/29/2023	4/29/2019	0.33688	113.23819	108.76161	104.85436	101.55845	99.36945	98.59213	98.47008	98.40300
5/4/2018	5/4/2023	5/6/2019	2.63000	111.46254	106.89500	103.09342	100.56273	99.40461	98.72204	98.07470	97.43490
5/4/2018	5/6/2023	5/6/2019	0.34050	113.04208	108.58138	104.74001	101.51394	99.39932	98.68131	98.61648	98.61098
5/8/2018	5/8/2023	5/8/2019	1.04325	112.23455	107.82995	104.10909	101.15362	99.49436	99.09670	99.06640	99.05439
5/17/2018	5/17/2023	5/17/2019	1.01175	112.48860	108.06045	104.29098	101.26479	99.50044	99.02368	98.96255	98.92644
5/17/2018	5/17/2023	5/18/2020	2.84000	112.53498	107.85196	103.80014	100.66350	98.42288	96.68419	95.10531	93.57396
5/24/2018	5/24/2021	5/24/2019	0.91175	107.09443	104.72326	102.65653	100.76301	99.38984	98.89419	98.81133	98.75717
5/24/2018	5/24/2023	5/26/2020	1.31175	109.88778	106.42442	103.51667	101.03265	99.23933	98.31465	98.05409	98.04297
6/5/2018	6/5/2023	6/5/2019	1.01781	111.58881	107.20147	103.56299	100.76638	99.31641	99.01153	98.99394	98.99077
6/5/2018	6/5/2023	6/5/2020	2.72000	112.08275	107.39453	103.39146	100.31690	98.11246	96.35837	94.74260	93.17362
6/25/2018	6/25/2021	6/25/2019	1.83506	106.28556	103.92487	101.92885	100.34508	99.62129	99.48282	99.42326	99.36624
6/25/2018	6/26/2023	6/25/2020	1.83506	108.95980	105.51202	102.73705	100.60898	99.35461	98.85938	98.72900	98.68369
6/25/2018	6/26/2023	6/25/2020	0.03560	110.29145	106.64990	103.53072	100.70963	98.33730	96.67618	95.84883	95.59427
6/27/2018	6/27/2023	6/27/2019	2.53000	111.29637	106.64325	102.84460	100.38355	99.16826	98.35322	97.57571	96.80844
7/2/2018	7/2/2023	7/2/2019	0.33738	111.84598	107.40046	103.66822	100.66856	98.88960	98.39100	98.35894	98.35894
7/2/2018	7/2/2023	7/2/2019	1.33738	110.99926	106.65042	103.13084	100.56898	99.39084	99.18766	99.18501	99.18501
7/2/2018	7/3/2023	7/2/2020	2.71000	112.20439	107.45114	103.39811	100.26387	97.98873	96.16280	94.48406	92.85677
7/30/2018	7/31/2023	7/30/2019	0.33888	112.55965	108.04570	104.17546	100.96667	98.89680	98.13501	97.98700	97.92105
7/30/2018	7/31/2023	7/30/2019	1.58888	111.49633	107.10484	103.49450	100.82414	99.51171	99.19442	99.11054	99.04144
8/23/2018	8/23/2023	8/23/2019	0.31025	111.68346	107.20828	103.43794	100.41461	98.60306	98.02719	97.92858	97.88578
8/28/2018	8/28/2023	8/28/2019	0.31725	111.67900	107.19793	103.41700	100.38532	98.56608	97.97436	97.85950	97.80321
9/4/2018	9/7/2021	9/4/2019	1.82075	105.88762	103.53516	101.65901	100.24154	99.62658	99.54351	99.54351	99.54351