

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	101.35201	101.15355	100.82043	100.49011	100.16238	99.96635	99.88585	99.80579
12/27/2011	12/27/2021	12/29/2014	3.55000	110.61553	107.28073	104.06364	100.96154	97.96976	95.08383	92.29950	89.61269
10/1/2012	10/1/2019	4/1/2015	2.25000	102.28726	101.39597	100.40157	99.42184	98.45647	97.50520	96.56774	95.64383
10/16/2014	10/16/2018	10/17/2016	2.48000	100.11021	100.08930	100.04560	100.00214	99.95892	99.91592	99.87315	99.83061
10/24/2014	10/24/2018	10/26/2015	1.74000	100.11595	100.08467	100.01919	99.95407	99.88931	99.82491	99.76087	99.69718
2/20/2015	2/20/2019	2/22/2016	1.79000	100.71086	100.46629	100.07671	99.69058	99.30780	98.92837	98.55224	98.17935
3/26/2015	3/26/2019	3/29/2016	1.61000	100.79140	100.46494	99.98332	99.50639	99.03407	98.56629	98.10298	97.64409
3/26/2015	3/26/2020	3/29/2016	1.59000	102.30026	100.81022	99.34954	97.91723	96.51260	95.13499	93.78375	92.45825
6/29/2015	7/1/2019	6/29/2017	2.74000	102.08525	101.48951	100.74282	100.00541	99.27697	98.55739	97.84653	97.14423
7/30/2015	7/30/2019	6/29/2017	1.80000	101.51480	100.83195	100.00939	99.19760	98.39636	97.60549	96.82481	96.05415
8/14/2015	8/14/2025	8/14/2020	1.85000	109.02457	103.96123	100.33163	97.84295	95.93108	94.20156	92.52880	90.89499
8/26/2015	8/26/2025	8/26/2020	1.75000	108.44335	103.50878	99.99665	97.56836	95.65488	93.90166	92.20377	90.54569
9/15/2015	9/16/2019	9/15/2016	1.75000	101.70602	100.86796	99.91651	98.97871	98.05431	97.14304	96.24466	95.35892
9/29/2015	9/30/2019	9/29/2016	1.61000	101.63213	100.74703	99.75878	98.78510	97.82568	96.88025	95.94854	95.03027
10/2/2015	10/2/2025	10/2/2020	1.69000	108.15263	103.27697	99.78046	97.28602	95.28392	93.44633	91.66981	89.93696
11/6/2015	11/7/2022	11/6/2018	1.40000	104.46929	101.47047	100.02091	99.89264	99.79218	99.69231	99.59303	99.49433
12/4/2015	12/4/2025	12/4/2018	1.36000	106.29216	102.11857	100.08851	99.80481	99.63115	99.45868	99.28733	99.11710
12/24/2015	12/24/2025	12/24/2020	1.99000	110.20326	104.76183	100.68221	97.70361	95.37728	93.31530	91.34984	89.44021
1/19/2016	1/20/2026	1/22/2019	1.35000	106.30246	102.10862	100.06950	99.62709	99.32070	99.01697	98.71565	98.41670
2/26/2016	2/26/2026	2/26/2021	1.49000	107.18383	102.38011	98.83672	96.11253	93.78967	91.62909	89.54479	87.51989
5/5/2016	5/5/2026	5/5/2021	1.49000	107.29089	102.37450	98.68682	95.79396	93.30679	90.99462	88.76986	86.61282
6/16/2016	6/16/2031	6/16/2021	1.21000	107.73358	101.97403	97.93559	94.87897	92.28372	89.88378	87.58115	85.35192
6/27/2016	6/27/2031	6/27/2019	0.91000	105.32880	101.16859	99.45190	98.64634	97.93090	97.22518	96.52795	95.83908
9/15/2016	9/15/2026	9/16/2019	0.99000	104.45413	100.97356	99.26321	98.24783	97.32394	96.41525	95.51945	94.63628
1/13/2017	1/13/2027	1/14/2019	1.31000	106.56312	102.15030	100.06738	99.64574	99.36124	99.07894	98.79881	98.52082
1/20/2017	1/22/2024	1/22/2019	1.31750	110.55955	105.77447	102.08635	99.98166	99.61982	99.56193	99.50523	99.44923
1/24/2017	1/24/2024	1/24/2019	1.30156	111.44197	106.54535	102.65044	100.19791	99.60584	99.53935	99.47700	99.41539
1/30/2017	1/30/2027	1/30/2020	1.30888	114.43841	108.15431	103.40070	100.31598	98.92585	98.60963	98.59572	98.59572
3/7/2017	3/8/2027	3/7/2019	1.50000	107.89700	102.97483	100.30546	99.52720	99.10148	98.68336	98.26903	97.85844
3/20/2017	3/20/2024	3/20/2019	1.55000	106.29663	102.35435	100.18372	99.49996	99.04196	98.58962	98.14154	97.69767
4/13/2017	4/15/2024	4/15/2019	1.45000	105.84687	102.04180	100.04718	99.34740	98.82035	98.29979	97.78450	97.27439
4/28/2017	4/28/2022	4/29/2019	1.59000	104.62803	101.71828	100.04594	99.37888	98.81806	98.26336	97.71446	97.17128
4/28/2017	4/29/2024	4/29/2019	1.33888	110.31466	105.52502	101.92882	99.87038	99.43462	99.43053	99.43053	99.43053
6/5/2017	6/5/2024	6/5/2019	1.31563	109.69108	104.98549	101.54145	99.69350	99.31118	99.29357	99.28802	99.28351
6/14/2017	6/14/2022	6/14/2019	1.59000	104.77149	101.77457	100.01053	99.20177	98.51857	97.84428	97.17786	96.51920
6/27/2017	6/27/2022	6/27/2019	1.60000	104.84753	101.81671	100.01275	99.15844	98.44070	97.73294	97.03370	96.34283
7/3/2017	10/3/2018	10/3/2018	2.61000	100.02175	100.01783	100.00963	100.00147	99.99336	99.98529	99.97725	99.96926
7/3/2017	7/3/2022	7/3/2019	1.33575	107.23675	104.04886	101.45114	99.73416	99.24607	99.22446	99.22446	99.22446
7/14/2017	10/15/2018	10/15/2018	2.29000	100.09540	100.07580	100.03484	99.99411	99.95358	99.91328	99.87318	99.83330
7/14/2017	7/14/2022	7/15/2019	1.62000	104.97367	101.88952	100.02354	99.11226	98.34963	97.59830	96.85635	96.12362
7/24/2017	7/25/2022	7/24/2019	1.63000	105.04406	101.92763	100.02931	99.08470	98.29791	97.52344	96.75882	96.00388
7/28/2017	7/28/2022	10/29/2018	2.16000	107.04963	103.52557	100.92107	99.97731	99.89869	99.82052	99.74280	99.66550
7/28/2017	7/28/2022	7/29/2019	1.60000	104.94289	101.85032	99.98594	99.03874	98.23894	97.45160	96.67439	95.90712
7/31/2017	7/31/2020	10/31/2018	2.66000	104.62640	102.78099	101.09494	100.06187	99.93474	99.85118	99.76810	99.68549
7/31/2017	2/1/2021	10/31/2018	2.50000	105.30306	102.98713	101.02945	100.01336	99.92100	99.83745	99.75438	99.67178
8/1/2017	8/3/2020	11/1/2018	2.79000	104.88591	103.02707	101.29869	100.13551	99.94419	99.85794	99.77219	99.68692
8/11/2017	8/11/2022	8/12/2019	1.59000	104.94775	101.83745	99.95855	98.97344	98.13686	97.31395	96.50193	95.70060
8/25/2017	8/25/2022	8/26/2019	1.55000	104.83877	101.74968	99.88975	98.87718	98.00402	97.14545	96.29857	95.46315
9/5/2017	9/6/2022	9/5/2019	1.55000	104.87232	101.76110	99.87738	98.83385	97.93417	97.05024	96.17857	95.31893
9/12/2017	9/12/2022	9/12/2019	1.49000	104.66220	101.60482	99.78869	98.74635	97.82990	96.92877	96.04031	95.16428
9/18/2017	9/19/2022	9/18/2019	1.62000	105.17783	101.96788	99.96593	98.85471	97.92172	97.00711	96.10550	95.21661
9/22/2017	9/22/2022	9/23/2019	1.65000	105.30363	102.05273	100.00463	98.86474	97.91771	96.99048	96.07655	95.17564
10/10/2017	10/10/2018	10/10/2018	1.58144	100.05972	100.04646	100.01878	99.99124	99.96384	99.93659	99.90947	99.88250
10/10/2017	10/10/2018	10/10/2018	0.99144	100.06722	100.05396	100.02627	99.99872	99.97132	99.94406	99.91694	99.88996
10/10/2017	10/11/2022	10/10/2019	1.75000	105.75713	102.39941	100.19161	98.90844	97.90267	96.93165	95.97529	95.03299
10/23/2017	10/24/2022	10/23/2018	1.59706	107.40323	103.70459	101.00158	99.94703	99.88498	99.82327	99.76190	99.70086
10/23/2017	10/24/2022	10/23/2019	1.79000	105.95867	102.54018	100.24966	98.90213	97.85800	96.85404	95.86572	94.89226
10/25/2017	10/25/2022	10/25/2018	1.33531	108.02529	104.22939	101.32665	99.93744	99.85849	99.79106	99.72401	99.65733
11/6/2017	11/7/2022	11/6/2018	1.34050	107.88715	104.09827	101.24549	99.91194	99.87449	99.85825	99.84224	99.82643
11/6/2017	11/7/2022	11/6/2019	1.82000	106.12718	102.65580	100.29197	98.88511	97.80160	96.76263	95.74039	94.73390
11/17/2017	11/17/2022	11/18/2019	1.88000	106.40439	102.85830	100.39396	98.91135	97.78680	96.71662	95.66445	94.62882

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
11/17/2017	11/19/2022	11/19/2018	1.31175	108.03128	104.20008	101.29559	99.89126	99.80469	99.75326	99.70224	99.65163
12/4/2017	12/5/2022	12/4/2018	1.32075	108.58463	104.67595	101.62994	99.95277	99.81199	99.80374	99.79578	99.78810
12/4/2017	12/5/2022	12/4/2019	2.00000	106.96130	103.28017	100.63856	99.01970	97.83294	96.72307	95.63338	94.56123
12/14/2017	12/14/2022	12/16/2019	2.04000	107.16194	103.42927	100.71933	99.03496	97.80874	96.66845	95.54988	94.44964
12/18/2017	12/19/2022	12/18/2018	1.75000	105.98473	102.50251	100.35269	99.84092	99.62895	99.41851	99.20953	99.00200
1/12/2018	1/14/2023	1/14/2019	1.33744	109.09892	105.09114	101.90037	99.99777	99.67321	99.63738	99.60226	99.56772
1/19/2018	1/19/2023	1/21/2020	2.26000	108.23933	104.28474	101.23863	99.25685	97.87154	96.63317	95.42571	94.23941
1/29/2018	1/30/2023	1/29/2019	2.05000	107.39079	103.55848	100.87536	99.84129	99.50776	99.18482	98.86450	98.54676
2/2/2018	2/4/2023	2/4/2019	0.59856	110.71480	106.55014	103.02312	100.43857	99.41150	99.37049	99.36285	99.35576
2/2/2018	2/4/2023	2/4/2019	1.34856	109.69605	105.62210	102.31563	100.16995	99.64418	99.63258	99.62439	99.61675
2/9/2018	2/9/2023	2/10/2020	2.33000	108.63633	104.59015	101.42954	99.32128	97.85775	96.56637	95.31099	94.07840
2/9/2018	2/9/2023	2/9/2022	2.77000	110.54556	106.22287	102.27073	98.70716	95.47579	92.47272	89.62432	86.88971
2/16/2018	2/19/2023	2/19/2019	1.31519	110.10613	105.98102	102.57143	100.26928	99.57444	99.51793	99.47174	99.42629
2/20/2018	2/21/2023	2/20/2020	2.44000	109.17192	105.04266	101.74932	99.50427	97.96634	96.64539	95.36664	94.11176
2/20/2018	2/21/2023	2/22/2022	2.87000	111.05535	106.67832	102.67035	99.04534	95.76484	92.72195	89.84117	87.07849
3/5/2018	3/6/2023	3/5/2019	1.06563	110.25882	106.11041	102.67625	100.28700	99.47360	99.44052	99.43203	99.42421
3/15/2018	3/15/2023	3/15/2019	1.08413	110.50874	106.33369	102.83766	100.35368	99.42860	99.35359	99.31828	99.28380
3/20/2018	3/20/2023	3/20/2019	0.33750	111.28273	107.02929	103.36104	100.53906	99.14424	98.95859	98.91068	98.86398
3/21/2018	3/21/2023	3/21/2019	0.35338	111.28200	107.02918	103.36128	100.53259	99.13634	98.94797	98.89741	98.84809
3/29/2018	3/29/2023	3/29/2019	1.08438	110.77472	106.58274	103.07036	100.50540	99.45281	99.38583	99.38583	99.38583
4/5/2018	4/5/2023	4/5/2019	0.03725	111.54770	107.27508	103.58656	100.65084	99.05655	98.79603	98.78714	98.78132
4/13/2018	4/15/2023	4/15/2019	0.03700	111.72846	107.43352	103.69939	100.69896	99.01463	98.67866	98.64076	98.60840
4/27/2018	4/29/2023	4/29/2019	0.33688	112.33002	108.01651	104.26778	101.17994	99.30695	98.86494	98.86241	98.86241
5/4/2018	5/4/2023	5/6/2019	2.63000	110.38603	105.99600	102.43496	100.26032	99.39964	98.81951	98.25050	97.68753
5/4/2018	5/6/2023	5/6/2019	0.34050	112.31447	107.99355	104.22763	101.13837	99.25387	98.79399	98.77338	98.76773
5/8/2018	5/8/2023	5/8/2019	1.04325	111.45460	107.19592	103.56682	100.77879	99.39164	99.18207	99.16630	99.15403
5/17/2018	5/17/2023	5/17/2019	1.01175	111.70096	107.41862	103.74133	100.87458	99.37584	99.09993	99.05831	99.02203
5/17/2018	5/17/2023	5/18/2020	2.84000	111.42358	106.90939	103.08309	100.20909	98.20243	96.60400	95.11029	93.65314
5/24/2018	5/24/2021	5/24/2019	0.91175	106.75174	104.47374	102.42468	100.56770	99.30031	98.97332	98.91390	98.85949
5/24/2018	5/24/2023	5/26/2020	1.31175	109.05608	105.93243	103.08590	100.69365	99.04688	98.30287	98.13531	98.13531
6/5/2018	6/5/2023	6/5/2019	1.01563	110.78972	106.56624	103.03235	100.41748	99.24928	99.09239	99.08544	99.08167
6/5/2018	6/5/2023	6/5/2020	2.72000	110.97211	106.46475	102.69237	99.89246	97.90568	96.27873	94.74605	93.25002
6/25/2018	6/25/2021	6/25/2019	1.87263	105.84810	103.59459	101.63029	100.13842	99.57870	99.49194	99.43134	99.37212
6/25/2018	6/26/2023	6/25/2020	1.87263	108.07779	104.98580	102.30229	100.31177	99.23334	98.86659	98.77114	98.72864
6/25/2018	6/26/2023	6/25/2020	0.07263	109.52693	106.22828	103.15595	100.39646	98.12296	96.61278	95.93162	95.75530
6/27/2018	6/27/2023	6/27/2019	2.53000	110.19655	105.74155	102.20257	100.09238	99.13495	98.41734	97.71535	97.02179
7/2/2018	7/2/2023	7/2/2019	0.33738	111.07801	106.80541	103.16872	100.31939	98.80576	98.49489	98.48902	98.48902
7/2/2018	7/2/2023	7/2/2019	1.33738	110.16044	105.99617	102.60052	100.23757	99.33045	99.23404	99.23404	99.23404
7/2/2018	7/3/2023	7/2/2020	2.71000	111.07536	106.50581	102.68547	99.82386	97.76277	96.06598	94.47014	92.91431
7/30/2018	7/30/2023	7/30/2019	0.33888	111.56287	107.26096	103.56120	100.58286	98.83605	98.38074	98.36458	98.36458
7/30/2018	7/30/2023	7/30/2019	1.58888	110.41345	106.24980	102.84616	100.45389	99.49911	99.38301	99.38301	99.38301
8/23/2018	8/23/2023	8/23/2019	0.31025	110.87977	106.59670	102.92123	100.05368	98.50557	98.11082	98.04455	97.99989
8/28/2018	8/28/2023	8/28/2019	0.31725	110.87401	106.58654	102.90648	100.02589	98.46809	98.05620	97.97549	97.91751
9/4/2018	9/7/2021	9/4/2019	1.82075	105.43618	103.21860	101.33502	99.97883	99.52982	99.49666	99.49473	99.49422
9/25/2018	9/27/2021	9/25/2019	2.69000	107.23356	104.25094	101.67039	99.96997	98.92355	97.98403	97.05969	96.14856
9/25/2018	9/27/2021	9/25/2020	2.99000	108.14090	105.11466	102.31337	99.89788	97.85964	96.00543	94.21927	92.47684