

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	7/30/2018	3.99000	103.04773	102.72197	101.96459	101.21654	100.47798	100.00000	100.00000	100.00000
5/23/2008	5/23/2018	5/23/2018	3.27000	100.20887	100.20353	100.14054	100.07795	100.01571	99.95381	99.89225	99.83103
6/30/2008	7/2/2018	7/2/2018	3.69000	100.64563	100.62045	100.44777	100.27623	100.10583	99.93650	99.76839	99.60133
7/11/2008	7/11/2018	7/11/2018	3.75000	100.74988	100.71743	100.52005	100.32403	100.12936	99.93602	99.74400	99.55328
7/14/2008	7/16/2018	7/16/2018	2.50000	100.53461	100.49771	100.28699	100.07775	99.86998	99.66366	99.45877	99.25530
7/14/2008	7/16/2018	7/16/2018	3.25000	100.69502	100.65809	100.44714	100.23768	100.02968	99.82314	99.61802	99.41433
7/17/2008	7/17/2018	7/17/2018	3.75000	100.81238	100.77453	100.56068	100.34835	100.13750	99.92813	99.72022	99.51375
8/15/2008	8/15/2018	5/15/2018	3.83000	101.13824	101.07031	100.77675	100.48549	100.19649	99.99319	99.95302	99.91306
12/27/2011	12/27/2021	12/29/2014	3.55000	112.53428	108.75392	105.10008	101.59093	98.22003	94.98125	91.86875	88.87700
7/18/2012	7/18/2018	7/20/2015	2.72000	100.59677	100.55806	100.34175	100.12698	99.91373	99.70198	99.49170	99.28289
10/1/2012	10/1/2019	4/1/2015	2.25000	103.24343	102.24794	100.83417	99.44698	98.08575	96.74986	95.43872	94.15177
5/7/2014	5/7/2018	5/7/2015	1.76000	100.03422	100.03257	100.01342	99.99437	99.97542	99.95656	99.93780	99.91914
10/16/2014	10/16/2018	10/17/2016	2.48000	101.16405	101.01545	100.55284	100.09472	99.64089	99.19134	98.74600	98.30481
10/24/2014	10/24/2018	10/26/2015	1.74000	100.85532	100.69528	100.21183	99.73314	99.25906	98.78954	98.32453	97.86395
2/20/2015	2/20/2019	2/22/2016	1.79000	101.47159	101.10796	100.30043	99.50334	98.71649	97.93970	97.17279	96.41559
3/26/2015	3/26/2019	3/29/2016	1.61000	101.47565	101.04211	100.14308	99.25647	98.38205	97.51960	96.66890	95.82972
3/26/2015	3/26/2020	3/29/2016	1.59000	103.07362	101.35089	99.47717	97.64738	95.86033	94.11479	92.40962	90.74369
6/29/2015	7/1/2019	6/29/2017	2.74000	103.24962	102.56350	101.39443	100.24446	99.11323	98.00033	96.90539	95.82802
7/30/2015	7/30/2019	6/29/2017	1.80000	102.27968	101.50646	100.26624	99.04730	97.84917	96.67139	95.51353	94.37515
8/14/2015	8/14/2025	8/14/2020	1.85000	110.23354	104.86708	100.84080	97.85129	95.47303	93.35031	91.32809	89.36509
8/26/2015	8/26/2025	8/26/2020	1.75000	109.61409	104.37436	100.46152	97.53266	95.15884	93.01928	90.97421	88.98886
9/15/2015	9/16/2019	9/15/2016	1.75000	102.44968	101.51196	100.14358	98.80041	97.48186	96.18736	94.91637	93.66836
9/29/2015	9/30/2019	9/29/2016	1.61000	102.31629	101.32807	99.92381	98.54594	97.19385	95.86692	94.56456	93.28623
10/2/2015	10/2/2025	10/2/2020	1.69000	109.30346	104.09391	100.18670	97.22240	94.78026	92.56432	90.44414	88.38764
11/6/2015	11/7/2022	11/6/2018	1.40000	105.45857	102.16001	100.25729	99.52757	99.01686	98.51305	98.01426	97.52040
12/4/2015	12/4/2025	12/4/2018	1.36000	107.31117	102.87763	100.42054	99.43736	98.83828	98.26342	97.69477	97.13216
12/24/2015	12/24/2025	12/24/2020	1.99000	111.47416	105.70035	101.24356	97.82446	95.05508	92.60409	90.29224	88.06175
1/19/2016	1/20/2026	1/22/2019	1.35000	107.32018	102.86388	100.37643	99.26863	98.53494	97.83258	97.13885	96.45340
2/2/2016	5/2/2018	5/2/2018	2.22000	100.01233	100.01186	100.00639	100.00094	99.99552	99.99013	99.98477	99.97943
2/26/2016	2/26/2026	2/26/2021	1.49000	108.26579	103.12392	99.17352	96.01077	93.28167	90.75766	88.34237	86.00776
5/2/2016	5/2/2023	5/4/2018	1.17777	107.09229	103.11675	100.64892	99.98435	99.98435	99.98435	99.98435	99.98435
5/5/2016	5/7/2018	5/7/2018	0.89000	100.01730	100.01565	99.99653	99.97750	99.95857	99.93974	99.92100	99.90235
5/5/2016	5/5/2026	5/5/2021	1.49000	108.33483	103.06720	98.98750	95.68551	92.81153	90.14582	87.59583	85.13505
5/17/2016	5/17/2021	5/17/2018	1.28494	106.21479	103.14337	100.16313	99.98614	99.94014	99.89440	99.84890	99.80364
6/16/2016	6/16/2026	6/18/2018	0.69000	103.42882	100.74511	99.94842	99.81090	99.67762	99.54529	99.41355	99.28274
6/16/2016	6/16/2031	6/16/2021	1.21000	108.56464	102.51083	98.10724	94.65418	91.68127	88.93530	86.31385	83.78766
6/27/2016	6/27/2031	6/27/2018	0.69000	104.32716	100.97964	99.94374	99.77741	99.62228	99.46811	99.31501	99.16284
6/27/2016	6/27/2031	6/27/2019	0.91000	106.05739	101.69677	99.45598	98.14112	97.01995	95.92869	94.85521	93.79891
7/28/2016	7/30/2026	7/30/2018	1.65878	107.17445	102.63613	100.33381	99.87514	99.79281	99.71343	99.63477	99.55681
8/11/2016	8/11/2026	8/13/2018	0.81000	104.16729	101.05741	99.91762	99.59872	99.31602	99.03550	98.75715	98.48093
9/9/2016	9/9/2026	9/10/2018	0.80000	104.12131	101.03525	99.87147	99.47806	99.12282	98.77060	98.42135	98.07502
9/15/2016	9/15/2026	9/16/2019	0.99000	105.29039	101.51503	99.28867	97.77479	96.44884	95.16188	93.89891	92.65874
9/22/2016	9/22/2031	9/24/2018	0.65000	104.05805	100.86598	99.77713	99.35199	98.95903	98.56960	98.18359	97.80096
1/13/2017	1/13/2027	1/14/2019	1.31000	107.52490	102.85528	100.31430	99.25873	98.55615	97.87491	97.20173	96.53642
1/20/2017	1/22/2024	1/22/2019	1.32866	110.53046	105.52856	101.91686	99.86910	99.29067	99.20035	99.14819	99.09774
1/24/2017	1/24/2024	1/24/2019	1.31923	111.40810	106.28921	102.45610	100.09192	99.30575	99.17663	99.11802	99.06200
1/30/2017	1/30/2027	1/30/2020	1.32878	114.56617	107.90675	103.17022	100.09169	98.56218	98.05217	97.92043	97.86722
2/17/2017	2/17/2022	5/17/2018	2.25000	107.97541	104.39666	101.57536	100.07620	99.96344	99.91768	99.87216	99.82688
3/7/2017	3/7/2022	6/7/2018	2.30000	108.25266	104.60878	101.70512	100.11196	99.92138	99.81850	99.71623	99.61456
3/7/2017	3/8/2027	3/7/2019	1.50000	108.93275	103.74238	100.67206	99.26255	98.39531	97.58081	96.77755	95.98478
3/20/2017	3/20/2024	3/20/2019	1.55000	107.36350	103.09217	100.51767	99.24927	98.36211	97.51426	96.67824	95.85343
3/27/2017	3/29/2021	6/27/2018	2.51000	107.15159	104.26539	101.76017	100.21143	99.91439	99.75987	99.60643	99.45392
3/31/2017	3/31/2022	7/2/2018	2.25000	108.17267	104.49755	101.60823	100.08453	99.86036	99.69251	99.52591	99.36032
4/10/2017	4/11/2022	7/10/2018	2.15000	107.83035	104.18185	101.38880	100.03448	99.81748	99.62789	99.43984	99.25292
4/13/2017	4/15/2024	4/15/2019	1.45000	106.86901	102.73472	100.31150	99.06474	98.12013	97.20872	96.31049	95.42490
4/28/2017	4/28/2022	4/29/2019	1.59000	105.69613	102.43137	100.31630	99.13822	98.17045	97.22312	96.28954	95.36944
4/28/2017	4/29/2024	4/29/2019	1.35878	110.46789	105.41833	101.81316	99.72818	99.07227	98.94556	98.87916	98.81607
5/8/2017	5/8/2018	5/8/2018	1.15000	100.02555	100.02367	100.00181	99.98006	99.95842	99.93690	99.91549	99.89418
5/8/2017	5/8/2018	5/8/2018	1.30000	100.02888	100.02700	100.00514	99.98339	99.96175	99.94023	99.91881	99.89751
5/19/2017	5/21/2022	5/21/2018	0.88494	107.76260	104.09033	101.36100	99.97941	99.90305	99.84658	99.79042	99.73457
5/22/2017	5/24/2021	5/22/2018	0.90394	106.49402	103.55934	101.21047	99.97947	99.89389	99.83475	99.77593	99.71744

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
5/22/2017	5/24/2027	5/22/2018	1.09000	106.18339	101.99581	100.10821	99.94152	99.88206	99.82294	99.76413	99.70565
6/1/2017	6/7/2032	6/5/2018	0.99000	106.92579	102.14985	100.11380	99.89276	99.79480	99.69741	99.60060	99.50435
6/2/2017	6/7/2032	6/5/2018	0.99000	106.92791	102.15077	100.11374	99.89276	99.79480	99.69741	99.60060	99.50435
6/5/2017	6/6/2022	6/5/2018	1.02457	107.51606	103.83624	101.19425	99.93536	99.89804	99.88437	99.87090	99.85763
6/5/2017	6/5/2024	6/5/2019	1.02457	109.66605	104.74565	101.39378	99.54325	99.01158	98.95386	98.95328	98.95328
6/5/2017	6/7/2032	6/5/2018	0.99000	106.92500	102.15171	100.11404	99.89276	99.79480	99.69741	99.60060	99.50435
6/14/2017	6/14/2022	6/14/2019	1.59000	105.83546	102.54581	100.35758	98.98938	97.88335	96.81914	95.77233	94.74191
6/22/2017	6/22/2022	6/22/2018	1.24814	107.71292	103.97989	101.26654	99.92774	99.82626	99.76669	99.70732	99.64853
6/27/2017	6/27/2022	6/27/2018	1.29155	107.52585	103.81593	101.15699	99.90813	99.80824	99.73740	99.66718	99.59744
6/27/2017	6/27/2022	6/27/2019	1.60000	105.91594	102.58981	100.36245	98.95463	97.81435	96.71773	95.63953	94.57856
7/3/2017	7/3/2020	7/3/2018	1.30800	105.14012	103.04082	101.22722	100.02574	99.84515	99.83931	99.83392	99.82873
7/3/2017	7/6/2021	7/3/2018	1.30800	106.62752	103.59168	101.22610	99.92912	99.83951	99.83361	99.82814	99.82284
7/3/2017	7/3/2022	7/3/2019	1.30800	107.19851	103.73421	101.23006	99.60570	98.98617	98.88546	98.88546	98.88546
7/14/2017	7/14/2022	7/15/2019	1.62000	106.05281	102.66848	100.38310	98.91720	97.72906	96.58931	95.46941	94.36791
7/14/2017	7/16/2022	7/16/2018	1.04769	108.18542	104.32073	101.45529	99.90071	99.72332	99.68220	99.64188	99.60188
7/21/2017	7/23/2022	7/23/2018	1.06156	108.19638	104.31977	101.44214	99.88298	99.68304	99.62306	99.56351	99.50463
7/24/2017	7/25/2022	7/24/2019	1.63000	106.12936	102.71113	100.39295	98.89690	97.68467	96.52256	95.38106	94.25860
7/28/2017	7/28/2022	7/29/2019	1.60000	106.01405	102.62288	100.33109	98.83341	97.60937	96.43439	95.28048	94.14597
7/28/2017	7/30/2022	7/30/2018	1.05878	108.24666	104.35119	101.45248	99.87205	99.64189	99.56275	99.48433	99.40661
7/28/2017	7/30/2022	7/30/2018	1.35878	107.76461	103.95697	101.22079	99.86833	99.71734	99.63808	99.55954	99.48170
7/31/2017	7/31/2020	7/31/2018	1.30878	105.33072	103.13811	101.24757	99.97273	99.69992	99.61801	99.53683	99.45637
7/31/2017	1/31/2021	7/31/2018	1.30878	106.08049	103.40856	101.20091	99.89078	99.69993	99.61802	99.53683	99.45638
7/31/2017	7/31/2021	7/31/2018	1.30878	106.70790	103.62520	101.20564	99.87140	99.69993	99.61802	99.53684	99.45638
7/31/2017	1/31/2022	7/31/2018	1.30878	107.36104	103.87181	101.21705	99.85030	99.69993	99.61802	99.53684	99.45638
7/31/2017	7/31/2022	7/31/2018	1.30878	107.79428	103.97948	101.23088	99.85836	99.69994	99.61802	99.53684	99.45638
8/1/2017	8/1/2020	8/1/2018	0.47340	105.32993	103.14106	101.29191	99.99079	99.69607	99.69540	99.69514	99.69527
8/1/2017	8/1/2022	8/1/2018	0.47340	108.04631	104.16283	101.34498	99.84754	99.69608	99.69542	99.69516	99.69529
8/11/2017	8/11/2022	8/12/2019	1.59000	106.01609	102.60716	100.29214	98.76503	97.50504	96.29590	95.10882	93.94213
8/11/2017	8/13/2022	8/13/2018	0.81050	107.35555	103.58439	100.99101	99.80723	99.71575	99.68202	99.64887	99.61629
8/17/2017	8/17/2022	8/17/2018	0.58494	107.91057	104.02799	101.23275	99.78315	99.60703	99.56274	99.51911	99.47610
8/18/2017	8/20/2022	8/20/2018	0.88494	107.49140	103.69105	101.04823	99.80413	99.68348	99.63098	99.57920	99.52808
8/25/2017	8/25/2022	8/26/2019	1.55000	105.88963	102.49796	100.19501	98.64763	97.35324	96.10957	94.88901	93.68995
8/25/2017	8/27/2022	8/27/2018	0.94363	107.18983	103.43481	100.88426	99.76333	99.64764	99.57609	99.50534	99.43538
9/5/2017	9/6/2022	9/5/2019	1.55000	105.92398	102.50918	100.18027	98.60532	97.28487	96.01682	94.77273	93.55089
9/12/2017	9/12/2022	9/12/2018	1.07140	106.54875	102.88250	100.56222	99.69807	99.64656	99.61823	99.59055	99.56353
9/12/2017	9/12/2022	9/12/2019	1.49000	105.68823	102.33132	100.05176	98.48828	97.15550	95.87132	94.61136	93.37419
9/18/2017	9/19/2022	9/18/2019	1.62000	106.26137	102.74040	100.30649	98.65708	97.29662	95.99732	94.72363	93.47299
9/22/2017	9/22/2022	9/23/2019	1.65000	106.39939	102.84043	100.36071	98.68157	97.30434	95.99233	94.70664	93.44436
9/22/2017	9/24/2022	9/24/2018	1.24814	107.44863	103.59984	100.96655	99.73883	99.58621	99.52502	99.46472	99.40527
10/10/2017	10/11/2022	10/10/2018	0.99746	108.21171	104.18707	101.29042	99.70187	99.41801	99.39400	99.37191	99.35055
10/10/2017	10/11/2022	10/10/2018	1.58746	107.40501	103.54881	100.97202	99.80450	99.68416	99.66054	99.63775	99.61570
10/10/2017	10/11/2022	10/10/2019	1.75000	106.89675	103.19672	100.55590	98.76473	97.32794	95.97150	94.64432	93.34204
10/23/2017	10/24/2022	10/23/2018	1.61156	107.48585	103.60594	100.99695	99.79806	99.62863	99.56932	99.51123	99.45408
10/23/2017	10/24/2022	10/23/2019	1.79000	107.11941	103.35025	100.63249	98.77967	97.30116	95.91228	94.55440	93.22255
10/25/2017	10/25/2022	10/25/2018	1.35954	108.00151	104.01526	101.20464	99.75915	99.49932	99.43445	99.37146	99.30946
11/6/2017	11/7/2022	11/6/2018	0.78902	107.86678	103.87432	101.12075	99.72722	99.50521	99.49090	99.47906	99.46803
11/6/2017	11/7/2022	11/6/2019	1.82000	107.30218	103.47507	100.68932	98.77350	97.24988	95.82497	94.43357	93.06933
11/17/2017	11/17/2022	11/18/2019	1.88000	107.60692	103.69691	100.81758	98.83058	97.26457	95.80883	94.38897	92.99731
11/17/2017	11/19/2022	11/19/2018	0.88494	108.01414	103.98934	101.18073	99.72536	99.44644	99.39597	99.34931	99.30368
12/4/2017	12/5/2022	12/4/2018	1.02457	108.57119	104.44408	101.48735	99.82483	99.44961	99.43481	99.43087	99.42780
12/4/2017	12/5/2022	12/4/2019	2.00000	108.21830	104.16932	101.11890	98.99790	97.36015	95.86210	94.40517	92.97800
12/14/2017	12/14/2022	12/16/2019	2.04000	108.43844	104.33625	101.21566	99.03217	97.35213	95.82308	94.33799	92.88378
12/18/2017	12/19/2022	12/18/2018	1.75000	107.13517	103.32109	100.80560	99.64914	99.00309	98.39089	97.78553	97.18681
1/12/2018	1/14/2023	1/14/2019	1.33903	109.09644	104.86761	101.76575	99.89750	99.34569	99.28263	99.25217	99.22306
1/19/2018	1/19/2023	1/21/2020	2.26000	109.61890	105.27367	101.83227	99.36468	97.51043	95.87508	94.30203	92.76434
1/29/2018	1/30/2023	1/29/2019	2.05000	108.68066	104.48914	101.46811	99.85308	99.01801	98.29365	97.57992	96.87483
2/2/2018	2/4/2023	2/4/2019	0.02777	110.40209	105.98418	102.51626	100.02262	98.89294	98.70585	98.69970	98.70004
2/2/2018	2/4/2023	2/4/2019	0.77777	109.69899	105.38602	102.15463	100.07827	99.34997	99.27431	99.27016	99.26817
2/9/2018	2/9/2023	2/10/2020	2.33000	110.05049	105.61398	102.05930	99.47423	97.53548	95.84496	94.22606	92.64507
2/9/2018	2/9/2023	2/9/2022	2.77000	112.15024	107.39757	103.03592	99.07488	95.45444	92.09619	88.92524	85.89715
2/16/2018	2/19/2023	2/19/2019	0.85000	110.05100	105.69516	102.36963	100.16367	99.31356	99.17534	99.13218	99.09234

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
2/16/2018	2/19/2023	2/19/2019	0.87250	110.13132	105.76869	102.42766	100.19412	99.31966	99.17558	99.13218	99.09234
2/20/2018	2/21/2023	2/20/2020	2.44000	110.63566	106.10580	102.41986	99.70415	97.68857	95.96113	94.31641	92.71192
2/20/2018	2/21/2023	2/22/2022	2.87000	112.70588	107.89607	103.47321	99.45224	95.77596	92.37566	89.16889	86.11070
3/5/2018	3/6/2023	3/5/2019	0.77457	110.16354	105.76719	102.39869	100.08522	99.13342	98.99043	98.98348	98.98201
3/15/2018	3/15/2023	3/15/2019	0.87450	110.41630	105.99554	102.56564	100.16291	99.11260	98.91543	98.87964	98.85165
3/20/2018	3/20/2023	3/20/2019	0.20175	110.87415	106.37040	102.75647	100.02203	98.58894	98.22832	98.16862	98.13038
3/21/2018	3/21/2023	3/21/2019	0.22249	110.87318	106.36828	102.75173	100.01526	98.58094	98.21819	98.15595	98.11510
3/29/2018	3/29/2023	3/29/2019	1.05200	110.87549	106.40684	102.87186	100.31292	99.09406	98.80455	98.72660	98.66151
4/5/2018	4/5/2023	4/5/2019	0.02084	111.01676	106.47399	102.82763	99.98726	98.39465	97.95364	97.91691	97.91691
4/13/2018	4/15/2023	4/15/2019	0.04163	111.19959	106.63824	102.94652	100.04082	98.36514	97.86335	97.79587	97.77497
4/27/2018	4/29/2023	4/29/2019	0.36561	112.12112	107.50978	103.71598	100.63617	98.72328	98.03656	97.89906	97.83843