

Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

The Federal Home Loan Bank of Boston (Bank) is providing estimated valuations of the specific HLB-Option and Knockout advances set forth below 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 HLB-Option or Knockout advance.

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 HLB-Option and Knockout advances.

The table depicts valuation estimates resulting from immediate parallel interest-rate movements of plus/minus 400 basis points in 100 basis point increments. 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 by the indicated basis point shocks. Please note that the valuation estimates are from the Federal Home Loan Bank of Boston's perspective. Since the advance is held by the member 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 advance, the Bank would be likely to exercise its option to cancel the advance as the value falls below 100. In the case of a Knockout advance, the Bank would automatically terminate the advance on any specified cancellation date if LIBOR is equal to or greater than a predetermined "strike rate" four London Business days prior to the scheduled cancellation date. In either case, the member's cost to prepay the advance increases as interest rates fall.

To identify your advance, locate the appropriate 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 the Money Desk at 1-800-357-3452.

As of: 10/31/2015 Parallel-Shift Sensitivity Analysis for HLB-Option and Knockout Advances

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
1/17/2006	1/19/2016	1/19/2016	4.080	100.907	100.907	100.907	100.859	100.641	100.423	100.207	99.991
4/24/2006	4/25/2016	1/25/2016	4.440	102.183	102.183	102.183	101.952	101.464	100.982	100.522	100.142
5/5/2006	5/5/2016	11/5/2015	4.350	102.259	102.259	102.259	102.007	101.492	100.985	100.511	100.126
5/5/2006	5/5/2016	11/5/2015	4.530	102.353	102.353	102.353	102.100	101.585	101.077	100.595	100.186
5/15/2006	5/16/2016	11/16/2015	4.350	102.392	102.392	102.392	102.118	101.573	101.037	100.534	100.133
5/15/2006	5/16/2016	11/16/2015	4.520	102.486	102.486	102.486	102.211	101.666	101.129	100.618	100.179
5/19/2006	5/19/2016	11/19/2015	4.510	102.518	102.518	102.518	102.237	101.684	101.139	100.620	100.176
6/12/2006	6/13/2016	12/14/2015	4.620	102.900	102.900	102.900	102.570	101.948	101.336	100.753	100.269
6/26/2006	6/27/2016	12/28/2015	4.730	103.153	103.153	103.153	102.796	102.135	101.484	100.860	100.333
7/24/2006	7/25/2016	1/25/2016	4.660	103.469	103.469	103.469	103.057	102.320	101.597	100.912	100.345
7/28/2006	7/28/2016	1/28/2016	4.490	103.380	103.380	103.380	102.962	102.218	101.489	100.806	100.260
8/25/2006	8/25/2016	11/25/2015	4.350	103.613	103.613	103.613	103.137	102.318	101.521	100.788	100.213
11/24/2006	11/25/2016	11/24/2015	4.190	104.551	104.551	104.551	103.834	102.763	101.742	100.850	100.210
12/1/2006	12/1/2016	12/1/2015	4.090	104.510	104.510	104.510	103.776	102.691	101.668	100.793	100.196
12/4/2006	12/5/2016	12/4/2015	4.080	104.544	104.544	104.544	103.797	102.701	101.669	100.788	100.190
12/5/2006	12/5/2016	12/7/2015	4.260	104.745	104.745	104.745	103.997	102.898	101.854	100.940	100.280
12/8/2006	12/8/2016	12/8/2015	3.990	104.477	104.477	104.477	103.721	102.619	101.586	100.716	100.146
12/12/2006	12/12/2016	12/14/2015	3.990	104.522	104.522	104.522	103.752	102.640	101.596	100.717	100.141
12/19/2006	12/19/2016	12/21/2015	4.190	104.830	104.830	104.830	104.036	102.901	101.826	100.893	100.236
12/28/2006	12/28/2016	12/28/2015	4.250	105.005	105.005	105.005	104.182	103.021	101.920	100.958	100.268
12/28/2006	12/28/2016	12/28/2015	4.400	105.182	105.182	105.182	104.358	103.195	102.084	101.098	100.361
1/12/2007	1/12/2017	1/12/2016	4.420	105.390	105.390	105.390	104.514	103.312	102.170	101.164	100.410
1/16/2007	1/17/2017	1/19/2016	4.790	105.907	105.907	105.907	105.012	103.790	102.615	101.545	100.682
2/2/2007	2/2/2017	11/2/2015	4.690	105.992	105.992	105.992	105.040	103.770	102.521	101.293	100.085
2/20/2007	2/21/2017	11/20/2015	4.850	106.453	106.453	106.453	105.429	104.100	102.794	101.510	100.248
2/20/2007	2/21/2017	11/20/2015	4.390	105.841	105.841	105.841	104.821	103.510	102.276	101.202	100.388
2/23/2007	2/23/2017	11/23/2015	4.250	105.678	105.678	105.678	104.652	103.339	102.112	101.061	100.285
2/23/2007	2/23/2017	11/23/2015	4.350	105.812	105.812	105.812	104.785	103.469	102.233	101.163	100.357
3/16/2007	3/16/2017	12/16/2015	4.090	105.703	105.703	105.703	104.599	103.239	101.986	100.942	100.237
3/23/2007	3/23/2017	12/23/2015	4.290	106.065	106.065	106.065	104.932	103.546	102.255	101.151	100.359
3/23/2007	3/23/2017	12/23/2015	4.290	106.065	106.065	106.065	104.932	103.546	102.255	101.151	100.359
4/9/2007	4/10/2017	1/11/2016	4.150	106.075	106.075	106.075	104.872	103.449	102.141	101.051	100.298
4/12/2007	4/12/2017	1/12/2016	4.250	106.245	106.245	106.245	105.033	103.600	102.276	101.158	100.365
4/13/2007	4/13/2017	1/13/2016	4.450	106.551	106.551	106.551	105.333	103.889	102.542	101.379	100.513
5/18/2007	5/18/2017	11/18/2015	4.190	106.576	106.576	106.576	105.218	103.696	102.304	101.145	100.314
5/22/2007	5/22/2017	11/23/2015	4.750	107.507	107.507	107.507	106.126	104.568	103.104	101.812	100.790
5/29/2007	5/30/2017	11/30/2015	4.250	106.811	106.811	106.811	105.403	103.847	102.418	101.218	100.341
6/7/2007	6/7/2017	12/7/2015	4.820	107.832	107.832	107.832	106.382	104.782	103.280	101.955	100.899
6/8/2007	6/8/2017	12/8/2015	4.490	107.308	107.308	107.308	105.859	104.270	102.801	101.542	100.599
6/18/2007	6/19/2017	12/18/2015	4.500	107.462	107.462	107.462	105.966	104.346	102.849	101.565	100.603
6/19/2007	6/19/2017	12/21/2015	4.650	107.711	107.711	107.711	106.212	104.585	103.071	101.753	100.724
6/22/2007	6/22/2017	12/22/2015	4.500	107.500	107.500	107.500	105.990	104.363	102.859	101.568	100.601
6/28/2007	6/28/2017	12/28/2015	4.500	107.575	107.575	107.575	106.040	104.396	102.877	101.574	100.599
7/13/2007	7/13/2017	1/13/2016	4.290	107.400	107.400	107.400	105.805	104.140	102.625	101.362	100.463
7/20/2007	7/20/2017	1/20/2016	4.290	107.483	107.483	107.483	105.858	104.174	102.644	101.367	100.456
7/27/2007	7/27/2017	1/27/2016	4.250	107.496	107.496	107.496	105.841	104.142	102.602	101.322	100.416
7/30/2007	1/30/2019	2/1/2016	3.990	113.155	113.155	111.998	108.809	105.964	103.587	101.774	100.574
7/31/2007	7/31/2017	2/1/2016	3.990	107.082	107.082	107.082	105.418	103.733	102.237	101.049	100.259
7/31/2007	7/31/2017	2/1/2016	3.990	107.082	107.082	107.082	105.418	103.733	102.237	101.049	100.259
7/31/2007	7/31/2017	2/1/2016	4.060	107.206	107.206	107.206	105.540	103.848	102.339	101.128	100.305
8/2/2007	8/2/2017	2/2/2016	4.050	107.211	107.211	107.211	105.537	103.846	102.339	101.128	100.303
8/2/2007	8/2/2017	2/2/2016	4.150	107.389	107.389	107.389	105.713	104.012	102.487	101.245	100.379
8/9/2007	8/9/2017	11/9/2015	3.990	107.182	107.182	107.182	105.479	103.775	102.263	101.058	100.257
8/16/2007	8/16/2017	11/16/2015	3.990	107.259	107.259	107.259	105.526	103.803	102.275	101.056	100.251
8/17/2007	8/17/2017	11/17/2015	4.000	107.288	107.288	107.288	105.550	103.824	102.292	101.067	100.255
9/4/2007	9/5/2017	12/4/2015	3.890	107.293	107.293	107.293	105.479	103.723	102.186	100.982	100.227
9/10/2007	9/11/2017	12/10/2015	3.690	106.980	106.980	106.980	105.148	103.402	101.900	100.762	100.112
9/11/2007	9/11/2017	12/11/2015	3.590	106.791	106.791	106.791	104.964	103.231	101.756	100.657	100.064

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9/13/2007	9/13/2017	12/14/2015	3.990	107.569	107.569	107.569	105.715	103.928	102.352	101.095	100.278
9/27/2007	9/27/2017	12/28/2015	3.650	107.066	107.066	107.066	105.166	103.385	101.860	100.706	100.065
10/11/2007	10/11/2017	1/11/2016	3.990	107.880	107.880	107.863	105.904	104.054	102.428	101.141	100.298
10/15/2007	10/16/2017	1/15/2016	3.990	107.935	107.935	107.911	105.937	104.074	102.437	101.141	100.291
10/26/2007	10/26/2017	1/26/2016	3.390	106.836	106.836	106.796	104.830	103.031	101.543	100.496	99.917
11/5/2007	11/6/2017	11/5/2015	4.390	108.987	108.987	108.929	106.880	104.928	103.173	101.720	100.661
11/6/2007	11/6/2017	11/6/2015	3.480	107.124	107.124	107.066	105.068	103.237	101.713	100.616	100.072
11/19/2007	11/20/2017	11/19/2012	4.290	108.949	108.949	108.868	106.760	104.685	102.661	100.687	98.761
11/20/2007	11/20/2017	11/20/2015	3.740	107.802	107.802	107.721	105.664	103.754	102.118	100.877	100.159
11/23/2007	11/24/2017	11/23/2011	3.990	108.367	108.367	108.280	106.166	104.086	102.058	100.079	98.149
11/23/2007	11/24/2017	11/23/2011	3.990	108.367	108.367	108.280	106.166	104.086	102.058	100.079	98.149
11/29/2007	11/29/2017	11/30/2015	2.950	106.227	106.227	106.132	104.124	102.356	100.989	100.176	99.903
11/30/2007	11/30/2017	11/30/2015	3.190	106.743	106.743	106.646	104.607	102.777	101.308	100.309	99.923
12/10/2007	12/11/2017	12/10/2015	3.450	107.398	107.398	107.281	105.194	103.294	101.724	100.607	100.031
12/24/2007	12/26/2017	12/24/2012	3.990	108.722	108.722	108.577	106.371	104.204	102.092	100.034	98.028
1/4/2008	1/4/2018	1/4/2016	3.360	107.429	107.429	107.270	105.132	103.207	101.638	100.557	99.982
1/7/2008	1/8/2018	1/7/2016	2.590	105.755	105.755	105.594	103.559	101.851	100.646	100.010	99.726
1/8/2008	1/8/2018	1/8/2016	2.570	105.711	105.711	105.550	103.518	101.817	100.622	99.998	99.716
1/8/2008	1/8/2018	1/8/2016	2.640	105.866	105.866	105.705	103.659	101.932	100.697	100.032	99.733
1/11/2008	1/11/2018	1/11/2016	2.720	106.067	106.067	105.899	103.831	102.070	100.784	100.068	99.739
1/14/2008	1/16/2018	1/14/2016	3.240	107.271	107.271	107.090	104.933	103.009	101.468	100.434	99.901
1/16/2008	1/16/2018	1/19/2016	2.380	105.341	105.341	105.168	103.160	101.518	100.426	99.889	99.620
1/17/2008	1/17/2018	1/19/2016	2.250	105.056	105.056	104.883	102.906	101.324	100.312	99.840	99.589
1/18/2008	1/18/2018	1/19/2016	2.290	105.152	105.152	104.977	102.987	101.384	100.346	99.855	99.598
2/14/2008	2/14/2018	2/14/2012	3.190	107.416	107.416	107.176	104.843	102.559	100.336	98.172	96.065
2/25/2008	2/26/2018	11/25/2015	2.420	105.707	105.707	105.461	103.352	101.631	100.461	99.964	99.882
3/7/2008	3/7/2018	12/7/2015	3.550	108.460	108.460	108.185	105.867	103.773	102.043	100.785	100.102
3/14/2008	3/14/2018	12/14/2015	2.400	105.766	105.766	105.492	103.361	101.633	100.478	99.965	99.793
3/17/2008	3/19/2018	12/17/2015	3.300	107.974	107.974	107.676	105.355	103.295	101.643	100.519	99.976
4/28/2008	4/30/2018	1/28/2016	2.150	105.446	105.446	105.090	102.940	101.274	100.251	99.783	99.516
4/30/2008	4/30/2018	4/30/2013	3.740	109.474	109.474	109.076	106.512	104.007	101.574	99.211	96.915
5/23/2008	5/23/2018	11/23/2015	3.270	108.492	108.492	108.053	105.580	103.408	101.684	100.504	99.986
6/30/2008	7/2/2018	6/30/2011	3.690	109.993	109.993	109.443	106.700	104.025	101.432	98.916	96.477
7/11/2008	7/11/2018	7/11/2012	3.750	110.249	110.249	109.675	106.905	104.204	101.586	99.047	96.585
7/14/2008	7/16/2018	1/14/2016	2.500	106.867	106.867	106.334	103.925	101.982	100.659	99.981	99.676
7/14/2008	7/16/2018	1/14/2016	3.250	108.928	108.928	108.365	105.771	103.516	101.741	100.553	99.935
7/17/2008	7/17/2018	7/17/2013	3.750	110.312	110.312	109.722	106.935	104.218	101.584	99.031	96.556
8/15/2008	8/15/2018	11/16/2015	3.830	110.840	110.840	110.188	107.432	104.951	102.875	101.305	100.310
12/27/2011	12/27/2021	12/29/2014	3.550	122.176	121.626	115.215	108.936	103.037	97.503	92.310	87.435
4/27/2012	4/27/2016	4/27/2013	1.430	100.711	100.711	100.711	100.477	99.988	99.504	99.024	98.549
4/30/2012	5/2/2016	4/30/2013	1.380	100.705	100.705	100.705	100.460	99.958	99.461	98.968	98.480
5/15/2012	5/15/2017	5/15/2014	2.510	103.918	103.918	103.918	102.582	101.050	99.549	98.077	96.633
5/15/2012	5/15/2017	11/17/2014	1.950	103.044	103.044	103.044	101.712	100.187	98.693	97.228	95.791
6/20/2012	6/20/2017	6/22/2015	1.630	102.707	102.707	102.707	101.229	99.613	98.029	96.478	94.959
7/16/2012	7/17/2017	7/16/2014	1.720	102.986	102.986	102.986	101.392	99.703	98.050	96.432	94.847
7/18/2012	7/18/2018	7/20/2015	2.720	107.487	107.487	106.897	104.141	101.460	98.862	96.343	93.901
7/19/2012	7/19/2017	7/21/2014	1.690	102.943	102.943	102.943	101.341	99.647	97.990	96.367	94.779
10/1/2012	10/1/2019	4/1/2015	2.250	108.943	108.943	106.798	102.860	99.082	95.463	91.997	88.675
10/5/2012	10/5/2017	10/6/2014	1.630	103.192	103.192	103.184	101.252	99.355	97.503	95.694	93.927
3/8/2013	3/8/2018	3/9/2015	1.780	104.247	104.247	103.966	101.601	99.295	97.052	94.871	92.748
5/7/2014	5/7/2018	5/7/2015	1.760	104.492	104.492	104.080	101.552	99.092	96.703	94.384	92.132
10/16/2014	10/16/2018	10/17/2016	0.097	104.882	104.882	104.045	101.756	100.384	99.618	99.209	98.948
10/24/2014	10/24/2018	10/26/2015	1.740	105.263	105.263	104.405	101.419	98.527	95.733	93.031	90.420
10/24/2014	10/24/2018	10/26/2015	1.740	105.263	105.263	104.405	101.419	98.527	95.733	93.031	90.420
2/20/2015	2/20/2019	2/22/2016	0.073	105.386	105.386	104.137	101.226	100.048	99.832	99.768	99.712
3/26/2015	3/26/2019	3/29/2016	0.066	104.831	104.831	103.456	100.785	99.846	99.589	99.432	99.282
3/26/2015	3/26/2020	3/29/2016	0.066	106.386	106.386	103.600	100.616	99.802	99.585	99.432	99.282
6/29/2015	7/1/2019	6/29/2017	0.046	105.294	105.294	103.566	101.587	100.375	99.639	99.200	98.922

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7/30/2015	7/30/2019	8/1/2016	0.032	105.324	105.324	103.451	100.944	99.803	99.306	99.015	98.772
8/14/2015	8/14/2025	8/14/2020	1.850	118.369	114.078	108.140	102.400	97.288	92.642	88.356	84.360
8/19/2015	8/19/2025	8/21/2017	0.990	109.842	107.203	104.095	101.086	98.734	96.751	94.957	93.263
8/25/2015	8/25/2020	8/25/2017	0.950	104.643	104.643	103.039	100.540	98.439	96.567	94.816	93.135
8/26/2015	8/26/2025	8/26/2020	1.750	117.434	113.277	107.428	101.746	96.672	92.048	87.773	83.783
9/14/2015	9/14/2020	9/14/2017	1.050	105.190	105.190	103.444	100.801	98.597	96.644	94.828	93.093
9/15/2015	9/16/2019	9/15/2016	0.007	105.135	105.135	103.059	99.587	96.607	93.777	91.082	88.517
9/18/2015	9/18/2020	9/18/2017	1.090	105.400	105.400	103.597	100.908	98.674	96.701	94.870	93.123
9/29/2015	9/30/2019	9/29/2016	0.006	104.658	104.658	102.570	100.480	99.690	99.375	99.197	99.049
10/2/2015	10/2/2020	10/2/2017	0.890	104.444	104.444	102.883	100.323	98.153	96.196	94.357	92.590
10/2/2015	10/2/2025	10/2/2020	1.690	117.010	112.842	106.999	101.283	96.162	91.487	87.161	83.122