

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 purchase 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.

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
8/19/1998	8/19/2013	8/19/2013	5.490	100.762	100.762	100.762	100.742	100.607	100.472	100.338	100.204
8/19/1998	8/19/2013	8/19/2013	5.490	100.762	100.762	100.762	100.742	100.607	100.472	100.338	100.204
12/14/1998	12/16/2013	9/16/2013	5.390	102.530	102.530	102.530	102.398	101.934	101.475	101.021	100.581
12/14/1998	12/16/2013	9/16/2013	4.890	102.295	102.295	102.295	102.163	101.700	101.242	100.790	100.372
12/15/1998	12/16/2013	9/16/2013	4.880	102.291	102.291	102.291	102.158	101.696	101.237	100.786	100.368
1/7/2000	1/7/2015	7/8/2013	5.950	109.189	109.189	109.189	108.302	106.744	105.233	103.793	102.474
7/2/2004	7/2/2014	7/2/2013	3.990	104.067	104.067	104.067	103.648	102.638	101.648	100.677	99.724
12/13/2004	12/15/2014	9/13/2013	3.320	104.915	104.915	104.915	104.116	102.714	101.483	100.546	99.977
9/1/2005	9/1/2015	9/1/2013	4.130	109.097	109.097	109.097	107.418	105.214	103.067	100.974	98.935
9/30/2005	9/30/2015	9/30/2013	4.440	110.137	110.137	110.137	108.336	106.042	103.809	101.634	99.515
10/26/2005	10/26/2015	7/26/2013	4.540	110.694	110.694	110.694	108.780	106.412	104.107	101.865	99.682
1/17/2006	1/19/2016	7/17/2013	4.080	110.573	110.573	110.573	108.343	105.935	103.809	102.059	100.778
4/24/2006	4/25/2016	7/24/2013	4.440	112.703	112.703	112.703	109.979	107.294	104.898	102.875	101.312
5/5/2006	5/5/2016	8/5/2013	4.350	112.566	112.566	112.566	109.805	107.122	104.745	102.756	101.241
5/5/2006	5/5/2016	8/5/2013	4.530	113.086	113.086	113.086	110.307	107.593	105.165	103.108	101.509
5/15/2006	5/16/2016	8/15/2013	4.350	112.699	112.699	112.699	109.878	107.167	104.765	102.756	101.219
5/15/2006	5/16/2016	8/15/2013	4.520	113.195	113.195	113.195	110.357	107.616	105.167	103.092	101.478
5/19/2006	5/19/2016	8/19/2013	4.510	113.204	113.204	113.204	110.350	107.603	105.150	103.073	101.458
6/12/2006	6/13/2016	9/12/2013	4.620	113.846	113.846	113.817	110.851	108.033	105.511	103.365	101.685
6/26/2006	6/27/2016	9/26/2013	4.730	114.360	114.360	114.298	111.275	108.402	105.820	103.607	101.851
6/30/2006	7/1/2013	7/1/2013	4.890	100.014	100.014	100.014	100.013	100.011	100.008	100.005	100.002
7/14/2006	7/15/2013	7/15/2013	4.890	100.204	100.204	100.204	100.198	100.158	100.118	100.077	100.037
7/24/2006	7/25/2016	7/24/2013	4.660	114.510	114.510	114.362	111.276	108.355	105.744	103.521	101.770
7/28/2006	7/28/2016	7/29/2013	4.490	114.018	114.018	113.861	110.787	107.891	105.322	103.159	101.484
8/21/2006	8/21/2013	8/21/2013	4.750	100.686	100.686	100.686	100.664	100.524	100.384	100.245	100.105
8/25/2006	8/25/2016	8/26/2013	4.350	113.919	113.919	113.673	110.545	107.624	105.057	102.920	101.292
10/10/2006	10/10/2013	7/10/2013	4.250	101.204	101.204	101.204	101.147	100.869	100.592	100.318	100.076
10/12/2006	10/15/2013	7/12/2013	4.500	101.337	101.337	101.337	101.275	100.984	100.694	100.406	100.122
11/6/2006	11/6/2013	8/6/2013	4.290	101.537	101.537	101.537	101.453	101.102	100.753	100.408	100.104
11/17/2006	11/18/2013	8/19/2013	4.350	101.704	101.704	101.704	101.606	101.220	100.838	100.462	100.134
11/24/2006	11/25/2016	8/26/2013	4.190	114.478	114.478	113.882	110.566	107.517	104.878	102.725	101.126
11/30/2006	12/2/2013	8/28/2013	4.350	101.873	101.873	101.873	101.758	101.334	100.914	100.497	100.083
12/1/2006	12/1/2016	9/3/2013	4.090	114.200	114.200	113.589	110.285	107.267	104.676	102.582	101.062
12/4/2006	12/5/2016	9/4/2013	4.080	114.211	114.211	113.581	110.270	107.247	104.654	102.562	101.045
12/5/2006	12/5/2016	9/5/2013	4.260	114.838	114.838	114.202	110.855	107.778	105.112	102.929	101.299
12/6/2006	12/6/2013	9/6/2013	4.400	101.943	101.943	101.943	101.824	101.389	100.958	100.539	100.177
12/8/2006	12/8/2016	9/9/2013	3.990	113.931	113.931	113.290	109.992	106.989	104.426	102.378	100.924
12/12/2006	12/12/2016	9/12/2013	3.990	113.975	113.975	113.317	110.008	106.997	104.427	102.375	100.916
12/12/2006	12/12/2016	9/12/2013	4.050	114.185	114.185	113.524	110.202	107.173	104.578	102.492	100.990
12/19/2006	12/19/2016	9/19/2013	4.190	114.757	114.757	114.058	110.691	107.604	104.942	102.770	101.166
12/20/2006	12/20/2013	9/20/2013	4.500	102.162	102.162	102.162	102.025	101.552	101.084	100.628	100.223
12/28/2006	12/28/2016	9/30/2013	4.250	115.075	115.075	114.333	110.931	107.808	105.103	102.889	101.232
12/28/2006	12/28/2016	9/30/2013	4.400	115.607	115.607	114.859	111.429	108.264	105.503	103.216	101.475
1/12/2007	1/12/2017	7/12/2013	4.420	115.862	115.862	115.044	111.585	108.396	105.617	103.317	101.563
1/16/2007	1/17/2017	7/16/2013	4.790	117.256	117.256	116.400	112.861	109.568	106.651	104.181	102.223
1/23/2007	1/23/2014	7/23/2013	4.490	102.582	102.582	102.582	102.401	101.836	101.279	100.741	100.259
1/29/2007	1/29/2014	7/29/2013	4.790	102.834	102.834	102.834	102.646	102.064	101.489	100.920	100.358
2/2/2007	2/2/2017	8/2/2013	4.690	117.104	117.104	116.117	112.360	108.693	105.169	101.780	99.821
2/20/2007	2/21/2017	8/20/2013	4.850	117.944	117.944	116.859	113.033	109.299	105.712	102.265	98.952
2/20/2007	2/21/2017	8/20/2013	4.390	116.242	116.242	115.241	111.693	108.439	105.617	103.290	101.524
2/23/2007	2/23/2017	8/23/2013	4.250	115.748	115.748	114.748	111.223	108.006	105.235	102.971	101.278
2/23/2007	2/23/2017	8/23/2013	4.350	116.118	116.118	115.111	111.565	108.318	105.507	103.195	101.445
3/16/2007	3/16/2017	9/16/2013	4.090	115.393	115.393	114.309	110.778	107.586	104.861	102.671	101.082
3/21/2007	3/21/2017	9/23/2013	4.220	115.941	115.941	114.822	111.247	108.000	105.210	102.943	101.260
3/23/2007	3/23/2017	9/23/2013	4.290	116.229	116.229	115.095	111.500	108.226	105.404	103.098	101.372
3/23/2007	3/23/2017	9/23/2013	4.290	116.229	116.229	115.095	111.500	108.226	105.404	103.098	101.372
4/9/2007	4/10/2017	7/9/2013	4.150	115.907	115.907	114.696	111.104	107.858	105.083	102.844	101.205
4/12/2007	4/12/2017	7/12/2013	4.250	116.314	116.314	115.084	111.463	108.177	105.353	103.057	101.347
4/13/2007	4/13/2017	7/15/2013	4.450	117.094	117.094	115.844	112.174	108.820	105.915	103.517	101.688
4/23/2007	4/23/2014	7/23/2013	4.620	103.811	103.811	103.811	103.508	102.689	101.889	101.134	100.480
4/27/2007	4/27/2017	7/29/2013	4.250	116.491	116.491	115.184	111.526	108.210	105.360	103.043	101.315
5/2/2007	5/2/2014	8/2/2013	4.590	103.901	103.901	103.901	103.584	102.741	101.920	101.152	100.492
5/4/2007	5/5/2014	8/5/2013	4.550	103.905	103.905	103.905	103.584	102.732	101.905	101.131	100.473
5/18/2007	5/18/2017	8/19/2013	4.190	116.503	116.503	115.100	111.417	108.090	105.251	102.953	101.255
5/22/2007	5/22/2017	8/22/2013	4.750	118.761	118.761	117.289	113.462	109.946	106.866	104.280	102.248
5/29/2007	5/30/2017	8/29/2013	4.250	116.881	116.881	115.415	111.683	108.316	105.433	103.088	101.334
6/1/2007	6/2/2014	9/3/2013	4.500	104.212	104.212	104.212	103.845	102.919	102.022	101.190	100.506
6/7/2007	6/7/2017	9/9/2013	4.820	119.252	119.252	117.695	113.821	110.265	107.144	104.518	102.446

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
6/8/2007	6/8/2017	9/9/2013	4.490	117.946	117.946	116.414	112.613	109.155	106.166	103.700	101.821
6/11/2007	6/12/2017	9/11/2013	4.490	117.996	117.996	116.443	112.631	109.166	106.170	103.699	101.817
6/18/2007	6/19/2017	9/18/2013	4.500	118.124	118.124	116.532	112.700	109.216	106.203	103.717	101.821
6/19/2007	6/19/2017	9/19/2013	4.650	118.728	118.728	117.120	113.254	109.721	106.646	104.084	102.094
6/22/2007	6/22/2017	9/23/2013	4.500	118.161	118.161	116.553	112.713	109.223	106.204	103.712	101.810
6/28/2007	6/28/2017	9/30/2013	4.500	118.236	118.236	116.596	112.741	109.237	106.207	103.706	101.796
7/13/2007	7/13/2017	7/15/2013	4.290	117.564	117.564	115.870	112.048	108.602	105.656	103.261	101.476
7/20/2007	7/20/2017	7/22/2013	4.290	117.647	117.647	115.914	112.076	108.616	105.657	103.252	101.458
7/27/2007	7/27/2017	7/29/2013	4.250	117.566	117.566	115.799	111.956	108.496	105.543	103.151	101.372
7/30/2007	1/30/2019	7/30/2013	3.990	122.608	122.175	117.484	112.828	108.829	105.544	102.988	101.171
7/31/2007	7/31/2017	7/31/2013	3.990	116.535	116.535	114.788	111.023	107.661	104.829	102.589	100.982
7/31/2007	7/31/2017	7/31/2013	3.990	116.535	116.535	114.788	111.023	107.661	104.829	102.589	100.982
7/31/2007	7/31/2017	7/31/2013	4.060	116.825	116.825	115.069	111.280	107.892	105.024	102.739	101.081
8/2/2007	8/4/2014	8/2/2013	4.490	104.989	104.989	104.989	104.503	103.399	102.337	101.367	100.569
8/2/2007	8/2/2017	8/2/2013	4.150	117.221	117.221	115.445	111.629	108.214	105.315	102.989	101.290
8/2/2007	8/2/2017	8/2/2013	4.050	116.806	116.806	115.045	111.260	107.882	105.034	102.769	101.139
8/9/2007	8/9/2017	8/9/2013	3.990	116.635	116.635	114.844	111.063	107.694	104.864	102.628	101.031
8/16/2007	8/16/2017	8/16/2013	3.990	116.713	116.713	114.884	111.085	107.703	104.861	102.614	101.010
8/17/2007	8/17/2017	8/19/2013	4.000	116.766	116.766	114.930	111.126	107.737	104.889	102.635	101.024
8/20/2007	8/20/2014	8/20/2013	4.250	104.911	104.911	104.911	104.391	103.241	102.109	101.013	100.240
8/28/2007	8/28/2014	8/28/2013	4.350	105.123	105.123	105.123	104.586	103.419	102.298	101.285	100.485
8/30/2007	9/2/2014	8/30/2013	3.890	104.635	104.635	104.635	104.089	102.917	101.817	100.864	100.196
9/4/2007	9/5/2017	9/4/2013	3.890	116.510	116.510	114.605	110.803	107.444	104.642	102.455	100.938
9/10/2007	9/11/2017	9/10/2013	3.690	115.722	115.722	113.824	110.081	106.800	104.104	102.041	100.668
9/11/2007	9/11/2017	9/11/2013	3.590	115.296	115.296	113.419	109.714	106.480	103.840	101.843	100.547
9/12/2007	9/12/2014	9/12/2013	3.690	104.499	104.499	104.499	103.931	102.741	101.639	100.721	100.100
9/13/2007	9/15/2014	9/13/2013	3.990	104.899	104.899	104.899	104.322	103.114	101.979	100.993	100.275
9/13/2007	9/13/2017	9/13/2013	3.990	117.023	117.023	115.055	111.200	107.782	104.913	102.650	101.043
9/27/2007	9/29/2014	9/27/2010	4.490	105.687	105.687	105.687	105.075	103.810	102.567	101.344	100.141
9/27/2007	9/27/2017	9/27/2013	3.650	115.714	115.714	113.737	109.973	106.680	103.982	101.924	100.566
10/11/2007	10/14/2014	7/11/2013	4.180	105.469	105.469	105.469	104.821	103.532	102.317	101.250	100.427
10/11/2007	10/11/2017	7/11/2013	3.990	117.333	117.333	115.215	111.312	107.857	104.962	102.681	101.060
10/15/2007	10/16/2017	7/15/2013	3.990	117.389	117.389	115.240	111.327	107.864	104.963	102.677	101.051
10/25/2007	10/27/2014	7/25/2013	4.360	105.861	105.861	105.861	105.181	103.852	102.587	101.460	100.561
10/26/2007	10/26/2017	7/26/2013	3.390	114.868	114.868	112.799	109.107	105.913	103.346	101.450	100.308
11/2/2007	11/3/2014	8/2/2013	3.990	105.442	105.442	105.442	104.746	103.411	102.170	101.107	100.342
11/2/2007	11/3/2014	8/2/2013	4.190	105.714	105.714	105.714	105.017	103.676	102.417	101.313	100.480
11/5/2007	11/5/2014	8/5/2013	3.990	105.464	105.464	105.464	104.763	103.423	102.177	101.109	100.341
11/5/2007	11/6/2017	8/5/2013	4.390	119.388	119.388	117.052	112.973	109.316	106.200	103.662	101.755
11/6/2007	11/6/2017	8/6/2013	3.480	115.369	115.369	113.229	109.492	106.251	103.634	101.682	100.461
11/9/2007	11/10/2014	8/9/2013	4.330	105.989	105.989	105.989	105.273	103.908	102.618	101.475	100.577
11/13/2007	11/13/2014	8/13/2013	3.350	104.662	104.662	104.662	103.946	102.619	101.441	100.527	100.017
11/19/2007	11/19/2014	8/19/2013	4.270	106.013	106.013	106.013	105.273	103.885	102.577	101.422	100.534
11/19/2007	11/19/2014	8/19/2013	3.750	105.281	105.281	105.281	104.545	103.178	101.922	100.871	100.170
11/19/2007	11/19/2014	8/19/2013	3.750	105.281	105.281	105.281	104.545	103.178	101.922	100.871	100.170
11/19/2007	11/20/2017	8/19/2013	4.290	119.113	119.113	116.409	111.829	107.414	103.203	99.184	95.349
11/20/2007	11/20/2017	8/20/2013	3.740	116.663	116.663	114.383	110.496	107.100	104.306	102.162	100.719
11/23/2007	11/24/2017	8/23/2013	3.990	117.821	117.821	115.096	110.530	106.133	101.939	97.939	94.121
11/23/2007	11/24/2017	8/23/2013	3.990	117.821	117.821	115.096	110.530	106.133	101.939	97.939	94.121
11/29/2007	11/29/2017	8/29/2013	2.950	113.216	113.216	111.135	107.598	104.627	102.339	100.782	99.982
11/30/2007	11/30/2017	8/30/2013	3.190	114.301	114.301	112.131	108.472	105.360	102.909	101.155	100.136
12/10/2007	12/11/2017	9/10/2013	3.450	115.572	115.572	113.269	109.478	106.212	103.584	101.640	100.414
12/24/2007	12/26/2017	9/24/2013	3.990	118.175	118.175	115.230	110.574	106.097	101.831	97.764	93.887
1/3/2008	1/5/2015	10/3/2013	3.650	105.617	105.617	105.617	104.755	103.282	101.953	100.875	100.193
1/4/2008	1/4/2018	10/4/2013	3.360	115.389	115.389	112.989	109.213	105.975	103.392	101.499	100.354
1/7/2008	1/7/2015	7/8/2013	3.490	105.390	105.390	105.390	104.525	103.058	101.752	100.721	100.131
1/7/2008	1/8/2018	7/8/2013	2.590	111.891	111.891	109.775	106.432	103.681	101.664	100.388	99.969
1/8/2008	1/8/2018	7/8/2013	2.570	111.799	111.799	109.691	106.361	103.624	101.622	100.371	99.968
1/8/2008	1/8/2018	7/8/2013	2.640	112.121	112.121	109.980	106.603	103.817	101.760	100.440	99.970
1/11/2008	1/11/2018	7/11/2013	2.720	112.511	112.511	110.319	106.885	104.037	101.912	100.530	99.979
1/14/2008	1/16/2018	7/15/2013	3.240	114.948	114.948	112.517	108.782	105.597	103.079	101.264	100.246
1/16/2008	1/16/2018	7/16/2013	2.380	110.980	110.980	108.923	105.711	103.106	101.246	100.216	99.928
1/17/2008	1/17/2018	7/17/2013	2.250	110.386	110.386	108.396	105.278	102.771	101.021	100.140	99.918
1/18/2008	1/20/2015	7/18/2013	2.350	103.714	103.714	103.714	102.855	101.517	100.513	100.016	99.918
1/18/2008	1/18/2018	7/18/2013	2.290	110.577	110.577	108.561	105.410	102.869	101.081	100.159	99.915
2/14/2008	2/14/2018	8/14/2013	3.190	114.974	114.974	111.693	106.972	102.449	98.146	94.051	90.153
2/25/2008	2/26/2018	8/26/2013	2.420	111.440	111.440	109.200	105.895	103.222	101.305	100.187	99.764
3/7/2008	3/9/2015	9/9/2013	2.890	104.953	104.953	104.953	103.934	102.404	101.142	100.281	99.828

Start Date	Maturity Date	Next Call Date	Coupon	-300	-200	-100	Base	+100	+200	+300	+400
3/7/2008	3/7/2018	9/9/2013	3.550	116.871	116.871	114.079	110.111	106.698	103.946	101.884	100.558
3/14/2008	3/14/2018	9/16/2013	2.400	111.452	111.452	109.161	105.866	103.207	101.306	100.186	99.686
3/17/2008	3/19/2018	9/17/2013	3.300	115.793	115.793	113.024	109.157	105.876	103.277	101.388	100.241
4/14/2008	4/14/2015	7/14/2013	2.750	104.988	104.988	104.988	103.819	102.027	100.275	98.561	96.885
4/28/2008	4/28/2015	7/29/2013	3.250	106.021	106.021	106.021	104.834	103.131	101.675	100.580	100.028
4/28/2008	4/30/2018	7/29/2013	2.150	110.540	110.540	108.187	105.050	102.559	100.867	100.060	99.852
4/30/2008	4/30/2018	7/30/2013	3.740	118.335	118.335	114.477	109.495	104.726	100.197	95.894	91.806
5/2/2008	5/4/2015	8/2/2013	3.990	107.459	107.459	107.459	106.229	104.436	102.816	101.465	100.501
5/5/2008	5/5/2015	8/5/2013	3.170	105.934	105.934	105.934	104.733	103.036	101.606	100.559	100.018
5/19/2008	5/19/2015	8/21/2013	4.700	108.982	108.982	108.982	107.679	105.756	103.878	102.042	100.247
5/23/2008	5/23/2018	8/23/2013	3.270	116.240	116.240	113.122	109.186	105.859	103.234	101.333	100.213
6/24/2008	6/24/2015	9/24/2013	3.830	107.702	107.702	107.702	106.306	104.402	102.704	101.320	100.355
6/30/2008	7/2/2018	9/30/2013	3.690	118.736	118.736	114.374	109.226	104.311	99.651	95.231	91.037
7/7/2008	7/8/2013	7/8/2013	4.590	100.102	100.102	100.102	100.099	100.078	100.056	100.035	100.013
7/8/2008	7/8/2013	7/8/2013	4.250	100.094	100.094	100.094	100.092	100.070	100.049	100.027	100.006
7/10/2008	7/10/2014	7/10/2013	4.800	105.000	105.000	105.000	104.563	103.526	102.507	101.507	100.524
7/11/2008	7/11/2018	7/11/2013	3.750	119.134	119.134	114.695	109.516	104.572	99.885	95.441	91.225
7/14/2008	7/14/2015	7/15/2013	4.900	110.126	110.126	110.126	108.623	106.538	104.504	102.520	100.791
7/14/2008	7/16/2018	7/15/2013	2.500	112.790	112.790	109.854	106.384	103.572	101.546	100.326	99.938
7/14/2008	7/16/2018	7/15/2013	3.250	116.628	116.628	113.217	109.238	105.882	103.249	101.354	100.275
7/17/2008	7/17/2018	7/17/2013	3.750	119.197	119.197	114.707	109.512	104.553	100.926	100.034	99.988
7/21/2008	7/22/2013	7/22/2013	3.000	100.183	100.183	100.183	100.176	100.116	100.057	99.998	99.939
8/15/2008	8/15/2018	8/15/2013	3.830	119.915	119.915	116.031	111.691	107.950	104.892	102.544	100.926
9/8/2008	9/9/2013	9/9/2013	2.890	100.570	100.570	100.570	100.537	100.345	100.154	99.963	99.773
5/13/2009	5/13/2014	8/13/2013	4.000	103.522	103.522	103.522	103.188	102.319	101.483	100.733	100.180
9/28/2009	9/30/2013	9/30/2013	2.920	100.746	100.746	100.746	100.698	100.448	100.199	99.951	99.704
5/11/2010	5/11/2015	5/11/2015	3.700	106.988	106.988	106.988	105.709	103.674	101.346	98.527	95.426
5/24/2010	5/26/2015	8/26/2013	2.250	104.343	104.343	104.343	103.040	101.144	99.292	97.483	95.715
6/15/2010	6/15/2015	6/15/2013	2.280	104.528	104.528	104.528	103.156	101.205	99.301	97.442	95.627
10/8/2010	10/8/2015	10/9/2012	2.250	105.187	105.187	105.187	103.386	101.128	98.930	96.791	94.708
12/27/2011	12/27/2021	12/29/2014	3.550	130.333	121.516	112.798	104.676	91.109	78.753	67.499	57.249
4/27/2012	4/27/2016	4/27/2013	1.430	104.123	104.123	104.123	101.394	98.633	95.960	93.373	90.868
4/30/2012	5/2/2016	4/30/2013	1.380	103.974	103.974	103.974	101.221	98.450	95.768	93.173	90.660
5/15/2012	5/15/2017	5/15/2014	-0.185	105.936	105.936	104.411	101.679	100.461	100.064	99.957	99.940
5/15/2012	5/15/2017	11/17/2014	-0.185	106.358	106.358	104.829	102.074	100.653	99.971	99.661	99.541
6/20/2012	6/20/2017	6/22/2015	1.630	106.569	106.569	104.844	99.886	94.224	88.843	83.728	78.866
7/16/2012	7/17/2017	7/16/2014	-0.172	105.253	105.253	103.377	101.092	100.179	99.847	99.733	99.684
7/18/2012	7/18/2018	7/20/2015	-0.173	107.939	107.939	103.798	101.088	99.750	99.107	98.789	98.631
7/19/2012	7/19/2017	7/21/2014	-0.174	105.168	105.168	103.282	101.032	100.145	99.809	99.687	99.620
10/1/2012	10/1/2019	4/1/2015	-0.076	110.273	107.950	102.810	100.639	99.742	99.382	99.268	99.246
10/5/2012	10/5/2017	10/6/2014	-0.069	104.980	104.980	102.676	100.839	100.089	99.832	99.751	99.726
10/5/2012	10/5/2017	10/6/2014	0.000	104.980	104.980	102.676	100.839	100.089	99.832	99.751	99.726
3/8/2013	3/8/2018	3/9/2015	0.004	105.461	105.461	102.364	100.578	99.646	99.181	98.888	98.667