

## Federal Home Loan Bank of Des Moines Monthly Price Report

The Federal Home Loan Bank of Des Moines (Bank) is providing estimated valuations for specific Convertible, Amortizing and Non-Amortizing advances set forth below for members' information and convenience only. The estimated valuations are generated by models used for the Bank's own asset/liability management purposes. The models use 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 prices only and should not be construed as a liquidation price for the specific advance.**

It is expressly understood that in providing these valuations to members, the Bank is not performing any advisory service. The valuations are provided without representation or warranty and the member is solely responsible for any decision it makes or actions it takes based on the valuations provided. It is recommended that members maintain independent capabilities to value their asset/liability positions, including Convertible, Amortizing and Non-Amortizing advances. You should consult with your own tax, legal, accounting, credit and financial advisors with respect to the transaction structure and information detailed herein.

The table depicts valuation estimates resulting from immediate parallel interest-rate movements of plus/minus 400 basis points in 100 basis point increments. To identify your advance, locate the appropriate maturity date and verify the advance rate. The advances in report are grouped by advance type and then within each type sorted in ascending order by maturity date. Once the appropriate structure is located, read across to view the sensitivity analysis for that advance.

If you have any questions, contact the Money Desk at 800.544.3452, ext. 2122.

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
050812A00050	8/12/2005	4.97	8/12/2025	103.49561	102.700158	101.9169782	101.1457916	100.3863237	99.6383082	98.90148697	98.17560947	97.46043265
050823A00085	8/23/2005	4.78	8/25/2025	103.57391	102.7413267	101.9221768	101.1161339	100.3228848	99.54212607	98.77356389	98.01691359	97.27189931
050823A00088	8/23/2005	4.78	8/25/2025	103.57391	102.7413267	101.9221768	101.1161339	100.3228848	99.54212607	98.77356389	98.01691359	97.27189931
050902A00032	9/2/2005	4.69	8/22/2025	103.46225	102.638471	101.8278501	101.0300781	100.2448506	99.47187276	98.71085911	97.96153288	97.22362578
050923A00096	9/23/2005	4.86	9/22/2025	104.00514	103.0931707	102.1972568	101.3169779	100.4519264	99.60170896	98.76594572	97.9442696	97.13632592
051003A00009	10/3/2005	5.15	10/15/2025	104.50487	103.5279341	102.5693574	101.6286264	100.7052449	99.79873505	98.90863641	98.03450517	97.17591342
051107A00075	11/7/2005	5.29	11/17/2025	105.17288	104.1000881	103.0493095	102.0198735	101.0111332	100.0224674	99.05327992	98.10299766	97.17107002
060308A00014	3/8/2006	5.44	3/16/2026	106.9116	105.506276	104.1264013	102.7713427	101.4404864	100.1332385	98.84902419	97.58728679	96.3474873
060808A00022	8/8/2006	5.57	6/15/2026	108.43757	106.7686084	105.1338289	103.5322426	101.9629023	100.4248964	98.91734787	97.43941214	95.99027576
070518A00023	5/18/2007	5.46	5/18/2027	108.01377	106.3915293	104.8083127	103.2628612	101.7539663	100.2804678	98.84125117	97.43524595	96.06142314
091112A00011	11/12/2009	4.77	11/15/2024	100.17025	100.1285039	100.0868141	100.0451759	100.0035893	99.96205403	99.92057012	99.87913743	99.83775585
091210A00005	12/10/2009	5.08	12/16/2024	100.54834	100.4205243	100.2930458	100.1659072	100.039107	99.91264371	99.78651609	99.66072269	99.53526217
100809A00029	8/9/2010	4.23	8/15/2025	102.94412	102.1427937	101.3539783	100.577378	99.81271016	99.05970079	98.31808424	97.58760292	96.86800691
100824A00009	8/24/2010	3.91	9/2/2025	102.8702	102.0197076	101.1832897	100.3606008	99.5513045	98.7550756	97.97159921	97.20057052	96.44169438
100930A00008	9/30/2010	3.82	9/30/2025	103.07308	102.1446764	101.2330078	100.337626	99.45809732	98.59400325	97.7449399	96.91051735	96.0903591
110414A00007	4/14/2011	3.95	1/21/2025	100.92568	100.647337	100.3705293	100.0952431	99.82146552	99.54918378	99.27838536	99.00905786	98.741189
110505A00022	5/5/2011	4.59	5/15/2026	106.4476	104.8808408	103.3452076	101.8398469	100.3639327	98.91666865	97.49728689	96.10504653	94.73923258
110701A00011	7/1/2011	3.87	7/1/2026	103.13601	102.2059351	101.2928692	100.3963345	99.5158751	98.65105205	97.80144289	96.9666407	96.14625341
110719A00017	7/19/2011	3.68	7/20/2026	102.96686	102.0360162	101.1222346	100.22504	99.34397321	98.47859275	97.62847346	96.79320596	95.97239586
110805A00014	8/5/2011	4.06	8/17/2026	106.661	104.8353253	103.0499633	101.3037362	99.59550669	97.92418013	96.28870236	94.68805788	93.12126809
110824A00006	8/24/2011	2.69	8/24/2026	103.12857	101.7796553	100.4583912	99.1640137	97.89578409	96.6529894	95.43494144	94.24097571	93.07045039
110909A00006	9/9/2011	2.26	9/9/2026	101.80957	100.8075419	99.82460872	98.86023445	97.91390242	96.98511527	96.07339398	95.17827705	94.29931966
111006A00023	10/6/2011	3.81	10/15/2026	106.8175	104.8285479	102.8869952	100.9914182	99.14044756	97.33276404	95.56709632	93.84221894	92.15695029
111007A00007	10/7/2011	3.92	10/7/2031	119.64534	113.4326594	107.6202889	102.1793934	97.0833888	92.30775553	87.82986717	83.62883371	79.68535883
111216A00001	12/16/2011	3.95	12/30/2031	124.24566	116.6192385	109.5297807	102.9363577	96.80137611	91.09028832	85.77133036	80.81528339	76.19525689
120113A00012	1/13/2012	3.62	1/15/2027	107.31771	105.0725146	102.8857488	100.7554634	98.67979278	96.65694869	94.68521656	92.76295174	90.88857596
120113A00013	1/13/2012	3.87	1/15/2032	123.78719	116.1341276	109.0230664	102.4124692	96.26419823	90.54322285	85.21735049	80.25698208	75.63488983
120127A00018	1/27/2012	3.64	2/1/2027	107.52168	105.2280429	102.9950777	100.8207257	98.70302021	96.64007803	94.63009463	92.67134031	90.76215632
120127A00019	1/27/2012	3.87	1/30/2032	123.89416	116.1972444	109.0480611	102.4044259	96.22762981	90.48213312	85.13528957	80.15709566	75.51996306
120410A00005	4/10/2012	2.35	4/12/2027	103.05293	101.546846	100.0760467	98.63943101	97.23594146	95.86456097	94.52431113	93.21425045	91.93347265
120411A00013	4/11/2012	3.59	4/15/2027	108.10198	105.5955296	103.1606639	100.7949293	98.49597058	96.26152757	94.08943022	91.97759464	89.92401904
120621A00009	6/21/2012	3.18	6/21/2032	114.66162	108.9364479	103.5913956	98.59770679	93.9290031	89.5610711	85.47167151	81.64036609	78.04836084
120709A00016	7/9/2012	3.2	7/15/2027	107.8737	105.1212014	102.4534244	99.86721216	97.35954786	94.92754866	92.56845876	90.2796427	88.05857911

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
120806A00015	8/6/2012	2.38	8/6/2027	102.9485	101.475056	100.0371684	98.63368688	97.2635053	95.92556222	94.61883871	93.34235625	92.09517484
120807A00026	8/7/2012	2.42	8/9/2027	103.00848	101.5340892	100.0952871	98.69091567	97.31986813	95.98108224	94.67353832	93.39625718	92.14829813
120808A00006	8/8/2012	2.06	8/9/2027	102.58981	101.1196793	99.68506856	98.28482668	96.91784768	95.5830703	94.27947584	93.00608604	91.76196115
120827A00048	8/27/2012	2.01	8/27/2027	103.17407	101.3427379	99.5599218	97.82398719	96.13336808	94.48656138	92.88212394	91.31866974	89.79486728
120827A00052	8/27/2012	2.01	8/27/2027	103.17407	101.3427379	99.5599218	97.82398719	96.13336808	94.48656138	92.88212394	91.31866974	89.79486728
121116A00006	11/16/2012	2.64	11/13/2025	102.26017	101.2159488	100.1930183	99.19073311	98.20847267	97.24564102	96.30166568	95.37599647	94.46810445
121116A00021	11/16/2012	2.35	11/17/2025	102.06151	101.0063157	99.97288517	98.9605506	97.96867079	96.99663033	96.04383829	95.10972702	94.19375099
121116A00022	11/16/2012	2.78	11/16/2029	112.76355	107.575995	102.6606926	98.00190669	93.58489433	89.39583661	85.42177595	81.65055786	78.07077694
121120A00010	11/20/2012	1.93	11/22/2027	102.64757	101.0552351	99.50853423	98.00579705	96.54542976	95.12590806	93.74577366	92.40363084	91.09814342
121120A00011	11/20/2012	2.22	11/22/2027	104.90206	102.4106344	100.0021279	97.67322969	95.42078806	93.24179727	91.13338985	89.09282914	87.11750252
121217A00009	12/17/2012	2.02	12/17/2027	102.92865	101.2480828	99.61638463	98.03172001	96.49234032	94.99657571	93.54283094	92.12958139	90.75536945
130107A00002	1/7/2013	3.22	1/18/2028	109.41987	106.1362948	102.9693749	99.91425636	96.96632166	94.1211753	91.37463137	88.72270205	86.16158672
130206A00004	2/6/2013	2.14	2/7/2028	103.42065	101.5805737	99.79151527	98.05166764	96.35929833	94.71274832	93.11042847	91.55081601	90.03245135
130206A00009	2/6/2013	2.83	2/7/2028	106.94489	104.1555846	101.4628583	98.86277366	96.35157266	93.92567133	91.58165087	89.31624904	87.12635209
130207A00012	2/7/2013	2.9	2/7/2033	110.51583	106.0275797	101.805649	97.83126559	94.08713372	90.55731093	87.22709278	84.08290786	81.11222243
130211A00017	2/11/2013	3.27	2/15/2028	109.81749	106.4492298	103.203055	100.0738542	97.05676006	94.14713723	91.34056954	88.63284834	86.0199614
130405A00006	4/5/2013	2.41	4/7/2025	100.81644	100.3790335	99.94542101	99.51555778	99.08939517	98.66688544	98.24798166	97.83263769	97.4208082
130405A00007	4/5/2013	2.91	4/17/2028	109.36128	105.8230927	102.4194787	99.14459859	95.99289999	92.95910035	90.03817243	87.22533048	84.51601728
130424A00004	4/24/2013	2.46	4/24/2025	100.93556	100.4511158	99.9713268	99.49612116	99.02543338	98.55919915	98.09735542	97.63984028	97.186593
130424A00005	4/24/2013	3.07	4/24/2030	115.23778	109.5491294	104.1808877	99.11330395	94.32794162	89.8075883	85.53616819	81.49866126	77.68102873
130531A00021	5/31/2013	3.22	5/30/2028	110.80092	107.1199501	103.5825631	100.1823616	96.91326799	93.76950915	90.74559963	87.83632539	85.03672881
130904A00039	9/4/2013	4.19	9/15/2028	115.48502	111.4172038	107.5181374	103.7799266	100.1950907	96.75653533	93.45753132	90.29169341	87.25296107
130913A00018	9/13/2013	3.72	9/13/2028	108.18922	105.6782816	103.2505406	100.9026069	98.63125356	96.43340593	94.30613326	92.24664118	90.25226445
130925A00035	9/25/2013	1.53	6/25/2025	100.73354	100.0327813	99.3416967	98.66008554	97.98775349	97.32451159	96.67017598	96.02456774	95.38751274
130926A00009	9/26/2013	4	10/2/2028	114.91947	110.814733	106.8822981	103.1140192	99.50217508	96.03944824	92.71890189	89.53395794	86.47837658
131018A00006	10/18/2013	3.28	10/20/2025	102.91955	101.9012105	100.9036309	99.92617175	98.96822307	98.02919953	97.10853905	96.20570174	95.32016876
131217A00024	12/17/2013	4.34	1/2/2029	116.93218	112.5405127	108.3423746	104.3281304	100.4886855	96.81544807	93.30029884	89.93556163	86.71397672
140219A00005	2/19/2014	3.13	2/20/2029	106.51565	104.2142569	101.9897005	99.83876667	97.7584038	95.74570948	93.7979221	91.91241305	90.08667933
140423A00036	4/23/2014	4.03	4/23/2029	116.74131	112.0394129	107.5585257	103.287061	99.21410299	95.32936218	91.62313636	88.08627385	84.71013937
140521A00019	5/21/2014	3.43	5/22/2028	111.4887	107.8171278	104.2879929	100.8949799	97.6320888	94.49361879	91.47415137	88.56853474	85.77186909
140626A00036	6/26/2014	3.55	6/26/2029	115.51382	110.6500593	106.0230015	101.6198113	97.4284256	93.43749835	89.63635433	86.01494537	82.56380997
140717A00027	7/17/2014	3.14	7/17/2026	104.59637	102.9252166	101.2904653	99.69105559	98.1259637	96.59420414	95.09482797	93.62692109	92.18960261
140815A00032	8/15/2014	3.59	10/15/2029	116.1959	111.0240658	106.1179225	101.4623984	97.04335626	92.84752877	88.86246042	85.07645386	81.47851984

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
140911A00033	9/11/2014	3.02	9/13/2027	106.30002	103.9036909	101.5801706	99.32677384	97.14093496	95.02019829	92.96221255	90.9647258	89.02558063
140917A00030	9/17/2014	3.23	9/17/2029	112.46037	108.1422736	104.0342507	100.1247118	96.40277319	92.85820988	89.48141251	86.26334673	83.19551574
140924A00057	9/24/2014	3.25	9/25/2028	111.17861	107.3903263	103.7600688	100.2803263	96.94398814	93.74431931	90.67493833	87.72979687	84.90316043
141117A00011	11/17/2014	3.81	11/17/2034	130.53794	119.8099028	110.0948766	101.2906091	93.30570812	86.05843431	79.47563551	73.49180313	68.04823675
141208A00008	12/8/2014	3.02	12/16/2024	100.28515	100.157599	100.0303861	99.90351241	99.77697657	99.65077717	99.52491284	99.39938219	99.27418386
141215A00062	12/15/2014	2.65	12/16/2024	100.24794	100.1203158	99.99303844	99.86610165	99.73950399	99.61324406	99.48732045	99.36173176	99.23647662
150203A00027	2/3/2015	2.26	2/4/2030	105.55371	102.7673347	100.091288	97.52022731	95.04910701	92.67316182	90.38788917	88.18903292	86.07256816
150213A00014	2/13/2015	2.41	2/13/2025	100.34642	100.1500837	99.95465242	99.76011649	99.56646917	99.37370381	99.18181385	98.99079279	98.80063419
150219A00016	2/19/2015	2.68	2/19/2025	100.79733	100.4119927	100.0295652	99.65001089	99.27329724	98.89939229	98.5282645	98.15988283	97.79421671
150220A00022	2/20/2015	2.8	2/20/2025	100.65904	100.3488501	100.0405746	99.73419937	99.42970668	99.12707919	98.82629974	98.52735139	98.23021741
150224A00010	2/24/2015	2.34	2/24/2025	100.55826	100.231218	99.90626249	99.58337827	99.26254552	98.94374473	98.62695666	98.31216228	97.99934281
150227A00011	2/27/2015	2.33	2/27/2025	100.70068	100.3055022	99.91348391	99.52458322	99.13876277	98.7559858	98.37621618	97.99941829	97.62555713
150311A00003	3/11/2015	2.72	3/31/2025	101.04102	100.5490068	100.0618212	99.579396	99.10166165	98.62854974	98.15999326	97.69592649	97.23628497
150317A00013	3/17/2015	2.58	3/17/2025	100.76443	100.3849026	100.0082428	99.63442085	99.26340456	98.89516229	98.52966287	98.16687559	97.8067702
150319A00012	3/19/2015	3.13	3/19/2029	112.43089	107.9208301	103.6196487	99.51659459	95.60152054	91.86485029	88.29754355	84.89106335	81.63734541
150319A00013	3/19/2015	3.25	3/19/2030	115.54096	109.9578869	104.6833651	99.69872253	94.98650875	90.53041026	86.31517098	82.32651852	78.55109601
150320A00019	3/20/2015	2.25	3/20/2025	100.78361	100.326851	99.87432004	99.42596013	98.98171329	98.54152259	98.10533216	97.67308716	97.24473376
150401A00008	4/1/2015	2.62	4/1/2025	100.838	100.4173952	100.0002938	99.58665042	99.17642213	98.76956683	98.36604309	97.96581013	97.56882784
150410A00021	4/10/2015	2.27	4/10/2025	100.44988	100.169085	99.89019238	99.61318148	99.33803138	99.06472153	98.79323169	98.52354193	98.25563265
150414A00037	4/14/2015	2.34	4/14/2025	100.47307	100.1903747	99.90961832	99.6307764	99.35382738	99.07875006	98.80552358	98.53412742	98.26454136
150422A00019	4/22/2015	2.62	4/22/2025	100.9627	100.4841334	100.0101074	99.54055544	99.07541423	98.61462176	98.15811714	97.70584064	97.25773362
150427A00014	4/27/2015	2.98	4/27/2035	113.4496	107.7328602	102.4225848	97.48497485	92.88934571	88.60781531	84.61502742	80.88790394	77.40542306
150512A00029	5/12/2015	3.03	5/12/2025	101.30059	100.7661825	100.2374151	99.71420325	99.19645947	98.68409818	98.17703558	97.67518961	97.17847989
150519A00013	5/19/2015	2.98	5/19/2025	101.32223	100.7685482	100.2209254	99.67925997	99.14345483	98.61341509	98.08904789	97.57026233	97.05696949
150601A00261	6/1/2015	3.19	2/11/2033	112.08313	107.567824	103.3151128	99.30693389	95.52661188	91.95874604	88.58910385	85.40452413	82.39282876
150601A00270	6/1/2015	3.12	3/21/2031	109.30323	105.8839432	102.6232601	99.51232709	96.54285093	93.70706103	90.99767321	88.4078558	85.9311985
150601A00342	6/1/2015	3.97	8/26/2033	115.20609	110.5497866	106.1712844	102.0508483	98.17031713	94.51296491	91.06337746	87.80733968	84.73173354
150601A00396	6/1/2015	3.61	1/3/2029	106.88481	104.7079076	102.6018313	100.5636783	98.59068706	96.68022912	94.82980157	93.03702015	91.29961282
150601A00404	6/1/2015	4.29	1/17/2029	116.61672	112.190654	107.9613291	103.9188676	100.0539477	96.35776859	92.82201737	89.43883947	86.20081028
150601A00405	6/1/2015	4.63	1/17/2034	135.39295	125.2649503	116.0168935	107.5665296	99.83974518	92.76971545	86.29615014	80.3646219	74.9259667
150601A00411	6/1/2015	3.38	1/24/2029	106.40219	104.2311715	102.1308858	100.0984299	98.13104222	96.22609463	94.38108458	92.59362837	90.86145467
150601A00426	6/1/2015	3.37	2/21/2029	106.5084	104.2942124	102.1532776	100.0825524	98.07914166	96.14029109	94.26337969	92.44591219	90.68551218
150601A00440	6/1/2015	3.27	3/16/2029	106.41503	104.160978	101.982639	99.87682681	97.84051323	95.87081912	93.96500585	92.12046746	90.33472335

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
150601A00450	6/1/2015	3.28	4/27/2029	106.56174	104.2632735	102.0432121	99.89821202	97.82509688	95.82084843	93.88259745	92.00761533	90.19330621
150601A00460	6/1/2015	3.05	5/16/2029	106.15908	103.8258889	101.5734926	99.39840014	97.2972988	95.26704229	93.30464138	91.40725495	89.57218155
150601A00475	6/1/2015	3.04	6/1/2029	106.13824	103.8045956	101.5517991	99.37636059	97.27496269	95.24445505	93.28184465	91.38428684	89.54907699
150601A00477	6/1/2015	3.21	6/1/2029	106.89061	104.4832958	102.1602463	99.91779536	97.75246496	95.66095298	93.64012293	91.68699452	89.79873477
150601A00506	6/1/2015	3.14	7/6/2029	106.59615	104.1735228	101.8371808	99.58330451	97.40827177	95.30864668	93.28116853	91.32274177	89.43042638
150601A00512	6/1/2015	3.79	7/16/2029	116.1557	111.2346072	106.5548565	102.1032561	97.8674085	93.8356606	89.99705469	86.34128273	82.85864401
150601A00522	6/1/2015	4.52	7/25/2030	123.24858	117.1010283	111.308966	105.849782	100.7024322	95.84731927	91.26618484	86.94201071	82.85892764
150601A00523	6/1/2015	4.55	7/25/2031	126.67489	119.400456	112.609197	106.2661626	100.3391221	94.79833652	89.6163528	84.76781565	80.22929633
150601A00528	6/1/2015	3.08	7/27/2029	106.45694	104.0355721	101.7005135	99.44794249	97.27423252	95.17594364	93.1498116	91.19273759	89.30177874
150601A00559	6/1/2015	3.06	8/31/2029	106.52277	104.058682	101.6836861	99.39378955	97.185205	95.05434197	92.99779519	91.01233377	89.09489106
150601A00664	6/1/2015	3.78	1/16/2032	122.75999	115.140474	108.0614787	101.4815365	95.36257735	89.66963534	84.37057968	79.4358701	74.83833482
150601A00665	6/1/2015	3.82	1/14/2033	125.58418	116.8757428	108.8580177	101.4720753	94.66432609	88.38600659	82.59272063	77.24402633	72.30306417
150601A00666	6/1/2015	3.88	1/16/2035	131.06536	120.1539482	110.2866568	101.356692	93.26875621	85.93775082	79.2876345	73.25041465	67.765256
150601A00667	6/1/2015	3.88	1/16/2036	133.2672	121.2809043	110.5371503	100.8985331	92.24358793	84.46486167	77.46722815	71.16641338	65.48770425
150601A00668	6/1/2015	3.89	1/16/2037	135.42597	122.370672	110.7707697	100.4534111	91.26722804	83.07956023	75.77405127	69.24856458	63.4133754
150601A00677	6/1/2015	2.39	1/30/2025	100.43494	100.1827512	99.93183075	99.68216615	99.43374804	99.18656711	98.94061414	98.69588	98.45235565
150601A00678	6/1/2015	2.12	1/30/2025	100.17168	100.0436208	99.91605764	99.78899116	99.66241822	99.53633566	99.41074037	99.28562926	99.16099926
150601A00684	6/1/2015	2.25	2/7/2025	100.23576	100.0773914	99.91973658	99.76278779	99.60653991	99.45098788	99.2961267	99.1419514	98.98845708
150601A00688	6/1/2015	2.61	2/21/2025	100.61798	100.3048408	99.99365778	99.68441197	99.37708531	99.07165991	98.7681181	98.46644242	98.16661566
150601A00689	6/1/2015	2.81	2/28/2025	100.69781	100.3655047	100.0353827	99.70742622	99.38161391	99.05792487	98.73633844	98.41683424	98.09939211
150601A00690	6/1/2015	2.34	2/28/2025	100.27024	100.1002572	99.93111972	99.76282353	99.59536167	99.42872731	99.26291372	99.09791421	98.9337222
150601A00696	6/1/2015	2.83	3/13/2025	100.78735	100.4191214	100.0535893	99.69072832	99.33050909	98.97290274	98.61788076	98.26541509	97.91547807
150601A00733	6/1/2015	2.72	5/1/2025	101.08647	100.5823598	100.0832671	99.58911985	99.09984479	98.61537014	98.13562551	97.66054189	97.19005159
150601A00734	6/1/2015	2.92	5/1/2025	101.1457	100.6418946	100.1431	99.64924132	99.16024559	98.6760413	98.19655828	97.72172776	97.25148229
150601A00736	6/1/2015	2.87	5/1/2030	106.8843	104.0830863	101.3945536	98.81315245	96.33364532	93.95109026	91.66082213	89.45843522	87.33976707
150601A00737	6/1/2015	2.68	12/31/2024	100.33032	100.1610971	99.99244565	99.82436041	99.65683854	99.48987722	99.32347366	99.15762507	98.99232869
150601A00739	6/1/2015	2.35	5/6/2025	100.478	100.1914108	99.90708333	99.62498571	99.34508916	99.06736542	98.79178674	98.51832587	98.24695603
150601A00832	6/1/2015	7.17	8/28/2025	102.7256	102.2987561	101.8768232	101.4597024	101.0473018	100.6395322	100.2363067	99.83754069	99.44315174
150601A00851	6/1/2015	7.12	4/30/2027	108.72382	107.3712109	106.0487925	104.7556371	103.4908548	102.2535899	101.04302	99.85835361	98.69882944
150601A00864	6/1/2015	7.37	3/31/2028	112.58393	110.6787654	108.8265245	107.0253017	105.2732787	103.568716	101.9099484	100.2953819	98.72348974
150601A00868	6/1/2015	7.08	6/5/2028	112.96833	110.9212597	108.9341278	107.0046896	105.1308014	103.310415	101.541573	99.82240436	98.15111944
150601A00871	6/1/2015	6.74	7/31/2028	112.59883	110.5116346	108.4866934	106.5216383	104.6142078	102.7622431	100.9636822	99.21655538	97.51898017
150601A00872	6/1/2015	7.42	7/31/2028	113.98364	111.8698656	109.8191447	107.8290722	105.8973581	104.0218157	102.2003572	100.4309875	98.71180032



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
150601A00875	6/1/2015	7.14	9/29/2028	114.04102	111.8343104	109.6956857	107.6224885	105.6121808	103.6623419	101.7706622	99.93493718	98.15306213
150601A00883	6/1/2015	6.21	11/30/2028	112.60652	110.3377899	108.1414231	106.0145077	103.9542741	101.9580839	100.0234224	98.14789224	96.32920668
150601A00888	6/1/2015	5.92	3/1/2029	112.73755	110.3301221	108.003208	105.7534393	103.5776138	101.472686	99.43575824	97.46407262	95.55500308
150601A00889	6/1/2015	6.55	3/2/2029	114.49926	112.0087248	109.6026784	107.2775476	105.0299349	102.8566104	100.7545026	98.72068931	96.7523894
150601A00893	6/1/2015	6.49	4/6/2029	114.64072	112.1007861	109.6483523	107.279671	104.9911787	102.7794899	100.6413869	98.57380999	96.57384909
150601A00897	6/1/2015	6.15	5/28/2029	114.08046	111.5064111	109.0224547	106.6246686	104.3093353	102.0729248	99.91208427	97.82362779	95.80452691
150601A00899	6/1/2015	7.07	6/14/2029	115.59449	113.070501	110.6342007	108.2817753	106.0096088	103.8142678	101.6924917	99.64118258	97.65739578
150601A00905	6/1/2015	6.14	10/29/2029	115.39301	112.5576101	109.8288054	107.201661	104.6715099	102.2339341	99.88474932	97.61999103	95.43590156
150601A00906	6/1/2015	6.2	11/1/2029	115.55845	112.7187456	109.9858001	107.3546779	104.820704	102.3794529	100.026733	97.75857318	95.57120943
150601A00912	6/1/2015	5.96	11/30/2029	115.15819	112.2826284	109.5166722	106.855184	104.2933096	101.8264562	99.45027664	97.16065468	94.95369104
150601A00916	6/1/2015	7.27	4/5/2030	136.99925	130.7938589	124.9252027	119.37302	114.1183733	109.1435584	104.4320183	99.9682627	95.73779382
150601A00918	6/1/2015	5.62	4/28/2025	101.2608	101.0045968	100.7502237	100.497663	100.2468932	99.99789326	99.75064235	99.50512006	99.26130629
150601A00927	6/1/2015	6.08	8/7/2030	116.8269	113.6604203	110.6262443	107.7176008	104.9281188	102.2517999	99.68299361	97.21637537	94.84692493
150601A00928	6/1/2015	5.94	8/21/2030	116.42348	113.2643182	110.2372532	107.3355249	104.5527685	101.8829914	99.32054915	96.86012251	94.49669663
150601A00929	6/1/2015	5.91	8/30/2030	117.29885	113.9485198	110.7415029	107.6703626	104.7281038	101.9081441	99.20428683	96.61069597	94.12187234
150601A00935	6/1/2015	6.46	11/21/2030	119.9179	116.3490425	112.9383647	109.6773942	106.558174	103.5732305	100.7155407	97.97850181	95.35590363
150601A00939	6/1/2015	5.79	1/17/2031	118.12719	114.5194461	111.075313	107.7858419	104.6426403	101.6378348	98.7640363	96.01430613	93.38212594
150601A00943	6/1/2015	6.44	5/9/2031	121.49733	117.5932799	113.8743193	110.3299067	106.9501818	103.7259173	100.6484738	97.70975853	94.90218685
150601A00948	6/1/2015	6.04	10/22/2031	119.55925	115.7280936	112.0829735	108.612967	105.3078767	102.1581812	99.15498547	96.28997539	93.55537552
150601A01024	6/1/2015	5.33	2/27/2026	106.42702	105.0710383	103.7392551	102.431073	101.14591	99.88320301	98.64240689	97.42299397	96.22445323
150601A01041	6/1/2015	5.99	10/2/2036	135.80411	128.0487192	120.9147558	114.3443331	108.2855049	102.6916096	97.52069125	92.73498868	88.30048275
150603A00012	6/3/2015	2.77	6/3/2030	107.42644	104.4195681	101.5380073	98.77540776	96.12578751	93.58351033	91.14326323	88.80003578	86.54910076
150603A00017	6/3/2015	2.84	6/3/2025	101.38994	100.7943277	100.2057033	99.62394786	99.04894156	98.4805674	97.91871108	97.36326089	96.81410768
150603A00032	6/3/2015	2.21	6/3/2025	100.60468	100.2400045	99.8785887	99.52038875	99.16535743	98.81344849	98.46461666	98.11881755	97.77600769
150604A00039	6/4/2015	2.82	6/4/2030	107.57845	104.5672767	101.6815957	98.9150485	96.26164447	93.715739	91.27201127	88.92544344	86.67130134
150610A00008	6/10/2015	3.58	6/10/2030	118.38949	112.4858166	106.9197936	101.6702507	96.71745557	92.04301069	87.62975538	83.46167637	79.52382499
150610A00009	6/10/2015	3.03	6/10/2025	101.55433	100.9389642	100.3310622	99.73048635	99.13710446	98.55078765	97.97141008	97.3988489	96.83298412
150615A00024	6/15/2015	2.26	6/16/2025	100.63077	100.2618828	99.89636175	99.53415505	99.17521285	98.81948632	98.46692767	98.11749012	97.77112782
150617A00017	6/17/2015	2.27	6/17/2025	100.63577	100.2661849	99.89997742	99.53710104	99.17750538	98.82114119	98.46796023	98.1179153	97.77096017
150617A00018	6/17/2015	2.45	6/17/2025	100.67319	100.3037816	99.93774636	99.57503637	99.21560145	98.85939249	98.50636144	98.15646122	97.80964575
150617A00030	6/17/2015	2.91	6/16/2025	101.63309	100.9375806	100.2517376	99.57536241	98.90825877	98.25023587	97.60110809	96.96069488	96.32882054
150701A00056	7/1/2015	2.34	7/1/2025	100.73414	100.3268868	99.92373031	99.52459954	99.12942804	98.73815096	98.35070492	97.96702797	97.58705958
150714A00003	7/14/2015	3.76	7/12/2030	110.61136	107.4708296	104.4628348	101.5805829	98.81767848	96.16809939	93.62617265	91.18655171	88.84419548

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
150720A00012	7/20/2015	2.99	7/21/2025	101.82837	101.0995649	100.3811892	99.67302322	98.97485025	98.28645959	97.60764647	96.93821178	96.27796192
150721A00027	7/21/2015	3.74	7/22/2030	119.11019	113.0878807	107.4152189	102.0699375	97.03130718	92.28002435	87.79810513	83.56878767	79.5764425
150722A00033	7/22/2015	2.47	7/22/2025	100.76829	100.3548664	99.94571024	99.54074471	99.13989832	98.74310129	98.35028551	97.96138446	97.5763332
150722A00035	7/22/2015	2.92	7/22/2025	101.89076	101.0985841	100.3189481	99.55155098	98.79610451	98.05232936	97.31995492	96.59871892	95.88836707
150727A00013	7/27/2015	3.04	7/28/2025	101.85781	101.1104655	100.3740784	99.64840857	98.9332232	98.22829621	97.53340801	96.84834519	96.17290039
150729A00028	7/29/2015	2.25	7/29/2025	100.71393	100.2982437	99.88689236	99.47979673	99.07688329	98.67808026	98.28331761	97.89252699	97.50564166
150729A00041	7/29/2015	2.44	7/29/2025	100.76021	100.3446931	99.93350476	99.52656546	99.12380185	98.72514236	98.33051713	97.93985802	97.55309848
150731A00016	7/31/2015	3.04	7/31/2025	101.87969	101.1240523	100.3796039	99.64610134	98.92330458	98.21098054	97.50890285	96.81685165	96.13461331
150803A00033	8/3/2015	3.41	8/2/2030	114.99307	109.8068831	104.9118426	100.2896927	95.92341911	91.79716284	87.89613549	84.2065415	80.71550646
150803A00036	8/3/2015	3.41	8/2/2030	114.99307	109.8068831	104.9118426	100.2896927	95.92341911	91.79716284	87.89613549	84.2065415	80.71550646
150803A00037	8/3/2015	3.41	8/2/2030	114.99307	109.8068831	104.9118426	100.2896927	95.92341911	91.79716284	87.89613549	84.2065415	80.71550646
150803A00038	8/3/2015	3.41	8/2/2030	114.99307	109.8068831	104.9118426	100.2896927	95.92341911	91.79716284	87.89613549	84.2065415	80.71550646
150803A00039	8/3/2015	3.01	8/2/2030	108.1318	105.0240941	102.0489603	99.19953256	96.46935553	93.85235399	91.342808	88.93532964	86.62484146
150803A00041	8/3/2015	3.01	8/2/2030	108.1318	105.0240941	102.0489603	99.19953256	96.46935553	93.85235399	91.342808	88.93532964	86.62484146
150803A00042	8/3/2015	3.01	8/2/2030	108.1318	105.0240941	102.0489603	99.19953256	96.46935553	93.85235399	91.342808	88.93532964	86.62484146
150812A00052	8/14/2015	2.13	8/14/2025	100.73066	100.2771603	99.82880225	99.38548757	98.94712194	98.51361356	98.084873	97.66081317	97.24134917
150814A00029	8/14/2015	2.39	8/14/2025	100.81312	100.3596488	99.91130872	99.46800616	99.02964702	98.5961397	98.16739497	97.74332593	97.3238479
150817A00099	8/17/2015	3.19	8/17/2027	108.10455	105.2600478	102.5054852	99.83748919	97.25283836	94.74845199	92.3213828	89.96881021	87.68803409
150819A00012	8/19/2015	3.04	8/19/2025	102.02518	101.2169212	100.421464	99.63850925	98.86776362	98.10894285	97.36177148	96.62598248	95.90131693
150819A00013	8/19/2015	3.51	8/19/2030	117.9672	111.9016577	106.1929414	100.8181235	95.75586588	90.98630371	86.49093581	82.25252422	78.25500159
150824A00033	8/24/2015	2.22	8/25/2025	100.74101	100.2851276	99.83446651	99.38892224	98.9483979	98.51279918	98.08203425	97.6560137	97.23465046
150824A00050	8/24/2015	2.03	8/25/2025	100.69016	100.234112	99.7832886	99.33758963	98.89691789	98.46117884	98.03028042	97.60413298	97.18264923
150826A00038	8/26/2015	2.94	8/26/2026	104.85205	103.0163742	101.2217893	99.46711561	97.75121789	96.07300109	94.4314087	92.82542111	91.25405401
150826A00039	8/26/2015	3.22	8/27/2029	114.4205	109.4135853	104.6583621	100.1408593	95.84795643	91.76732309	87.88736794	84.19719046	80.68653631
150925A00034	9/25/2015	2.36	9/25/2025	100.88935	100.39045	99.89781193	99.41130761	98.93080961	98.45619422	97.98734132	97.52413424	97.06645966
150929A00076	9/29/2015	2.28	9/29/2025	100.85128	100.3515732	99.8581651	99.37092196	98.8897151	98.4144196	97.9449142	97.48108114	97.02280605
150929A00083	9/29/2015	2.09	9/29/2025	100.79554	100.2956632	99.80209517	99.31470067	98.83335068	98.35791999	97.88828706	97.42433384	96.96594569
150929A00087	9/29/2015	2.09	9/29/2025	100.79554	100.2956632	99.80209517	99.31470067	98.83335068	98.35791999	97.88828706	97.42433384	96.96594569
151001A00023	10/1/2015	2.02	10/1/2025	100.8215	100.2860386	99.75776703	99.23652145	98.72214697	98.21449348	97.71341545	97.21877176	96.73042553
151013A00033	10/13/2015	2.23	10/14/2025	100.89739	100.3592857	99.82845752	99.30474471	98.78798871	98.27803587	97.77473732	97.27794878	96.78753033
151029A00008	10/29/2015	2.28	10/29/2025	100.93181	100.3898853	99.85537956	99.32812409	98.80795463	98.2947122	97.78824284	97.28839741	96.79503139
151030A00026	10/30/2015	3.29	10/30/2030	114.77665	109.4181701	104.371109	99.61524133	95.13177572	90.90324251	86.91339351	83.14710986	79.59031744
151106A00011	11/6/2015	3.1	1/15/2026	103.18796	101.9672999	100.7755108	99.61157681	98.47452899	97.36344306	96.27743666	95.21566701	94.17732879

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
151116A00025	11/16/2015	3.04	11/14/2025	102.68596	101.6366345	100.6087441	99.60163784	98.61468959	97.64729814	96.698886	95.76889825	94.8568014
151118A00037	11/18/2015	2.75	11/18/2025	102.3748	101.3258517	100.2994831	99.2949589	98.31157649	97.3486632	96.40557487	95.4816943	94.57642984
151120A00019	11/20/2015	2.72	11/20/2030	107.7761	104.5451929	101.4573496	98.50491018	95.68068437	92.9779181	90.39026426	87.91175534	85.53677813
151125A00037	11/25/2015	2.41	11/25/2025	101.08692	100.5030608	99.92781073	99.36095705	98.80229544	98.25162854	97.70876567	97.17352255	96.64572102
151204A00011	12/4/2015	2.28	12/4/2025	101.13226	100.5097917	99.8970726	99.29384625	98.69986858	98.11490435	97.53872669	96.97111671	96.41186318
151209A00024	12/9/2015	2.22	12/9/2025	101.09638	100.4731731	99.85974759	99.2558517	98.66123951	98.07567402	97.49892672	96.93077717	96.37101267
151211A00055	12/11/2015	2.62	12/11/2024	100.21618	100.1024265	99.98894464	99.87573566	99.76279856	99.6501323	99.53773586	99.42560821	99.31374835
151223A00036	12/23/2015	2.64	12/23/2025	102.10401	101.1243779	100.1671556	99.23155409	98.31682277	97.42224571	96.54713955	95.69085164	94.85275836
151223A00072	12/23/2015	2.81	12/23/2025	102.78284	101.6256535	100.4944832	99.38846219	98.30675832	97.24857593	96.21315369	95.19976284	94.20770546
151223A00074	12/23/2015	3.01	12/23/2027	108.80984	105.5995664	102.5015287	99.51113849	96.62402749	93.83603293	91.1431864	88.54170348	86.02797389
151223A00077	12/23/2015	3.57	12/24/2035	131.3345	119.4555432	108.8077349	99.25518242	90.67771909	82.96900517	76.03486989	69.79186013	64.16596875
151223A00078	12/23/2015	2.28	12/23/2025	101.13899	100.5128053	99.89652888	99.28990004	98.69266725	98.10458816	97.52542922	96.95496523	96.392979
151228A00013	12/28/2015	2.27	12/29/2025	101.13445	100.5073226	99.89014996	99.28266563	98.684616	98.09575683	97.51585277	96.94467695	96.38201056
151229A00026	12/29/2015	2.28	12/29/2025	101.14111	100.5137537	99.89635532	99.28865408	98.69039601	98.10133647	97.52123973	96.94987856	96.38703381
151229A00079	12/29/2015	3	12/30/2025	102.95743	101.7815655	100.6325262	99.50940448	98.41133076	97.33747383	96.28703894	95.25926579	94.25342665
151229A00080	12/29/2015	3.49	12/30/2030	118.68441	112.2362777	106.188129	100.5129328	95.18562399	90.18295383	85.48334875	81.06678091	76.91464931
151229A00081	12/29/2015	3.76	12/31/2035	132.46869	120.5659679	109.8941728	100.3175625	91.71609604	83.98353899	77.02580851	70.75952408	65.11073794
160106A00042	1/6/2016	2.43	1/6/2026	101.26286	100.5976301	99.94354122	99.30028715	98.66757001	98.04510334	97.43261162	96.82982967	96.23650219
160113A00030	1/13/2016	2.52	1/13/2025	100.38305	100.1778823	99.97356817	99.77010257	99.56748018	99.36569565	99.16474372	98.96461915	98.76531674
160115A00011	1/15/2016	2.18	1/15/2026	101.0981	100.4323411	99.77778216	99.13411265	98.50103137	97.8782488	97.26548654	96.66247675	96.06896162
160119A00019	1/19/2016	2.95	1/19/2027	105.85482	103.6155149	101.4348033	99.31071934	97.24138308	95.22499305	93.25982239	91.34421507	89.47658226
160119A00025	1/19/2016	3.05	1/19/2028	108.87633	105.5989058	102.438078	99.38899165	96.4470267	93.6077855	90.86708037	88.22092193	85.66550833
160119A00026	1/19/2016	3.14	1/19/2029	112.01537	107.6807283	103.5401177	99.58376004	95.80242543	92.18740133	88.73046004	85.42382872	82.26016136
160119A00027	1/19/2016	3.25	1/18/2030	115.13985	109.7359596	104.62241	99.78199133	95.19861308	90.85722147	86.74372677	82.84493608	79.14849118
160119A00028	1/19/2016	3.34	1/21/2031	117.88007	111.3980392	105.3219186	99.62402627	94.27871667	89.26221987	84.55249407	80.12909076	75.97303102
160119A00029	1/19/2016	3.39	1/20/2032	120.3593	112.814038	105.8064061	99.29503662	93.2419595	87.61230831	82.37405024	77.49774135	72.95630413
160119A00030	1/19/2016	3.44	1/18/2033	122.9535	114.3394676	106.4117668	99.11167328	92.38579231	86.18554897	80.46672885	75.18906486	70.31586526
160119A00072	1/19/2016	2.77	1/21/2031	108.06445	104.598654	101.2993987	98.15707595	95.16270883	92.3079047	89.5848132	86.98608725	84.50484718
160122A00029	1/22/2016	2.48	1/22/2025	100.42377	100.1936881	99.9646739	99.73671863	99.50981489	99.28395535	99.05913275	98.83533989	98.61256964
160126A00004	1/26/2016	2.52	1/26/2026	102.80036	101.4985547	100.2202928	98.96497594	97.73202473	96.52087925	95.3309981	94.16185765	93.01295132
160129A00066	1/29/2016	3.04	1/29/2031	116.57789	110.0948838	104.0204457	98.32656578	92.98730661	87.9786369	83.27828096	78.86558102	74.72137104
160129A00067	1/29/2016	2.53	1/29/2026	102.66916	101.4124339	100.1863858	98.98990406	97.82192894	96.68145093	95.56750768	94.47918125	93.41559564
160201A00016	2/1/2016	2.1	2/2/2026	101.11144	100.4060101	99.71311531	99.03238763	98.36347289	97.70603139	97.05973708	96.42427686	95.79934996



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
160209A00006	2/9/2016	1.91	2/9/2026	100.97909	100.2733118	99.57992353	98.89856133	98.22888067	97.57055086	96.92325428	96.28668573	95.66055178
160209A00008	2/9/2016	2.45	2/10/2031	106.87827	103.5533538	100.380588	97.35158309	94.45847395	91.69388584	89.05090058	86.52302517	84.10416274
160210A00042	2/10/2016	2.57	2/10/2026	102.70465	101.4183092	100.1601954	98.92938018	97.72497445	96.5461278	95.39202641	94.26189106	93.15497529
160210A00049	2/10/2016	1.78	2/10/2026	100.94312	100.236775	99.54281392	98.86088115	98.1906326	97.53173793	96.88387984	96.24675339	95.62006543
160210A00051	2/10/2016	2.28	2/10/2031	106.57661	103.2557477	100.087045	97.06209605	94.17302722	91.41245647	88.77345928	86.24953715	83.83458843
160210A00054	2/10/2016	1.78	2/10/2026	100.94312	100.236775	99.54281392	98.86088114	98.1906326	97.53173793	96.88387984	96.24675339	95.62006543
160211A00035	2/11/2016	2.25	2/11/2025	100.4458	100.1607884	99.87740364	99.59563054	99.31545535	99.0368644	98.75984424	98.48438151	98.21046304
160211A00036	2/11/2016	2.41	2/11/2026	102.50483	101.2172937	99.95769964	98.72513686	97.51873521	96.33766206	95.18112021	94.04834601	92.9386076
160211A00038	2/11/2016	1.83	2/11/2026	100.92277	100.2170731	99.52372299	98.84236106	98.17264533	97.51424747	96.86685207	96.23015599	95.60386776
160212A00037	2/12/2016	3.03	2/12/2031	116.06192	109.5743411	103.4976537	97.80361061	92.46604838	87.46072649	82.76517621	78.35856209	74.22155493
160212A00047	2/12/2016	1.94	2/12/2026	101.00153	100.2951245	99.60105328	98.91896414	98.24851599	97.58938132	96.9412455	96.30380611	95.67677234
160222A00005	2/22/2016	2.79	2/22/2028	108.27684	104.9141185	101.6741721	98.55186042	95.54228748	92.64078832	89.84291694	87.14443464	84.54129918
160222A00018	2/22/2016	2.59	2/23/2026	102.82773	101.5073023	100.2116962	98.94023668	97.69227717	96.46719401	95.26438572	94.08327193	92.92329247
160222A00019	2/22/2016	3.09	2/21/2031	116.49319	109.9659404	103.8534451	98.12713066	92.76053261	87.72913193	83.0102023	78.58267033	74.42698734
160303A00020	3/3/2016	2.97	3/3/2031	116.32622	109.7554752	103.6047571	97.84499831	92.44928562	87.39268929	82.65210749	78.20612367	74.03487567
160303A00035	3/3/2016	2.14	3/3/2026	101.28526	100.4991225	99.72643341	98.96683177	98.21996839	97.48550694	96.76312336	96.05250529	95.35335154
160307A00024	3/7/2016	2.17	3/6/2026	101.24149	100.4931905	99.75769965	99.03466475	98.32374841	97.62462602	96.93698504	96.26052447	95.59495427
160307A00027	3/7/2016	2.71	3/6/2026	103.06391	101.7130885	100.3863386	99.08306897	97.80270975	96.54470889	95.30853173	94.09366022	92.89959232
160307A00028	3/7/2016	2.91	3/7/2028	108.7807	105.3707705	102.0865674	98.922805	95.87444891	92.93670147	90.1049894	87.37495207	84.7424305
160307A00029	3/7/2016	3.21	3/7/2031	117.33193	110.739623	104.5681296	98.78834265	93.37330938	88.29806351	83.53946919	79.07607823	74.887999
160328A00038	3/28/2016	2.54	3/30/2026	102.98999	101.5708849	100.1794359	98.81490017	97.47655993	96.16372237	94.87571878	93.61190344	92.37165266
160328A00045	3/28/2016	2.49	3/27/2026	102.99769	101.5897197	100.2077805	98.85121619	97.5193889	96.2116816	94.9274974	93.66625868	92.42740631
160329A00017	3/29/2016	2.48	3/30/2026	102.9037	101.4855242	100.0949901	98.7313523	97.39389343	96.08192114	94.79476713	93.53178612	92.29235478
160330A00054	3/30/2016	2.9	3/31/2031	116.00801	109.373467	103.1678513	97.36115269	91.92560933	86.83552771	82.06711866	77.59834708	73.40879429
160330A00056	3/30/2016	2.26	3/31/2025	100.71455	100.2966104	99.88213349	99.47107384	99.06338936	98.65903863	98.25798092	97.86017617	97.46558494
160401A00016	4/1/2016	2.42	4/1/2025	100.75368	100.3332914	99.91640048	99.50296626	99.09294592	98.68629733	98.28297905	97.88295033	97.48617108
160404A00019	4/4/2016	2.48	4/4/2031	107.14126	103.7240018	100.4666373	97.36016536	94.39616403	91.56674602	88.86452105	86.28256116	83.81436864
160412A00029	4/12/2016	2.48	4/14/2031	107.14159	103.7240576	100.4664474	97.35976264	94.39557788	91.56600266	88.86364387	86.28157099	83.813284
160413A00014	4/13/2016	2.55	4/14/2031	107.38457	103.9592337	100.6941958	97.58043019	94.60949185	91.77347201	89.06496038	86.47701039	84.003107
160413A00016	4/13/2016	2.55	4/14/2031	107.38457	103.9592337	100.6941958	97.58043019	94.60949185	91.77347201	89.06496038	86.47701039	84.003107
160413A00021	4/13/2016	2.48	4/13/2026	103.04159	101.5619693	100.1116031	98.68969007	97.2954564	95.9281559	94.58706892	93.27150105	91.98078212
160413A00033	4/13/2016	2.32	4/13/2026	102.59365	101.2212494	99.87570849	98.55628573	97.26227095	95.99297954	94.74775123	93.52594904	92.32695826
160414A00042	4/13/2016	2.48	4/13/2026	103.04159	101.5619693	100.1116031	98.68969007	97.2954564	95.9281559	94.58706892	93.27150105	91.98078212

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
160421A00016	4/21/2016	2.26	4/21/2026	102.81402	101.3453511	99.90588508	98.49480637	97.11133337	95.754713	94.42421929	93.11915222	91.83883649
160422A00026	4/22/2016	2.62	4/22/2026	103.23672	101.757841	100.3075841	98.88519347	97.48993644	96.12110551	94.77801735	93.46001169	92.1664504
160427A00004	4/27/2016	2.09	4/27/2026	101.25952	100.4667249	99.68776131	98.92224687	98.16981726	97.43012181	96.70282282	95.98759495	95.2841246
160428A00028	4/28/2016	2	4/28/2026	101.25113	100.4574858	99.67769655	98.91138665	98.15819059	97.41775657	96.68974581	95.97383193	95.26970039
160504A00004	5/4/2016	2.3	5/4/2026	102.95114	101.4398677	99.95840628	98.50595053	97.08172177	95.68496871	94.31496628	92.97101449	91.65243731
160511A00015	5/11/2016	2.42	5/11/2026	103.12329	101.570619	100.0495288	98.55911719	97.09851431	95.66688296	94.26341723	92.88734096	91.53790636
160511A00016	5/11/2016	2.48	5/12/2031	107.22147	103.7592917	100.4609179	97.31703203	94.3189229	91.45843771	88.72794222	86.12028429	83.62876015
160523A00086	5/23/2016	2.2	5/26/2026	102.92185	101.365347	99.84094248	98.34769838	96.88471272	95.45111848	94.04608184	92.66880055	91.31850244
160524A00015	11/25/2016	2.71	11/25/2026	104.93973	102.8579988	100.8280943	98.84838332	96.91729522	95.03332014	93.19500634	91.40095751	89.64983012
160524A00027	5/24/2016	3.06	5/27/2031	116.77457	109.9843211	103.6413812	97.71384336	92.1722395	86.98934127	82.13997869	77.60087431	73.35049151
160603A00014	6/3/2016	1.74	6/3/2026	101.16278	100.2908661	99.43462541	98.59362853	97.76745936	96.95571731	96.1580166	95.37398554	94.60326589
160603A00029	6/3/2016	2.18	6/3/2031	106.52114	103.0343546	99.71450609	96.55200281	93.53787642	90.66373898	87.92174148	85.30453549	82.80523781
160606A00004	6/6/2016	2.43	6/8/2026	103.24878	101.6430758	100.0701133	98.52895568	97.01870363	95.53849157	94.08748609	92.66488435	91.26991276
160606A00005	6/6/2016	2.92	6/6/2031	115.90051	109.1117846	102.7723833	96.8501246	91.31529778	86.14045903	81.30024719	76.77121525	72.53167636
160606A00018	6/6/2016	1.74	6/5/2026	101.16355	100.29121	99.43456436	98.59317598	97.7666281	96.9545196	96.15646417	95.37208961	94.60103722
160608A00019	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00020	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00023	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00024	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00025	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00026	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00027	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00028	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00029	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00030	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00031	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00032	6/8/2016	2.36	6/8/2026	103.19019	101.5692215	99.98221889	98.42817628	96.90612343	95.41512842	93.9542957	92.52276429	91.11970611
160608A00033	6/8/2016	2.44	6/9/2031	107.15841	103.6563094	100.3216915	97.14493724	94.11705762	91.22964491	88.47483101	85.8452492	83.33399869
160608A00034	6/8/2016	2.44	6/9/2031	107.15841	103.6563094	100.3216915	97.14493724	94.11705762	91.22964491	88.47483101	85.8452492	83.33399869
160609A00075	6/9/2016	1.94	6/9/2026	101.27108	100.3982641	99.541138	98.69926915	97.87224096	97.05965242	96.26111731	95.47626356	94.70473256
160613A00047	6/15/2016	2.18	6/16/2025	101.0106	100.3813446	99.75992115	99.14618447	98.53999237	97.94120621	97.34969073	96.76531395	96.18794706
160615A00031	6/15/2016	2.51	6/17/2030	112.37977	106.6239367	101.2009301	96.08973084	91.27076061	86.7257724	82.43775302	78.39083313	74.57020435
160616A00027	6/16/2016	2.27	6/16/2026	103.04024	101.4142975	99.82180529	98.26179969	96.73335114	95.23556543	93.76758205	92.32857258	90.91773912

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
160616A00029	6/16/2016	1.58	6/16/2026	101.02463	100.1521223	99.29533475	98.45382798	97.62718388	96.81500001	96.01688886	95.23247708	94.46140491
160628A00038	6/28/2016	1.88	6/27/2025	100.91642	100.2567944	99.60576395	98.96316596	98.32883742	97.70261949	97.08435738	96.47390022	95.87110091
160628A00039	6/28/2016	2.01	6/29/2026	102.82053	101.1584101	99.53102206	97.93734626	96.37639924	94.84723583	93.34894735	91.88065975	90.44153196
160628A00049	6/28/2016	1.88	6/27/2025	100.91642	100.2567944	99.60576395	98.96316596	98.32883742	97.70261949	97.08435738	96.47390022	95.87110091
160629A00066	6/29/2016	2.61	6/30/2036	117.65884	108.2098416	99.71249638	92.06160931	85.16434141	78.93868528	73.31213861	68.22054717	63.60709464
160630A00012	6/30/2016	2.11	6/30/2025	101.02977	100.3621981	99.70341873	99.05326055	98.41155529	97.77813904	97.15285208	96.53553877	95.92604745
160701A00020	7/1/2016	2.13	7/1/2026	102.89901	101.2331406	99.6021313	98.00494847	96.44060338	94.90814595	93.40666278	91.93527541	90.49313858
160701A00039	7/1/2016	1.92	7/1/2026	102.68044	101.0141285	99.38272857	97.7852047	96.22056579	94.6878595	93.18617036	91.71461792	90.27235508
160705A00104	7/5/2016	2.1	7/6/2026	102.87642	101.197495	99.55391794	97.94463299	96.36863063	94.8249411	93.31263243	91.83080858	90.37860769
160706A00010	7/6/2016	1.99	7/7/2025	100.98003	100.293566	99.61641317	98.9483849	98.2892976	97.63897258	96.99723588	96.36391814	95.73885441
160706A00026	7/6/2016	2.19	7/6/2027	105.07435	102.3841576	99.77644182	97.24814608	94.79635166	92.41826842	90.11122805	87.87267781	85.70017455
160706A00027	7/6/2016	2.29	7/6/2028	107.35611	103.6442985	100.0810919	96.65969522	93.37366988	90.21690905	87.18361843	84.26829814	81.46572587
160706A00028	7/6/2016	2.39	7/6/2029	109.73564	104.9911765	100.4802231	96.1900221	92.1085853	88.22464238	84.52759366	81.00746627	77.65487351
160706A00029	7/6/2016	2.49	7/8/2030	111.87668	106.0953606	100.6510033	95.52215944	90.68886449	86.13252266	81.83580583	77.78256019	73.95772043
160706A00030	7/6/2016	2.59	7/7/2031	113.8395	107.0354721	100.6880988	94.76426741	89.23343882	84.06743243	79.24023194	74.72780801	70.50795645
160711A00004	7/11/2016	1.51	7/13/2026	101.01713	100.1041033	99.20780966	98.32778252	97.463572	96.61474523	95.78088552	94.96159158	94.15647682
160712A00019	7/12/2017	2.32	7/12/2027	105.45813	102.7468122	100.1189832	97.57153918	95.10151071	92.70605998	90.3824739	88.12815761	85.94062834
160713A00015	7/13/2016	1.57	7/13/2026	101.07309	100.1592961	99.26226035	98.38150926	97.5165923	96.66707595	95.83254293	95.0125914	94.2068342
160714A00018	9/6/2016	2.28	9/4/2026	103.54752	101.7025542	99.89936212	98.13675649	96.41359157	94.72876114	93.08119689	91.46986689	89.89377408
160714A00020	9/6/2016	2.28	9/4/2026	103.54752	101.7025542	99.89936212	98.13675649	96.41359157	94.72876114	93.08119689	91.46986689	89.89377408
160714A00023	8/10/2016	2.49	8/10/2028	108.30336	104.4810455	100.8149246	97.29774399	93.92263289	90.68307842	87.57290445	84.58625211	81.71756144
160714A00024	9/20/2016	2.5	9/20/2028	108.58758	104.6490549	100.875708	97.25976169	93.79384873	90.47098434	87.28454457	84.22824574	81.2961252
160714A00029	8/10/2016	2.27	8/10/2026	103.37636	101.5999581	99.86255714	98.16298655	96.50012589	94.87289824	93.28026815	91.72123961	90.19485413
160719A00026	7/19/2016	1.87	7/20/2026	101.2791	100.3636023	99.46488355	98.58247834	97.7159352	96.86481977	96.02871394	95.20721509	94.39993531
160726A00005	7/26/2016	2.28	7/27/2026	103.30901	101.5704991	99.86950418	98.20487752	96.57551752	94.98036757	93.41841362	91.88868202	90.39023751
160729A00017	7/31/2017	2.47	7/31/2029	110.23808	105.4160009	100.834051	96.47894687	92.33821934	88.40015595	84.6537506	81.08865659	77.6951432
160801A00002	8/1/2016	1.58	8/3/2026	101.1391	100.1849356	99.24857939	98.32952586	97.42729044	96.54140708	95.67142739	94.81691976	93.97746855
160802A00003	8/2/2016	2.53	8/1/2031	114.08989	107.1908216	100.7595093	94.76170806	89.16585501	83.94284917	79.06584627	74.5100721	70.25265211
160810A00025	8/10/2016	2.17	8/10/2026	103.21913	101.4418932	99.70486405	98.00689294	96.34686946	94.72372197	93.13641599	91.58395265	90.06536726
160810A00027	8/10/2016	2.13	8/10/2026	103.06761	101.3331602	99.63776031	97.98029293	96.35968026	94.77488216	93.22489465	91.70874833	90.22550703
160810A00028	8/10/2016	2.19	8/10/2026	103.2993	101.499048	99.73963174	98.01987887	96.33866148	94.69489097	93.08751649	91.5155233	89.97793135
160810A00029	8/10/2016	2.17	8/10/2026	103.21913	101.4418932	99.70486405	98.00689294	96.34686946	94.72372197	93.13641599	91.58395265	90.06536726
160810A00030	8/10/2016	2.24	8/11/2031	106.58428	103.0173481	99.62466138	96.39601727	93.32189111	90.39338543	87.60218431	84.94051129	82.40109074

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
160811A00011	8/11/2016	2.25	8/11/2026	103.34653	101.5677458	99.8280567	98.1263	96.46135519	94.8321451	93.23763381	91.67682463	90.14875823
160812A00006	8/12/2016	2.16	8/12/2026	103.27175	101.5278937	99.82343991	98.157253	96.52824184	94.93535363	93.37757229	91.85391692	90.36344031
160815A00005	8/15/2016	2.23	8/17/2026	103.34641	101.5516278	99.79659161	98.0801322	96.40112793	94.75849904	93.15120575	91.57824641	90.03865577
160815A00006	8/15/2016	2.23	8/17/2026	103.34641	101.5516278	99.79659161	98.0801322	96.40112793	94.75849904	93.15120575	91.57824641	90.03865577
160815A00007	8/15/2016	2.23	8/17/2026	103.34641	101.5516278	99.79659161	98.0801322	96.40112793	94.75849904	93.15120574	91.57824641	90.03865577
160819A00015	10/12/2016	2.3	10/13/2026	103.82516	101.8717608	99.96492753	98.10326338	96.28542561	94.51012049	92.77610114	91.08216553	89.42715451
160824A00019	8/24/2016	1.98	8/25/2031	105.93352	102.3820669	99.00435434	95.79019844	92.73009003	89.81514688	87.03706794	84.38809142	81.86095597
160830A00037	8/30/2016	2.16	8/29/2025	101.36548	100.532837	99.71383247	98.9081326	98.11541523	97.33536857	96.56769076	95.81208942	95.06828136
160830A00038	8/30/2016	2.24	8/28/2026	103.43039	101.6054925	99.82154271	98.07737806	96.37187336	94.70394273	93.07253801	91.47664713	89.91529262
160906A00027	9/6/2016	2.03	9/8/2031	106.17525	102.5745552	99.15181697	95.89650261	92.79878877	89.84950506	87.04008606	84.36252731	81.80934469
160908A00022	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00023	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00024	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00025	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00026	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00027	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00028	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00030	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00031	9/8/2016	2.21	9/8/2026	103.44342	101.594307	99.78854785	98.02486082	96.30200645	94.61879027	92.97406082	91.36670777	89.79566019
160908A00032	9/8/2016	2.17	9/8/2026	103.28067	101.4775539	99.71649075	97.99623141	96.31557535	94.6733656	93.06848687	91.49986376	89.96645901
160908A00033	9/8/2016	2.17	9/8/2026	103.28067	101.4775539	99.71649075	97.99623141	96.31557535	94.6733656	93.06848687	91.49986376	89.96645901
160908A00034	9/8/2016	2.17	9/8/2026	103.28067	101.4775539	99.71649075	97.99623141	96.31557535	94.6733656	93.06848687	91.49986376	89.96645901
160908A00035	9/8/2016	2.3	9/8/2031	106.87179	103.2534329	99.81368709	96.54199326	93.42850174	90.46401686	87.63994897	84.9482704	82.38147481
160908A00036	9/8/2016	2.3	9/8/2031	106.87179	103.2534329	99.81368709	96.54199326	93.42850174	90.46401686	87.63994897	84.9482704	82.38147481
160922A00014	9/22/2016	2.06	9/22/2026	103.39376	101.4981431	99.64654709	97.83768463	96.07031915	94.34325785	92.65534995	91.00548487	89.39259058
160923A00009	9/23/2016	2.24	9/23/2031	106.65164	103.0402769	99.60722009	96.34192759	93.23456338	90.2759448	87.45749462	84.77119698	82.20955677
160928A00029	9/28/2016	2.52	9/29/2036	112.05919	105.5229149	99.51201931	93.97712773	88.87399157	84.16291557	79.80825301	75.77796031	72.04320366
160928A00030	9/28/2016	2.52	9/29/2036	112.05919	105.5229149	99.51201931	93.97712773	88.87399157	84.16291557	79.80825301	75.77796031	72.04320366
160928A00032	9/28/2016	2.52	9/29/2036	112.05919	105.5229149	99.51201931	93.97712773	88.87399157	84.16291557	79.80825301	75.77796031	72.04320366
160928A00033	9/28/2016	2.46	9/29/2036	111.67797	105.1585875	99.16348023	93.64335928	88.55405705	83.8559519	79.51346406	75.49461091	71.77061425
160928A00041	9/28/2016	3.26	9/29/2036	116.76093	110.0162854	103.8106679	98.09360529	92.81985052	87.94880075	83.44398347	79.27260295	75.40513966
160928A00042	9/28/2016	3.05	9/29/2036	115.42665	108.7411397	102.5907811	96.92541571	91.70007974	86.87442793	82.41222212	78.28088004	74.45107674
160928A00044	9/28/2016	2.89	9/29/2036	114.41006	107.7696001	101.6613436	96.03536651	90.84692104	86.05585816	81.62611824	77.52528163	73.72417166

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
160930A00032	9/30/2016	2.15	9/30/2031	106.23259	102.6788408	99.30040726	96.08689822	93.02862028	90.11652635	87.34216804	84.69765192	82.17559922
160930A00033	9/30/2016	1.8	9/30/2026	101.39965	100.3672536	99.35490866	98.36204822	97.38812621	96.43261694	95.49501405	94.57482969	93.67159362
161005A00016	10/5/2016	2.32	10/6/2031	107.01539	103.350384	99.86816632	96.55782963	93.40920429	90.41280179	87.55976439	84.84181886	82.25123393
161014A00019	10/14/2016	2.39	10/15/2031	107.27678	103.6025401	100.111573	96.79294171	93.63644781	90.63257605	87.77244386	85.04775496	82.45075667
161014A00026	10/14/2016	2.16	10/14/2031	106.71962	103.0583362	99.57990421	96.27340363	93.12864865	90.13613655	87.28699713	84.57294627	81.98624321
161014A00029	10/14/2016	2.51	10/15/2031	108.02819	104.3219521	100.8008108	97.45371196	94.27034467	91.24108954	88.35696745	85.6095926	82.99112917
161109A00018	11/9/2016	2.63	11/9/2026	104.65934	102.624801	100.6402412	98.70411438	96.81493139	94.97125955	93.17172011	91.41498581	89.69977852
161116A00006	11/16/2016	2.39	11/16/2026	102.12827	101.0390997	99.97165277	98.92530145	97.89944591	96.8935088	95.90693418	94.93918653	93.98974983
161118A00026	12/20/2016	3.03	12/21/2026	105.81131	103.6500989	101.543903	99.49094126	97.48950078	95.5379375	93.63467289	91.77819076	89.96703424
161207A00014	12/7/2016	2.75	12/8/2031	109.11667	105.287752	101.6539803	98.20347271	94.92516832	91.80876074	88.8446415	86.02384801	83.33801564
161214A00023	12/14/2016	3.3	12/15/2031	120.11953	112.6525408	105.7124368	99.25908002	93.25559897	87.66810408	82.46543156	77.61891053	73.10215125
161214A00034	12/14/2016	2.65	12/14/2026	102.51909	101.3842299	100.2724801	99.1831718	98.11565876	97.06931895	96.04355367	95.03778639	94.05146175
161222A00013	12/22/2016	2.93	12/22/2026	105.54456	103.4614103	101.4319583	99.45441061	97.52705238	95.6482403	93.81639912	92.03001804	90.28764756
161222A00030	12/22/2016	3.09	12/22/2026	106.12457	103.9537838	101.8383582	99.77648958	97.76645133	95.80658642	93.89530405	92.03107638	90.21243548
161222A00036	12/22/2016	2.69	12/22/2026	102.54162	101.4160765	100.3134113	99.23295968	98.17408174	97.13616184	96.11860739	95.1208478	94.14233341
161222A00037	12/22/2016	3.08	12/22/2031	109.7343	106.0161388	102.4843475	99.12769416	95.93571675	92.89866205	90.00743259	87.25353796	84.62905011
161227A00073	12/27/2016	2.83	12/28/2026	104.98734	103.036888	101.1360492	99.28317252	97.47667822	95.71505284	93.99684561	92.32066518	90.68517669
161229A00018	12/29/2016	2.46	12/29/2026	102.39593	101.2596906	100.146656	99.05614677	97.98751214	96.94012609	95.91338612	94.90671211	93.91954533
161229A00019	12/29/2016	2.46	12/29/2026	102.39593	101.2596906	100.146656	99.05614677	97.98751214	96.94012609	95.91338612	94.90671211	93.91954533
170105A00010	1/5/2017	2.61	1/5/2027	102.57337	101.3971107	100.2453034	99.11722507	98.01218277	96.92951008	95.86856578	94.82873267	93.80941643
170106A00030	1/6/2017	2.39	1/6/2027	102.40633	101.2306475	100.079427	98.95194975	97.8475217	96.76547535	95.7051685	94.66598301	93.64732372
170111A00009	1/11/2017	3.16	1/11/2028	109.17129	105.9105273	102.7650736	99.73015839	96.8012392	93.97399071	91.24429264	88.60821855	86.06202526
170111A00011	1/11/2017	3.24	1/11/2029	112.37898	108.0581644	103.9298184	99.98428917	96.21246203	92.60573039	89.15596424	85.85548073	82.69701685
170111A00012	1/11/2017	3.31	1/11/2030	115.40885	110.0167514	104.9133365	100.0815577	95.50546574	91.17013561	87.06159463	83.16675649	79.47336002
170111A00013	1/11/2017	3.4	1/10/2031	118.19139	111.7290145	105.6694613	99.98537676	94.65141335	89.64406874	84.94154175	80.52360022	76.37145976
170111A00014	1/11/2017	3.47	1/12/2032	120.88801	113.345123	106.337913	99.82528306	93.76950381	88.13592067	82.89268745	78.01052439	73.46249836
170111A00016	1/11/2017	3.51	1/11/2033	123.48355	114.8665914	106.9343414	99.62834856	92.89545851	86.68730427	80.95985093	75.67298612	70.79015122
170112A00015	1/12/2017	2.32	1/12/2027	102.32433	101.1489969	99.9981379	98.87102971	97.76697745	96.68531294	95.62539329	94.58659976	93.56833661
170119A00006	1/19/2017	2.85	1/21/2025	100.48477	100.2575475	100.031367	99.80621874	99.5820956	99.35899053	99.13689657	98.91580678	98.6957143
170120A00008	1/20/2017	3.63	1/20/2034	126.88553	117.1288317	108.2293795	100.1065325	92.68765936	85.90730288	79.70643589	74.03179782	68.83530301
170120A00009	1/20/2017	3.67	1/22/2035	129.54272	118.6906477	108.8804272	100.0052411	91.96979456	84.68901206	78.08689147	72.09549173	66.65403846
170120A00010	1/20/2017	3.71	1/22/2036	132.0361	120.1006557	109.4059053	99.81436638	91.20453181	83.46893638	76.51246499	70.25087299	64.60949049
170120A00011	1/20/2017	3.75	1/20/2037	134.44518	121.4365172	109.8808972	99.60550296	90.45902233	82.3088663	75.0387605	68.54665749	62.74292598



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
170123A00039	1/23/2017	2.79	1/23/2026	102.95828	101.7159011	100.5034617	99.31988484	98.16414871	97.0352793	95.93234753	94.85446676	93.80079035
170124A00017	1/24/2017	2.82	1/23/2032	109.48381	105.5986601	101.9135561	98.41620169	95.09515682	91.93976891	88.94011329	86.08693838	83.37161535
170130A00010	1/30/2017	2.92	1/30/2025	100.55867	100.3064848	100.0555642	99.80589666	99.55747298	99.31028386	99.06432013	98.81957273	98.57603267
170130A00031	1/30/2017	2.96	7/30/2025	101.8121	101.0594758	100.3179606	99.58731246	98.8672937	98.15767367	97.4582283	96.76873992	96.08899705
170130A00036	1/30/2017	3.11	1/31/2033	111.27823	106.8742117	102.7244511	98.81142648	95.11897499	91.6321772	88.33725236	85.22146291	82.27302773
170130A00039	1/30/2017	2.74	1/31/2028	104.19194	102.4146357	100.6871482	99.00763196	97.3743235	95.78553968	94.2396734	92.73518948	91.27062079
170130A00043	1/30/2017	2.64	1/29/2027	102.80541	101.5403564	100.3037481	99.09465823	97.91220268	96.7555349	95.62384399	94.51635277	93.43231602
170130A00046	1/30/2017	2.52	1/30/2026	101.51128	100.7511982	100.0056093	99.27404859	98.55607593	97.85127027	97.15922877	96.4795658	95.81191194
170203A00012	2/3/2017	3.63	2/2/2035	129.20316	118.3389966	108.5210055	99.64163492	91.60496313	84.32538116	77.7264333	71.73979362	66.30436178
170203A00013	2/3/2017	3.67	2/1/2036	131.64745	119.707352	109.0116581	99.42215353	90.8167196	83.08738091	76.13859794	69.88577385	64.25394758
170207A00055	2/7/2017	2.36	2/8/2027	102.46612	101.2478763	100.0555397	98.88833388	97.74551314	96.62636072	95.53018731	94.45632973	93.40414972
170216A00043	2/16/2017	3.17	2/16/2027	106.58823	104.2607645	101.9959426	99.79168925	97.64600957	95.55698869	93.52278768	91.54163998	89.61184803
170216A00044	2/16/2017	3.52	2/17/2032	121.48284	113.8205606	106.7087526	100.1047551	93.9694313	88.26685919	82.96405124	78.03070054	73.43894995
170216A00045	2/16/2017	3.73	2/17/2037	134.36505	121.2861806	109.6767822	99.36113556	90.18549117	82.01521634	74.73232602	68.23334388	62.42744771
170224A00020	2/24/2017	3.08	2/24/2027	106.45014	104.1004887	101.8146417	99.59050404	97.42606233	95.31938109	93.26859948	91.27192783	89.32764449
170224A00021	2/24/2017	3.4	2/24/2032	120.65404	113.0015416	105.9007801	99.30889539	93.18657251	87.49772925	82.20923478	77.29065426	72.71401666
170224A00039	5/24/2017	3.17	5/24/2027	107.37425	104.7707864	102.2442655	99.79195198	97.41122289	95.09956549	92.85457177	90.67393333	88.55543657
170224A00044	5/24/2017	3.29	5/24/2029	113.64364	108.9265666	104.4355783	100.1586161	96.0843297	92.20203195	88.50165623	84.97371709	81.60927349
170228A00014	2/28/2017	2.89	3/1/2027	106.23789	103.8722717	101.5713262	99.33293485	97.15506116	95.03574664	92.97310729	90.96533037	89.01067122
170228A00015	2/28/2017	2.87	5/28/2025	101.32069	100.7423247	100.1705524	99.60526357	99.04634852	98.49369982	97.94721252	97.40678397	96.8723138
170309A00014	3/9/2017	2.58	3/9/2027	102.84388	101.5789705	100.3415609	99.13081937	97.94594908	96.78618365	95.65078586	94.53904631	93.4502821
170313A00032	3/13/2017	3.69	6/14/2032	123.52967	115.4742887	108.0189333	101.1154171	94.71967455	88.79138626	83.29364169	78.19263408	73.45738413
170313A00033	3/13/2017	3.31	3/15/2027	107.14939	104.7392553	102.3958267	100.1168891	97.90031558	95.74406175	93.64616211	91.6047265	89.61793677
170313A00034	3/13/2017	3.31	3/15/2027	107.14939	104.7392553	102.3958267	100.1168891	97.90031558	95.74406175	93.64616211	91.6047265	89.61793677
170313A00035	3/13/2017	3.31	3/15/2027	107.14939	104.7392553	102.3958267	100.1168891	97.90031558	95.74406175	93.64616211	91.6047265	89.61793677
170313A00041	3/13/2017	3.21	3/15/2032	110.71209	106.7660841	103.0273209	99.48276449	96.12030158	92.92867289	89.89740699	87.01675961	84.27765802
170313A00045	3/13/2017	3.22	3/15/2032	110.95508	106.938206	103.1319775	99.52322778	96.09972048	92.85007468	89.76369899	86.83073134	84.04198372
170317A00044	3/17/2017	3.11	3/17/2027	106.35044	104.0556122	101.8251	99.65671568	97.54835594	95.49800186	93.50371519	91.56363452	89.67597171
170322A00022	3/22/2017	3.89	9/23/2041	147.61323	129.3941051	113.8302986	100.509498	89.0860097	79.26965934	70.81658821	63.52161779	57.21190791
170322A00023	3/22/2017	3.82	9/22/2039	141.03987	125.1386803	111.3320309	99.32641332	88.87116865	79.75201835	71.78560408	64.81487147	58.7051638
170322A00024	3/22/2017	3.72	9/22/2036	133.4608	120.8144797	109.5493578	99.50483476	90.53984635	82.53039455	75.36740156	68.95484325	63.20812454
170322A00025	3/22/2017	3.58	3/22/2033	124.51951	115.6695841	107.5370512	100.0595385	93.18040908	86.84820713	81.01616018	75.64173057	70.68621225
170322A00026	3/22/2017	3.22	3/22/2028	109.94518	106.4752983	103.1345717	99.91751344	96.81890167	93.83376265	90.95735781	88.1851713	85.51289833

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
170322A00033	3/22/2017	3.61	3/24/2042	127.49088	116.753395	107.2463382	98.80799639	91.29977173	84.60267021	78.61435217	73.24664869	68.42346701
170327A00070	3/29/2017	3.05	3/29/2027	106.95624	104.5042048	102.121148	99.80474488	97.55276194	95.36305404	93.23356018	91.16229968	89.14736856
170327A00072	3/29/2017	3.09	3/29/2027	107.05356	104.6003181	102.2160867	99.89853435	97.64542681	95.45461819	93.3240468	91.25173127	89.23576697
170327A00078	3/27/2019	3.04	3/27/2026	103.6634	102.2523262	100.8673114	99.50769531	98.17283973	96.8621275	95.57496149	94.31076384	93.0689752
170327A00079	3/27/2019	3.19	3/29/2027	106.97344	104.5278987	102.1510226	99.84050218	97.59411795	95.4097378	93.28531315	91.2188751	89.20853084
170327A00080	3/27/2019	3.43	3/27/2029	113.81785	109.2558493	104.9057097	100.7564791	96.79783153	93.02002436	89.41386249	85.97066469	82.68223232
170328A00015	3/28/2017	2.75	11/29/2024	100.15366	100.0732066	99.99288464	99.91269254	99.83263003	99.7526968	99.67289256	99.59321699	99.5136698
170406A00029	4/6/2017	3.01	4/6/2027	106.44293	104.0336098	101.6935964	99.42047139	97.21191958	95.06572109	92.97974664	90.95195318	88.98037985
170406A00031	4/6/2017	3.01	4/6/2027	106.44293	104.0336098	101.6935964	99.42047139	97.21191958	95.06572109	92.97974664	90.95195318	88.98037985
170406A00032	4/6/2017	3.01	4/6/2027	106.44293	104.0336098	101.6935964	99.42047139	97.21191958	95.06572109	92.97974664	90.95195318	88.98037985
170406A00033	4/6/2017	3.01	4/6/2027	106.44293	104.0336098	101.6935964	99.42047139	97.21191958	95.06572109	92.97974664	90.95195318	88.98037985
170406A00034	4/6/2017	3.01	4/6/2027	106.44293	104.0336098	101.6935964	99.42047139	97.21191958	95.06572109	92.97974664	90.95195318	88.98037985
170406A00036	4/6/2017	3.07	4/6/2032	110.45264	106.4111967	102.5837329	98.95675642	95.51773429	92.2550169	89.15776939	86.21590907	83.420048
170407A00001	4/6/2017	2.97	4/6/2027	106.14962	103.8139645	101.5449314	99.34020984	97.19758193	95.11492074	93.09018602	91.12142002	89.20674366
170427A00044	4/27/2017	3.02	4/27/2027	106.78306	104.2600331	101.8101078	99.43074111	97.11949621	94.87403579	92.69211722	90.57158809	88.510382
170427A00046	4/27/2017	3.1	4/27/2028	109.81388	106.2475069	102.8175601	99.51808337	96.34341373	93.28816529	90.34721423	87.51568458	84.78893473
170427A00047	4/27/2017	3.18	4/27/2029	112.94112	108.3130203	103.9040519	99.70267574	95.69801844	91.87983298	88.23845943	84.76478817	81.45022564
170502A00028	5/2/2017	2.84	5/3/2027	106.58036	104.0392196	101.5722073	99.17672342	96.8502803	94.59049276	92.39507303	90.26182605	88.18864518
170511A00011	5/11/2017	2.41	5/11/2027	102.82167	101.4732232	100.1554129	98.86728546	97.60792852	96.37646525	95.17205271	93.99388025	92.84116799
170524A00027	5/24/2017	2.32	5/24/2027	102.70122	101.3532449	100.0359188	98.74829424	97.48945712	96.258529	95.05466543	93.87705438	92.72491465
170609A00043	6/9/2017	3.07	6/9/2032	119.43974	111.5221183	104.197543	97.41826299	91.14061636	85.32465825	79.93382604	74.93463638	70.2964109
170609A00052	6/11/2018	2.9	6/9/2027	106.79412	104.1545602	101.5940267	99.10966832	96.69875438	94.35867072	92.08691405	89.88108642	87.73888996
170613A00032	6/13/2017	2.45	6/13/2025	101.2144	100.5919975	99.977252	99.37001842	98.77015947	98.17754122	97.59203294	97.01350705	96.44183901
170614A00019	6/14/2017	2.48	6/13/2025	101.18353	100.5618658	99.94783476	99.3412991	98.74212196	98.15016986	97.56531252	96.98742279	96.41637652
170619A00089	6/16/2017	2.79	6/16/2027	106.3495	103.7719689	101.2726582	98.84866616	96.49722476	94.21568863	92.00152849	89.85232516	87.76576379
170619A00092	6/16/2017	2.79	6/16/2027	106.3495	103.7719689	101.2726582	98.84866616	96.49722476	94.21568863	92.00152849	89.85232516	87.76576379
170619A00095	6/16/2017	2.79	6/16/2027	106.3495	103.7719689	101.2726582	98.84866616	96.49722476	94.21568863	92.00152849	89.85232516	87.76576379
170619A00096	6/16/2017	2.79	6/16/2027	106.3495	103.7719689	101.2726582	98.84866616	96.49722476	94.21568863	92.00152849	89.85232516	87.76576379
170619A00101	6/16/2017	2.74	6/16/2027	106.01509	103.521792	101.1034642	98.75734596	96.48079557	94.27128786	92.12640823	90.04384687	88.02139335
170622A00036	6/22/2017	3.23	6/22/2032	120.07831	112.1297805	104.7774851	97.97331454	91.67328655	85.83717269	80.42815924	75.41254047	70.75944102
170622A00037	6/22/2017	3.27	6/22/2033	122.44675	113.4386446	105.1821789	97.61020675	90.66192391	84.28223824	78.42120538	73.03352267	68.07807537
170622A00038	6/22/2017	3.32	6/22/2034	124.90254	114.8289975	105.6790642	97.36237028	89.79785164	82.91274942	76.64171885	70.9260381	65.71290522
170622A00039	6/22/2017	3.36	6/22/2035	127.1858	116.0541756	106.0333145	97.00520129	88.86497638	81.51940564	74.88553572	68.88951107	63.46553256

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
170622A00040	6/22/2017	3.41	6/23/2036	129.44587	117.2563936	106.3802255	96.66693833	87.98413043	80.215183	73.25730299	67.01981748	61.42268631
170623A00028	6/23/2017	2.79	6/23/2027	106.60505	103.9293157	101.3346082	98.81796436	96.37655066	94.00765643	91.70868771	89.47716129	87.31069917
170711A00010	7/11/2017	2.38	7/12/2027	102.97289	101.5387722	100.1386157	98.77133271	97.43588111	96.13126065	94.85651062	93.61070799	92.39296567
170713A00021	7/13/2017	3.25	7/13/2037	125.12402	114.4624256	104.9474214	96.44356875	88.83240202	82.01020416	75.88608365	70.38031204	65.42288569
170728A00040	7/28/2017	2.44	1/27/2025	100.44118	100.1972595	99.95453013	99.71298179	99.47260583	99.23339372	98.99533698	98.75842724	98.52265619
170803A00020	8/3/2017	2.84	8/3/2027	107.02249	104.2309126	101.5266918	98.90652715	96.367269	93.90590926	91.51957379	89.20551536	86.96110693
170809A00005	8/9/2017	2.61	8/11/2025	101.62557	100.8409375	100.0684097	99.30770713	98.55855949	97.82070479	97.09388889	96.37786522	95.67239453
170822A00020	8/22/2017	2.59	8/22/2025	101.68036	100.8654253	100.0635325	99.2743746	98.49764983	97.73306589	96.9803396	96.23919651	95.50937063
170822A00023	8/23/2017	3.95	8/23/2028	113.986	110.0203052	106.2167811	102.5679272	99.06662712	95.70613065	92.48003281	89.38225428	86.40702298
170918A00007	9/18/2017	2.8	9/20/2027	107.23959	104.3146933	101.4851188	98.74725072	96.09763363	93.53296121	91.05006923	88.64592848	86.31763835
170921A00055	9/21/2017	2.82	9/21/2027	107.01534	104.1960395	101.4693571	98.83171073	96.27968215	93.81000441	91.41955444	89.10534575	86.86452166
170921A00056	9/21/2017	2.82	9/21/2027	107.01534	104.1960395	101.4693571	98.83171073	96.27968215	93.81000441	91.41955444	89.10534575	86.86452166
170921A00057	9/21/2017	2.79	9/21/2027	106.68797	103.9663541	101.3332202	98.78516527	96.3189386	93.9314331	91.61967818	89.38083284	87.21217928
170929A00046	9/29/2017	2.49	9/30/2027	103.1738	101.6708906	100.2049098	98.77465063	97.37895143	96.01669762	94.68681939	93.38828948	92.1201212
171011A00013	10/11/2017	2.77	10/13/2026	104.75034	102.7876182	100.871635	99.00099616	97.17435392	95.39040985	93.64791252	91.94565552	90.28247548
171018A00011	10/18/2017	2.68	10/18/2027	107.31374	104.3066499	101.40009	98.59015375	95.87310539	93.24537493	90.70354997	88.24436776	85.86470775
171026A00009	10/26/2017	2.75	10/27/2025	102.26645	101.2684026	100.2898008	99.33008385	98.38870892	97.4651538	96.55891596	95.6695116	94.79647481
171026A00010	10/26/2017	2.84	10/26/2026	104.9829	102.9831844	101.0318931	99.12755113	97.26873897	95.45409007	93.68228828	91.95206562	90.26220018
171026A00011	10/26/2017	2.94	10/26/2027	107.90189	104.8702989	101.940568	99.10870765	96.37091246	93.72354714	91.16313784	88.68636397	86.29005053
171030A00023	10/30/2017	2.9	11/1/2027	107.82318	104.776692	101.8330726	98.9882809	96.23845449	93.5799047	91.00910751	88.52269527	86.11744874
171109A00016	11/9/2017	2.94	11/9/2032	116.87478	109.5660913	102.8111343	96.56403143	90.78296933	85.4298178	80.46978613	75.87111304	71.60478697
171129A00020	11/29/2017	2.89	11/30/2026	105.35443	103.2544192	101.2068887	99.21017838	97.26268935	95.36288543	93.50928989	91.7004827	89.93509792
171204A00009	12/4/2017	2.23	12/4/2024	100.12922	100.0417994	99.95453778	99.86743377	99.78048694	99.69369684	99.60706306	99.52058514	99.43426265
171204A00024	12/4/2017	2.71	12/4/2024	100.35266	100.1728158	99.993625	99.81508078	99.63717962	99.459918	99.28329247	99.10729957	98.9319359
171206A00020	12/6/2017	2.62	12/6/2027	103.66497	102.034866	100.447178	98.90045276	97.3933009	95.92439104	94.49244684	93.09624433	91.73460931
171206A00038	12/6/2017	2.69	12/6/2027	107.68027	104.5335478	101.4957445	98.56245768	95.72949437	92.99285607	90.34872843	87.7934715	85.32361064
171206A00041	12/6/2017	2.44	12/6/2024	100.17025	100.070367	99.97069067	99.87122337	99.77196441	99.6729131	99.57406875	99.47543069	99.37699822
171206A00048	12/6/2017	3.04	12/6/2032	120.16415	111.7416493	103.9856172	96.83952684	90.25193244	84.1759868	78.56900805	73.39208912	68.60974571
171207A00024	12/7/2017	2.93	12/7/2027	107.9871	104.9065103	101.9331463	99.06261199	96.29072133	93.61348695	91.02710909	88.52796544	86.11260153
171207A00025	12/7/2017	2.91	12/7/2027	107.76705	104.7480352	101.8334979	99.01916721	96.30097578	93.67504884	91.13769359	88.68538939	86.31477845
171207A00026	12/7/2017	2.93	12/7/2027	107.9871	104.9065103	101.9331463	99.06261199	96.29072133	93.61348695	91.02710909	88.52796544	86.11260153
171219A00009	12/19/2017	2.3	12/19/2024	100.17061	100.0623866	99.95441861	99.8467075	99.73925231	99.63205204	99.52510572	99.41841236	99.311971
171219A00063	12/19/2017	2.8	12/20/2027	108.12236	104.93109	101.8512643	98.87833411	96.00796905	93.23604196	90.55861802	87.97194439	85.47244055

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
171219A00067	12/19/2017	2.72	12/20/2027	107.23323	104.2958787	101.4600553	98.72158753	96.07650511	93.52102755	91.05155339	88.66465042	86.35704647
171227A00018	12/27/2017	2.83	12/27/2024	100.32633	100.1683062	100.0107867	99.85376813	99.69724811	99.54122426	99.38569422	99.23065566	99.07610623
180102A00021	1/2/2018	2.82	1/2/2026	102.76445	101.581676	100.4260813	99.29673856	98.19276076	97.11330036	96.05754723	95.0247266	94.01409713
180104A00017	1/4/2018	2.77	1/3/2025	100.35806	100.1806731	100.0039173	99.82778856	99.65228342	99.47739861	99.30313082	99.12947679	98.95643326
180104A00018	1/4/2018	2.97	1/4/2027	105.78752	103.5890666	101.4473086	99.36037564	97.32647709	95.34389568	93.41098388	91.52616037	89.68790684
180104A00023	1/4/2018	2.91	1/4/2028	107.19964	104.3952468	101.6867661	99.07027504	96.54203727	94.0984942	91.7362553	89.45208884	87.24291332
180104A00024	1/4/2018	2.98	1/4/2028	108.16111	105.0679951	102.0839764	99.20451474	96.42529507	93.74220965	91.15134667	88.64897939	86.23155607
180104A00041	1/4/2018	3.08	1/4/2033	118.20896	110.6727065	103.7158508	97.28964598	91.34973025	85.85571104	80.77078826	76.06141545	71.69699466
180109A00028	1/9/2018	2.6	1/9/2025	100.3764	100.182284	99.98893094	99.79633687	99.60449727	99.41340765	99.22306353	99.03346048	98.8445941
180110A00028	1/10/2018	2.85	1/10/2025	100.41603	100.2192638	100.0232805	99.82807606	99.63364575	99.43998491	99.2470889	99.05495314	98.86357307
180110A00029	1/10/2018	3.13	1/10/2028	109.06699	105.8105901	102.6692802	99.63830063	96.71312078	93.88942618	91.16310675	88.5302456	85.98710856
180111A00007	1/11/2018	2.66	1/14/2025	100.41775	100.2097714	100.00267	99.79644011	99.59107611	99.38657247	99.1829237	98.98012435	98.77816902
180116A00014	1/16/2018	3.01	1/19/2027	105.98914	103.7483078	101.5660976	99.44054593	97.36977171	95.35197272	93.38542127	91.46846053	89.59950089
180116A00015	1/16/2018	3.06	1/18/2028	108.90131	105.62616	102.4674386	99.42030299	96.48014308	93.64257047	90.90340606	88.25866855	85.70456358
180118A00004	1/18/2018	2.88	1/17/2025	100.46627	100.250119	100.0349114	99.82064177	99.607304	99.3948919	99.1833994	98.97282045	98.76314908
180118A00037	1/18/2018	2.88	1/21/2025	100.4916	100.2643651	100.0381741	99.81301543	99.58888191	99.36576651	99.14366224	98.92256218	98.70245947
180118A00039	1/18/2018	3.09	1/19/2027	106.16824	103.9253651	101.7411568	99.61364804	97.54095655	95.52127895	93.55288644	91.63412113	89.7633924
180125A00027	1/25/2018	2.69	1/24/2025	100.53976	100.2704117	100.0026436	99.73644311	99.47179617	99.2086886	98.94710649	98.68703608	98.42846377
180126A00011	1/26/2018	2.72	1/26/2028	104.13322	102.4286482	100.7695976	99.15448228	97.58178163	96.05003954	94.55786116	93.10390989	91.68690444
180126A00029	1/26/2018	2.88	1/27/2025	100.52958	100.2857189	100.0430494	99.80155802	99.56123625	99.32207559	99.08406763	98.84720403	98.61147655
180130A00070	1/30/2018	3.14	1/29/2027	106.35956	104.0876935	101.8758102	99.72188073	97.62396102	95.58018933	93.58878198	91.64802929	89.75629184
180130A00085	1/30/2018	2.79	1/30/2025	100.54556	100.293182	100.0420714	99.79221743	99.54361068	99.29624184	99.05010167	98.80518106	98.56147096
180131A00022	1/31/2018	2.96	1/30/2025	100.56877	100.3165697	100.0656321	99.81594772	99.56750721	99.32030132	99.0743209	98.82955686	98.58600022
180201A00022	2/1/2018	2.99	2/3/2025	100.60326	100.3399838	100.078091	99.81756631	99.55839891	99.30057823	99.04409379	98.78893519	98.53509219
180205A00019	2/5/2018	2.88	2/5/2025	100.60829	100.3392706	100.0716964	99.80555455	99.54083343	99.27752169	99.01560802	98.75508127	98.49593038
180207A00002	2/7/2018	3.13	2/6/2026	103.39259	102.1118222	100.8604197	99.63737318	98.44171848	97.27253504	96.12894339	95.01010291	93.9152097
180207A00003	2/7/2018	3.28	2/7/2028	109.7805	106.4359258	103.211844	100.1032053	97.10520177	94.21325689	91.42301289	88.73031865	86.13121847
180222A00025	2/22/2018	3.48	2/22/2033	124.23686	115.4406824	107.3531652	99.91307873	93.06479456	86.75774357	80.9459319	75.58750527	70.64435687
180222A00026	2/22/2018	2.98	2/21/2025	100.74666	100.4332581	100.1218176	99.81231552	99.50473382	99.19905456	98.89526007	98.59333288	98.29325576
180222A00027	2/22/2018	3.24	2/22/2028	110.05533	106.6560516	103.3807558	100.224253	97.18159858	94.2480816	91.41921226	88.69071025	86.05849377
180305A00030	3/5/2018	3.12	3/5/2025	101.07238	100.6424019	100.2160986	99.79341913	99.37431723	98.95874753	98.54666542	98.13802701	97.73278917
180309A00011	3/9/2018	3.19	3/10/2025	101.1397	100.6959587	100.2561349	99.82017212	99.38801936	98.95962668	98.53494497	98.11392599	97.69652232
180313A00026	3/13/2018	3.34	3/13/2028	110.28143	106.8300168	103.5061746	100.3045227	97.21993589	94.24753087	91.38265366	88.62086758	85.95794192

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
180321A00015	3/21/2018	3.02	3/21/2025	100.93115	100.5416514	100.155502	99.77265887	99.39307789	99.01671565	98.64352956	98.2734778	97.90651928
180322A00030	3/22/2018	2.79	3/24/2025	100.70088	100.3845222	100.0705729	99.75900042	99.44977532	99.14286867	98.83825202	98.53589742	98.23577739
180322A00040	3/22/2018	3.16	3/21/2031	111.81772	107.4928892	103.4016465	99.52926468	95.86204965	92.38726109	89.09304002	85.96834238	83.00287796
180322A00044	3/22/2018	3.18	3/22/2033	112.44208	107.8397098	103.5071764	99.42577713	95.57825657	91.94868748	88.52235923	85.28567626	82.22606568
180323A00013	3/23/2018	3.18	3/23/2028	110.09988	106.6175472	103.2650619	100.0369012	96.92780628	93.93276887	91.04701783	88.26600668	85.58540183
180328A00010	3/28/2018	3.1	3/28/2025	101.01138	100.6013324	100.1946163	99.79118759	99.39100656	98.99403409	98.60023168	98.20956147	97.82198618
180329A00003	3/29/2018	3.08	3/29/2028	109.80373	106.3103061	102.9477591	99.71049816	96.5932001	93.59079652	90.69846014	87.91159198	85.22580933
180402A00013	4/2/2018	2.99	4/3/2028	107.93732	105.0120655	102.1921344	99.47304959	96.8505549	94.32059972	91.87932799	89.52306762	87.24832057
180403A00006	4/3/2018	3.07	4/3/2028	109.80861	106.301418	102.926111	99.67703589	96.54880893	93.53630512	90.63464425	87.83917778	85.14547667
180403A00014	4/3/2018	3.11	4/3/2025	101.26972	100.7632235	100.2618093	99.76540087	99.27392344	98.78730365	98.30546962	97.82835089	97.35587838
180403A00041	4/3/2018	2.91	4/3/2025	101.00773	100.580812	100.1575067	99.7377639	99.32153867	98.90878691	98.49946521	98.09353091	97.69094204
180410A00002	4/10/2018	3.14	4/11/2033	112.36337	107.721106	103.3533457	99.24090819	95.36611164	91.71264525	88.26545325	85.01062948	81.93532142
180412A00034	4/12/2018	3.23	4/15/2030	116.06312	110.3769315	105.0092885	99.94064518	95.15275666	90.62858339	86.35220567	82.30874442	78.48428796
180412A00036	4/12/2018	3.54	4/15/2038	135.34732	121.0629108	108.5175808	97.48649966	87.77514754	79.21508048	71.66030961	64.98419897	59.07680584
180503A00040	5/3/2018	3.3	5/5/2025	101.39047	100.8749878	100.364744	99.85966325	99.35966748	98.86468004	98.37462588	97.88943141	97.40902454
180508A00038	5/8/2018	3.57	5/9/2033	114.11185	109.3622272	104.8954837	100.6917183	96.73259457	93.00120683	89.4819587	86.16045224	83.02338741
180517A00018	5/17/2018	3.46	5/17/2033	113.98118	109.2278152	104.7579569	100.5516345	96.59044924	92.85743986	89.3369603	86.01456822	82.87692388
180517A00024	5/17/2018	3.46	5/17/2033	113.98118	109.2278152	104.7579569	100.5516345	96.59044924	92.85743986	89.3369603	86.01456822	82.87692388
180521A00025	5/21/2018	3.24	5/21/2025	101.52627	100.96591	100.4117389	99.86365911	99.32157033	98.78537454	98.25497585	97.7302804	97.2111964
180529A00042	5/29/2018	3.42	5/30/2028	111.22216	107.5413795	104.0039121	100.6033827	97.33373282	94.18920749	91.16433794	88.2539257	85.45302761
180529A00057	5/29/2018	3.09	5/30/2028	107.11755	104.5760334	102.1222172	99.75240722	97.46309285	95.25093501	93.11275643	91.04553268	89.04638375
180530A00024	5/30/2018	3.44	5/30/2029	114.38029	109.6301738	105.1081493	100.8020227	96.70031876	92.7922343	89.06759517	85.51681605	82.13086323
180530A00025	5/30/2018	3.49	5/30/2030	117.32374	111.4967103	106.0013716	100.8170341	95.92440324	91.30548233	86.94347835	82.82271515	78.92855336
180530A00026	5/30/2018	3.55	5/30/2031	120.01731	113.1143362	106.6646094	100.6358439	94.99821635	89.72416931	84.78822766	80.16683078	75.83817914
180530A00027	5/30/2018	3.61	6/1/2032	122.83296	114.8390201	107.4386252	100.5842773	94.23252378	88.34359261	82.88106197	77.81156169	73.1045027
180530A00028	5/30/2018	3.67	5/31/2033	125.73207	116.6458608	108.3099626	100.6578993	93.62942439	87.16990928	81.22979241	75.7640846	70.73192515
180530A00030	5/30/2018	3.68	5/30/2034	128.18671	118.0220966	108.7802125	100.3714785	92.71547515	85.73996467	79.38001921	73.57724588	68.27909763
180605A00031	6/5/2018	3.37	6/5/2030	109.00949	105.9627596	103.0428592	100.2433665	97.55823295	94.98175929	92.50857273	90.13360611	87.85207847
180615A00039	6/15/2018	3.49	6/15/2028	111.61874	107.8862026	104.3003576	100.8546106	97.54270209	94.35868942	91.29692911	88.35205974	85.51898609
180618A00036	6/18/2018	3.89	6/18/2048	163.18708	137.5024615	116.7016213	99.79072393	85.98609288	74.6685416	65.34784869	57.63508175	51.22100153
180619A00020	6/19/2018	3.1	6/19/2025	101.66486	101.0244186	100.3920472	99.76759738	99.15092081	98.54187276	97.9403121	97.34610116	96.75910564
180619A00021	6/19/2018	3.24	6/19/2028	111.04452	107.3033173	103.7098074	100.2573246	96.93954226	93.75045595	90.68436453	87.73585301	84.89977637
180620A00014	6/20/2018	3.4	6/20/2028	111.33408	107.592773	103.9990071	100.5461296	97.22782438	94.03809678	90.97125481	88.021892	85.18487132



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
180620A00038	6/20/2018	3.4	6/20/2028	111.33408	107.592773	103.9990071	100.5461296	97.22782438	94.03809678	90.97125481	88.021892	85.18487132
180621A00017	6/21/2018	3.42	6/21/2028	111.4162	107.6705921	104.0727766	100.616079	97.29416934	94.10103989	91.03098654	88.0785915	85.23870715
180621A00068	6/21/2018	3.32	6/23/2025	101.7862	101.1349893	100.4921151	99.85741643	99.23073798	98.61192825	98.00083957	97.39732792	96.80125289
180622A00004	6/22/2018	3.47	12/22/2028	113.18418	108.9005142	104.8054079	100.8895084	97.14398339	93.56048667	90.13112842	86.8484475	83.70538558
180622A00005	6/22/2018	3.5	7/2/2029	114.93069	110.0759608	105.4580475	101.0640809	96.88196712	92.90033307	89.1084796	85.49633747	82.05442665
180622A00006	6/22/2018	3.53	12/21/2029	116.40654	111.0453821	105.9682022	101.1583941	96.60041449	92.27970767	88.18263743	84.29642379	80.60908457
180628A00068	6/28/2018	3.12	6/28/2028	108.79021	105.688167	102.7031348	99.82989229	97.06348632	94.39921716	91.83262355	89.35946893	86.97572851
180713A00031	7/13/2018	3.06	7/14/2025	101.00627	100.5945993	100.1871284	99.78378356	99.38449542	98.98919628	98.59782001	98.21030204	97.82657927
180716A00054	7/16/2018	3.59	7/16/2040	141.08623	124.3428987	109.915198	97.46297875	86.69807645	77.37610806	69.28960054	62.26222902	56.14398081
180716A00062	7/16/2018	2.91	7/16/2025	100.97943	100.5666041	100.1580044	99.75356283	99.35320913	98.95687463	98.56449228	98.17599663	97.79132374
180717A00021	7/17/2018	3.34	7/17/2028	110.28787	106.8219336	103.4925931	100.2936299	97.21914805	94.26355378	91.42153759	88.68805826	86.05832764
180717A00026	7/17/2018	3.24	7/16/2025	102.11566	101.3317937	100.5601247	99.80036651	99.05224361	98.3154888	97.58984311	96.87505538	96.17088199
180717A00047	7/17/2018	3.3	9/17/2025	102.48109	101.5912934	100.7169514	99.85766607	99.01305042	98.18273077	97.36634603	96.56354719	95.7739968
180718A00008	7/18/2018	3.37	7/18/2028	111.1639	107.3801324	103.748709	100.2626082	96.91517586	93.70010152	90.61139837	87.64338472	84.79066659
180719A00064	7/19/2018	3.3	7/21/2025	101.99624	101.2675166	100.5492086	99.84109617	99.14296313	98.45459932	97.77580048	97.10636802	96.44610881
180719A00065	7/19/2018	3.36	7/20/2026	105.13928	103.4029896	101.7038112	100.0406155	98.41232336	96.81789916	95.25634856	93.72671639	92.22808471
180727A00028	7/27/2018	3.25	7/27/2026	105.15174	103.3940542	101.6742825	99.99126735	98.34389519	96.73109796	95.15185068	93.60516923	92.09010824
180727A00038	7/27/2018	3.36	7/25/2025	102.07269	101.3326835	100.6034117	99.88463919	99.17614025	98.47769559	97.7890921	97.11012268	96.440586
180727A00039	7/27/2018	3.48	7/27/2028	111.94911	108.0956401	104.3975246	100.8475869	97.43902916	94.16540841	91.02061598	87.99885766	85.09463536
180730A00081	7/30/2018	3.5	7/28/2028	112.03307	108.175318	104.4731741	100.9194435	97.50731346	94.23032753	91.08236419	88.05761734	85.15057777
180813A00045	8/13/2018	2.89	8/13/2025	101.07676	100.6219599	100.172309	99.72771076	99.28807076	98.85329718	98.42330057	97.99799375	97.57729181
180814A00010	8/14/2018	3.1	8/14/2025	102.09795	101.3022107	100.518882	99.747671	98.98829769	98.2404907	97.50398694	96.77853123	96.06387602
180814A00032	8/14/2018	3.1	8/14/2025	102.09795	101.3022107	100.518882	99.747671	98.98829769	98.2404907	97.50398694	96.77853123	96.06387602
180814A00033	8/14/2018	3.25	8/13/2027	108.47269	105.6285951	102.8741979	100.2061236	97.62115163	95.11620324	92.68833432	90.33472838	88.05269011
180816A00038	8/16/2018	3.38	8/16/2028	111.73902	107.8353018	104.0909856	100.4986861	97.05140331	93.74249945	90.56567822	87.51496506	84.58468878
180820A00055	8/20/2018	3.37	8/21/2028	111.7423	107.8249474	104.0680525	100.4641802	97.00628123	93.68767003	90.50200354	87.4432619	84.50573009
180823A00035	8/23/2018	3.05	8/22/2025	102.1214	101.3036094	100.4989166	99.7070064	98.92757573	98.16033102	97.40498786	96.66127065	95.92891223
180823A00053	8/23/2018	3.2	8/23/2028	111.42639	107.5010341	103.73694	100.1266252	96.66299479	93.33932	90.14921673	87.08662614	84.14579626
180823A00055	8/23/2018	3.44	8/23/2033	125.03945	115.7232422	107.1966247	99.38798014	92.23254997	85.6717442	79.6525244	74.12685141	69.05119054
180827A00020	8/27/2018	3.21	8/27/2025	102.22772	101.3966245	100.5790356	99.77462725	98.98308262	98.20409475	97.43736644	96.6826098	95.9395459
180828A00032	8/28/2018	3.49	8/29/2033	125.51609	116.1634619	107.6043385	99.76667928	92.58534344	86.00139891	79.96150159	74.4173393	69.32513371
180829A00008	8/29/2018	3.23	8/30/2027	108.55522	105.66385	102.8649421	100.1550485	97.53087083	94.98925106	92.52716474	90.14171451	87.83012409
180831A00019	8/31/2018	3.21	9/2/2025	102.2768	101.4290442	100.5953363	99.77532597	98.96867761	98.17506649	97.39417833	96.62570888	95.86936352

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
180904A00012	9/4/2018	3.35	9/4/2030	117.63294	111.515752	105.7615953	100.3469973	95.25012245	90.45064648	85.92964484	81.66948943	77.65375365
180904A00014	9/4/2018	3.37	9/1/2028	111.83376	107.8847304	104.098554	100.4676757	96.98493056	93.64352091	90.43699523	87.35922895	84.40440617
180905A00017	9/5/2018	3.43	9/6/2033	122.16483	113.9840043	106.4716227	99.56796891	93.21901153	87.37583282	81.99411834	77.03369981	72.45814566
180906A00032	9/6/2018	3.24	9/5/2025	102.54533	101.6169751	100.7055509	99.81059541	98.93166394	98.06832781	97.22017349	96.38680198	95.56782818
180907A00013	9/7/2018	3.27	9/8/2025	102.5847	101.6524529	100.7373229	99.83884324	98.95656079	98.0900388	97.23885611	96.40260649	95.58089796
180910A00028	9/10/2018	3.56	9/9/2033	126.2037	116.7918639	108.1803562	100.2963284	93.07393178	86.45360966	80.38146667	74.80870419	69.69111451
180910A00033	9/10/2018	3.43	9/8/2028	112.12623	108.1521047	104.342568	100.6899504	97.18698058	93.82676108	90.60274763	87.50872907	84.53880864
180912A00011	9/12/2018	3.41	9/11/2026	105.7162	103.831117	101.9890336	100.1887192	98.42898384	96.70867905	95.02669616	93.38196463	91.77345049
180913A00012	9/13/2018	3.31	9/13/2033	113.72576	108.8078552	104.1932096	99.85978315	95.78732323	91.95720637	88.35229574	84.95681179	81.75621503
180913A00030	9/13/2018	3.33	9/12/2025	102.46469	101.5886732	100.7276423	99.8812142	99.04901925	98.23070031	97.42591206	96.63432059	95.85560287
180913A00033	9/13/2018	3.31	9/13/2033	113.72576	108.8078552	104.1932096	99.85978315	95.78732323	91.95720637	88.35229574	84.95681179	81.75621503
180914A00013	9/14/2018	3.48	9/14/2028	112.37318	108.3775642	104.5480344	100.8768188	97.35655366	93.98025567	90.74130041	87.6334019	84.65059367
180914A00028	9/14/2018	3.37	9/12/2025	102.4997	101.6235218	100.7623265	99.91573596	99.0833805	98.26490292	97.45995787	96.6682114	95.88934047
180914A00029	9/14/2018	3.48	9/14/2028	112.37318	108.3775642	104.5480344	100.8768188	97.35655366	93.98025567	90.74130041	87.6334019	84.65059367
180914A00049	9/14/2018	3.37	9/14/2033	114.02102	109.0903124	104.4636539	100.1189493	96.03589264	92.1958117	88.58152466	85.17721062	81.96829198
180920A00014	9/20/2018	3.59	9/20/2028	112.85676	108.8350076	104.9809753	101.2867951	97.74500488	94.34852988	91.09066005	87.96502957	84.96559731
180925A00013	9/25/2018	3.41	9/25/2028	106.2903	104.2098437	102.1934089	100.2384956	98.34272304	96.50382037	94.71962071	92.98805563	91.30714994
180925A00116	9/25/2018	3.28	9/25/2028	106.18673	104.1056323	102.0886437	100.1332605	98.23709631	96.39787488	94.61342441	92.88167185	91.20063771
181003A00019	10/3/2018	3.44	10/3/2025	102.97628	101.968002	100.9796295	100.0105739	99.06027125	98.12817964	97.21377776	96.31656404	95.43605578
181003A00032	10/3/2018	3.23	10/3/2025	101.43322	100.8945102	100.3630327	99.83862694	99.32113694	98.81041143	98.30630379	97.80867188	97.31737781
181004A00029	10/4/2018	3.7	10/4/2028	113.41755	109.3460371	105.4457616	101.7086135	98.12691143	94.69337587	91.40110632	88.24355943	85.21452858
181010A00025	10/10/2018	3.48	10/10/2030	110.14045	106.8825099	103.7671148	100.7867132	97.93421425	95.20295351	92.58666386	90.07944929	87.6757604
181029A00051	2/5/2019	3.69	2/5/2029	114.50808	110.0732457	105.8382157	101.792855	97.92760644	94.23345072	90.70187242	87.32482884	84.09472084
181029A00097	10/29/2018	3.53	10/27/2028	111.30735	107.7007961	104.2434949	100.9283202	97.74853044	94.69774422	91.76991879	88.95933009	86.26055405
181031A00070	3/1/2019	3.77	3/1/2029	115.0928	110.5734056	106.2604755	102.1435072	98.21258174	94.45833226	90.87191027	87.44495443	84.16956133
181105A00015	11/5/2018	3.57	11/5/2025	103.37305	102.2773307	101.2050579	100.1554793	99.12787762	98.12156576	97.13588495	96.17020338	95.22391487
181109A00028	11/9/2018	3.72	11/9/2026	106.88615	104.8283542	102.820994	100.862512	98.95140641	97.08623241	95.26559961	93.4881695	91.75265314
181109A00029	11/9/2018	3.72	11/9/2026	106.88615	104.8283542	102.820994	100.862512	98.95140641	97.08623241	95.26559961	93.4881695	91.75265314
181116A00006	11/16/2018	3.18	11/17/2025	101.53494	100.9503554	100.3743425	99.80668932	99.24719386	98.69566112	98.15190259	97.61573607	97.08698531
181211A00042	12/11/2018	3.7	12/11/2028	112.02404	108.3128569	104.7596681	101.3567182	98.09668302	94.97264168	91.97805146	89.10672482	86.35280783
181214A00030	12/14/2018	3.47	12/14/2033	122.80833	114.3096019	106.5242856	99.38696551	92.83861579	86.82594381	81.30080242	76.21966541	71.54315913
181218A00040	12/18/2018	3.23	6/18/2030	108.58235	105.5470443	102.6381339	99.84921174	97.17424826	94.60756194	92.14379699	89.77790244	87.50511268
181220A00041	12/20/2018	3.36	12/18/2026	106.49773	104.3370331	102.2311566	100.1783274	98.17684448	96.22507495	94.32145073	92.46446542	90.65267133

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
181226A00030	12/26/2018	2.91	12/26/2028	105.76948	103.5689055	101.439545	99.37849759	97.38300565	95.45044336	93.57830944	91.76422037	90.005904
181227A00019	12/28/2020	3.1	12/29/2025	103.06809	101.8942375	100.7471074	99.62579067	98.52942293	97.45717811	96.40826626	95.38193156	94.37745056
181227A00027	12/27/2018	3.24	12/26/2025	103.21025	102.0436772	100.9034683	99.78874102	98.69864772	97.63237799	96.58915664	95.5682418	94.56892314
181227A00028	12/27/2018	3.46	12/27/2028	113.18441	108.8871812	104.7796116	100.85227	97.0962501	93.5031372	90.06497816	86.77425316	83.62384954
190102A00015	1/2/2019	2.97	1/3/2034	111.94008	107.1282243	102.6167949	98.3835566	94.4081139	90.67174556	87.15725477	83.84883382	80.73194159
190102A00020	1/2/2019	2.97	1/3/2034	111.94008	107.1282243	102.6167949	98.3835566	94.4081139	90.67174556	87.15725477	83.84883382	80.73194159
190102A00022	1/2/2019	2.97	1/3/2034	111.94008	107.1282243	102.6167949	98.3835566	94.40811391	90.67174556	87.15725477	83.84883382	80.73194159
190102A00024	1/2/2019	2.97	1/3/2034	111.94008	107.1282243	102.6167949	98.3835566	94.40811391	90.67174556	87.15725477	83.84883382	80.73194159
190102A00050	1/2/2019	3.38	1/3/2034	125.3064	115.6251376	106.7941623	98.73363392	91.37162068	84.64327865	78.49011872	72.85935285	67.70331073
190103A00020	1/3/2019	3.12	1/5/2026	103.31363	102.0567714	100.8288998	99.62901323	98.4561532	97.3094047	96.18789392	95.09078592	94.01728246
190104A00006	1/4/2019	2.83	1/5/2026	101.53032	100.8636785	100.2081926	99.56355444	98.92946598	98.30564085	97.6918035	97.08768874	96.49304126
190104A00033	1/4/2019	3.37	1/31/2029	113.08865	108.6990109	104.50689	100.5022667	96.67569289	93.01825329	89.52153241	86.17758312	82.97889757
190104A00034	1/4/2019	3.18	1/4/2029	109.77693	106.29361	102.9558572	99.75657904	96.68907587	93.74701561	90.9244112	88.21559949	85.61522165
190104A00035	1/4/2019	3.1	1/5/2026	103.26702	102.0183361	100.7984021	99.60621855	98.44083574	97.30134726	96.18688745	95.09662911	94.0297814
190104A00038	1/4/2019	3.25	1/4/2029	111.56832	107.539672	103.688155	100.0048959	96.4815225	93.11013027	89.88325318	86.79383657	83.83521193
190110A00004	1/10/2019	3.09	1/10/2025	100.46334	100.2665033	100.0704554	99.87518647	99.68069188	99.48696695	99.29400705	99.10180758	98.910364
190110A00005	1/10/2019	3.2	1/9/2026	103.26604	102.0611433	100.8843615	99.73471904	98.61128443	97.51316837	96.4395214	95.38953173	94.36242313
190111A00026	1/11/2019	3.48	1/11/2034	126.26725	116.5223743	107.6340908	99.52185525	92.11311568	85.34248068	79.15097754	73.48539071	68.2976717
190114A00040	1/14/2019	2.89	1/14/2025	100.46564	100.257593	100.0504234	99.84412562	99.63869392	99.43412278	99.23040673	99.02754031	98.82551813
190118A00006	1/18/2019	3.14	1/18/2034	113.31072	108.2365979	103.4856215	99.033584	94.85829585	90.9394045	87.25822898	83.79761053	80.54177749
190122A00043	1/22/2019	2.96	1/22/2025	100.53436	100.304109	100.0749236	99.84679771	99.61972398	99.39369506	99.16870366	98.9447426	98.72180473
190122A00045	1/22/2019	3.17	1/22/2027	106.55443	104.2954645	102.0957998	99.95343997	97.86647525	95.833076	93.85148875	91.92003221	90.03709366
190122A00046	1/22/2019	3.29	1/22/2029	113.03353	108.6590856	104.4807818	100.4887124	96.67352852	93.02640625	89.53901417	86.20348255	83.01237486
190129A00073	1/29/2019	3.11	1/29/2029	106.15963	103.9111295	101.7364788	99.63263105	97.59669167	95.62590579	93.71765072	91.86942862	90.07885969
190131A00013	1/31/2019	3.48	1/31/2034	122.44672	113.8816735	106.0428578	98.86304792	92.28163843	86.24395696	80.70065251	75.60714989	70.92316274
190131A00019	1/31/2019	3.44	1/30/2034	126.01297	116.229934	107.3113472	99.17551815	91.74890321	84.96525333	78.76485437	73.09385014	67.90363897
190131A00023	1/31/2019	3.02	1/30/2034	112.79913	107.7051292	102.9380577	98.47324311	94.28808787	90.36187798	86.6756122	83.21184804	79.95456255
190205A00017	2/5/2019	3.36	2/5/2029	112.2309	108.1119657	104.1771334	100.4171223	96.82317175	93.38700607	90.10080563	86.95717919	83.94913821
190205A00020	2/5/2019	3.32	2/5/2029	112.06627	107.9521045	104.0218494	100.2662322	96.67650093	93.24438811	89.96208189	86.82219838	83.81775605
190205A00021	2/5/2019	3.32	2/5/2029	112.06627	107.9521045	104.0218494	100.2662322	96.67650093	93.24438811	89.96208189	86.82219838	83.81775605
190205A00022	2/5/2019	3.32	2/5/2029	112.06627	107.9521045	104.0218494	100.2662322	96.67650093	93.24438811	89.96208189	86.82219838	83.81775605
190205A00023	2/5/2019	3.32	2/5/2029	112.06627	107.9521045	104.0218494	100.2662322	96.67650093	93.24438811	89.96208189	86.82219838	83.81775605
190211A00016	2/11/2019	3.01	2/11/2025	100.66302	100.3776121	100.0938329	99.81166703	99.53110074	99.25212034	98.97471235	98.69886341	98.42456035

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
190211A00017	2/11/2019	3.12	2/11/2026	103.42448	102.130679	100.8649228	99.6263027	98.41394566	97.22701621	96.0647144	94.92627396	93.81096051
190225A00026	2/25/2019	3.43	2/27/2034	126.1119	116.2435786	107.254178	99.0600929	91.58609309	84.76444393	78.5341246	72.8401313	67.63285597
190227A00033	2/27/2019	2.65	2/27/2026	101.57274	100.8592324	100.1578997	99.46840652	98.79042705	98.12364793	97.46776772	96.82249634	96.1875545
190301A00012	3/1/2019	3.41	3/1/2029	113.5229	109.0374576	104.7573542	100.672126	96.77189911	93.04734952	89.48966947	86.09053642	82.84208387
190305A00015	3/5/2019	3.32	3/5/2029	112.27096	108.0807849	104.0810887	100.2621043	96.61462125	93.12994859	89.79988226	86.61667545	83.57301069
190305A00017	3/5/2019	3.12	3/5/2026	103.69724	102.3143342	100.9572823	99.62541621	98.31809166	97.03468594	95.77459706	94.53724287	93.32206023
190308A00016	3/8/2019	3.18	3/8/2034	119.81386	111.7225882	104.3090372	97.51062886	91.27095964	85.53915509	80.26929792	75.41991799	70.95353737
190308A00026	3/8/2019	3.18	3/8/2034	119.81386	111.7225882	104.3090372	97.51062886	91.27095964	85.53915509	80.26929792	75.41991799	70.95353737
190314A00027	3/22/2019	2.92	3/21/2025	100.89033	100.4998483	100.1123978	99.72794272	99.34644826	98.96788022	98.59220491	98.21938917	97.84940032
190315A00017	3/15/2019	2.88	3/15/2034	112.17685	107.06763	102.2889317	97.81562586	93.62470956	89.69511041	86.00751065	82.54418832	79.28887381
190315A00019	3/15/2019	2.88	3/15/2034	112.17685	107.06763	102.2889317	97.81562586	93.62470956	89.69511041	86.00751065	82.54418832	79.28887381
190315A00023	3/15/2019	2.88	3/15/2034	112.17685	107.06763	102.2889317	97.81562586	93.62470956	89.69511041	86.00751065	82.54418832	79.28887381
190315A00029	3/15/2019	2.88	3/15/2034	112.17685	107.06763	102.2889317	97.81562586	93.62470957	89.69511041	86.00751065	82.54418832	79.28887381
190322A00008	3/22/2019	2.64	3/20/2026	101.60241	100.8490775	100.1086794	99.38085973	98.6652773	97.9616036	97.26952244	96.58872926	95.91893062
190327A00027	3/27/2019	2.66	1/15/2025	100.40719	100.1966471	99.98699714	99.77823872	99.57036612	99.36337364	99.15725563	98.95200647	98.74762059
190327A00030	3/27/2019	2.9	3/27/2036	113.25472	107.3714832	101.9279176	96.88537699	92.20898478	87.86723472	83.8316387	80.07641371	76.57820357
190328A00046	3/28/2019	2.7	3/4/2025	100.70008	100.3567694	100.0157994	99.67714758	99.34079027	99.0067042	98.67486637	98.34525412	98.01784507
190402A00004	4/2/2019	2.9	4/2/2029	111.88033	107.3337077	102.9997955	98.86753228	94.92649318	91.16684547	87.57931193	84.15513659	80.88605282
190402A00005	4/2/2019	2.77	4/2/2032	111.56526	106.4776273	101.7057007	97.22684038	93.02019056	89.06653121	85.34813959	81.84866431	78.55301069
190403A00010	4/3/2019	3.08	4/3/2029	111.73423	107.3948618	103.2576205	99.31192591	95.54781414	91.95589376	88.52730995	85.25371093	82.12721666
190403A00013	4/3/2019	3.05	4/3/2029	111.31153	107.0855705	103.0548397	99.20917044	95.53897737	92.0352246	88.68939121	85.49343903	82.43978268
190403A00014	4/3/2019	3.05	4/3/2029	111.31153	107.0855705	103.0548397	99.20917044	95.53897737	92.0352246	88.68939121	85.49343903	82.43978268
190404A00015	4/4/2019	2.88	4/3/2026	103.62666	102.1447725	100.6919676	99.26746278	97.87049988	96.50034753	95.15629979	93.83767509	92.54381515
190409A00019	4/9/2019	2.91	4/9/2029	111.97382	107.4058046	103.0523627	98.90229359	94.94503947	91.17064489	87.56971929	84.133402	80.85332964
190422A00030	4/22/2019	2.93	12/22/2025	102.8228	101.6694736	100.5419933	99.43949981	98.361169	97.30621254	96.2738761	95.2634375	94.27420505
190426A00023	4/26/2019	2.91	6/24/2026	104.15448	102.4969494	100.8738014	99.28402882	97.72666598	96.20078437	94.705491	93.23992658	91.80326396
190501A00015	5/1/2019	2.78	5/1/2029	105.84397	103.433972	101.1080546	98.86257032	96.69405991	94.59923833	92.57498476	90.61833324	88.72646392
190502A00016	5/2/2019	2.87	5/1/2026	103.81877	102.2608298	100.7343041	99.23830189	97.77196994	96.33448654	94.92506015	93.54292791	92.18735437
190506A00026	5/6/2019	3.03	5/4/2029	111.71256	107.2989524	103.0939894	99.08658957	95.26632507	91.62337691	88.14849606	84.83296711	81.66857446
190510A00049	5/10/2019	2.58	5/8/2026	101.74826	100.91	100.0866009	99.2776515	98.48275908	97.70154548	96.93364653	96.17871137	95.43640181
190514A00020	5/14/2019	2.66	5/14/2025	101.11466	100.575336	100.0417713	99.51387181	98.99154734	98.47470977	97.96327278	97.45715188	96.95626432
190514A00021	5/14/2019	2.72	11/14/2025	102.35011	101.3026709	100.276638	99.27136299	98.28622042	97.32060966	96.37395381	95.44569849	94.53531076
190515A00035	5/15/2019	2.82	2/15/2029	110.33625	106.1507208	102.1551487	98.33986059	94.69572685	91.21412782	87.88692269	84.70642045	81.66535274

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
190520A00020	5/20/2019	2.39	5/20/2026	101.64105	100.809092	99.99185003	99.1889189	98.39991012	97.62444975	96.86217763	96.11274674	95.3758226
190529A00061	5/29/2019	2.46	5/29/2026	101.6467	100.809287	99.98671496	99.17857811	98.38448408	97.60405513	96.83692746	96.08275056	95.34118658
190530A00008	5/30/2019	2.38	5/30/2025	101.09373	100.5100615	99.93311612	99.36278048	98.7989415	98.2414887	97.69031404	97.14531194	96.60637918
190531A00037	5/31/2019	2.61	5/31/2029	110.94551	106.2594399	101.7998421	97.55455732	93.51214934	89.66185389	85.99353527	82.49764618	79.16519039
190531A00038	5/31/2019	2.82	5/31/2034	120.85574	110.9862258	102.0232771	93.87828667	86.47174873	79.73228473	73.59577412	68.00458212	62.90687323
190605A00007	6/5/2019	2.47	6/5/2026	103.40976	101.7680954	100.1607967	98.58684897	97.04527351	95.53513007	94.05551491	92.60555907	91.18442663
190605A00023	6/5/2019	2.64	6/5/2029	110.15298	105.7141865	101.488641	97.46483561	93.63195431	89.97982364	86.49887057	83.18008351	80.01497606
190605A00024	6/5/2019	2.64	6/5/2029	110.15298	105.7141865	101.488641	97.46483561	93.63195431	89.97982364	86.49887057	83.18008351	80.01497606
190605A00025	6/5/2019	2.64	6/5/2029	110.15298	105.7141865	101.488641	97.46483561	93.63195431	89.97982364	86.49887057	83.18008351	80.01497606
190605A00027	6/5/2019	2.64	6/5/2029	110.15298	105.7141865	101.488641	97.46483561	93.63195431	89.97982364	86.49887057	83.18008351	80.01497606
190606A00027	6/6/2019	2.51	6/5/2026	103.35736	101.7590005	100.1931244	98.658804	97.15515118	95.68131083	94.23645947	92.81980368	91.43057878
190606A00028	6/6/2019	2.74	6/6/2029	111.19883	106.5021466	102.0327307	97.77836703	93.72756101	89.86949479	86.19398353	82.69143485	79.35281109
190606A00029	6/6/2019	2.96	6/6/2034	121.39508	111.5264038	102.5630965	94.41669539	87.00783042	80.26524453	74.12492584	68.52933668	63.42672815
190618A00002	6/18/2019	2.11	6/18/2025	101.02605	100.3906372	99.76320759	99.1436132	98.53170777	97.92734866	97.33039674	96.7407163	96.15817492
190620A00033	6/20/2019	2.1	6/20/2029	104.46969	102.0450133	99.70632472	97.44984459	95.27198535	93.16934256	91.13868425	89.17694094	87.28119638
190625A00023	6/25/2019	2.47	6/25/2027	105.76448	103.0945617	100.5056995	97.99492686	95.55940293	93.19641047	90.9033495	88.67773133	86.51717288
190625A00024	6/25/2019	2.26	6/25/2025	101.10566	100.4514645	99.80572043	99.16826351	98.53893492	97.91757989	97.30404755	96.69819083	96.09986631
190628A00007	6/28/2019	2.28	6/28/2034	109.01139	104.0886874	99.48667837	95.18068826	91.14815525	87.36843784	83.82263712	80.49343667	77.36495826
190702A00068	7/2/2019	2.69	7/1/2039	121.11948	109.5577473	99.39466803	90.44450203	82.54762049	75.56667625	69.38335497	63.89561757	59.01535704
190702A00071	7/2/2019	2.69	7/1/2039	121.11948	109.5577473	99.39466803	90.44450203	82.54762049	75.56667625	69.38335497	63.89561757	59.01535704
190703A00017	7/3/2019	2.33	5/4/2026	102.87486	101.3662224	99.88731424	98.43733296	97.01550269	95.62107484	94.2533269	92.91156129	91.5951043
190708A00028	7/8/2019	2.57	7/2/2029	109.97041	105.4735043	101.1955933	97.12470322	93.24958814	89.55967915	86.04503957	82.69632323	79.50473586
190708A00029	7/8/2019	2.57	7/2/2029	109.97041	105.4735043	101.1955933	97.12470322	93.24958814	89.55967915	86.04503957	82.69632323	79.50473586
190708A00030	7/8/2019	2.57	7/2/2029	109.97041	105.4735043	101.1955933	97.12470322	93.24958814	89.55967915	86.04503957	82.69632323	79.50473586
190708A00032	7/8/2019	2.58	7/2/2029	110.01581	105.517462	101.2381709	97.16596069	93.2895822	89.59846369	86.08266577	82.73283972	79.54018885
190712A00016	7/12/2019	2.39	7/12/2029	105.07723	102.6001917	100.2121567	97.90916763	95.68747077	93.54350596	91.47389514	89.47543187	87.54507132
190718A00012	7/18/2019	2.55	7/18/2029	109.24092	105.0335722	101.0275186	97.21187348	93.57639853	90.11146442	86.80801118	83.65751134	80.65193563
190724A00021	7/24/2019	2.33	7/23/2027	105.76867	103.0189194	100.3546733	97.7727176	95.26998	92.84352639	90.49055318	88.20838043	85.99444539
190724A00023	7/24/2019	2.13	7/24/2025	101.21638	100.481841	99.7579404	99.04445003	98.34114642	97.64781247	96.96423723	96.29021564	95.62554838
190724A00024	7/24/2019	2.49	7/24/2029	110.69326	105.8666452	101.2797462	96.91933817	92.7730038	88.82907735	85.07659453	81.50524615	78.10533509
190726A00017	7/26/2019	2.44	7/24/2026	103.57002	101.8371284	100.1414959	98.48198284	96.85749959	95.26700076	93.70948292	92.18398243	90.68957341
190802A00011	8/2/2019	2.01	8/2/2029	104.40005	101.8942827	99.47992229	97.15284944	94.90915993	92.74515329	90.65732072	88.64233377	86.69703381
190807A00021	8/7/2019	2	8/7/2026	102.87655	101.1127408	99.38752406	97.69973524	96.04825656	94.43201446	92.84997736	91.30115359	89.78458944



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
190809A00020	8/9/2019	2.44	8/9/2034	117.4702	107.5811528	98.62061954	90.49609523	83.12475278	76.43238204	70.35245259	64.82528292	59.79730329
190809A00021	8/9/2019	2.12	8/9/2029	108.99786	104.1689308	99.58231591	95.22456797	91.08305727	87.14592009	83.40200783	79.84083988	76.45255973
190813A00051	8/13/2019	2.19	8/13/2029	108.40463	103.8628341	99.54709219	95.44488557	91.54445755	87.8347595	84.30540462	80.94662493	77.74923132
190813A00052	8/13/2019	2.24	8/13/2029	108.63536	104.0860054	99.76304143	95.65393368	91.74690881	88.03090251	84.49551321	81.130959	77.92803763
190814A00003	8/14/2019	2.01	8/14/2029	108.48841	103.6583695	99.07148087	94.7142339	90.57393815	86.63867206	82.89723205	79.33908535	75.95432615
190819A00030	8/19/2019	2.01	8/20/2029	108.51209	103.6656085	99.06383736	94.69316325	90.54079911	86.59473138	82.84366913	79.27699675	75.88473005
190820A00021	8/20/2019	2.13	8/20/2029	108.69494	103.8565989	99.26215221	94.89804618	90.75155221	86.81071078	83.06428089	79.50169307	76.11300579
190823A00009	8/23/2019	1.8	8/23/2029	103.80917	101.3508693	98.98177083	96.69786687	94.49535792	92.37064235	90.32030462	88.34110436	86.4299662
190826A00018	8/26/2019	1.9	8/27/2029	108.00509	103.1522646	98.54550311	94.17109488	90.01615918	86.06859332	82.31702165	78.7507483	75.35971316
190826A00030	8/26/2019	1.72	8/26/2026	102.61033	100.7958509	99.02206504	97.28780489	95.59194586	93.93340325	92.31113051	90.72411758	89.17138939
190826A00032	8/26/2019	1.72	8/24/2029	103.66352	101.1743798	98.77610668	96.46460374	94.23598774	92.08657804	90.01288461	88.01159682	86.07957297
190826A00057	8/26/2019	1.87	8/26/2025	101.10959	100.2862931	99.47636276	98.67947241	97.89530912	97.12356986	96.36396117	95.61619876	94.88000717
190826A00058	8/26/2019	1.91	8/26/2026	102.81251	100.9987802	99.22567431	97.49202916	95.79672318	94.13867449	92.51683921	90.93020981	89.37781363
190826A00060	8/26/2019	2.02	8/26/2027	104.84967	102.0274787	99.29554282	96.65048868	94.08908949	91.60825682	89.20503377	86.8765886	84.62020868
190826A00063	8/26/2019	2.05	8/28/2028	106.71367	102.873829	99.19301212	95.66382093	92.27924398	89.03263019	85.9176683	82.92836783	80.05904101
190826A00065	8/26/2019	2.09	8/28/2029	108.53318	103.6776293	99.06787529	94.69023901	90.53186994	86.58069243	82.82535521	79.25518428	75.8601392
190828A00015	8/28/2019	2.04	8/28/2029	108.29051	103.4407831	98.83664021	94.4644123	90.31125792	86.36511004	82.61462551	79.04913807	75.65861461
190828A00019	8/28/2019	2	3/28/2028	105.80365	102.3887596	99.1022226	95.93854772	92.89251168	89.95914104	87.13369878	84.41167181	81.78875916
190828A00020	8/28/2019	1.95	5/28/2027	104.24102	101.6678791	99.17128894	96.74851575	94.39693759	92.11404318	89.89742639	87.7447811	85.65389634
190829A00032	8/29/2019	1.69	8/28/2026	101.25155	100.2929335	99.35228038	98.42908705	97.52286816	96.6331566	95.75950268	94.90147325	94.05865096
190829A00039	8/29/2019	1.85	8/29/2034	107.17698	102.0907203	97.34630244	92.91677957	88.7775661	84.90621137	81.28219865	77.88676435	74.70273526
190829A00045	8/29/2019	1.9	8/28/2026	102.80425	100.985281	99.20715176	97.46869975	95.76880273	94.10637773	92.48037935	90.88979821	89.33365942
190830A00002	8/30/2019	1.93	8/28/2026	102.8595	101.0400055	99.26136273	97.52240666	95.82201484	94.15910405	92.53262865	90.941579	89.38498
190905A00019	9/5/2019	2.08	9/5/2029	107.97281	103.394705	99.04708011	94.91702967	90.99243889	87.26193106	83.7148187	80.34105834	77.13120839
190905A00021	9/5/2019	2.08	9/5/2029	107.97281	103.394705	99.04708011	94.91702967	90.99243889	87.26193106	83.7148187	80.34105834	77.13120839
190905A00023	9/5/2019	2.08	9/5/2029	107.97281	103.394705	99.04708011	94.91702967	90.99243889	87.26193106	83.7148187	80.34105834	77.13120839
190905A00024	9/5/2019	2.08	9/5/2029	107.97281	103.394705	99.04708011	94.91702967	90.99243889	87.26193106	83.7148187	80.34105834	77.13120839
190905A00025	9/5/2019	2.08	9/5/2029	107.97281	103.394705	99.04708011	94.91702967	90.99243889	87.26193106	83.7148187	80.34105834	77.13120839
190910A00044	9/10/2019	2.02	9/10/2026	103.15733	101.2739917	99.43511514	97.63937498	95.88549582	94.17224864	92.49844878	90.86295401	89.26466269
190911A00016	9/11/2019	1.9	9/11/2029	104.19146	101.6486295	99.19990652	96.84099587	94.5678315	92.37656157	90.26353554	88.22529235	86.25854923
190913A00018	9/13/2019	2.11	9/11/2026	101.65841	100.6573965	99.67547473	98.71210418	97.76676817	96.83896926	95.92822837	95.03408396	94.15609117
190923A00012	9/23/2019	2.43	9/25/2034	117.52525	107.5146342	98.45507281	90.25078953	82.81611634	76.07438245	69.95692839	64.4022325	59.35513654
190923A00020	9/23/2019	2.05	9/24/2029	108.84999	103.901294	99.20693517	94.75255684	90.52468486	86.51066826	82.69862479	79.07739049	75.63647265

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
190925A00009	9/25/2019	2	9/25/2026	103.09858	101.2285935	99.40333432	97.62144513	95.88162066	94.18260409	92.52318492	90.9021969	89.31851612
190926A00002	9/30/2019	2.01	9/29/2034	108.11245	102.8999919	98.04299859	93.51306762	89.28431329	85.33312673	81.63795885	78.17912553	74.93863238
190926A00015	9/26/2019	2.32	11/26/2030	111.35024	105.2131282	99.45562054	94.0522459	88.97937306	84.21506668	79.73895709	75.53212062	71.57696977
190926A00016	9/26/2019	2.28	5/24/2030	110.5245	104.900748	99.59929922	94.60000184	89.88406346	85.43395622	81.23332525	77.26690416	73.52043702
190926A00017	9/26/2019	2.23	9/26/2029	109.34028	104.3871854	99.68838393	95.22952789	90.99715181	86.97861263	83.16203537	79.53626263	76.09080769
190930A00071	9/30/2019	2.05	9/29/2025	101.43051	100.513048	99.61212489	98.72729461	97.85812909	97.00421533	96.16515473	95.34056248	94.53006693
190930A00075	9/30/2019	2.19	9/29/2027	105.51153	102.5873657	99.75945793	97.02412506	94.37784835	91.81726243	89.3391477	86.94042316	84.61813962
190930A00077	9/30/2019	2.23	9/28/2029	109.34909	104.3903803	99.68651083	95.22309262	90.98661808	86.96440544	83.1445441	79.51584398	76.06778831
191004A00001	10/4/2019	2.47	10/4/2034	117.11535	107.145447	98.12345532	89.9538087	82.55104224	75.83867761	69.74823709	64.21837016	59.19407928
191004A00002	10/4/2019	2.08	10/4/2029	108.6305	103.6735498	98.97240107	94.51255687	90.28041245	86.26319776	82.44892203	78.82632237	75.38481593
191004A00003	10/4/2019	1.89	10/5/2026	102.98072	101.0569372	99.17856539	97.34425927	95.55272287	93.80270691	92.09300686	90.42246098	88.7899485
191004A00017	10/4/2019	2.02	10/4/2029	107.78239	103.1439955	98.74259223	94.56470654	90.59770596	86.82973977	83.24968638	79.84710463	76.6121886
191004A00019	10/4/2019	2.02	10/4/2029	107.78239	103.1439955	98.74259223	94.56470654	90.59770596	86.82973977	83.24968638	79.84710463	76.6121886
191004A00022	10/4/2019	2.02	10/4/2029	107.78239	103.1439955	98.74259223	94.56470654	90.59770596	86.82973977	83.24968638	79.84710463	76.6121886
191004A00023	10/4/2019	2.02	10/4/2029	107.78239	103.1439955	98.74259223	94.56470654	90.59770596	86.82973977	83.24968638	79.84710463	76.6121886
191004A00032	10/4/2019	2.01	1/3/2028	105.42973	102.2504429	99.18348059	96.22421659	93.36824155	90.61135552	87.94955656	85.37902995	82.8961381
191007A00029	10/7/2019	1.88	10/9/2029	108.06167	103.0925909	98.3811795	93.91277005	89.67360443	85.65077211	81.83215359	78.20636801	74.76272446
191008A00007	10/8/2019	1.67	10/9/2029	103.65708	101.0860231	98.61145069	96.22890498	93.93416904	91.72325032	89.59236716	87.53793617	85.55656055
191008A00014	10/8/2019	1.85	10/8/2026	102.95899	101.006087	99.10085861	97.24183435	95.42759771	93.65678582	91.92808704	90.24023856	88.59202431
191009A00009	10/9/2019	1.8	10/9/2026	101.41028	100.3708541	99.35167766	98.35217685	97.37179927	96.41001307	95.46630603	94.54018463	93.63117323
191011A00027	10/11/2019	1.84	10/11/2029	104.10408	101.5217822	99.03640107	96.64345674	94.33871298	92.11815898	89.97799584	87.91462386	85.9246308
191015A00025	10/15/2019	2.01	10/15/2029	104.34133	101.7566573	99.26888377	96.87354143	94.56639805	92.34344646	90.20089101	88.13513494	86.14276859
191017A00022	10/17/2019	2.25	7/17/2028	107.26513	103.5259835	99.93757212	96.49296012	93.18557182	90.00917326	86.95785205	84.02599867	81.20828885
191017A00026	10/17/2019	2.3	7/17/2029	109.36211	104.5974729	100.0687507	95.76297472	91.66796748	87.77228528	84.0651696	80.53650201	77.17676234
191021A00021	10/21/2019	2.22	12/21/2027	106.03439	102.8798164	99.83563702	96.89734222	94.06063867	91.32143468	88.6758293	86.12010209	83.65070355
191025A00009	10/25/2019	2.26	5/25/2029	108.91982	104.3075037	99.91776602	95.73869073	91.75906476	87.9683316	84.35654922	80.91435097	77.63290912
191025A00010	10/25/2019	2.24	7/25/2028	107.26923	103.5088917	99.90089331	96.43818719	93.11409552	89.92228953	86.85676884	83.91184213	81.08210916
191031A00033	10/31/2019	2.2	5/31/2028	106.8275	103.2231937	99.760113	96.43195209	93.23272161	90.1567328	87.19858055	84.35312752	81.61548924
191101A00004	11/1/2019	1.91	11/1/2029	107.16545	102.8054981	98.66518159	94.73203917	90.99438763	87.44126985	84.06240549	80.84814542	77.7894294
191101A00005	11/1/2019	1.83	11/2/2026	103.19199	101.1719636	99.20230737	97.28142094	95.40776826	93.57987346	91.79631804	90.05573813	88.35682194
191104A00018	11/5/2019	1.96	11/5/2024	100.0178	100.0039287	99.99006786	99.97622026	99.96238585	99.94856463	99.93475656	99.92096163	99.90717982
191104A00022	11/4/2019	2.17	8/4/2027	105.16572	102.3975017	99.71617363	97.11845539	94.60121222	92.16145004	89.79630788	87.50305093	85.27906396
191104A00023	11/4/2019	2.24	8/4/2028	107.32113	103.5333686	99.90000232	96.41386172	93.06815329	89.85643904	86.77261544	83.81089382	80.96578205

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
191104A00024	11/4/2019	2.26	8/3/2029	109.24816	104.4415408	99.87497083	95.53515323	91.40960746	87.48661023	83.75514502	80.20485529	76.82600104
191104A00025	11/4/2019	2.33	8/2/2030	111.04287	105.22015	99.74072734	94.58252071	89.72498978	85.14901721	80.83680228	76.77176294	72.93844582
191105A00007	11/5/2019	1.98	11/5/2026	103.47329	101.4590214	99.49418235	97.57724607	95.70674431	93.88126434	92.09944637	90.35998117	88.66160777
191105A00008	11/5/2019	1.83	11/5/2024	100.01695	100.0030654	99.98919517	99.97533824	99.96149462	99.9476643	99.93384725	99.92004345	99.90625287
191105A00012	11/5/2019	2.07	11/3/2034	108.48464	103.2128687	98.30326043	93.726674	89.45656819	85.46875177	81.74115815	78.25364309	74.98780296
191106A00022	11/6/2019	2.34	1/2/2030	110.30622	105.0691403	100.1132279	95.42189079	90.97960225	86.77183017	82.78496786	79.00627	75.42379332
191108A00013	11/8/2019	2.25	11/8/2029	110.03317	104.9359501	100.1062743	95.52870842	91.18878531	87.07294212	83.16845929	79.46340367	75.94657585
191108A00014	11/8/2019	2.25	11/8/2029	110.03317	104.9359501	100.1062743	95.52870842	91.18878531	87.07294212	83.16845929	79.46340367	75.94657585
191112A00022	11/12/2019	2.36	11/13/2029	109.54516	104.7584896	100.2201984	95.91594529	91.83229288	87.95664985	84.27721286	80.78291293	77.46336567
191112A00023	11/12/2019	2.36	11/13/2029	109.54516	104.7584896	100.2201984	95.91594529	91.83229288	87.95664985	84.27721286	80.78291293	77.46336566
191112A00024	11/12/2019	2.09	11/12/2024	100.15206	100.0358743	99.91997055	99.80435111	99.68901484	99.57396066	99.45918749	99.34469426	99.23047989
191113A00013	11/13/2019	2.17	11/13/2026	103.78282	101.7294653	99.72774475	97.77599674	95.87263024	94.01611753	92.20499107	90.43784062	88.7133105
191115A00014	11/18/2019	2.45	11/18/2024	100.08167	100.0317313	99.98185351	99.93204119	99.88229423	99.83261251	99.78299589	99.73344424	99.68395743
191115A00015	11/18/2019	2.61	11/18/2024	100.08976	100.0398134	99.98992869	99.94010952	99.89035572	99.84066717	99.79104373	99.74148527	99.69199166
191115A00016	11/18/2019	2.48	11/18/2024	100.08319	100.0332467	99.98336761	99.933554	99.88380576	99.83412276	99.78450486	99.73495193	99.68546385
191115A00028	11/15/2019	2.34	9/28/2029	109.89228	104.9203123	100.2036774	95.72796166	91.47963625	87.44599938	83.61512145	79.97579435	76.51748421
191115A00029	11/15/2019	2.07	11/15/2029	104.49231	101.9055842	99.41647764	97.02044842	94.71320065	92.4906687	90.34900328	88.28455839	86.29387923
191115A00030	11/15/2019	2.35	11/9/2029	110.12511	105.0364006	100.2144913	95.64399987	91.31051061	87.20050845	83.301318	79.60104702	76.08853399
191119A00027	11/19/2019	1.8	11/19/2024	100.05558	100.0028499	99.95019061	99.8976023	99.84508489	99.79263821	99.74026212	99.68795646	99.63572109
191120A00005	11/20/2019	2.63	11/20/2034	118.84412	108.6741817	99.47996828	91.16212125	83.6318929	76.80996488	70.6254023	65.01472871	59.92110728
191120A00006	11/20/2019	2.67	11/20/2035	120.40027	109.2429772	99.24753219	90.28580719	82.24445132	75.02311472	68.53289701	62.6949879	57.43947518
191120A00024	11/20/2019	2.23	11/16/2029	109.54897	104.4556416	99.6304104	95.05776164	90.72316301	86.61299334	82.71448065	79.01564474	75.50524403
191121A00004	11/21/2019	1.77	11/21/2024	100.0594	100.0011265	99.94293289	99.88482099	99.82679064	99.76884166	99.71097387	99.65318708	99.59548114
191121A00009	11/21/2019	2.55	11/21/2036	120.99589	108.8509594	98.073554	88.5010756	79.99108187	72.41869154	65.6743384	59.66182254	54.29661808
191121A00010	11/21/2019	2.59	11/20/2037	122.46138	109.3491056	97.81703535	87.66431072	78.71663043	70.82261886	63.85070491	57.68643938	52.23018748
191121A00034	11/21/2019	2.28	11/2/2029	109.74027	104.6801731	99.88468113	95.33858557	91.02762606	86.93843044	83.05845485	79.37592809	75.87980014
191122A00003	11/22/2019	2.32	11/22/2039	115.33876	105.2754738	96.38115003	88.50370946	81.51226071	75.29399604	69.75156299	64.80083373	60.36901003
191122A00018	11/26/2019	3.11	11/22/2039	131.1812	115.8240833	102.5340072	91.01657292	81.02095279	72.33323503	64.77081348	58.17765432	52.42029954
191122A00020	11/26/2019	3.2	11/23/2037	129.12196	115.6604228	103.8039903	93.34983794	84.12185437	75.96700052	68.75217725	62.36153227	56.69414274
191122A00021	11/26/2019	3.4	11/22/2038	133.40474	118.7766588	105.9984426	94.82194748	85.03370042	76.4498852	68.91207917	62.28362175	56.44651847
191125A00036	11/25/2019	2.29	11/23/2029	109.88459	104.7638396	99.91334197	95.3174192	90.9613837	86.83147154	82.91477947	79.19920657	75.67340012
191126A00023	11/26/2019	1.81	5/27/2025	100.74857	100.1742568	99.60648044	99.04512711	98.49008825	97.94125774	97.39853182	96.86180903	96.33099015
191126A00026	11/26/2019	1.91	11/25/2026	103.4376	101.3686489	99.35134873	97.38406414	95.4652274	93.5933318	91.76692866	89.98462467	88.24507929

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
191129A00012	11/29/2019	1.99	11/29/2024	100.09241	100.0120122	99.93174264	99.8516029	99.77159266	99.69171162	99.61195948	99.53233594	99.45284069
191202A00005	12/2/2019	2.03	12/2/2024	100.1064	100.0176961	99.92915466	99.840773	99.75255066	99.66448721	99.5765822	99.48883521	99.40124582
191203A00004	12/4/2019	1.87	12/4/2024	100.09875	100.0045334	99.91049859	99.81664728	99.72297894	99.62949301	99.53618895	99.4430662	99.35012423
191203A00009	12/3/2019	2.21	12/3/2029	108.88756	104.076217	99.51691716	95.19497134	91.09662599	87.20900204	83.52003428	80.01841532	76.69354366
191203A00010	12/3/2019	2.21	12/3/2029	108.88756	104.076217	99.51691716	95.19497134	91.09662599	87.20900204	83.52003428	80.01841532	76.69354366
191203A00011	12/3/2019	2.21	12/3/2029	108.88756	104.076217	99.51691716	95.19497134	91.09662599	87.20900204	83.52003428	80.01841532	76.69354366
191204A00013	12/4/2019	1.72	12/4/2024	100.09206	99.99777229	99.90366925	99.80975067	99.71601598	99.62246462	99.52909602	99.43590963	99.34290489
191206A00005	12/6/2019	2.18	12/7/2026	103.92998	101.8125441	99.7495604	97.73923348	95.77984217	93.86973605	92.00733187	90.1911102	88.41961223
191206A00008	12/6/2019	2.44	12/6/2030	112.11529	105.9289553	100.1263077	94.68152479	89.57065269	84.77146236	80.2633168	76.02704894	72.04484947
191206A00009	12/6/2019	2.87	12/4/2037	124.97081	111.739517	100.0975201	89.84301185	80.80086992	72.8190015	65.76520708	59.52448497	53.99671301
191206A00013	12/6/2019	3.05	12/6/2044	140.65147	120.2062883	103.2419642	89.13020298	77.36021253	67.51612353	59.25885336	52.311517	46.44767674
191206A00021	12/6/2019	2.02	12/6/2024	100.12034	100.0205731	99.9210196	99.82167401	99.72253567	99.62360392	99.52487807	99.42635746	99.32804142
191209A00005	12/9/2019	2.22	12/10/2029	108.29996	103.832126	99.59270363	95.5685322	91.74728692	88.11742194	84.66811649	81.38922501	78.27123113
191217A00012	12/20/2019	2.03	12/20/2024	100.1736	100.0351008	99.8970038	99.75930238	99.62199484	99.48507945	99.34855449	99.21241827	99.07666908
191218A00014	12/18/2019	2.04	12/18/2024	100.16746	100.0345036	99.901911	99.76968539	99.6378252	99.50632888	99.37519489	99.2444217	99.11400776
191219A00036	12/20/2019	2.1	12/20/2024	100.18332	100.0448104	99.90670295	99.76899109	99.63167314	99.49474736	99.35821204	99.22206548	99.08630598
191220A00001	12/20/2019	2.62	12/19/2031	114.68021	107.4176323	100.6710588	94.40103805	88.57133185	83.14863982	78.10234684	73.40429323	69.02856564
191220A00002	12/20/2019	3.02	12/20/2038	128.36069	114.0000638	101.4755081	90.53875369	80.97644971	72.60508482	65.26667209	58.82507673	53.16288854
191223A00055	12/23/2019	2.46	12/7/2029	110.8156	105.633907	100.7270348	96.07895603	91.674659	87.50008179	83.54204712	79.78820189	76.22696129
191223A00056	12/23/2019	2.46	12/14/2029	110.84659	105.6456691	100.721433	96.05769618	91.63930245	87.45205753	83.48266303	79.71865497	76.14834696
191224A00002	12/24/2019	2.17	12/24/2029	104.92025	102.2372464	99.65764159	97.17654498	94.78933458	92.4916396	90.27932506	88.14847739	86.09539113
191226A00019	12/26/2019	2.4	12/22/2028	108.7204	104.5292343	100.52365	96.69441296	93.03280578	89.5305918	86.17998553	82.97362526	79.90454749
191226A00020	12/26/2019	2.44	12/21/2029	110.77423	105.5567016	100.6176357	95.94068464	91.51055115	87.31291216	83.33435149	79.56229746	75.98496518
191230A00013	12/30/2019	1.84	12/2/2024	100.09655	100.0077914	99.91918902	99.8307473	99.74246575	99.65434392	99.56638137	99.47857765	99.39093234
191230A00031	12/30/2019	1.85	12/30/2024	100.19396	100.0276779	99.8619446	99.69676092	99.53212417	99.36803164	99.20448064	99.0414685	98.87899257
200103A00002	1/3/2020	2.07	1/3/2030	108.05173	103.5362497	99.25435054	95.19241933	91.33772215	87.67833843	84.20310415	80.90155925	77.76389911
200108A00021	1/13/2020	1.97	1/13/2025	100.25401	100.0491957	99.84523264	99.64211491	99.43983721	99.23839425	99.0377808	98.83799166	98.6390217
200109A00006	1/9/2020	1.95	1/9/2030	104.6088	101.8888387	99.27518674	96.76275349	94.34673045	92.02257343	89.78598615	87.632905	85.55948486
200109A00008	1/9/2020	1.95	1/9/2030	104.6088	101.8888387	99.27518674	96.76275349	94.34673045	92.02257343	89.78598615	87.632905	85.55948486
200110A00022	1/13/2020	2	1/6/2025	100.23292	100.0474295	99.86263208	99.67852531	99.49510523	99.31236795	99.13030963	98.94892645	98.76821461
200110A00037	1/10/2020	2.32	1/10/2030	109.55857	104.6376814	99.9788907	95.56669108	91.38658314	87.42500051	83.66924452	80.10742388	76.72839893
200110A00038	1/10/2020	2.32	1/10/2030	109.55857	104.6376814	99.9788907	95.56669108	91.38658314	87.42500051	83.66924452	80.10742388	76.72839893
200110A00039	1/10/2020	2.32	1/10/2030	109.55857	104.6376814	99.9788907	95.56669108	91.38658314	87.42500051	83.66924452	80.10742388	76.72839893

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200110A00043	1/10/2020	2.32	1/10/2030	109.55857	104.6376814	99.9788907	95.56669108	91.38658314	87.42500051	83.66924452	80.10742388	76.72839893
200110A00053	1/10/2020	1.99	1/10/2025	100.36627	100.0850432	99.80540408	99.52733778	99.25083096	98.97587045	98.70244321	98.43053639	98.16013723
200114A00006	1/15/2020	1.99	1/15/2025	100.26585	100.0555033	99.84605628	99.63750022	99.42982934	99.22303793	99.01712034	98.81207096	98.60788423
200115A00013	1/15/2020	2.18	1/15/2030	107.40649	103.3312552	99.45873738	95.7773926	92.27640451	88.9456352	85.77557865	82.75731765	79.88248398
200116A00012	1/16/2020	2.16	1/19/2027	104.11564	101.8844182	99.71310554	97.59972368	95.54237549	93.5392389	91.58856331	89.68866626	87.83793027
200121A00009	1/24/2020	1.94	1/24/2025	100.28882	100.0536339	99.81955474	99.58657884	99.35469841	99.12390569	98.89419299	98.66555272	98.43797735
200122A00035	1/22/2020	1.94	1/22/2025	100.28138	100.0517106	99.82310844	99.59556133	99.36906191	99.14360291	98.91917713	98.69577741	98.47339669
200123A00013	1/27/2020	1.89	1/27/2025	100.28779	100.0443252	99.80205061	99.56095271	99.32102293	99.0822528	98.84463391	98.60815793	98.37281663
200123A00048	1/23/2020	1.7	1/23/2025	100.24733	100.014764	99.78328827	99.55289463	99.3235754	99.09532301	98.86812998	98.64198888	98.41689235
200124A00008	1/24/2020	1.92	1/22/2027	103.7431	101.5163144	99.34815741	97.23665665	95.17992125	93.17613983	91.22357645	89.32056671	87.46551415
200127A00016	1/27/2020	1.81	1/27/2025	100.26825	100.0248186	99.78257596	99.54150985	99.30161176	99.06287318	98.82528573	98.58884107	98.35353098
200127A00023	1/27/2020	1.8	1/27/2025	100.2658	100.0223803	99.78014163	99.5390795	99.29918536	99.06045073	98.8228672	98.58642647	98.35112027
200127A00030	1/27/2020	1.8	1/27/2025	100.2658	100.0223803	99.78014163	99.5390795	99.29918536	99.06045073	98.8228672	98.58642647	98.35112027
200128A00028	1/28/2020	1.81	1/28/2025	100.27161	100.0254199	99.78043999	99.53666143	99.29407541	99.05267319	98.81244613	98.57338566	98.3354833
200130A00006	1/30/2020	1.77	1/30/2025	100.26824	100.0165437	99.76611059	99.51692879	99.26898892	99.02228175	98.77679812	98.53252897	98.28946534
200130A00016	1/30/2020	1.58	1/30/2025	100.23993	99.98807353	99.73747642	99.48813395	99.24003672	98.99317543	98.74754087	98.50312391	98.25991553
200130A00027	1/31/2020	1.79	1/31/2025	100.19768	100.0108948	99.82490439	99.63970501	99.45529132	99.27165796	99.08879965	98.90671115	98.72538725
200130A00046	1/30/2020	1.81	1/29/2027	101.68982	100.4829748	99.30174862	98.14537004	97.01310208	95.90423631	94.81809146	93.75401215	92.71136765
200131A00015	2/5/2020	1.73	2/5/2025	100.2776	100.0093894	99.74261917	99.47727498	99.21334542	98.95081917	98.68968503	98.42993191	98.17154885
200131A00016	1/31/2020	1.73	1/31/2025	100.26128	100.0068449	99.75369647	99.50182445	99.25121922	99.00187129	98.75377125	98.5069098	98.2612777
200131A00032	1/31/2020	2.1	1/31/2030	109.15158	103.8688552	98.87394661	94.14962961	89.67980218	85.4494091	81.44436786	77.65150021	74.05846896
200131A00038	1/31/2020	1.73	1/30/2025	100.25814	100.0064588	99.75604264	99.50687773	99.25895469	99.01226428	98.76679735	98.52254484	98.27949778
200203A00006	2/3/2020	1.76	2/3/2025	100.27898	100.0162678	99.75493254	99.49496309	99.23634876	98.97907897	98.72314325	98.46853122	98.21523264
200203A00046	2/3/2020	1.98	2/3/2040	110.12508	102.5566714	95.72363673	89.54288912	83.94164793	78.85607045	74.23007586	70.01433261	66.16538538
200204A00001	2/4/2020	1.79	2/4/2025	100.29032	100.0248379	99.76076424	99.49808654	99.23679374	98.97687487	98.71831911	98.46111572	98.2052541
200204A00012	2/4/2020	1.98	2/4/2027	103.76319	101.5042233	99.30544646	97.16482936	95.0804248	93.05036715	91.07286819	89.14621308	87.26875674
200204A00020	2/4/2020	1.6	2/4/2025	100.26055	99.99488845	99.7306414	99.46779396	99.20633498	98.94625344	98.68753844	98.43017919	98.17416501
200206A00008	2/6/2020	1.64	2/6/2025	100.36655	100.0208567	99.67755696	99.33662841	98.99804642	98.66178671	98.32782531	97.99613861	97.66670331
200206A00027	2/6/2020	2.15	2/6/2030	108.79475	103.8433718	99.1588935	94.72541547	90.52806411	86.55292362	82.78696955	79.2180073	75.83461513
200206A00031	2/6/2020	2.15	2/6/2030	108.79475	103.8433718	99.1588935	94.72541547	90.52806411	86.55292362	82.78696955	79.2180073	75.83461513
200206A00032	2/6/2020	2.15	2/6/2030	108.79475	103.8433718	99.1588935	94.72541547	90.52806411	86.55292362	82.78696955	79.2180073	75.83461513
200206A00033	2/6/2020	2.15	2/6/2030	108.79475	103.8433718	99.1588935	94.72541547	90.52806411	86.55292362	82.78696955	79.2180073	75.83461513
200206A00034	2/6/2020	1.84	2/6/2025	100.40988	100.0631561	99.71883123	99.37688441	99.03729097	98.70002659	98.36506728	98.03238939	97.70196959



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200207A00009	2/7/2020	1.58	2/7/2025	100.26447	99.99055154	99.71813463	99.44720859	99.17776113	98.90978011	98.6432535	98.37816943	98.11451614
200207A00017	2/7/2020	1.96	2/8/2027	103.74035	101.4698969	99.26021	97.10925076	95.01506324	92.97577221	90.9895791	89.05475817	87.16965294
200207A00018	2/7/2020	2.14	2/7/2030	109.39247	104.083226	99.06418179	94.31793968	89.82823937	85.5798765	81.55862819	77.75118424	74.14508361
200210A00005	2/10/2020	1.77	2/10/2027	103.49947	101.2222095	99.00612457	96.84915945	94.74934802	92.70480474	90.71372069	88.77435978	86.88505518
200210A00007	2/10/2020	1.78	2/10/2025	100.42142	100.0714618	99.72398845	99.37897345	99.03639056	98.69621384	98.35841777	98.02297716	97.68986718
200210A00009	2/10/2020	1.57	2/10/2025	100.27089	99.98870688	99.7081165	99.4291096	99.15167272	98.87579253	98.60145588	98.32864975	98.05736128
200210A00021	2/10/2020	1.76	2/10/2025	100.3024	100.0204043	99.73999801	99.46117127	99.18391065	98.9082029	98.63403495	98.36139384	98.09026678
200212A00003	2/12/2020	1.63	2/12/2025	100.29433	100.0065906	99.72051659	99.43608869	99.15329263	98.87211428	98.59253971	98.31455513	98.03814691
200212A00013	2/12/2020	1.98	2/12/2027	103.80795	101.5277738	99.31017544	97.15309048	95.05453285	93.01259333	91.02543608	89.09129543	87.20847272
200214A00002	2/14/2020	1.58	11/15/2024	100.03509	99.99346465	99.95188891	99.91036465	99.86889177	99.82747018	99.78609976	99.74478041	99.70351204
200214A00005	2/14/2020	1.59	2/14/2025	100.289	99.99577425	99.70426933	99.41447351	99.12637169	98.83994894	98.55519054	98.27208191	97.99060865
200214A00007	2/14/2020	1.59	2/14/2025	100.289	99.99577425	99.70426933	99.41447351	99.12637169	98.83994894	98.55519054	98.27208191	97.99060865
200214A00014	2/18/2020	1.8	2/18/2025	100.34137	100.0373027	99.73508026	99.43469048	99.13611665	98.83934227	98.54435106	98.25112692	97.95965394
200214A00020	2/18/2020	1.78	1/15/2025	100.22154	100.0112641	99.80188079	99.59338815	99.38578049	99.17905211	98.97319733	98.76821057	98.56408627
200220A00013	2/20/2020	2.09	12/14/2029	108.94177	103.7892443	98.91155536	94.29259969	89.91730328	85.77154984	81.84211474	78.11660381	74.5833968
200220A00014	2/20/2020	2.09	12/21/2029	108.96569	103.7942813	98.89956383	94.26527333	89.87619137	85.71806957	81.77756243	78.04216516	74.5001562
200220A00015	2/20/2020	1.57	2/20/2025	100.30146	99.99168843	99.6838408	99.37789499	99.07383334	98.7716384	98.47129298	98.17278004	97.87608279
200220A00026	2/20/2020	2.22	2/21/2040	111.895	103.6581212	96.25879374	89.59889688	83.5928534	78.16592381	73.25274158	68.79605685	64.74565753
200221A00003	2/25/2020	1.69	2/25/2025	100.32985	100.0065528	99.68533331	99.36617526	99.04905886	98.73396459	98.42087315	98.1097655	97.80062282
200221A00004	2/21/2020	1.69	2/21/2025	100.31725	100.0049774	99.69464977	99.38625181	99.07976551	98.77517309	98.47245701	98.17159993	97.87258471
200221A00012	2/21/2020	2.14	2/21/2040	111.22773	103.0430691	95.69067885	89.07305259	83.10514939	77.71269867	72.83074446	68.4023969	64.37775999
200221A00013	2/21/2020	1.69	2/21/2025	100.31725	100.0049774	99.69464977	99.38625181	99.07976551	98.77517309	98.47245701	98.17159993	97.87258471
200221A00016	2/21/2020	1.69	2/21/2025	100.31725	100.0049774	99.69464977	99.38625181	99.07976551	98.77517309	98.47245701	98.17159993	97.87258471
200221A00023	2/21/2020	2.05	12/7/2029	108.71268	103.5842229	98.7285608	94.12975504	89.77288399	85.64397103	81.72991954	78.01845286	74.49805854
200221A00024	2/21/2020	2.05	12/28/2029	108.78214	103.5971594	98.69052036	94.04581296	89.64768257	85.48175657	81.53457607	77.79353279	74.24681069
200221A00031	2/21/2020	1.69	2/21/2025	100.31725	100.0049774	99.69464977	99.38625181	99.07976551	98.77517309	98.47245701	98.17159993	97.87258471
200224A00001	2/24/2020	1.59	2/24/2025	100.29452	99.97404014	99.65560815	99.33920414	99.02480877	98.71240295	98.40196784	98.09348482	97.78693551
200224A00006	2/24/2020	1.58	11/15/2024	100.03178	99.99018688	99.94864501	99.90715424	99.86571448	99.82432563	99.78298759	99.74170027	99.70046356
200224A00007	2/24/2020	1.59	2/24/2025	100.29452	99.97404014	99.65560815	99.33920414	99.02480877	98.71240295	98.40196784	98.09348482	97.78693551
200224A00019	2/24/2020	1.59	2/18/2025	100.27728	99.9733307	99.67123098	99.37096336	99.07251115	98.77585786	98.48098718	98.18788304	97.89652953
200224A00020	2/24/2020	1.59	2/24/2025	100.29452	99.97404014	99.65560815	99.33920414	99.02480877	98.71240295	98.40196784	98.09348482	97.78693551
200224A00024	2/24/2020	1.59	2/24/2025	100.29452	99.97404014	99.65560815	99.33920414	99.02480877	98.71240295	98.40196784	98.09348482	97.78693551
200224A00025	2/24/2020	1.59	1/23/2025	100.2035	99.97119958	99.7399865	99.50985205	99.28078865	99.05278879	98.82584504	98.59995001	98.37509642

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200224A00046	2/24/2020	1.59	2/24/2025	100.29452	99.97404014	99.65560815	99.33920414	99.02480877	98.71240295	98.40196784	98.09348482	97.78693551
200225A00012	2/25/2020	1.57	2/25/2025	100.2909	99.96767868	99.64653802	99.32745845	99.01042015	98.69540362	98.38238954	98.07135888	97.76229283
200225A00017	2/25/2020	1.94	2/25/2030	108.39947	103.0643424	98.02390457	93.26039843	88.75722712	84.49886924	80.470804	76.65944182	73.0520601
200225A00018	2/25/2020	1.94	2/25/2030	108.39947	103.0643424	98.02390457	93.26039843	88.75722712	84.49886924	80.470804	76.65944182	73.0520601
200225A00023	2/25/2020	1.62	2/25/2025	100.30713	99.98387624	99.66270273	99.34359045	99.02651962	98.71147069	98.39842438	98.08736164	97.77826366
200225A00028	2/25/2020	1.89	12/21/2029	107.93224	102.787184	97.9178085	93.30789544	88.94227149	84.80673094	80.88796868	77.17351813	73.65169393
200225A00029	2/25/2020	1.89	12/28/2029	107.95233	102.788584	97.90236457	93.27729713	88.89806363	84.75032603	80.82065818	77.09648277	73.56601306
200225A00049	2/25/2020	1.79	2/24/2040	108.65333	101.1930416	94.45573542	88.35998382	82.83442703	77.81643911	73.25098271	69.08962248	65.28967399
200225A00050	2/25/2020	1.57	2/25/2025	100.2909	99.96767868	99.64653802	99.32745845	99.01042015	98.69540362	98.38238954	98.07135888	97.76229283
200226A00004	2/26/2020	1.58	2/26/2025	100.29699	99.97100797	99.64713911	99.32536467	99.0056644	98.68801831	98.37240666	98.05880998	97.74720903
200226A00006	2/26/2020	1.57	2/26/2025	100.29372	99.96774086	99.64387869	99.3221109	99.00241724	98.68477773	98.36917264	98.05558248	97.74398802
200226A00008	2/26/2020	1.38	2/26/2025	100.25758	99.93138334	99.60731127	99.28533845	98.96544454	98.64760945	98.33181336	98.01803668	97.70626009
200226A00009	2/26/2020	1.75	2/26/2030	107.82441	102.4867245	97.44468824	92.68045971	88.17735811	83.91978491	79.89314842	76.08379394	72.47893912
200226A00016	2/26/2020	1.57	2/26/2025	100.29372	99.96774086	99.64387869	99.3221109	99.00241724	98.68477773	98.36917264	98.05558248	97.74398802
200226A00025	2/26/2020	1.38	2/26/2025	100.25758	99.93138334	99.60731127	99.28533845	98.96544454	98.64760945	98.33181336	98.01803668	97.70626009
200227A00004	2/27/2020	1.65	2/27/2030	107.29144	101.9649512	96.93386547	92.18034229	87.68770473	83.44035798	79.42371399	75.62412163	72.02880207
200227A00006	2/27/2020	1.47	2/27/2025	100.26352	99.93485587	99.60834018	99.28395199	98.9616706	98.64147556	98.3233467	98.00726411	97.69320811
200227A00009	2/27/2020	1.47	2/27/2025	100.26352	99.93485587	99.60834018	99.28395199	98.9616706	98.64147556	98.3233467	98.00726411	97.69320811
200227A00016	2/27/2020	1.47	2/27/2025	100.26352	99.93485587	99.60834018	99.28395199	98.9616706	98.64147556	98.3233467	98.00726411	97.69320811
200227A00027	2/27/2020	1.47	2/27/2025	100.26352	99.93485587	99.60834018	99.28395199	98.9616706	98.64147556	98.3233467	98.00726411	97.69320811
200227A00030	2/27/2020	1.59	2/27/2026	101.51818	100.1967383	98.89890808	97.62410324	96.37175776	95.14132379	93.93227103	92.74408597	91.57627124
200227A00046	2/27/2020	1.52	3/1/2027	101.33882	100.1332442	98.95333835	97.79833829	96.66750715	95.56013629	94.47554401	93.41307426	92.37209544
200228A00012	3/3/2020	1.4	3/3/2025	100.25034	99.91072911	99.5734146	99.23837514	98.90558775	98.57502977	98.24667884	97.9205129	97.59651017
200228A00014	2/28/2020	1.4	2/28/2025	100.24276	99.91138576	99.58219817	99.25517143	98.93028437	98.6075161	98.28684599	97.96825368	97.65171907
200228A00019	2/28/2020	1.21	2/20/2025	100.18957	99.88001722	99.57238739	99.26665837	98.96281252	98.66083241	98.36070083	98.06240077	97.76591545
200228A00025	2/28/2020	1.57	3/2/2027	102.94525	100.6202491	98.35904091	96.15953259	94.01971313	91.93764848	89.91147818	87.93941211	86.0197274
200228A00026	2/28/2020	2.14	2/28/2035	114.19987	104.0066165	94.82155326	86.53933012	79.06610334	72.31823086	66.22111778	60.7081975	55.72003191
200228A00059	2/28/2020	1.79	2/28/2030	107.60728	102.2844374	97.25637228	92.50530498	88.01461189	83.76874655	79.75316478	75.95425528	72.35927543
200228A00067	2/28/2020	1.4	2/28/2025	100.24276	99.91138576	99.58219817	99.25517143	98.93028437	98.6075161	98.28684599	97.96825368	97.65171907
200228A00071	2/28/2020	1.74	12/14/2029	107.13991	102.0331667	97.19950899	92.62291382	88.28838514	84.18188041	80.29024473	76.60115002	73.10303855
200228A00091	2/28/2020	1.72	12/7/2029	107.02008	101.9344772	97.12003296	92.56088595	88.24218704	84.15002822	80.27137784	76.59402072	73.10650267
200302A00002	3/2/2020	1.12	3/3/2025	100.18196	99.84218783	99.50472002	99.16953212	98.83660105	98.50590405	98.17741864	97.85112267	97.52699427
200302A00005	3/2/2020	1.31	3/3/2025	100.21963	99.88008277	99.54283293	99.20785781	98.87513445	98.54464019	98.21635265	97.89024979	97.56630984

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200302A00011	3/2/2020	1.31	2/27/2025	100.2107	99.8821407	99.55573369	99.23145365	98.90927989	98.58919195	98.27116968	97.95519316	97.64124272
200302A00016	3/2/2020	1.36	3/3/2025	100.23669	99.89710851	99.55982275	99.22481188	98.89205295	98.56152329	98.23320054	97.90706263	97.5830878
200302A00033	3/2/2020	1.31	3/3/2025	100.21963	99.88008277	99.54283293	99.20785781	98.87513445	98.54464019	98.21635265	97.89024979	97.56630984
200302A00036	3/2/2020	1.45	3/2/2026	101.3406	100.0126048	98.70811127	97.42655134	96.16737273	94.93004043	93.71403608	92.51885729	91.34401704
200302A00045	3/4/2020	1.31	3/4/2025	100.22191	99.87961504	99.53965727	99.20201257	98.86665737	98.5335684	98.20272271	97.87409767	97.54767096
200302A00053	3/2/2020	1.31	3/3/2025	100.21963	99.88008277	99.54283293	99.20785781	98.87513445	98.54464019	98.21635265	97.89024979	97.56630984
200302A00054	3/2/2020	1.31	3/3/2025	100.21963	99.88008277	99.54283293	99.20785781	98.87513445	98.54464019	98.21635265	97.89024979	97.56630984
200302A00060	3/2/2021	1.44	3/3/2025	100.26399	99.92434971	99.58700645	99.25193839	98.91912255	98.58853625	98.26015715	97.93396317	97.60993254
200303A00001	3/3/2020	1.15	3/3/2025	100.1922	99.85240497	99.51491558	99.17970621	98.84675378	98.51603552	98.18752896	97.86121195	97.5370626
200303A00010	3/3/2020	1.34	3/3/2025	100.22987	99.89029822	99.55302682	99.21803026	98.88528555	98.55477005	98.22646138	97.9003375	97.57637662
200303A00012	3/3/2020	1.71	3/1/2030	107.18074	101.8665903	96.84705821	92.10435395	87.6218514	83.38400244	79.37626199	75.58501853	71.99752975
200303A00018	3/3/2020	1.27	3/3/2025	100.20598	99.86646217	99.52924107	99.19429456	98.86159966	98.53113371	98.20287435	97.87679953	97.55288747
200303A00028	3/3/2020	1.54	3/4/2030	105.35734	100.826021	96.53561272	92.47178204	88.62112423	84.97110157	81.5099827	78.22678654	75.11123039
200303A00034	3/3/2020	1.21	3/3/2025	100.18551	99.84603127	99.50885329	99.17394968	98.84129746	98.51087398	98.18265689	97.85662412	97.53275392
200304A00002	3/4/2020	0.98	3/4/2025	100.13576	99.79333928	99.45326385	99.11550625	98.78004276	98.44685004	98.11590503	97.78718499	97.4606675
200304A00005	3/4/2020	0.98	3/4/2025	100.13576	99.79333928	99.45326385	99.11550625	98.78004276	98.44685004	98.11590503	97.78718499	97.4606675
200304A00010	3/4/2020	1.2	3/4/2027	102.26757	99.94154763	97.679601	95.4796222	93.33958458	91.25753937	89.23161217	87.25999971	85.34096667
200304A00012	3/4/2020	0.98	3/4/2025	100.13576	99.79333928	99.45326385	99.11550625	98.78004276	98.44685004	98.11590503	97.78718499	97.4606675
200304A00018	3/4/2020	0.98	3/4/2025	100.13576	99.79333928	99.45326385	99.11550625	98.78004276	98.44685004	98.11590503	97.78718499	97.4606675
200304A00020	3/4/2020	0.98	3/4/2025	100.13576	99.79333928	99.45326385	99.11550625	98.78004276	98.44685004	98.11590503	97.78718499	97.4606675
200304A00030	3/4/2020	1.6	12/22/2028	105.38299	101.2609877	97.32233573	93.557893	89.95902812	86.51758628	83.22586	80.07656191	77.06279939
200304A00032	3/4/2020	1.6	12/15/2028	105.35994	101.2566741	97.33524462	93.58662576	90.00228744	86.57416853	83.29464825	80.1565195	77.15296403
200304A00033	3/4/2020	1.17	3/4/2025	100.17375	99.83155632	99.49170051	99.15415725	98.81890297	98.48591443	98.15516867	97.82664307	97.50031529
200304A00035	3/4/2020	1.17	3/4/2025	100.17375	99.83155632	99.49170051	99.15415725	98.81890297	98.48591443	98.15516867	97.82664307	97.50031529
200304A00052	3/6/2020	2.11	3/8/2027	104.24636	101.8899411	99.59848454	97.36984751	95.20197064	93.09287397	91.04065335	89.04347709	87.09958278
200304A00053	3/6/2020	2.33	3/6/2025	100.58301	100.2344543	99.888318	99.54457582	99.20320288	98.86417467	98.52746703	98.19305612	97.86091844
200304A00054	3/6/2020	2.35	3/8/2027	104.81541	102.452144	100.153986	97.9187898	95.74449187	93.62910818	91.57073067	89.5675239	87.61772183
200305A00001	3/5/2020	1.14	3/5/2025	100.16524	99.82032074	99.4777806	99.13759139	98.79972893	98.46416935	98.13088912	97.79986503	97.47107419
200305A00002	3/5/2020	1.14	3/5/2025	100.16524	99.82032074	99.4777806	99.13759139	98.79972893	98.46416935	98.13088912	97.79986503	97.47107419
200305A00007	3/5/2020	1.14	3/5/2025	100.16524	99.82032074	99.4777806	99.13759139	98.79972893	98.46416935	98.13088912	97.79986503	97.47107419
200305A00012	3/5/2020	1.14	3/5/2025	100.16524	99.82032074	99.4777806	99.13759139	98.79972893	98.46416935	98.13088912	97.79986503	97.47107419
200305A00020	3/5/2020	0.95	3/5/2025	100.12693	99.78178779	99.43902635	99.09862117	98.76054793	98.42478268	98.09130177	97.76008187	97.43109999
200305A00029	3/5/2020	1.14	3/5/2025	100.16524	99.82032074	99.4777806	99.13759139	98.79972893	98.46416935	98.13088912	97.79986503	97.47107419

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200305A00030	3/5/2020	1.58	3/5/2030	106.49026	101.184143	96.17302898	91.43907093	86.96558421	82.73696834	78.73863134	74.95691983	71.37905417
200305A00032	3/5/2020	1.58	3/5/2030	106.49026	101.184143	96.17302898	91.43907093	86.96558421	82.73696834	78.73863134	74.95691983	71.37905417
200305A00035	3/5/2020	1.25	3/5/2026	101.07782	99.74378941	98.43349684	97.14636386	95.88182996	94.63935224	93.41840477	92.21847791	91.03907773
200305A00036	3/5/2020	1.36	3/5/2027	102.45944	100.1323863	97.86941748	95.66842423	93.52737982	91.44433538	89.41741643	87.44481959	85.52480947
200305A00037	3/5/2020	1.43	3/6/2028	103.78175	100.4588656	97.25921132	94.17759603	91.20907468	88.34893489	85.5926848	82.93604156	80.37492057
200305A00038	3/5/2020	1.51	3/5/2029	105.24819	100.931408	96.81491912	92.8884441	89.14228047	85.56726881	82.15475971	78.89658281	75.78501795
200305A00039	3/5/2020	1.58	3/5/2030	106.49026	101.184143	96.17302898	91.43907093	86.96558421	82.73696834	78.73863134	74.95691984	71.37905417
200306A00001	3/6/2020	1.11	3/6/2026	100.88985	99.55452354	98.24300595	96.95471159	95.68907751	94.44555847	93.22362633	92.0227693	90.84249139
200306A00013	3/6/2020	1.01	3/6/2025	100.1216	99.77403948	99.42889053	99.08613065	98.74573503	98.4076792	98.07193904	97.73849077	97.40731091
200306A00014	3/6/2020	1.38	3/6/2030	105.41747	100.1372066	95.1510994	90.44132963	85.99124136	81.78526191	77.8088263	74.04830722	70.49095026
200306A00022	3/6/2020	1.2	3/8/2027	102.08871	99.75825491	97.49220819	95.28844132	93.14491098	91.0596526	89.03077684	87.05646627	85.1349722
200306A00028	3/6/2020	1.01	3/6/2025	100.1216	99.77403948	99.42889053	99.08613065	98.74573503	98.4076792	98.07193904	97.73849077	97.40731091
200306A00031	3/6/2020	1.01	3/6/2025	100.1216	99.77403948	99.42889053	99.08613065	98.74573503	98.4076792	98.07193904	97.73849077	97.40731091
200306A00040	3/6/2020	1.01	3/6/2025	100.1216	99.77403948	99.42889053	99.08613065	98.74573503	98.4076792	98.07193904	97.73849077	97.40731091
200306A00046	3/6/2020	1.01	3/3/2025	100.11726	99.77792828	99.44089402	99.10613341	98.77362348	98.44334158	98.11526536	97.78937278	97.46564207
200306A00048	3/6/2020	1.04	3/6/2035	103.05572	97.89149885	93.09236009	88.62812198	84.47136367	80.59715527	76.98281303	73.60768023	70.45293086
200306A00050	3/6/2020	0.87	3/6/2030	101.69018	98.96529985	96.34974406	93.83815356	91.42547512	89.10693878	86.87803996	84.73452291	82.67236527
200306A00055	3/6/2020	0.82	3/6/2025	100.08298	99.73518473	99.38981289	99.04683549	98.70622763	98.36796472	98.03202253	97.69837716	97.36700504
200306A00057	3/6/2020	0.92	3/8/2027	101.53539	99.29681732	97.12100253	95.00582119	92.94923108	90.94927143	89.00405913	87.11178516	85.27071119
200306A00058	3/6/2020	1.06	3/6/2030	102.00096	99.27177821	96.65196365	94.13616273	91.7193253	89.39668394	87.16373622	85.01622815	82.9501388
200306A00064	3/6/2020	1.2	3/8/2027	102.08871	99.75825491	97.49220819	95.28844132	93.14491098	91.0596526	89.03077684	87.05646627	85.1349722
200306A00065	3/6/2020	1.38	3/6/2030	105.41747	100.1372066	95.1510994	90.44132963	85.99124136	81.78526191	77.8088263	74.04830722	70.49095026
200306A00066	3/6/2020	1.2	3/8/2027	102.08871	99.75825491	97.49220819	95.28844132	93.14491098	91.0596526	89.03077684	87.05646627	85.1349722
200306A00077	3/6/2020	1.06	3/6/2025	100.13908	99.79147943	99.44629309	99.103496	98.76306335	98.42497069	98.08919389	97.75570916	97.42449301
200306A00087	3/8/2021	1.26	3/7/2025	100.21113	99.86063308	99.51259002	99.16697575	98.82376483	98.48293219	98.14445309	97.80830314	97.47445829
200309A00005	3/9/2020	0.77	3/7/2025	100.06649	99.71599314	99.36795296	99.02234585	98.67914629	98.33832908	97.99986938	97.66374271	97.32992492
200309A00007	3/9/2020	1.11	3/9/2027	101.8775	99.54697904	97.28094595	95.07727222	92.93390962	90.84888897	88.82031657	86.84637086	84.92529928
200309A00020	3/9/2020	0.96	3/10/2025	100.10936	99.75086147	99.39493444	99.04155217	98.69068733	98.34231299	97.9964026	97.65292999	97.31186936
200309A00021	3/9/2020	1.05	3/9/2026	100.81343	99.47076861	98.15217129	96.85704636	95.5848219	94.33494415	93.10687674	91.90010007	90.71411061
200309A00027	3/9/2020	0.97	3/10/2025	100.11297	99.75445989	99.39852496	99.04513484	98.69426219	98.34588008	97.99996197	97.65648166	97.31541338
200309A00030	3/9/2020	1.11	3/9/2027	101.8775	99.54697904	97.28094595	95.07727222	92.93390962	90.84888897	88.82031657	86.84637086	84.92529928
200309A00033	3/9/2020	1.06	3/9/2026	100.8271	99.48434132	98.1656477	96.87042809	95.59811054	94.34814123	93.11998377	91.9131185	90.72704186
200309A00034	3/9/2020	0.96	3/9/2035	102.62603	97.4833064	92.70415412	88.25851415	84.11907858	80.26102025	76.66174899	73.30069334	70.15910507

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200309A00038	3/9/2020	1.26	3/11/2030	104.7761	99.50016315	94.51909906	89.8149957	85.37111351	81.1718045	77.20243584	73.44931918	69.8996452
200309A00046	3/9/2020	0.78	3/11/2025	100.07411	99.71262486	99.35375525	98.9974755	98.64375752	98.29257361	97.94389649	97.59769926	97.25395541
200309A00081	3/9/2020	1.18	3/8/2030	103.97773	99.13088399	94.55012824	90.21933858	86.12345388	82.24839877	78.58101418	75.10899298	71.82082059
200309A00082	3/9/2020	1.18	3/8/2030	103.97773	99.13088399	94.55012824	90.21933858	86.12345388	82.24839877	78.58101418	75.10899298	71.82082059
200309A00084	3/9/2020	1.06	3/9/2027	101.73963	99.42619881	97.17818688	94.99337134	92.86961641	90.80487155	88.79716755	86.84461273	84.9453894
200310A00003	3/10/2020	1.1	3/10/2025	100.15985	99.80123927	99.44520174	99.09170956	98.74073537	98.39225226	98.04623365	97.70265338	97.36148563
200310A00005	3/10/2020	1.41	3/8/2030	105.58072	100.2910475	95.29626216	90.5784845	86.12100485	81.90820128	77.92546359	74.15912296	70.59638688
200310A00015	3/10/2020	1.37	3/11/2030	105.36847	100.0768029	95.08063932	90.36203137	85.90421085	81.69150268	77.70924841	73.94373551	70.38213177
200310A00020	3/10/2020	1.1	3/10/2025	100.15985	99.80123927	99.44520174	99.09170956	98.74073537	98.39225226	98.04623365	97.70265338	97.36148563
200310A00021	3/10/2020	1.1	3/10/2025	100.15985	99.80123927	99.44520174	99.09170956	98.74073537	98.39225226	98.04623365	97.70265338	97.36148563
200310A00028	3/10/2020	1.1	3/10/2025	100.15985	99.80123927	99.44520174	99.09170956	98.74073537	98.39225226	98.04623365	97.70265338	97.36148563
200310A00033	3/10/2020	0.91	3/10/2025	100.11998	99.76113346	99.40486636	99.05115025	98.69995768	98.3512616	98.00503532	97.66125255	97.31988737
200310A00034	3/10/2020	1.41	3/11/2030	105.58387	100.2864901	95.28483577	90.56095343	86.09806443	81.88048383	77.89354389	74.12352326	70.55758143
200310A00038	3/10/2020	1.41	3/11/2030	105.58387	100.2864901	95.28483577	90.56095343	86.09806443	81.88048383	77.89354389	74.12352326	70.55758143
200310A00040	3/10/2020	1.36	3/10/2028	103.55667	100.2271832	97.02157139	93.93460224	90.9612901	88.09688472	85.33685881	82.67689642	80.11288196
200310A00041	3/10/2020	1.39	3/12/2029	104.74039	100.4165564	96.29429313	92.36320749	88.61349561	85.03590471	81.62169941	78.36263015	75.25090382
200310A00042	3/10/2020	1.41	3/11/2030	105.58387	100.2864901	95.28483577	90.56095343	86.09806443	81.88048383	77.89354389	74.12352326	70.55758143
200310A00051	3/10/2020	1.41	3/8/2030	105.58072	100.2910475	95.29626216	90.5784845	86.12100485	81.90820128	77.92546359	74.15912296	70.59638688
200310A00054	3/10/2020	1.1	3/10/2025	100.15985	99.80123927	99.44520174	99.09170956	98.74073537	98.39225226	98.04623365	97.70265338	97.36148563
200310A00065	3/13/2020	1.1	3/13/2025	100.16494	99.79809431	99.43394223	99.07245393	98.71360016	98.35735207	98.00368124	97.65255965	97.30395971
200310A00067	3/10/2020	0.94	3/10/2025	100.05717	99.82084032	99.58584395	99.35216556	99.11979303	98.88871445	98.65891803	98.43039214	98.20312529
200310A00073	3/12/2020	2.12	3/11/2027	104.28499	101.9201732	99.62074925	97.38455507	95.20951146	93.09361965	91.03495765	89.03167686	87.08199882
200311A00006	3/13/2020	1.12	3/10/2025	100.16706	99.8084361	99.45238279	99.0988749	98.7478851	98.39938644	98.05335237	97.70975672	97.36857367
200311A00015	3/11/2020	1.26	3/11/2027	102.21925	99.89253478	97.6317356	95.43460709	93.29899295	91.22282316	89.20410996	87.24094406	85.33149102
200311A00026	3/11/2020	1.34	3/11/2030	104.65083	99.90833795	95.42372114	91.18142376	87.16691033	83.36659481	79.76777365	76.35856394	73.12784622
200311A00031	3/11/2020	1.41	12/24/2027	103.48043	100.3585376	97.34647982	94.43975299	91.63407032	88.92534706	86.30968954	83.78338488	81.34289135
200311A00040	3/12/2020	1.3	3/11/2025	100.23423	99.87271131	99.51380882	99.15749185	98.80373241	98.45250293	98.10377623	97.75752552	97.41372439
200311A00050	3/2/2021	1.46	3/2/2026	101.35408	100.0259869	98.7213996	97.43974751	96.18047826	94.94305683	93.7269648	92.53169975	91.35677461
200311A00052	3/2/2021	1.43	2/28/2025	100.25274	99.92135263	99.59214431	99.26509696	98.94018939	98.6174007	98.29671028	97.97809775	97.66154303
200311A00055	3/11/2020	1.66	12/17/2027	104.24797	101.1322589	98.12553767	95.22336574	92.42151132	89.71594079	87.10280803	84.57844445	82.13934958
200312A00004	3/13/2020	1.23	1/24/2025	100.12132	99.88639841	99.65258401	99.41987193	99.18825436	98.95772355	98.72827183	98.4998916	98.27257534
200312A00006	3/12/2020	1.23	3/12/2025	100.21085	99.84663967	99.48508691	99.12615887	98.76982692	98.41606286	98.06483889	97.7161276	97.369902
200312A00009	3/12/2020	1.46	3/12/2027	102.7178	100.3692771	98.08588528	95.86546225	93.70593399	91.60530681	89.5616637	87.57316093	85.63802479



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200312A00014	3/12/2020	1.04	3/12/2025	100.17036	99.8059142	99.44412855	99.08497342	98.72842005	98.37444011	98.02300568	97.67408923	97.32766366
200312A00015	3/12/2020	1.23	3/10/2025	100.20673	99.84801865	99.49187853	99.13828428	98.78720856	98.43862443	98.09250533	97.74882509	97.40755788
200312A00037	3/12/2020	1.3	3/12/2025	100.23648	99.87221495	99.51060544	99.15162094	98.79523284	98.44141292	98.09013338	97.74136681	97.39508621
200313A00032	3/18/2020	1.46	3/18/2025	100.31123	99.93034055	99.5523504	99.17722611	98.80493504	98.43544507	98.06872456	97.70474235	97.34346774
200316A00008	3/16/2020	1.31	3/15/2030	102.63444	99.95880181	97.38850611	94.91846939	92.54389065	90.26023478	88.06321601	85.94878245	83.91310175
200316A00009	3/16/2020	1.25	3/14/2025	100.22239	99.85267785	99.48569624	99.12141886	98.75981579	98.40085753	98.04451502	97.69075962	97.33956312
200316A00037	3/16/2020	1.06	3/14/2025	100.18128	99.8113261	99.44410845	99.07960097	98.71777359	98.35859669	98.00204108	97.64807801	97.29667914
200316A00049	3/16/2020	1.25	3/14/2025	100.22239	99.85267785	99.48569624	99.12141886	98.75981579	98.40085753	98.04451502	97.69075962	97.33956312
200316A00050	3/16/2020	1.54	3/16/2027	102.92186	100.560367	98.26461663	96.0324203	93.86167634	91.75036477	89.69654364	87.69834557	85.7539744
200316A00055	3/16/2020	1.06	3/14/2025	100.18128	99.8113261	99.44410845	99.07960097	98.71777359	98.35859669	98.00204108	97.64807801	97.29667914
200317A00009	3/17/2020	1.61	3/16/2035	105.71349	100.4269734	95.51367946	90.94277965	86.6862707	82.71869074	79.01686967	75.55970589	72.3279661
200317A00023	3/17/2020	1.1	3/17/2025	100.20189	99.82364964	99.44827455	99.07573025	98.70598468	98.33900623	97.97476379	97.61322671	97.2543648
200317A00024	3/17/2020	1.09	3/17/2025	100.09514	99.85490056	99.61605281	99.37857901	99.14246614	98.90770137	98.67427201	98.44216558	98.21136974
200317A00027	3/17/2020	1.29	3/17/2025	100.24393	99.86593968	99.49080525	99.11849547	98.74897842	98.38222263	98.01819712	97.65687137	97.29821531
200317A00043	3/17/2020	1.29	3/15/2030	102.87305	100.1159842	97.46956274	94.92836182	92.48726539	90.14144424	87.88633799	85.71763827	83.63127307
200317A00045	3/19/2020	1.43	3/19/2025	100.30236	99.91874441	99.53807278	99.16030737	98.7854149	98.41336257	98.04411807	97.67764962	97.31392588
200317A00065	3/19/2020	2.05	3/19/2025	100.54141	100.1572419	99.77601796	99.39770332	99.02226464	98.6496691	98.27988438	97.91287865	97.54862055
200318A00012	3/18/2020	1.68	3/18/2033	106.49672	101.2047173	96.27346314	91.6746343	87.38234855	83.37293515	79.62473186	76.11790174	72.83426773
200318A00013	3/18/2020	1.5	3/18/2025	100.32654	99.94561715	99.56759185	99.19243259	98.82010675	98.4505822	98.0838273	97.71981088	97.35850225
200318A00038	3/18/2020	1.48	3/18/2025	100.31889	99.93797885	99.55997113	99.18482935	98.8125209	98.44301364	98.07627593	97.71227662	97.35098499
200318A00047	3/18/2020	1.29	3/18/2025	100.27654	99.89538839	99.51713835	99.14176047	98.76922197	98.3994906	98.03253458	97.6683226	97.30682385
200318A00054	3/18/2020	1.56	3/18/2025	100.34951	99.96853206	99.59045403	99.21524232	98.84286433	98.4732879	98.10648141	97.74241368	97.38105401
200319A00035	3/19/2020	1.72	3/18/2033	106.71273	101.4093048	96.46738303	91.8585911	87.55699278	83.53886783	79.78250869	76.26803684	72.97723712
200320A00049	3/25/2020	1.47	3/25/2025	100.3341	99.93395773	99.53700208	99.14319908	98.75251125	98.36490168	97.98033405	97.59877261	97.22018218
200320A00052	3/25/2020	1.47	3/25/2025	100.3341	99.93395773	99.53700208	99.14319908	98.75251125	98.36490168	97.98033405	97.59877261	97.22018218
200323A00090	3/23/2020	1.55	3/23/2027	101.7591	100.2699411	98.81671486	97.39827376	96.01351501	94.66137929	93.34084865	92.05094458	90.79072615
200324A00012	3/25/2020	1.78	3/25/2025	100.45878	100.0583353	99.66108036	99.26697987	98.87599626	98.48809262	98.10323259	97.72138043	97.34250092
200324A00013	3/25/2020	1.78	3/25/2025	100.45878	100.0583353	99.66108036	99.26697987	98.87599626	98.48809262	98.10323259	97.72138043	97.34250092
200324A00029	3/24/2020	1.86	3/24/2025	100.48716	100.0893869	99.69476761	99.30326176	98.9148325	98.5294436	98.14705941	97.76764483	97.39116529
200324A00051	3/24/2020	1.73	11/1/2024	100.00482	100.0020466	99.99927427	99.99650427	99.99373661	99.99097127	99.98820827	99.98544758	99.98268922
200324A00066	3/26/2020	1.81	3/26/2025	100.47451	100.0712795	99.67128348	99.27448359	98.88084162	98.49031994	98.10288152	97.71848993	97.3371093
200325A00009	3/27/2020	1.67	3/27/2025	100.42109	100.0152447	99.61267527	99.2133429	98.81720865	98.42423419	98.03438182	97.64761443	97.26389548
200325A00016	3/30/2020	1.67	3/31/2025	100.43419	100.01734	99.60393688	99.19393905	98.78730459	98.38399232	97.98396172	97.58717291	97.19358668

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200325A00030	3/25/2020	1.5	3/25/2025	100.37808	99.97745861	99.58003808	99.18577814	98.7946411	98.40658991	98.02158809	97.63959972	97.26058947
200325A00044	3/25/2020	1.7	12/23/2024	100.13622	99.98947796	99.84317729	99.69731615	99.55189255	99.4069045	99.26235001	99.11822713	98.97453389
200325A00046	3/25/2020	1.76	3/25/2025	100.45074	100.0503109	99.65307531	99.25899402	98.86802949	98.48014481	98.09530365	97.71347025	97.33460939
200326A00009	3/27/2020	1.54	3/27/2025	100.36809	99.9623697	99.55992913	99.16072487	98.76471797	98.37187013	97.98214363	97.59550139	97.21190687
200326A00011	3/30/2020	1.54	3/31/2025	100.37975	99.96303108	99.54976329	99.13989994	98.73339916	98.33021977	97.93032125	97.53366375	97.14020805
200326A00016	3/26/2020	1.54	3/25/2025	100.36226	99.96204298	99.56501975	99.17114958	98.78039496	98.39271898	98.00808533	97.62645825	97.24780254
200326A00028	3/26/2020	1.54	3/26/2025	100.36517	99.96220643	99.5624745	99.16593718	98.77255624	98.38229409	97.99511371	97.61097867	97.22985313
200326A00029	3/26/2020	1.82	3/26/2027	103.63338	101.2368875	98.90773799	96.64366985	94.44250958	92.30216917	90.2206421	88.19599972	86.22638771
200326A00032	3/26/2020	1.49	3/26/2030	103.21373	100.4512551	97.79953699	95.25315094	92.80697937	90.45619144	88.19622507	86.02277009	83.93175263
200326A00037	3/26/2020	1.78	3/26/2035	106.47783	101.303068	96.48863989	92.00502943	87.82540881	83.92537123	80.28269407	76.87712691	73.69020148
200327A00031	3/27/2020	1.18	3/27/2025	100.2213	99.81594661	99.4138629	99.01501339	98.61935917	98.22686194	97.83748404	97.45118836	97.06793841
200327A00037	3/27/2020	1.18	3/27/2026	101.14066	99.74646222	98.37806124	97.03480469	95.7160609	94.42121893	93.14968769	91.90089515	90.67428759
200327A00043	3/27/2020	1.48	3/27/2028	104.29164	100.8982917	97.63280846	94.48971679	91.46380654	88.55011692	85.74392322	83.04072424	80.43623053
200327A00045	3/27/2020	2.24	3/27/2034	115.15262	105.7101503	97.12737459	89.32128872	82.21729882	75.7483329	69.85404817	64.48012541	59.57764045
200327A00046	3/27/2020	1.23	3/27/2025	100.24169	99.83628315	99.43414987	99.03525109	98.63954789	98.24700197	97.85757565	97.47123183	97.08793403
200327A00047	3/27/2020	0.99	3/27/2025	100.17613	99.77051412	99.36817569	98.96907829	98.57318283	98.18045087	97.79084456	97.40432668	97.02086057
200327A00048	3/27/2020	1.18	3/24/2025	100.21555	99.81843341	99.42446184	99.03359994	98.64581095	98.26105867	97.87930748	97.50052231	97.12466864
200327A00051	3/27/2020	0.99	3/27/2025	100.17613	99.77051412	99.36817569	98.96907829	98.57318283	98.18045087	97.79084456	97.40432668	97.02086057
200327A00056	3/27/2020	1.18	3/27/2025	100.2213	99.81594661	99.4138629	99.01501339	98.61935917	98.22686194	97.83748404	97.45118836	97.06793841
200327A00060	3/27/2020	1.18	3/27/2025	100.2213	99.81594661	99.4138629	99.01501339	98.61935917	98.22686194	97.83748404	97.45118836	97.06793841
200327A00061	3/31/2020	1.18	3/31/2025	100.22898	99.81263725	99.39974412	98.99025318	98.58412257	98.18131115	97.78177841	97.38548452	96.99239029
200327A00073	3/27/2020	0.99	3/27/2025	100.17613	99.77051412	99.36817569	98.96907829	98.57318283	98.18045087	97.79084456	97.40432668	97.02086057
200327A00084	3/27/2020	1.1	3/27/2025	100.23865	99.75446036	99.27497025	98.80011019	98.32981324	97.86401372	97.40264723	96.94565058	96.49296179
200327A00094	3/27/2020	1.6	3/27/2030	105.66323	101.0801532	96.743147	92.63741001	88.74911867	85.06535324	81.57403385	78.26386142	75.12426306
200330A00006	3/30/2020	0.9	3/28/2025	100.14079	99.73251075	99.32755769	98.92588698	98.52745883	98.13223407	97.74017417	97.35124123	96.96539793
200330A00008	3/30/2020	1.09	3/28/2025	100.18628	99.77826366	99.37356653	98.97214488	98.57395906	98.17897008	97.78713956	97.39842974	97.01280346
200330A00028	3/30/2020	1.09	3/28/2025	100.18628	99.77826366	99.37356653	98.97214488	98.57395906	98.17897008	97.78713956	97.39842974	97.01280346
200330A00037	3/30/2020	1.09	3/28/2025	100.18628	99.77826366	99.37356653	98.97214488	98.57395906	98.17897008	97.78713956	97.39842974	97.01280346
200330A00038	3/30/2020	1.79	3/29/2030	107.66771	102.268774	97.17284594	92.36140372	87.81714841	83.52391716	79.46660295	75.63108059	72.00413813
200330A00041	4/1/2020	1.09	4/1/2025	100.19298	99.77400089	99.35850964	98.94646663	98.53782913	98.13255509	97.73060316	97.33193267	96.93650359
200330A00044	3/30/2020	1.09	3/28/2025	100.18628	99.77826366	99.37356653	98.97214488	98.57395906	98.17897008	97.78713956	97.39842974	97.01280346
200330A00045	3/30/2020	1.47	3/30/2027	102.79887	100.4021273	98.07307095	95.80942072	93.60898277	91.46964989	89.38939749	87.36627986	85.39842658
200330A00047	3/30/2020	1.5	3/30/2035	105.13619	99.83923318	94.91881979	90.34364908	86.0853019	82.11795392	78.41811946	74.9644222	71.7373899

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200330A00054	3/30/2021	1.19	3/30/2026	101.04869	99.64910809	98.275525	96.92728298	95.60374303	94.30428716	93.02831755	91.77525571	90.54454171
200330A00058	3/30/2020	1.49	3/29/2030	105.15413	100.5811554	96.25410008	92.15815975	88.27950181	84.60519916	81.12316605	77.82209885	74.69142127
200330A00066	3/30/2020	1.08	3/31/2025	100.18709	99.77086119	99.35807213	98.94868463	98.54265685	98.13994764	97.74051651	97.34432363	96.95132981
200330A00079	3/30/2020	1.51	3/30/2035	105.19102	99.89129496	94.9683133	90.39075454	86.13018466	82.16076589	78.45900026	75.0035003	71.77478362
200331A00011	3/31/2020	1.09	3/31/2025	100.19128	99.77503879	99.36223933	98.95284149	98.54680343	98.14408399	97.7446427	97.34843972	96.95543585
200331A00016	3/31/2020	1.11	3/31/2026	101.04977	99.64570472	98.26780014	96.91538498	95.58781488	94.28446679	93.00473801	91.74804542	90.51382468
200331A00017	3/31/2020	0.9	3/31/2025	100.14486	99.72834441	99.31528434	98.90563299	98.49934834	98.09638909	97.69671457	97.30028481	96.90706045
200331A00022	4/1/2020	1.07	4/1/2025	100.18455	99.76559051	99.3501203	98.93809822	98.52948151	98.12422814	97.72229676	97.32364669	96.92823792
200331A00056	3/31/2020	0.96	3/29/2030	101.89917	99.23048897	96.66716821	94.20411535	91.83651874	89.55983364	87.3697656	85.26225492	83.23346218
200331A00060	3/31/2020	1.09	3/31/2025	100.19128	99.77503879	99.36223933	98.95284149	98.54680343	98.14408399	97.7446427	97.34843972	96.95543585
200401A00001	4/1/2020	1.01	4/1/2025	100.15926	99.74035936	99.3249523	98.91299297	98.50443865	98.09924729	97.69737754	97.29878875	96.90344089
200401A00012	4/2/2020	1	4/2/2025	100.15649	99.73486793	99.3167808	98.9021881	98.49104619	98.08331213	97.67894371	97.27789942	96.88013842
200401A00013	4/1/2020	1.01	4/1/2025	100.15926	99.74035936	99.3249523	98.91299297	98.50443865	98.09924729	97.69737754	97.29878875	96.90344089
200401A00023	4/1/2020	0.82	4/1/2025	100.11252	99.6933515	99.27768223	98.86546788	98.45666553	98.05123297	97.6491287	97.25031188	96.85474236
200402A00009	4/2/2020	1.03	4/2/2025	100.16922	99.74756626	99.3294472	98.91482277	98.50364931	98.0958839	97.69148433	97.29040906	96.89261726
200402A00014	4/2/2020	0.84	4/2/2025	100.12218	99.70025319	99.28187025	98.86698918	98.45556616	98.0475581	97.64292261	97.241618	96.84360329
200402A00038	4/2/2020	0.84	4/2/2025	100.12218	99.70025319	99.28187025	98.86698918	98.45556616	98.0475581	97.64292261	97.241618	96.84360329
200402A00041	4/2/2020	1.03	4/2/2025	100.16922	99.74756626	99.3294472	98.91482277	98.50364931	98.0958839	97.69148433	97.29040906	96.89261726
200402A00044	4/2/2020	1.65	4/2/2030	106.91403	101.5249034	96.43913266	91.63812816	87.1045319	82.82212835	78.77576366	74.951271	71.33540154
200403A00006	4/3/2020	1.05	4/3/2025	100.1793	99.75488342	99.33405203	98.9167623	98.50296966	98.09263029	97.68570109	97.2821397	96.88190442
200406A00006	4/6/2020	1.13	4/7/2025	100.22072	99.78525442	99.35357016	98.92561716	98.50134712	98.08071258	97.66366688	97.25016419	96.84015941
200406A00014	4/6/2020	1.33	4/6/2035	104.64112	99.35775278	94.45052278	89.88812735	85.64214451	81.68675053	77.99846301	74.55591113	71.33962992
200406A00027	4/6/2020	1.31	4/5/2030	104.68775	100.1134212	95.78600158	91.69057596	87.81321095	84.14088851	80.66144082	77.36349022	74.23639362
200406A00029	4/6/2020	1.61	4/5/2030	106.17953	101.1918109	96.48081738	92.02959208	87.82230368	83.84416991	80.08138244	76.52103776	73.15107313
200406A00030	4/6/2020	1.61	4/5/2030	106.17953	101.1918109	96.48081738	92.02959208	87.82230368	83.84416991	80.08138244	76.52103776	73.15107313
200406A00032	4/6/2020	1.09	4/4/2025	100.24688	99.74127457	99.24077887	98.74531429	98.25480512	97.76917721	97.28835784	96.81227575	96.34086108
200406A00033	4/6/2020	1.09	4/4/2025	100.24688	99.74127457	99.24077887	98.74531429	98.25480512	97.76917721	97.28835784	96.81227575	96.34086108
200406A00035	4/6/2020	1.05	4/4/2025	100.22322	99.72387768	99.22956047	98.74018818	98.25568662	97.77598305	97.30100618	96.83068616	96.36495448
200406A00036	4/6/2020	1.09	4/4/2025	100.24688	99.74127457	99.24077887	98.74531429	98.25480512	97.76917721	97.28835784	96.81227575	96.34086108
200406A00053	4/6/2020	1.13	4/7/2025	100.22072	99.78525442	99.35357016	98.92561716	98.50134712	98.08071258	97.66366688	97.25016419	96.84015941
200407A00001	4/8/2020	2.41	4/7/2025	100.78161	100.3446985	99.9115737	99.48218908	99.05649629	98.63444777	98.21599679	97.80109741	97.38970447
200407A00004	4/7/2020	0.99	4/7/2025	100.19408	99.75827417	99.32626151	98.8979881	98.47340545	98.05246591	97.63512265	97.22132965	96.81104165
200408A00021	4/8/2020	0.99	4/4/2025	100.18914	99.76156429	99.33763319	98.91729906	98.50051624	98.08723981	97.67742563	97.27103028	96.86801106

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200413A00009	4/13/2020	0.77	4/13/2027	100.57024	99.29215393	98.04247905	96.82034796	95.62492618	94.45541145	93.31103226	92.19104638	91.0947395
200413A00013	4/13/2020	1.19	4/12/2030	102.39876	99.61799744	96.95013205	94.38957368	91.9310511	89.56959129	87.30050049	85.11934667	83.02194313
200414A00009	4/14/2020	0.82	4/14/2025	100.0421	99.76064409	99.48111507	99.2034921	98.92775375	98.65387893	98.38184686	98.1116371	97.84322953
200414A00024	4/14/2020	1.37	4/14/2027	102.57475	100.160941	97.81758181	95.54218875	93.33238488	91.18589195	89.10052559	87.07419082	85.10487773
200415A00021	4/15/2020	1.37	4/15/2027	102.60576	100.1682362	97.80077987	95.5009834	93.26653603	91.09522009	88.98490656	86.93355097	84.93918948
200415A00023	4/15/2020	1.71	4/15/2030	107.26677	101.8339114	96.70864054	91.87199851	87.30628456	82.99497044	78.92261702	75.07479708	71.43802409
200415A00024	4/15/2020	2.2	4/16/2035	114.90027	104.5591034	95.25121881	86.86748382	79.31082281	72.49482738	66.34253573	60.78535721	55.76212398
200415A00031	4/15/2020	0.97	4/15/2025	100.16155	99.70436801	99.25135316	98.80245326	98.35761228	97.91677527	97.47988821	97.0468981	96.61775285
200415A00035	4/17/2020	2.16	4/16/2025	100.71404	100.252624	99.79543934	99.34242803	98.893533	98.44869818	98.00786856	97.57099007	97.13800965
200415A00037	4/15/2020	0.97	4/15/2025	100.16155	99.70436801	99.25135316	98.80245326	98.35761228	97.91677527	97.47988821	97.0468981	96.61775285
200415A00038	4/15/2020	1.37	4/15/2027	102.60576	100.1682362	97.80077987	95.5009834	93.26653603	91.09522009	88.98490656	86.93355097	84.93918948
200417A00002	4/17/2020	0.96	4/17/2025	100.15963	99.69698225	99.23860381	98.78443784	98.33442636	97.88851244	97.4466402	97.00875478	96.57480229
200417A00008	4/17/2020	0.96	4/17/2025	100.15963	99.69698225	99.23860381	98.78443784	98.33442636	97.88851244	97.4466402	97.00875478	96.57480229
200417A00009	4/17/2020	1.35	4/16/2027	102.55933	100.1196886	97.75025327	95.44861092	93.21244368	91.03952709	88.92772574	86.87498913	84.87934772
200417A00014	4/17/2020	0.96	4/17/2025	100.15963	99.69698225	99.23860381	98.78443784	98.33442636	97.88851244	97.4466402	97.00875478	96.57480229
200417A00016	4/21/2020	2.18	4/21/2025	100.7469	100.2716767	99.80094181	99.33462714	98.87267054	98.41501104	97.9615888	97.51234506	97.06722216
200417A00019	4/17/2020	0.77	4/17/2025	100.10801	99.64506357	99.18639837	98.73195406	98.28167244	97.83549637	97.39336977	96.95523758	96.52104571
200421A00026	4/21/2020	1.34	4/19/2030	104.46136	99.87983894	95.5466069	91.44660252	87.56576185	83.8909488	80.40988895	77.11110826	73.98387658
200421A00032	4/21/2020	1.31	4/21/2027	102.47508	100.0229875	97.64185173	95.32921611	93.0827255	90.90012027	88.77923179	86.71797815	84.71436013
200423A00006	4/23/2020	0.82	4/23/2025	100.13835	99.65890365	99.18403879	98.71369199	98.24779892	97.78629647	97.32912274	96.87621697	96.42751953
200423A00017	4/23/2020	1.82	4/23/2035	111.84097	101.5894175	92.3706338	84.07494503	76.60484071	69.87357298	63.80392037	58.32709905	53.38180319
200424A00014	4/28/2020	1.01	4/23/2025	100.1918	99.71265472	99.23808483	98.7680241	98.30240846	97.84117501	97.38426207	96.9316091	96.48315669
200424A00022	4/24/2020	1.39	4/24/2030	104.70066	100.1017535	95.75249631	91.63771429	87.74324413	84.05585871	80.56320006	77.25371751	74.11661058
200427A00017	4/27/2020	1.02	4/25/2025	100.19964	99.7150012	99.23504251	98.75969297	98.28888642	97.82255795	97.36064389	96.90308176	96.44981027
200427A00018	4/27/2020	1.51	4/27/2028	104.22374	100.755572	97.42106518	94.21436061	91.12989129	88.16236335	85.30674098	82.5582324	79.91227664
200428A00002	4/28/2020	1.47	4/26/2030	106.41375	100.9594916	95.81652079	90.96550972	86.38842471	82.06843507	77.98982685	74.13792318	70.49901073
200428A00003	4/29/2020	1.01	4/29/2025	100.20067	99.7050937	99.21440042	98.72851769	98.2473751	97.77090363	97.29903558	96.83170456	96.36884543
200428A00009	4/28/2020	1.08	4/29/2030	102.08466	99.31185389	96.65166605	94.09851684	91.64714545	89.29258886	87.03016298	84.85544505	82.76425726
200428A00011	4/30/2020	1.95	4/29/2025	100.66984	100.1729009	99.6808548	99.19362887	98.71115256	98.23335673	97.76017359	97.29153661	96.82738058
200428A00018	4/28/2020	1.33	4/27/2035	104.13612	99.00299337	94.23100001	89.79030229	85.65379928	81.7968546	78.1970537	74.83398665	71.68905366
200429A00009	4/29/2020	0.78	4/29/2025	100.12542	99.62959529	99.13865715	98.65253848	98.17116866	97.69447841	97.2223998	96.75486621	96.29181229
200429A00010	4/29/2020	0.78	4/29/2025	100.12542	99.62959529	99.13865715	98.65253848	98.17116866	97.69447841	97.2223998	96.75486621	96.29181229
200429A00021	5/4/2020	0.97	4/29/2025	100.1807	99.68518701	99.1945513	98.70872572	98.22763989	97.75122478	97.27941269	96.81213724	96.34933329

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200429A00030	4/29/2020	1.41	4/29/2030	105.03515	100.1819071	95.59772548	91.26605072	87.17143959	83.29947837	79.63670871	76.17055912	72.88928182
200429A00043	5/1/2020	1.56	4/30/2025	100.47819	99.97906932	99.48489259	98.99558277	98.51106832	98.03127911	97.55614636	97.0856026	96.61958168
200429A00044	5/1/2020	1.86	4/30/2025	100.62875	100.1291961	99.63458356	99.144841	98.65989688	98.17968103	97.70412462	97.23316016	96.76672147
200429A00045	5/1/2020	1.54	4/30/2025	100.46815	99.96906087	99.47491319	98.98563222	98.50114642	98.02138565	97.54628114	97.07576543	96.60977236
200429A00046	5/1/2020	2.07	4/30/2025	100.73415	100.2342849	99.73936724	99.24932176	98.76407687	98.28356236	97.8077094	97.33645046	96.86971933
200429A00047	5/1/2020	2.7	4/30/2025	101.05034	100.5495512	100.0537183	99.56276405	99.07661685	98.59520638	98.11846374	97.64632134	97.17871289
200429A00049	4/29/2020	1.25	4/29/2026	101.21692	99.7346936	98.28154717	96.85669995	95.45939916	94.0889182	92.74455558	91.42563375	90.13149812
200429A00050	5/1/2020	2.61	4/30/2025	101.00517	100.5045132	100.008811	99.51798658	99.03196828	98.55068581	98.07407026	97.60205407	97.13457095
200429A00051	5/1/2020	2.54	4/30/2025	100.97003	100.4694836	99.9738831	99.48315966	98.99724161	98.51605869	98.039542	97.56762397	97.10023834
200429A00053	5/1/2020	2.18	4/30/2025	100.78936	100.2893314	99.79425393	99.30404978	98.81864734	98.3379764	97.86196809	97.3905549	96.92367058
200429A00054	4/29/2020	1.04	4/29/2025	100.21564	99.72002372	99.22928726	98.74336166	98.26217651	97.78566278	97.31375275	96.84638005	96.38347953
200429A00056	5/1/2020	1.54	4/30/2025	100.46815	99.96906087	99.47491319	98.98563222	98.50114642	98.02138565	97.54628114	97.07576543	96.60977236
200429A00057	4/29/2020	1.4	4/29/2027	102.72519	100.2483041	97.84368637	95.50881174	93.24126163	91.03871649	88.898951	86.8198297	84.79930268
200429A00058	5/1/2020	1.83	4/30/2025	100.6137	100.1141835	99.61961446	99.12991518	98.64501403	98.16484084	97.68932679	97.21840441	96.75200749
200429A00061	4/29/2020	1.66	10/29/2029	106.60916	101.6373828	96.92624279	92.46074715	88.22684543	84.21136164	80.40193536	76.78696716	73.35556783
200430A00008	4/30/2020	0.94	4/30/2025	100.16702	99.66880724	99.17553124	98.68711575	98.2034893	97.72458183	97.25032462	96.7806503	96.31549278
200430A00009	4/30/2020	1.16	4/30/2026	101.08374	99.59985338	98.14512778	96.7187837	95.32006493	93.9482416	92.60260907	91.28248681	89.9872174
200430A00017	4/30/2020	0.94	4/30/2025	100.16702	99.66880724	99.17553124	98.68711575	98.2034893	97.72458183	97.25032462	96.7806503	96.31549278
200430A00027	4/30/2020	1.31	4/30/2035	104.11161	98.82704522	93.92077527	89.36114399	85.119428	81.16954322	77.48778262	74.05258179	70.84430922
200430A00030	4/30/2020	0.96	4/30/2025	100.17705	99.67881569	99.18551064	98.6970663	98.21341121	97.73447529	97.26018984	96.79048747	96.3253021
200501A00002	5/1/2020	1.3	5/1/2035	104.05672	98.77492537	93.87123023	89.3139939	85.07450766	81.12670078	77.44687837	74.01348712	70.80690561
200501A00009	5/4/2020	0.67	5/1/2025	100.00564	99.68589174	99.36864496	99.05386387	98.74151696	98.43157329	98.12400245	97.81877457	97.51586033
200504A00004	5/4/2020	0.75	5/5/2025	100.1162	99.60401215	99.09705172	98.5952382	98.09849344	97.6067409	97.11990554	96.63791387	96.1606938
200504A00006	5/4/2020	0.94	5/5/2025	100.17335	99.66148313	99.15483439	98.65332267	98.1568701	97.66540041	97.17883881	96.69711205	96.2201483
200504A00007	5/4/2020	1.47	5/4/2028	104.10597	100.6213447	97.27165522	94.05095632	90.95360236	87.97422608	85.10772326	82.34923829	79.69415066
200505A00004	5/5/2020	0.77	5/5/2025	100.12652	99.61429849	99.10730757	98.60546377	98.10868895	97.61690656	97.13004158	96.64802049	96.17077121
200505A00005	5/5/2020	0.77	5/5/2025	100.12652	99.61429849	99.10730757	98.60546377	98.10868895	97.61690656	97.13004158	96.64802049	96.17077121
200506A00002	5/8/2020	0.97	5/5/2025	100.18882	99.67690904	99.1702146	98.66865751	98.1721599	97.68064549	97.19403949	96.71226865	96.23526113
200506A00005	5/6/2020	0.97	5/6/2025	100.19017	99.67552671	99.16615774	98.66198184	98.16291986	97.66889423	97.17982896	96.69564957	96.21628308
200506A00010	5/6/2020	0.94	5/6/2026	100.88511	99.38492438	97.91442472	96.47280476	95.05928674	93.67312041	92.3135818	90.97997201	89.67161618
200511A00006	5/11/2020	1.65	5/13/2030	106.98701	101.4888259	96.30594516	91.41868266	86.80868209	82.45881891	78.35311136	74.47663848	70.81546437
200511A00017	5/11/2020	0.83	2/3/2025	100.0338	99.77150697	99.5105932	99.25104359	98.99284743	98.73599416	98.48047333	98.22627456	97.97338762
200511A00018	5/11/2020	0.98	2/2/2026	100.62526	99.37328719	98.15142043	96.95858356	95.79374907	94.6559375	93.54421469	92.45768911	91.39550954



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200511A00019	5/11/2020	1.18	2/1/2027	101.92627	99.69736462	97.52777097	95.41547772	93.35855687	91.35516217	89.40352475	87.50194922	85.64880983
200511A00020	5/11/2020	1.4	2/1/2028	103.56249	100.3373523	97.22880694	94.23193806	91.34207236	88.55476395	85.86578156	83.2710965	80.76687149
200511A00021	5/11/2020	1.53	2/1/2029	105.21485	100.9896475	96.95670419	93.10621865	89.42894501	85.91616067	82.55963326	79.35158996	76.28468897
200511A00022	5/11/2020	1.6	2/1/2030	106.51488	101.2979515	96.36645749	91.70327841	87.29241295	83.11890116	79.16875064	75.42886851	71.88699846
200511A00023	5/11/2020	1.7	2/3/2031	107.6632	101.4607516	95.65422341	90.21629316	85.12166675	80.34691572	75.87032976	71.67178174	67.73260397
200512A00001	5/12/2020	1.17	5/12/2027	102.1493	99.67269514	97.2699576	94.93842273	92.67553827	90.47886127	88.34605254	86.27487148	84.26317113
200512A00010	5/12/2020	1.48	5/10/2030	105.55378	100.5123529	95.75471548	91.26322938	87.02144691	83.01402627	79.2266512	75.64595689	72.25946172
200512A00011	5/12/2020	1.48	5/10/2030	105.55378	100.5123529	95.75471548	91.26322938	87.02144691	83.01402627	79.2266512	75.64595689	72.25946172
200512A00013	5/12/2020	1.17	5/12/2027	102.1493	99.67269514	97.2699576	94.93842273	92.67553827	90.47886127	88.34605254	86.27487148	84.26317113
200512A00014	5/12/2020	1.17	5/12/2027	102.1493	99.67269514	97.2699576	94.93842273	92.67553827	90.47886127	88.34605254	86.27487148	84.26317113
200512A00017	5/12/2020	0.85	5/12/2025	100.16243	99.55707042	98.95907752	98.36831853	97.78466231	97.20798087	96.63814929	96.07504563	95.51855083
200512A00018	5/12/2020	0.85	5/12/2025	100.16243	99.55707042	98.95907752	98.36831853	97.78466231	97.20798087	96.63814929	96.07504563	95.51855083
200512A00020	5/12/2020	0.86	5/12/2025	100.17003	99.56045726	98.95832586	98.36349787	97.77584068	97.19522493	96.62152431	96.05461555	95.4943783
200512A00021	5/12/2020	0.86	5/12/2025	100.17003	99.56045726	98.95832586	98.36349787	97.77584068	97.19522493	96.62152431	96.05461555	95.4943783
200513A00003	5/13/2020	0.68	5/13/2025	100.08617	99.55223771	99.02399263	98.50134397	97.984203	97.47248287	96.96609852	96.46496671	95.96900589
200514A00008	5/14/2020	1.23	5/14/2030	103.95733	99.34494924	94.98513958	90.86242422	86.96236154	83.2714729	79.77717297	76.46770562	73.33208461
200518A00019	5/19/2020	0.9	5/19/2025	100.16889	99.61886015	99.07485759	98.5367843	98.00454363	97.47804101	96.95718393	96.44188186	95.93204617
200520A00009	5/20/2020	1.63	5/20/2038	108.85937	98.86544781	90.01908992	82.17627391	75.2120868	69.0180803	63.50000414	58.57586307	54.17424995
200521A00005	5/21/2020	0.75	5/21/2030	101.37623	98.59752131	95.93288358	93.37660628	90.92330785	88.56791441	86.30564	84.1319683	82.04263559
200521A00013	5/21/2020	2.09	5/21/2035	113.82547	103.4540322	94.12880759	85.73834172	78.1835956	71.37650313	65.23870533	59.70043626	54.69954166
200521A00015	5/21/2020	2.14	5/21/2036	114.91141	103.6086193	93.53917543	84.56126071	76.55005327	69.39561542	63.0010513	57.28090074	52.15973786
200521A00016	5/21/2020	2.18	5/21/2037	115.89567	103.6802369	92.89681411	83.36877685	74.9421558	67.48262773	60.87292004	55.01056929	49.80598411
200521A00017	5/21/2020	2.22	5/21/2038	117.00829	103.8842746	92.40300223	82.34834999	73.53370663	65.79781086	59.00119309	53.02313201	47.75904916
200522A00009	5/22/2020	0.96	5/22/2030	101.75807	98.94764114	96.2563332	93.67801754	91.20692607	88.83762846	86.56501006	84.38425141	82.29080914
200527A00012	5/27/2020	1.2	5/27/2027	102.29283	99.74786341	97.27874128	94.88274781	92.55728495	90.29986426	88.10810144	85.97971128	83.91250277
200527A00013	5/27/2020	1.13	11/25/2026	101.64216	99.59557975	97.60012912	95.6541916	93.75621577	91.90471043	90.0982418	88.33543084	86.61495069
200527A00014	5/27/2020	1.06	5/27/2026	100.9985	99.44399753	97.92083424	96.4281328	94.96504704	93.53076179	92.12449154	90.74547897	89.39299375
200527A00015	5/27/2020	0.99	11/26/2025	100.55149	99.48182847	98.43476801	97.4095945	96.40562793	95.42221624	94.45873379	93.51458015	92.58917874
200527A00016	5/27/2020	0.92	5/27/2025	100.18966	99.61774871	99.05234267	98.4933314	97.94060694	97.3940637	96.85359847	96.31911032	95.79050055
200529A00022	6/1/2020	0.98	6/1/2026	100.8833	99.3164761	97.78139742	96.27716878	94.80292694	93.3578406	91.9411089	90.55196004	89.18964992
200601A00009	6/1/2020	0.84	6/2/2025	100.14952	99.56139745	98.98015324	98.40566539	97.83781673	97.27649275	96.72158159	96.1729739	95.63056285
200604A00005	6/4/2020	0.89	6/4/2025	100.18149	99.58782024	99.0011589	98.42138232	97.84836986	97.28200371	96.72216879	96.16875264	95.62164538
200604A00009	6/4/2020	0.7	6/4/2025	100.115	99.52096906	98.93395644	98.35384117	97.78050224	97.21382147	96.65368341	96.09997525	95.5525868

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200604A00010	6/4/2020	0.89	6/4/2025	100.18149	99.58782024	99.0011589	98.42138232	97.84836986	97.28200371	96.72216879	96.16875264	95.62164538
200604A00012	6/4/2020	1.59	6/4/2030	106.68697	101.1403055	95.91468437	90.98989076	86.34708132	81.96868858	77.83832799	73.94071218	70.26157184
200604A00013	6/4/2020	2.21	6/4/2035	115.10079	104.6307962	95.21830999	86.75044987	79.12693394	72.25861658	66.0662006	60.47910404	55.43446247
200604A00014	6/4/2020	2.42	6/4/2040	121.93211	106.7872239	93.76855495	82.56213623	72.90202095	64.56272052	57.35286252	51.1098701	45.695494
200605A00005	6/5/2020	0.99	6/5/2025	100.2428	99.64620002	99.05667705	98.47410451	97.89836003	97.32932412	96.76688005	96.21091377	95.66131388
200605A00014	6/5/2020	1.02	6/5/2025	100.30355	99.63209255	98.96964042	98.31601747	97.67104779	97.03456011	96.40638769	95.78636809	95.17434312
200605A00016	6/5/2020	1.02	6/5/2025	100.30355	99.63209255	98.96964042	98.31601747	97.67104779	97.03456011	96.40638769	95.78636809	95.17434312
200605A00017	6/5/2020	1.02	6/5/2025	100.30355	99.63209255	98.96964042	98.31601747	97.67104779	97.03456011	96.40638769	95.78636809	95.17434312
200605A00018	6/5/2020	0.91	6/5/2025	100.22899	99.55791331	98.89584255	98.24259648	97.59799927	96.96187973	96.33407119	95.71441131	95.10274195
200608A00001	6/8/2020	1.34	6/7/2030	104.49907	99.82169084	95.40270306	91.22613129	87.27707851	83.54165055	80.00688276	76.66067256	73.49171718
200610A00006	6/10/2020	1.11	6/10/2027	102.05782	99.51476639	97.04926597	94.65844334	92.33955549	90.08998046	87.90721102	85.78884869	83.73259815
200611A00010	6/11/2020	1.08	6/11/2027	102.01728	99.43573175	96.93204467	94.50339826	92.14709052	89.86053537	87.64125678	85.48688326	83.39514265
200611A00011	6/11/2020	1.2	6/9/2028	103.2429	99.67902979	96.25626178	92.96824469	89.80894789	86.77264587	83.85390091	81.04754678	78.34867356
200611A00019	6/11/2020	0.88	12/11/2025	100.44648	99.33718637	98.25221687	97.19077521	96.15210317	95.13547479	94.1401947	93.16559646	92.21104115
200611A00020	6/11/2020	0.81	6/11/2025	100.14012	99.52755195	98.92245223	98.32468659	97.73412222	97.1506295	96.57408193	96.004356	95.44133112
200612A00004	6/12/2020	1.42	6/12/2040	105.46368	97.44413196	90.25502497	83.79729793	77.98478911	72.7424428	68.00478171	63.71460052	59.82184729
200615A00019	6/17/2020	1.34	6/16/2025	100.47974	99.85236391	99.23280664	98.62091975	98.01656136	97.41959306	96.8298798	96.24728983	95.67169456
200616A00005	6/16/2020	0.74	6/17/2030	101.37251	98.53487619	95.81553701	93.20849363	90.70809721	88.30902543	86.00626139	83.79507397	81.67099965
200623A00028	6/23/2020	1.23	6/23/2038	104.41109	97.62465196	91.45102784	85.82620546	80.69350337	76.00267312	71.7091168	67.77320515	64.15968279
200626A00014	6/26/2020	0.62	6/26/2025	100.08091	99.42710314	98.78179714	98.14482828	97.51603589	96.89526336	96.2823581	95.67717133	95.07955805
200629A00020	6/29/2020	1.4	6/28/2030	105.647	100.0661392	94.81206436	89.86397073	85.20248831	80.80957307	76.66840909	72.76331848	69.07967842
200629A00021	6/29/2020	1.21	6/29/2028	103.33447	99.71523997	96.24106153	92.90531853	89.70173703	86.62436528	83.66755497	80.82594387	78.09443945
200629A00023	6/29/2020	0.95	6/29/2026	100.90966	99.26644265	97.65757425	96.08204493	94.53888243	93.02715237	91.54595635	90.09443022	88.67174241
200708A00011	7/10/2020	2.87	7/10/2031	115.72553	108.8518423	102.4387819	96.45296292	90.86358931	85.64224401	80.76269292	76.20070592	71.93389357
200709A00002	7/10/2020	1.66	7/10/2025	100.76274	100.0689411	99.38467046	98.70973488	98.04394421	97.38711342	96.73906245	96.09961604	95.46860358
200709A00003	7/10/2020	1.63	7/10/2026	102.09668	100.4140288	98.76699256	97.15450489	95.57554266	94.02912336	92.51430307	91.0301745	89.57586519
200709A00004	7/10/2020	1.4	7/10/2025	100.58116	99.88806671	99.20449325	98.53024816	97.86514139	97.208988	96.56160804	95.92282635	95.29247242
200709A00005	7/10/2020	2.23	7/10/2030	110.39832	104.65338	99.24423861	94.14948838	89.34919803	84.824805	80.55901402	76.53570372	72.73984071
200709A00006	7/10/2020	2.58	7/10/2030	112.39815	106.5969662	101.1339351	95.98752821	91.13770144	86.56578614	82.254387	78.18728833	74.34936776
200709A00007	7/10/2020	1.67	7/9/2027	103.68039	101.0013319	98.40474779	95.88757469	93.44688397	91.07987649	88.78387583	86.55632188	84.39476486
200709A00008	7/10/2020	1.88	7/10/2026	102.52329	100.836876	99.18614765	97.57003421	95.98751073	94.43759297	92.9193353	91.43182881	89.97419945
200709A00019	7/9/2020	0.77	7/9/2025	100.17201	99.40857199	98.65679894	97.91642757	97.18719948	96.46886404	95.76117808	95.06390564	94.3768177
200709A00021	7/9/2020	0.83	7/9/2025	100.21834	99.45462974	98.70258765	97.96195086	97.23246089	96.51386702	95.80592603	95.10840188	94.42106548

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200709A00025	7/9/2020	1.37	7/9/2030	105.02385	99.87493311	95.02304053	90.44928051	86.13606883	82.06702946	78.22690487	74.60147358	71.17747418
200716A00004	7/16/2020	0.97	7/16/2027	101.75095	99.12623784	96.58399989	94.1211523	91.73474663	89.42196323	87.18010469	85.00658962	82.89894693
200720A00012	7/20/2020	0.77	7/15/2025	100.14627	99.44128264	98.74618269	98.06076093	97.38481624	96.71815305	96.06058112	95.41191543	94.7719759
200720A00034	7/20/2020	0.77	7/21/2025	100.15237	99.43106833	98.72011476	98.01928311	97.32835839	96.64713168	95.97539988	95.31296556	94.6596367
200720A00035	7/20/2020	1.81	7/20/2035	110.97021	100.6012941	91.2968274	82.94167584	75.43371399	68.68229439	62.60690462	57.13598769	52.20590501
200720A00037	7/22/2020	2.1	7/21/2025	101.12168	100.3964739	99.6816542	98.97699511	98.28228104	97.59730241	96.92185553	96.25574235	95.59877026
200720A00039	7/22/2020	2.48	7/21/2025	101.39862	100.6723041	99.95637975	99.25062712	98.55483037	97.86877976	97.19227143	96.52510714	95.86709413
200720A00042	7/22/2020	2.04	7/21/2026	102.85578	101.1372764	99.45560857	97.80965676	96.19834753	94.62065081	93.0755777	91.56217833	90.07953992
200720A00044	7/22/2020	2.22	7/21/2026	103.1684	101.4470941	99.76267566	98.114023	96.5000613	94.91975919	93.37212648	91.85621208	90.37110203
200724A00011	7/24/2020	1.41	7/26/2038	106.63355	96.57099178	87.68677308	79.83061606	72.87246347	66.69964115	61.21443562	56.33202125	51.97868521
200730A00002	7/30/2020	0.67	11/6/2024	99.997857	99.98122734	99.96461388	99.94801672	99.93143584	99.91487122	99.89832282	99.88179062	99.86527459
200730A00011	7/30/2020	1.15	7/28/2028	103.17714	99.48575747	95.94502881	92.54795437	89.28790062	86.15858215	83.1540409	80.26862691	77.49698026
200730A00013	7/30/2020	0.74	1/30/2025	100.00811	99.75685724	99.50686087	99.25811408	99.01060754	98.76433203	98.5192784	98.27543761	98.03280068
200803A00011	8/3/2020	0.72	8/4/2025	100.12967	99.37047615	98.62273286	97.88618055	97.16056964	96.44565787	95.74121013	95.04699811	94.36280015
200811A00003	8/11/2020	0.57	8/11/2025	100.08231	99.30351069	98.53676319	97.78179405	97.03833353	96.30612005	95.58489991	94.874427	94.17446251
200812A00004	8/12/2020	0.59	8/12/2025	100.09915	99.31756139	98.54811078	97.79052078	97.04451883	96.30984063	95.58622989	94.873438	94.17122375
200813A00019	8/13/2020	1.44	8/13/2030	105.42062	100.1818501	95.24955451	90.60404102	86.22698227	82.10131626	78.21115282	74.54168729	71.0791211
200813A00020	8/13/2020	1.44	8/13/2030	105.42062	100.1818501	95.24955451	90.60404102	86.22698227	82.10131626	78.21115282	74.54168729	71.0791211
200813A00023	8/13/2020	0.86	10/14/2025	100.3897	99.37050866	98.37208464	97.39380124	96.43505243	95.4952563	94.57385389	93.67030803	92.78410233
200814A00003	8/14/2020	0.96	8/14/2035	102.63528	97.29800184	92.35133134	87.76189452	83.49946941	79.53666656	75.84864219	72.41284242	69.20877475
200814A00009	8/18/2020	1.36	8/16/2028	104.02134	100.2645206	96.66269196	93.20863459	89.89550972	86.71683352	83.66645661	80.73854475	77.9275609
200814A00011	8/18/2020	1.58	8/16/2030	106.72693	100.9910354	95.59738817	90.52384266	85.74979344	81.25606452	77.02480291	73.03938057	69.28430426
200818A00004	8/18/2020	0.92	8/18/2026	100.97601	99.20069495	97.46481922	95.76722826	94.10681128	92.48249876	90.89326057	89.33810411	87.81607266
200818A00005	8/18/2020	1.05	8/18/2027	102.07742	99.31585338	96.64233211	94.05354378	91.5463263	89.1176555	86.76463815	84.48450543	82.27460667
200818A00006	8/18/2020	1.18	8/18/2028	103.3382	99.58917775	95.99516515	92.54893779	89.24365212	86.07281942	83.03028521	80.11021017	77.30705208
200818A00007	8/18/2020	1.31	8/20/2029	104.73308	99.98939313	95.48616216	91.20998883	87.1482908	83.28924724	79.62174862	76.13535025	72.82022901
200818A00008	8/18/2020	1.5	8/18/2031	106.57758	99.90726506	93.69608791	87.91015074	82.518226	77.49152976	72.80351868	68.42970486	64.34748684
200818A00009	8/18/2020	1.7	8/18/2033	109.04128	100.457124	92.6141932	85.44465358	78.88719969	72.88639693	67.39209233	62.35888709	57.74566427
200818A00010	8/18/2020	1.88	8/20/2035	111.73747	101.256134	91.8570537	83.42250171	75.84811981	69.04133688	62.91998468	57.41108225	52.44976769
200818A00012	8/18/2020	0.97	8/18/2027	101.80585	99.10084124	96.48321243	93.94967072	91.4970626	89.12237039	86.82270564	84.59530279	82.43751332
200824A00020	8/26/2020	1.57	8/26/2025	100.86108	100.0389083	99.23008985	98.43429885	97.65122256	96.88055819	96.1220125	95.37530143	94.64014972
200825A00007	8/27/2020	4.79	8/27/2026	108.11345	106.2469129	104.4220514	102.6376715	100.8926258	99.18580758	97.5161486	95.88261781	94.2842196
200826A00019	8/26/2020	0.98	8/26/2026	101.10495	99.30735373	97.55007501	95.83196396	94.15190714	92.5088305	90.9016977	89.32950851	87.79129726

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
200826A00021	8/26/2020	0.83	8/26/2025	100.24809	99.42869236	98.62261668	97.8295374	97.04914239	96.28112941	95.5252058	94.78108802	94.04850135
200826A00029	8/28/2020	1.16	11/27/2024	100.02387	99.94906788	99.87437778	99.79980434	99.72534728	99.65100635	99.57678128	99.50267181	99.42867767
200827A00007	8/27/2020	0.77	8/27/2025	100.19976	99.37787531	98.56938959	97.77398116	96.99133499	96.22114608	95.46311908	94.71696792	93.98241542
200828A00002	8/28/2020	0.73	8/28/2026	100.79531	98.99271917	97.2307171	95.50814553	93.82388794	92.1768669	90.56604237	88.99041015	87.44900042
200909A00001	9/9/2020	0.98	9/8/2028	102.92159	99.11690101	95.47194914	91.97924065	88.63167092	85.42250249	82.34534424	79.39413175	76.56310899
200910A00006	9/10/2020	0.96	9/10/2027	101.81276	99.05498579	96.38799933	93.80830587	91.31256862	88.89759753	86.56034186	84.29788334	82.10742961
200911A00011	9/11/2020	1.18	9/11/2030	104.02452	98.78234078	93.85073972	89.20951154	84.83987133	80.72434717	76.8466818	73.19174203	69.74543547
200911A00012	9/11/2020	1.18	9/11/2030	104.02452	98.78234078	93.85073972	89.20951154	84.83987133	80.72434717	76.8466818	73.19174203	69.74543547
200911A00013	9/11/2020	0.69	9/11/2025	100.18502	99.255842	98.34395092	97.44886937	96.57013491	95.70730192	94.85994086	94.02763759	93.2099926
200916A00015	9/16/2020	0.72	9/16/2025	100.18556	99.30953649	98.44874105	97.6027802	96.77127319	95.95385219	95.15016177	94.35985835	93.58260974
200922A00015	9/24/2020	1.09	9/24/2025	100.53292	99.63351125	98.75010788	97.88228425	97.02963127	96.19175405	95.36827129	94.55881473	93.76302855
200922A00027	9/24/2020	1.65	9/23/2025	101.03774	100.1385677	99.25533787	98.38762669	97.535028	96.69714969	95.87361311	95.06405248	94.26811439
200922A00034	9/24/2020	2.24	9/23/2026	103.59052	101.6930672	99.83967333	98.02905574	96.25997625	94.53124058	92.84169653	91.19023215	89.57577408
200922A00036	9/24/2020	1.55	9/23/2025	100.94716	100.0484334	99.16564233	98.2983646	97.44619407	96.60873875	95.78562008	94.9764724	94.18094238
200922A00037	9/24/2020	2.76	9/23/2025	102.04316	101.1390593	100.2509583	99.37843587	98.52108457	97.67851111	96.85033568	96.03619139	95.23572371
200922A00039	9/24/2020	3	9/23/2025	102.26055	101.3553818	100.4662276	99.59266488	98.73428599	97.89069737	97.06151894	96.24638358	95.44493653
200925A00002	9/25/2020	0.74	9/25/2025	100.21638	99.31582037	98.43134042	97.56251238	96.70892402	95.87017745	95.04588853	94.23568627	93.43921226
200925A00008	9/25/2020	0.74	9/25/2025	100.21638	99.31582037	98.43134042	97.56251238	96.70892402	95.87017745	95.04588853	94.23568627	93.43921226
200928A00003	9/28/2020	0.55	9/26/2025	100.1162	99.21242154	98.32484288	97.45303335	96.59657609	95.75506877	94.92812304	94.11536387	93.31642902
200928A00009	9/28/2020	1.51	9/28/2032	107.06015	99.35538893	92.25762096	85.71600062	79.68417757	74.11987969	68.98453574	64.2429346	59.86291742
201001A00011	10/1/2020	0.71	6/17/2025	100.08225	99.45356363	98.83275229	98.21966468	97.61415728	97.01609008	96.42532654	95.84173343	95.26518073
201001A00012	10/1/2020	0.74	9/16/2025	100.20329	99.32717995	98.46630033	97.62025632	96.78866714	95.97116493	95.16739426	94.37701152	93.59968452
201007A00008	10/7/2020	1.22	10/7/2030	104.13156	98.98587429	94.14482423	89.58849248	85.29837641	81.25727621	77.44919632	73.85925489	70.47360046
201007A00010	10/7/2020	1.22	10/7/2030	104.13156	98.98587429	94.14482423	89.58849248	85.29837641	81.25727621	77.44919632	73.85925489	70.47360046
201007A00014	10/7/2020	0.8	10/7/2025	100.31987	99.32363728	98.34731133	97.39029814	96.45202749	95.5319514	94.62954314	93.74429612	92.87572301
201015A00003	10/15/2020	0.75	10/15/2025	100.25179	99.29698141	98.3602399	97.44105905	96.53894893	95.65343766	94.78407064	93.93040971	93.09203245
201015A00020	10/15/2020	0.94	10/15/2027	101.81119	98.96818464	96.22138285	93.56697112	91.00131447	88.52094299	86.12254332	83.80295057	81.5591407
201015A00024	10/19/2020	1.53	10/18/2027	103.63312	100.6869967	97.83971714	95.08742999	92.42645876	89.85329022	87.36456617	84.95707566	82.6277477
201015A00025	10/19/2020	1.54	10/18/2027	103.663	100.7164274	97.86871029	95.11599642	92.45460897	89.88103434	87.39191403	84.98403676	82.65433124
201015A00030	10/19/2020	2.39	10/18/2027	106.20275	103.2180384	100.3331281	97.54414302	94.84737604	92.23928449	89.71648193	87.27573034	84.91393267
201015A00032	10/19/2020	2.33	10/19/2026	103.91951	101.9492607	100.0263422	98.14932578	96.31683612	94.52754834	92.78018603	91.07351906	89.40636157
201019A00005	10/19/2020	0.79	10/20/2025	100.2973	99.32874598	98.37877085	97.44684894	96.53246976	95.63514189	94.75439212	93.8897646	93.04082006
201021A00011	10/21/2020	1.11	10/21/2027	102.38399	99.44884333	96.61259161	93.87136674	91.2214784	88.65940071	86.18176385	83.78534627	81.46706723

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
201021A00012	10/21/2020	1.85	10/19/2035	111.46715	100.8584785	91.36068047	82.85127587	75.22187268	68.37648008	62.23003433	56.70710622	51.74076703
201022A00012	10/26/2020	2.25	10/24/2030	110.82344	104.7895706	99.12441189	93.80352031	88.80419822	84.10535642	79.68739236	75.53207798	71.62245679
201028A00003	10/30/2020	1.42	2/27/2026	101.29047	99.97063193	98.67437681	97.40112051	96.1502977	94.92136124	93.71378151	92.52704565	91.36065694
201028A00005	10/30/2020	1.85	10/31/2025	101.38385	100.3796796	99.39530878	98.43015869	97.48367094	96.55530859	95.64455514	94.75091353	93.87390525
201028A00011	10/28/2020	0.91	4/28/2026	100.70243	99.22695629	97.78038495	96.36194423	94.97088712	93.60649258	92.2680644	90.95493009	89.66643993
201029A00002	10/29/2020	0.59	10/29/2025	100.18773	99.19430656	98.22042526	97.26551716	96.32903278	95.41044366	94.50924137	93.62493658	92.75705813
201029A00004	10/29/2020	1.49	10/29/2038	107.51786	97.25016303	88.20181519	80.21501065	73.15349327	66.8994896	61.35109457	56.42004033	52.02979019
201030A00001	11/2/2020	2.54	10/29/2040	124.36362	108.7097511	95.29496766	83.78200164	73.88621431	65.3671374	58.02141235	51.67688861	46.18768587
201030A00002	11/2/2020	2.8	10/29/2040	128.33504	112.3850353	98.70461813	86.95290076	76.84209479	68.12898621	60.60781938	54.10434799	48.47085671
201030A00003	11/2/2020	2.58	10/29/2040	124.9746	109.2751795	95.81952927	84.26983228	74.34096516	65.79203722	58.41932112	52.0503439	46.53894292
201030A00004	11/2/2020	2.56	10/29/2040	124.66911	108.9924653	95.55724847	84.02591696	74.11358974	65.57958731	58.22036674	51.86361625	46.3633144
201030A00005	11/2/2020	2.49	10/29/2040	123.59988	108.0029657	94.63926565	83.17221335	73.31777576	64.83601263	57.52402638	51.2100695	45.74861455
201030A00012	10/30/2020	0.63	10/30/2025	100.2291	99.23275098	98.25604973	97.29842426	96.35932078	95.43820673	94.53456979	93.64791693	92.77777348
201030A00016	10/30/2020	1.14	10/8/2027	102.44763	99.54526935	96.73958476	94.0268432	91.40347713	88.86607598	86.41137828	84.03626429	81.73774902
201030A00017	10/30/2020	1.14	10/15/2027	102.46176	99.54102089	96.71816434	93.98938804	91.35105804	88.79970138	86.33199796	83.9447729	81.63498937
201030A00018	10/30/2020	1.15	10/22/2027	102.50588	99.56630538	96.72584103	93.9806109	91.32691362	88.76121288	86.28012908	83.88043138	81.55903034
201030A00019	10/30/2020	1.15	10/29/2027	102.5202	99.56223464	96.70460248	93.94335358	91.27471881	88.69509826	86.20105256	83.78929475	81.45668262
201103A00005	11/3/2020	0.89	11/4/2030	101.6576	98.61576903	95.70841984	92.928367	90.26886085	87.7235607	85.28650723	82.95209699	80.71505871
201105A00003	11/6/2020	2.24	11/4/2030	110.79446	104.7327792	99.04318947	93.70091593	88.68295759	83.96795098	79.53604543	75.36878846	71.4490205
201105A00016	11/9/2020	2.18	11/8/2027	105.68206	102.6489424	99.71900892	96.88817271	94.1525364	91.50837901	88.9521468	86.48044474	84.09002841
201109A00012	11/9/2020	1.39	11/8/2030	105.19837	99.78610335	94.70138811	89.922453	85.42908926	81.20253266	77.22535261	73.48135033	69.95546541
201110A00003	11/10/2020	1.12	11/10/2027	102.39157	99.47609009	96.66084737	93.94180245	91.31510423	88.77708025	86.32422722	83.95320204	81.66081339
201116A00011	11/16/2020	0.71	11/15/2024	99.994922	99.95336046	99.91184966	99.87038993	99.82898118	99.78762329	99.74631618	99.70505975	99.6638539
201116A00021	11/16/2020	0.53	11/15/2024	99.990606	99.94901601	99.9074778	99.86599104	99.82455561	99.78317142	99.74183835	99.70055632	99.6593252
201116A00024	11/18/2020	2.36	11/15/2034	116.14904	106.1222051	97.05980744	88.86355278	81.44564895	74.72763293	68.63933641	63.11797073	58.10731686
201116A00025	11/18/2020	1.96	11/15/2032	110.70977	102.744481	95.41270165	88.66072624	82.43966034	76.70496818	71.41606359	66.53594128	62.03084423
201117A00016	11/17/2020	0.52	11/18/2024	99.988073	99.93817089	99.88833486	99.83856469	99.78886023	99.73922134	99.6896479	99.64013975	99.59069677
201118A00009	11/18/2020	0.61	11/18/2025	100.22068	99.17320407	98.14745631	97.14276404	96.15848474	95.19400184	94.24872333	93.32208062	92.41352735
201119A00021	11/23/2020	2.22	11/21/2030	110.72595	104.6208808	98.89304457	93.51716406	88.46978517	83.72913434	79.27498966	75.08856255	71.15238905
201119A00023	11/23/2020	2.23	11/21/2030	110.78671	104.6798295	98.95025867	93.57271933	88.52375337	83.78158346	79.32598414	75.13816352	71.20065449
201123A00009	11/25/2020	1.02	11/25/2024	100.01247	99.94321032	99.87405216	99.80499819	99.73604819	99.66720192	99.59845915	99.52981965	99.4612832
201123A00010	11/25/2020	1.48	11/24/2025	101.07645	100.0091573	98.96428295	97.94112574	96.93901441	95.9573051	94.99537996	94.05264587	93.12853318
201123A00011	11/25/2020	1.41	11/24/2025	101.00105	99.93419025	98.88974312	97.86700697	96.86531068	95.88401052	94.92248879	93.98015248	93.05643209



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
201203A00005	12/3/2020	0.78	12/3/2026	101.09352	99.02811552	97.01475459	95.05178152	93.13760159	91.2706828	89.44955286	87.67279635	85.93905206
201204A00015	12/8/2020	1.07	12/8/2025	100.65586	99.55336752	98.47486081	97.41956528	96.38673846	95.37566922	94.38567617	93.41610609	92.46633251
201207A00009	12/7/2020	1.01	12/7/2027	102.10933	99.13472898	96.26433835	93.49387566	90.81925992	88.23660404	85.74220423	83.33252997	81.0042147
201207A00021	12/7/2020	1.85	12/7/2050	112.91356	99.7574951	88.68636913	79.32375599	71.36664559	64.57033662	58.73656944	53.70417861	49.3417117
201208A00029	12/10/2020	1.52	12/9/2025	101.16063	100.052446	98.96841514	97.9077514	96.8697058	95.85356108	94.85863	93.88425383	92.92980086
201208A00031	12/10/2020	1.43	12/9/2024	100.06753	99.95953092	99.85177633	99.7442673	99.63700294	99.52998238	99.42320476	99.31666921	99.21037487
201210A00021	12/10/2020	0.89	12/10/2027	102.05918	98.99022794	96.02856823	93.16983768	90.40988077	87.74473578	85.17062444	82.68394213	80.2812488
201211A00001	12/11/2020	0.95	12/11/2030	102.97682	98.00752658	93.33370804	88.93579493	84.79562891	80.89635335	77.22231263	73.75895976	70.49277174
201215A00001	12/15/2020	0.76	12/15/2025	100.31375	99.19454455	98.10011607	97.0296518	95.98237206	94.95753067	93.95441316	92.9723351	92.01064053
201216A00004	12/16/2020	0.74	9/8/2025	100.19165	99.33727562	98.49738349	97.67161035	96.85960269	96.06101871	95.27552786	94.50281033	93.74255669
201216A00013	12/16/2020	0.59	12/16/2025	100.21047	99.08786445	97.99019508	96.91664255	95.86641973	94.83877341	93.83298248	92.84835625	91.88423285
201218A00014	12/18/2020	0.57	12/18/2025	100.18817	99.0603309	97.95767093	96.87935121	95.82457365	94.79257474	93.78262362	92.79402041	91.82609457
201221A00014	12/21/2020	0.76	12/19/2025	100.31592	99.18599029	98.08131154	97.0010473	95.94439594	94.91059057	93.8988972	92.90861297	91.93906451
201221A00015	12/21/2020	0.88	12/4/2026	101.13899	99.07372741	97.06049413	95.09763214	93.18354711	91.31670738	89.49564101	87.71893294	85.98522232
201221A00022	12/21/2020	0.51	12/19/2025	100.116	98.94407425	97.79992911	96.6825775	95.59108249	94.52455045	93.4821286	92.46300269	91.46639482
201223A00012	12/23/2020	0.91	12/18/2026	101.22901	99.12609292	97.07682271	95.07946376	93.13234767	91.23387293	89.3825017	87.57675667	85.81521819
201223A00013	12/23/2020	0.9	12/11/2026	101.19437	99.11016818	97.07880618	95.09858444	93.16787174	91.28510164	89.44876936	87.65742884	85.90968992
201228A00013	12/28/2020	0.84	12/30/2030	101.51151	98.43315955	95.49255505	92.6822548	89.99527253	87.42504969	84.96542631	82.61061407	80.35517133
210104A00006	11/22/2021	0.88	11/20/2026	101.10908	99.08175448	97.10489185	95.1769036	93.2962664	91.46151567	89.67124282	87.92409268	86.21876105
210104A00007	11/23/2021	0.88	11/23/2026	101.11586	99.08032648	97.09558169	95.1600295	93.27213158	91.43040918	89.63344032	87.87985716	86.1683435
210104A00009	12/20/2021	0.89	12/18/2026	101.186	99.08355464	97.03474652	95.03784039	93.0911681	91.19312843	89.34218374	87.536857	85.77572878
210104A00010	11/22/2021	0.88	11/20/2026	101.10908	99.08175448	97.10489185	95.1769036	93.2962664	91.46151567	89.67124282	87.92409268	86.21876105
210104A00011	11/23/2021	0.88	11/23/2026	101.11586	99.08032648	97.09558169	95.1600295	93.27213158	91.43040918	89.63344032	87.87985716	86.1683435
210104A00012	12/20/2021	0.89	12/18/2026	101.186	99.08355464	97.03474652	95.03784039	93.0911681	91.19312843	89.34218374	87.536857	85.77572878
210107A00007	1/7/2021	0.84	1/7/2026	100.44958	99.21176573	98.00196772	96.81922856	95.66263857	94.53132881	93.42446878	92.3412643	91.28095555
210114A00009	1/19/2021	2.66	1/17/2030	112.0414	106.7202973	101.6861394	96.9218968	92.41164117	88.14047127	84.094441	80.26049272	76.6263957
210125A00006	1/27/2021	2.16	1/26/2027	104.12289	101.8847636	99.70570132	97.58370936	95.51687709	93.50337461	91.54144849	89.62941785	87.76567067
210125A00007	1/27/2021	2.98	1/27/2031	115.66099	109.2312493	103.2062598	97.5583128	92.26174555	87.29277814	82.62936537	78.25106081	74.13889235
210127A00008	1/27/2021	0.93	1/27/2027	101.34738	99.13852293	96.98819328	94.89440909	92.85527257	90.8689663	88.93374896	87.04795145	85.20997318
210127A00009	1/27/2021	1.3	7/27/2029	104.64182	99.96222448	95.51702287	91.29322422	87.27863382	83.4617974	79.83195166	76.37897843	73.0933622
210127A00010	1/27/2021	1.41	7/26/2030	105.724	100.0701642	94.75121198	89.74558001	85.03320501	80.59541419	76.41482113	72.47523019	68.76154844
210129A00013	1/29/2021	0.65	1/9/2025	99.982258	99.78883849	99.59617877	99.40427402	99.21311976	99.02271152	98.83304487	98.64411545	98.45591888
210201A00001	2/1/2021	0.77	12/16/2025	100.32567	99.20371644	98.10665739	97.03367595	95.98398698	94.9568391	93.95151294	92.96731947	92.00359836

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210201A00002	2/1/2021	1.19	2/1/2036	103.5169	97.91284801	92.7348994	87.94529272	83.50996031	79.39814014	75.58202986	72.03647933	68.73871723
210201A00003	2/2/2021	0.74	10/15/2025	100.24213	99.2873656	98.35067372	97.43154185	96.52948007	95.64401653	94.77469662	93.92108222	93.0827509
210201A00004	2/3/2021	1.15	2/3/2025	100.11816	99.85572575	99.59466695	99.33497288	99.07663283	98.81963625	98.56397265	98.30963169	98.05660311
210201A00012	2/3/2021	0.75	11/17/2025	100.28482	99.2409028	98.21855677	97.21712289	96.23596517	95.27447315	94.33206067	93.40816462	92.5022439
210208A00004	2/11/2021	0.76	10/15/2025	100.26146	99.30659721	98.36980607	97.45057625	96.54841778	95.66285879	94.79344465	93.9397372	93.101314
210208A00008	2/11/2021	0.78	11/17/2025	100.31656	99.27245785	98.24993504	97.24832689	96.26699736	95.30533591	94.36275634	93.4386955	92.53261221
210209A00029	2/12/2021	0.8	12/15/2025	100.35916	99.23967722	98.14497903	97.07424915	96.02670779	95.00160868	93.99823724	93.01590895	92.05396776
210212A00004	2/12/2021	1.1	2/12/2036	103.45341	97.84005039	92.65417082	87.85783924	83.4168368	79.30026897	75.48021727	71.93142974	68.63104574
210212A00006	2/12/2021	0.77	2/12/2026	100.42144	99.10319487	97.80867074	96.53728028	95.28845552	94.0616467	92.85632152	91.67196446	90.50807612
210212A00007	2/12/2021	0.76	2/12/2026	100.40494	99.0944992	97.80763021	96.54374924	95.30229151	94.08271032	92.88447639	91.70707713	90.55001602
210212A00008	2/12/2021	0.95	10/13/2026	101.1677	99.24110667	97.36055491	95.52466921	93.73212088	91.98162976	90.27196206	88.60192832	86.97038154
210212A00014	2/17/2021	1.38	2/17/2026	101.19551	99.90169103	98.6340755	97.39187596	96.1743378	94.98073652	93.81037621	92.66258815	91.53672942
210212A00016	2/17/2021	1.32	2/18/2025	100.19487	99.891081	99.58913906	99.28902851	98.99073266	98.69423503	98.39951934	98.10656949	97.81536958
210216A00006	2/16/2021	1.44	2/15/2030	106.13402	100.8724811	95.90146479	91.20345628	86.76209085	82.56206791	78.58907622	74.82972479	71.27147896
210216A00007	2/16/2021	1.3	2/16/2029	104.62828	100.3620818	96.29225055	92.40873863	88.7020653	85.16328287	81.78394369	78.55606945	75.47212251
210216A00008	2/16/2021	0.71	2/17/2026	100.42015	99.13005086	97.86611546	96.62756229	95.41363702	94.22361543	93.05680194	91.91252814	90.79015148
210216A00009	2/16/2021	0.92	2/16/2027	101.56164	99.2895508	97.07903195	94.92803375	92.8345898	90.79681254	88.81288943	86.88107943	84.99970958
210216A00011	2/17/2021	0.83	12/15/2025	100.39321	99.27352671	98.17862625	97.10769716	96.05995959	95.03466718	94.03110529	93.04858933	92.08646318
210217A00005	2/17/2021	0.83	2/14/2031	101.75806	98.58732293	95.56187988	92.67371069	89.91529556	87.27958422	84.75996342	82.35022676	80.04454694
210217A00009	2/18/2021	0.68	11/15/2024	99.993651	99.95209058	99.91058086	99.8691222	99.82771451	99.78635769	99.74505165	99.70379628	99.66259149
210218A00010	2/18/2021	1.72	2/18/2031	107.82218	101.5726421	95.72451055	90.2499791	85.12330586	80.32064808	75.81991273	71.60061958	67.64377568
210218A00011	2/22/2021	0.85	10/24/2025	100.36227	99.38255868	98.42184529	97.47958362	96.55524648	95.6483266	94.75833566	93.88480345	93.02727703
210219A00004	2/19/2021	0.91	2/19/2026	100.58462	99.28996152	98.02090691	96.77671043	95.55665694	94.36005896	93.18625532	92.03460985	90.90451022
210219A00008	2/22/2021	0.86	12/1/2025	100.4158	99.33349258	98.27433117	97.23758282	96.2225429	95.22853605	94.25491463	93.30105733	92.36636785
210224A00002	2/25/2021	0.88	11/3/2025	100.4067	99.39975462	98.41286529	97.44543544	96.49689456	95.56669422	94.65430705	93.7592257	92.88096192
210224A00003	2/26/2021	0.9	12/3/2025	100.46152	99.37358365	98.30903072	97.26711616	96.24712468	95.24837078	94.27019729	93.31197388	92.37309572
210224A00004	2/26/2021	0.91	12/18/2025	100.4869	99.35860456	98.25546249	97.17663785	96.12133412	95.08878923	94.07827369	93.08908892	92.12056556
210224A00006	2/26/2021	0.88	10/21/2025	100.38716	99.41542586	98.46238265	97.52749718	96.61025467	95.71015965	94.82673504	93.95952132	93.10807571
210225A00003	3/1/2021	0.93	9/24/2025	100.38755	99.48885818	98.60616115	97.73903515	96.88707127	96.04987478	95.22706458	94.41827255	93.62314304
210225A00006	2/25/2021	0.98	2/25/2026	100.69504	99.38444675	98.0978921	96.83475098	95.59442165	94.37632288	93.17989308	92.00458945	90.84988723
210225A00007	2/25/2021	1.79	8/23/2030	107.95994	102.1707302	96.72736076	91.6074289	86.79009685	82.25597127	77.98699597	73.96635319	70.17837265
210225A00012	3/1/2021	0.91	8/25/2025	100.31259	99.49561806	98.69188184	97.90106204	97.12284939	96.35694443	95.60305713	94.86090648	94.1302202
210225A00013	3/1/2021	0.93	10/6/2025	100.40997	99.47867223	98.5645429	97.66711151	96.78592408	95.92054298	95.07054614	94.23552643	93.41509095

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210225A00016	3/1/2021	0.88	7/15/2025	100.22461	99.51931668	98.82391074	98.13818598	97.46194124	96.79498089	96.13711467	95.48815748	94.84792922
210226A00002	2/26/2021	0.86	2/26/2025	100.06128	99.73577632	99.41238851	99.09109279	98.77186893	98.45469696	98.13955716	97.82643008	97.51529649
210226A00004	3/1/2021	1.04	12/5/2025	100.61844	99.52421259	98.45362044	97.40590216	96.38033145	95.37621244	94.39287814	93.42968896	92.48603127
210226A00012	2/26/2021	2.31	2/26/2036	116.68549	105.4871069	95.48581369	86.54657327	78.55023456	71.39159541	64.97770699	59.22639152	54.06494573
210302A00005	3/5/2021	0.92	9/10/2025	100.35113	99.49058397	98.64471319	97.8131484	96.99552916	96.19150705	95.40074519	94.62291772	93.85770941
210303A00006	3/4/2021	0.97	10/10/2025	100.45511	99.5127635	98.58799294	97.6803101	96.78924499	95.91434468	95.05517258	94.21130772	93.382344
210304A00002	3/5/2021	0.93	7/10/2025	100.25293	99.56110145	98.8787883	98.2057914	97.54192089	96.88699203	96.24082506	95.60324499	94.97408148
210304A00006	3/4/2021	1.02	3/4/2026	100.76431	99.43513978	98.12957805	96.84705324	95.58700888	94.34890596	93.13222229	91.9364518	90.76110396
210305A00006	3/8/2021	1.02	8/11/2025	100.37442	99.59518625	98.82799717	98.07257588	97.32865319	96.5959681	95.87426742	95.16330555	94.46284415
210305A00013	3/5/2021	2.41	3/5/2036	117.81375	106.5347612	96.46169744	87.4584099	79.40478511	72.19478517	65.73473502	59.94182544	54.74280381
210309A00004	3/11/2021	0.87	11/25/2024	100.00202	99.93276918	99.86361994	99.79457489	99.72563378	99.6567964	99.5880625	99.51943186	99.45090425
210311A00007	3/11/2021	1.06	3/11/2026	100.83056	99.4825229	98.1587285	96.85858129	95.58150315	94.32693434	93.09433282	91.88317351	90.69294765
210312A00008	3/12/2021	1.13	3/12/2026	100.92857	99.57719426	98.2501677	96.94688664	95.66676955	94.40925343	93.1737931	91.95986046	90.7669439
210315A00003	3/15/2021	1.13	3/13/2026	100.93049	99.57647539	98.2468961	96.94114928	95.65865028	94.39883313	93.16114979	91.94506945	90.75007786
210319A00003	3/19/2021	0.95	3/19/2025	100.11728	99.7341012	99.35385715	98.97651697	98.60204736	98.23041557	97.86158932	97.49553682	97.13222678
210319A00009	3/19/2021	1.1	3/19/2026	100.93586	99.52448443	98.14022155	96.78235628	95.45019765	94.14307838	92.86035388	91.60140129	90.36561851
210324A00002	3/24/2021	2.06	3/24/2031	110.05074	103.6426504	97.65046426	92.04507673	86.79955914	81.88898662	77.2902795	72.98205805	68.9445093
210324A00003	3/24/2021	1.18	3/24/2026	101.02208	99.63846604	98.28030381	96.94694778	95.63777834	94.35219606	93.08962088	91.84949131	90.63126373
210330A00021	3/30/2021	2.16	3/28/2031	110.70084	104.2620978	98.24151303	92.60979148	87.33983249	82.40655453	77.78673509	73.45886423	69.40301018
210330A00022	3/30/2021	1.27	3/30/2026	101.16269	99.76226022	98.38784228	97.03877962	95.71443287	94.41418366	93.1374338	91.88360448	90.65213542
210331A00007	3/31/2021	1.25	3/31/2031	102.92991	99.64730851	96.51828077	93.53419024	90.68694819	87.96897931	85.3731856	82.89291301	80.52192071
210407A00012	4/7/2021	0.94	4/7/2025	100.13746	99.70221193	99.27074151	98.84300102	98.41894217	97.99851751	97.58168041	97.16838503	96.75858632
210407A00013	4/7/2021	1.23	4/7/2026	101.12693	99.70513584	98.31014535	96.94127157	95.59784616	94.27922314	92.98477793	91.71390645	90.46602433
210408A00007	4/8/2021	1.05	4/8/2031	102.52275	99.24759484	96.12587801	93.14895686	90.30874011	87.59765068	85.00858957	82.53490239	80.17034847
210409A00010	4/9/2021	1.05	4/9/2031	102.49547	99.25688804	96.16928022	93.22416881	90.41361441	87.73018125	85.16690177	82.71724392	80.37508099
210420A00009	4/20/2021	1.08	12/5/2025	100.66274	99.5682529	98.49740332	97.44943143	96.42361084	95.41924558	94.43566859	93.47224017	92.52834663
210420A00010	4/20/2021	1.08	12/12/2025	100.67273	99.55940074	98.47053415	97.40532743	96.36301643	95.3428696	94.34418626	93.36629498	92.40855206
210420A00035	4/20/2021	1.92	4/20/2034	107.93788	101.9896731	96.48752578	91.39301291	86.67132438	82.29090373	78.22312241	74.44198865	70.92388697
210423A00001	4/23/2021	1.72	4/23/2036	107.18691	101.2902216	95.84844695	90.82071243	86.17019827	81.86370398	77.8712648	74.16581149	70.72286811
210423A00003	4/23/2021	1.31	4/23/2031	103.40268	100.0988726	96.94989302	93.94701298	91.08206521	88.34740178	85.7358575	83.24071613	80.85567922
210428A00006	4/28/2021	1.23	4/28/2026	101.18404	99.70479216	98.25451057	96.83242369	95.4377828	94.06986517	92.72797297	91.41143218	90.11959156
210428A00007	4/28/2021	1.74	10/27/2028	105.74882	101.76834	97.95952356	94.31407438	90.82414349	87.48230062	84.28150949	81.21510478	78.2767706
210428A00008	4/28/2021	1.93	4/26/2030	108.50104	103.0056703	97.82253715	92.93230151	88.31692128	83.95955547	79.8444782	75.95699936	72.28339124

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210428A00015	4/28/2021	2.02	4/28/2031	109.8696	103.3763602	97.31062638	91.64204891	86.34258359	81.38630327	76.74922789	72.40916883	68.34558656
210429A00005	4/29/2021	2.08	4/29/2031	110.26206	103.7536821	97.67374081	91.99181647	86.67980091	81.71170844	77.06350525	72.71295341	68.63946808
210507A00008	5/7/2021	1.94	5/7/2031	109.3669	102.8666917	96.79612992	91.12461264	85.82386415	80.8677506	76.23210732	71.89458095	67.83448498
210507A00009	5/7/2021	2.02	5/7/2032	110.73877	103.2557066	96.33321786	89.92638169	83.99409664	78.49873605	73.40583783	68.68382337	64.30374276
210512A00011	5/12/2021	1.16	5/12/2026	101.16397	99.6146651	98.09698476	96.61002096	95.15290079	93.72478436	92.32486313	90.95235853	89.60652048
210512A00012	5/12/2021	1.16	5/12/2026	101.16397	99.6146651	98.09698476	96.61002096	95.15290079	93.72478436	92.32486313	90.95235853	89.60652048
210514A00007	5/14/2021	0.95	5/15/2028	101.23269	99.42280181	97.66481539	95.95681731	94.29698006	92.68355671	91.11487678	89.58934227	88.10542403
210514A00010	5/14/2021	1.34	5/14/2031	103.48783	100.1876001	97.04270779	94.0443483	91.18428113	88.45479319	85.84866129	83.35911774	80.97981845
210514A00033	5/18/2021	2.8	5/18/2028	108.90374	105.2968734	101.8298983	98.49662693	95.29117669	92.20795738	89.24165495	86.38721614	83.63983417
210518A00023	5/18/2021	1.17	5/18/2026	101.14819	99.61623356	98.11489906	96.64333925	95.20073795	93.78630845	92.39929215	91.03895731	89.70459784
210525A00004	5/25/2021	1.02	12/19/2025	100.61394	99.48219103	98.37572626	97.29370337	96.23532004	95.1998087	94.18643472	93.1944946	92.22331437
210526A00014	5/26/2021	1.01	12/19/2025	100.60247	99.47079869	98.36440262	97.28244737	96.22413065	95.18868493	94.17537559	93.18349915	92.21238168
210526A00017	5/26/2021	2.13	5/26/2033	112.58475	104.0587893	96.24849723	89.08995013	82.52524705	76.50191163	70.97235841	65.89341412	61.22588807
210526A00018	5/26/2021	1.11	5/26/2026	101.07518	99.52268485	98.00146012	96.5106289	95.04934813	93.61680562	92.21221863	90.83483252	89.48391947
210527A00019	5/27/2021	1	5/27/2026	101.02905	99.47216291	97.94669366	96.45176389	94.98652451	93.55015764	92.14187509	90.7609171	89.40655096
210527A00026	6/1/2021	2.78	6/1/2028	108.92792	105.2830066	101.7806077	98.41436006	95.17822388	92.06646255	89.07362548	86.19453207	83.42425671
210601A00002	6/1/2021	0.9	6/2/2025	100.18511	99.59687196	99.01550908	98.44090356	97.87293818	97.31149845	96.75647247	96.20775091	95.66522688
210603A00008	6/3/2021	1.74	6/3/2036	107.17687	101.3839255	96.03672264	91.09510227	86.52290987	82.28756247	78.3596678	74.71268672	71.32263367
210603A00015	6/7/2021	2.71	6/7/2028	108.71637	105.0587458	101.5446999	98.16780025	94.92193872	91.80131521	88.80042007	85.91401782	83.13713173
210608A00017	6/10/2021	2.67	6/8/2029	110.88712	106.1920806	101.7245598	97.47230681	93.42380158	89.56820314	85.89530568	82.39549775	79.0597244
210609A00007	6/11/2021	2.6	6/11/2029	110.58051	105.8842802	101.4160634	97.163561	93.11520944	89.260128	85.58807452	82.08940437	78.75503227
210609A00013	6/11/2021	1.64	6/11/2025	100.65318	100.0388278	99.43195915	98.83243979	98.24013663	97.65491986	97.07666277	96.50524162	95.94053564
210610A00012	6/11/2021	1.9	6/10/2026	102.40171	100.7976301	99.22634824	97.68692495	96.17845652	94.7000733	93.25093807	91.83024444	90.43721551
210610A00014	6/11/2021	2.03	6/10/2026	102.61279	101.0069312	99.43390551	97.89276919	96.3826177	94.90258058	93.45181982	92.0295283	90.63492838
210611A00006	6/11/2021	1.85	6/11/2031	108.84129	102.2683357	96.13551096	90.41108201	85.06575901	80.07249809	75.40631798	71.04413238	66.96459695
210611A00010	6/11/2021	1.02	6/11/2026	101.01711	99.3969024	97.81086229	96.25796986	94.73724417	93.24774324	91.78856207	90.35883079	88.95771292
210611A00011	6/11/2021	1.02	6/11/2026	101.01711	99.3969024	97.81086229	96.25796986	94.73724417	93.24774324	91.78856207	90.35883079	88.95771292
210611A00012	6/11/2021	1.02	6/11/2026	101.01711	99.3969024	97.81086229	96.25796986	94.73724417	93.24774324	91.78856207	90.35883079	88.95771292
210616A00006	2/11/2022	0.86	2/11/2025	100.04852	99.7642294	99.48156596	99.20051118	98.92105127	98.64317262	98.36686177	98.0921054	97.81889035
210616A00007	3/18/2022	0.9	3/18/2025	100.09686	99.71646806	99.33897011	98.9643353	98.59253104	98.22352522	97.85728622	97.49378292	97.13298462
210616A00008	5/2/2022	0.95	5/2/2025	100.17462	99.67093706	99.17229671	98.67862715	98.18985439	97.70590588	97.22671051	96.75219856	96.28230167
210616A00009	2/11/2022	0.86	2/11/2025	100.04852	99.7642294	99.48156596	99.20051118	98.92105127	98.64317262	98.36686177	98.0921054	97.81889035
210616A00011	5/2/2022	0.95	5/2/2025	100.17462	99.67093706	99.17229671	98.67862715	98.18985439	97.70590588	97.22671051	96.75219856	96.28230167

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210616A00012	3/18/2022	0.9	3/18/2025	100.09686	99.71646806	99.33897011	98.9643353	98.59253104	98.22352522	97.85728622	97.49378292	97.13298462
210621A00008	6/21/2021	1.04	6/23/2025	100.30113	99.65533539	99.01782899	98.38844974	97.76704295	97.15345789	96.54754756	95.94916867	95.35818143
210623A00028	6/23/2021	1.22	6/23/2026	101.34181	99.71120092	98.11444425	96.5505498	95.01856735	93.51758334	92.04671901	90.60512879	89.19199865
210624A00004	6/24/2021	1.01	6/24/2025	100.28307	99.63462546	98.99453145	98.36263057	97.73876629	97.12278606	96.51454117	95.91388663	95.32068105
210624A00005	6/24/2021	1.22	6/24/2026	101.34521	99.71184453	98.11242687	96.54596202	95.01149581	93.50811091	92.03492501	90.59108918	89.17578622
210624A00022	6/24/2021	0.87	6/24/2025	100.24323	99.59427136	98.95368155	98.32130053	97.6969713	97.08054083	96.47185995	95.87078322	95.27716883
210624A00025	6/24/2021	1.43	6/24/2027	102.98286	100.3531789	97.80354197	95.33101523	92.93279149	90.60618576	88.34862884	86.15766152	84.03092894
210624A00026	6/24/2021	1.6	6/23/2028	104.75013	101.1210721	97.63664581	94.29028596	91.07576473	87.98717253	85.01889966	82.16561915	79.42227072
210629A00005	6/29/2021	1.25	6/29/2026	101.41249	99.76490741	98.15175723	96.57202263	95.02472925	93.5089407	92.02375663	90.56831101	89.14177048
210629A00009	6/29/2021	1.14	12/31/2025	100.77058	99.60568135	98.46751412	97.35516749	96.26777165	95.20449545	94.16454425	93.14715796	92.1516092
210629A00012	6/29/2021	1.14	12/29/2025	100.7674	99.6078785	98.47485234	97.36741801	96.28471703	95.22592889	94.190269	93.17698674	92.18536367
210629A00014	6/29/2021	1.78	12/28/2029	107.38183	102.2326884	97.36050747	92.7489425	88.3827006	84.24746754	80.32983964	76.61726088	73.09796469
210629A00015	6/29/2021	1.89	6/27/2031	109.13881	102.5144157	96.33596968	90.57114084	85.19010608	80.16534206	75.47143625	71.08491436	66.98408291
210701A00007	7/1/2021	1.22	7/1/2026	101.36875	99.71619245	98.09825212	96.51390453	94.96216737	93.4420967	91.95278509	90.49335979	89.06298108
210706A00006	7/6/2021	1.15	7/6/2026	101.26579	99.60098177	97.9712616	96.37558509	94.81294951	93.28239166	91.78298591	90.31384231	88.87410487
210706A00014	7/6/2021	1.15	6/26/2026	101.23526	99.59739238	97.99364221	96.42300884	94.8845306	93.3772831	91.90037737	90.45295816	89.03420231
210706A00015	7/6/2021	1.06	12/31/2025	100.67623	99.51192382	98.37433729	97.26256219	96.17572898	95.11300671	94.073601	93.05675195	92.06173239
210707A00002	7/7/2021	1.12	6/26/2026	101.18523	99.54778994	97.94446378	96.37424685	94.83617771	93.32933214	91.85282139	90.40579038	88.98741612
210707A00008	7/9/2021	2.44	7/7/2031	112.83606	106.0649607	99.74893293	93.85495874	88.35258398	83.21370756	78.41238754	73.9246642	69.72839853
210709A00002	7/9/2021	1.36	7/9/2029	105.27348	100.6133508	96.18467835	91.97474392	87.97159911	84.16401433	80.54143141	77.09391945	73.81213395
210709A00005	7/9/2021	1.69	7/9/2031	107.82119	101.2096561	95.04595398	89.29745164	83.93405629	78.92800729	74.25368349	69.88742753	65.80738541
210709A00006	7/13/2021	2.4	7/11/2031	112.58071	105.8077777	99.4908458	93.59677829	88.09501412	82.95735728	78.15778163	73.6722527	69.47856525
210712A00008	6/27/2022	1.05	6/27/2025	100.31403	99.65730094	99.0091357	98.36936517	97.73782719	97.11436372	96.49882076	95.8910482	95.2908997
210712A00010	6/27/2022	1.05	6/27/2025	100.31403	99.65730094	99.0091357	98.36936517	97.73782719	97.11436372	96.49882076	95.8910482	95.2908997
210714A00012	7/14/2021	1.12	7/14/2026	101.27411	99.56752126	97.89840643	96.26565472	94.66820186	93.10502408	91.57513614	90.07758955	88.6114708
210714A00013	7/14/2021	1.12	7/14/2026	101.27411	99.56752126	97.89840643	96.26565472	94.66820186	93.10502408	91.57513614	90.07758955	88.6114708
210714A00014	7/14/2021	1.12	7/14/2026	101.27411	99.56752126	97.89840643	96.26565472	94.66820186	93.10502408	91.57513614	90.07758955	88.6114708
210714A00015	7/14/2021	1.11	7/14/2026	101.23896	99.55331598	97.90460179	96.29172263	94.71363036	93.1693167	91.65781131	90.17818005	88.72952322
210714A00020	7/14/2021	0.9	3/14/2025	100.09229	99.72286982	99.35617971	98.99219228	98.63087762	98.27220622	97.91614906	97.56267751	97.21176337
210719A00004	7/19/2021	1	4/20/2026	100.82121	99.36648286	97.93985113	96.54057084	95.16792559	93.82122352	92.49979625	91.20299791	89.93020414
210719A00009	7/19/2021	1.04	7/17/2026	101.10842	99.41608344	97.75990091	96.13877514	94.55165754	92.99754164	91.47546092	89.98448684	88.52372687
210720A00035	7/22/2021	2.27	7/21/2031	111.73676	104.9661322	98.65350945	92.76546762	87.27119532	82.14227526	77.35248574	72.87761966	68.69531944
210721A00009	7/21/2021	1.7	7/21/2031	107.90232	101.2582048	95.06599141	89.2926137	83.9075899	78.88281081	74.1923429	69.81224877	65.72042334



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210722A00001	7/22/2021	1.1	7/22/2026	101.22602	99.51949767	97.84964053	96.21533559	94.61551226	93.04914331	91.51524264	90.01286314	88.54109477
210722A00008	7/21/2023	1.84	7/22/2030	108.19218	102.4786262	97.10174659	92.03993177	87.27307672	82.78246573	78.55066874	74.56144605	70.79966055
210722A00009	7/21/2023	1.96	7/22/2032	110.45906	102.7944827	95.71794864	89.18124403	83.14034578	77.55503982	72.38857259	67.60733613	63.18058351
210729A00003	7/29/2021	1.11	7/29/2026	101.2633	99.53803174	97.85014387	96.19848723	94.58196067	92.99950814	91.45011629	89.9328123	88.4466618
210729A00004	7/29/2021	1.74	7/29/2031	108.1817	101.5083946	95.29007821	89.49336977	84.08750686	79.04412816	74.33707352	69.94220181	65.8372247
210729A00006	7/29/2021	1.87	11/30/2032	110.02193	102.0452682	94.70644649	87.95113579	81.72989758	75.99772028	70.71360191	65.84017402	61.34336275
210802A00002	8/2/2021	0.7	8/1/2025	100.17064	99.4186233	98.67782989	97.94801125	97.22892514	96.52033643	95.82201679	95.13374447	94.45530406
210803A00005	8/5/2021	2.06	8/4/2026	102.96709	101.2104307	99.4920584	97.81081046	96.16556903	94.55526117	92.97885657	91.43536541	89.92383629
210804A00008	8/6/2021	2.28	8/4/2028	107.47264	103.6820165	100.0458756	96.55704247	93.20872057	89.99446891	86.90818113	83.94406586	81.09662838
210809A00010	8/9/2021	1.06	8/7/2026	101.23166	99.46644972	97.74116115	96.05465442	94.40583084	92.79362991	91.21702765	89.6750352	88.16669729
210809A00012	8/9/2021	1.06	8/7/2026	101.23166	99.46644972	97.74116115	96.05465442	94.40583084	92.79362991	91.21702765	89.6750352	88.16669729
210809A00013	8/9/2021	1.05	8/7/2026	101.1957	99.45282376	97.74926609	96.08390241	94.45565098	92.86346761	91.30634421	89.78330719	88.29341615
210809A00014	8/9/2021	1.06	8/7/2026	101.23166	99.46644972	97.74116115	96.05465442	94.40583084	92.79362991	91.21702765	89.6750352	88.16669729
210809A00015	8/9/2021	1.06	8/7/2026	101.23166	99.46644972	97.74116115	96.05465442	94.40583084	92.79362991	91.21702765	89.6750352	88.16669729
210817A00013	8/19/2021	2	8/19/2026	102.94047	101.1441563	99.38772911	97.670026	95.98992669	94.34635232	92.73826353	91.16465863	89.62457195
210818A00007	8/18/2021	0.81	8/18/2025	100.28316	99.48446749	98.69843038	97.92475441	97.16314978	96.41333566	95.67503399	94.94799868	94.23195615
210826A00008	8/26/2021	0.89	2/26/2025	100.0711	99.74557763	99.42216978	99.10085412	98.78161041	98.46441868	98.14925923	97.83611257	97.52495951
210826A00009	8/26/2021	1.18	8/26/2026	101.47217	99.67110136	97.91041895	96.18896723	94.50563102	92.85933458	91.24903996	89.67374535	88.13248358
210826A00013	8/26/2021	1.97	2/28/2033	111.04023	102.7939116	95.22402499	88.27157412	81.88298327	76.00957653	70.60710758	65.63533671	61.05765002
210907A00004	9/7/2021	2.01	9/7/2033	111.79327	103.0419601	95.04752704	87.74051534	81.05816654	74.94374698	69.34594232	64.21831551	59.51882149
210907A00006	9/7/2021	2.1	9/7/2034	113.42975	103.7025108	94.89855181	86.92517175	79.69941778	73.14701554	67.2014224	61.80298802	56.89820981
210907A00007	9/7/2021	2.35	9/4/2037	118.17739	105.5786931	94.48167904	84.69790841	76.06351812	68.43590884	61.69089045	55.72022274	50.42949516
210907A00008	9/7/2021	2.42	9/7/2038	119.90131	106.3413897	94.50405035	84.15901703	75.10796006	67.1799229	60.22742056	54.12311071	48.756951
210907A00009	9/7/2021	2.5	9/7/2039	122.09457	107.5508732	94.96427189	84.05758075	74.59431148	66.37251609	59.21958431	52.98784691	47.55085641
210907A00010	9/7/2021	2.58	9/7/2040	124.74277	109.1772163	95.81977112	84.34052529	74.46063308	65.94417614	58.59135576	52.23279383	46.72475732
210907A00011	9/7/2021	2.65	9/6/2041	127.61798	111.0049828	96.86618547	84.81311428	74.52045609	65.71549573	58.1693629	51.68977334	46.11500291
210907A00013	9/9/2021	2.14	9/9/2025	101.40702	100.5442046	99.69603724	98.86214462	98.0421685	97.23576259	96.44259201	95.66233282	94.89467158
210907A00014	9/9/2021	2.45	9/9/2026	103.89767	102.0356391	100.2160348	98.43764805	96.69930759	94.99988275	93.33828193	91.71345095	90.12437152
210907A00015	9/9/2021	2.21	9/9/2026	103.44775	101.5900442	99.77469087	98.00047576	96.26622967	94.5708241	92.91316949	91.29221362	89.70694013
210913A00014	9/13/2021	1.15	9/13/2028	101.65557	99.62589966	97.65970515	95.75447539	93.90782021	92.11746085	90.38122391	88.69703579	87.06291734
210913A00015	9/13/2021	1.08	9/14/2026	101.30319	99.51430587	97.7674908	96.06149201	94.39509901	92.76714567	91.17650817	89.62210322	88.10288627
210914A00012	9/14/2021	1.18	9/14/2027	102.74036	99.89219646	97.13699578	94.47124378	91.89157592	89.39477253	86.97775173	84.63756282	82.37137987
210914A00014	9/14/2021	0.97	9/14/2026	101.28638	99.43318081	97.62264336	95.85353677	94.12467424	92.43491054	90.78314033	89.16829643	87.58934828

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
210914A00015	9/14/2021	0.81	9/15/2025	100.33338	99.45839397	98.59858087	97.75355082	96.92292524	96.10633834	95.30343666	94.5138785	93.73733348
210914A00017	9/14/2021	1.32	9/14/2028	104.26271	100.4159203	96.73097841	93.20026788	89.81656931	86.57303778	83.46318143	80.4808415	77.62017347
210914A00018	9/14/2021	1.43	9/14/2029	105.76457	100.9177853	96.31986404	91.95680515	87.81546138	83.88348539	80.14927717	76.60193522	73.23121102
210915A00024	9/15/2021	1.1	9/15/2026	101.40326	99.54192449	97.72480639	95.95057748	94.21796136	92.52572837	90.87269354	89.25771466	87.6796904
210915A00025	9/15/2021	1.09	9/15/2026	101.36288	99.52633035	97.73327751	95.98241811	94.27249741	92.60230662	90.9706809	89.37649747	87.8186737
210915A00026	9/15/2021	1.1	9/15/2026	101.40326	99.54192449	97.72480639	95.95057748	94.21796136	92.52572837	90.87269354	89.25771466	87.6796904
210915A00027	9/15/2021	1.1	9/15/2026	101.40326	99.54192449	97.72480639	95.95057748	94.21796136	92.52572837	90.87269354	89.25771466	87.6796904
210916A00008	9/16/2021	1.48	9/15/2028	104.57603	100.7291394	97.04392206	93.51277885	90.12850271	86.88426019	83.77357012	80.79028366	77.92856553
210916A00009	9/16/2021	2.25	9/16/2036	116.34909	104.6873613	94.32656791	85.11379914	76.9148586	69.61189273	63.10132737	57.29207381	52.10396777
210917A00004	9/17/2021	1.03	9/17/2025	100.46261	99.58254245	98.7178121	97.86802235	97.03278867	96.21173961	95.4045163	94.61077185	93.83017092
210917A00008	9/17/2021	1.55	9/15/2028	104.84924	100.9970386	97.30667484	93.77054119	90.38142454	87.1324857	84.01723804	81.0295275	78.16351383
210917A00012	9/17/2021	1.2	9/11/2026	101.56093	99.71596511	97.91324904	96.15156528	94.42974433	92.74665747	91.10121504	89.49236478	87.91909039
210920A00014	9/9/2022	1.28	9/9/2026	101.70428	99.86336368	98.06448324	96.30643312	94.58805274	92.90822183	91.26585876	89.65991897	88.08939347
210920A00015	9/9/2022	1.28	9/9/2026	101.70428	99.86336368	98.06448324	96.30643312	94.58805274	92.90822183	91.26585876	89.65991897	88.08939347
210921A00006	9/21/2021	1.43	9/21/2028	104.20543	100.5031626	96.95722096	93.56014282	90.30486456	87.18469593	84.19329828	81.32466415	78.57309819
210921A00009	9/21/2021	1.28	9/21/2028	103.93861	100.2378014	96.69345659	93.29810376	90.04466511	86.92643744	83.93707022	81.07054512	78.32115679
210924A00003	9/24/2021	2.37	9/24/2036	117.75886	105.9980933	95.54892675	86.25709443	77.98723536	70.62048932	64.05241104	58.19115707	52.95590842
210924A00004	9/24/2021	2.37	9/24/2036	117.75886	105.9980933	95.54892675	86.25709443	77.98723536	70.62048932	64.05241104	58.19115707	52.95590842
210924A00005	9/24/2021	2.37	9/24/2036	117.75886	105.9980933	95.54892675	86.25709443	77.98723536	70.62048932	64.05241104	58.19115707	52.95590842
210924A00011	9/24/2021	2.19	9/25/2034	114.34934	104.5337417	95.65287631	87.6125292	80.32843337	73.72517385	67.73521789	62.29805565	57.35943829
210928A00008	9/28/2021	1.35	9/28/2026	101.9063	100.0117875	98.16162736	96.35451655	94.58920068	92.8644701	91.17915801	89.53213865	87.9223256
210928A00009	9/28/2021	2.18	9/28/2033	113.34373	104.4728126	96.37202923	88.97036397	82.20368868	76.01406343	70.34911114	65.16145829	60.40823429
210928A00010	9/28/2021	1.12	9/26/2025	100.56518	99.66018975	98.77139058	97.89835576	97.04066906	96.1979288	95.36974717	94.55574972	93.75557469
210929A00011	3/16/2022	1.03	3/14/2025	100.14062	99.77108423	99.40428585	99.04019073	98.67876894	98.319991	97.96382785	97.61025087	97.25923185
210929A00012	3/16/2022	1.03	3/14/2025	100.14062	99.77108423	99.40428585	99.04019073	98.67876894	98.319991	97.96382785	97.61025087	97.25923185
211007A00006	10/7/2021	1.28	10/7/2026	101.81267	99.88920921	98.01263605	96.18150575	94.39442695	92.65006094	90.94711923	89.28436129	87.66059238
211014A00012	10/14/2021	1.46	10/14/2031	104.13285	100.5604285	97.16642549	93.94018075	90.87175571	87.95187828	85.17189357	82.52371853	79.99980029
211015A00031	10/15/2021	1.22	10/15/2025	100.7061	99.74892407	98.80985017	97.88836738	96.98398509	96.09623079	95.22464925	94.36880172	93.52826519
211019A00009	10/19/2021	1.48	10/9/2026	102.19684	100.270377	98.3896614	96.55333512	94.76008516	93.00864624	91.29779862	89.62636615	87.99321442
211019A00011	10/19/2021	1.48	10/16/2026	102.22162	100.2765091	98.3780241	96.52475968	94.71536561	92.94854116	91.22303289	89.53763264	87.89117554
211026A00012	10/26/2021	1.52	10/26/2026	102.33718	100.3646069	98.43993241	96.56169257	94.72848252	92.93894959	91.19179106	89.48575187	87.81962259
211026A00013	10/26/2021	1.52	10/26/2026	102.33718	100.3646069	98.43993241	96.56169257	94.72848252	92.93894959	91.19179106	89.48575187	87.81962259
211028A00012	10/28/2021	1.64	10/15/2027	103.95161	101.0085515	98.16393406	95.41393519	92.75490329	90.18334845	87.6959343	85.28947035	82.96090476

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
211028A00013	10/28/2021	1.65	10/22/2027	104.00536	101.0431802	98.18067997	95.41396175	92.73930607	90.15315932	87.65212527	85.23295716	82.89255024
211028A00020	10/28/2021	2.05	1/28/2031	109.84408	103.5905567	97.73401176	92.24714419	87.10467639	82.28319114	77.76098458	73.51793173	69.53536332
211028A00021	10/28/2021	2.28	10/28/2033	114.30737	105.3211262	97.12049602	89.63248074	82.79121521	76.53724107	70.81685402	65.58152042	60.78735575
211110A00012	11/10/2021	1.44	11/10/2026	102.23981	100.2281596	98.26693187	96.35451547	94.48936167	92.66998301	90.8949504	89.16289032	87.4724822
211110A00013	11/10/2021	1.44	11/10/2026	102.23981	100.2281596	98.26693187	96.35451547	94.48936167	92.66998301	90.8949504	89.16289032	87.4724822
211110A00014	11/10/2021	1.44	11/10/2026	102.23981	100.2281596	98.26693187	96.35451547	94.48936167	92.66998301	90.8949504	89.16289032	87.47248219
211115A00032	11/15/2021	1.75	11/12/2027	104.38934	101.3651034	98.44419645	95.62251036	92.89612861	90.26131266	87.71449266	85.25225878	82.87135305
211117A00010	11/17/2021	1.18	11/18/2024	100.01747	99.96758016	99.91775676	99.8679988	99.81830613	99.76867863	99.71911615	99.66961858	99.62018578
211119A00009	11/19/2021	1.68	11/19/2027	104.20366	101.1632259	98.22718194	95.3913573	92.6517758	90.00464302	87.4463368	84.97339828	82.58252355
211123A00011	11/23/2021	1.69	11/23/2026	102.80193	100.7484589	98.74614257	96.79336542	94.88857924	93.03029579	91.21708396	89.44756713	87.72042062
211123A00012	11/23/2021	2.27	11/23/2033	114.2967	105.2448006	96.98972173	89.45693044	82.57922733	76.29599235	70.55250997	65.29936654	60.49191206
211129A00011	11/29/2021	1.53	11/20/2026	102.45671	100.4151139	98.42426027	96.4825563	94.58847088	92.74053192	90.93732358	89.17748372	87.4597014
211129A00012	11/29/2021	1.53	11/25/2026	102.47699	100.4215086	98.41733548	96.46284773	94.55648905	92.69676352	90.88223282	89.11151354	87.3832746
211206A00008	12/6/2021	1.24	12/6/2024	100.04232	99.94262915	99.84314451	99.74386769	99.64479801	99.54593479	99.44727737	99.34882506	99.25057721
211206A00009	12/6/2021	1.43	12/5/2025	101.05038	99.95360564	98.88050352	97.83031254	96.80230548	95.79578558	94.81008499	93.84456328	92.89860603
211206A00010	12/6/2021	1.54	12/4/2026	102.53284	100.4525494	98.42459082	96.44729624	94.51906294	92.63835122	90.8036814	89.01363096	87.26683187
211206A00017	12/6/2021	1.56	12/4/2026	102.57508	100.4943319	98.46592708	96.48819515	94.55953311	92.67840103	90.84331899	89.05286424	87.30566852
211207A00011	12/7/2021	1.62	12/1/2026	102.6902	100.6161341	98.59409038	96.62241931	94.69953279	92.82390494	90.99406909	89.20861499	87.46618619
211207A00012	12/7/2021	1.62	12/4/2026	102.70179	100.6196793	98.58993587	96.61089189	94.68094364	92.79855047	90.96223175	89.17056406	87.42217848
211207A00017	12/7/2021	1.3	11/15/2024	100.01992	99.9783347	99.93680283	99.89532205	99.85389226	99.81251338	99.7711853	99.72990792	99.68868114
211208A00012	12/8/2021	1.62	12/8/2026	102.71281	100.6237245	98.58837662	96.60499241	94.67187206	92.78738571	90.94996988	89.1581242	87.41040823
211208A00013	12/8/2021	1.63	12/8/2026	102.76133	100.6528902	98.5988059	96.59727809	94.6465859	92.74507929	90.89117549	89.08335565	87.32016161
211209A00006	12/9/2021	1.61	12/8/2026	102.69601	100.6034045	98.56362021	96.57496853	94.63582486	92.74462885	90.89988128	89.10014119	87.34402309
211209A00007	12/9/2021	1.61	12/8/2026	102.69601	100.6034045	98.56362021	96.57496853	94.63582486	92.74462885	90.89988128	89.10014119	87.34402309
211210A00014	12/10/2021	1.54	12/10/2025	101.1857	100.0746763	98.98792647	97.92465794	96.88411622	95.8655789	94.86835388	93.89177783	92.9352147
211210A00015	12/10/2021	1.63	12/10/2026	102.74625	100.6478181	98.60244896	96.60844103	94.66415893	92.7680321	90.91855168	89.11426761	87.3537858
211210A00016	12/10/2021	1.76	12/10/2027	104.53583	101.4339753	98.44008024	95.54976418	92.75885632	90.06337997	87.45954221	84.94372414	82.51247174
211213A00011	12/13/2021	1.32	12/13/2024	100.06267	99.94362362	99.82487907	99.70643244	99.58828255	99.47042825	99.35286838	99.23560181	99.11862738
211214A00014	12/14/2021	1.31	12/13/2024	100.06147	99.94243037	99.82368698	99.70524149	99.58709275	99.46923959	99.35168087	99.23441544	99.11744215
211214A00015	12/14/2021	1.49	12/12/2025	101.13475	100.0186526	98.92705986	97.85916811	96.81421217	95.79145948	94.7902084	93.80978658	92.84954942
211217A00021	12/21/2021	2.44	12/18/2026	104.51927	102.3802719	100.2956516	98.26365207	96.28258445	94.35082766	92.46682497	90.62908091	88.83615832
211220A00006	12/20/2021	1.21	12/20/2024	100.05973	99.92135982	99.78338529	99.64580608	99.50862047	99.37182673	99.23542315	99.09940803	98.96377967
211221A00010	12/21/2021	1.31	12/20/2024	100.07362	99.93523068	99.7972412	99.65964709	99.52244661	99.38563804	99.24921966	99.11318977	98.97754667

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
211221A00023	12/21/2021	1.53	6/19/2026	101.83924	100.2152985	98.62490373	97.06708628	95.54090963	94.04547316	92.57991034	91.1433871	89.73510031
211221A00025	12/21/2021	1.59	12/21/2026	102.70269	100.5756878	98.50301243	96.48289707	94.51364817	92.59364032	90.72131296	88.89516719	87.11376281
211222A00003	12/22/2021	1.33	1/15/2025	100.12661	99.91646602	99.70721902	99.4988623	99.29139012	99.08479677	98.87907661	98.67422404	98.47023349
211222A00030	12/22/2021	1.33	1/15/2025	100.12661	99.91646602	99.70721902	99.4988623	99.29139012	99.08479677	98.87907661	98.67422404	98.47023349
211222A00031	12/22/2021	1.33	1/15/2025	100.12661	99.91646602	99.70721902	99.4988623	99.29139012	99.08479677	98.87907661	98.67422404	98.47023349
211222A00035	12/22/2021	2.15	12/22/2033	113.29066	104.2111316	95.93799249	88.39521281	81.51430056	75.23352112	69.49719861	64.25509291	59.46184354
211227A00005	12/27/2021	1.61	12/18/2026	102.73436	100.614933	98.54948952	96.53628194	94.57363247	92.65993065	90.79362999	88.97324488	87.19734766
211227A00009	12/27/2021	1.6	12/23/2026	102.73189	100.5992864	98.52124776	96.49599684	94.52182912	92.59710893	90.72026597	88.88979217	87.10423867
220104A00006	1/4/2022	1.76	1/4/2029	105.84996	102.0323452	98.38260673	94.89233159	91.55358116	88.35886054	85.30109092	82.37358379	79.57001698
220106A00007	1/6/2022	2.42	1/6/2034	115.78417	106.5571888	98.14998367	90.48511057	83.49282658	77.11028742	71.28083208	65.953345	61.08168714
220106A00008	1/6/2022	2.5	1/5/2035	117.69178	107.4640106	98.22962281	89.88631775	82.34284524	75.51775512	69.33829856	63.7394576	58.66308734
220106A00009	1/6/2022	2.57	1/4/2036	119.43092	108.2154619	98.18060628	89.19485917	81.14203845	73.91941514	67.43609269	61.61158878	56.37459359
220106A00010	1/6/2022	2.64	1/6/2037	121.16573	108.9622613	98.14157487	88.53812725	80.00703668	72.42141001	65.67002516	59.65532258	54.29166313
220106A00011	1/6/2022	2.7	1/6/2038	122.90115	109.7211016	98.1378284	87.94710878	78.97190538	71.0586161	64.07386224	57.90173112	52.44140683
220106A00013	1/6/2022	2.75	1/6/2039	124.73363	110.5753553	98.24091601	87.48238294	78.08685058	69.87132174	62.67836552	56.37242484	50.83667344
220106A00018	1/10/2022	3.11	1/8/2032	118.27756	110.8370619	103.9260973	97.50401815	91.53350866	85.98029348	80.81287447	76.00229161	71.5219057
220106A00019	1/10/2022	3.17	1/7/2033	120.68805	112.1929237	104.3745076	97.1749926	90.54180378	84.42710147	78.78733145	73.58281985	68.77740846
220111A00002	1/11/2022	1.75	1/16/2026	101.54326	100.3305243	99.14661205	97.99050548	96.86123406	95.757872	94.67953566	93.62538118	92.59460225
220111A00005	1/11/2022	1.54	1/10/2025	100.2391	99.95832018	99.67912135	99.40149264	99.12542075	98.85089254	98.57789501	98.30641529	98.03644069
220112A00004	1/12/2022	1.55	1/12/2026	101.38342	100.180989	99.00691317	97.86020293	96.73991053	95.64513155	94.57500245	93.52869826	92.50543046
220112A00005	1/12/2022	1.55	1/12/2026	101.38342	100.180989	99.00691317	97.86020293	96.73991053	95.64513155	94.57500245	93.52869826	92.50543046
220112A00008	1/12/2022	1.47	11/20/2024	100.03547	99.98002894	99.92466301	99.86937283	99.81415827	99.75901916	99.70395534	99.64896667	99.59405297
220114A00007	1/14/2022	1.7	1/27/2026	101.51718	100.2750463	99.06314227	97.88037287	96.72569786	95.59812598	94.49671209	93.42055454	92.36879268
220114A00009	1/14/2022	1.74	4/21/2026	101.92273	100.4567657	99.01914585	97.60912056	96.22596563	94.86898176	93.53749347	92.23084802	90.94841453
220114A00010	1/14/2022	1.86	1/13/2027	103.38814	101.1927879	99.05468942	96.97194157	94.94271635	92.9652617	91.03789759	89.1590124	87.32705946
220118A00009	1/18/2022	1.65	1/17/2025	100.19996	99.98420136	99.76938424	99.55550386	99.34255402	99.13052859	98.91942148	98.70922666	98.49993816
220121A00013	1/21/2022	1.78	11/3/2025	101.32391	100.311955	99.32012294	98.34781824	97.39446883	96.45952478	95.54245727	94.64275754	93.75993597
220121A00014	1/21/2022	1.78	11/3/2025	101.32391	100.311955	99.32012294	98.34781824	97.39446883	96.45952478	95.54245727	94.64275754	93.75993597
220124A00007	1/24/2022	1.88	1/22/2027	103.47278	101.2526931	99.09100745	96.98576214	94.93507505	92.93714314	90.99023839	89.09270394	87.24295048
220124A00008	1/24/2022	1.88	1/22/2027	103.47278	101.2526931	99.09100745	96.98576214	94.93507505	92.93714314	90.99023839	89.09270394	87.24295048
220125A00010	1/25/2022	1.89	1/25/2027	103.50873	101.2803042	99.11066653	96.9978367	94.93991427	92.93507903	90.98158674	89.07776528	87.22201093
220126A00002	1/26/2022	1.9	12/18/2026	103.358	101.2317381	99.15959435	97.1398209	95.17073618	93.25072599	91.37824029	89.55179	87.76994416
220126A00003	1/26/2022	1.9	12/18/2026	103.358	101.2317381	99.15959435	97.1398209	95.17073618	93.25072599	91.37824029	89.55179	87.76994416

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220131A00003	1/31/2022	1.98	2/1/2027	103.74592	101.4959592	99.3057569	97.17328193	95.09659373	93.07383399	91.10322227	89.18305201	87.31168674
220131A00006	1/31/2022	1.83	2/1/2027	103.58722	101.3354324	99.14352186	97.00945904	94.93129736	92.90717271	90.93529924	89.01396524	87.1415294
220201A00011	2/1/2022	1.86	4/20/2026	102.09656	100.6319772	99.19565945	97.78685966	96.40485692	95.04895503	93.71848142	92.41278618	91.13124109
220203A00009	2/3/2022	1.99	2/2/2027	103.77445	101.5212235	99.32790489	97.19246293	95.11295471	93.08751935	91.11437367	89.19180823	87.31818358
220204A00004	2/4/2022	2.08	1/8/2027	103.85193	101.6645637	99.53393764	97.45817613	95.4354776	93.46411479	91.54243094	89.66883633	87.8418049
220204A00005	2/4/2022	1.83	1/10/2025	100.21499	100.0184957	99.82278726	99.62785684	99.43369972	99.24031125	99.04768679	98.85582177	98.66471163
220209A00010	2/9/2022	2.14	1/11/2027	103.99999	101.8030078	99.66317867	97.57860178	95.5474569	93.56799921	91.63855545	89.75752025	87.92335283
220209A00011	2/9/2022	2.14	1/11/2027	103.99999	101.8030078	99.66317867	97.57860178	95.5474569	93.56799921	91.63855545	89.75752025	87.92335283
220209A00012	2/9/2022	1.98	7/29/2025	101.06912	100.3223045	99.58649288	98.86144088	98.14691392	97.44268416	96.74853031	96.06423736	95.38959639
220209A00013	2/9/2022	1.98	7/29/2025	101.06912	100.3223045	99.58649288	98.86144088	98.14691392	97.44268416	96.74853031	96.06423736	95.38959639
220211A00010	2/11/2022	1.99	2/11/2025	100.45395	100.1136764	99.77579367	99.44027907	99.10710733	98.77625355	98.4476932	98.12140211	97.79735643
220214A00010	2/14/2022	2.46	12/21/2029	110.87757	105.6574113	100.7158112	96.03642242	91.60394314	87.40404603	83.42331087	79.64916217	76.06981141
220214A00012	2/14/2022	2.47	12/28/2029	110.9604	105.7196697	100.7594293	96.06316702	91.6154323	87.40176173	83.40861051	79.6232891	76.03390445
220216A00002	2/16/2022	2.09	2/14/2025	100.41285	100.1196448	99.82816157	99.53838399	99.25029702	98.96388583	98.67913573	98.39603225	98.11456104
220216A00003	2/16/2022	2.49	12/14/2029	111.00104	105.7961901	100.8681798	96.20081212	91.778924	87.58831491	83.61568046	79.84855101	76.27523481
220217A00011	2/17/2022	2.08	2/14/2025	100.40991	100.116709	99.82523121	99.53545907	99.24737752	98.96097171	98.67622699	98.39312884	98.11166295
220217A00012	2/17/2022	2.28	2/16/2027	104.52708	102.223858	99.98277478	97.80176315	95.67884301	93.61211354	91.59974938	89.63999702	87.73117145
220217A00013	2/17/2022	2.08	2/14/2025	100.40991	100.116709	99.82523121	99.53545907	99.24737752	98.96097171	98.67622699	98.39312884	98.11166295
220217A00015	2/17/2022	2.28	2/16/2027	104.52708	102.223858	99.98277478	97.80176315	95.67884301	93.61211354	91.59974938	89.63999702	87.73117145
220217A00016	2/17/2022	2.24	9/15/2026	103.54107	101.6660313	99.83407382	98.04395875	96.29448749	94.58450345	92.91289028	91.27857026	89.68050263
220217A00017	2/17/2022	2.27	1/29/2027	104.38789	102.1387577	99.94913114	97.8169983	95.74042857	93.71757318	91.74666092	89.82599412	87.95394492
220217A00018	2/17/2022	2.28	2/17/2027	104.53366	102.2274176	99.98345665	97.79971418	95.67420769	93.60503372	91.59036409	89.62844232	87.71758032
220217A00020	2/17/2022	2.08	2/13/2025	100.40568	100.1152358	99.82648507	99.53940842	99.25399119	98.97021895	98.68807743	98.40755253	98.1286303
220217A00027	2/16/2024	2.56	2/17/2032	114.48418	107.0717703	100.1968975	93.81770185	87.89578973	82.39593039	77.28578038	72.53563295	68.11819051
220218A00003	2/18/2022	2.16	9/4/2026	103.32421	101.4813812	99.68028482	97.91973582	96.19858957	94.51574091	92.87012254	91.26070347	89.68648759
220222A00018	2/22/2022	2.5	12/19/2031	113.82455	106.5918634	99.87366405	93.63059269	87.82649658	82.42815524	77.40502803	72.72902471	68.37429683
220224A00010	2/24/2022	2.04	3/10/2025	100.49885	100.1394902	99.78271079	99.4284806	99.07677224	98.72755874	98.38081352	98.03651037	97.69462344
220224A00018	2/24/2022	2.15	3/16/2026	102.35038	100.978169	99.63084157	98.30777911	97.00838292	95.7320736	94.47829018	93.24648948	92.03614537
220224A00023	2/24/2022	2.15	3/16/2026	102.35038	100.978169	99.63084157	98.30777911	97.00838292	95.7320736	94.47829018	93.24648948	92.03614537
220225A00014	2/25/2022	2.42	2/23/2029	109.16844	104.794536	100.6212902	96.63846895	92.83641104	89.20599511	85.73860649	82.42610647	79.26080351
220225A00015	2/25/2022	2.26	2/25/2027	104.53954	102.2096277	99.94318502	97.7381308	95.59246283	93.50425625	91.47166012	89.49289404	87.56624507
220301A00013	3/1/2022	2.01	2/16/2027	103.90178	101.60592	99.37203846	97.19807771	95.08206214	93.02209524	91.01635574	89.0630941	87.16062911
220301A00014	3/1/2022	1.85	1/10/2025	100.21893	100.0224323	99.8267185	99.6317827	99.43762023	99.24422642	99.05159664	98.85972631	98.66861088



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220301A00015	3/1/2022	2	1/4/2027	103.65607	101.4814782	99.36308947	97.29905116	95.28758634	93.32699097	91.41563025	89.55193509	87.73439898
220302A00010	3/2/2022	2.14	1/13/2027	104.01036	101.80796	99.66296824	97.573468	95.53762716	93.55368972	91.61997187	89.73485834	87.89679894
220302A00011	3/2/2022	2.14	1/13/2027	104.01036	101.80796	99.66296824	97.573468	95.53762716	93.55368972	91.61997187	89.73485834	87.89679894
220304A00004	3/4/2022	2.12	12/29/2028	107.58532	103.3992194	99.39944933	95.57670051	91.92218275	88.42759283	85.08508447	81.88724042	78.8270464
220308A00011	3/8/2022	2.07	1/10/2025	100.26229	100.0657352	99.86996214	99.67496724	99.48074584	99.28729329	99.09460494	98.90267621	98.71150256
220308A00012	3/8/2022	2.51	3/8/2032	112.00038	105.8117521	100.0487754	94.679033	89.67276597	85.00264201	80.64354471	76.57238222	72.76791345
220309A00010	3/9/2022	2.27	3/8/2027	104.62573	102.264743	99.96881885	97.73580904	95.56365146	93.45036344	91.39403823	89.39284163	87.44500881
220310A00008	3/10/2022	2.22	3/10/2025	100.70808	100.2659424	99.82770727	99.39332024	98.96273059	98.53588851	98.11274504	97.69325211	97.27736244
220310A00009	3/10/2022	2.31	3/10/2027	104.69307	102.3410392	100.0553514	97.83375114	95.67407308	93.57423848	91.53225106	89.54619322	87.61422243
220310A00010	3/10/2022	2.31	3/10/2027	104.69307	102.3410392	100.0553514	97.83375114	95.67407308	93.57423848	91.53225105	89.54619322	87.61422243
220311A00013	3/15/2022	2.35	3/15/2027	104.85466	102.4723564	100.1561572	97.90386797	95.71337891	93.5826623	91.50976862	89.4928231	87.53002242
220314A00004	3/14/2022	2.44	3/12/2027	105.05223	102.6754911	100.3644886	98.11704292	95.93106258	93.80453707	91.73553323	89.72219177	87.76272402
220314A00005	3/14/2022	2.36	3/14/2025	100.635	100.2643547	99.89644864	99.53125172	99.16873401	98.80886596	98.45161847	98.09696286	97.74487089
220314A00006	3/14/2022	2.36	3/14/2025	100.635	100.2643547	99.89644864	99.53125172	99.16873401	98.80886596	98.45161847	98.09696286	97.74487089
220314A00007	3/14/2022	2.44	3/12/2027	105.05223	102.6754911	100.3644886	98.11704292	95.93106258	93.80453707	91.73553323	89.72219177	87.76272402
220314A00008	3/14/2022	2.38	7/28/2025	101.36402	100.6187176	99.88434982	99.16067846	98.44747113	97.7445021	97.05155211	96.3684081	95.69486302
220314A00009	3/14/2022	2.38	7/28/2025	101.36402	100.6187176	99.88434982	99.16067846	98.44747113	97.7445021	97.05155211	96.3684081	95.69486302
220315A00014	3/15/2022	2.78	3/15/2032	116.21024	108.6644242	101.6696282	95.18265096	89.16388681	83.57701079	78.38869167	73.56833126	69.08782769
220315A00015	3/15/2022	3.18	3/13/2037	127.86306	115.1032998	103.7959249	93.76568084	84.85937511	76.94299952	69.89923821	63.62531035	58.03110117
220315A00018	3/15/2022	2.43	3/15/2027	105.04589	102.6612646	100.3427964	98.0882864	95.89562363	93.76277892	91.68780141	89.66881505	87.70401528
220315A00036	3/17/2022	2.63	3/16/2027	105.53033	103.1371748	100.8104383	98.54791772	96.34749158	94.20712101	92.12484585	90.09878118	88.12711396
220315A00037	3/17/2022	2.63	3/16/2027	105.53033	103.1371748	100.8104383	98.54791772	96.34749158	94.20712101	92.12484585	90.09878118	88.12711396
220317A00011	3/17/2022	2.48	3/17/2025	100.69617	100.3171362	99.9409698	99.56763372	99.19709594	98.82932495	98.46428973	98.1019597	97.74230476
220317A00023	5/3/2022	2.52	5/2/2025	100.97128	100.465252	99.96428711	99.46830972	98.97724558	98.49102198	98.00956761	97.53281254	97.06068824
220317A00026	5/3/2022	2.59	5/3/2027	105.7428	103.2167457	100.7643634	98.38307471	96.07040889	93.82399665	91.64156535	89.52093444	87.46001107
220317A00027	5/3/2022	2.59	5/3/2027	105.7428	103.2167457	100.7643634	98.38307471	96.07040889	93.82399665	91.64156535	89.52093444	87.46001107
220317A00028	5/3/2022	2.59	5/3/2027	105.7428	103.2167457	100.7643634	98.38307471	96.07040889	93.82399665	91.64156535	89.52093444	87.46001107
220323A00016	6/2/2022	2.78	6/2/2025	101.3004	100.7084066	100.1233256	99.5450328	98.97341048	98.40834373	97.84972026	97.29743033	96.75136667
220323A00017	6/2/2022	2.78	6/2/2025	101.3004	100.7084066	100.1233256	99.5450328	98.97341048	98.40834373	97.84972026	97.29743033	96.75136667
220324A00007	3/24/2022	2.72	3/24/2025	100.83066	100.4320633	100.0366249	99.64430465	99.25506564	98.86887161	98.48568686	98.10547625	97.72820517
220324A00015	3/24/2022	2.79	3/3/2026	103.15309	101.8096082	100.4899384	99.19350074	97.91973419	96.66809519	95.4380572	94.22910996	93.04075889
220325A00010	3/28/2022	2.78	3/21/2025	100.83557	100.4452218	100.0578994	99.67357173	99.29220394	98.91376186	98.53821182	98.16552064	97.79565568
220325A00011	3/28/2022	2.79	4/25/2025	101.06347	100.5763838	100.0939882	99.61621866	99.14300874	98.67429337	98.21000868	97.75009201	97.2944819

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220325A00012	3/28/2022	2.85	3/23/2026	103.36754	101.9693122	100.5967332	99.24916012	97.9259687	96.62655502	95.35033467	94.09674198	92.86522926
220325A00015	3/28/2022	2.86	3/23/2027	106.12983	103.7107023	101.3591533	99.07292179	96.84983525	94.68780622	92.58482846	90.53897333	88.54838626
220325A00017	3/28/2022	2.86	3/23/2027	106.12983	103.7107023	101.3591533	99.07292179	96.84983525	94.68780622	92.58482846	90.53897333	88.54838626
220325A00018	3/28/2022	2.85	9/10/2026	104.65542	102.7833307	100.9539321	99.16599955	97.41835325	95.70985433	94.03940336	92.40593866	90.80843477
220325A00019	3/28/2022	2.86	3/23/2027	106.12983	103.7107023	101.3591533	99.07292179	96.84983525	94.68780622	92.58482846	90.53897333	88.54838626
220325A00020	3/28/2022	2.86	3/23/2027	106.12983	103.7107023	101.3591533	99.07292179	96.84983525	94.68780622	92.58482846	90.53897333	88.54838626
220329A00007	3/29/2022	2.94	3/29/2029	111.65942	107.1395048	102.8303315	98.72097892	94.80115106	91.06113469	87.49176345	84.0843843	80.83082614
220329A00009	3/29/2022	2.94	3/29/2029	111.65942	107.1395048	102.8303315	98.72097892	94.80115106	91.06113469	87.49176345	84.0843843	80.83082614
220331A00010	3/31/2022	2.83	2/18/2026	103.10584	101.7962811	100.5128891	99.25489017	98.02154231	96.8121326	95.62597582	94.46241312	93.3208107
220331A00012	3/31/2022	2.81	3/17/2025	100.82157	100.4422579	100.0658054	99.69218466	99.32136382	98.95331131	98.58799609	98.22538756	97.86545561
220401A00009	4/1/2022	2.98	4/1/2027	106.48564	104.0380081	101.6593585	99.34735695	97.0997668	94.91443973	92.78931186	90.72239987	88.71179732
220404A00010	4/4/2022	2.93	4/2/2027	106.37122	103.9222537	101.5423889	99.22928774	96.98070704	94.79449234	92.66857393	90.60096301	88.58974796
220404A00014	4/4/2022	2.94	4/5/2027	106.41803	103.9602283	101.5720011	99.25098718	96.99492059	94.80162538	92.66901152	90.59507094	88.57787381
220407A00014	4/7/2022	3.14	4/6/2029	110.65748	106.7963821	103.1080248	99.58355068	96.21461292	92.99333841	89.91229848	86.96448115	84.14326546
220407A00017	4/7/2022	3.16	4/6/2029	111.40527	107.2995912	103.3816342	99.64166307	96.07050402	92.659508	89.40051768	86.28583677	83.30820144
220408A00012	4/8/2022	3.12	6/29/2026	104.54676	102.8720044	101.2321645	99.62621694	98.05317443	96.51208794	95.00204502	93.52216795	92.07161212
220408A00013	4/8/2022	3.15	1/14/2027	106.26273	104.0321721	101.8596742	99.74329734	97.68118863	95.67157223	93.71274533	91.80307446	89.94099205
220408A00014	4/8/2022	3.12	6/29/2026	104.54676	102.8720044	101.2321645	99.62621694	98.05317443	96.51208794	95.00204502	93.52216795	92.07161212
220411A00002	4/11/2022	3.18	4/9/2027	107.03813	104.5615881	102.1554089	99.81719236	97.54463754	95.33553538	93.18776445	91.0992869	89.06814468
220411A00008	4/11/2022	3.02	4/12/2027	106.81869	104.3473291	101.9477379	99.6173936	97.35388071	95.15488401	93.01818347	90.94164973	88.92323976
220412A00010	4/12/2022	3.09	3/15/2027	106.62351	104.2197577	101.8825691	99.60973843	97.3991426	95.24874104	93.15657193	91.12074864	89.1394564
220412A00016	4/12/2022	3.09	3/19/2027	106.6541	104.2392643	101.8915761	99.60879579	97.38877356	95.22944343	93.12881947	91.08499223	89.0961253
220412A00017	4/12/2022	3.09	3/19/2027	106.6541	104.2392643	101.8915761	99.60879579	97.38877356	95.22944343	93.12881947	91.08499223	89.0961253
220412A00018	4/12/2022	3.09	3/15/2027	106.62351	104.2197577	101.8825691	99.60973843	97.3991426	95.24874104	93.15657193	91.12074864	89.1394564
220418A00015	4/22/2022	3.03	7/28/2025	101.85033	101.1030148	100.3666583	99.64101872	98.92586332	98.220966	97.52610716	96.84107342	96.1656574
220418A00016	4/22/2022	3.11	9/15/2026	105.18646	103.295442	101.4478106	99.64231568	97.87775054	96.15295067	94.46679214	92.8181899	91.20609617
220419A00014	4/19/2022	3.06	4/18/2025	101.14516	100.677083	100.2133428	99.75388187	99.29864095	98.84756196	98.40058786	97.95766269	97.51873145
220419A00015	4/19/2022	3.14	4/17/2026	103.97079	102.4999817	101.0573791	99.64224045	98.25384974	96.8915154	95.55456925	94.2423655	92.95427983
220419A00016	4/19/2022	3.21	4/19/2027	107.19404	104.6879155	102.2537519	99.88906831	97.59148652	95.35872433	93.18859118	91.07898382	89.02788231
220420A00032	4/20/2022	3.26	10/16/2026	105.74025	103.7595137	101.8260935	99.93856418	98.09555664	96.29575203	94.53787951	92.82071413	91.14307482
220420A00033	4/20/2022	3.29	4/20/2027	107.40142	104.889913	102.4505841	100.0809396	97.77859198	95.54125006	93.36671487	91.25287519	89.19770348
220420A00034	6/15/2022	3.3	6/15/2027	107.8963	105.2254309	102.6348035	100.1215094	97.6827631	95.31589892	93.01836482	90.78771685	88.62161363
220420A00037	6/15/2022	3.3	6/15/2027	107.8963	105.2254309	102.6348035	100.1215094	97.6827631	95.31589892	93.01836482	90.78771685	88.62161363

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220420A00061	6/15/2022	3.3	6/15/2027	107.8963	105.2254309	102.6348035	100.1215094	97.6827631	95.31589892	93.01836482	90.78771685	88.62161363
220421A00012	4/21/2022	3.31	4/21/2026	104.25532	102.7712945	101.3159278	99.88846084	98.48816126	97.1143218	95.76625929	94.4433136	93.14484673
220421A00013	4/21/2022	3.33	9/15/2026	105.60254	103.7074769	101.8558819	100.0464979	98.27811591	96.5495695	94.85973284	93.20751901	91.59187845
220421A00014	4/21/2022	3.24	5/30/2025	101.55033	100.9657181	100.3878277	99.81654547	99.25175855	98.69335664	98.14123194	97.59527905	97.05539492
220421A00016	4/21/2022	3.31	4/21/2026	104.25532	102.7712945	101.3159278	99.88846084	98.48816126	97.1143218	95.76625929	94.4433136	93.14484673
220422A00014	4/22/2022	3.36	9/29/2026	105.78906	103.8533831	101.9629147	100.116327	98.31234063	96.549722	94.82728124	93.14387044	91.49838186
220425A00026	4/25/2022	3.13	2/25/2026	103.56301	102.2323193	100.9260061	99.64344088	98.38401259	97.14713109	95.93222625	94.73874703	93.56616072
220425A00027	4/29/2022	3.15	8/20/2026	105.03826	103.2196412	101.4413856	99.70231749	98.00130649	96.33726373	94.70913997	93.11592384	91.55664011
220425A00028	4/29/2022	3.16	4/23/2027	107.102	104.5859789	102.1425202	99.76911099	97.46334282	95.22290516	93.04558061	90.92924059	88.8718412
220426A00004	4/26/2022	3.41	4/26/2032	121.10096	113.2666254	106.0088858	99.28203211	93.04421066	87.257078	81.88548934	76.89721642	72.2626915
220427A00011	4/29/2022	3.15	4/29/2027	107.1253	104.5923974	102.1330061	99.74456615	97.42462224	95.1708196	92.98089905	90.85269251	88.78411871
220428A00019	4/28/2022	3.27	4/28/2027	107.41865	104.8847769	102.4243452	100.0347957	97.71367836	95.45864351	93.26743667	91.13789416	89.06793886
220429A00002	4/29/2022	3.63	4/29/2032	122.76519	114.8618111	107.5394475	100.7520467	94.45743954	88.61699458	83.19530406	78.15989942	73.48099313
220502A00025	5/2/2022	3.21	5/2/2025	101.3214	100.8143458	100.3123593	99.81536766	99.32329649	98.83607301	98.35362582	97.87588493	97.4027817
220502A00030	5/4/2022	3.24	6/20/2025	101.71112	101.0684162	100.4338347	99.80722623	99.18844106	98.57733314	97.97376002	97.37758281	96.78866598
220506A00016	5/6/2022	3.35	5/6/2027	107.68739	105.1283935	102.6440169	100.2316487	97.88878225	95.61301414	93.40203937	91.25364652	89.16571336
220509A00013	7/15/2022	3.37	7/15/2027	108.3372	105.5783238	102.9043206	100.3120271	97.79842168	95.36061729	92.99585387	90.70149191	88.47500616
220509A00014	7/15/2022	3.37	7/15/2027	108.3372	105.5783238	102.9043206	100.3120271	97.79842168	95.36061729	92.99585387	90.70149191	88.47500616
220509A00016	7/15/2022	3.37	7/15/2027	108.3372	105.5783238	102.9043206	100.3120271	97.79842168	95.36061729	92.99585387	90.70149191	88.47500616
220510A00015	5/13/2022	3.13	11/3/2025	102.69973	101.6802556	100.6810094	99.70139243	98.74083023	97.79877063	96.87468261	95.9680553	95.07839703
220510A00016	5/13/2022	3.23	5/5/2027	107.37525	104.8229452	102.3450411	99.93893299	97.60212332	95.33221739	93.12691837	90.98402266	88.90141542
220511A00002	5/11/2022	3.18	5/12/2025	101.38086	100.8462031	100.3171916	99.79373728	99.27575289	98.76315278	98.25585312	97.75377183	97.2568285
220511A00015	5/11/2022	3.29	5/11/2027	107.57673	105.005674	102.5098743	100.0866833	97.73356268	95.44807905	93.22789925	91.07078532	88.97459006
220512A00013	5/12/2022	3.18	5/12/2027	107.30448	104.7342428	102.2393147	99.8170455	97.46489259	95.18041873	92.96128702	90.80525611	88.71017559
220518A00009	5/18/2022	3.38	5/18/2028	110.97638	107.3325202	103.8296154	100.4614312	97.22204795	94.1058401	91.10745974	88.22182124	85.44408684
220519A00010	5/19/2022	3.15	11/19/2026	105.80691	103.7326018	101.7096326	99.73639032	97.81132938	95.93296374	94.09986408	92.31065516	90.56401334
220520A00006	5/20/2022	3.02	5/20/2027	106.9795	104.4491368	101.9940605	99.61154095	97.29896851	95.05384612	92.87378358	90.75649204	88.69977901
220526A00010	5/26/2022	3	5/26/2026	104.0657	102.4886399	100.9432856	99.42874777	97.9441719	96.48873472	95.0616428	93.66213124	92.28946231
220526A00011	5/26/2022	3.29	5/24/2029	113.64364	108.9265666	104.4355783	100.1586161	96.0843297	92.20203195	88.50165623	84.97371709	81.60927349
220527A00014	5/27/2022	2.99	5/27/2026	104.05764	102.4779616	100.9300734	99.41308083	97.92612578	96.46838178	95.03905235	93.63736966	92.26259322
220527A00015	5/27/2022	3.03	5/27/2027	107.03526	104.42815	101.8982927	99.44293031	97.05942278	94.7452413	92.49796282	90.3152648	88.19492036
220601A00024	6/1/2022	3.09	6/2/2025	101.4843	100.8916915	100.3059975	99.72709666	99.15487133	98.58920652	98.02998985	97.47711151	96.93046419
220601A00038	6/3/2022	3.69	5/28/2032	123.4111	115.4064963	107.9950575	101.1293953	94.76614651	88.86561568	83.3914464	78.31032422	73.59170721

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220602A00039	6/2/2022	3.11	6/2/2027	107.50353	104.8693564	102.3136363	99.83355303	97.42641022	95.089626	92.8207272	90.61734404	88.47720497
220610A00068	6/10/2022	3.09	6/10/2025	100.93079	100.5636485	100.199819	99.83925688	99.48191348	99.12774123	98.77669352	98.42872472	98.0837901
220615A00010	6/15/2022	3.86	6/15/2027	109.37685	106.6862043	104.0762584	101.5440861	99.08688813	96.70198571	94.38681423	92.13891758	89.95594278
220617A00030	6/17/2022	3.43	6/17/2025	101.03731	100.6665423	100.2991639	99.93512293	99.57436905	99.21685298	98.86252647	98.51134228	98.16325417
220622A00006	6/22/2022	3.58	6/22/2027	108.70177	106.0006017	103.3809613	100.8398758	98.37449928	95.98210947	93.66010088	91.40597917	89.21735543
220623A00005	6/23/2022	3.45	6/23/2027	108.36452	105.6651003	103.0472521	100.5079979	98.04448762	95.65399469	93.33390993	91.0817355	88.89507927
220624A00003	6/24/2022	3.5	6/24/2027	108.50691	105.8027798	103.1804181	100.6368342	98.1691691	95.77468785	93.45077331	91.19492014	89.00472918
220624A00016	6/24/2022	3.34	6/24/2026	105.00387	103.3367072	101.7041452	100.1051681	98.53880357	97.00411669	95.50020832	94.02621334	92.58129896
220624A00033	6/24/2022	3.5	6/24/2027	108.50691	105.8027798	103.1804181	100.6368342	98.1691691	95.77468785	93.45077331	91.19492014	89.00472918
220624A00044	6/24/2022	3.43	6/24/2025	101.86603	101.211782	100.5659432	99.92834969	99.29884405	98.67727299	98.06348703	97.45734045	96.85869112
220627A00055	6/27/2022	3.55	6/26/2026	105.238	103.5655878	101.927917	100.3239679	98.75276228	97.21335975	95.70485602	94.22638104	92.77709737
220628A00034	6/28/2022	3.61	6/28/2027	108.83804	106.1182687	103.4809668	100.9231085	98.44180093	96.03427766	93.69789172	91.43010971	89.22850599
220628A00044	8/15/2022	3.6	8/13/2027	109.22385	106.3743181	103.6144602	100.940915	98.350467	95.84004227	93.40670093	91.04763047	88.7601392
220628A00052	8/15/2022	3.6	8/13/2027	109.22385	106.3743181	103.6144602	100.940915	98.350467	95.84004227	93.40670093	91.04763047	88.7601392
220628A00053	8/15/2022	3.6	8/13/2027	109.22385	106.3743181	103.6144602	100.940915	98.350467	95.84004227	93.40670093	91.04763047	88.7601392
220629A00003	6/29/2022	3.59	6/29/2027	108.79379	106.0718203	103.4324587	100.8726689	98.38955107	95.98033175	93.64235769	91.37308951	89.17009595
220629A00034	6/29/2022	3.51	6/29/2027	104.29945	102.9096821	101.5520026	100.2254053	98.92892164	97.66162125	96.42261015	95.21102899	94.02605139
220630A00036	6/30/2022	3.42	6/30/2027	108.34665	105.6279629	102.991886	100.435386	97.95555967	95.54963054	93.2149425	90.94895364	88.74923034
220630A00044	6/30/2022	3.34	6/30/2025	101.85475	101.1840788	100.5222343	99.86903958	99.22432583	98.58792872	97.95968811	97.33944796	96.72705618
220630A00045	6/30/2022	3.39	6/30/2026	105.00869	103.3271567	101.6807088	100.0683156	98.48898358	96.94175819	95.42572156	93.93999085	92.48371655
220630A00057	6/30/2022	3.34	6/30/2025	101.85475	101.1840788	100.5222343	99.86903958	99.22432583	98.58792872	97.95968811	97.33944796	96.72705618
220701A00024	7/1/2022	3.08	7/1/2025	101.68777	101.0149948	100.3511108	99.69594268	99.0493196	98.41107519	97.7810474	97.1590783	96.54501401
220701A00049	7/1/2022	3.19	7/1/2025	101.76185	101.0887986	100.4246385	99.76919686	99.12230277	98.48378984	97.85349599	97.23126326	96.61693772
220701A00050	7/1/2022	3.26	7/1/2027	107.92505	105.2093929	102.5763678	100.0229323	97.54617943	95.14332915	92.81172228	90.54881398	88.35216804
220705A00011	7/5/2022	3.14	7/7/2025	101.77362	101.084111	100.4039416	99.7329255	99.07087859	98.41762176	97.77298063	97.13678539	96.50887068
220706A00032	7/6/2022	3.15	7/6/2027	107.88992	105.1564618	102.5066169	99.93729415	97.44553598	95.02851507	92.68352759	90.40798683	88.19941718
220707A00041	7/7/2022	3.41	7/7/2025	101.95994	101.2697173	100.5888396	99.91712199	99.25438022	98.60043505	97.955112	97.31824117	96.68965711
220711A00021	7/11/2022	3.27	7/11/2025	101.95101	101.249135	100.5569353	99.87420743	99.20075753	98.53639718	97.88094296	97.23421639	96.59604374
220712A00016	7/15/2022	3.35	1/15/2026	103.49315	102.2705212	101.0767954	99.91095598	98.77203347	97.65910266	96.5712804	95.50772318	94.4676249
220715A00001	7/15/2022	3.44	7/15/2027	108.52805	105.7665506	103.0899838	100.4951861	97.97913443	95.53893967	93.17184009	90.87519453	88.64647613
220715A00027	7/15/2022	3.44	7/15/2027	108.52805	105.7665506	103.0899838	100.4951861	97.97913443	95.53893967	93.17184009	90.87519453	88.64647613
220715A00047	7/15/2022	3.44	7/15/2027	108.52805	105.7665506	103.0899838	100.4951861	97.97913443	95.53893967	93.17184009	90.87519453	88.64647613
220719A00004	7/19/2022	3.46	7/19/2027	108.61685	105.8433535	103.1554326	100.5498837	98.0236507	95.57381378	93.19758224	90.89228773	88.65537786

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220722A00036	7/22/2022	3.34	7/22/2025	101.12571	100.7123706	100.3032855	99.89838133	99.49758681	99.10083242	98.70805029	98.31917416	97.9341393
220722A00044	9/1/2022	3.23	9/1/2027	108.33639	105.4480203	102.6520826	99.94513793	97.32389025	94.78518343	92.32599449	89.94342727	87.63470642
220722A00049	9/15/2022	3.25	9/15/2025	102.41984	101.5358205	100.6670622	99.81317543	98.9737803	98.14850983	97.33700932	96.53893587	95.75395792
220722A00050	9/15/2022	3.25	9/15/2025	102.41984	101.5358205	100.6670622	99.81317543	98.9737803	98.14850983	97.33700932	96.53893588	95.75395792
220722A00051	9/15/2022	3.23	9/15/2027	108.45052	105.5217408	102.6878469	99.94526085	97.29055923	94.72046578	92.23184428	89.82169174	87.48713202
220727A00004	7/27/2022	3.23	7/27/2027	108.05068	105.2635231	102.5629728	99.9457708	97.4088019	94.94909134	92.56379694	90.25020218	88.00570953
220727A00009	7/27/2022	3.31	7/28/2025	102.05981	101.3116351	100.5744219	99.84793452	99.13193995	98.42621199	97.73053087	97.04468309	96.36846114
220727A00027	7/27/2022	3.23	7/27/2027	108.05068	105.2635231	102.5629728	99.9457708	97.4088019	94.94909134	92.56379694	90.25020218	88.00570953
220727A00035	10/24/2022	3.33	10/24/2029	114.96237	109.7967783	104.8982108	100.2514427	95.84219216	91.65706086	87.6834747	83.90962894	80.32443715
220727A00049	7/27/2022	3.31	7/25/2025	102.03569	101.2958413	100.5667192	99.84809481	99.13974251	98.44144301	97.75298325	97.07415613	96.40476036
220729A00035	8/3/2022	3.14	8/3/2027	107.85612	105.0528658	102.3372436	99.70594608	97.15581519	94.6838346	92.28712231	89.96292349	87.70860386
220729A00043	7/29/2022	3.04	7/29/2027	107.5412	104.7557664	102.0570869	99.4418825	96.90702717	94.44953578	92.06655671	89.75536459	87.51335376
220729A00045	7/29/2022	3.03	7/29/2027	107.51355	104.7285019	102.0301988	99.41536207	96.88086577	94.42372514	92.04108878	89.73023159	87.48854815
220729A00047	7/29/2022	3.06	1/29/2027	106.17826	103.908481	101.6986443	99.54671913	97.45076263	95.40891428	93.41939154	91.48048583	89.59055879
220801A00066	8/1/2022	2.93	7/30/2027	107.35409	104.6007999	101.9345914	99.35223304	96.8506322	94.42682741	92.07798224	89.80137926	87.59441441
220802A00009	8/2/2022	3	8/2/2027	107.45979	104.6647793	101.9571084	99.33348139	96.79074846	94.32590153	91.93606671	89.61849721	87.37056665
220804A00023	8/4/2022	3.19	8/4/2027	108.00288	105.1948748	102.4747077	99.83906626	97.28478642	94.80884613	92.40835759	90.08056022	87.82281395
220804A00037	8/4/2022	3.35	8/4/2025	102.14826	101.3805459	100.6243705	99.87947479	99.1456076	98.42252517	97.70999088	97.00777501	96.31565445
220808A00025	8/8/2022	3.25	8/6/2027	108.18575	105.3697796	102.6420296	99.99917166	97.43803159	94.95557672	92.54890868	90.21525624	87.95196878
220811A00021	8/11/2022	3.47	8/11/2025	102.30229	101.5147401	100.7393247	99.97576555	99.22379183	98.48314099	97.75355837	97.03479687	96.32661675
220812A00001	8/12/2022	3.17	8/12/2027	108.23993	105.4018406	102.6532075	99.99066553	97.41100091	94.91114183	92.48815096	90.13921855	87.86165598
220812A00002	8/12/2022	3.17	8/12/2027	108.23993	105.4018406	102.6532075	99.99066553	97.41100091	94.91114183	92.48815096	90.13921855	87.86165598
220816A00009	8/16/2022	3.33	8/16/2027	108.49077	105.6434885	102.8861187	100.2152872	97.62777301	95.12049606	92.69050986	90.33499487	88.05125211
220817A00036	10/14/2022	3.41	10/15/2027	109.22567	106.20361	103.2819588	100.4568321	97.72451547	95.08145909	92.52426897	90.04969933	87.65464524
220817A00037	10/14/2022	3.41	10/15/2027	109.22567	106.20361	103.2819588	100.4568321	97.72451547	95.08145909	92.52426897	90.04969933	87.65464524
220817A00038	10/14/2022	3.41	10/15/2027	109.22567	106.20361	103.2819588	100.4568321	97.72451547	95.08145909	92.52426897	90.04969933	87.65464524
220817A00047	8/17/2022	3.29	8/17/2027	108.61837	105.7613682	102.994748	100.3151221	97.71925067	95.20403546	92.7665125	90.40384545	88.11331911
220819A00034	8/19/2022	3.73	8/19/2032	124.28618	116.0255452	108.392374	101.3353543	94.80763027	88.76639539	83.17252262	77.99023031	73.18678004
220823A00002	8/23/2022	3.38	8/23/2027	108.92367	106.0460188	103.259826	100.5616687	97.94827693	95.41652161	92.96340783	90.58606819	88.28175648
220823A00009	8/23/2022	3.52	8/23/2027	109.08662	106.2119142	103.4284379	100.7327892	98.12170961	95.5920809	93.14091839	90.76536429	88.46268151
220823A00015	8/23/2022	3.78	8/30/2032	124.75174	116.4437909	108.7686922	101.6745733	95.11407442	89.043933	83.4246101	78.21995225	73.39688575
220824A00011	8/24/2022	3.7	8/22/2025	102.58757	101.7685809	100.9626808	100.1695602	99.38891669	98.62045704	97.86389731	97.11896229	96.38538523
220825A00006	8/25/2022	3.56	8/25/2027	109.21765	106.3356418	103.545234	100.8430113	98.22570443	95.6901847	93.23345672	90.85265198	88.54502273



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220825A00022	8/25/2022	3.68	8/25/2025	102.5995	101.7722141	100.9582783	100.1573739	99.36918945	98.59342347	97.82978382	97.0779875	96.33776027
220826A00033	8/26/2022	3.73	8/26/2025	102.65035	101.8200791	101.0032548	100.1995485	99.40864578	98.63024219	97.86404288	97.10976219	96.36712334
220829A00048	8/29/2022	3.75	2/25/2025	100.99855	100.6738923	100.3513191	100.0308139	99.7123567	99.39592805	99.08150858	98.76907917	98.45862097
220829A00057	8/29/2022	3.67	8/31/2026	106.09368	104.235448	102.4189731	100.6430733	98.90660957	97.20848189	95.54762777	93.92302072	92.33366878
220830A00055	8/30/2022	3.7	8/30/2029	116.36382	111.3148807	106.5191201	101.9625103	97.63187553	93.5148317	89.59973495	85.87563378	82.33222451
220830A00093	11/16/2022	3.69	11/16/2029	116.95381	111.6750468	106.6713873	101.9269966	97.42703379	93.15758583	89.10560426	85.25884701	81.60582432
220831A00079	8/31/2022	3.79	8/29/2025	102.72923	101.8903595	101.0651934	100.2534025	99.45466314	98.66866234	97.89509691	97.13367327	96.38410698
220901A00033	9/1/2022	3.72	9/1/2027	109.73711	106.8285719	104.0129577	101.2868093	98.64681545	96.0898054	93.61274216	91.21271611	88.88693894
220901A00035	9/1/2022	3.82	9/1/2028	113.5728	109.5903044	105.7716715	102.1093124	98.59602512	95.22497615	91.98968005	88.88397979	85.90202845
220906A00046	9/6/2022	3.79	9/7/2027	109.99538	107.0663893	104.2314511	101.4870428	98.82979658	96.2564881	93.76402987	91.34946455	89.0099588
220907A00010	9/7/2022	3.9	9/9/2032	126.45618	118.0257679	110.239377	103.0440474	96.39143863	90.23740661	84.54161977	79.26721169	74.38046711
220907A00023	9/7/2022	3.76	9/8/2026	106.34316	104.4603478	102.6202942	100.821775	99.06361155	97.34466622	95.6638407	94.02007425	92.41234225
220912A00044	11/15/2022	3.85	11/14/2025	103.53608	102.4819797	101.4493877	100.4376461	99.44612719	98.47422836	97.52137062	96.58699764	95.67057456
220912A00046	11/15/2022	3.85	11/14/2025	103.53608	102.4819797	101.4493877	100.4376461	99.44612719	98.47422836	97.52137062	96.58699764	95.67057456
220912A00050	11/15/2022	3.76	11/15/2027	110.56264	107.4352236	104.414035	101.4948626	98.67368558	95.94666578	93.31013841	90.76060302	88.29471512
220912A00051	11/15/2022	3.76	11/15/2027	110.56264	107.4352236	104.414035	101.4948626	98.67368558	95.94666578	93.31013841	90.76060302	88.29471512
220913A00017	9/13/2022	3.98	9/14/2026	106.82087	104.9167631	103.0562253	101.2380001	99.46087735	97.72368946	96.0253094	94.3646491	92.74065782
220913A00018	9/13/2022	3.91	9/13/2027	110.40053	107.44891	104.5925218	101.8277852	99.15127313	96.55970568	94.04994282	91.61897761	89.26392985
220915A00035	9/15/2022	4.2	3/17/2025	101.34981	100.9692858	100.5916278	100.2168083	99.84479521	99.47555688	99.10906225	98.74528066	98.38418194
220915A00040	9/15/2022	4.16	9/15/2025	103.22398	102.3361052	101.4635395	100.605891	99.76277892	98.93383535	98.11870475	97.31704337	96.52851882
220916A00018	9/16/2022	4.07	9/16/2027	110.19631	107.4141189	104.7218151	102.1159638	99.59327894	97.15061891	94.78497939	92.49348653	90.27339045
220916A00021	9/16/2022	4.17	9/16/2027	105.70333	104.1757792	102.6856271	101.2316503	99.81267542	98.42757649	97.07527256	95.75472569	94.46493879
220916A00042	9/16/2022	4.07	9/16/2030	121.96514	115.6889067	109.7850044	104.2293075	98.99937504	94.07432479	89.43471732	85.06244934	80.94065539
220916A00043	9/16/2022	4.07	9/16/2031	124.89042	117.5052857	110.622119	104.2039586	98.21674922	92.62910062	87.41206606	82.53894056	77.98507652
220916A00045	9/16/2022	4.1	9/16/2032	128.08526	119.5727971	111.7107649	104.4456166	97.72848113	91.51473705	85.7636221	80.43788143	75.50344904
220919A00033	9/19/2022	4	9/17/2027	110.70186	107.7346531	104.863485	102.0847312	99.39492473	96.79074788	94.26902496	91.82671539	89.46090716
220919A00036	9/19/2022	4.11	9/19/2029	117.89033	112.9088346	108.1789403	103.6864868	99.41818503	95.36156084	91.50490035	87.8371998	84.34811883
220920A00024	9/20/2022	4.25	9/19/2025	103.34815	102.4486632	101.5648752	100.6963763	99.84277157	99.00367978	98.17873245	97.36757353	96.56985886
220920A00025	9/20/2022	4.23	9/18/2026	107.33967	105.4193696	103.5432168	101.7099354	99.9182932	98.16710135	96.45521253	94.78151933	93.14495253
220920A00026	9/20/2022	4.1	9/20/2027	111.02376	108.0434354	105.1597914	102.3691694	99.66807129	97.05314975	94.52120122	92.06915877	89.69408546
220921A00014	9/21/2022	4.08	9/21/2027	110.97603	107.9936013	105.1080101	102.3155902	99.61283441	96.99638748	94.46303808	92.00971199	89.63346545
220921A00069	9/21/2022	3.98	9/21/2027	110.92742	107.9401702	105.0500369	102.2533391	99.54655592	96.92631883	94.3894042	91.93272614	89.55332989
220921A00074	9/21/2022	3.98	9/21/2027	110.92742	107.9401702	105.0500369	102.2533391	99.54655592	96.92631883	94.3894042	91.93272614	89.55332989

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
220929A00041	9/29/2022	4.38	9/29/2027	111.94064	108.92152	106.0009987	103.1753199	100.4408909	97.79427548	95.23218594	92.7514759	90.34913344
220929A00043	9/29/2022	4.44	9/28/2029	120.26223	115.0371966	110.076858	105.3663705	100.8918013	96.64006552	92.59887081	88.75666495	85.10258776
220929A00063	9/29/2022	4.38	9/29/2027	111.94064	108.92152	106.0009987	103.1753199	100.4408909	97.79427548	95.23218594	92.7514759	90.34913344
221003A00067	10/3/2022	4.48	11/13/2024	100.13486	100.0987226	100.0626251	100.0265701	99.99055741	99.95458698	99.91865873	99.88277257	99.84692843
221005A00041	10/5/2022	4.3	10/5/2027	111.77046	108.7374637	105.8040577	102.9664292	100.2209304	97.56407313	94.99252102	92.50308189	90.09270068
221006A00012	10/6/2022	4.37	10/6/2027	111.98802	108.9490734	106.0099732	103.166894	100.416176	97.75431949	95.17797736	92.68394716	90.26916421
221007A00003	10/7/2022	4.67	10/7/2025	103.94413	102.9921218	102.057613	101.1401259	100.2391975	99.35438191	98.48524878	97.63138315	96.79238454
221011A00036	10/11/2022	4.59	10/6/2026	108.24817	106.2691137	104.3366055	102.449264	100.6057603	98.80481367	97.04518941	95.32569665	93.64518669
221011A00122	10/11/2022	4.64	12/11/2024	100.43726	100.3233875	100.2097889	100.0964623	99.98340683	99.87062141	99.75810503	99.6458567	99.53387541
221014A00026	10/14/2022	4.63	10/14/2027	112.84928	109.7756716	106.803649	103.9292922	101.1488539	98.45875205	95.8555617	93.33600719	90.89695472
221014A00027	10/14/2022	4.63	10/14/2027	112.84928	109.7756716	106.803649	103.9292922	101.1488539	98.45875205	95.8555617	93.33600719	90.89695472
221014A00032	10/14/2022	4.67	10/14/2027	112.1658	109.2768959	106.4832115	103.7810232	101.1667773	98.63708037	96.18869083	93.81851133	91.52358135
221014A00043	10/14/2022	4.49	10/14/2027	112.68261	109.6057435	106.6307136	103.7535863	100.9706007	98.27816213	95.67283364	93.15132832	90.71050172
221014A00050	10/14/2022	4.49	10/14/2027	112.68261	109.6057435	106.6307136	103.7535863	100.9706007	98.27816213	95.67283364	93.15132832	90.71050172
221017A00055	10/17/2022	4.88	11/18/2024	100.19354	100.1462757	100.0990675	100.0519199	100.0048329	99.9578063	99.91084007	99.86393404	99.8170881
221018A00006	10/18/2022	4.55	10/18/2027	112.65673	109.5750734	106.5956486	103.714492	100.9278194	98.23201428	95.62361921	93.09932814	90.65597866
221018A00007	10/18/2022	4.68	10/18/2027	106.81694	105.2004653	103.6246585	102.0881638	100.5896832	99.12797143	97.70183391	96.31012391	94.95174046
221018A00030	10/18/2022	4.71	10/17/2025	104.10397	103.1236133	102.1617924	101.2179884	100.2916975	99.38243464	98.4897324	97.61314039	96.75222447
221018A00031	10/18/2022	4.71	10/17/2025	104.10397	103.1236133	102.1617924	101.2179884	100.2916975	99.38243464	98.4897324	97.61314039	96.75222447
221018A00047	10/18/2022	4.78	10/20/2025	104.20922	103.2200374	102.2497146	101.2977144	100.3635202	99.44663484	98.54657963	97.66289326	96.79513121
221018A00048	10/18/2022	4.71	10/19/2026	108.64389	106.6256131	104.655603	102.7324006	100.8546049	99.02086665	97.22988589	95.48040977	93.77123055
221018A00049	10/18/2022	4.59	10/18/2027	112.77625	109.6927962	106.7116212	103.8287578	101.0404202	98.34299075	95.73301064	93.20717254	90.76231285
221019A00008	10/19/2022	4.8	10/17/2025	104.19147	103.2106481	102.2483756	101.304126	100.3773954	99.46769835	98.57456753	97.69755237	96.83621861
221019A00009	10/19/2022	4.8	10/17/2025	104.19147	103.2106481	102.2483756	101.304126	100.3773954	99.46769835	98.57456753	97.69755237	96.83621861
221020A00046	10/20/2022	4.95	1/21/2025	100.96273	100.734776	100.5078642	100.2819871	100.0571377	99.83330891	99.6104937	99.38868515	99.16787638
221025A00027	10/25/2022	4.57	10/25/2027	112.79666	109.693766	106.6944058	103.794546	100.9903318	98.27808028	95.65427156	93.11554087	90.65867057
221027A00009	10/27/2022	4.68	10/27/2025	104.19602	103.1876063	102.19878	101.2289766	100.2776502	99.34427546	98.42834704	97.52937828	96.64690054
221027A00050	10/27/2022	4.52	10/27/2027	112.66893	109.5624989	106.5599132	103.6571196	100.8502451	98.13558959	95.50961712	92.96894784	90.51034995
221027A00056	4/25/2023	4.48	4/25/2030	122.54254	116.6688256	111.1224905	105.8834619	100.9330028	96.25361594	91.82895497	87.64374324	83.68369829
221027A00060	12/1/2022	4.46	12/1/2027	112.8948	109.6861692	106.5873791	103.5940254	100.7019107	97.90703127	95.20556614	92.59386799	90.06845393
221027A00061	12/15/2022	4.45	12/15/2027	113.02218	109.7731795	106.6364333	103.6073997	100.681748	97.85534927	95.12426576	92.48474055	89.93318806
221027A00062	12/15/2022	4.45	12/15/2027	113.02218	109.7731795	106.6364333	103.6073997	100.681748	97.85534927	95.12426576	92.48474055	89.93318806
221027A00063	12/15/2022	4.45	12/15/2027	113.02218	109.7731795	106.6364333	103.6073997	100.681748	97.85534927	95.12426576	92.48474055	89.93318806

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221031A00003	10/31/2022	4.89	11/12/2024	100.13899	100.1056132	100.0722786	100.0389822	100.005724	99.97250397	99.93932194	99.90617788	99.87307171
221031A00004	10/31/2022	4.79	10/28/2025	104.31842	103.3065879	102.3144578	101.3414602	100.3870446	99.45068159	98.5318617	97.63009444	96.7449075
221031A00033	10/31/2022	4.74	10/31/2025	104.30516	103.2851343	102.2851296	101.3045588	100.3428588	99.39948791	98.47392505	97.56566878	96.67423631
221031A00035	10/31/2022	4.67	10/30/2026	108.70018	106.6514621	104.6524291	102.7015588	100.7973892	98.93851292	97.12357496	95.35127009	93.62034075
221031A00036	10/31/2022	4.59	10/29/2027	112.90284	109.7873865	106.7762344	103.8653001	101.0506877	98.32867555	95.69570773	93.14838528	90.68345847
221031A00042	10/31/2022	4.73	10/30/2026	108.8211	106.7711369	104.770881	102.8188116	100.9134658	99.05343585	97.23736597	95.46395036	93.73193089
221031A00045	10/31/2022	4.79	10/31/2025	104.3557	103.3354017	102.3351265	101.354289	100.3923257	99.44869517	98.52287609	97.61436697	96.72268495
221102A00012	11/2/2022	4.82	11/3/2025	104.42205	103.3931652	102.3846377	101.3958668	100.4262753	99.47530803	98.54243137	97.62713176	96.72891496
221102A00026	11/2/2022	4.66	11/2/2027	113.162	110.0314823	107.0060516	104.0815846	101.2541445	98.51997129	95.87547291	93.31721638	90.84192
221103A00050	11/3/2022	5.14	11/4/2024	100.05401	100.0428829	100.0317633	100.0206539	100.0095547	99.99846589	99.9873873	99.97631893	99.96526079
221107A00010	11/7/2022	5.12	11/7/2024	100.08867	100.0691958	100.0497405	100.0303048	100.0108887	99.99149215	99.97211515	99.95275765	99.93341961
221107A00029	11/7/2022	4.83	11/9/2026	109.15382	107.0723395	105.0417607	103.0605133	101.1270828	99.24001212	97.39789892	95.59939327	93.84319518
221107A00030	11/7/2022	4.7	11/5/2027	113.32022	110.1787757	107.1429747	104.2086642	101.3718788	98.62883145	95.97590464	93.40964161	90.92673822
221107A00048	11/7/2022	4.96	9/8/2025	103.83906	102.9675422	102.110717	101.2682098	100.4396631	99.62473132	98.82308026	98.03438651	97.25833715
221107A00053	11/7/2022	4.95	10/7/2025	104.20859	103.2552324	102.3193934	101.4005931	100.4983682	99.61227237	98.74187494	97.88676061	97.04652861
221107A00056	11/7/2022	4.73	11/8/2027	113.44864	110.296712	107.2509722	104.3072405	101.4615229	98.71000568	96.04904616	93.47516395	90.98503269
221108A00033	11/8/2022	4.7	11/8/2027	113.35727	110.2067382	107.1623608	104.2199573	101.3755348	98.62528066	95.96555323	93.39287314	90.90391499
221108A00036	11/8/2022	4.95	11/7/2025	104.604	103.5631413	102.5430928	101.5432356	100.5629734	99.60173288	98.65896332	97.73413492	96.826738
221110A00023	11/10/2022	4.71	11/8/2024	100.09077	100.0685234	100.046298	100.0240956	100.0019163	99.97975985	99.95762637	99.93551578	99.91342804
221110A00024	11/10/2022	4.51	11/10/2025	104.18417	103.1374034	102.1117483	101.1065698	100.1212579	99.15522696	98.20791395	97.27877771	96.36729776
221110A00025	11/10/2022	4.39	11/10/2026	108.26687	106.1918407	104.1676459	102.192712	100.2655246	98.38462647	96.54861565	94.75614243	93.00590714
221110A00026	11/10/2022	4.29	11/10/2027	112.13097	108.9935465	105.9621345	103.0325492	100.2007949	97.46305692	94.81569181	92.25521888	89.77831176
221110A00038	11/10/2022	4.34	11/10/2027	112.28353	109.1437696	106.110079	103.1782723	100.3443522	97.60450196	94.95507646	92.39259331	89.91372454
221110A00039	11/10/2022	4.34	11/10/2027	112.28353	109.1437696	106.110079	103.1782723	100.3443522	97.60450196	94.95507646	92.39259331	89.91372454
221110A00064	1/17/2023	4.25	1/14/2028	112.71517	109.3889908	106.180172	103.0838525	100.0954091	97.21043968	94.42475125	91.73434816	89.13542154
221110A00065	1/17/2023	4.25	1/14/2028	112.71517	109.3889908	106.180172	103.0838525	100.0954091	97.21043968	94.42475125	91.73434816	89.13542154
221110A00074	11/10/2022	4.75	11/12/2024	100.1342	100.1008328	100.0675022	100.0342098	100.0009556	99.96773956	99.93456151	99.90142142	99.86831923
221110A00075	11/10/2022	4.56	11/10/2025	104.23609	103.1890384	102.1630989	101.1576399	100.1720515	99.2057477	98.25816559	97.32876387	96.41702198
221110A00076	11/10/2022	4.45	11/10/2026	108.38961	106.3132993	104.2878462	102.3116786	100.3832813	98.50119652	96.66402165	94.87040631	93.11905028
221110A00084	11/10/2022	4.56	11/6/2025	104.19094	103.1551019	102.1399303	101.1448134	100.1691604	99.2124032	98.27399592	97.35341341	96.45015044
221110A00086	11/10/2022	4.34	11/8/2027	112.26081	109.1270531	106.0990248	103.1725595	100.3436779	97.60858042	94.96363802	92.40538336	89.93050263
221110A00108	11/10/2022	4.48	12/10/2025	104.48248	103.3517919	102.2456749	101.1633299	100.1039953	99.06694157	98.05146983	97.05691024	96.0826204
221110A00110	11/10/2022	4.47	1/13/2026	104.83873	103.6128821	102.4158256	101.2465513	100.1040984	98.98755009	97.89603074	96.828704	95.78477041

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221114A00002	11/14/2022	4.37	11/15/2027	112.43228	109.2760834	106.2268513	103.2803435	100.4325155	97.67950669	95.01763041	92.44336545	89.9533473
221116A00026	11/16/2022	4.78	11/15/2024	100.16735	100.1256404	100.0839842	100.0423793	100.0008255	99.95932272	99.91787093	99.87646999	99.83511981
221116A00027	11/16/2022	4.46	11/14/2025	104.17629	103.1185977	102.0824649	101.0672325	100.0722716	99.09697828	98.14077262	97.20309718	96.28341609
221116A00028	11/16/2022	4.21	11/16/2027	111.95288	108.8012421	105.7565425	102.8145428	99.97119546	97.22263698	94.56517848	91.99529658	89.50962491
221117A00008	11/17/2022	4.82	11/15/2024	100.16904	100.1273336	100.0856759	100.0440696	100.0025144	99.96101018	99.91955697	99.87815461	99.83680301
221117A00012	11/17/2022	4.54	11/14/2025	104.26025	103.2020886	102.1654915	101.1498012	100.1543889	99.1786504	98.22200567	97.28389712	96.36378875
221117A00013	11/17/2022	4.54	11/14/2025	104.26025	103.2020886	102.1654915	101.1498012	100.1543889	99.1786504	98.22200567	97.28389712	96.36378875
221117A00014	11/17/2022	4.54	11/14/2025	104.26025	103.2020886	102.1654915	101.1498012	100.1543889	99.1786504	98.22200567	97.28389712	96.36378875
221117A00025	11/17/2022	4.28	11/17/2027	112.17882	109.0208682	105.9701159	103.0223064	100.1733804	97.4194631	94.75685503	92.1820228	89.69159061
221118A00018	11/18/2022	4.55	11/18/2025	104.31577	103.246325	102.1988913	101.1727958	100.16739	99.18205165	98.21618318	97.26921055	96.34058212
221118A00019	11/18/2022	4.55	11/18/2025	104.31577	103.246325	102.1988913	101.1727958	100.16739	99.18205165	98.21618318	97.26921055	96.34058212
221118A00023	11/18/2022	4.12	11/18/2027	111.95554	108.7921739	105.7364184	102.7839965	99.93082558	97.17300915	94.50682724	91.92872722	89.43531526
221118A00045	11/18/2022	4.57	11/18/2025	104.33698	103.2674164	102.2198642	101.1936519	100.188131	99.20267917	98.23669877	97.28961574	96.3608784
221118A00046	11/18/2022	4.4	11/18/2026	108.38309	106.2843487	104.2373674	102.2405302	100.2922815	98.39112592	96.5356247	94.72439361	92.95610025
221118A00080	11/18/2022	4.61	11/18/2025	104.37941	103.3095991	102.26181	101.2353642	100.2296131	99.24393421	98.27772994	97.33042611	96.40147098
221121A00047	11/21/2022	4.89	11/21/2033	137.82826	127.7492968	118.5307758	110.0935355	102.3661234	95.28400761	88.78887241	82.82798852	77.3536505
221121A00052	11/21/2022	4.35	11/22/2027	112.45068	109.2743775	106.2062169	103.2418922	100.3772947	97.60850384	94.93177677	92.34353952	89.84037811
221121A00064	11/21/2022	4.34	11/22/2027	112.41984	109.2440127	106.1763176	103.2124465	100.3482912	97.57993139	94.90362479	92.31579769	89.81303645
221122A00015	11/22/2022	4.97	11/22/2024	100.25398	100.1928145	100.1317365	100.0707456	100.0098414	99.9490238	99.88829261	99.82764763	99.76708869
221122A00029	11/22/2022	4.31	11/22/2027	112.32731	109.1529186	106.0866196	103.1241092	100.2612804	97.49421405	94.81916885	92.2325722	89.73101144
221122A00040	11/22/2022	4.31	11/22/2027	112.32731	109.1529186	106.0866196	103.1241092	100.2612804	97.49421405	94.81916885	92.2325722	89.73101144
221122A00041	11/22/2022	4.97	11/22/2024	100.25398	100.1928145	100.1317365	100.0707456	100.0098414	99.9490238	99.88829261	99.82764763	99.76708869
221123A00016	11/23/2022	4.58	11/23/2029	120.81828	115.5809119	110.6152036	105.90544	101.4369007	97.19579477	93.16919709	89.34498881	85.7118027
221123A00034	11/23/2022	4.43	11/23/2026	108.50539	106.391277	104.3295213	102.318477	100.3565627	98.44225789	96.57410074	94.75068482	92.9706568
221123A00039	11/23/2022	4.29	11/23/2027	112.27685	109.1004051	106.0322049	103.0679323	100.2034717	97.43489601	94.75845655	92.1705737	89.66782829
221128A00034	11/28/2022	4.27	11/26/2027	112.2486	109.0641062	105.9883454	103.0169768	100.145858	97.37103628	94.68873909	92.09536448	89.58747232
221129A00034	11/29/2022	4.38	12/1/2025	104.36381	103.2571117	102.1739492	101.1135814	100.0752933	99.05839978	98.0622437	97.08619462	96.12964743
221129A00035	11/29/2022	4.09	11/29/2027	111.98332	108.7883302	105.7028196	102.7224008	99.84288957	97.06029423	94.37080557	91.7707873	89.25676708
221129A00037	11/29/2022	4.56	11/26/2025	104.41664	103.3246488	102.2555787	101.2087157	100.1833721	99.17888823	98.1946313	97.2299938	96.28439241
221129A00038	11/29/2022	4.56	11/26/2025	104.41664	103.3246488	102.2555787	101.2087157	100.1833721	99.17888823	98.1946313	97.2299938	96.28439241
221129A00039	11/29/2022	4.56	11/26/2025	104.41664	103.3246488	102.2555787	101.2087157	100.1833721	99.17888823	98.1946313	97.2299938	96.28439241
221129A00040	11/29/2022	4.56	11/26/2025	104.41664	103.3246488	102.2555787	101.2087157	100.1833721	99.17888823	98.1946313	97.2299938	96.28439241
221129A00041	11/29/2022	4.56	11/28/2025	104.43921	103.3415848	102.2671167	101.2150743	100.1847598	99.17550414	98.18666562	97.21762828	96.26780079

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221129A00042	11/29/2022	4.56	11/28/2025	104.43921	103.3415848	102.2671167	101.2150743	100.1847598	99.17550414	98.18666562	97.21762828	96.26780079
221129A00043	11/29/2022	4.59	12/1/2025	104.50571	103.3994826	102.3167586	101.2567946	100.2188774	99.20232351	98.20647731	97.23070982	96.27441732
221129A00044	11/29/2022	4.56	11/28/2025	104.43921	103.3415848	102.2671167	101.2150743	100.1847598	99.17550414	98.18666562	97.21762828	96.26780079
221129A00045	11/29/2022	4.56	11/28/2025	104.43921	103.3415848	102.2671167	101.2150743	100.1847598	99.17550414	98.18666562	97.21762828	96.26780079
221129A00046	11/29/2022	4.56	12/1/2025	104.47282	103.3667803	102.2842458	101.2244685	100.1867353	99.17036275	98.1746953	97.19910404	96.24298529
221129A00047	11/29/2022	4.56	12/1/2025	104.47282	103.3667803	102.2842458	101.2244685	100.1867353	99.17036275	98.1746953	97.19910404	96.24298529
221129A00048	11/29/2022	4.56	12/1/2025	104.47282	103.3667803	102.2842458	101.2244685	100.1867353	99.17036275	98.1746953	97.19910404	96.24298529
221129A00049	11/29/2022	4.56	12/1/2025	104.47282	103.3667803	102.2842458	101.2244685	100.1867353	99.17036275	98.1746953	97.19910404	96.24298529
221129A00050	11/29/2022	4.56	12/2/2025	104.48386	103.3750266	102.2898147	101.227473	100.1872832	99.16855652	98.17063279	97.19287853	96.23468578
221129A00051	11/29/2022	4.56	12/2/2025	104.48386	103.3750266	102.2898147	101.227473	100.1872832	99.16855652	98.17063279	97.19287853	96.23468578
221129A00052	11/29/2022	4.56	12/2/2025	104.48386	103.3750266	102.2898147	101.227473	100.1872832	99.16855652	98.17063279	97.19287853	96.23468578
221129A00053	11/29/2022	4.56	12/2/2025	104.48386	103.3750266	102.2898147	101.227473	100.1872832	99.16855652	98.17063279	97.19287853	96.23468578
221129A00054	11/29/2022	4.56	12/3/2025	104.4949	103.383272	102.2953823	101.2304761	100.1878295	99.1667488	98.16656896	97.18665196	96.22638556
221129A00055	11/29/2022	4.56	12/3/2025	104.4949	103.383272	102.2953823	101.2304761	100.1878295	99.1667488	98.16656896	97.18665196	96.22638556
221129A00056	11/29/2022	4.31	11/29/2027	112.40624	109.2107895	106.124648	103.1434368	100.2629835	97.47930771	94.78861066	92.18726582	89.67180997
221129A00059	11/29/2022	4.39	11/27/2026	108.4699	106.3448976	104.2727058	102.2516547	100.2801425	98.35662991	96.47963672	94.64773944	92.85956854
221129A00060	11/29/2022	4.39	11/27/2026	108.4699	106.3448976	104.2727058	102.2516547	100.2801425	98.35662991	96.47963672	94.64773944	92.85956854
221129A00061	11/29/2022	4.39	11/27/2026	108.4699	106.3448976	104.2727058	102.2516547	100.2801425	98.35662991	96.47963672	94.64773944	92.85956854
221129A00062	11/29/2022	4.39	11/27/2026	108.4699	106.3448976	104.2727058	102.2516547	100.2801425	98.35662991	96.47963672	94.64773944	92.85956854
221129A00064	11/29/2022	4.28	11/30/2027	112.32433	109.1273321	106.0397794	103.0572842	100.1756658	97.39093624	94.69928961	92.09709275	89.58087622
221129A00065	11/29/2022	4.28	11/30/2027	112.32433	109.1273321	106.0397794	103.0572842	100.1756658	97.39093624	94.69928961	92.09709275	89.58087622
221129A00066	11/29/2022	4.28	11/29/2027	112.31313	109.1191355	106.0344073	103.0545734	100.1754627	97.39309571	94.70367496	92.10357495	89.58933348
221129A00067	11/29/2022	4.28	11/29/2027	112.31313	109.1191355	106.0344073	103.0545734	100.1754627	97.39309571	94.70367496	92.10357495	89.58933348
221129A00068	11/29/2022	4.28	11/29/2027	112.31313	109.1191355	106.0344073	103.0545734	100.1754627	97.39309571	94.70367496	92.10357495	89.58933348
221129A00069	11/29/2022	4.28	11/26/2027	112.27955	109.0945776	106.0183481	103.0465228	100.1749588	97.39970299	94.7169825	92.12319501	89.61490004
221129A00070	11/29/2022	4.28	11/26/2027	112.27955	109.0945776	106.0183481	103.0465228	100.1749588	97.39970299	94.7169825	92.12319501	89.61490004
221129A00071	11/29/2022	4.28	11/26/2027	112.27955	109.0945776	106.0183481	103.0465228	100.1749588	97.39970299	94.7169825	92.12319501	89.61490004
221129A00072	11/29/2022	4.39	12/2/2026	108.52873	106.3892281	104.3031242	102.2687224	100.2843945	98.34857629	96.45976414	94.61651234	92.81743034
221129A00073	11/29/2022	4.39	12/2/2026	108.52873	106.3892281	104.3031242	102.2687224	100.2843945	98.34857629	96.45976414	94.61651234	92.81743034
221129A00075	11/29/2022	4.38	12/1/2026	108.49619	106.3597542	104.2765918	102.2450143	100.2633992	98.33018738	96.44388001	94.60303602	92.80626923
221129A00076	11/29/2022	4.38	12/1/2026	108.49619	106.3597542	104.2765918	102.2450143	100.2633992	98.33018738	96.44388001	94.60303602	92.80626923
221129A00077	11/29/2022	4.38	12/1/2026	108.49619	106.3597542	104.2765918	102.2450143	100.2633992	98.33018738	96.44388001	94.60303602	92.80626923
221129A00078	11/29/2022	4.38	12/1/2026	108.49619	106.3597542	104.2765918	102.2450143	100.2633992	98.33018738	96.44388001	94.60303602	92.80626923



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221129A00083	11/29/2022	4.38	11/30/2026	108.48472	106.3511169	104.2706735	102.2417026	100.262587	98.33177234	96.44776481	94.60912775	92.81447921
221129A00084	11/29/2022	4.38	11/30/2026	108.48472	106.3511169	104.2706735	102.2417026	100.262587	98.33177234	96.44776481	94.60912775	92.81447921
221129A00085	11/29/2022	4.38	11/30/2026	108.48472	106.3511169	104.2706735	102.2417026	100.262587	98.33177234	96.44776481	94.60912775	92.81447921
221129A00086	11/29/2022	4.38	11/30/2026	108.48472	106.3511169	104.2706735	102.2417026	100.262587	98.33177234	96.44776481	94.60912775	92.81447921
221130A00019	11/30/2022	4.63	11/26/2025	104.49243	103.3999982	102.3304965	101.2832083	100.2574455	99.25254847	98.26788419	97.30284505	96.35684758
221130A00032	11/30/2022	4.37	11/30/2027	112.60389	109.402534	106.3107342	103.3241001	100.4384475	97.64978495	94.95430314	92.34836573	89.8285002
221130A00033	11/30/2022	4.37	11/30/2027	112.60389	109.402534	106.3107342	103.3241001	100.4384475	97.64978495	94.95430314	92.34836573	89.8285002
221130A00041	11/30/2022	4.95	12/2/2024	100.36603	100.2771053	100.1883409	100.0997366	100.011292	99.92300663	99.83488009	99.74691192	99.6591017
221130A00069	11/30/2022	4.15	11/30/2027	112.18085	108.9799466	105.8887731	102.9029273	100.0182132	97.23062797	94.53635184	91.93173868	89.41330681
221130A00075	11/30/2022	4.15	11/30/2027	112.18085	108.9799466	105.8887731	102.9029273	100.0182132	97.23062797	94.53635184	91.93173868	89.41330681
221130A00076	11/30/2022	4.15	11/30/2027	112.18085	108.9799466	105.8887731	102.9029273	100.0182132	97.23062797	94.53635184	91.93173868	89.41330681
221130A00078	11/30/2022	4.15	11/30/2027	112.18085	108.9799466	105.8887731	102.9029273	100.0182132	97.23062797	94.53635184	91.93173868	89.41330681
221130A00081	11/30/2022	4.15	11/30/2027	112.18085	108.9799466	105.8887731	102.9029273	100.0182132	97.23062797	94.53635184	91.93173868	89.41330681
221130A00085	11/30/2022	4.19	11/30/2027	112.04476	108.8521301	105.7688247	102.7904683	99.91288408	97.13208752	94.44427607	91.84581977	89.33325225
221130A00110	11/30/2022	4.15	11/30/2027	111.92052	108.7298181	105.6484003	102.6718834	99.79609219	97.01704365	94.33093672	91.73414289	89.22319715
221201A00009	12/1/2022	4.22	12/1/2025	104.18829	103.0826189	102.0004685	100.9410979	99.90379243	98.88786737	97.89266589	96.91755787	95.96193855
221201A00011	12/1/2022	3.95	12/1/2027	111.569	108.37492	105.2904905	102.311309	99.43317814	96.65209397	93.96423598	91.36595739	88.85377611
221201A00037	12/1/2022	4.26	12/1/2026	108.24376	106.1100316	104.0295265	102.0005537	100.021492	98.09078379	96.20693171	94.36849598	92.57409171
221201A00043	12/1/2022	4.37	12/3/2029	111.38183	108.4483839	105.6307858	102.9234401	100.3210634	97.81866514	95.4115289	93.09519555	90.86544744
221201A00068	12/1/2022	4.21	12/1/2027	111.28808	108.3068519	105.4270213	102.6444856	99.9553391	97.35585944	94.84249741	92.41186775	90.06074038
221202A00013	12/2/2022	4.78	12/3/2024	100.36228	100.2705973	100.179085	100.0877446	99.99657569	99.90557771	99.81475017	99.7240926	99.6336045
221202A00018	12/2/2022	4.16	12/2/2027	111.97262	108.7756614	105.6883333	102.7062413	99.82519094	97.04118112	94.35039389	91.74918484	89.23407411
221202A00025	12/2/2022	4.06	12/2/2026	108.00666	105.86945	103.7856656	101.7536104	99.77165344	97.83822784	95.95182758	94.11100468	92.31436648
221205A00024	12/5/2022	4.13	12/3/2027	111.88971	108.6913189	105.6026941	102.6194309	99.73732656	96.95237228	94.26074295	91.65878751	89.14301982
221205A00048	12/5/2022	4.4	12/5/2025	104.33978	103.2235989	102.1313824	101.0623608	100.0158	98.99099638	97.98727556	97.00399079	96.04052154
221205A00065	12/5/2022	4.13	12/6/2027	111.92103	108.7139697	105.6171913	102.6262607	99.73694649	96.94521338	94.24721131	91.63926584	89.11786898
221205A00088	12/5/2022	4.13	12/3/2027	111.88971	108.6913189	105.6026941	102.6194309	99.73732656	96.95237228	94.26074295	91.65878751	89.14301982
221206A00011	12/6/2022	4.29	12/7/2026	108.37422	106.2228137	104.1253522	102.0801135	100.085444	98.13975529	96.24152112	94.38927431	92.58160405
221206A00025	12/6/2022	4.27	12/4/2026	108.29831	106.1558585	104.0669908	102.0299977	100.043242	98.10515073	96.2142121	94.36897278	92.56803502
221206A00036	12/6/2022	4.13	12/6/2027	111.92103	108.7139697	105.6171913	102.6262607	99.73694649	96.94521338	94.24721131	91.63926584	89.11786898
221206A00039	12/6/2022	4.29	12/7/2026	108.37422	106.2228137	104.1253522	102.0801135	100.085444	98.13975529	96.24152112	94.38927431	92.58160405
221206A00040	12/6/2022	5	11/29/2024	100.37668	100.2863668	100.1962198	100.106242	100.0164331	99.92679241	99.83731953	99.74801396	99.65887521
221207A00009	12/7/2022	4.38	12/8/2025	104.34926	103.2248292	102.1247202	101.0481452	99.99435372	98.96262694	97.95227596	96.96264031	95.99308655

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221207A00010	12/7/2022	4.08	12/7/2027	111.7752	108.5676951	105.4705862	102.479426	99.589976	96.7981939	94.1002232	91.49238348	88.97116116
221207A00012	12/7/2022	4.21	12/7/2026	108.20461	106.0550357	103.9593725	101.9158963	99.92295447	97.97895968	96.08238654	94.23176881	92.42569658
221207A00017	12/7/2022	3.86	12/7/2027	111.34845	108.1414457	105.0450165	102.0546988	99.16624187	96.37559189	93.67888182	91.07242133	88.5526876
221207A00032	12/7/2022	4.52	12/7/2032	131.41756	122.5795476	114.4298853	106.9106968	99.96927754	93.55760743	87.63191069	82.15225976	77.08221799
221207A00035	12/7/2022	4.31	1/7/2026	104.5819	103.374078	102.1942496	101.0414518	99.91476179	98.81329867	97.73622068	96.68272318	95.65203664
221207A00074	12/7/2022	4.66	12/6/2024	100.38438	100.2843836	100.1845969	100.0850185	99.98564776	99.88648402	99.7875266	99.6887748	99.59022798
221208A00001	12/8/2022	4.6	12/8/2033	135.37575	125.3571235	116.2000587	107.8248249	100.1595006	93.13916675	86.70519033	80.80458432	75.38943637
221208A00005	12/8/2022	4.88	12/8/2037	150.5705	135.7410288	122.6404701	111.0528261	100.7903724	91.68981302	83.60897608	76.42397309	70.0267529
221208A00006	12/8/2022	4.88	12/8/2037	150.5705	135.7410288	122.6404701	111.0528261	100.7903724	91.68981302	83.60897608	76.42397309	70.0267529
221208A00020	12/8/2022	4.11	12/8/2027	111.87935	108.6674841	105.5662253	102.5711145	99.67790214	96.88253594	94.18114992	91.57005475	89.0457285
221208A00050	12/8/2022	4.11	12/8/2027	111.87935	108.6674841	105.5662253	102.5711145	99.67790214	96.88253594	94.18114992	91.57005475	89.0457285
221208A00051	2/15/2023	4.27	2/13/2026	104.9383	103.6290042	102.3474077	101.0926325	99.86383749	98.66021688	97.4809985	96.32544189	95.19283672
221208A00052	2/15/2023	4.01	2/15/2028	112.27277	108.8637256	105.5778645	102.4100389	99.35534463	96.40911075	93.5668872	90.82443282	88.17770421
221208A00054	2/1/2023	4.02	2/1/2028	112.15468	108.7883928	105.542473	102.4118733	99.39179409	96.47766871	93.66515004	90.95009844	88.32857026
221208A00061	12/8/2022	4.11	12/8/2027	111.87935	108.6674841	105.5662253	102.5711145	99.67790214	96.88253594	94.18114992	91.57005475	89.0457285
221208A00062	12/8/2022	4.24	12/8/2028	116.24901	111.9403482	107.8191938	103.8763367	100.1030723	96.49117062	93.03284751	89.72073768	86.54786987
221208A00110	12/8/2022	4.07	12/8/2027	111.75422	108.5443187	105.4449734	102.451727	99.5603317	96.76673676	94.06707771	91.4576667	88.93498318
221209A00035	12/9/2022	3.91	12/9/2027	111.52506	108.3098279	105.2055733	102.2078172	99.31228747	96.51491068	93.81180105	91.19925075	88.6737205
221209A00037	12/9/2022	3.91	12/9/2027	111.52506	108.3098279	105.2055733	102.2078172	99.31228747	96.51491068	93.81180105	91.19925075	88.6737205
221209A00070	12/9/2022	4.42	12/9/2037	127.54513	119.5811759	112.3094437	105.6602261	99.57152409	93.98813279	88.86084272	84.14574004	79.80359357
221212A00011	12/12/2022	3.89	12/10/2027	111.47238	108.2552433	105.1492347	102.1498628	99.25284695	96.45410538	93.74974474	91.13605008	88.60947546
221212A00040	12/12/2022	4.45	12/12/2025	104.47031	103.3342269	102.2229528	101.1356765	100.0716253	99.03005958	98.0102707	97.01157959	96.03333521
221212A00041	12/12/2022	4.15	12/10/2027	112.02547	108.8058506	105.6972367	102.6951452	99.79530603	96.99364734	94.28628493	91.66951236	89.13979161
221212A00063	12/12/2022	4.45	12/12/2025	104.47031	103.3342269	102.2229528	101.1356765	100.0716253	99.03005958	98.0102707	97.01157959	96.03333521
221212A00071	12/12/2022	4.15	12/13/2027	112.05695	108.8286472	105.7118685	102.7021015	99.79504751	96.98660771	94.27287276	91.65011266	89.11476729
221212A00117	6/12/2023	4.11	6/12/2026	106.01276	104.3727253	102.7662213	101.1922823	99.64998263	98.13843138	96.65677098	95.20417562	93.77984972
221212A00131	12/12/2023	3.77	12/11/2026	107.3109	105.160196	103.0636722	101.01959	99.02628096	97.08214272	95.18563602	93.33528153	91.52965707
221213A00004	12/13/2022	3.99	12/13/2027	111.55423	108.3338531	105.2247935	102.2225473	99.32282231	96.52152622	93.81475584	91.19878707	88.67006547
221213A00017	12/13/2022	4.1	12/14/2026	108.0463	105.8794643	103.7673253	101.7081192	99.70015696	97.74181672	95.83154076	93.96783226	92.14925242
221213A00047	12/13/2022	3.8	12/13/2027	111.21929	107.997954	104.8881521	101.8853648	98.98528612	96.18381118	93.47702484	90.86119186	88.33274737
221213A00051	12/13/2022	4.02	12/13/2027	111.64849	108.426627	105.3161201	102.3124637	99.41136454	96.608729	93.90065276	91.28341062	88.75344706
221213A00056	12/13/2022	4.02	5/13/2026	105.66742	104.110254	102.5840164	101.0878569	99.62095666	98.18252605	96.77180354	95.38805438	94.0305694
221213A00061	12/13/2022	4.15	12/11/2026	108.12075	105.9612449	103.8560935	101.8035559	99.80195883	97.8496952	95.94522115	94.08705296	92.27376422

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221214A00003	12/14/2022	4.26	12/12/2025	104.2562	103.1214029	102.0113921	100.9253601	99.8625346	98.82217647	97.80357751	96.8060591	95.82897058
221214A00020	12/14/2022	4.2	12/12/2025	104.18859	103.0541953	101.9445835	100.8589443	99.79650595	98.75652917	97.73830598	96.74115789	95.76443438
221214A00022	12/14/2022	4.17	2/13/2026	104.80822	103.4998134	102.219092	100.965177	99.73722755	98.53443852	97.35603802	96.20128598	95.06947242
221214A00031	12/14/2022	3.97	12/14/2027	111.50139	108.2791217	105.1683195	102.1644688	99.2632687	96.46061865	93.75260789	91.13550518	88.60574943
221214A00046	12/14/2022	4.02	12/14/2027	111.65863	108.4338781	105.3206596	102.3144547	99.41096045	96.60607432	93.89588357	91.27665513	88.74482614
221214A00077	12/14/2022	3.84	12/14/2027	111.35501	108.128801	105.0143529	102.0071324	99.10282261	96.29730774	93.58666278	90.96714309	88.43517498
221214A00079	12/14/2022	3.84	12/14/2027	111.35501	108.128801	105.0143529	102.0071324	99.10282261	96.29730774	93.58666278	90.96714309	88.43517498
221214A00102	12/14/2022	4.33	12/15/2025	104.36629	103.222635	102.1041353	101.0099653	99.93933608	98.89149263	97.86571181	96.8613009	95.87759592
221215A00082	12/15/2022	4.27	12/15/2025	104.29818	103.154936	102.0368408	100.9430692	99.87283249	98.82537562	97.7999757	96.79594013	95.81260507
221215A00115	12/15/2022	4	12/15/2027	111.60581	108.3791727	105.2642105	102.2564002	99.35143003	96.54518933	93.83375772	91.21339498	88.68053158
221216A00007	12/16/2022	4.27	12/16/2025	104.30842	103.1623783	102.0416099	100.9452799	99.87259419	98.82279243	97.79514678	96.78895998	95.80356378
221216A00008	12/16/2022	4.27	12/16/2025	104.30842	103.1623783	102.0416099	100.9452799	99.87259419	98.82279243	97.79514678	96.78895998	95.80356378
221216A00009	12/16/2022	4.27	12/16/2025	104.30842	103.1623783	102.0416099	100.9452799	99.87259419	98.82279243	97.79514678	96.78895998	95.80356378
221216A00010	12/16/2022	4.27	12/16/2025	104.30842	103.1623783	102.0416099	100.9452799	99.87259419	98.82279243	97.79514678	96.78895998	95.80356378
221216A00013	12/16/2022	4.04	12/16/2027	111.7419	108.5103874	105.3907751	102.3785279	99.46932278	96.65903842	93.94374448	91.31969139	88.7833008
221216A00023	12/16/2022	4.04	12/13/2027	111.71133	108.4884763	105.3770045	102.372408	99.47039269	96.66686418	93.95791738	91.33982632	88.80903479
221216A00044	12/16/2022	4.43	4/16/2025	101.76533	101.3010698	100.8410587	100.3852395	99.93355489	99.48594859	99.04236539	98.60275103	98.16705227
221216A00045	12/16/2022	4.38	5/16/2025	102.06615	101.5183782	100.976504	100.4404318	99.91006858	99.38532325	98.86610664	98.35233146	97.84391226
221216A00047	12/16/2022	4.34	6/16/2025	102.37568	101.7415805	101.1153585	100.4968652	99.88595782	99.28249719	98.68634743	98.09737598	97.51545348
221216A00048	12/16/2022	4.32	7/16/2025	102.68545	101.9676973	101.2600067	100.5621656	99.87396913	99.19521785	98.52571789	97.86528068	97.21372272
221216A00049	12/16/2022	4.29	8/15/2025	102.99199	102.1904614	101.4014392	100.6246343	99.85976406	99.10655448	98.36473986	97.63406254	96.91427262
221219A00043	12/19/2022	4.07	12/17/2027	111.84668	108.6107835	105.4869999	102.4707825	99.55779739	96.74391298	94.02518937	91.39786795	88.85836191
221220A00024	12/20/2022	4.7	12/20/2024	100.54435	100.4054527	100.2669568	100.1288574	99.99115285	99.85384134	99.71692116	99.58039062	99.44424801
221220A00025	12/20/2022	4.38	12/22/2025	104.49682	103.333231	102.1956503	101.0832123	99.99508891	98.93048792	97.88865128	96.86885321	95.87039854
221220A00029	12/20/2022	4.7	12/20/2024	100.54435	100.4054527	100.2669568	100.1288574	99.99115285	99.85384134	99.71692116	99.58039062	99.44424801
221221A00038	12/21/2022	4.43	12/20/2024	100.51779	100.3788101	100.2402313	100.1020505	99.96426598	99.82687596	99.68987872	99.55327251	99.41705562
221221A00043	12/21/2022	4.26	12/19/2025	104.32766	103.173308	102.0445866	100.9406482	99.86068189	98.80391158	97.76959455	96.75701951	95.76550493
221221A00046	12/21/2022	4.33	12/19/2025	104.4079	103.2530543	102.1238521	101.0194403	99.93900761	98.881778	97.8470085	96.83398764	95.84203374
221221A00048	12/21/2022	4.22	12/21/2026	108.38025	106.1907581	104.0568611	101.9767556	99.94871232	97.97107198	96.04224116	94.16068939	92.32494604
221221A00049	12/21/2022	4.15	12/21/2027	112.14089	108.8894086	105.7508435	102.7206016	99.79430702	96.96778865	94.23706957	91.59835647	89.04802992
221221A00053	12/21/2022	4.15	12/21/2027	112.14089	108.8894086	105.7508435	102.7206016	99.79430702	96.96778865	94.23706957	91.59835647	89.04802992
221222A00012	12/22/2022	4.35	12/16/2025	104.39945	103.252862	102.1315516	101.034688	99.96147664	98.91115707	97.88300127	96.87631176	95.89042014
221222A00013	12/22/2022	4.34	12/23/2025	104.46107	103.2949618	102.154982	101.0402566	99.94995192	98.88327057	97.83944956	96.81775848	95.81749776

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
221222A00014	12/22/2022	4.65	12/23/2024	100.5704	100.4231635	100.2763721	100.1300214	99.98410944	99.83863423	99.69359376	99.54898606	99.40480918
221222A00024	12/22/2022	4.35	12/15/2025	104.38899	103.2452013	102.1265667	101.0322639	99.96150395	98.91353163	97.88762385	96.88308782	95.89925953
221222A00026	12/22/2022	4.22	12/15/2026	108.31406	106.1415949	104.0239958	101.9594989	99.94640805	97.98309484	96.0679952	94.19960631	92.37648369
221222A00027	12/22/2022	4.16	12/15/2027	112.10941	108.8748195	105.7521119	102.7367556	99.82443197	97.01102397	94.29260502	91.66542896	89.12592055
221222A00035	12/30/2022	4.34	12/30/2025	104.53405	103.3483464	102.1896227	101.056969	99.94951154	98.86641544	97.80688219	96.77014792	95.75548146
221222A00053	12/22/2022	4.18	12/22/2027	111.80247	108.6613125	105.6296728	102.703026	99.87707023	97.14770969	94.51104328	91.96335382	89.50109805
221223A00016	12/23/2022	4.73	12/23/2024	100.58217	100.4349244	100.2881197	100.1417558	99.99583058	99.85034215	99.7052885	99.56066766	99.41647766
221223A00025	12/23/2022	4.25	12/23/2027	112.47882	109.2165027	106.0675809	103.0274386	100.0916761	97.25610014	94.51671271	91.8697008	89.31142642
221228A00044	12/28/2022	4.31	12/28/2027	112.72365	109.4437265	106.2781641	103.2222858	100.2716402	97.42198603	94.66927998	92.00966669	89.43946842
221228A00075	12/28/2022	4.09	12/28/2027	112.29013	109.0107413	105.845897	102.7909056	99.84130314	96.99283599	94.2414499	91.58327905	89.01463597
221228A00129	12/28/2022	4.11	12/28/2027	112.13392	108.9087138	105.7971753	102.7945702	99.89639854	97.09837758	94.3964298	91.78667141	89.26540169
221229A00075	12/29/2022	5.2	12/29/2037	154.83225	139.6810081	126.2947321	114.4526937	103.963111	94.65920333	86.39580209	79.04643745	72.50083145
221230A00055	12/30/2022	4.59	12/30/2024	100.65047	100.4836085	100.3173021	100.1515468	99.98634012	99.82167917	99.6575613	99.49398383	99.3309441
221230A00059	12/30/2022	4.47	6/30/2025	102.66643	101.9920347	101.3265067	100.6696743	100.021368	99.38142231	98.7496763	98.12597297	97.51015937
221230A00072	12/30/2022	4.8	12/31/2024	100.68378	100.5142521	100.3452921	100.1768974	100.0090654	99.84179306	99.67507778	99.50891675	99.34330725
221230A00086	12/30/2022	4.8	1/2/2025	100.7071	100.5320266	100.3575601	100.1837008	100.0104454	99.83779098	99.66573426	99.49427216	99.32340161
221230A00087	12/30/2022	4.56	1/2/2026	104.82612	103.6304	102.4620651	101.3201838	100.2038637	99.11225214	98.04453415	96.99993016	95.97769425
221230A00088	12/30/2022	4.42	12/30/2026	108.91624	106.6963268	104.5332076	102.4250194	100.3699806	98.36638191	96.41258284	94.50700846	92.64814607
221230A00108	12/30/2022	4.8	12/30/2024	100.67236	100.5056122	100.3394133	100.1737637	100.0086607	99.84410166	99.6800839	99.51660475	99.35366158
221230A00109	12/30/2022	4.56	12/30/2025	104.7929	103.6055791	102.4452654	101.3110467	100.2020487	99.1174357	98.05640869	97.01820319	96.00208747
221230A00111	12/30/2022	4.42	12/30/2026	108.91624	106.6963268	104.5332076	102.4250194	100.3699806	98.36638191	96.41258284	94.50700846	92.64814607
230103A00066	1/3/2023	4.19	7/15/2026	106.66227	104.9234103	103.2214925	101.5554028	99.9240734	98.32647946	96.76163658	95.22859892	93.7264572
230103A00068	1/3/2023	4.69	3/13/2025	101.48946	101.1196478	100.7525457	100.3881231	100.0263504	99.66719891	99.31063989	98.95664525	98.60518725
230103A00070	1/3/2023	4.53	10/15/2025	103.90557	102.9317544	101.9762545	101.0385601	100.1181759	99.21462496	98.3274476	97.45620081	96.60045747
230104A00004	1/4/2023	4.19	1/4/2028	112.41573	109.1216363	105.9429964	102.8750638	99.91332189	97.0534682	94.29140281	91.62321726	89.04518426
230104A00044	1/4/2023	4.2	1/4/2028	112.44775	109.153147	105.9740064	102.9055862	99.94336925	97.08305271	94.32053625	91.651911	89.07344929
230105A00020	1/5/2023	4.32	1/5/2028	112.84297	109.5392938	106.3514232	103.2746005	100.304293	97.43618284	94.66615591	91.99029015	89.40484551
230106A00017	1/6/2023	4.23	1/6/2028	112.56518	109.2632361	106.0771644	103.0021936	100.0337847	97.1676142	94.3995625	91.72570271	89.14229026
230106A00019	1/6/2023	4.23	1/6/2028	112.56518	109.2632361	106.0771644	103.0021936	100.0337847	97.1676142	94.3995625	91.72570271	89.14229026
230106A00032	1/6/2023	4.28	1/6/2026	104.63196	103.4250766	102.246128	101.0941503	99.96822415	98.86747195	97.79105495	96.73817139	95.70805441
230109A00011	1/9/2023	4.61	1/6/2025	100.7184	100.5322689	100.3468312	100.1620859	99.97802915	99.79465704	99.61196571	99.42995133	99.24861009
230109A00027	1/9/2023	4.64	12/17/2024	100.5031	100.3725581	100.2423707	100.1125369	99.98305522	99.85392428	99.72514257	99.59670863	99.46862102
230109A00042	1/9/2023	4.07	12/20/2027	111.8775	108.6329266	105.5009916	102.4771145	99.55693253	96.73628692	94.0112124	91.37792662	88.83282047

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230109A00083	1/9/2023	4.79	1/11/2038	149.69411	134.8288284	121.7087318	110.1143861	99.85525733	90.76575797	82.70185292	75.53814307	69.16535734
230110A00006	1/10/2023	4.06	1/10/2028	112.06065	108.755944	105.5676067	102.4908301	99.52104125	96.65388545	93.8852139	91.2110726	88.62769181
230110A00023	1/10/2023	4.3	1/12/2026	104.62177	103.4000453	102.2069615	101.0415164	99.9027562	98.78977036	97.70168952	96.63768303	95.59695686
230110A00035	1/10/2023	4.08	1/10/2028	111.90662	108.6570914	105.523074	102.499759	99.58257286	96.76716026	94.0493724	91.42525564	88.891041
230110A00037	1/11/2023	4.66	11/15/2024	100.16226	100.1205609	100.078909	100.0373083	99.9957588	99.95426033	99.9128128	99.87141613	99.8300702
230110A00040	1/13/2023	4.07	12/13/2027	111.80559	108.5812502	105.468331	102.4623244	99.55893491	96.75406696	94.0438143	91.42444987	88.89241638
230110A00043	1/10/2023	3.84	1/10/2028	111.62132	108.31722	105.1296718	102.0538554	99.08518493	96.21929317	93.4520199	90.77940045	88.19765512
230110A00047	1/10/2023	3.84	1/10/2028	111.62132	108.31722	105.1296718	102.0538554	99.08518493	96.21929317	93.4520199	90.77940045	88.19765512
230110A00055	1/10/2023	4.06	1/10/2028	112.06065	108.755944	105.5676067	102.4908301	99.52104125	96.65388545	93.8852139	91.2110726	88.62769181
230110A00070	1/10/2023	4.27	1/9/2026	104.55453	103.3414252	102.1565669	100.9989777	99.86772251	98.7619087	97.68068363	96.6232324	95.5887758
230110A00074	1/12/2023	4.65	1/10/2025	100.77081	100.5735604	100.3770921	100.1814041	99.98649169	99.7923502	99.59897498	99.40636144	99.21450503
230111A00004	1/11/2023	3.83	1/11/2028	111.5989	108.2924399	105.1027005	102.0248511	99.05429554	96.18665743	93.41776786	90.74365407	88.16052878
230111A00013	1/11/2023	4.25	1/9/2026	104.53045	103.3174947	102.1327874	100.9753467	99.84423768	98.73856776	97.65748434	96.60017257	95.56585332
230111A00019	1/11/2023	3.83	1/11/2028	111.5989	108.2924399	105.1027005	102.0248511	99.05429554	96.18665743	93.41776786	90.74365407	88.16052878
230111A00039	1/11/2023	4.6	1/13/2025	100.79427	100.5886897	100.3839663	100.1800905	99.97705712	99.77486086	99.57349644	99.37295868	99.17324241
230111A00046	1/11/2023	4.28	1/13/2026	104.60783	103.3834698	102.1878726	101.020034	99.87899375	98.76383567	97.67368482	96.60770535	95.56509836
230111A00072	1/11/2023	4.21	1/12/2026	104.51264	103.2916218	102.0992262	100.9344582	99.79636428	98.68403421	97.59659888	96.53322792	95.49312754
230112A00004	1/12/2023	4	1/12/2028	111.88759	108.5802452	105.3895476	102.3106731	99.33903082	96.47024915	93.70016368	91.02480589	88.44039245
230112A00014	1/12/2023	4.09	1/12/2027	108.33305	106.0844608	103.8941589	101.7602069	99.68075004	97.65401073	95.6782841	93.7519345	91.8733921
230112A00041	1/12/2023	4.2	1/12/2026	104.50052	103.2795747	102.0872556	100.9225629	99.78454296	98.67228575	97.58492214	96.52162179	95.48159095
230112A00042	1/12/2023	4.09	1/12/2027	108.33305	106.0844608	103.8941589	101.7602069	99.68075004	97.65401073	95.6782841	93.7519345	91.8733921
230112A00044	1/12/2023	4	1/12/2028	111.88759	108.5802452	105.3895476	102.3106731	99.33903082	96.47024915	93.70016368	91.02480589	88.44039245
230112A00059	3/1/2023	4.04	3/2/2026	104.83127	103.4785654	102.1497903	100.8443584	99.56170607	98.30128761	97.06257421	95.84505347	94.64822874
230112A00060	3/15/2023	4.01	3/13/2026	104.89945	103.5167766	102.1590323	100.8255968	99.51587243	98.22928079	96.96526176	95.72327294	94.50278892
230112A00061	3/15/2023	4.01	3/13/2026	104.89945	103.5167766	102.1590323	100.8255968	99.51587243	98.22928079	96.96526176	95.72327294	94.50278892
230112A00062	3/15/2023	3.83	3/15/2028	111.96268	108.4773115	105.1206839	101.887365	98.77218009	95.77019926	92.87672422	90.08727626	87.39758479
230112A00063	3/15/2023	3.83	3/15/2028	111.96268	108.4773115	105.1206839	101.887365	98.77218009	95.77019926	92.87672422	90.08727626	87.39758479
230112A00065	1/12/2023	4.09	1/12/2027	108.33305	106.0844608	103.8941589	101.7602069	99.68075004	97.65401073	95.6782841	93.7519345	91.8733921
230112A00066	1/12/2023	4	1/12/2028	111.88759	108.5802452	105.3895476	102.3106731	99.33903082	96.47024915	93.70016368	91.02480589	88.44039245
230113A00037	1/26/2024	3.43	1/30/2026	103.71029	102.4454873	101.2115487	100.0073517	98.83182994	97.68396768	96.56279648	95.4673927	94.39687492
230113A00055	1/13/2023	3.88	1/13/2028	111.51036	108.2064022	105.0191051	101.9436426	98.97541864	96.11005719	93.3433898	90.67144427	88.09043398
230113A00057	1/13/2023	3.99	1/13/2028	110.99792	107.9262966	104.962278	102.1014223	99.33950395	96.67249732	94.0965661	91.60805295	89.20347001
230113A00080	1/13/2023	4.18	1/13/2026	104.48631	103.2627265	102.0678973	100.9008143	99.7605176	98.64609124	97.55666065	96.49139027	95.4494815



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230117A00015	1/17/2023	4.52	1/17/2025	100.82135	100.6046758	100.3889475	100.174159	99.96030396	99.74737633	99.53536997	99.32427884	99.11409696
230117A00040	1/17/2023	4.07	1/19/2027	108.36218	106.0943168	103.885632	101.7341489	99.63797084	97.59528025	95.60433482	93.66346358	91.77106335
230117A00048	1/17/2023	3.97	1/14/2028	111.81077	108.4992358	105.3046698	102.2222292	99.24730384	96.3755038	93.60264782	90.92475157	88.33801702
230117A00087	1/17/2023	3.93	1/18/2028	111.72096	108.4000179	105.1967172	102.1061744	99.12373912	96.24498424	93.46569369	90.78185069	88.1896269
230118A00019	1/18/2023	3.59	1/18/2028	110.88872	107.5747467	104.378442	101.2949057	98.31947951	95.44772924	92.67543226	89.99856585	87.41329625
230118A00020	1/18/2023	3.87	1/16/2026	104.23543	103.0037779	101.801295	100.6269549	99.47977707	98.35882569	97.2632077	96.19207017	95.14459813
230118A00033	1/18/2023	3.81	1/18/2028	111.33205	108.0174168	104.820265	101.7357094	98.75910519	95.88603061	93.1122747	90.43382557	87.84685955
230118A00039	1/18/2023	3.81	1/18/2028	111.33205	108.0174168	104.820265	101.7357094	98.75910519	95.88603061	93.1122747	90.43382557	87.84685955
230118A00053	1/18/2023	3.87	1/16/2026	104.23543	103.0037779	101.801295	100.6269549	99.47977707	98.35882569	97.2632077	96.19207017	95.14459813
230118A00056	1/18/2023	3.87	1/16/2026	104.23543	103.0037779	101.801295	100.6269549	99.47977707	98.35882569	97.2632077	96.19207017	95.14459813
230118A00058	1/23/2023	4	2/17/2026	104.63257	103.3150378	102.024119	100.7590128	99.51895355	98.30320594	97.11106382	95.94184855	94.79490772
230118A00087	1/18/2023	4.02	1/16/2026	104.32066	103.0899619	101.8883868	100.7149051	99.56853858	98.44835391	97.3534602	96.28300666	95.23618027
230119A00034	1/19/2023	3.82	1/19/2028	111.374	108.0559784	104.8556302	101.7680631	98.78862132	95.91287299	93.13659754	90.45577413	87.86657073
230119A00075	1/19/2023	4.44	1/21/2025	100.84665	100.6188777	100.3921434	100.1664434	99.94177035	99.7181173	99.49547725	99.27384326	99.05320845
230119A00105	1/19/2023	3.9	1/19/2027	107.9816	105.7180701	103.5136312	101.3663069	99.27420306	97.23550452	95.24847133	93.31143479	91.4227939
230119A00108	1/19/2023	3.81	1/19/2028	111.34156	108.0240684	104.8242334	101.737166	98.758211	95.88293679	93.10712329	90.42675008	87.83798551
230119A00137	1/19/2023	3.9	1/19/2027	107.9816	105.7180701	103.5136312	101.3663069	99.27420306	97.23550452	95.24847133	93.31143479	91.4227939
230120A00021	1/20/2023	4.13	1/20/2026	104.49484	103.2521006	102.0390177	100.854534	99.69764554	98.56739452	97.46286721	96.38319128	95.32753346
230120A00022	1/20/2023	3.9	1/20/2028	111.64326	108.3181491	105.1110038	102.0169194	99.0312261	96.14947848	93.36744347	90.68108839	88.0865701
230120A00027	1/20/2023	4.13	1/20/2026	104.49484	103.2521006	102.0390177	100.854534	99.69764554	98.56739452	97.46286721	96.38319128	95.32753346
230120A00029	1/20/2023	3.9	1/20/2028	111.64326	108.3181491	105.1110038	102.0169194	99.0312261	96.14947848	93.36744347	90.68108839	88.0865701
230120A00049	1/20/2023	4.53	1/16/2025	100.81261	100.5987123	100.3857385	100.1736811	99.96253427	99.75229201	99.54294845	99.33449775	99.12693415
230120A00065	1/20/2023	4.52	1/21/2025	100.86486	100.6370578	100.4102957	100.1845679	99.95986719	99.73618658	99.51351905	99.29185767	99.07119558
230120A00071	1/20/2023	4.31	1/21/2025	100.83489	100.606942	100.3800359	100.154167	99.92932811	99.7055121	99.48271195	99.26092066	99.04013132
230120A00079	1/20/2023	3.68	1/20/2028	111.19958	107.8751216	104.6688187	101.5757499	98.59123175	95.71080637	92.93022895	90.24545592	87.65263396
230120A00099	1/20/2023	3.92	1/20/2026	104.3348	103.0915817	101.8780573	100.6931749	99.53592781	98.40535618	97.30054418	96.22061751	95.16474107
230120A00103	1/20/2023	3.92	1/20/2026	104.3348	103.0915817	101.8780573	100.6931749	99.53592781	98.40535618	97.30054418	96.22061751	95.16474107
230120A00114	1/20/2023	4.13	1/20/2026	104.49484	103.2521006	102.0390177	100.854534	99.69764554	98.56739452	97.46286721	96.38319128	95.32753346
230120A00117	1/20/2023	3.9	1/20/2028	111.64326	108.3181491	105.1110038	102.0169194	99.0312261	96.14947848	93.36744347	90.68108839	88.0865701
230123A00016	1/23/2023	4.64	12/2/2024	100.33847	100.2495653	100.1608245	100.0722439	99.98382288	99.89556108	99.80745805	99.71951336	99.63172659
230123A00051	1/23/2023	3.75	1/21/2028	111.43672	108.1056803	104.8930759	101.7939731	98.80367457	95.91770959	93.13182108	90.441954	87.84424421
230123A00078	1/23/2023	4.41	6/23/2025	102.49617	101.8423677	101.1969273	100.5596856	99.93048692	99.30917943	98.69561513	98.08964967	97.49114231
230124A00004	1/24/2023	3.99	1/24/2028	111.97549	108.6340921	105.4115221	102.3028249	99.30328408	96.40841097	93.61393182	90.91577593	88.31006446

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230124A00014	1/24/2023	4.23	1/26/2026	104.67933	103.4189953	102.189113	100.9885859	99.81637061	98.6714727	97.55294396	96.4598796	95.39141584
230124A00015	1/24/2023	4.09	1/25/2027	108.4703	106.1849452	103.9595633	101.7921382	99.68073597	97.62350403	95.61866707	93.66452304	91.75943941
230124A00022	1/24/2023	4.39	1/24/2025	100.8853	100.6489623	100.4137429	100.1796334	99.946626	99.71471278	99.48388601	99.25413801	99.02546118
230124A00024	1/24/2023	4.23	1/23/2026	104.64881	103.3968772	102.1750001	100.9821061	99.81717133	98.67921961	97.56731985	96.48058338	95.41816156
230124A00025	1/24/2023	4.09	1/25/2027	108.4703	106.1849452	103.9595633	101.7921382	99.68073597	97.62350403	95.61866707	93.66452304	91.75943941
230124A00035	1/24/2023	4.23	1/26/2026	104.67933	103.4189953	102.189113	100.9885859	99.81637061	98.6714727	97.55294396	96.4598796	95.39141584
230124A00041	1/24/2023	4.6	1/24/2025	100.91636	100.6801782	100.4451071	100.2111428	99.97827754	99.74650355	99.51581312	99.28619861	99.05765248
230124A00045	1/24/2023	3.99	1/24/2028	111.97549	108.6340921	105.4115221	102.3028249	99.30328408	96.40841097	93.61393182	90.91577593	88.31006446
230124A00046	1/24/2023	3.99	1/24/2028	111.97549	108.6340921	105.4115221	102.3028249	99.30328408	96.40841097	93.61393182	90.91577593	88.31006446
230124A00055	6/15/2023	4.13	6/15/2032	126.88344	118.7004815	111.1246484	104.1072827	97.60387964	91.57371364	85.97949824	80.78707863	75.96515297
230124A00056	3/28/2023	4.19	3/28/2033	129.65692	120.5813541	112.2380089	104.5633269	97.49959744	90.99438709	85.00003194	79.47318092	74.3743851
230124A00058	6/15/2023	4.21	6/15/2034	133.33561	122.8889041	113.3882995	104.7419052	96.86724517	89.69024784	83.14434855	77.16969171	71.71242172
230125A00010	1/25/2023	4.01	1/25/2027	108.28988	106.0065946	103.7832398	101.6178	99.50834245	97.45301585	95.45004597	93.49773185	91.59444201
230125A00021	1/25/2023	3.95	1/26/2026	104.4296	103.1693541	101.9395997	100.7392345	99.56721297	98.42253871	97.30426156	96.21147493	95.14331339
230125A00022	1/25/2023	3.8	1/25/2027	108.00131	105.71765	103.4940239	101.3284029	99.21884905	97.16350618	95.1605955	93.20841174	91.30531937
230125A00023	1/25/2023	3.69	1/25/2028	111.27921	107.9398531	104.7195883	101.6134341	98.61665371	95.72473935	92.93339973	90.23854782	87.63628965
230125A00031	1/25/2023	3.74	1/25/2028	110.57994	107.4857562	104.5010369	101.6212716	98.84215949	96.15960077	93.56968582	91.0686854	88.65304128
230126A00015	1/26/2023	4.08	1/26/2027	108.45828	106.1703496	103.9425209	101.7727685	99.65915234	97.59981415	95.5929733	93.63692269	91.73002506
230126A00034	1/26/2023	4.56	1/24/2025	100.90693	100.6707565	100.4357002	100.2017508	99.96890041	99.73714118	99.50646545	99.27686559	99.04833406
230126A00036	1/26/2023	4.19	1/26/2026	104.62928	103.369281	102.1397238	100.9395163	99.76761529	98.62302661	97.50480211	96.41203715	95.34386807
230127A00012	1/27/2023	4	1/27/2028	112.03818	108.687593	105.4564017	102.339616	99.33248708	96.43049627	93.62934163	90.92492617	88.31334644
230127A00044	1/27/2023	4.25	1/27/2026	104.71458	103.451278	102.2185635	101.0153312	99.84053116	98.69316276	97.57227198	96.47694858	95.40632364
230127A00045	1/27/2023	4.12	1/27/2027	108.55924	106.2674379	104.0358904	101.862565	99.74551476	97.68287509	95.67285924	93.71375442	91.80391793
230127A00046	1/27/2023	4	1/27/2028	112.03818	108.687593	105.4564017	102.339616	99.33248708	96.43049627	93.62934163	90.92492617	88.31334644
230127A00048	1/27/2023	4	1/27/2028	112.03818	108.687593	105.4564017	102.339616	99.33248708	96.43049627	93.62934163	90.92492617	88.31334644
230127A00053	1/27/2023	4	1/27/2028	112.03818	108.687593	105.4564017	102.339616	99.33248708	96.43049627	93.62934163	90.92492617	88.31334644
230127A00056	1/27/2023	3.78	1/27/2028	111.59236	108.2424338	105.0120963	101.8963397	98.89040168	95.98975059	93.19007266	90.48725978	87.87739818
230127A00059	1/27/2023	4.41	1/27/2025	100.92238	100.6776699	100.4341539	100.1918219	99.95066516	99.71067524	99.47184361	99.23416186	98.99762167
230127A00060	1/30/2023	4.25	2/3/2026	104.79167	103.5092012	102.2570507	101.0341484	99.83947153	98.67204491	97.5309379	96.41526195	95.32416831
230127A00073	1/27/2023	4.24	2/17/2026	104.94741	103.6277108	102.3346574	101.0674529	99.82533057	98.60755429	97.41341688	96.24223882	95.0933668
230127A00075	1/27/2023	4.23	7/28/2025	102.80802	102.0559602	101.3149227	100.5846644	99.86495121	99.15555562	98.45625671	97.76683981	97.0870963
230127A00079	1/27/2023	4.23	7/28/2025	102.80802	102.0559602	101.3149227	100.5846644	99.86495121	99.15555562	98.45625671	97.76683981	97.0870963
230127A00095	1/27/2023	4.59	1/27/2025	100.94721	100.7026717	100.45932	100.217149	99.97615016	99.73631496	99.49763496	99.26010184	99.02370732

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230127A00096	1/27/2023	4.21	1/27/2026	104.66442	103.4014548	102.1690667	100.9661554	99.79167103	98.64461317	97.52402791	96.42900514	95.3586761
230130A00045	1/30/2023	4.02	1/28/2028	112.11359	108.7590432	105.5241082	102.4037796	99.39329725	96.48813141	93.6839701	90.97670681	88.36242922
230130A00086	1/30/2023	4.16	2/1/2027	108.70444	106.3971293	104.1507686	101.9632984	99.83274417	97.75721472	95.73489802	93.76405713	91.8430263
230130A00087	1/30/2023	4.04	1/28/2028	112.17896	108.8233421	105.5873652	102.4660223	99.45455224	96.5484244	93.74332592	91.03514945	88.41998186
230130A00095	2/3/2023	4.25	5/26/2026	106.04355	104.4502503	102.8889373	101.3587206	99.85873789	98.38815872	96.9461826	95.5320378	94.14498006
230130A00096	1/30/2023	4.67	1/30/2025	101.00063	100.7476996	100.496037	100.2456304	99.99647046	99.74854794	99.50185363	99.25637845	99.01211339
230130A00127	1/30/2023	4.02	2/1/2028	112.15468	108.7883928	105.542473	102.4118733	99.39179409	96.47766871	93.66515004	90.95009844	88.32857026
230131A00004	1/31/2023	3.76	1/31/2028	111.56543	108.2050601	104.9649927	101.8401725	98.82579557	95.91729126	93.11030956	90.40070849	87.78454263
230131A00006	1/31/2023	4.23	2/2/2026	104.7542	103.4745635	102.225505	101.0059356	99.81481487	98.65115101	97.51399789	96.40245255	95.31565274
230131A00009	1/31/2023	3.98	1/31/2028	112.0128	108.65176	105.4108229	102.2849566	99.26937097	96.3595084	93.55103082	90.83980745	88.2219033
230131A00032	2/3/2023	4.17	7/30/2026	106.65664	104.8797443	103.1412289	101.4399167	99.77467799	98.14442913	96.54813041	94.98478369	93.45343024
230131A00034	2/3/2023	3.99	12/23/2027	111.65475	108.4055354	105.2693719	102.241658	99.31800498	96.49423034	93.76634643	91.1305501	88.58321282
230131A00057	1/31/2023	4.1	1/29/2027	108.53519	106.2382434	104.0018009	101.82382	99.70234165	97.63548991	95.62146729	93.65855086	91.74508844
230131A00067	1/31/2023	4.02	2/2/2026	104.58965	103.309521	102.0600191	100.8400498	99.64857027	98.48458641	97.34714997	96.23535599	95.14834034
230131A00071	1/31/2023	4.22	1/30/2026	104.7074	103.4359525	102.1954842	100.9848673	99.80303239	98.64896063	97.52168079	96.42026654	95.34383379
230131A00087	2/3/2023	4.26	1/5/2026	104.50145	103.2995858	102.1254589	100.9781138	99.85664045	98.76016974	97.68787104	96.63895021	95.61264758
230131A00095	1/31/2023	4.22	1/30/2026	104.7074	103.4359525	102.1954842	100.9848673	99.80303239	98.64896063	97.52168079	96.42026654	95.34383379
230201A00003	2/1/2023	3.93	1/31/2028	111.84897	108.4906136	105.252294	102.1289758	99.11587119	96.20842501	93.40230134	90.69337153	88.07770259
230201A00011	2/1/2023	3.93	2/1/2028	111.85953	108.4980899	105.2568891	102.1308831	99.11527693	96.20550786	93.3972328	90.68631593	88.06881725
230201A00012	2/1/2023	4.08	2/1/2027	108.52248	106.2172699	103.97297	101.787518	99.65894048	97.58534753	95.56492827	93.59594685	91.67673861
230201A00047	2/1/2023	4.42	2/3/2025	101.00097	100.7367828	100.4739831	100.2125579	99.95249647	99.6937881	99.43642222	99.18038836	98.92567619
230201A00048	2/1/2023	4.42	2/3/2025	101.00097	100.7367828	100.4739831	100.2125579	99.95249647	99.6937881	99.43642222	99.18038836	98.92567619
230202A00006	2/2/2023	3.92	2/2/2027	108.16966	105.8655349	103.6223828	101.4381402	99.31083402	97.23857415	95.21954936	93.25202323	91.33433029
230202A00008	2/2/2023	3.81	2/2/2028	111.47622	108.1181757	104.8803955	101.7578365	98.7457021	95.83942777	93.03466848	90.32728633	87.71333915
230202A00011	2/2/2023	3.92	2/2/2027	108.16966	105.8655349	103.6223828	101.4381402	99.31083402	97.23857415	95.21954937	93.25202323	91.33433029
230202A00033	2/2/2023	4.26	2/3/2025	100.95878	100.6946678	100.4319406	100.1705878	99.91059832	99.65196167	99.39466723	99.13870454	98.88406325
230202A00034	2/2/2024	3.41	2/2/2026	103.71244	102.4397799	101.1975821	99.98475753	98.80026904	97.64312791	96.51239105	95.40715839	94.32657046
230202A00038	2/2/2023	3.84	2/2/2028	111.57469	108.2150232	104.9756674	101.8515748	98.83794698	95.93021828	93.12404226	90.41527975	87.79998737
230202A00041	2/2/2023	3.82	2/2/2028	111.50904	108.1504582	104.9121528	101.7890826	98.77645039	95.86969127	93.06445974	90.35661747	87.74222189
230202A00042	2/2/2023	3.82	2/2/2028	111.50904	108.1504582	104.9121528	101.7890826	98.77645039	95.86969127	93.06445974	90.35661747	87.74222189
230202A00045	2/2/2023	3.62	2/2/2028	111.12599	107.7670324	104.528569	101.4055452	98.39314876	95.48680105	92.68214363	89.9750261	87.36149464
230202A00050	2/2/2023	3.82	2/2/2028	111.50904	108.1504582	104.9121528	101.7890826	98.77645039	95.86969127	93.06445974	90.35661747	87.74222189
230202A00061	2/2/2023	4.16	2/2/2026	104.66527	103.3862283	102.1377555	100.9187619	99.7282073	98.56510025	97.42849486	96.31748841	95.23121889

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230202A00096	2/2/2023	3.81	2/2/2028	111.47622	108.1181757	104.8803955	101.7578365	98.7457021	95.83942777	93.03466848	90.32728633	87.71333915
230203A00021	2/8/2023	4.21	6/17/2026	106.23392	104.5780573	102.9562316	101.3674553	99.81078203	98.28530142	96.79013746	95.32444685	93.88741747
230203A00025	2/3/2023	4.63	2/3/2025	101.03562	100.7716051	100.508969	100.2477039	99.98779911	99.72924391	99.47202784	99.21614049	98.96157158
230203A00026	2/3/2023	3.98	2/3/2028	112.04489	108.6745863	105.424992	102.2910499	99.26794761	96.35110539	93.5361634	90.81896933	88.19556704
230203A00038	2/3/2023	4.1	2/3/2027	108.59118	106.2791725	104.0283875	101.836756	99.70229958	97.62312291	95.59740944	93.62341737	91.69947585
230203A00039	2/3/2023	3.98	2/3/2028	112.04489	108.6745863	105.424992	102.2910499	99.26794761	96.35110539	93.5361634	90.81896933	88.19556704
230203A00043	2/14/2023	4.31	2/13/2026	104.99033	103.6806805	102.398734	101.1436148	99.91448146	98.71052822	97.53098269	96.37510426	95.24218244
230203A00045	2/14/2023	4.31	2/13/2026	104.99033	103.6806805	102.398734	101.1436148	99.91448146	98.71052822	97.53098269	96.37510426	95.24218244
230203A00046	2/10/2023	4.65	2/10/2025	101.1204	100.8369196	100.5550389	100.2747438	99.99602091	99.71885701	99.44323893	99.1691537	98.89658847
230203A00048	2/10/2023	4.65	2/10/2025	101.1204	100.8369196	100.5550389	100.2747438	99.99602091	99.71885701	99.44323893	99.1691537	98.89658847
230203A00050	2/14/2023	4.64	2/14/2025	101.16288	100.8682784	100.5754027	100.2842386	99.9947711	99.70698534	99.42086657	99.13640027	98.85357206
230203A00051	2/14/2023	4.64	2/14/2025	101.16288	100.8682784	100.5754027	100.2842386	99.9947711	99.70698534	99.42086657	99.13640027	98.85357206
230203A00053	2/10/2023	4.32	2/10/2026	104.96658	103.6648428	102.3916023	101.1459178	99.92689286	98.73367012	97.56542905	96.42138399	95.30078229
230203A00054	2/10/2023	4.32	2/10/2026	104.96658	103.6648428	102.3916023	101.1459178	99.92689286	98.73367012	97.56542905	96.42138399	95.30078229
230203A00057	2/3/2023	4.34	2/3/2026	104.90626	103.6230203	102.3701138	101.1464681	99.95106043	98.78291504	97.64110099	96.52472945	95.43295132
230203A00058	2/3/2023	4.34	2/3/2026	104.90626	103.6230203	102.3701138	101.1464681	99.95106043	98.78291504	97.64110099	96.52472945	95.43295132
230203A00059	2/3/2023	4.67	2/3/2025	101.04617	100.7821324	100.5194782	100.2581951	99.99827229	99.73969917	99.48246526	99.22656013	98.97197351
230206A00008	2/6/2023	4.58	2/6/2025	101.07737	100.8047665	100.5336443	100.2639882	99.99578621	99.72902662	99.4636977	99.1997879	98.93728578
230206A00009	2/6/2023	4.58	2/6/2025	101.07737	100.8047665	100.5336443	100.2639882	99.99578621	99.72902662	99.4636977	99.1997879	98.93728578
230207A00025	2/7/2023	4.62	2/7/2025	101.09976	100.8243587	100.5504664	100.2780709	100.00716	99.73772153	99.46974336	99.2032136	98.93812045
230207A00046	2/7/2023	4.83	2/7/2025	101.13578	100.8605524	100.5868306	100.3146018	100.043854	99.77457486	99.5067525	99.24037504	98.97543075
230208A00029	2/8/2023	4.27	2/8/2027	109.03915	106.7069162	104.4367487	102.2265677	100.0743801	97.9782751	95.93641982	93.94705558	92.00849414
230208A00036	2/8/2023	4.43	2/6/2026	105.05852	103.7665055	102.5040478	101.2701336	100.0637936	98.88410195	97.73017447	96.60116579	95.49626749
230208A00038	2/8/2023	4.27	2/8/2027	109.03915	106.7069162	104.4367487	102.2265677	100.0743801	97.9782751	95.93641982	93.94705558	92.00849414
230208A00039	2/8/2023	4.17	2/8/2028	112.72512	109.3290195	106.0549148	102.8977028	99.85252451	96.91475415	94.07998662	91.34402519	88.70287032
230208A00040	2/8/2023	4.26	2/8/2029	116.99059	112.4937305	108.1991966	104.0967443	100.1767056	96.42995494	92.84787547	89.42232768	86.14562001
230208A00041	2/8/2023	4.32	2/8/2030	120.95234	115.33802	110.0260642	104.9984814	100.2384521	95.73024344	91.45913318	87.41133899	83.57395331
230208A00055	2/8/2023	4.22	2/6/2026	104.89278	103.6002742	102.337367	101.1030453	99.89633726	98.71631515	97.56209266	96.43282262	95.32769485
230208A00060	2/8/2023	4.06	2/8/2027	108.74647	106.4138603	104.1434154	101.933051	99.78076871	97.68465264	95.64286517	93.6536431	91.71529395
230209A00015	2/9/2023	4.8	2/5/2025	101.10399	100.8343376	100.5661283	100.2993508	100.0339937	99.77004555	99.50749522	99.24633155	98.98654354
230209A00023	2/9/2023	4.79	2/10/2025	101.16003	100.876474	100.5945218	100.3141556	100.0353619	99.75812745	99.48243912	99.20828393	98.93564904
230209A00024	2/9/2023	4.4	2/5/2026	105.0076	103.7185141	102.4592426	101.2287536	100.0260598	98.85021873	97.7003305	96.57553524	95.47501091
230209A00025	2/9/2023	4.25	2/5/2027	108.95722	106.6349618	104.3743053	102.1731789	100.029597	97.941657	95.90753464	93.92548024	91.99381494

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230209A00027	2/9/2023	4.12	2/7/2028	112.54911	109.158831	105.8902773	102.7383506	99.69820157	96.76521453	93.93499392	91.20335247	88.56629986
230209A00028	2/9/2023	4.9	12/9/2024	100.44348	100.3351325	100.2270348	100.1191832	100.0115769	99.90421505	99.79709675	99.69022113	99.58358733
230209A00037	2/9/2023	4.12	2/9/2028	112.57127	109.1747861	105.9004328	102.743097	99.69791453	96.76025458	93.92570683	91.19006943	88.54933771
230209A00049	2/9/2023	4.17	2/9/2028	112.73634	109.3371298	106.0601208	102.9002001	99.85250106	96.91239048	94.07545579	91.337493	88.69449535
230210A00009	2/10/2023	4.93	12/11/2024	100.47029	100.3563849	100.2427553	100.1293979	100.0163116	99.90349538	99.7909483	99.67866931	99.56665743
230210A00035	2/10/2023	4.52	2/10/2026	105.22508	103.9215895	102.6466203	101.3992364	100.1785407	98.98367495	97.81381792	96.66818318	95.54601738
230210A00040	2/10/2023	4.29	8/10/2027	111.12766	108.2594139	105.481009	102.7890714	100.1803791	97.65185255	95.20054721	92.82364678	90.51845653
230210A00043	2/10/2023	4.34	2/10/2027	109.22425	106.8838375	104.6058327	102.3881507	100.2287924	98.12584069	96.07745595	94.08187262	92.13739535
230210A00045	2/10/2023	4.43	8/10/2026	107.24696	105.4348408	103.6623797	101.9283912	100.2317369	98.57132288	96.946097	95.35504736	93.79720012
230210A00055	2/10/2023	4.02	2/10/2028	112.52913	109.1236393	105.8408581	102.6756417	99.62309819	96.67857037	93.83762275	91.09602947	88.44976301
230210A00062	2/10/2023	4.13	2/10/2027	108.93108	106.5902877	104.3120018	102.0941334	99.93467805	97.83171355	95.78339554	93.7879539	91.84368901
230210A00065	2/10/2023	4.02	2/10/2028	112.52913	109.1236393	105.8408581	102.6756417	99.62309819	96.67857037	93.83762275	91.09602947	88.44976301
230213A00020	2/15/2023	4.28	1/25/2028	112.93097	109.5712387	106.330936	103.2050759	100.1889178	97.27794987	94.4678767	91.75460687	89.13424193
230214A00031	2/14/2023	4.31	2/14/2028	113.25656	109.8340963	106.5350646	103.3543018	100.2868964	97.32817059	94.4736682	91.71914227	89.06054407
230214A00042	2/14/2023	4.96	2/14/2025	101.257	100.9622246	100.6691741	100.377836	100.0881953	99.80023704	99.51394652	99.2293092	98.94631069
230214A00049	2/14/2023	4.38	2/14/2029	117.57759	113.049907	108.7265368	104.5971314	100.6519208	96.88168145	93.27770259	89.83175467	86.53606015
230214A00050	2/14/2023	4.31	2/14/2028	113.25656	109.8340963	106.5350646	103.3543018	100.2868964	97.32817059	94.4736682	91.71914227	89.06054407
230215A00008	2/15/2023	4.49	2/16/2027	109.64523	107.2817944	104.9817646	102.7430403	100.5636049	98.44152261	96.37493436	94.36205427	92.4011661
230215A00019	2/15/2023	5.01	2/18/2025	101.32112	101.0151603	100.7110621	100.4088049	100.1083721	99.80974694	99.51291324	99.21785477	98.92455557
230215A00035	2/15/2023	4.47	2/17/2026	105.35544	104.0312602	102.7338323	101.4623573	100.2160646	98.99421487	97.79609754	96.62102999	95.46835597
230215A00045	2/15/2023	4.37	2/15/2028	113.46724	110.0383452	106.7331772	103.5465612	100.473575	97.5095303	94.64996066	91.89060905	89.22741693
230216A00045	2/16/2023	4.43	5/16/2028	114.70586	111.0009719	107.4385546	104.0123354	100.7163506	97.54493172	94.49268962	91.55449858	88.72548208
230216A00046	2/16/2023	4.42	4/17/2028	114.34039	110.722737	107.2416393	103.8911964	100.6657963	97.56009899	94.5690217	91.6877253	88.91160105
230217A00036	2/17/2023	4.44	2/17/2028	113.72341	110.2843908	106.9696081	103.7738732	100.6922449	97.72001632	94.85270259	92.0860287	89.41591852
230217A00052	2/17/2023	4.55	2/17/2027	109.79703	107.4287872	105.1241386	102.8809797	100.6972905	98.57113138	96.50063954	94.48402508	92.51956776
230221A00004	2/21/2023	4.47	2/18/2028	113.83516	110.3913378	107.0720075	103.8719663	100.7862636	97.81018364	94.93923235	92.16912598	89.49577977
230221A00007	2/21/2023	4.5	10/18/2027	112.50733	109.4279198	106.4506828	103.5716599	100.7870684	98.09329368	95.48687992	92.96452263	90.52306093
230222A00024	2/22/2023	4.74	3/2/2026	105.77469	104.4153115	103.0799738	101.76809	100.4790935	99.2124355	97.96758451	96.74402541	95.54125893
230223A00010	2/23/2023	4.68	10/3/2025	103.9802	103.0379543	102.1128403	101.2043942	100.3121679	99.43572917	98.57466109	97.72856127	96.89704128
230223A00012	2/23/2023	4.68	10/3/2025	103.9802	103.0379543	102.1128403	101.2043942	100.3121679	99.43572917	98.57466109	97.72856127	96.89704128
230223A00033	2/23/2023	4.5	2/23/2028	113.99556	110.5343636	107.1987301	103.9834223	100.8834491	97.89405447	95.01070469	92.22907697	89.5450483
230224A00014	2/24/2023	4.98	2/24/2025	101.41133	101.0883117	100.7673569	100.4484458	100.131559	99.81667713	99.5037812	99.19285241	98.88387223
230224A00015	2/24/2023	4.86	3/17/2026	106.11971	104.7174378	103.3406069	101.9885849	100.6607577	99.35653072	98.07532871	96.81659459	95.57978889



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230224A00018	2/24/2023	5.19	2/24/2025	101.45315	101.1303297	100.809571	100.4908515	100.1741515	99.85945193	99.54673387	99.23597861	98.92716768
230224A00029	2/24/2023	4.87	2/24/2026	105.8703	104.5260321	103.2066861	101.9115988	100.6401329	99.39167291	98.16562515	96.96141616	95.77849207
230227A00060	2/27/2023	4.86	2/27/2026	105.89823	104.5459612	103.217833	101.9132417	100.6316072	99.37236812	98.13498115	96.91892021	95.72367588
230228A00009	2/28/2023	4.69	2/27/2026	105.7795	104.4263554	103.0973867	101.7919946	100.5095975	99.24963253	98.01155512	96.79483798	95.5989705
230228A00010	2/28/2023	4.5	2/26/2027	109.99014	107.5884578	105.2519538	102.9784973	100.7660363	98.61259762	96.51628374	94.47526931	92.48779792
230301A00029	3/1/2023	4.59	3/1/2028	114.38202	110.8939276	107.5329824	104.2938804	101.171567	98.1612238	95.2582564	92.45828273	89.75712214
230301A00036	3/1/2023	4.91	3/2/2026	106.00381	104.642807	103.3058755	101.9924248	100.7018876	99.43371427	98.18737273	96.96234717	95.75813769
230301A00047	3/1/2023	4.61	3/1/2028	114.18825	110.7588779	107.4557628	104.273546	101.2071298	98.25165971	95.40251134	92.65527827	90.00576057
230302A00028	3/2/2023	5.02	3/2/2026	106.15206	104.7900099	103.4520472	102.1375827	100.8460484	99.57689465	98.32958863	97.10361419	95.89847101
230302A00047	3/2/2023	4.76	3/2/2028	113.88395	110.6341831	107.5020375	104.4825668	101.5710573	98.76301931	96.05417511	93.44044791	90.91795115
230303A00019	3/3/2023	5.26	3/3/2025	101.56752	101.2251168	100.8850285	100.5472292	100.2116957	99.87840522	99.54733533	99.21846385	98.8917689
230303A00020	3/3/2023	4.96	3/3/2026	106.08369	104.719432	103.3793399	102.0628245	100.7693153	99.49825963	98.24912221	97.02138437	95.81454343
230303A00035	5/15/2023	4.65	5/15/2030	123.6758	117.7153048	112.0893518	106.7772713	101.7597845	97.01889803	92.53781188	88.30083386	84.2933009
230303A00036	5/15/2023	4.53	5/15/2028	115.05104	111.3427638	107.7769453	104.3473177	101.0479223	97.8730953	94.81745165	91.87586936	89.04347526
230303A00037	5/15/2023	4.81	5/15/2026	106.78903	105.2195145	103.6811767	102.1731584	100.6946324	99.24480127	97.82289583	96.42817408	95.05991992
230303A00038	4/14/2023	4.56	4/14/2028	114.79329	111.1762289	107.6953115	104.3446714	101.1187273	98.01216753	95.01993602	92.13721813	89.35942795
230303A00041	4/14/2023	4.56	4/14/2028	114.79329	111.1762289	107.6953115	104.3446714	101.1187273	98.01216753	95.01993602	92.13721813	89.35942795
230303A00057	3/3/2023	4.77	3/3/2027	110.49195	108.0739949	105.7219007	103.4335093	101.2067479	99.03962325	96.93021769	94.87668632	92.87725359
230303A00059	3/3/2023	4.56	3/3/2027	110.19297	107.7746073	105.4222136	103.1336243	100.9067609	98.73962459	96.63029271	94.57691552	92.57771291
230306A00019	3/6/2023	5.26	3/6/2025	101.60719	101.2564355	100.9081078	100.5621852	100.2186429	99.8774563	99.53860113	99.20205346	98.86778969
230306A00040	3/6/2023	5.05	3/6/2025	101.56183	101.2108536	100.8623148	100.5161865	100.1724438	99.83106185	99.49201638	99.15528331	98.82083896
230307A00004	3/7/2023	4.67	3/7/2028	114.45759	111.007057	107.6840983	104.4832806	101.3994304	98.42762246	95.56316596	92.80159238	90.13864349
230307A00020	3/7/2023	4.98	3/9/2026	106.18601	104.8048463	103.448401	102.1160675	100.8072564	99.52139703	98.25793692	97.01634085	95.79609029
230307A00021	3/7/2023	4.63	3/7/2028	114.58686	111.0788569	107.6992587	104.4426864	101.3040147	98.2783588	95.36106206	92.54768401	89.83398916
230307A00022	3/7/2023	4.77	3/8/2027	110.55334	108.1210237	105.7552924	103.4539579	101.2149143	99.03613645	96.915677	94.85166256	92.84229061
230307A00026	3/7/2023	4.98	3/6/2026	106.14836	104.7755526	103.4271917	102.102676	100.8014255	99.52287855	98.26649128	97.03173672	95.81810426
230307A00034	3/7/2023	4.41	3/7/2028	114.12978	110.6224355	107.2437054	103.9881939	100.8507608	97.82650706	94.91076308	92.09907611	89.38719924
230307A00039	3/7/2023	5.29	3/7/2025	101.63099	101.2774199	100.9263218	100.5776682	100.2314335	99.88759234	99.54611997	99.20699186	98.87018382
230307A00056	3/7/2023	5.08	3/7/2025	101.58526	101.2314737	100.8801631	100.5313023	100.1848657	99.84082785	99.4991639	99.15984916	98.82285935
230307A00057	3/7/2023	5.08	3/7/2025	101.58526	101.2314737	100.8801631	100.5313023	100.1848657	99.84082785	99.4991639	99.15984916	98.82285935
230307A00058	3/7/2023	5.29	3/7/2025	101.63099	101.2774199	100.9263218	100.5776682	100.2314335	99.88759234	99.54611997	99.20699186	98.87018382
230307A00114	3/7/2023	4.65	3/7/2028	114.65437	111.14523	107.7645226	104.5068711	101.3671492	98.3404711	95.42217919	92.60783206	89.89319333
230308A00019	3/8/2023	5.05	3/9/2026	106.28171	104.8998553	103.5427359	102.2097397	100.9002768	99.6137766	98.34968608	97.10746982	95.88660901

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230308A00030	3/8/2023	5.22	9/8/2025	104.06378	103.191208	102.3333395	101.4898012	100.6602355	99.84429656	99.04164984	98.25197177	97.47494921
230309A00002	3/9/2023	5.41	3/10/2025	101.71419	101.3521557	100.9927166	100.6358406	100.2815001	99.92966817	99.58031796	99.2334232	98.88895794
230309A00003	3/9/2023	5.06	3/9/2026	106.29538	104.913428	103.5562123	102.2231214	100.9135655	99.62697368	98.36279311	97.12048824	95.89954026
230309A00004	3/9/2023	4.86	3/9/2027	110.77926	108.3414955	105.9705168	103.6641279	101.4202142	99.23674295	97.11175923	95.04338254	93.02980354
230309A00005	3/9/2023	5.06	3/9/2026	106.29538	104.913428	103.5562123	102.2231214	100.9135655	99.62697368	98.36279311	97.12048824	95.89954026
230309A00021	3/9/2023	5.41	3/10/2025	101.71419	101.3521557	100.9927166	100.6358406	100.2815001	99.92966817	99.58031796	99.2334232	98.88895794
230309A00027	3/9/2023	4.68	3/9/2028	114.77941	111.2626563	107.8747883	104.6103973	101.4643323	98.43168453	95.5077746	92.68814077	89.96852751
230309A00030	3/9/2023	5.01	3/9/2026	106.22702	104.8455645	103.4888303	102.1562127	100.8471223	99.56098828	98.29725799	97.05539612	95.83488403
230309A00031	3/9/2023	5.01	3/9/2026	106.22702	104.8455645	103.4888303	102.1562127	100.8471223	99.56098828	98.29725799	97.05539612	95.83488403
230309A00032	3/9/2023	4.82	3/9/2027	110.68431	108.2476873	105.8778281	103.5725347	101.3296936	99.14727251	97.02331718	94.95594774	92.9433555
230309A00033	3/9/2023	4.82	3/9/2027	110.68431	108.2476873	105.8778281	103.5725347	101.3296936	99.14727251	97.02331718	94.95594774	92.9433555
230309A00034	3/9/2023	4.64	3/9/2028	114.64416	111.1296975	107.7440549	104.481829	101.3378709	98.30727374	95.38536016	92.56767026	89.84995033
230309A00035	3/9/2023	4.64	3/9/2028	114.64416	111.1296975	107.7440549	104.481829	101.3378709	98.30727374	95.38536016	92.56767026	89.84995033
230309A00036	3/9/2023	4.46	3/9/2028	114.32184	110.8057417	107.418741	104.1554112	101.0105858	97.97934204	95.05698734	92.23904766	89.52125599
230309A00038	3/9/2023	4.85	3/9/2026	106.11969	104.7372304	103.3795415	102.0460118	100.7360501	99.44908435	98.18456041	96.94194169	95.72070829
230309A00041	3/9/2023	4.85	3/9/2026	106.11969	104.7372304	103.3795415	102.0460118	100.7360501	99.44908435	98.18456041	96.94194169	95.72070829
230309A00057	3/9/2023	4.86	3/9/2027	110.77926	108.3414955	105.9705168	103.6641279	101.4202142	99.23674295	97.11175923	95.04338254	93.02980354
230309A00068	4/10/2023	5.21	4/9/2025	102.03479	101.589122	101.1473591	100.7094522	100.2753511	99.84500602	99.41836824	98.99538985	98.57602376
230309A00080	3/9/2023	4.68	3/9/2028	114.77941	111.2626563	107.8747883	104.6103973	101.4643323	98.43168453	95.5077746	92.68814077	89.96852751
230309A00091	3/9/2023	4.68	3/9/2028	114.77941	111.2626563	107.8747883	104.6103973	101.4643323	98.43168453	95.5077746	92.68814077	89.96852751
230309A00096	3/9/2023	4.68	3/9/2028	114.77941	111.2626563	107.8747883	104.6103973	101.4643323	98.43168453	95.5077746	92.68814077	89.96852751
230310A00017	3/10/2023	4.43	3/9/2029	118.05683	113.4512838	109.0563088	104.8611571	100.8556882	97.03032771	93.3760332	89.88426169	86.54693964
230310A00024	3/10/2023	4.38	3/10/2028	113.77611	110.2736	106.8997004	103.6490122	100.5163889	97.49692599	94.58594881	91.77900008	89.07182883
230310A00030	3/10/2023	4.38	3/10/2028	113.77611	110.2736	106.8997004	103.6490122	100.5163889	97.49692599	94.58594881	91.77900008	89.07182883
230310A00037	3/10/2023	4.69	3/10/2026	105.80131	104.4202108	103.0638734	101.7316896	100.4230682	99.13743661	97.87424077	96.63294383	95.41302572
230310A00039	3/10/2023	4.33	3/10/2028	113.60692	110.1072686	106.7361552	103.4881776	100.3581919	97.34129616	94.43281818	91.628303	88.92350189
230310A00040	3/10/2023	4.38	3/10/2028	113.77611	110.2736	106.8997004	103.6490122	100.5163889	97.49692599	94.58594881	91.77900008	89.07182883
230310A00047	6/9/2023	4.22	6/9/2028	114.21737	110.4544673	106.838425	103.3626741	100.0209801	96.80742292	93.71637851	90.74250264	87.88071502
230310A00049	3/10/2023	4.7	3/10/2026	105.81501	104.4338107	103.0773767	101.7450979	100.4363829	99.15065947	97.88737323	96.64598735	95.42598174
230310A00054	9/8/2023	4.09	9/11/2028	114.72091	110.6881623	106.8222073	103.1152716	99.55998363	96.14935188	92.87674293	89.73586142	86.72073101
230310A00062	3/10/2023	4.38	4/10/2028	114.12156	110.5274589	107.0683372	103.738394	100.5321099	97.44423164	94.46975779	91.60392505	88.84219574
230310A00069	3/10/2023	4.7	3/9/2026	105.80323	104.4248102	103.0710615	101.741379	100.4351745	99.15187876	97.89094027	96.65182497	95.4340154
230310A00071	3/10/2023	4.38	3/10/2028	113.77611	110.2736	106.8997004	103.6490122	100.5163889	97.49692599	94.58594881	91.77900008	89.07182883

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230310A00073	3/10/2023	4.7	3/6/2026	105.7679	104.3978037	103.0521085	101.7302135	100.4315398	99.15552723	97.90163283	96.66933081	95.4581116
230310A00088	3/10/2023	5.03	3/10/2025	101.57714	101.215416	100.8562768	100.4996991	100.1456555	99.79411874	99.44506227	99.09845974	98.75428521
230310A00089	3/10/2023	4.7	3/10/2026	105.81501	104.4338107	103.0773767	101.7450979	100.4363829	99.15065947	97.88737323	96.64598735	95.42598174
230310A00091	3/10/2023	4.53	3/10/2027	110.00753	107.5763346	105.2118772	102.9119522	100.6744443	98.49731998	96.37862366	94.3164743	92.30906217
230310A00092	3/10/2023	4.38	3/10/2028	113.77611	110.2736	106.8997004	103.6490122	100.5163889	97.49692599	94.58594881	91.77900008	89.07182883
230310A00114	3/10/2023	4.5	3/10/2027	109.93623	107.5058977	105.1422817	102.8431803	100.6064786	98.43014362	96.31222026	94.25082799	92.24415751
230310A00120	3/10/2023	4.33	3/10/2028	113.60692	110.1072686	106.7361552	103.4881776	100.3581919	97.34129616	94.43281818	91.628303	88.92350189
230313A00032	3/13/2023	4.45	3/13/2025	101.40091	101.0312988	100.6643939	100.3001675	99.93858998	99.57963255	99.22326661	98.86946404	98.51819711
230313A00036	3/13/2023	4.06	3/13/2028	112.72379	109.2309285	105.8667751	102.6259083	99.50316437	96.49362288	93.59259444	90.7956084	88.09840154
230313A00048	3/13/2023	4.25	3/13/2026	105.23019	103.8451351	102.4850436	101.1493007	99.83730761	98.54848476	97.28227109	96.03812324	94.81551484
230313A00052	3/13/2023	4.17	3/15/2027	109.20508	106.770019	104.4021973	102.0993872	99.85944635	97.68031543	95.56001461	93.49663996	91.48836005
230313A00057	3/13/2023	4.06	3/13/2028	112.72379	109.2309285	105.8667751	102.6259083	99.50316437	96.49362288	93.59259444	90.7956084	88.09840154
230313A00061	3/13/2023	4.06	3/13/2028	112.72379	109.2309285	105.8667751	102.6259083	99.50316437	96.49362288	93.59259444	90.7956084	88.09840154
230313A00072	3/13/2023	4.06	3/13/2028	112.72379	109.2309285	105.8667751	102.6259083	99.50316437	96.49362288	93.59259444	90.7956084	88.09840154
230313A00078	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00080	3/13/2023	4.59	3/14/2025	101.46393	101.0914173	100.7216539	100.3546096	99.99025439	99.62855856	99.26949297	98.91302884	98.55913786
230313A00090	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00091	3/13/2023	4.15	3/13/2028	113.02908	109.5310425	106.1618501	102.9160815	99.78856793	96.77438438	93.86883703	91.067451	88.36595899
230313A00093	3/16/2023	4.65	3/17/2025	101.52083	101.1399063	100.7618581	100.3866505	100.0142514	99.64462919	99.27775273	98.91359138	98.55211493
230313A00095	3/16/2023	4.65	3/17/2025	101.52083	101.1399063	100.7618581	100.3866505	100.0142514	99.64462919	99.27775273	98.91359138	98.55211493
230313A00096	3/13/2023	4.36	3/14/2033	130.96274	121.8716484	113.5098563	105.8143732	98.72797344	92.19864036	86.1790674	80.62620914	75.50087725
230313A00098	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00099	3/13/2023	4.59	3/13/2025	101.45256	101.0828358	100.7158158	100.3514749	99.98978358	99.63071292	99.27423436	98.92031975	98.56894136
230313A00102	3/13/2023	4.15	3/13/2028	113.02908	109.5310425	106.1618501	102.9160815	99.78856793	96.77438438	93.86883703	91.067451	88.36595899
230313A00104	3/13/2023	4.58	3/13/2025	101.44888	101.0791545	100.7121428	100.3478101	99.98612689	99.62706433	99.27059381	98.9166872	98.56531677
230313A00109	3/13/2023	4.58	3/13/2025	101.44888	101.0791545	100.7121428	100.3478101	99.98612689	99.62706433	99.27059381	98.9166872	98.56531677
230313A00112	3/13/2023	4.15	3/13/2028	113.02908	109.5310425	106.1618501	102.9160815	99.78856793	96.77438438	93.86883703	91.067451	88.36595899
230313A00113	3/13/2023	4.58	3/13/2025	101.44888	101.0791545	100.7121428	100.3478101	99.98612689	99.62706433	99.27059381	98.9166872	98.56531677
230313A00117	3/13/2023	4.59	3/13/2025	101.45256	101.0828358	100.7158158	100.3514749	99.98978358	99.63071292	99.27423436	98.92031975	98.56894136
230313A00119	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00121	3/13/2023	4.29	3/15/2027	109.49192	107.0533814	104.682156	102.3760149	100.1328134	97.95049036	95.8270638	93.76062789	91.74934935
230313A00123	3/13/2023	4.22	9/15/2027	111.31869	108.3480902	105.4733991	102.6910052	99.99745289	97.38943528	94.8637866	92.41747556	90.04759877
230313A00128	3/13/2023	4.18	12/15/2027	112.17236	108.9367754	105.8130996	102.7968	99.88355721	97.06925331	94.34996093	91.72193321	89.18159418

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230313A00134	3/13/2023	4.16	4/14/2028	113.40125	109.8084026	106.3510212	103.0232644	99.81957427	96.73466163	93.76349169	90.90127032	88.14343124
230313A00135	3/13/2023	4.17	6/15/2028	114.10102	110.3232656	106.693518	103.2051314	99.85179942	96.62753513	93.52665246	90.54374928	87.67369145
230313A00149	3/13/2023	4.15	3/13/2028	113.02908	109.5310425	106.1618501	102.9160815	99.78856793	96.77438438	93.86883703	91.067451	88.36595899
230313A00152	3/13/2023	4.18	3/13/2028	113.13085	109.6310805	106.2602085	103.0128059	99.88370245	96.86797155	93.9609179	91.1580652	88.45514481
230313A00158	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00159	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00177	3/13/2023	4.41	3/13/2026	105.45069	104.0640407	102.7023845	101.3651034	100.0515977	98.76128741	97.49361065	96.24802343	95.02399879
230313A00179	3/13/2023	4.29	3/15/2027	109.49192	107.0533814	104.682156	102.3760149	100.1328134	97.95049036	95.8270638	93.76062789	91.74934935
230313A00180	3/13/2023	4.15	3/13/2028	113.02908	109.5310425	106.1618501	102.9160815	99.78856793	96.77438438	93.86883703	91.067451	88.36595899
230313A00215	3/13/2023	4.13	3/13/2028	112.96124	109.4643505	106.0962779	102.8515986	99.72514491	96.71199294	93.80744979	91.00704154	88.30650178
230314A00003	3/14/2023	4.64	3/16/2026	105.80249	104.4052165	103.0332561	101.6859777	100.3627713	99.06304645	97.78623172	96.53177377	95.29913668
230314A00006	3/14/2023	4.92	1/13/2025	100.86	100.6543316	100.4495156	100.2455476	100.0424223	99.84013436	99.63867858	99.43804973	99.23824265
230314A00011	3/14/2023	4.38	3/14/2028	113.82034	110.3061324	106.9213388	103.6605072	100.5184446	97.49020359	94.57106879	91.75654495	89.04234547
230314A00014	3/14/2023	4.18	3/14/2028	112.87553	109.5021216	106.2535837	103.1245742	100.110011	97.20505664	94.4051056	91.70577146	89.10287542
230314A00015	3/14/2023	4.55	9/14/2026	107.89731	105.9827655	104.1119875	102.2837142	100.4967301	98.74986228	97.04197891	95.37198711	93.73883154
230314A00016	3/14/2023	4.38	3/14/2028	113.82034	110.3061324	106.9213388	103.6605072	100.5184446	97.49020359	94.57106879	91.75654495	89.04234547
230314A00017	3/14/2023	4.39	1/18/2028	113.21181	109.8666553	106.6397841	103.5262904	100.5215026	97.62097313	94.82046645	92.115947	89.50356842
230314A00019	3/14/2023	4.39	1/18/2028	113.21181	109.8666553	106.6397841	103.5262904	100.5215026	97.62097313	94.82046645	92.115947	89.50356842
230314A00021	3/14/2023	4.41	10/13/2027	112.18334	109.1224194	106.162662	103.3001629	100.5311923	97.85218474	95.25973127	92.75057123	90.32158509
230314A00024	3/14/2023	4.41	10/13/2027	112.18334	109.1224194	106.162662	103.3001629	100.5311923	97.85218474	95.25973127	92.75057123	90.32158509
230314A00028	3/14/2023	4.43	7/14/2027	111.21601	108.4202596	105.7101592	103.0825231	100.5343096	98.0626117	95.66465046	93.33776784	91.07942071
230314A00030	3/14/2023	4.43	7/14/2027	111.21601	108.4202596	105.7101592	103.0825231	100.5343096	98.0626117	95.66465046	93.33776784	91.07942071
230314A00032	3/14/2023	4.45	4/14/2027	110.21952	107.6893148	105.2311257	102.8424853	100.5210292	98.26448782	96.07068228	93.93751997	91.86299062
230314A00034	3/14/2023	4.45	4/14/2027	110.21952	107.6893148	105.2311257	102.8424853	100.5210292	98.26448782	96.07068228	93.93751997	91.86299062
230314A00054	3/14/2023	4.46	3/15/2027	109.89828	107.4548114	105.0787641	102.767904	100.5200835	98.33323818	96.20538348	94.13461078	92.11908418
230314A00067	3/14/2023	4.16	3/14/2028	113.35956	109.8460677	106.4622012	103.2024901	100.0617264	97.03494843	94.11742746	91.3046559	88.59233558
230314A00070	3/14/2023	4.25	3/12/2027	109.56122	107.1259448	104.7577599	102.4544471	100.2138729	98.03398663	95.91281667	93.84846668	91.83911244
230314A00073	3/14/2023	4.84	3/14/2025	101.55686	101.1841374	100.8141657	100.4469143	100.0823531	99.72045235	99.36118293	99.00451606	98.65042339
230314A00081	3/14/2023	4.16	3/14/2028	113.35956	109.8460677	106.4622012	103.2024901	100.0617264	97.03494843	94.11742746	91.3046559	88.59233558
230315A00007	3/15/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384
230315A00010	3/15/2023	4.2	3/13/2026	105.16129	103.7767271	102.4171246	101.0818624	99.77034194	98.48198393	97.21622748	95.97252942	94.7503636
230315A00012	3/15/2023	4.24	9/15/2025	103.29468	102.4064599	101.5335595	100.6755803	99.83214143	99.00287496	98.18742522	97.38544842	96.59661209
230315A00013	3/15/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230315A00016	3/15/2023	4.08	3/16/2027	109.00033	106.5650385	104.1970819	101.8942216	99.65431002	97.47528298	95.35515612	93.2920212	91.28404273
230315A00023	3/15/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384
230315A00024	3/15/2023	4.03	3/15/2028	112.64221	109.1452941	105.7774337	102.5331878	99.40737109	96.39504316	93.49149586	90.69224099	87.9929989
230315A00030	3/15/2023	4.03	3/15/2028	112.64221	109.1452941	105.7774337	102.5331878	99.40737109	96.39504316	93.49149586	90.69224099	87.9929989
230315A00049	3/15/2023	4.28	3/14/2025	101.3487	100.9764445	100.6069393	100.2401518	99.876052	99.51461026	99.15579741	98.7995847	98.44594379
230315A00052	3/15/2023	4.07	3/14/2025	101.30035	100.9278725	100.5581454	100.1911419	99.82683185	99.46518549	99.1061735	98.74976703	98.39593762
230315A00055	3/15/2023	4.2	3/11/2026	105.14049	103.7614522	102.4071849	101.0770798	99.77054487	98.48700671	97.22591027	95.98671794	94.76890886
230315A00068	3/15/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384
230315A00076	3/15/2023	4.28	3/14/2025	101.3487	100.9764445	100.6069393	100.2401518	99.876052	99.51461026	99.15579741	98.7995847	98.44594379
230315A00084	3/15/2023	4.08	3/24/2027	109.08332	106.6253446	104.2358764	101.9126222	99.65338017	97.45603459	95.31855224	93.23897853	91.21543403
230315A00086	3/15/2023	4.28	3/11/2025	101.31718	100.9532635	100.5919773	100.2332891	99.87717078	99.52359473	99.17253362	98.82396058	98.47784908
230315A00097	3/15/2023	4.08	3/15/2027	108.98995	106.5574972	104.1922283	101.8919165	99.65442104	97.47768423	95.35972772	93.29864902	91.29261808
230315A00098	3/15/2023	4.08	3/15/2027	108.98995	106.5574972	104.1922283	101.8919165	99.65442104	97.47768423	95.35972772	93.29864902	91.29261808
230315A00112	3/15/2023	4.5	3/14/2025	101.43048	101.0580381	100.6883497	100.3213799	99.95709886	99.5954768	99.23648458	98.88009345	98.52627506
230315A00116	3/15/2023	4.36	3/16/2026	105.4143	104.0198457	102.6506553	101.3061	99.98557099	98.68847922	97.41425436	96.16234421	94.93221396
230315A00117	3/15/2023	4.17	3/15/2027	109.20508	106.770019	104.4021973	102.0993872	99.85944635	97.68031543	95.56001461	93.49663996	91.48836005
230315A00125	3/15/2023	4.11	3/15/2027	109.06166	106.6283378	104.2622179	101.9610734	99.72276281	97.54522796	95.42649002	93.364646	91.3578654
230315A00128	3/15/2023	4.43	3/14/2025	101.40446	101.0320765	100.6624464	100.2955346	99.93131122	99.56974653	99.21081139	98.85447703	98.50071511
230315A00130	3/15/2023	4.43	3/14/2025	101.40446	101.0320765	100.6624464	100.2955346	99.93131122	99.56974653	99.21081139	98.85447703	98.50071511
230315A00131	3/15/2023	4.13	3/15/2027	109.10947	106.6755649	104.3088777	102.007178	99.76832399	97.59025712	95.47099822	93.40864399	91.40136362
230315A00133	3/15/2023	3.9	3/15/2028	112.48564	108.9842822	105.6123349	102.3643323	99.23506886	96.21958535	93.31315592	90.51127575	87.80964959
230316A00001	3/16/2023	3.81	3/16/2028	112.18916	108.69012	105.3205503	102.0749744	98.94818003	95.93520187	93.03130835	90.2319894	87.53294494
230316A00017	3/16/2023	3.81	3/16/2028	112.18916	108.69012	105.3205503	102.0749744	98.94818003	95.93520187	93.03130835	90.2319894	87.53294494
230316A00021	3/16/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384
230316A00032	3/16/2023	4.39	3/16/2026	105.45589	104.0611354	102.6916482	101.3468012	100.0259853	98.72861143	97.45410908	96.20192595	94.97152711
230316A00039	3/16/2023	4.63	3/17/2025	101.51323	101.1323231	100.7542923	100.379102	100.00672	99.63711486	99.27025538	98.9061109	98.54465124
230316A00042	3/16/2023	4.42	3/14/2025	101.40074	101.0283677	100.6587459	100.2918424	99.92762727	99.56607078	99.20714379	98.85081754	98.49706369
230316A00046	3/16/2023	4.18	6/16/2026	106.17306	104.520512	102.9018918	101.3162213	99.76255832	98.23999652	96.74766365	95.28471998	93.85035674
230316A00047	3/16/2023	4.07	9/16/2027	110.89458	107.9273632	105.0560768	102.2771062	99.58699156	96.98242173	94.46022719	92.01737315	89.65095301
230316A00048	3/16/2023	4.05	6/16/2028	113.67353	109.9007423	106.2759349	102.7924592	99.4440047	96.22458042	93.12849695	90.15034919	87.28500041
230316A00050	3/16/2023	4.2	3/16/2026	105.19248	103.7996338	102.4320262	101.089027	99.77002797	98.47444081	97.20169587	95.9512416	94.72254384
230316A00054	3/16/2023	4.62	3/17/2025	101.50943	101.1285316	100.7505094	100.3753277	100.0029543	99.6333577	99.2665067	98.90237066	98.54091939
230316A00055	3/16/2023	4.03	3/16/2028	112.65231	109.1524949	105.7819408	102.5351882	99.40704009	96.39254542	93.48698585	90.68586369	87.98489037



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230316A00058	3/16/2023	4.1	3/16/2027	109.04819	106.6123193	104.2437942	101.9403775	99.6999213	97.52036108	95.39971213	93.33606589	91.32758658
230316A00060	3/16/2023	3.89	3/16/2027	108.74317	106.3069519	103.9381827	101.6346252	99.3941258	97.21461427	95.09410064	93.03067134	91.02248586
230316A00061	3/16/2023	4.31	9/16/2025	103.36786	102.4765379	101.6006322	100.7397429	99.89348553	99.06148877	98.24339372	97.43885346	96.64753255
230316A00067	3/16/2023	3.89	3/16/2027	108.74317	106.3069519	103.9381827	101.6346252	99.3941258	97.21461427	95.09410064	93.03067134	91.02248586
230316A00072	3/16/2023	4.1	3/16/2027	109.04819	106.6123193	104.2437942	101.9403775	99.6999213	97.52036108	95.39971213	93.33606589	91.32758658
230316A00076	3/16/2023	4.45	3/16/2026	105.53908	104.1437149	102.7736341	101.4282035	100.106814	98.80887583	97.53381851	96.28108942	95.05015341
230316A00078	3/16/2023	4.34	3/16/2027	109.62253	107.1796899	104.8043421	102.4942485	100.2472568	98.06129823	95.93438417	93.86460217	91.85011272
230316A00082	3/16/2023	4.3	3/16/2028	113.57042	110.0549886	106.6692464	103.4077195	100.2651963	97.23671179	94.31753421	91.50315303	88.78926739
230316A00113	3/16/2023	4.28	3/16/2026	105.41591	104.0196505	102.6487099	101.3024614	99.98029412	98.68161716	97.40585842	96.15246402	94.92089754
230317A00015	3/17/2023	4.13	3/17/2028	113.00272	109.4942176	106.1153354	102.8605954	99.72478372	96.70293312	93.79031019	90.98240298	88.27490943
230317A00016	3/17/2023	4.22	3/17/2027	109.34612	106.9039218	104.5292886	102.2199762	99.97382753	97.78876982	95.66281022	93.59403245	91.5805934
230317A00024	3/17/2023	4.54	3/17/2025	101.47902	101.098199	100.7202463	100.3451335	99.97282878	99.6033004	99.23651728	98.87244876	98.51106464
230317A00025	3/17/2023	4.35	3/17/2026	105.41125	104.0141247	102.6423585	101.2953155	99.97238369	98.67297102	97.39650427	96.14242847	94.91020617
230317A00026	3/17/2023	4.22	3/17/2027	109.34612	106.9039218	104.5292886	102.2199762	99.97382753	97.78876982	95.66281022	93.59403245	91.5805934
230317A00031	5/18/2023	4.3	5/19/2025	102.05415	101.498158	100.9482377	100.4042926	99.86622541	99.33394095	98.80734617	98.28634995	97.77086313
230317A00032	5/18/2023	4.27	5/19/2025	102.03752	101.4815759	100.9317079	100.3878146	99.8497988	99.31756537	98.79102121	98.27007523	97.75463827
230317A00047	3/17/2023	4.1	3/17/2028	112.90062	109.3938609	106.0166689	102.763573	99.629361	96.60906719	93.69795966	90.89152787	88.18547112
230317A00048	3/17/2023	4.1	3/17/2028	112.90062	109.3938609	106.0166689	102.763573	99.629361	96.60906719	93.69795966	90.89152787	88.18547112
230317A00049	3/17/2023	4.1	3/17/2028	112.90062	109.3938609	106.0166689	102.763573	99.629361	96.60906719	93.69795966	90.89152787	88.18547112
230317A00050	3/17/2023	4.1	3/17/2028	112.90062	109.3938609	106.0166689	102.763573	99.629361	96.60906719	93.69795966	90.89152787	88.18547112
230317A00051	3/17/2023	4.35	3/17/2026	105.41125	104.0141247	102.6423585	101.2953155	99.97238369	98.67297102	97.39650427	96.14242847	94.91020617
230320A00005	3/20/2023	4.37	3/20/2025	101.44668	101.0576537	100.6716199	100.2885479	99.90840345	99.531153	99.15676345	98.78520222	98.41643721
230320A00006	3/20/2023	4.25	3/20/2026	105.30393	103.8995262	102.5207383	101.1669267	99.83747024	98.53176799	97.24923836	95.98931832	94.75146271
230320A00033	3/20/2023	4.35	3/20/2026	105.44368	104.0382469	102.6584544	101.3036553	99.97322787	98.66657078	97.38310199	96.12225809	94.88349349
230320A00092	3/20/2023	4.31	3/20/2026	105.38778	103.9827586	102.603368	101.2489639	99.91892482	98.61264966	97.32955654	96.06908218	94.83068118
230321A00001	3/21/2023	4.48	3/23/2026	105.65884	104.2437597	102.854617	101.4907614	100.1515609	98.83640447	97.54470045	96.27587635	95.02937792
230321A00002	3/21/2023	4.33	3/19/2027	109.63179	107.180687	104.7975111	102.4800027	100.2259893	98.03338328	95.90017772	93.82444302	91.80432338
230321A00009	3/21/2023	4.27	3/21/2028	113.52217	109.9938927	106.5962588	103.3237352	100.171054	97.13319702	94.2053831	91.38305528	88.66186921
230321A00020	3/21/2023	4.73	11/18/2024	100.19694	100.1469004	100.0969248	100.0470149	99.99717051	99.94739145	99.89767762	99.84802889	99.79844513
230321A00025	3/21/2023	4.57	3/21/2025	101.53566	101.1436603	100.7547	100.3687436	99.98575626	99.60570366	99.22855205	98.85426817	98.48281929
230321A00029	3/21/2023	4.57	3/21/2025	101.53566	101.1436603	100.7547	100.3687436	99.98575626	99.60570366	99.22855205	98.85426817	98.48281929
230321A00052	3/21/2023	4.62	3/21/2025	101.55522	101.1631697	100.7741637	100.3881618	100.0051292	99.62503165	99.2478353	98.87350693	98.5020138
230321A00053	3/21/2023	4.27	3/21/2028	113.52217	109.9938927	106.5962588	103.3237352	100.171054	97.13319702	94.2053831	91.38305528	88.66186921

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230321A00074	3/21/2023	4.23	3/21/2028	113.3856	109.8596588	106.4642927	103.193975	100.0434398	97.00767121	94.08188998	91.2615411	88.54228207
230322A00004	3/22/2023	4.3	3/22/2028	113.63543	110.102482	106.7004277	103.423719	100.2670746	97.22546386	94.29409379	91.46839642	88.744017
230322A00005	3/22/2023	4.42	3/22/2029	118.15211	113.5086661	109.0790593	104.8523028	100.8180286	96.96645194	93.28833547	89.77495578	86.41807227
230322A00006	3/22/2023	4.53	3/22/2030	122.49039	116.7138241	111.2540889	106.0920742	101.2099167	96.59091529	92.21945	88.08090638	84.16160594
230322A00007	3/22/2023	4.54	3/21/2031	125.91572	119.0168214	112.5558438	106.5025068	100.8287763	95.50868821	90.51818534	85.83496799	81.43835725
230322A00009	3/22/2023	4.59	3/22/2032	129.59868	121.5510629	114.0823879	107.1475718	100.7052696	94.71754968	89.14959557	83.96943493	79.14769374
230322A00015	3/22/2023	4.24	3/22/2028	113.43041	109.9009718	106.5023246	103.2289298	100.0755094	97.03703601	94.10871957	91.28599502	88.56451041
230322A00020	3/22/2023	4.2	3/22/2029	117.55961	112.9180888	108.4907712	104.2666347	100.2352782	96.3868866	92.71219477	89.20245367	85.84939916
230322A00029	3/22/2023	4.67	3/21/2025	101.57477	101.1826792	100.7936274	100.40758	100.0245022	99.64435963	99.26711854	98.89274569	98.52120832
230323A00027	3/23/2023	4.43	3/24/2025	101.51366	101.1134315	100.7163644	100.3224248	99.93157571	99.54378079	99.15900423	98.77721082	98.39836587
230323A00028	3/23/2023	4.1	3/23/2028	112.41619	109.0370821	105.7837754	102.6508596	99.6331855	96.72585394	93.92420169	91.2237889	88.62038707
230323A00029	3/23/2023	4.39	3/24/2031	124.98075	118.1030191	111.6628807	105.6300262	99.97639681	94.6760085	89.70478847	85.04042534	80.66223179
230323A00030	3/23/2023	4.72	3/23/2037	146.51537	132.632409	120.2978723	109.3268393	99.55753717	90.84832698	83.07509749	76.1290089	69.91453703
230323A00034	3/23/2023	4.23	3/23/2026	105.30742	103.8949181	102.5083158	101.1469575	99.81021244	98.49747051	97.20814128	95.94165329	94.69745328
230323A00048	3/23/2023	4.07	3/23/2028	112.85974	109.3373286	105.9456356	102.6791191	99.53249879	96.50074529	93.57906693	90.76289724	88.04788314
230323A00051	3/23/2023	3.85	3/23/2028	112.39422	108.8726007	105.4819114	102.2165933	99.07135049	96.04113904	93.12115384	90.30681587	87.59376033
230323A00054	3/23/2023	3.95	3/23/2028	112.44939	108.9339896	105.5491214	102.2892431	99.14908078	96.12361144	93.2080495	90.39783429	87.6886183
230323A00056	3/23/2023	4	3/23/2027	108.87995	106.4271787	104.0427106	101.7242668	99.46965355	97.27676318	95.14356994	93.0681264	91.04855991
230323A00058	3/23/2023	3.96	9/23/2027	110.64671	107.6635082	104.7773768	101.9846335	99.28175651	96.66537647	94.13226908	91.67934793	89.3036578
230323A00064	3/23/2023	4.25	3/21/2025	101.4105	101.0187998	100.6301323	100.2444671	99.86176926	99.48200457	99.10513927	98.73114012	98.3599744
230323A00065	3/23/2023	3.85	3/23/2028	112.39422	108.8726007	105.4819114	102.2165933	99.07135049	96.04113904	93.12115384	90.30681587	87.59376033
230323A00081	3/23/2023	3.85	3/23/2028	112.39422	108.8726007	105.4819114	102.2165933	99.07135049	96.04113904	93.12115384	90.30681587	87.59376033
230324A00001	3/24/2023	4.04	6/24/2026	106.03287	104.3591793	102.7201642	101.1148072	99.54213478	98.00121101	96.49113572	95.01104272	93.5600982
230324A00006	3/24/2023	4.06	3/24/2026	105.07845	103.664954	102.2774134	100.915178	99.57761464	98.26411081	96.97407384	95.70693016	94.46212444
230324A00009	3/24/2023	4.19	3/24/2025	101.4178	101.0178009	100.6209624	100.22725	99.83662693	99.44905669	99.06450355	98.68293229	98.30430823
230324A00021	3/24/2023	3.72	3/24/2028	111.10678	107.8363831	104.6870714	101.6536413	98.73114531	95.91487592	93.20035246	90.58330884	88.059682
230324A00023	3/24/2023	3.69	3/24/2028	111.85572	108.3405945	104.956347	101.6974088	98.55848104	95.53451752	92.62071092	89.81248037	87.10545953
230324A00029	3/24/2023	4.01	3/24/2025	101.37779	100.9775196	100.5804181	100.1864494	99.79557644	99.4077628	99.02297251	98.64117022	98.2623211
230324A00031	3/24/2023	4.01	3/24/2025	101.37779	100.9775196	100.5804181	100.1864494	99.79557644	99.4077628	99.02297251	98.64117022	98.2623211
230324A00032	3/24/2023	3.93	3/24/2028	112.39081	108.8736965	105.4872788	102.2260076	99.08459843	96.05801854	93.14147307	90.33039274	87.62042198
230324A00036	3/24/2023	3.98	3/24/2027	108.8418	106.3867883	104.0002141	101.6797919	99.42332146	97.22868895	95.09386284	93.0168902	90.9958932
230324A00050	3/24/2023	4.13	3/24/2026	102.77363	102.0173965	101.2741151	100.5434333	99.82500916	99.11851404	98.42363133	97.74005617	97.0674948
230327A00045	3/27/2023	4.42	3/27/2025	101.54234	101.1337544	100.728459	100.3264167	99.9275884	99.53193559	99.13942043	98.75000564	98.36365456

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230327A00046	3/27/2023	4.22	3/27/2026	105.33516	103.9116933	102.5145025	101.1429175	99.79629452	98.47401093	97.1754644	95.90007204	94.64726964
230327A00047	3/27/2023	4.08	3/27/2028	112.93486	109.4002494	105.9971841	102.7200651	99.56356442	96.52260848	93.59236401	90.76822555	88.04580348
230328A00011	3/28/2023	4.53	3/28/2025	101.59839	101.1868987	100.7787462	100.3738896	99.97228912	99.5739055	99.17870021	98.78663529	98.39767338
230328A00019	3/28/2023	4.12	3/27/2026	105.30835	103.8832385	102.484454	101.1113313	99.76322449	98.4395092	97.13958125	95.86285605	94.60876778
230328A00020	3/28/2023	3.98	3/28/2028	112.89037	109.3465724	105.9349297	102.6498078	99.48584475	96.43793462	93.50121409	90.67104943	87.94302447
230328A00024	3/28/2023	4.2	3/28/2028	113.35709	109.8125067	106.3998612	103.1135396	99.94819568	96.89873831	93.96031779	91.12831315	88.39832007
230328A00026	3/28/2023	4.34	3/28/2029	117.86152	113.2079091	108.7694132	104.5349346	100.4940092	96.63676328	92.95387788	89.43655409	86.07648169
230328A00027	3/28/2023	4.22	3/28/2028	112.74411	109.3749476	106.1313436	103.0078769	99.99939659	97.10100213	94.30803006	91.61604097	89.02080746
230328A00028	3/28/2023	4.34	3/27/2026	105.74791	104.2616075	102.8042279	101.3749921	99.97315349	98.59799123	97.24880941	95.92493589	94.62572126
230328A00037	3/28/2023	4.21	3/28/2028	113.1047	109.6319	106.2896421	103.0722689	99.97440366	96.99093154	94.1169857	91.34793364	88.67936464
230328A00045	3/28/2023	4.21	3/28/2028	113.1047	109.6319	106.2896421	103.0722689	99.97440366	96.99093154	94.1169857	91.34793364	88.67936464
230328A00047	3/28/2023	4.21	3/28/2028	113.1047	109.6319	106.2896421	103.0722689	99.97440366	96.99093154	94.1169857	91.34793364	88.67936464
230328A00051	3/28/2023	4.53	3/28/2033	129.25449	121.0540857	113.4922863	106.5145142	100.0711765	94.1171849	88.61152259	83.51685541	78.79918179
230328A00052	3/28/2023	4.53	3/28/2033	129.25449	121.0540857	113.4922863	106.5145142	100.0711765	94.1171849	88.61152259	83.51685541	78.79918179
230328A00098	3/28/2023	4.24	3/29/2027	109.52381	107.0468557	104.63925	102.2986628	100.0228546	97.80967439	95.65705512	93.56301029	91.52563011
230328A00100	3/28/2023	4.19	3/28/2028	113.32276	109.7787624	106.3666901	103.080926	99.91612439	96.86719468	93.9292877	91.09778296	88.36827661
230328A00111	3/28/2023	4.36	3/27/2026	105.5335	104.1085673	102.709932	101.3369269	99.9889078	98.66525134	97.36535457	96.08863403	94.83452491
230328A00122	3/28/2023	4.58	3/28/2025	101.61891	101.2073731	100.7991703	100.3942638	99.99261368	99.59418073	99.19892638	98.8068127	98.41780231
230329A00020	3/29/2023	4.23	3/29/2028	113.47073	109.9214627	106.5043821	103.2138622	100.0445433	96.99132162	94.04933556	91.213953	88.48075915
230329A00043	3/29/2023	4.36	3/27/2026	105.5335	104.1085673	102.709932	101.3369269	99.9889078	98.66525134	97.36535457	96.08863403	94.83452491
230329A00055	3/29/2023	4.59	3/28/2025	101.62302	101.211468	100.8032552	100.3983387	99.99667859	99.59823577	99.20297162	98.81084818	98.42182809
230330A00011	3/30/2023	4.21	3/30/2028	113.4126	109.8616022	106.4429639	103.1510437	99.98047147	96.9261333	93.98315842	91.14690599	88.4129531
230330A00029	3/30/2023	4.6	4/1/2025	101.67272	101.2500232	100.8308381	100.4151236	100.0028366	99.59393498	99.18837712	98.78612214	98.38712981
230330A00061	3/30/2023	4.65	3/31/2025	101.68224	101.2622667	100.8457622	100.4326817	100.022983	99.61662478	99.21356633	98.8137676	98.41718919
230330A00062	3/30/2023	4.42	3/30/2026	105.65151	104.2176254	102.810335	101.4289598	100.0728452	98.74135806	97.43388622	96.14983722	94.88863772
230330A00080	3/30/2023	4.44	3/31/2025	101.62773	101.2075073	100.7907593	100.3774423	99.96751393	99.56093275	99.15765787	98.75764909	98.36086685
230330A00083	3/30/2023	4.1	3/30/2027	109.3955	106.9132491	104.5006611	102.155384	99.87516386	97.65783586	95.50132009	93.4036177	91.36280725
230331A00014	3/31/2023	4.34	3/31/2026	105.54829	104.1124908	102.7033649	101.3202315	99.96243292	98.62933341	97.320318	96.03479173	94.77217881
230331A00033	3/31/2023	4.34	3/31/2026	105.54829	104.1124908	102.7033649	101.3202315	99.96243292	98.62933341	97.320318	96.03479173	94.77217881
230331A00055	3/31/2023	4.5	3/31/2025	101.61942	101.1996026	100.7832542	100.3703289	99.96078442	99.55457952	99.15167348	98.75202625	98.35559846
230331A00057	3/31/2023	4.08	3/31/2028	112.97578	109.4295711	106.015713	102.7285564	99.56272652	96.51310559	93.57481916	90.74322314	88.01389172
230404A00002	4/4/2023	4.1	4/2/2027	109.22596	106.7416836	104.3272791	101.9803852	99.69873626	97.48015634	95.32255502	93.22392357	91.18233121
230404A00004	4/4/2023	4.45	4/4/2025	101.64251	101.2116327	100.7844104	100.3607994	99.94075409	99.52422948	99.11118137	98.70156632	98.29534159

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230404A00019	4/4/2023	4.45	4/4/2025	101.64251	101.2116327	100.7844104	100.3607994	99.94075409	99.52422948	99.11118137	98.70156632	98.29534159
230404A00040	4/4/2023	4.28	4/4/2025	101.56943	101.1387378	100.7117005	100.2882734	99.86841082	99.45206784	99.03920028	98.62976468	98.22371831
230405A00008	4/5/2023	4.01	10/6/2025	103.31049	102.3644546	101.435773	100.5239749	99.62860226	98.74921369	97.8853834	97.03670065	96.20276904
230405A00010	4/5/2023	3.96	4/6/2026	105.06726	103.6184565	102.1968768	100.8018154	99.43259397	98.08855721	96.76907131	95.47352338	94.20132048
230405A00012	4/5/2023	3.8	4/5/2028	112.0608	108.5163913	105.1049263	101.8207085	98.65831574	95.61258632	92.678605	89.85168989	87.1273801
230405A00020	4/5/2023	4.17	4/4/2025	101.52214	101.0915706	100.6646529	100.2413448	99.82160047	99.40537502	98.99262427	98.58330478	98.17737384
230405A00021	4/5/2023	3.96	4/6/2026	105.06726	103.6184565	102.1968768	100.8018154	99.43259397	98.08855721	96.76907131	95.47352338	94.20132048
230405A00022	4/5/2023	3.8	4/5/2028	112.0608	108.5163913	105.1049263	101.8207085	98.65831574	95.61258632	92.678605	89.85168989	87.1273801
230405A00037	4/5/2023	3.71	4/6/2026	104.82298	103.3741277	101.9525242	100.5574696	99.1882846	97.84431231	96.52491781	95.22948706	93.95742607
230405A00044	4/5/2023	3.8	4/5/2028	112.0608	108.5163913	105.1049263	101.8207085	98.65831574	95.61258632	92.678605	89.85168989	87.1273801
230405A00045	4/5/2023	4.15	5/5/2025	101.82885	101.3120552	100.8005165	100.2941503	99.7928784	99.29662398	98.8053119	98.31886848	97.83722149
230405A00046	4/5/2023	3.82	10/5/2027	110.35342	107.3414574	104.4285702	101.6109562	98.8849841	96.24718152	93.69422725	91.22294368	88.83028976
230405A00049	4/5/2023	3.81	4/5/2028	112.09535	108.550348	105.1383027	101.8535206	98.69057897	95.64431556	92.7098146	89.88239373	87.15759156
230405A00051	4/5/2023	4.17	4/7/2025	101.55284	101.1139342	100.6788286	100.2474755	99.81982639	99.39583366	98.97545042	98.55863059	98.14532892
230406A00016	4/6/2023	3.89	4/6/2028	111.3789	108.1104576	104.9633123	101.9322326	99.0122403	96.19860032	93.48680705	90.87257199	88.35181195
230406A00017	4/6/2023	3.99	4/7/2025	101.50894	101.0697375	100.634345	100.2027128	99.77479219	99.35053535	98.9298952	98.51282552	98.09928084
230406A00023	4/6/2023	3.84	4/6/2028	112.20886	108.659101	105.242564	101.9535367	98.7865818	95.7365237	92.79843394	89.96761826	87.23960413
230406A00026	4/6/2023	3.92	4/6/2027	108.82745	106.3369711	103.9168719	101.5647669	99.27836354	97.05546046	94.89394332	92.7917808	90.74702074
230406A00029	4/6/2023	3.84	4/6/2028	112.20886	108.659101	105.242564	101.9535367	98.7865818	95.7365237	92.79843394	89.96761826	87.23960413
230406A00038	4/6/2023	4.24	4/7/2025	101.58352	101.1445288	100.7093444	100.277913	99.85018611	99.42611605	99.00565596	98.58875976	98.17538216
230406A00039	3/29/2024	3.43	3/31/2026	104.24901	102.8229091	101.4233143	100.0495495	98.70096156	97.37691899	96.0768109	94.80004625	93.54605305
230406A00041	5/31/2024	3.25	5/29/2026	104.4867	102.898121	101.3415556	99.81610759	98.32091039	96.85512936	95.41796027	94.0086279	92.62638473
230406A00042	4/6/2023	3.99	4/7/2025	101.50894	101.0697375	100.634345	100.2027128	99.77479219	99.35053535	98.9298952	98.51282552	98.09928084
230406A00043	7/31/2024	3.2	7/31/2026	104.95649	103.1923688	101.4664445	99.77754529	98.12454472	96.50636238	94.9219617	93.37034764	91.85056454
230406A00044	9/30/2024	3.16	9/30/2026	105.4118	103.4771031	101.587661	99.74214756	97.93928043	96.17782302	94.45658271	92.77440898	91.13019162
230406A00045	4/29/2024	3.41	4/30/2027	107.7878	105.2436918	102.7734449	100.3744808	98.04433096	95.78062796	93.58110052	91.44356908	89.36594141
230406A00046	6/28/2024	3.35	6/30/2027	108.15869	105.442551	102.8089633	100.2548953	97.77744532	95.37383875	93.04142113	90.7776521	88.58009961
230406A00047	8/30/2024	3.31	8/31/2027	108.55671	105.667933	102.8714984	100.1639696	97.54205711	95.00261081	92.54261349	90.15917433	87.84952297
230406A00050	4/6/2023	3.67	4/6/2027	108.41664	105.9270569	103.5079474	101.1569145	98.87165998	96.64997727	94.48974708	92.38893338	90.34557968
230406A00052	4/6/2023	4.02	4/6/2026	105.15392	103.7044632	102.2822413	100.8865485	99.51670651	98.1720595	96.85197346	95.55583523	94.28305162
230406A00091	4/6/2023	3.99	4/7/2025	101.50894	101.0697375	100.634345	100.2027128	99.77479219	99.35053535	98.9298952	98.51282552	98.09928084
230406A00105	4/6/2023	3.84	4/6/2028	112.20886	108.659101	105.242564	101.9535367	98.7865818	95.7365237	92.79843394	89.96761826	87.23960413
230410A00011	4/10/2023	4.08	4/9/2027	109.25144	106.7473247	104.3141704	101.949565	99.65118976	97.41681884	95.24431449	93.13162319	91.07677179

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230410A00012	4/10/2023	3.98	4/10/2028	112.73392	109.163879	105.7281492	102.4209507	99.23678747	96.17042824	93.21689271	90.37143791	87.62954557
230411A00028	4/11/2023	4.2	4/11/2025	101.64314	101.1925605	100.7459918	100.3033781	99.86466679	99.42980634	98.99874598	98.57143588	98.14782708
230411A00030	4/11/2023	4.2	4/11/2025	101.64314	101.1925605	100.7459918	100.3033781	99.86466679	99.42980634	98.99874598	98.57143588	98.14782708
230411A00054	4/11/2023	3.74	4/11/2028	112.2018	108.6308546	105.1946139	101.8872723	98.70330558	95.63745656	92.68472069	89.8403324	87.09975242
230412A00002	4/12/2023	4.42	4/11/2025	101.70609	101.2557646	100.8094428	100.3670682	99.9285884	99.49395205	99.06310857	98.63600832	98.21260251
230412A00005	4/12/2023	4.16	4/10/2026	105.39934	103.9369568	102.5022427	101.0944828	99.71298267	98.35707148	97.0261007	95.71944331	94.43649287
230412A00006	4/12/2023	4.04	4/12/2027	109.18458	106.6729215	104.2326804	101.8614146	99.55678325	97.31653934	95.13852527	93.02066874	90.96097882
230412A00007	4/12/2023	3.95	4/12/2028	112.65014	109.0759534	105.6364537	102.3258362	99.13858069	96.06943384	93.1133945	90.26570029	87.52181483
230412A00028	4/12/2023	3.69	4/12/2028	112.03764	108.4667474	105.0306874	101.723645	98.54008604	95.47474425	92.52260647	89.67889918	86.93907573
230412A00031	4/12/2023	3.91	4/10/2026	105.15342	103.6909751	102.2562399	100.8484902	99.46703033	98.11118812	96.78031377	95.4737791	94.19097656
230412A00033	4/12/2023	4.04	4/12/2027	109.18458	106.6729215	104.2326804	101.8614146	99.55678325	97.31653934	95.13852527	93.02066874	90.96097882
230412A00038	4/12/2023	3.69	4/12/2028	112.03764	108.4667474	105.0306874	101.723645	98.54008604	95.47474425	92.52260647	89.67889918	86.93907573
230412A00044	4/12/2023	3.91	4/10/2026	105.15342	103.6909751	102.2562399	100.8484902	99.46703033	98.11118812	96.78031377	95.4737791	94.19097656
230412A00053	4/12/2023	4.2	4/12/2028	111.22753	108.2981333	105.4734357	102.7489941	100.1205823	97.58417857	95.13595472	92.7722656	90.48963914
230412A00059	4/12/2023	4.2	4/12/2028	111.22753	108.2981333	105.4734357	102.7489941	100.1205823	97.58417857	95.13595472	92.7722656	90.48963914
230413A00017	4/13/2023	3.88	4/13/2028	112.41687	108.8439401	105.4057903	102.0966086	98.91086609	95.84330128	92.88890556	90.04290964	87.30077077
230413A00018	4/13/2023	3.96	4/13/2027	108.99746	106.4853525	104.0447675	101.6732562	99.36847173	97.12816123	94.95016171	92.83239574	90.77286758
230413A00020	4/13/2023	3.88	4/13/2028	112.41687	108.8439401	105.4057903	102.0966086	98.91086609	95.84330128	92.88890556	90.04290964	87.30077077
230413A00021	4/13/2023	4.07	4/13/2026	105.30003	103.8300852	102.3881105	100.9733742	99.58517084	98.22281911	96.88566038	95.57305803	94.28439645
230413A00024	4/13/2023	4.41	4/14/2025	101.73428	101.2756154	100.8211007	100.3706795	99.92429645	99.48189718	99.0434284	98.6088377	98.17807365
230413A00030	4/13/2023	4.33	4/14/2025	101.69767	101.2391066	100.7846894	100.3343649	99.88807798	99.44577424	99.00740037	98.57290399	98.14223365
230413A00031	4/13/2023	4.07	4/13/2026	105.30003	103.8300852	102.3881105	100.9733742	99.58517084	98.22281911	96.88566038	95.57305803	94.28439645
230413A00045	4/13/2023	4.33	4/11/2025	101.66565	101.2154363	100.7692204	100.3269511	99.88857592	99.45404351	99.02330332	98.59630571	98.17300191
230413A00069	4/13/2023	4.33	4/14/2025	101.69767	101.2391066	100.7846894	100.3343649	99.88807798	99.44577424	99.00740037	98.57290399	98.14223365
230413A00082	4/13/2023	4.01	4/13/2027	109.12097	106.60732	104.1652233	101.7922334	99.4860021	97.24427584	95.06489063	92.94576817	90.88491187
230417A00023	4/17/2023	3.86	4/7/2028	112.57842	109.0121609	105.5799541	102.2760411	99.09494195	96.03144084	93.08057166	90.23760466	87.49803389
230417A00034	4/17/2023	4.63	4/17/2025	101.86946	101.4021572	100.9391577	100.4804011	100.0258291	99.57538445	99.1290109	98.68665329	98.24825742
230417A00036	4/17/2023	4.63	4/17/2025	101.86946	101.4021572	100.9391577	100.4804011	100.0258291	99.57538445	99.1290109	98.68665329	98.24825742
230417A00037	4/17/2023	4.39	4/16/2026	105.80271	104.3205999	102.866832	101.4406657	100.0413824	98.66828806	97.32071202	95.99800609	94.69954359
230417A00042	4/17/2023	4.58	4/17/2025	101.84616	101.3789259	100.9159894	100.4572954	100.0027855	99.55240254	99.10609032	98.66379363	98.2254583
230417A00044	4/17/2023	4.32	4/17/2026	105.71092	104.2267376	102.7709889	101.3429297	99.94183806	98.56701637	97.21779084	95.89351021	94.59354489
230417A00045	4/17/2023	4.21	4/16/2027	109.64793	107.1192942	104.6628278	102.2760552	99.95660129	97.70218644	95.51062229	93.37980737	91.30772309
230417A00046	4/17/2023	4.13	4/17/2028	113.32877	109.7287545	106.2647991	102.9310224	99.72182922	96.63189599	93.65615564	90.78978397	88.02818656



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230417A00085	4/17/2023	4.68	4/17/2026	103.30301	102.5043907	101.719614	100.9483034	100.1900955	99.44464036	98.71160094	97.99065252	97.28148212
230418A00007	4/18/2023	4.61	4/18/2025	101.87159	101.401522	100.9358082	100.4743867	100.0171981	99.56418429	99.11528799	98.67045311	98.22962455
230418A00035	4/18/2023	4.13	4/18/2028	106.9332	105.0948991	103.3080412	101.5707618	99.88128016	98.23789327	96.63897152	95.08295514	93.56835066
230418A00057	4/18/2023	4.36	4/18/2025	101.79191	101.3216148	100.8556845	100.3940545	99.93666533	99.48345852	99.03437669	98.58936353	98.14836374
230418A00059	4/18/2023	4.09	4/17/2026	105.49145	104.0069944	102.55101	101.1227514	99.72149501	98.34654184	96.99721664	95.67286684	94.3728616
230419A00016	4/19/2023	4.41	4/18/2025	101.81534	101.3449889	100.8789948	100.4173015	99.95984943	99.50658013	99.05743623	98.61236141	98.17130036
230419A00024	4/19/2023	4.66	4/18/2025	101.89502	101.424891	100.9591136	100.4976288	100.0403774	99.58730114	99.13834283	98.69344635	98.25255658
230419A00030	4/19/2023	4.39	4/20/2026	105.84847	104.354885	102.8900723	101.4532675	100.0437363	98.66076982	97.30368314	95.97181449	94.66452422
230419A00035	4/19/2023	4.16	4/19/2028	113.45487	109.8470288	106.3757336	103.0350693	99.81941305	96.7234153	93.74198475	90.87027447	88.10366877
230419A00072	4/19/2023	4.53	10/20/2025	103.96411	102.9762222	102.0071743	101.0564321	100.1234794	99.20781949	98.3089739	97.42648169	96.55989868
230420A00003	4/20/2023	4.06	4/20/2026	105.47947	103.9867638	102.5228449	101.0869513	99.67834763	98.2963239	96.94019431	95.60929621	94.30298911
230420A00024	4/20/2023	4.31	4/20/2026	105.72983	104.2371646	102.7732529	101.3373336	99.92867293	98.54656223	97.19031707	95.85927604	94.55279985
230420A00056	4/20/2023	4.38	4/20/2033	131.44056	122.2285795	113.7633701	105.979735	98.81851206	92.22598306	86.15334651	80.55624377	75.39433313
230420A00059	4/20/2023	4.72	4/20/2038	149.58914	134.461495	121.1426768	109.4011696	99.0364668	89.87476353	81.76526505	74.57702306	68.19622149
230420A00060	4/20/2023	4.72	4/20/2038	149.58914	134.461495	121.1426768	109.4011696	99.0364668	89.87476353	81.76526505	74.57702306	68.19622149
230420A00063	4/20/2023	4.65	4/20/2037	145.8791	131.9585854	119.6004022	108.6168599	98.84389413	90.13797815	82.37344957	75.44019731	69.24165871
230420A00067	4/20/2023	4.57	4/21/2025	101.88685	101.4084632	100.9345812	100.4651407	100.0000792	99.53933565	99.08284984	98.63056283	98.18241674
230420A00071	4/20/2023	4.31	4/20/2026	105.72983	104.2371646	102.7732529	101.3373336	99.92867293	98.54656223	97.19031707	95.85927604	94.55279985
230421A00006	4/21/2023	4.04	4/21/2028	113.05639	109.4498983	105.9801725	102.6412823	99.42758611	96.33371687	93.35456713	90.48527499	87.72121092
230421A00015	4/21/2023	4.54	4/21/2025	101.87254	101.3941939	100.9203514	100.4509501	99.98592767	99.52522279	99.06877543	98.61652662	98.16841848
230421A00020	4/21/2023	4.23	4/21/2026	105.62219	104.127579	102.6618127	101.2241252	99.81377909	98.43006246	97.07228766	95.73979025	94.43192803
230421A00023	4/21/2023	4.04	4/21/2028	113.05639	109.4498983	105.9801725	102.6412823	99.42758611	96.33371687	93.35456713	90.48527499	87.72121092
230421A00025	4/21/2023	4.04	4/21/2028	113.05639	109.4498983	105.9801725	102.6412823	99.42758611	96.33371687	93.35456713	90.48527499	87.72121092
230421A00036	4/21/2023	4.48	4/21/2025	101.84392	101.3656553	100.8918919	100.422569	99.95762452	99.49699707	99.04062662	98.58845421	98.14042196
230421A00041	4/21/2023	4.22	4/21/2027	109.7277	107.1840629	104.7134104	102.3132204	99.98107852	97.71466816	95.51176587	93.370237	91.28803157
230421A00043	4/21/2023	4.1	4/21/2028	113.26635	109.6561865	106.1828922	102.8405328	99.62346332	96.52631314	93.54397159	90.67157364	87.90448677
230421A00044	4/21/2023	4.13	10/21/2027	111.43252	108.3611061	105.3919964	102.5212137	99.74495896	97.05960213	94.46167336	91.94785508	89.51497438
230421A00062	4/21/2023	4.33	4/21/2028	107.32877	105.4441793	103.6127376	101.8325137	100.1016615	98.41841479	96.78108422	95.1880527	93.63777203
230421A00064	4/21/2023	4.1	4/21/2028	113.26635	109.6561865	106.1828922	102.8405328	99.62346332	96.52631314	93.54397159	90.67157364	87.90448677
230424A00003	4/24/2023	4.15	4/26/2027	109.60725	107.0511414	104.5687751	102.1575895	99.81513223	97.53905074	95.32708778	93.17707673	91.08693739
230424A00005	4/24/2023	4.08	4/24/2028	113.22787	109.6099513	106.1295145	102.7805852	99.55748031	96.45479397	93.46738242	90.59034977	87.81903467
230424A00010	4/24/2023	4.55	4/24/2025	101.91115	101.4244137	100.9423364	100.4648512	99.99189268	99.52339656	99.05929979	98.5995405	98.144058
230424A00011	4/24/2023	4.55	4/24/2025	101.91115	101.4244137	100.9423364	100.4648512	99.99189268	99.52339656	99.05929979	98.5995405	98.144058

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230424A00012	4/24/2023	4.28	4/24/2026	105.72988	104.2260979	102.7514914	101.3052798	99.88671374	98.49506974	97.12964912	95.78977688	94.47480077
230424A00026	4/24/2023	4.28	4/24/2026	105.72988	104.2260979	102.7514914	101.3052798	99.88671374	98.49506974	97.12964912	95.78977688	94.47480077
230424A00064	4/24/2023	4.28	4/24/2026	105.72988	104.2260979	102.7514914	101.3052798	99.88671374	98.49506974	97.12964912	95.78977688	94.47480077
230425A00006	4/25/2023	3.89	4/24/2026	105.26837	103.7661923	102.2931888	100.848586	99.43163358	98.04160747	96.67780826	95.33956037	94.02621097
230425A00011	4/25/2023	4.3	9/25/2025	103.46067	102.5440977	101.6438078	100.7593655	99.89035431	99.0363726	98.19703236	97.3719589	96.56079023
230425A00024	4/25/2023	4.48	4/25/2025	101.88827	101.3988338	100.9141115	100.4340313	99.95852666	99.48753226	99.02098409	98.55881931	98.10097628
230425A00029	4/25/2023	4.14	4/24/2026	105.52072	104.0185657	102.5455591	101.1009198	99.68389918	98.29377454	96.92984786	95.59144483	94.27791382
230425A00030	4/25/2023	4.01	4/26/2027	109.25639	106.7047418	104.2267291	101.8198013	99.48150877	97.20950199	95.0015263	92.85541767	90.76909838
230425A00031	4/25/2023	3.69	4/25/2028	112.16346	108.5539238	105.0820178	101.7417424	98.52739495	95.43355132	92.45505115	89.58698325	86.82467227
230425A00032	4/25/2023	3.95	4/25/2028	112.78203	109.1691224	105.6936871	102.3497442	99.13160551	96.03386038	93.05136079	90.17920705	87.41273442
230425A00040	4/25/2023	3.89	4/24/2026	105.26837	103.7661923	102.2931888	100.848586	99.43163358	98.04160747	96.67780826	95.33956037	94.02621097
230425A00045	4/25/2023	3.95	4/25/2028	112.78203	109.1691224	105.6936871	102.3497442	99.13160551	96.03386038	93.05136079	90.17920705	87.41273442
230425A00047	4/25/2023	4.01	4/26/2027	109.25639	106.7047418	104.2267291	101.8198013	99.48150877	97.20950199	95.0015263	92.85541767	90.76909838
230425A00050	4/25/2023	4.14	4/24/2026	105.52072	104.0185657	102.5455591	101.1009198	99.68389918	98.29377454	96.92984786	95.59144483	94.27791382
230425A00052	4/25/2023	4.01	4/26/2027	109.25639	106.7047418	104.2267291	101.8198013	99.48150877	97.20950199	95.0015263	92.85541767	90.76909838
230425A00053	4/25/2023	4.14	4/24/2026	105.52072	104.0185657	102.5455591	101.1009198	99.68389918	98.29377454	96.92984786	95.59144483	94.27791382
230425A00104	4/25/2023	3.86	7/15/2026	106.09419	104.360382	102.6634225	101.0022015	99.37565391	97.78275713	96.22252907	94.69402609	93.19634105
230425A00124	4/25/2023	4.42	4/25/2025	101.85898	101.3696344	100.8849947	100.4049966	99.92957336	99.45865987	98.99219206	98.5301071	98.07234334
230426A00003	4/26/2023	3.89	5/9/2028	112.7101	109.0598775	105.5498177	102.17376	98.92585381	95.80053722	92.79252094	89.89677344	87.10850681
230426A00004	4/26/2023	3.89	5/9/2028	112.7101	109.0598775	105.5498177	102.17376	98.92585381	95.80053722	92.79252094	89.89677344	87.10850681
230426A00005	4/26/2023	3.91	6/13/2028	113.13156	109.3770937	105.7697197	102.302838	98.97018525	95.7658147	92.6840783	89.71960972	86.86730857
230426A00006	4/26/2023	3.91	6/13/2028	113.13156	109.3770937	105.7697197	102.302838	98.97018525	95.7658147	92.6840783	89.71960972	86.86730857
230426A00007	4/26/2023	3.92	7/11/2028	113.44927	109.6111815	105.9260152	102.3867878	98.98687803	95.72000647	92.58021533	89.56184995	86.65954134
230426A00008	4/26/2023	3.92	7/11/2028	113.44927	109.6111815	105.9260152	102.3867878	98.98687803	95.72000647	92.58021533	89.56184995	86.65954134
230426A00009	4/26/2023	3.94	8/8/2028	113.79967	109.8786554	106.1165292	102.5059423	99.03992998	95.71188972	92.5155603	89.44500179	86.49457704
230426A00010	4/26/2023	3.94	8/8/2028	113.79967	109.8786554	106.1165292	102.5059423	99.03992998	95.71188972	92.5155603	89.44500179	86.49457704
230426A00011	4/26/2023	3.96	9/12/2028	114.22506	110.1991125	106.3398895	102.6396146	99.09091279	95.68678914	92.42060752	89.28607021	86.27719894
230426A00012	4/26/2023	3.96	9/12/2028	114.22506	110.1991125	106.3398895	102.6396146	99.09091279	95.68678914	92.42060752	89.28607021	86.27719894
230426A00013	4/26/2023	3.98	10/10/2028	114.58358	110.4727973	106.5353209	102.7629147	99.14778081	95.68253077	92.3601623	89.17403685	86.11785876
230426A00014	4/26/2023	3.98	10/10/2028	114.58358	110.4727973	106.5353209	102.7629147	99.14778081	95.68253077	92.3601623	89.17403685	86.11785876
230426A00025	4/26/2023	3.62	4/26/2028	111.92687	108.3186892	104.8482303	101.5094865	98.29674619	95.20457708	92.22781126	89.36153059	86.60105328
230426A00033	4/26/2023	3.88	4/26/2028	112.54626	108.9346873	105.460681	102.1182518	98.90170262	95.80561466	92.82483236	89.95444908	87.18979364
230426A00036	4/26/2023	4.06	4/27/2026	105.43277	103.9229848	102.4426416	100.9909572	99.56717164	98.17055114	96.80038727	95.45599573	94.13671538

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230426A00037	4/26/2023	3.94	4/26/2027	109.08097	106.5315421	104.0557061	101.6509071	99.31469705	97.04472761	94.83874556	92.69458813	90.61017888
230426A00040	4/26/2023	3.9	4/26/2028	112.61652	109.0037152	105.5285102	102.1849159	98.96723379	95.87004406	92.88819002	90.01676395	87.25109368
230426A00043	4/26/2023	4.35	4/22/2025	101.79264	101.3117596	100.8354301	100.3635902	99.89617654	99.43312687	98.97438017	98.51987654	98.06955717
230426A00045	4/26/2023	4.34	4/25/2025	101.81994	101.3307019	100.8461723	100.3662835	99.89096896	99.42016336	98.9538027	98.49182415	98.03416609
230426A00046	4/26/2023	3.95	4/26/2028	112.79218	109.176285	105.6980833	102.3515761	99.13106174	96.03111758	93.04658416	90.17255114	87.4043438
230426A00049	4/26/2023	4.13	4/27/2026	105.53793	104.0273213	102.5461694	101.0936903	99.66912359	98.27173519	96.90081626	95.55568221	94.23567155
230426A00057	4/26/2023	4.44	4/25/2025	101.86874	101.3793676	100.8947003	100.4146748	99.93922446	99.468284	99.00178941	98.53967784	98.08188765
230426A00062	4/26/2023	4.13	4/27/2026	105.53793	104.0273213	102.5461694	101.0936903	99.66912359	98.27173519	96.90081626	95.55568221	94.23567155
230426A00064	6/15/2023	3.87	6/15/2028	113.0059	109.2480907	105.6377119	102.1681369	98.83308001	95.62657379	92.54295098	89.57682742	86.72308615
230426A00065	6/15/2023	3.87	6/15/2028	113.0059	109.2480907	105.6377119	102.1681369	98.83308001	95.62657379	92.54295098	89.57682742	86.72308615
230426A00142	4/26/2023	4.51	4/27/2026	103.17414	102.3748258	101.5893974	100.8174757	100.0586953	99.31270466	98.57916533	97.85775105	97.14814743
230427A00066	4/27/2023	4.07	4/27/2027	109.41734	106.8608496	104.3782021	101.9668338	99.62428621	97.3482009	95.13631508	92.98645691	90.89654131
230427A00069	4/27/2023	4.5	4/28/2025	101.93145	101.4336072	100.9406334	100.4524545	99.96900091	99.49020411	99.01599705	98.54631394	98.08109023
230427A00077	4/27/2023	4.14	10/27/2026	107.59941	105.5701469	103.589959	101.6573512	99.77088447	97.92917301	96.13088243	94.37472723	92.65946865
230428A00010	4/28/2023	4.31	4/28/2025	101.87687	101.3787182	100.8854379	100.3969618	99.9132201	99.43414409	98.95966644	98.48972115	98.02424344
230428A00017	4/28/2023	4.17	4/28/2026	105.60886	104.0949093	102.6105397	101.1549538	99.72738682	98.32710077	96.95338295	95.60554509	94.2829222
230428A00018	4/28/2023	3.99	4/28/2028	112.95321	109.3288762	105.8427364	102.4887625	99.26122431	96.15467239	93.16392223	90.28403999	87.51032897
230428A00026	4/28/2023	4.56	4/28/2025	101.96123	101.4633021	100.9702429	100.4819792	99.99844141	99.51956099	99.0452709	98.57550533	98.11019972
230428A00029	4/28/2023	4.23	4/28/2026	105.69916	104.1845035	102.6994382	101.2431687	99.81492976	98.41398313	97.03961581	95.69113923	94.36788813
230428A00050	4/28/2023	4.31	4/28/2028	107.11123	105.2731544	103.4864677	101.7493133	100.0599129	98.4165658	96.81764452	95.26159132	93.74691467
230428A00054	4/28/2023	4.62	3/13/2025	101.46363	101.0938794	100.7268348	100.3624693	100.0007536	99.64165872	99.28515602	98.9312174	98.57981512
230428A00055	4/28/2023	4.61	4/28/2026	103.25488	102.4548105	101.6686412	100.8959963	100.13651	99.38983009	98.65561751	97.93354552	97.22329922
230501A00011	5/1/2023	4.09	4/26/2027	109.45688	106.9026844	104.422184	102.0128231	99.67215075	97.39781556	95.18756143	93.03922285	90.95072067
230501A00012	5/1/2023	3.98	5/1/2028	112.94859	109.3160037	105.8222131	102.4611536	99.22705836	96.11444346	93.11809242	90.23304155	87.45456619
230501A00013	5/1/2023	4.54	5/1/2025	101.98504	101.4787833	100.9775527	100.4812752	99.98987786	99.50328882	99.02143777	98.54425573	98.07167506
230501A00022	5/1/2023	4.54	5/1/2025	101.98504	101.4787833	100.9775527	100.4812752	99.98987786	99.50328882	99.02143777	98.54425573	98.07167506
230501A00038	5/1/2023	4.33	5/1/2025	101.91947	101.4129187	100.9114062	100.4148563	99.92319563	99.43635221	98.95425543	98.47683608	98.00402629
230501A00039	5/1/2023	4.33	5/1/2025	101.91947	101.4129187	100.9114062	100.4148563	99.92319563	99.43635221	98.95425543	98.47683608	98.00402629
230501A00041	5/1/2023	4.58	4/28/2025	101.97115	101.4732004	100.9801127	100.4918208	100.0082549	99.52934662	99.05502885	98.58523579	98.11990288
230502A00017	5/2/2023	4.26	5/4/2026	105.81153	104.2796403	102.7778843	101.3054511	99.86155412	98.44543443	97.05635954	95.69362229	94.35653972
230502A00024	5/2/2023	4.38	5/2/2025	101.91509	101.4062875	100.9025687	100.4038572	99.91007847	99.42115954	98.93702888	98.45761637	97.98285323
230502A00025	5/2/2023	4.81	11/1/2024	100.01758	100.0147963	100.0120166	100.0092392	100.0064642	100.0036916	100.0009213	99.99815326	99.9953876
230502A00038	5/2/2023	3.86	5/2/2028	112.53516	108.9071291	105.417876	102.0613282	98.83171506	95.72354941	92.73161177	89.8509358	87.07679457

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230502A00042	5/2/2023	4.64	11/4/2024	100.04785	100.0367214	100.0256065	100.0145019	100.0034075	99.99232343	99.98124958	99.97018597	99.95913256
230502A00045	5/2/2023	4.38	5/2/2025	101.91509	101.4062875	100.9025687	100.4038572	99.91007847	99.42115954	98.93702888	98.45761637	97.98285323
230502A00047	5/2/2023	4.1	5/1/2026	105.5356	104.0139892	102.5222329	101.0595304	99.62510599	98.21821117	96.83812333	95.48414472	94.15560132
230502A00052	5/2/2023	3.96	5/3/2027	109.20256	106.6322791	104.1366561	101.7130831	99.35906028	97.07219043	94.85017405	92.69080475	90.59196482
230502A00055	5/2/2023	4.08	5/4/2026	105.53765	104.0079225	102.5082974	101.0379582	99.59611928	98.18202266	96.79493681	95.43415546	94.09899652
230502A00058	5/2/2023	4.39	5/2/2025	101.92016	101.4113468	100.9076133	100.408887	99.9150937	99.42616028	98.94201523	98.46258843	97.9878111
230502A00076	5/2/2023	3.95	5/3/2027	109.17731	106.6073482	104.1120408	101.6887765	99.33505553	97.04848098	94.82675355	92.66766701	90.56910384
230502A00079	5/2/2023	3.6	5/2/2028	111.91284	108.2882508	104.8025906	101.4497745	98.22401734	95.11981828	92.13194526	89.25542032	86.48550579
230502A00081	5/2/2023	3.96	5/3/2027	109.20256	106.6322791	104.1366561	101.7130831	99.35906028	97.07219043	94.85017405	92.69080475	90.59196482
230502A00086	5/2/2023	4.08	5/1/2026	105.50534	103.9839614	102.4924395	101.0299672	99.59576916	98.18909683	96.80922776	95.45546427	94.12713244
230502A00120	5/2/2023	4.38	5/2/2025	101.91509	101.4062875	100.9025687	100.4038572	99.91007847	99.42115954	98.93702888	98.45761637	97.98285323
230502A00122	5/2/2023	3.7	5/3/2027	108.75442	106.1854602	103.6912467	101.2691638	98.91670555	96.63146925	94.41115015	92.25353691	90.15650722
230503A00004	5/3/2023	3.94	5/3/2027	109.15205	106.5824173	104.0874255	101.6644698	99.31105077	97.02477154	94.80333305	92.64452928	90.54624286
230503A00012	5/3/2023	3.82	5/3/2028	112.40365	108.7752141	105.2856742	101.9289491	98.69925951	95.59111015	92.59927414	89.71877824	86.94488912
230503A00014	5/3/2023	3.94	5/3/2027	109.15205	106.5824173	104.0874255	101.6644698	99.31105077	97.02477154	94.80333305	92.64452928	90.54624286
230503A00017	5/3/2023	4.41	11/4/2024	100.0459	100.0347638	100.0236423	100.0125312	100.0014304	99.99033997	99.97925989	99.96819013	99.95713067
230503A00020	5/3/2023	3.84	5/3/2028	112.47429	108.8446133	105.3538621	101.9959595	98.7651252	95.65586273	92.66294407	89.78139491	87.00648088
230503A00022	5/3/2023	4.4	5/2/2025	101.92524	101.4164061	100.9126578	100.4139169	99.92010893	99.43116102	98.94700158	98.4675605	97.99276898
230503A00025	5/3/2023	3.84	5/3/2028	112.47429	108.8446133	105.3538621	101.9959595	98.7651252	95.65586273	92.66294407	89.78139491	87.00648087
230503A00029	5/3/2023	4.08	5/4/2026	105.53765	104.0079225	102.5082974	101.0379582	99.59611928	98.18202266	96.79493681	95.43415546	94.09899652
230503A00030	5/3/2023	3.84	5/3/2028	112.47429	108.8446133	105.3538621	101.9959595	98.7651252	95.65586273	92.66294407	89.78139491	87.00648087
230503A00031	5/3/2023	4.4	5/2/2025	101.92524	101.4164061	100.9126578	100.4139169	99.92010893	99.43116102	98.94700158	98.4675605	97.99276898
230503A00032	5/3/2023	4.08	5/1/2026	105.50534	103.9839614	102.4924395	101.0299672	99.59576916	98.18909683	96.80922776	95.45546427	94.12713244
230503A00034	5/3/2023	3.84	5/3/2028	112.47429	108.8446133	105.3538621	101.9959595	98.7651252	95.65586273	92.66294407	89.78139491	87.00648087
230503A00036	5/3/2023	4.15	5/2/2025	101.83898	101.3299182	100.8259461	100.3269906	99.83297686	99.34383172	98.85948338	98.37986147	97.904897
230503A00038	5/3/2023	4.15	5/2/2025	101.83898	101.3299182	100.8259461	100.3269906	99.83297686	99.34383172	98.85948338	98.37986147	97.904897
230503A00072	5/3/2023	3.83	5/4/2026	105.28065	103.7509153	102.2513125	100.78103	99.33928069	97.92530494	96.53836982	95.1777677	93.8428152
230504A00006	5/4/2023	3.79	12/6/2027	110.8593	107.6688769	104.5883079	101.6131717	98.73925106	95.96252399	93.27915331	90.68547688	88.17799854
230504A00007	5/4/2023	3.82	7/6/2027	109.47808	106.7278337	104.0614666	101.4758754	98.96809903	96.53530649	94.17479026	91.88395991	89.66033607
230504A00011	5/4/2023	3.7	5/4/2026	105.08272	103.5545518	102.0564904	100.5877226	99.14746196	97.73494958	96.34945318	94.9902658	93.65670466
230504A00019	5/4/2023	3.95	5/4/2026	105.33984	103.811682	102.3135958	100.8447689	99.40441633	97.99178082	96.6061315	95.24676275	93.9129931
230504A00020	5/4/2023	3.83	5/4/2027	108.88402	106.3151009	103.8208806	101.3987484	99.04620056	96.76083641	94.54035313	92.38254123	90.28528014
230504A00021	5/4/2023	3.76	5/4/2028	112.20122	108.573634	105.0850276	101.7293112	98.50069822	95.39368646	92.40304272	89.52378796	86.75118347

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230504A00034	5/4/2023	3.95	5/4/2026	105.33984	103.811682	102.3135958	100.8447689	99.40441633	97.99178082	96.6061315	95.24676275	93.9129931
230504A00040	5/4/2023	4.5	11/4/2024	100.04612	100.0349962	100.0238826	100.0127793	100.0016863	99.99060354	99.97953102	99.96846874	99.95741666
230504A00041	5/4/2023	3.95	5/4/2026	105.33984	103.811682	102.3135958	100.8447689	99.40441633	97.99178082	96.6061315	95.24676275	93.9129931
230504A00042	5/4/2023	3.83	5/4/2027	108.88402	106.3151009	103.8208806	101.3987484	99.04620056	96.76083641	94.54035313	92.38254123	90.28528014
230504A00043	5/4/2023	3.76	5/4/2028	112.20122	108.573634	105.0850276	101.7293112	98.50069822	95.39368646	92.40304272	89.52378796	86.75118347
230504A00046	5/4/2023	4.24	5/5/2025	101.87526	101.3583329	100.8466571	100.3401548	99.83874779	99.34235922	98.85091395	98.36433828	97.88255999
230504A00047	5/4/2023	4.5	11/4/2024	100.04612	100.0349962	100.0238826	100.0127793	100.0016863	99.99060354	99.97953102	99.96846874	99.95741666
230504A00049	5/4/2023	3.95	5/4/2026	105.33984	103.811682	102.3135958	100.8447689	99.40441633	97.99178082	96.6061315	95.24676275	93.9129931
230504A00054	5/4/2023	3.95	5/4/2026	105.33984	103.811682	102.3135958	100.8447689	99.40441633	97.99178082	96.6061315	95.24676275	93.9129931
230504A00055	5/4/2023	4.24	5/5/2025	101.87526	101.3583329	100.8466571	100.3401548	99.83874779	99.34235922	98.85091395	98.36433828	97.88255999
230504A00057	5/4/2023	3.86	5/4/2026	105.2029	103.6758231	102.1788024	100.7110225	99.2716989	97.86007493	96.47542014	95.11702934	93.7842215
230504A00058	5/4/2023	3.69	5/4/2028	111.95377	108.3305509	104.8461909	101.4946017	98.27000097	95.16689073	92.18004169	89.30447858	86.53546631
230504A00059	5/4/2023	4.34	5/4/2026	103.19326	102.3555882	101.5326692	100.7240962	99.92948125	99.14845112	98.38064612	97.62571964	96.88333757
230504A00064	5/4/2023	4.35	11/4/2024	100.04427	100.0331478	100.0220356	100.0109337	99.99984214	99.9887608	99.97768971	99.96662884	99.95557819
230504A00065	5/4/2023	4.11	5/5/2025	101.80822	101.2914873	100.7800096	100.2737039	99.772492	99.27629721	98.78504432	98.29865967	97.81707104
230504A00069	5/4/2023	3.82	5/4/2026	105.14203	103.6154414	102.1188942	100.6515796	99.21271338	97.80153898	96.4173262	95.05937004	93.72698968
230504A00084	5/4/2023	3.5	5/4/2028	111.57744	107.9533276	104.4683444	101.1163897	97.89166219	94.78864613	91.80209569	88.92702018	86.15867014
230504A00085	5/4/2023	4.24	5/5/2025	101.87526	101.3583329	100.8466571	100.3401548	99.83874779	99.34235922	98.85091395	98.36433828	97.88255999
230504A00092	5/4/2023	4.5	11/4/2024	100.04612	100.0349962	100.0238826	100.0127793	100.0016863	99.99060354	99.97953102	99.96846874	99.95741666
230505A00001	5/5/2023	4.33	5/5/2025	101.92168	101.4046106	100.8927977	100.3861594	99.88461718	99.38809446	98.896516	98.40980809	97.92789849
230505A00002	5/5/2023	4.01	5/5/2026	105.44171	103.9100501	102.4085548	100.93641	99.49282708	98.07704529	96.68833042	95.32597366	93.98929052
230505A00005	5/5/2023	3.99	5/5/2026	105.41123	103.8798049	102.3785472	100.9066358	99.46328236	98.04772613	96.65923301	95.29709432	93.96062564
230505A00012	5/5/2023	4.6	11/5/2024	100.05757	100.0436629	100.0297706	100.0158916	100.0020258	99.9881732	99.9743338	99.96050756	99.94669446
230505A00013	5/5/2023	4.33	5/5/2025	101.92168	101.4046106	100.8927977	100.3861594	99.88461718	99.38809446	98.896516	98.40980809	97.92789849
230505A00014	5/5/2023	3.59	5/5/2028	111.90533	108.272691	104.7795316	101.4197325	98.18747542	95.07722896	92.08373245	89.20198124	86.42721269
230505A00016	5/5/2023	3.85	5/5/2028	112.52913	108.8930252	105.3962499	102.0326956	98.79655893	95.68232207	92.68473702	89.79881081	87.01979161
230505A00017	5/5/2023	4.01	5/5/2026	105.44171	103.9100501	102.4085548	100.93641	99.49282708	98.07704529	96.68833042	95.32597366	93.98929052
230505A00022	5/5/2023	3.85	5/5/2028	112.52913	108.8930252	105.3962499	102.0326956	98.79655893	95.68232207	92.68473702	89.79881081	87.01979161
230505A00027	5/5/2023	4.01	5/5/2026	105.44171	103.9100501	102.4085548	100.93641	99.49282708	98.07704529	96.68833042	95.32597366	93.98929052
230505A00035	5/5/2023	3.9	5/5/2027	109.07094	106.4969164	103.9977766	101.5709031	99.2137841	96.92401109	94.69927406	92.53735667	90.43613183
230505A00071	5/5/2023	3.85	5/5/2028	112.52913	108.8930252	105.3962499	102.0326956	98.79655893	95.68232207	92.68473702	89.79881081	87.01979161
230508A00007	5/8/2023	3.92	5/8/2028	112.80661	109.1574148	105.6482381	102.2729367	99.02566923	95.90088241	92.89329506	89.99788313	87.20986567
230508A00012	5/8/2023	4.43	5/8/2025	102.00604	101.480469	100.9603281	100.445532	99.93599842	99.43164686	98.93239833	98.43817549	97.94890256



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230508A00016	5/8/2023	4.14	5/8/2026	105.67269	104.131087	102.6199327	101.1383938	99.6856708	98.2609926	96.86361519	95.49282045	94.14791502
230508A00017	5/8/2023	4.01	5/10/2027	109.40062	106.8087711	104.2925769	101.8493751	99.47661834	97.17186458	94.93277205	92.75709447	90.64267649
230508A00018	5/8/2023	3.92	5/8/2028	112.80661	109.1574148	105.6482381	102.2729367	99.02566923	95.90088241	92.89329506	89.99788313	87.20986567
230508A00025	5/8/2023	4.69	11/8/2024	100.09031	100.0680587	100.0458337	100.0236317	100.0014527	99.97929668	99.95716359	99.93505337	99.91296601
230509A00009	5/9/2023	4.45	5/9/2025	102.0275	101.4991178	100.9762193	100.4587225	99.94654388	99.43960157	98.93781535	98.44110665	97.9493985
230509A00010	5/9/2023	4.14	5/8/2026	105.67269	104.131087	102.6199327	101.1383938	99.6856708	98.2609926	96.86361519	95.49282045	94.14791502
230509A00019	5/9/2023	4.7	11/8/2024	100.09054	100.0682911	100.0460658	100.0238637	100.0016845	99.97952826	99.95739498	99.93528458	99.91319702
230509A00035	5/9/2023	4.14	5/8/2026	105.67269	104.131087	102.6199327	101.1383938	99.6856708	98.2609926	96.86361519	95.49282045	94.14791502
230509A00036	5/9/2023	4.02	5/10/2027	109.42606	106.8338901	104.3173755	101.8738606	99.50079759	97.19574425	94.95635864	92.78039427	90.66569563
230509A00037	5/9/2023	4.47	11/8/2024	100.08696	100.0647003	100.0424616	100.0202463	99.99805407	99.97588503	99.95373909	99.93161623	99.90951639
230509A00047	5/9/2023	4.43	5/9/2025	102.01697	101.4886136	100.9657467	100.4482813	99.93613388	99.42922253	98.92746704	98.43078885	97.93911098
230509A00048	5/9/2023	4.43	5/9/2025	102.01697	101.4886136	100.9657467	100.4482813	99.93613388	99.42922253	98.92746704	98.43078885	97.93911098
230509A00060	5/9/2023	3.92	5/9/2028	112.81656	109.1644538	105.6525604	102.2747208	99.02508244	95.89808161	92.88842735	89.99108647	87.2012695
230509A00118	5/9/2023	4.12	5/8/2026	105.64203	104.1006787	102.5897645	101.1084615	99.65597029	98.23151996	96.83436659	95.46379214	94.11910336
230510A00007	5/10/2023	4.39	5/9/2025	101.9959	101.4676051	100.9448015	100.4273989	99.91531389	99.40846445	98.90677042	98.41015325	97.91853596
230510A00009	5/10/2023	4.07	5/11/2026	105.59763	104.0485251	102.5301018	101.0415186	99.58196608	98.15066396	96.74685938	95.36982587	94.01886214
230510A00014	5/10/2023	4.07	5/11/2026	105.59763	104.0485251	102.5301018	101.0415186	99.58196608	98.15066396	96.74685938	95.36982587	94.01886214
230510A00018	11/10/2023	3.61	11/10/2026	106.67122	104.6128785	102.605042	100.6461469	98.73468759	96.86921578	95.04833775	93.2707119	91.53504634
230510A00031	5/10/2023	4.14	5/9/2025	101.90632	101.3777906	100.8547587	100.3371374	99.82484305	99.31779337	98.81590792	98.31910789	97.82731607
230510A00033	5/10/2023	4.39	5/12/2025	102.02835	101.4917034	100.9607216	100.4353118	99.9153865	99.40085986	98.8916479	98.38766834	97.88884063
230510A00037	5/10/2023	3.84	5/10/2028	112.54238	108.8924099	105.3826964	102.0070773	98.75969397	95.63497704	92.62763031	89.73261584	86.94513981
230510A00057	5/10/2023	3.98	5/11/2026	105.45895	103.9109545	102.3936226	100.9061118	99.44761322	98.01734706	96.61456096	95.2385289	93.88855003
230510A00062	8/10/2023	3.78	8/10/2026	106.08219	104.2808252	102.5189146	100.7952833	99.10879843	97.45837102	95.84295406	94.2615404	92.71316082
230511A00011	5/11/2023	4.54	11/5/2024	100.05666	100.0427599	100.0288683	100.01499	100.0011249	99.987273	99.97343431	99.95960879	99.9457964
230511A00015	5/11/2023	4.25	5/12/2025	101.95343	101.4170174	100.8862635	100.36108	99.8413793	99.32707557	98.81808487	98.31432494	97.81571526
230511A00023	5/11/2023	3.95	5/19/2026	105.496	103.9261092	102.3875423	100.8794337	99.40094734	97.95127755	96.52964744	95.13530771	93.7675354
230511A00029	5/11/2023	4.25	5/9/2025	101.92214	101.3940754	100.8714933	100.3543107	99.84244391	99.33581117	98.83433225	98.33792863	97.84652336
230511A00032	5/11/2023	3.7	5/11/2026	105.15235	103.6047312	102.0878009	100.6007203	99.14267929	97.71289644	96.31061813	94.93511709	93.5856913
230511A00034	5/11/2023	4	5/12/2025	101.86241	101.3257611	100.7947775	100.2693742	99.74946319	99.23495851	98.72577588	98.22183281	97.72304849
230511A00036	5/11/2023	3.79	5/19/2027	108.92762	106.3174395	103.7839841	101.324538	98.93649813	96.61737015	94.36476312	92.17638449	90.05003534
230511A00038	5/11/2023	3.95	5/11/2026	105.41272	103.8650976	102.3481296	100.8609762	99.40282893	97.97290809	96.57046149	95.19476324	93.84511266
230511A00039	5/11/2023	3.86	11/27/2026	107.36083	105.2476805	103.1871062	101.1774428	99.21709516	97.30453007	95.43827351	93.6169078	91.83906903
230511A00042	5/11/2023	3.72	5/11/2028	112.1256	108.480294	104.9752267	101.6042251	98.36142676	95.24125905	92.23842285	89.34787768	86.56482749

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230511A00043	5/11/2023	3.72	5/16/2028	112.17258	108.5128229	104.994257	101.6106497	98.35608216	95.22492926	92.21184289	89.31173683	86.5197723
230511A00044	5/11/2023	3.79	5/11/2027	108.85044	106.2629656	103.751118	101.312236	98.9437703	96.64327722	94.40841347	92.23693143	90.12667457
230511A00046	5/11/2023	3.95	5/11/2026	105.41272	103.8650976	102.3481296	100.8609762	99.40282893	97.97290809	96.57046149	95.19476324	93.84511266
230511A00050	5/11/2023	3.98	5/11/2026	105.45895	103.9109545	102.3936226	100.9061118	99.44761322	98.01734706	96.61456096	95.2385289	93.88855003
230511A00052	5/11/2023	4.25	5/12/2025	101.95343	101.4170174	100.8862635	100.36108	99.8413793	99.32707557	98.81808487	98.31432494	97.81571526
230511A00053	5/11/2023	4.53	11/12/2024	100.12668	100.0933207	100.0599964	100.0267103	99.99346242	99.96025261	99.92708082	99.89394699	99.86085104
230511A00067	5/11/2023	4.58	11/13/2024	100.13855	100.1024099	100.0663094	100.0302513	99.99423549	99.95826197	99.92233064	99.8864414	99.85059419
230511A00068	5/11/2023	4.31	5/12/2025	101.98554	101.4490257	100.9181741	100.3928937	99.87309667	99.35869741	98.84961188	98.34575783	97.8470547
230511A00069	5/11/2023	3.98	5/12/2026	105.46944	103.9186645	102.3986326	100.9085018	99.44745976	98.01472347	96.60953749	95.2311729	93.87892608
230511A00080	5/11/2023	3.49	5/11/2028	111.60506	107.9613878	104.4581571	101.0891833	97.84858722	94.73078051	91.73044963	88.84254066	86.06224507
230512A00007	5/12/2023	4.08	5/12/2025	101.90523	101.3684491	100.8373351	100.3118024	99.7917629	99.27713071	98.76782152	98.26375281	97.76484377
230512A00008	5/12/2023	3.75	5/12/2026	105.23953	103.6885102	102.1682737	100.6779777	99.21680804	97.78398006	96.37873669	95.0003475	93.64810745
230512A00009	5/12/2023	4.08	5/12/2025	101.90523	101.3684491	100.8373351	100.3118024	99.7917629	99.27713071	98.76782152	98.26375281	97.76484377
230512A00010	5/12/2023	3.75	5/12/2026	105.23953	103.6885102	102.1682737	100.6779777	99.21680804	97.78398006	96.37873669	95.0003475	93.64810745
230512A00011	5/12/2023	3.78	5/12/2028	112.34841	108.6964308	105.1849807	101.8078784	98.55924655	95.43349838	92.42532158	89.52966323	86.74171559
230512A00020	5/12/2023	4.6	11/12/2024	100.12908	100.0957109	100.0623846	100.0290965	99.99584663	99.96263482	99.92946104	99.89632522	99.86322728
230512A00022	5/12/2023	4.33	5/12/2025	101.99624	101.4596951	100.928811	100.4034982	99.88366913	99.36923802	98.86012089	98.35623546	97.85750118
230512A00023	5/12/2023	4.6	11/13/2024	100.13929	100.1031474	100.0670462	100.0309875	99.99497111	99.95899697	99.92306502	99.88717517	99.85132734
230512A00026	5/12/2023	4	5/12/2026	105.50031	103.94929	102.4290148	100.9386448	99.47736782	98.04440053	96.63898746	95.26039957	93.90793314
230512A00033	5/12/2023	3.75	5/12/2026	105.23953	103.6885102	102.1682737	100.6779777	99.21680804	97.78398006	96.37873669	95.0003475	93.64810745
230512A00037	5/12/2023	3.86	5/12/2027	109.0386	106.4459857	103.9291867	101.4855333	99.11246808	96.80753954	94.56839706	92.39278609	90.27854352
230512A00042	5/12/2023	4	5/12/2026	105.50031	103.94929	102.4290148	100.9386448	99.47736782	98.04440053	96.63898746	95.26039957	93.90793314
230515A00011	5/15/2023	4.11	5/15/2026	105.70267	104.1419163	102.6121843	101.1126219	99.64240601	98.20074294	96.78686739	95.40004098	94.03955112
230515A00024	5/15/2023	4.69	11/15/2024	100.16354	100.1218308	100.0801778	100.0385761	99.99702547	99.95552593	99.91407733	99.87267959	99.8313326
230515A00031	5/15/2023	4.41	5/15/2025	102.07166	101.5266289	100.9874321	100.45398	99.92618086	99.40394494	98.88718437	98.37581312	97.86974697
230515A00034	5/15/2023	4.69	11/15/2024	100.16354	100.1218308	100.0801778	100.0385761	99.99702547	99.95552593	99.91407733	99.87267959	99.8313326
230515A00045	5/15/2023	4.08	5/15/2026	105.65611	104.0957335	102.5663703	101.0671704	99.59731059	98.15599759	96.74246617	95.35597814	93.99582103
230515A00072	5/15/2023	4.42	5/9/2025	102.0117	101.4833614	100.9605104	100.4430607	99.93092888	99.42403301	98.92229289	98.42562995	97.93396723
230515A00074	5/15/2023	4.11	5/15/2026	105.70267	104.1419163	102.6121843	101.1126219	99.64240601	98.20074294	96.78686739	95.40004098	94.03955112
230515A00078	5/15/2023	3.96	5/17/2027	109.3442	106.7340428	104.2004657	101.7407595	99.35233089	97.03269458	94.77946813	92.59036692	90.46319944
230515A00080	5/15/2023	3.88	5/15/2028	112.73362	109.0666038	105.5408709	102.1501965	98.88866289	95.75064583	92.73079777	89.82403278	87.02551215
230516A00009	5/16/2023	4.46	5/16/2025	102.10984	101.5619366	101.0199271	100.4837206	99.95322412	99.42834654	98.90899866	98.39509319	97.88654468
230516A00013	5/16/2023	4.11	5/15/2026	105.70267	104.1419163	102.6121843	101.1126219	99.64240601	98.20074294	96.78686739	95.40004098	94.03955112

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230516A00035	5/16/2023	4.11	5/15/2026	105.70267	104.1419163	102.6121843	101.1126219	99.64240601	98.20074294	96.78686739	95.40004098	94.03955112
230516A00036	5/16/2023	4	5/17/2027	109.44676	106.8352706	104.3003934	101.8394162	99.44974473	97.12889283	94.87447727	92.68421264	90.55590666
230516A00037	5/16/2023	3.91	5/16/2028	112.8505	109.1786656	105.6483648	102.2533543	98.98770328	95.84577499	92.82221033	89.91191251	87.11003266
230516A00044	5/16/2023	4.72	11/15/2024	100.16481	100.1231006	100.0814466	100.0398438	99.99829213	99.95679152	99.91534187	99.87394306	99.83259501
230516A00067	5/16/2023	4.44	5/16/2025	102.09892	101.551047	101.0090713	100.4728984	99.94243524	99.41759071	98.89827565	98.38440276	97.87588657
230516A00069	5/16/2023	4.1	5/15/2026	105.68715	104.126522	102.596913	101.0974714	99.6273742	98.18582782	96.77206699	95.38535337	94.02497442
230517A00014	5/17/2023	4.14	5/18/2026	105.78203	104.2125236	102.6742976	101.1664901	99.68826748	98.23882616	96.81739135	95.4232157	94.05557806
230517A00019	5/17/2023	4.7	1/17/2025	100.86032	100.6435906	100.4278052	100.2129597	99.99904786	99.78606364	99.57400088	99.36285354	99.15261563
230517A00020	5/17/2023	4.47	7/17/2025	102.80395	102.0829736	101.3721437	100.6712425	99.98006244	99.29840192	98.62606484	97.96286046	97.30860323
230517A00046	5/17/2023	4.53	5/16/2025	102.14808	101.6000502	101.0579223	100.5215983	99.99098522	99.46599191	98.94652917	98.4325097	97.92384804
230517A00048	5/17/2023	4.17	5/15/2026	105.79579	104.2342818	102.7038122	101.2035251	99.73259684	98.29023366	96.87566983	95.48816668	94.1270113
230518A00015	5/18/2023	4.64	5/16/2025	102.20816	101.6599431	101.117629	100.5811204	100.0503241	99.52514892	99.00550569	98.49130708	97.98246761
230518A00017	5/18/2023	4.28	5/18/2026	106.00046	104.4291837	102.8892187	101.3797026	99.89980086	98.44870915	97.02565192	95.62988108	94.26067477
230518A00019	5/18/2023	3.81	5/18/2028	112.81326	109.1289157	105.5869419	102.1810406	98.90523311	95.75383756	92.72145281	89.8029427	86.9934215
230519A00002	5/19/2023	4.95	11/19/2024	100.21924	100.166406	100.1136475	100.0609598	100.0083426	99.9557959	99.9033195	99.85091327	99.79857705
230519A00010	5/19/2023	4.91	12/19/2024	100.56179	100.4256443	100.2898854	100.1545086	100.0195123	99.88489485	99.75065465	99.61679005	99.48329945
230519A00011	5/19/2023	4.73	5/19/2025	102.29258	101.7358339	101.1851652	100.6404775	100.1016734	99.56865771	99.04133727	98.51962091	98.00341939
230519A00012	5/19/2023	4.53	12/19/2025	104.63714	103.4809011	102.350325	101.2445603	100.1627954	99.10425348	98.0681912	97.05389658	96.06068748
230519A00013	5/19/2023	4.39	5/19/2026	106.18371	104.6082357	103.0641846	101.5506875	100.0669059	98.61203152	97.18528504	95.78591486	94.41319578
230519A00025	5/19/2023	4.95	11/19/2024	100.21924	100.166406	100.1136475	100.0609598	100.0083426	99.9557959	99.9033195	99.85091327	99.79857705
230519A00026	5/19/2023	4.73	5/19/2025	102.29258	101.7358339	101.1851652	100.6404775	100.1016734	99.56865771	99.04133727	98.51962091	98.00341939
230519A00027	5/19/2023	4.39	5/19/2026	106.18371	104.6082357	103.0641846	101.5506875	100.0669059	98.61203152	97.18528504	95.78591486	94.41319578
230519A00028	5/19/2023	4.73	5/19/2025	102.29258	101.7358339	101.1851652	100.6404775	100.1016734	99.56865771	99.04133727	98.51962091	98.00341939
230519A00029	5/19/2023	4.39	5/19/2026	106.18371	104.6082357	103.0641846	101.5506875	100.0669059	98.61203152	97.18528504	95.78591486	94.41319578
230519A00030	5/19/2023	4.27	5/19/2027	110.16096	107.5347504	104.9856289	102.5108669	100.1078509	97.77407612	95.50714175	93.30474568	91.16467985
230519A00038	5/19/2023	3.92	5/19/2028	113.2171	109.5227938	105.9712514	102.5561561	99.27151081	96.11161624	93.07105486	90.14467505	87.32757649
230519A00041	5/19/2023	3.92	5/19/2028	113.2171	109.5227938	105.9712514	102.5561561	99.27151081	96.11161624	93.07105486	90.14467505	87.32757649
230522A00026	5/22/2023	4.35	5/22/2026	106.15573	104.5723517	103.0206426	101.4997237	100.0087462	98.54689211	97.11337306	95.70742872	94.32832564
230522A00029	5/22/2023	4.67	5/22/2025	102.29408	101.7290541	101.1702869	100.6176754	100.0711183	99.53051607	98.99577166	98.46678999	97.94347807
230522A00043	5/22/2023	4.17	5/16/2028	113.77818	110.0898187	106.5434597	103.1328449	99.85202692	96.69535335	93.65744997	90.73320555	87.91775737
230522A00046	5/22/2023	4.17	5/22/2028	113.84197	110.1359894	106.5731731	103.1471871	99.85201567	96.68194243	93.63153358	90.69562228	87.86929386
230522A00058	5/22/2023	4.7	5/19/2025	102.27595	101.7192518	101.1686354	100.6239995	100.0852468	99.55228212	99.02501231	98.50334619	97.98719454
230522A00093	5/22/2023	4.17	5/22/2028	113.84197	110.1359894	106.5731731	103.1471871	99.85201567	96.68194243	93.63153358	90.69562228	87.86929386

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230523A00008	5/23/2023	4.44	5/26/2026	106.34419	104.7484151	103.1846764	101.6520764	100.1497519	98.67687117	97.23263265	95.81626359	94.42701876
230523A00024	5/23/2023	4.06	5/24/2027	109.88765	107.2467751	104.6838144	102.195996	99.78066463	97.4352764	95.15739364	92.94467954	90.79489328
230523A00031	5/23/2023	4.76	11/22/2024	100.24594	100.1847342	100.1236166	100.0625865	100.0016437	99.94078805	99.88001934	99.81933737	99.75874197
230523A00045	5/23/2023	5	11/22/2024	100.25582	100.1946572	100.1335777	100.0725852	100.0116794	99.95086025	99.8901275	99.82948096	99.76892046
230523A00047	5/23/2023	4.77	5/23/2025	102.36223	101.7942209	101.2325377	100.6770706	100.1277167	99.58437517	99.0469475	98.51533734	97.98945039
230523A00048	5/23/2023	4.44	5/26/2026	106.34419	104.7484151	103.1846764	101.6520764	100.1497519	98.67687117	97.23263265	95.81626359	94.42701876
230523A00049	5/23/2023	4.31	5/24/2027	110.31913	107.6771982	105.1130789	102.6240109	100.2073454	97.86054468	95.5811769	93.36691063	91.21551012
230523A00083	5/23/2023	4.21	5/23/2028	113.99609	110.2846015	106.7165448	103.2855707	99.98564959	96.81105185	93.75633137	90.81630973	87.9860614
230523A00085	5/23/2023	4.39	5/23/2029	118.68299	113.8541175	109.2550758	104.873655	100.6983581	96.71835774	92.92345397	89.30403409	85.85103572
230523A00086	5/23/2023	4.42	5/23/2030	122.46994	116.5203165	110.9061945	105.6067707	100.6026408	95.87569955	91.4090465	87.18689983	83.19451637
230523A00088	5/23/2023	4.59	5/23/2033	133.50671	124.1185112	115.4964938	107.5732561	100.2876867	93.58434259	87.41289563	81.72763541	76.48702285
230523A00089	5/23/2023	4.65	5/23/2034	137.3182	126.7504698	117.1298542	108.3651071	100.3742619	93.08364567	86.42699892	80.34469332	74.78303532
230523A00090	5/23/2023	4.71	5/23/2035	141.07449	129.3166355	118.7046894	109.1188037	100.4523242	92.61027518	85.50802308	79.07009901	73.22916091
230523A00091	5/23/2023	4.77	5/23/2036	144.706	131.7534873	120.1626927	109.7801395	100.4705213	92.11445827	84.60654334	77.8536368	71.77337696
230524A00009	5/24/2023	3.9	5/24/2028	113.19612	109.488454	105.9244793	102.4978239	99.20243445	96.03255955	92.98273285	90.04775728	87.22269009
230524A00020	5/24/2023	4.44	5/23/2025	102.22082	101.6527125	101.0909394	100.535392	99.98596697	99.44256336	98.90508232	98.3734272	97.84750343
230524A00021	5/24/2023	4.44	5/23/2025	102.22082	101.6527125	101.0909394	100.535392	99.98596697	99.44256336	98.90508232	98.3734272	97.84750343
230524A00028	5/24/2023	4.36	5/26/2026	106.21761	104.622872	103.0601547	101.5285582	100.0272197	98.55530804	97.1120221	95.69658957	94.30826562
230524A00037	5/24/2023	4.69	5/23/2025	102.31698	101.7491219	101.1875833	100.6322598	100.0830482	99.53984789	99.00256036	98.47108926	97.94534029
230524A00038	5/24/2023	4.36	5/26/2026	106.21761	104.622872	103.0601547	101.5285582	100.0272197	98.55530804	97.1120221	95.69658957	94.30826562
230524A00055	5/24/2023	4.7	11/22/2024	100.24225	100.1810485	100.1199341	100.0589071	99.99796743	99.93711491	99.87634932	99.81567048	99.75507819
230525A00004	5/25/2023	4.87	5/27/2025	102.46735	101.8879576	101.3151352	100.7487675	100.1887457	99.63496339	99.08731666	98.54570378	98.0100253
230525A00024	5/25/2023	5.06	11/25/2024	100.29393	100.2244251	100.1550266	100.0857326	100.0165429	99.94745738	99.87847567	99.80959759	99.74082291
230525A00094	5/25/2023	4.31	5/25/2028	114.37684	110.6530253	107.0732122	103.6310236	100.3204002	97.13558472	94.07110526	91.12175897	88.2825975
230526A00013	5/26/2023	4.39	5/26/2026	106.39404	104.7956875	103.2294506	101.694434	100.1897714	98.71462828	97.26820032	95.84971219	94.45841618
230526A00016	5/26/2023	4.46	5/26/2027	110.7296	108.0768231	105.5022566	103.0031191	100.5767446	98.22057927	95.93217581	93.70918832	91.5493673
230526A00026	5/26/2023	4.49	5/26/2027	110.80726	108.1534686	105.5779086	103.0777998	100.6504757	98.29338176	96.00407005	93.78019405	91.61950369
230526A00027	5/26/2023	4.49	5/26/2027	110.80726	108.1534686	105.5779086	103.0777998	100.6504757	98.29338176	96.00407005	93.78019405	91.61950369
230526A00028	5/26/2023	4.38	5/26/2028	114.63954	110.9082522	107.3212925	103.8722646	100.5550931	97.3640058	94.29351635	91.33840865	88.49372176
230526A00029	5/26/2023	4.53	5/25/2029	119.3473	114.4977677	109.8790735	105.4789483	101.2858393	97.28886732	93.47778384	89.84293092	86.37520389
230526A00031	5/26/2023	4.54	5/24/2030	123.14946	117.1783699	111.5438388	106.2249988	101.2023859	96.45783897	91.97440594	87.73625664	83.72860291
230526A00033	5/26/2023	4.63	5/27/2031	127.10459	119.9808525	113.3201884	107.0897961	101.2593696	95.80089627	90.68847177	85.89813057	81.40769115
230526A00034	5/26/2023	4.66	5/26/2032	130.72418	122.4545664	114.7918077	107.6876832	101.0980551	94.98250473	89.30400104	84.02859941	79.12516928

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230530A00018	5/30/2023	5.13	11/25/2024	100.29881	100.2292977	100.159895	100.0905968	100.021403	99.95231329	99.88332744	99.81444523	99.74566642
230530A00027	5/30/2023	4.22	5/30/2028	114.10733	110.3746013	106.7866795	103.3371339	100.0198533	96.82903247	93.75915448	90.80497483	87.9615063
230530A00041	5/30/2023	4.93	5/27/2025	102.50194	101.9224418	101.3495067	100.7830273	100.2228946	99.66900237	99.12124655	98.57952545	98.0437396
230530A00045	5/30/2023	4.56	5/29/2026	106.86302	105.1905952	103.552911	101.9489456	100.3777181	98.83828562	97.32974168	95.85121425	94.40186414
230530A00048	5/30/2023	4.45	5/29/2026	106.39538	104.7910358	103.2189918	101.6783369	100.1681973	98.68773114	97.23612736	95.81260413	94.41640758
230530A00054	5/30/2023	4.56	5/29/2026	106.86302	105.1905952	103.552911	101.9489456	100.3777181	98.83828562	97.32974168	95.85121425	94.40186414
230530A00055	5/30/2023	4.56	5/29/2026	106.86302	105.1905952	103.552911	101.9489456	100.3777181	98.83828562	97.32974168	95.85121425	94.40186414
230530A00118	5/30/2023	4.4	5/28/2027	110.59693	107.9404095	105.3623371	102.8599159	100.4304676	98.07142678	95.78033514	93.55483648	91.39267162
230530A00161	5/30/2023	5.08	11/29/2024	100.34143	100.2608159	100.1803331	100.0999805	100.0197577	99.93966451	99.85970053	99.77986548	99.70015907
230530A00166	5/30/2023	4.81	5/30/2025	102.46868	101.8810073	101.3000881	100.7258019	100.1580354	99.59667811	99.04162183	98.49276085	97.9499918
230530A00171	5/30/2023	4.43	5/29/2026	106.36357	104.7594872	103.1877012	101.6472998	100.1374092	98.65718778	97.20582457	95.78253786	94.38657387
230531A00006	5/31/2023	5.05	11/25/2024	100.29323	100.2237291	100.1543311	100.0850377	100.0158487	99.94676367	99.87778256	99.80890507	99.74013098
230531A00036	5/31/2023	4.79	5/30/2025	102.45698	101.8693476	101.2884669	100.714219	100.1464905	99.58517083	99.0301519	98.48132796	97.93859566
230531A00037	5/31/2023	4.41	5/29/2026	106.33175	104.7279387	103.1564106	101.6162626	100.1066211	98.62664441	97.17552179	95.75247159	94.35674015
230531A00038	5/31/2023	4.01	5/28/2027	109.8003	107.1496264	104.5773902	102.0807919	99.65714976	97.30389511	95.0185669	92.79880632	90.64235183
230531A00042	5/31/2023	4.01	5/28/2027	109.8003	107.1496264	104.5773902	102.0807919	99.65714976	97.30389511	95.0185669	92.79880632	90.64235183
230531A00060	5/31/2023	4.44	2/27/2026	105.33565	103.9873455	102.6631087	101.3623432	100.0844706	98.82893123	97.59518352	96.38270297	95.19098171
230531A00061	5/31/2023	4.42	4/1/2026	105.67404	104.2345258	102.8218064	101.4351925	100.0740226	98.73765678	97.42547646	96.13688304	94.87129728
230531A00062	5/31/2023	4.39	4/30/2026	105.96284	104.4405612	102.9481198	101.4847124	100.0495649	98.64193053	97.26108819	95.90634156	94.57701799
230531A00063	5/31/2023	4.37	5/29/2026	106.26813	104.6648415	103.0938294	101.5541883	100.0450448	98.56555769	97.11491622	95.69233905	94.29707272
230531A00085	5/31/2023	5.05	12/2/2024	100.37492	100.2859892	100.1972171	100.1086052	100.020153	99.93186004	99.8437259	99.75575016	99.66793238
230531A00088	5/31/2023	4.79	5/30/2025	102.45698	101.8693476	101.2884669	100.714219	100.1464905	99.58517083	99.0301519	98.48132796	97.93859566
230531A00090	5/31/2023	4.41	6/1/2026	106.36731	104.7550014	103.1752445	101.6271232	100.1097531	98.62228219	97.1638898	95.73378503	94.33120537
230531A00091	5/31/2023	4.26	6/1/2027	110.27775	107.6144203	105.0300019	102.5216714	100.0867256	97.72257568	95.4267414	93.19684596	91.03061081
230531A00099	5/31/2023	4.41	5/29/2026	106.33175	104.7279387	103.1564106	101.6162626	100.1066211	98.62664441	97.17552179	95.75247159	94.35674015
230601A00006	6/1/2023	4.77	6/2/2025	102.48094	101.8849778	101.2959612	100.7137654	100.1382721	99.56936613	99.00693468	98.45086759	97.90105719
230601A00007	6/1/2023	5.04	12/2/2024	100.37403	100.2851008	100.1963295	100.1077184	100.0192669	99.9309747	99.84284132	99.75486634	99.66704931
230601A00012	6/1/2023	4.72	6/2/2025	102.45127	101.8554157	101.266498	100.6844002	100.1090042	99.54019471	98.97785894	98.42188676	97.87217049
230601A00022	6/1/2023	5.04	12/2/2024	100.37403	100.2851008	100.1963295	100.1077184	100.0192669	99.9309747	99.84284132	99.75486634	99.66704931
230601A00025	6/1/2023	4.12	6/1/2028	113.76794	110.0357566	106.4485988	103.0000109	99.68386458	96.49433849	93.42590102	90.4732941	87.63151796
230601A00040	6/1/2023	4.35	6/1/2026	106.27138	104.6598669	103.0808915	101.533538	100.0169223	98.53019283	97.0725292	95.64314086	94.24126563
230602A00012	6/2/2023	4.39	6/2/2026	106.34748	104.7325435	103.1502502	101.5996783	100.0799393	98.59017786	97.12956986	95.69732123	94.29266643
230602A00020	6/2/2023	3.94	6/2/2028	113.43264	109.6958228	106.1045512	102.6523311	99.33300067	96.14070746	93.06989095	90.11526603	87.27180777



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230602A00027	6/2/2023	4.2	6/2/2026	106.17356	104.5578595	102.974855	101.423623	99.903273	98.41294737	96.95182008	95.51909514	94.11400526
230602A00030	6/2/2023	4.2	6/2/2026	106.17356	104.5578595	102.974855	101.423623	99.903273	98.41294737	96.95182008	95.51909514	94.11400526
230602A00051	6/2/2023	4.33	6/2/2038	125.48079	117.9834363	111.1328713	104.8635442	99.11725025	93.84224318	88.99246323	84.52686312	80.40881888
230605A00022	6/5/2023	4.39	6/4/2027	110.65108	107.9743864	105.3771611	102.8565489	100.409821	98.03436463	95.72767682	93.48735939	91.31111358
230606A00008	6/6/2023	3.98	6/6/2028	113.61992	109.868405	106.2633341	102.7981581	99.46666272	96.26294676	93.18140396	90.21670664	87.36379005
230606A00014	6/6/2023	4.35	6/7/2027	110.58084	107.89664	105.2923212	102.7650129	100.3119647	97.93054348	95.61822724	93.37259982	91.19134557
230606A00015	6/6/2023	4.24	6/6/2028	114.2568	110.5016632	106.8928087	103.4237031	100.0881479	96.88025646	93.7944361	90.82537161	87.9680098
230606A00029	6/6/2023	4.45	6/5/2026	106.48051	104.8560869	103.2646088	101.7051376	100.1767727	98.67864728	97.20992646	95.76980586	94.35751019
230607A00001	6/7/2023	4.9	6/6/2025	102.60707	101.999685	101.3995078	100.8064124	100.2202736	99.6409695	99.06838069	98.50239074	97.94288583
230607A00007	6/7/2023	4.24	6/7/2028	114.26788	110.5097187	106.898042	103.426307	100.0883029	96.87813153	93.79018926	90.81915086	87.95995374
230607A00012	6/7/2023	4.24	6/7/2028	114.26788	110.5097187	106.898042	103.426307	100.0883029	96.87813153	93.79018926	90.81915086	87.95995374
230607A00020	6/7/2023	4.28	6/7/2028	114.0565	110.3859621	106.8590831	103.4693698	100.2106636	97.07712084	94.06319535	91.16362076	88.37339472
230607A00037	6/7/2023	4.96	6/6/2025	102.64333	102.0358197	101.4355199	100.8423028	100.2560434	99.67661968	99.10391225	98.53780464	97.97818303
230607A00038	6/7/2023	4.58	6/5/2026	106.68979	105.0636237	103.47043	101.9092733	100.3792525	98.87949973	97.40917941	95.96748642	94.55364477
230608A00003	6/8/2023	4.23	6/8/2028	114.24265	110.4821198	106.8682595	103.3945158	100.0546659	96.84280073	93.75330649	90.78084844	87.92035512
230608A00015	6/8/2023	4.81	6/9/2025	102.58869	101.9731149	101.3649442	100.7640495	100.1703003	99.58356951	99.00373298	98.43066942	97.86426041
230608A00049	6/8/2023	4.47	6/8/2026	106.5498	104.9164193	103.31627	101.7484055	100.2119132	98.70591506	97.22956548	95.78204997	94.36258367
230609A00016	6/9/2023	4.91	6/9/2025	102.64996	102.0341645	101.4257842	100.8246816	100.2307264	99.64379126	99.0637521	98.4904876	97.9238793
230609A00026	6/9/2023	4.11	6/9/2027	110.19146	107.5020929	104.8930229	102.361351	99.90430449	97.51922925	95.20358377	92.95493342	90.77094523
230609A00027	6/9/2023	3.99	6/9/2028	113.68817	109.9269298	106.3127698	102.8391029	99.49967673	96.28855442	93.20009656	90.22894454	87.37000479
230609A00034	6/9/2023	3.99	6/9/2028	113.68817	109.9269298	106.3127698	102.8391029	99.49967673	96.28855442	93.20009656	90.22894454	87.37000479
230609A00036	6/9/2023	4.91	6/6/2025	102.61312	102.0057074	101.4055098	100.8123941	100.2262353	99.64691119	99.07430262	98.50829306	97.9487687
230609A00038	6/9/2023	4.91	6/10/2025	102.66224	102.0436483	101.4325396	100.8287741	100.2322198	99.64274771	99.06023195	98.48454964	97.91558076
230609A00039	6/9/2023	4.73	12/10/2025	104.76282	103.6304582	102.5226943	101.4387272	100.3777946	99.33916628	98.32214296	97.32605415	96.35025693
230609A00040	6/9/2023	4.38	5/12/2027	110.36469	107.7549656	105.2214417	102.7614357	100.3723788	98.0518084	95.79736357	93.60677961	91.4778837
230609A00041	6/9/2023	4.53	7/13/2026	107.08215	105.3474363	103.6494346	101.9870456	100.3592121	98.76491879	97.20319055	95.67309017	94.17371656
230609A00042	6/9/2023	4.46	11/25/2026	108.59211	106.4714377	104.4033721	102.3862539	100.4184908	98.49855242	96.62496707	94.79631932	93.01124722
230609A00043	6/9/2023	4.32	9/29/2027	111.7645	108.7479815	105.8299976	103.006794	100.2747802	97.6305217	95.07073283	92.59226898	90.19211991
230609A00076	7/10/2023	4.19	7/10/2028	114.44362	110.5898075	106.8892597	103.3349839	99.92035224	96.63907855	93.48519831	90.45305013	87.5372583
230612A00023	6/12/2023	4.32	6/12/2026	106.48777	104.8414566	103.2288291	101.6489153	100.1007844	98.5835408	97.0963224	95.6382991	94.20867121
230612A00024	6/12/2023	4.69	6/12/2025	102.59993	101.9754281	101.3585538	100.7491674	100.1471327	99.55231705	98.96459073	98.38382726	97.80990312
230612A00058	6/12/2023	5.16	12/12/2024	100.5089	100.3921934	100.2757733	100.1596386	100.0437882	99.92822097	99.81293594	99.69793199	99.58320805
230613A00010	6/13/2023	4.9	6/13/2025	102.69284	102.0658793	101.4466044	100.8348701	100.230539	99.63347699	99.04355312	98.46063964	97.8846118

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230613A00015	6/13/2023	4.73	6/13/2033	118.65263	113.9484251	109.5189403	105.3450291	101.4090401	97.69469356	94.18696483	90.87197825	87.736911
230613A00019	6/13/2023	4.49	6/15/2026	106.66911	105.0151452	103.3950914	101.8079701	100.2528409	98.72879932	97.23497475	95.77052905	94.3346549
230613A00021	6/13/2023	4.35	6/14/2027	110.66089	107.9559157	105.3318838	102.7858666	100.3150605	97.91678242	95.58846352	93.32764341	91.13196489
230613A00034	6/13/2023	4.56	6/12/2026	106.74589	105.0996717	103.4870917	101.9071843	100.3590207	98.8417072	97.35438356	95.89622132	94.46642239
230613A00055	6/13/2023	5.14	2/13/2025	101.29723	101.0051435	100.7147499	100.4260374	100.1389914	99.85359722	99.5698407	99.28770764	99.00718406
230613A00061	6/13/2023	4.56	6/15/2026	106.78373	105.1287956	103.5077874	101.9197285	100.3636782	98.83873154	97.34401746	95.8786974	94.44196366
230613A00062	6/13/2023	4.97	6/13/2025	102.73649	102.1093838	101.4899572	100.8780726	100.2735924	99.67638257	99.08631215	98.50325335	97.92708141
230613A00091	6/13/2023	4.58	6/15/2026	106.81648	105.1612671	103.5399862	101.9516595	100.395346	98.87014074	97.37517251	95.90960264	94.4726233
230614A00001	6/14/2023	4.55	6/12/2026	106.7296	105.0835174	103.4710724	101.8912976	100.3432643	98.82607885	97.33888106	95.88084253	94.45116522
230614A00029	6/14/2023	4.55	6/15/2026	106.76736	105.1125598	103.491688	101.903763	100.3478443	98.82302694	97.32843993	95.86324478	94.42663384
230614A00031	6/14/2023	4.94	6/16/2025	102.75487	102.1194239	101.4918689	100.8720543	100.2598371	99.65507801	99.05764095	98.46739321	97.88420527
230614A00038	6/14/2023	4.3	6/15/2026	106.49156	104.836816	103.2160377	101.6282455	100.0724966	98.54788413	97.05353551	95.58861054	94.15230001
230614A00047	6/14/2023	4.94	6/16/2025	102.75487	102.1194239	101.4918689	100.8720543	100.2598371	99.65507801	99.05764095	98.46739321	97.88420527
230614A00048	6/14/2023	4.55	6/15/2026	106.76736	105.1125598	103.491688	101.903763	100.3478443	98.82302694	97.32843993	95.86324478	94.42663384
230615A00023	6/15/2023	4.58	6/15/2026	106.81648	105.1612671	103.5399862	101.9516595	100.395346	98.87014074	97.37517251	95.90960264	94.4726233
230615A00026	6/15/2023	4.84	6/15/2038	151.62129	136.2134161	122.661775	110.7268163	100.2013521	90.90601971	82.68540195	75.40470612	68.94691936
230615A00033	6/15/2023	4.58	6/15/2026	106.81648	105.1612671	103.5399862	101.9516595	100.395346	98.87014074	97.37517251	95.90960264	94.4726233
230615A00039	6/15/2023	4.16	6/15/2027	110.3899	107.6809726	105.0532935	102.5039152	100.030018	97.62890357	95.29798885	93.03480009	90.83696745
230615A00044	6/15/2023	4.33	6/15/2026	106.54072	104.885556	103.264368	101.6761733	100.120029	98.59502805	97.10029761	95.63499733	94.19831783
230615A00103	6/15/2023	4.99	6/16/2025	102.78646	102.1509108	101.5232447	100.90332	100.2909937	99.68612642	99.08858208	98.49822798	97.91493458
230616A00012	6/16/2023	4.41	6/16/2026	106.68424	105.0250571	103.3999637	101.8079757	100.2481457	98.71956237	97.22134877	95.75266066	94.31268499
230616A00037	6/16/2023	4.48	6/16/2027	111.02782	108.3123024	105.6781412	103.1223854	100.6422131	98.23492369	95.89793195	93.62876195	91.4250418
230616A00038	6/16/2023	4.32	6/16/2028	114.65988	110.8691146	107.2268497	103.7264191	100.3614935	97.12606439	94.01442533	91.02115507	88.14110137
230616A00039	6/16/2023	5.07	6/16/2025	102.83702	102.2012899	101.5734461	100.9533452	100.3408443	99.73580386	99.13808789	98.54756361	97.96410148
230616A00040	6/16/2023	4.66	6/16/2026	106.96037	105.3011314	103.6759449	102.0838246	100.5238251	98.99503679	97.49658468	96.02762613	94.58734965
230616A00106	6/16/2023	4.61	6/16/2026	106.87836	105.2198169	103.5953144	102.0038659	100.4445264	98.91638677	97.41857207	95.95024007	94.51057956
230620A00035	6/20/2023	4.36	6/20/2030	122.39024	116.3638426	110.6812697	105.3209567	100.2628082	95.48809033	90.97933045	86.72022574	82.69555863
230620A00042	6/20/2023	5.15	12/20/2024	100.60683	100.4678715	100.3293084	100.191142	100.0533705	99.91599222	99.77900543	99.64240843	99.50619951
230620A00065	6/20/2023	4.56	6/18/2026	106.82157	105.157914	103.5284736	101.9322608	100.3683226	98.83574276	97.33363954	95.86116413	94.41749915
230620A00089	6/20/2023	4.98	6/20/2025	102.83003	102.1832864	101.5447089	100.91414	100.2914295	99.67643076	99.06900087	98.4690004	97.87629338
230620A00091	6/20/2023	4.56	6/22/2026	106.87203	105.1967302	103.5560407	101.9489518	100.3744946	98.83173735	97.31978397	95.83777192	94.38487086
230621A00016	6/21/2023	4.55	6/22/2026	106.85546	105.1803045	103.5397545	101.9328026	100.35848	98.81585508	97.30403167	95.82214737	94.36937188
230621A00022	6/21/2023	4.24	6/21/2028	114.42304	110.6224285	106.9712048	103.4626406	100.090349	96.84826792	93.73064102	90.73200074	87.84715181

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230621A00031	6/21/2023	5.19	12/20/2024	100.61239	100.4734199	100.3348508	100.1966784	100.058901	99.92151674	99.78452403	99.64792112	99.51170631
230621A00041	6/21/2023	4.24	6/21/2028	114.42304	110.6224285	106.9712048	103.4626406	100.090349	96.84826792	93.73064102	90.73200074	87.84715181
230621A00045	6/21/2023	4.95	6/23/2025	102.84789	102.192812	101.5461003	100.9075988	100.2771515	99.65460663	99.03981586	98.43263476	97.8329224
230621A00047	6/21/2023	4.44	6/21/2028	107.85137	105.9170376	104.0387467	102.2144054	100.4420203	98.71968644	97.04558339	95.41797038	93.83518239
230621A00048	6/21/2023	4.55	6/22/2026	106.85546	105.1803045	103.5397545	101.9328026	100.35848	98.81585508	97.30403167	95.82214737	94.36937188
230622A00004	6/22/2023	4.23	6/22/2027	110.65461	107.9223612	105.2724931	102.7019972	100.2079979	97.78774467	95.4386051	93.15805903	90.94369292
230622A00005	6/22/2023	4.05	6/22/2028	114.04709	110.2424482	106.5877135	103.0761151	99.70123187	96.45697006	93.33754397	90.33745861	87.45149317
230622A00019	6/22/2023	4.33	6/22/2028	113.91698	110.3236611	106.8708832	103.5522645	100.3617541	97.29361394	94.34239949	91.50294329	88.77033876
230622A00027	6/22/2023	4.49	6/22/2026	106.75605	105.0817505	103.4420375	101.8359078	100.2623928	98.72056141	97.20951784	95.72840004	94.27637805
230622A00028	6/22/2023	4.35	6/22/2027	110.75237	108.0236193	105.3770363	102.8096249	100.3185205	97.90098197	95.55438631	93.27622208	91.06408399
230622A00030	6/22/2023	4.17	6/22/2028	114.17725	110.3783031	106.7288179	103.2220558	99.85162199	96.61144703	93.4957682	90.49911191	87.61627742
230622A00039	6/26/2023	4.49	6/26/2026	106.80574	105.1197977	103.4688413	101.8518436	100.2678197	98.71582311	97.1949435	95.704305	94.2430646
230622A00045	6/22/2023	4.91	6/23/2025	102.82184	102.1668532	101.5202356	100.8818274	100.2514727	99.62901943	99.01431951	98.40722846	97.80760535
230622A00047	6/22/2023	4.49	6/22/2026	106.75605	105.0817505	103.4420375	101.8359078	100.2623928	98.72056141	97.20951784	95.72840004	94.27637805
230622A00049	6/22/2023	4.71	12/17/2025	104.82055	103.6686811	102.5422446	101.4404073	100.3623682	99.30736072	98.27465096	97.26353594	96.27334196
230622A00056	6/26/2023	4.49	6/26/2026	106.80574	105.1197977	103.4688413	101.8518436	100.2678197	98.71582311	97.1949435	95.704305	94.2430646
230622A00083	6/22/2023	4.55	6/22/2026	106.85546	105.1803045	103.5397545	101.9328026	100.35848	98.81585508	97.30403167	95.82214737	94.36937188
230622A00093	6/22/2023	4.55	6/22/2026	106.85546	105.1803045	103.5397545	101.9328026	100.35848	98.81585508	97.30403167	95.82214737	94.36937188
230622A00095	6/22/2023	4.38	6/22/2027	110.83226	108.1024382	105.4548054	102.8863684	100.3942616	97.97574324	95.62818964	93.34908868	91.13603446
230622A00096	6/22/2023	4.21	6/22/2028	114.32404	110.522401	106.8703067	103.3610109	99.98811588	96.74554966	93.62754693	90.62863167	87.7436008
230623A00002	6/23/2023	4.45	6/23/2026	106.70209	105.025452	103.3834887	101.7751922	100.1995904	98.65574842	97.14276718	95.65978141	94.20595815
230623A00003	6/23/2023	4.29	6/23/2027	110.60385	107.8742807	105.2269808	102.6589497	100.1673165	97.74933429	95.40237458	93.12392085	90.91156304
230623A00004	6/23/2023	4.13	6/23/2028	114.04125	110.2419593	106.5922661	103.0854157	99.7150033	96.47495044	93.35948589	90.36312824	87.48066953
230623A00025	6/23/2023	4.45	6/23/2026	106.70209	105.025452	103.3834887	101.7751922	100.1995904	98.65574842	97.14276718	95.65978141	94.20595815
230623A00026	6/23/2023	4.29	6/23/2027	110.60385	107.8742807	105.2269808	102.6589497	100.1673165	97.74933429	95.40237458	93.12392085	90.91156304
230623A00027	6/23/2023	4.13	6/23/2028	114.04125	110.2419593	106.5922661	103.0854157	99.7150033	96.47495044	93.35948589	90.36312824	87.48066953
230623A00031	6/23/2023	4.87	6/23/2025	102.79579	102.1408944	101.494371	100.8560561	100.2257938	99.60343223	98.98882316	98.38182215	97.78228831
230623A00036	6/23/2023	4.45	6/23/2026	106.70209	105.025452	103.3834887	101.7751922	100.1995904	98.65574842	97.14276718	95.65978141	94.20595815
230623A00037	6/23/2023	4.13	6/23/2028	114.04125	110.2419593	106.5922661	103.0854157	99.7150033	96.47495044	93.35948589	90.36312824	87.48066953
230623A00051	6/23/2023	4.18	6/23/2028	114.22486	110.422214	106.7692547	103.2592325	99.88573924	96.64269309	93.52431961	90.52513435	87.63992642
230623A00053	6/23/2023	4.4	6/23/2026	106.7547	105.0752719	103.4306168	101.8197184	100.241601	98.69532678	97.17999333	95.69473251	94.23870859
230623A00056	6/23/2023	4.18	6/23/2028	114.22486	110.422214	106.7692547	103.2592325	99.88573924	96.64269309	93.52431961	90.52513435	87.63992642
230623A00057	6/23/2023	4.52	6/23/2026	106.81826	105.1406216	103.4976785	101.8884198	100.3118726	98.76710184	97.25320785	95.76932496	94.31461981

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230623A00058	6/23/2023	4.38	6/23/2027	110.84378	108.1109786	105.4605231	102.8894089	100.3947624	97.97383497	95.62399579	93.34272642	91.12761488
230626A00019	6/26/2023	4.91	6/20/2025	102.78501	102.1384353	101.5000185	100.869609	100.2470564	99.63221419	99.02493945	98.4250928	97.83253825
230626A00020	6/26/2023	4.49	6/26/2026	106.80574	105.1197977	103.4688413	101.8518436	100.2678197	98.71582311	97.1949435	95.704305	94.2430646
230626A00021	6/26/2023	4.49	6/26/2026	106.80574	105.1197977	103.4688413	101.8518436	100.2678197	98.71582311	97.1949435	95.704305	94.2430646
230626A00022	6/26/2023	4.34	6/25/2027	110.75996	108.0226438	105.36795	102.7928565	100.2944753	97.87004393	95.51691899	93.23256999	91.0145737
230626A00023	6/26/2023	4.18	6/26/2028	114.25762	110.4458696	106.7844425	103.2665394	99.88571369	96.63584801	93.5111348	90.50605878	87.61538029
230626A00026	6/26/2023	4.84	6/26/2025	102.81249	102.149258	101.4946047	100.8483627	100.2103704	99.58047054	98.95850951	98.34433776	97.73780941
230627A00004	6/27/2023	4.47	6/29/2026	106.80948	105.1150959	103.4559879	101.8311166	100.2394851	98.68013542	97.15214627	95.65463152	94.18673843
230627A00005	6/27/2023	4.3	6/28/2027	110.68699	107.9422001	105.2804592	102.6987239	100.1940839	97.76375577	95.40507644	93.11549692	90.89257658
230627A00006	6/27/2023	4.12	6/27/2028	114.04753	110.2368128	106.5765049	103.0598026	99.68025091	96.43172453	93.30840875	90.30478165	87.41559751
230627A00030	6/27/2023	4.17	6/27/2028	114.2317	110.4175967	106.7540035	103.2341111	99.85146088	96.59992427	93.4736833	90.46721298	87.57526462
230627A00035	6/27/2023	4.21	6/27/2028	114.37903	110.5622238	106.8960024	103.3735578	99.98842885	96.73448406	93.60590294	90.59715804	87.70299832
230627A00036	6/27/2023	4.38	6/28/2027	110.90136	108.1536704	105.489096	102.9045923	100.3972471	97.96427497	95.6030109	93.31090413	91.0855123
230627A00037	6/27/2023	4.56	6/26/2026	106.92248	105.2355367	103.583591	101.9656215	100.3806431	98.82770868	97.30590746	95.81436316	94.35223237
230627A00042	6/27/2023	5.16	1/27/2025	101.08643	100.841656	100.5980769	100.3556793	100.1144548	99.87439475	99.63549074	99.39773444	99.16111757
230627A00043	6/27/2023	5.12	2/27/2025	101.46858	101.1374207	100.8084257	100.4815703	100.1568337	99.83419536	99.51363502	99.19513267	98.87866854
230627A00044	6/27/2023	5.08	3/27/2025	101.81144	101.4021967	100.9962471	100.5935544	100.1940795	99.79778393	99.40462969	99.01457953	98.62759674
230627A00046	6/27/2023	5.03	4/28/2025	102.19451	101.6959121	101.202184	100.7132561	100.2290586	99.74952323	99.2745827	98.80417118	98.33822408
230627A00048	6/27/2023	4.99	5/27/2025	102.53654	101.9569259	101.3838782	100.817287	100.2570435	99.70304135	99.15517645	98.61334713	98.0774539
230627A00049	6/27/2023	4.95	6/27/2025	102.89743	102.2311289	101.5734735	100.9243001	100.283445	99.65074907	99.02605691	98.40921717	97.8000823
230627A00060	6/27/2023	4.89	6/27/2025	102.85769	102.1915316	101.5340222	100.8849934	100.2442817	99.61172776	98.98717635	98.37047611	97.76147949
230627A00065	6/27/2023	4.95	6/27/2025	102.89743	102.2311289	101.5734735	100.9243001	100.283445	99.65074907	99.02605691	98.40921717	97.8000823
230627A00078	6/27/2023	4.95	6/27/2025	102.89743	102.2311289	101.5734735	100.9243001	100.283445	99.65074907	99.02605691	98.40921717	97.8000823
230627A00087	6/27/2023	4.95	6/30/2025	102.93459	102.2598738	101.5940174	100.9368479	100.2881962	99.64789732	99.01579056	98.39171933	97.77553102
230627A00089	6/27/2023	4.56	6/30/2026	106.97294	105.2743441	103.6111453	101.9823006	100.3868084	98.82370606	97.29206823	95.79100469	94.31965886
230627A00090	6/27/2023	4.21	6/27/2028	114.37903	110.5622238	106.8960024	103.3735578	99.98842885	96.73448406	93.60590294	90.59715804	87.70299832
230627A00102	6/27/2023	4.95	6/27/2025	102.89743	102.2311289	101.5734735	100.9243001	100.283445	99.65074907	99.02605691	98.40921717	97.8000823
230628A00015	6/28/2023	4.98	6/27/2025	102.91731	102.2509276	101.5931992	100.9439534	100.3030267	99.67025973	99.04549719	98.4285877	97.81938371
230628A00016	6/28/2023	4.58	6/26/2026	106.95584	105.268605	103.6163766	101.9981295	100.4128784	98.85967598	97.33761145	95.84580835	94.38342317
230628A00017	6/28/2023	4.41	6/28/2027	110.98175	108.2329718	105.5673348	102.981793	100.4734333	98.03946967	95.67723632	93.38418183	91.1578632
230628A00018	6/28/2023	4.23	6/28/2028	114.46375	110.642553	106.9721891	103.4458364	100.0570193	96.79959331	93.66772545	90.65587671	87.75878526
230628A00028	6/28/2023	4.58	6/24/2026	106.9305	105.2490945	103.6024969	101.9896925	100.4097039	98.86159188	97.34445266	95.8574168	94.3996473
230628A00038	6/28/2023	4.58	6/24/2026	106.9305	105.2490945	103.6024969	101.9896925	100.4097039	98.86159188	97.34445266	95.8574168	94.3996473

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230628A00045	6/28/2023	4.18	6/28/2028	114.27945	110.4616368	106.794563	103.271405	99.8856909	96.63127938	93.50234079	90.49333919	87.5990157
230628A00055	6/28/2023	5.19	12/27/2024	100.69985	100.5413744	100.3834039	100.2259355	100.0689668	99.91249552	99.75651918	99.60103548	99.44604207
230628A00059	6/28/2023	4.87	6/27/2025	102.84444	102.1783325	101.5208717	100.8718912	100.2312272	99.59872066	98.97421617	98.35756243	97.74861189
230628A00061	6/28/2023	4.47	6/26/2026	106.77238	105.0867294	103.4360557	101.8193356	100.2355844	98.6838558	97.16323951	95.67285981	94.21187381
230628A00063	6/28/2023	4.47	6/29/2026	106.80948	105.1150959	103.4559879	101.8311166	100.2394851	98.68013542	97.15214627	95.65463152	94.18673843
230628A00068	6/28/2023	4.29	6/28/2027	110.66019	107.9157663	105.2543796	102.6729903	100.1686885	97.73869087	95.38033463	93.09107101	90.86845962
230629A00008	6/29/2023	4.34	6/29/2028	114.88058	111.0488745	107.3684331	103.8324095	100.4343076	97.16796337	94.0275257	91.00743841	88.1024235
230629A00019	6/29/2023	4.51	6/24/2027	111.20222	108.4617638	105.803918	103.2256637	100.7241166	98.29651737	95.94022544	93.652713	91.43155925
230629A00025	6/29/2023	4.7	6/24/2026	107.12998	105.4468534	103.7985708	102.1841114	100.6024971	99.05278763	97.53407865	96.04549993	94.58621376
230629A00037	6/29/2023	4.69	6/29/2026	107.17822	105.4806367	103.8183887	102.1904336	100.5957728	99.03344686	97.50253314	96.0021441	94.53142568
230629A00041	6/29/2023	5.09	6/30/2025	103.02849	102.3534212	101.6872159	101.0297008	100.3807067	99.74006851	99.10762556	98.48322119	97.86670275
230629A00042	6/29/2023	4.69	6/29/2026	107.17822	105.4806367	103.8183887	102.1904336	100.5957728	99.03344686	97.50253314	96.0021441	94.53142568
230629A00045	6/29/2023	4.69	6/29/2026	107.17822	105.4806367	103.8183887	102.1904336	100.5957728	99.03344686	97.50253314	96.0021441	94.53142568
230629A00046	6/29/2023	4.51	6/29/2027	111.26159	108.5061944	105.8341813	103.2424915	100.7282016	98.28851567	95.92075877	93.62237069	91.39090014
230629A00068	6/29/2023	5.34	12/30/2024	100.76232	100.5954583	100.4291465	100.2633844	100.0981692	99.93349822	99.76936883	99.60577836	99.44272417
230629A00070	6/29/2023	5.09	6/30/2025	103.02849	102.3534212	101.6872159	101.0297008	100.3807067	99.74006851	99.10762556	98.48322119	97.86670275
230629A00071	6/29/2023	4.41	6/29/2028	114.95043	111.1586702	107.5177961	104.0208804	100.6613587	97.43300828	94.32992832	91.3465207	88.47747247
230629A00072	6/29/2023	4.69	6/29/2026	107.17822	105.4806367	103.8183887	102.1904336	100.5957728	99.03344686	97.50253314	96.0021441	94.53142568
230629A00076	6/29/2023	4.51	6/29/2027	111.26159	108.5061944	105.8341813	103.2424915	100.7282016	98.28851567	95.92075877	93.62237069	91.39090014
230629A00094	6/29/2023	4.41	6/29/2028	114.95043	111.1586702	107.5177961	104.0208804	100.6613587	97.43300828	94.32992832	91.3465207	88.47747247
230629A00097	6/29/2023	4.41	6/29/2028	114.95043	111.1586702	107.5177961	104.0208804	100.6613587	97.43300828	94.32992832	91.3465207	88.47747247
230629A00109	6/29/2023	5.3	12/27/2024	100.71726	100.5587631	100.4007716	100.2432823	100.0862927	99.92980053	99.7738034	99.61829894	99.46328484
230629A00120	6/29/2023	5.03	6/27/2025	102.95043	102.2839254	101.6260753	100.976709	100.3356628	99.70277749	99.07789765	98.46087192	97.85155271
230630A00003	6/30/2023	4.54	6/30/2027	111.35402	108.5945531	105.9186483	103.3232377	100.8053893	98.36229903	95.99128444	93.68977813	91.45532207
230630A00011	6/30/2023	5.37	12/27/2024	100.72834	100.5698287	100.4118238	100.2543211	100.0973183	99.94081282	99.78480244	99.62928479	99.47425751
230630A00028	6/30/2023	4.42	6/30/2027	111.25613	108.4931088	105.8138638	103.2153173	100.6945267	98.24867789	95.87507894	93.57115347	91.33443501
230630A00030	6/30/2023	4.23	6/30/2028	114.79906	110.9578534	107.2685894	103.7243788	100.3186854	97.04530755	93.89835899	90.87225074	87.96167416
230630A00043	6/30/2023	4.6	6/30/2026	107.17758	105.4748252	103.8075917	102.1748275	100.5755268	99.00872316	97.47348724	95.96892533	94.49417741
230630A00046	6/30/2023	4.6	6/30/2026	107.17758	105.4748252	103.8075917	102.1748275	100.5755268	99.00872316	97.47348724	95.96892533	94.49417741
230630A00055	6/30/2023	4.35	6/30/2028	114.92886	111.0934279	107.4094959	103.8701973	100.4690223	97.19979439	94.05665064	91.03402392	88.12662603
230630A00061	6/30/2023	5	7/11/2025	103.10804	102.4023962	101.7064423	101.0199836	100.3428265	99.67478233	99.01566759	98.36530371	97.72351685
230630A00062	6/30/2023	4.6	6/30/2026	107.17758	105.4748252	103.8075917	102.1748275	100.5755268	99.00872316	97.47348724	95.96892533	94.49417741
230630A00079	6/30/2023	4.65	6/30/2026	107.12404	105.4241277	103.7596404	102.1295302	100.5327949	98.96847128	97.43563336	95.93339037	94.46088519



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230630A00080	6/30/2023	5.02	6/30/2025	102.98154	102.3066475	101.6406166	100.9832744	100.3344515	99.69398291	99.06170806	98.43747026	97.82111688
230630A00086	6/30/2023	4.72	6/30/2026	107.24155	105.5406261	103.8751366	102.2440421	100.64634	99.08106646	97.54729512	96.04413479	94.57072789
230630A00088	6/30/2023	4.54	6/30/2027	111.35402	108.5945531	105.9186483	103.3232377	100.8053893	98.36229903	95.99128444	93.68977814	91.45532207
230630A00094	6/30/2023	4.42	6/30/2027	111.25613	108.4931088	105.8138638	103.2153173	100.6945267	98.24867789	95.87507894	93.57115347	91.33443501
230703A00013	7/3/2023	4.34	7/3/2028	114.9248	111.0812378	107.389774	103.843508	100.4358921	97.16071437	94.012079	90.98438829	88.07232556
230703A00015	7/3/2023	4.34	7/3/2028	114.9248	111.0812378	107.389774	103.843508	100.4358921	97.16071437	94.012079	90.98438829	88.07232556
230703A00018	7/3/2023	4.61	7/3/2026	107.23256	105.5211925	103.8456533	102.2048772	100.5978457	99.02357987	97.48113909	95.96961867	94.48814826
230703A00019	7/3/2023	4.61	7/3/2026	107.23256	105.5211925	103.8456533	102.2048772	100.5978457	99.02357987	97.48113909	95.96961867	94.48814826
230703A00021	7/3/2023	4.99	7/3/2025	103.05405	102.3699317	101.694923	101.028841	100.3715089	99.72275517	99.08241224	98.45031713	97.82631098
230703A00025	7/3/2023	4.73	7/3/2026	107.29682	105.5872953	103.9135115	102.2744159	100.6689928	99.09626656	97.55529907	96.04518832	94.56506649
230703A00027	7/3/2023	5.45	11/4/2024	100.05784	100.0467031	100.0355804	100.0244681	100.013366	100.0022742	99.99119268	99.98012138	99.96906029
230703A00028	7/3/2023	5.11	7/3/2025	103.08098	102.397461	101.7230308	101.0575097	100.4007217	99.75249568	99.11266463	98.48106605	97.85754154
230703A00029	7/3/2023	4.89	2/3/2026	105.60652	104.3185816	103.0610546	101.8328667	100.6329926	99.4604547	98.31431991	97.19369748	96.09773643
230703A00043	7/3/2023	4.53	7/6/2027	111.39626	108.6198644	105.9279497	103.3174017	100.7852405	98.32861755	95.94480816	93.6312055	91.38531441
230705A00006	7/5/2023	4.26	7/5/2028	114.96487	111.1068654	107.4019131	103.8430499	100.4236722	97.1375158	93.97863631	90.94139054	88.02041934
230705A00008	7/5/2023	4.63	7/6/2026	107.30467	105.5845346	103.9005368	102.2516001	100.6366928	99.05482372	97.50504052	95.9864275	94.49810387
230705A00019	7/5/2023	4.44	7/6/2027	111.37893	108.5978317	105.9014669	103.2867009	100.7505423	98.29013139	95.90273312	93.58573085	91.33662018
230705A00033	7/5/2023	5.12	7/7/2025	103.13998	102.4452233	101.7598602	101.0836998	100.4165572	99.75825254	99.10861071	98.46746116	97.83463782
230705A00034	7/5/2023	4.75	7/6/2026	107.36921	105.6509268	103.9686961	102.3214508	100.7081622	99.12784217	97.57954114	96.06234608	94.57537872
230705A00035	7/5/2023	5.03	8/8/2025	103.49035	102.7059452	101.9334768	101.1726732	100.4232708	99.68501444	98.95765613	98.24095539	97.53467874
230705A00040	7/5/2023	4.38	7/5/2028	115.09492	111.2427393	107.5431539	103.9892336	100.5744019	97.29241991	94.13736676	91.1036214	88.18584533
230705A00042	7/5/2023	4.42	7/5/2028	115.24314	111.3882135	107.6859694	104.1294679	100.7121293	97.42771223	94.2702931	91.23424835	88.31423707
230705A00103	7/5/2023	4.56	7/6/2027	111.47731	108.6998094	106.0068152	103.3952126	100.8620212	98.40439126	96.01959765	93.70503277	91.45820082
230705A00111	7/5/2023	4.9	1/6/2026	105.27709	104.0675943	102.8860357	101.7314563	100.6029377	99.4996031	98.42061448	97.36517073	96.33250557
230706A00006	7/6/2023	4.59	7/6/2028	115.88468	112.0151531	108.298854	104.7288223	101.2984534	98.00148165	94.83196129	91.78424752	88.85297946
230706A00014	7/6/2023	4.99	7/6/2038	153.78347	138.1793437	124.4576044	112.3747763	101.7203668	92.31222672	83.99258645	76.62466546	70.08976919
230706A00029	7/6/2023	5.53	1/6/2025	100.88953	100.7031701	100.5175067	100.3325364	100.1482552	99.96465933	99.78174487	99.59950799	99.4179449
230706A00032	7/6/2023	5.53	1/6/2025	100.88953	100.7031701	100.5175067	100.3325364	100.1482552	99.96465933	99.78174487	99.59950799	99.4179449
230706A00034	7/6/2023	5.18	7/7/2025	103.18138	102.4864692	101.8009487	101.1246323	100.4573353	99.79887771	99.14908435	98.50778467	97.87481258
230707A00021	9/1/2023	4.61	8/30/2030	124.47449	118.1918355	112.2774103	106.7075905	101.4603884	96.5153298	91.85334241	87.45665317	83.30869331
230707A00022	9/1/2023	4.61	8/30/2030	124.47449	118.1918355	112.2774103	106.7075905	101.4603884	96.5153298	91.85334241	87.45665317	83.30869331
230707A00023	9/1/2023	4.61	8/30/2030	124.47449	118.1918355	112.2774103	106.7075905	101.4603884	96.5153298	91.85334241	87.45665317	83.30869331
230707A00031	7/7/2023	4.84	7/7/2026	107.53493	105.8124793	104.1262117	102.4750506	100.8579625	99.27395459	97.72207285	96.20139999	94.71105376

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230707A00038	7/7/2023	5.35	1/7/2025	100.86923	100.680137	100.491759	100.3040958	100.1171432	99.93089706	99.74535341	99.5605082	99.37635744
230707A00041	7/7/2023	4.44	7/7/2028	115.65578	111.779475	108.0570082	104.4813735	101.0459281	97.74437116	94.57072357	91.51930976	88.58474011
230710A00013	7/10/2023	4.55	7/10/2029	119.94891	114.9554184	110.2049141	105.6841876	101.3808216	97.28314095	93.38016374	89.66155608	86.11759007
230710A00053	7/10/2023	4.98	7/10/2025	103.13745	102.4337186	101.7396261	101.0549758	100.3795754	99.71323801	99.05578161	98.40702909	97.76680802
230710A00066	7/10/2023	5	7/10/2025	103.09533	102.3924815	101.6992546	101.0154489	100.3408729	99.67534007	99.01866917	98.37068361	97.73121115
230711A00012	7/11/2023	5.07	7/11/2025	103.15712	102.4512854	101.7551424	101.0684965	100.3911539	99.72292601	99.0636293	98.41308517	97.77111974
230711A00013	7/11/2023	4.78	7/13/2026	107.51083	105.7723172	104.0705888	102.4045403	100.7731124	99.17528827	97.61009093	96.07658156	94.57385748
230711A00027	7/11/2023	5.07	7/11/2025	103.15712	102.4512854	101.7551424	101.0684965	100.3911539	99.72292601	99.0636293	98.41308517	97.77111974
230711A00038	7/11/2023	4.89	10/10/2025	104.19003	103.2285096	102.2848094	101.3584406	100.4489282	99.55581407	98.6786567	97.81703034	96.97052427
230711A00087	7/11/2023	5.04	6/16/2025	102.81806	102.1823977	101.5546206	100.9345858	100.3221503	99.71717482	99.11952321	98.52906275	97.9456639
230711A00089	7/11/2023	5.32	12/16/2024	100.57901	100.4511563	100.323647	100.1964775	100.0696464	99.94315243	99.81699413	99.69117013	99.56567906
230712A00002	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00005	7/12/2023	5.2	12/16/2024	100.56368	100.4358403	100.3083464	100.1811923	100.0543767	99.92789807	99.80175511	99.67594641	99.55047061
230712A00009	7/12/2023	4.89	6/16/2025	102.72327	102.0879369	101.460493	100.8407885	100.2286805	99.62402961	99.02669983	98.43655844	97.85347595
230712A00014	7/12/2023	4.62	7/13/2026	107.23648	105.5003934	103.8010501	102.1373437	100.5082162	98.9126518	97.34967469	95.81834707	94.31776729
230712A00015	7/12/2023	4.62	7/13/2026	107.23648	105.5003934	103.8010501	102.1373437	100.5082162	98.9126518	97.34967469	95.81834707	94.31776729
230712A00016	7/12/2023	4.45	7/12/2027	111.2479	108.4571627	105.7517822	103.1285868	100.5845504	98.11678098	95.72251314	93.39910189	91.14401623
230712A00017	7/12/2023	4.45	7/12/2027	111.2479	108.4571627	105.7517822	103.1285868	100.5845504	98.11678098	95.72251314	93.39910189	91.14401623
230712A00018	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00019	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00020	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00021	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00034	1/12/2024	4.88	1/13/2025	100.85178	100.6461264	100.4413219	100.2373655	100.0342516	99.83197517	99.63053081	99.42991335	99.23011762
230712A00035	1/12/2024	4.36	1/12/2026	104.69452	103.4723277	102.278785	101.1128886	99.97368414	98.86026113	97.77174994	96.70731977	95.6661764
230712A00039	7/12/2023	4.62	7/13/2026	107.23648	105.5003934	103.8010501	102.1373437	100.5082162	98.9126518	97.34967469	95.81834707	94.31776729
230712A00040	7/12/2023	4.45	7/12/2027	111.2479	108.4571627	105.7517822	103.1285868	100.5845504	98.11678098	95.72251314	93.39910189	91.14401623
230712A00041	7/12/2023	4.31	7/12/2028	114.91165	111.0436765	107.3296339	103.7624894	100.3355804	97.04258789	93.87751682	90.83467716	87.90866633
230712A00046	7/12/2023	4.52	7/13/2026	107.06501	105.3304411	103.6325884	101.9703458	100.3426561	98.74850401	97.18691453	95.65695051	94.15771092
230712A00048	7/12/2023	4.95	7/14/2025	103.11073	102.3968023	101.6928024	100.9985199	100.313754	99.63830956	98.97199673	98.31463079	97.66603199
230712A00051	7/12/2023	4.62	7/13/2026	107.23648	105.5003934	103.8010501	102.1373437	100.5082162	98.9126518	97.34967469	95.81834707	94.31776729
230712A00056	7/12/2023	4.22	7/12/2028	114.57644	110.7146924	107.0066919	103.4454131	100.0241999	96.73673947	93.57704293	90.53942592	87.61849141
230713A00014	7/13/2023	4.2	7/13/2028	114.51251	110.649222	106.9398435	103.3773432	99.95505319	96.66665014	93.50613501	90.4678143	87.54628237
230713A00017	7/13/2023	5.11	1/14/2025	100.91155	100.7030389	100.4954075	100.288647	100.0827521	99.87771702	99.67353648	99.47020501	99.26771725

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230713A00019	7/13/2023	4.51	7/13/2026	107.04786	105.3134458	103.6157423	101.9536461	100.3261001	98.73208923	97.17063852	95.64081086	94.14170529
230713A00021	7/13/2023	4.44	7/13/2026	106.92783	105.1944792	103.4978191	101.8367475	100.210208	98.61718578	97.05670641	95.52783327	94.02966583
230713A00023	7/13/2023	4.2	7/13/2028	114.51251	110.649222	106.9398435	103.3773432	99.95505319	96.66665014	93.50613501	90.4678143	87.54628237
230713A00025	7/13/2023	4.82	7/14/2025	103.0185	102.3049372	101.6012963	100.9073692	100.2229554	99.54785958	98.88189207	98.22486816	97.57660816
230713A00026	7/13/2023	4.49	7/13/2026	107.01356	105.2794554	103.5820499	101.9202465	100.292988	98.69925967	97.13808649	95.60853155	94.10969401
230713A00031	7/13/2023	4.49	7/13/2026	107.01356	105.2794554	103.5820499	101.9202465	100.292988	98.69925967	97.13808649	95.60853155	94.10969401
230713A00058	7/13/2023	4.08	7/13/2028	114.38077	110.5116371	106.796878	103.2294254	99.80258387	96.51000448	93.3456642	90.30384712	87.37912664
230714A00018	7/14/2023	4.24	7/14/2027	110.92561	108.1288696	105.4179355	102.7896164	100.2408614	97.76875501	95.37050996	93.04346063	90.78505671
230714A00019	7/14/2023	4.85	7/14/2025	103.03978	102.3261368	101.6224131	100.928404	100.2439089	99.56873265	98.90268545	98.24558262	97.59724443
230714A00020	7/14/2023	4.52	7/14/2026	107.07725	105.3398726	103.6393074	101.9744506	100.3442407	98.74765846	97.18372488	95.65149914	94.15007673
230714A00022	7/14/2023	4.36	7/14/2027	111.02535	108.2322203	105.5246786	102.8995417	100.3537697	97.88445769	95.48882817	93.16422486	90.90810621
230714A00023	7/14/2023	4.18	7/14/2028	114.44848	110.5836451	106.8728922	103.3091738	99.88581061	96.59646838	93.43513814	90.39611713	87.47399117
230714A00026	7/14/2023	4.18	7/14/2028	114.44848	110.5836451	106.8728922	103.3091738	99.88581061	96.59646838	93.43513814	90.39611713	87.47399117
230714A00030	7/14/2023	4.52	7/17/2026	107.11399	105.3681636	103.6594579	101.9867569	100.3489859	98.74511323	97.17414812	95.6351387	94.12716997
230714A00034	7/14/2023	4.37	7/16/2027	111.07473	108.2754737	105.5621257	102.9314874	100.3805024	97.90625016	95.50593878	93.17689822	90.91657407
230714A00036	7/14/2023	4.37	7/12/2030	122.64327	116.5484754	110.8044892	105.3891156	100.2816821	95.46292938	90.91490733	86.62087855	82.56522987
230714A00042	7/14/2023	4.58	7/14/2026	107.1803	105.4420067	103.7405443	102.0748065	100.4437313	98.84629904	97.28153033	95.74848393	94.24625496
230717A00022	7/17/2023	4.59	7/17/2026	107.2348	105.4878893	103.7781272	102.1043888	100.4655989	98.8607253	97.28877688	95.74880123	94.23988291
230717A00061	7/17/2023	4.93	7/17/2025	103.13411	102.4118233	101.6996949	100.997508	100.3050548	99.62213355	98.94854793	98.28410701	97.62862504
230717A00088	7/17/2023	4.43	7/19/2027	111.2722	108.4620346	105.738308	103.0977885	100.5373937	98.05417834	95.64532751	93.30814948	91.04006943
230718A00012	7/18/2023	5.2	12/16/2024	100.56368	100.4358403	100.3083464	100.1811923	100.0543767	99.92789807	99.80175511	99.67594641	99.55047061
230718A00013	7/18/2023	4.54	7/17/2026	107.14851	105.402371	103.6933634	102.020366	100.3823039	98.77814525	97.20689919	95.66761371	94.15937367
230718A00014	7/18/2023	4.37	7/19/2027	111.10795	108.3000543	105.5785425	102.9401862	100.3819044	97.90075373	95.49392058	93.15871473	90.89256274
230718A00015	7/18/2023	4.19	7/18/2028	114.52794	110.6506851	106.9283758	103.3539053	99.92054093	96.62189895	93.45192433	90.40487146	87.47528627
230718A00016	7/18/2023	4.54	7/17/2026	107.14851	105.402371	103.6933634	102.020366	100.3823039	98.77814525	97.20689919	95.66761371	94.15937367
230718A00023	7/18/2023	4.54	7/20/2026	107.18542	105.4308189	103.7136644	102.0328177	100.3871906	98.77573888	97.19745986	95.65139037	94.13660475
230718A00038	7/18/2023	4.46	11/13/2026	108.44648	106.3611327	104.3269967	102.3424791	100.4060491	98.51623469	96.67161938	94.87083987	93.11258361
230718A00065	7/18/2023	4.3	7/18/2033	117.29791	112.5763325	108.1337771	103.9505929	100.00868	96.29135813	92.78324523	89.47014673	86.33895524
230718A00070	7/18/2023	4.06	7/18/2028	114.35824	110.4758152	106.7487772	103.1699899	99.73269352	96.43047911	93.25726811	90.2072929	87.27507889
230718A00093	7/18/2023	4.06	7/18/2028	114.35824	110.4758152	106.7487772	103.1699899	99.73269352	96.43047911	93.25726811	90.2072929	87.27507889
230719A00006	7/19/2023	4.54	7/20/2026	107.18542	105.4308189	103.7136644	102.0328177	100.3871906	98.77573888	97.19745986	95.65139037	94.13660475
230719A00013	7/19/2023	4.54	7/17/2026	107.14851	105.402371	103.6933634	102.020366	100.3823039	98.77814525	97.20689919	95.66761371	94.15937367
230719A00015	7/19/2023	4.37	7/19/2027	111.10795	108.3000543	105.5785425	102.9401862	100.3819044	97.90075373	95.49392058	93.15871473	90.89256274

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230719A00027	7/19/2023	4.92	7/18/2025	103.13942	102.4143632	101.6995344	100.994722	100.299716	99.61431214	98.93831211	98.27152286	97.61375663
230719A00034	7/19/2023	4.19	7/19/2028	114.53848	110.6582918	106.9332609	103.3562654	99.92055933	96.61974674	93.44776122	90.39884659	87.46753892
230719A00035	7/19/2023	4.92	7/18/2025	103.13942	102.4143632	101.6995344	100.994722	100.299716	99.61431214	98.93831211	98.27152286	97.61375663
230719A00061	7/19/2023	5.18	1/21/2025	101.01508	100.7870439	100.560052	100.3340951	100.1091661	99.88525807	99.66236386	99.44047659	99.21958937
230719A00091	11/13/2023	4.56	11/14/2025	104.28124	103.2229613	102.1862481	101.1704434	100.1749182	99.19906843	98.24231393	97.30409711	96.38388191
230719A00096	12/18/2023	4.46	12/19/2025	104.5569	103.4011547	102.2710595	101.1657683	100.0844697	99.02638706	97.99077726	96.97692845	95.98415867
230719A00101	10/16/2023	4.65	10/17/2025	104.04565	103.0655901	102.1040702	101.1605633	100.2345656	99.32559217	98.43317565	97.55686574	96.69622838
230720A00025	7/20/2023	5.18	1/21/2025	101.03293	100.8046746	100.5774652	100.3512941	100.1261541	99.90203797	99.67893875	99.45684943	99.23576309
230720A00037	7/20/2023	4.55	7/20/2026	107.3448	105.5862827	103.865331	102.1808021	100.5316035	98.91668693	97.33504579	95.7857132	94.26775998
230720A00038	7/20/2023	4.55	7/20/2026	107.3448	105.5862827	103.865331	102.1808021	100.5316035	98.91668693	97.33504579	95.7857132	94.26775998
230720A00039	7/20/2023	4.68	7/20/2026	107.42818	105.6714088	103.9521216	102.2691807	100.6214969	99.00802494	97.4277612	95.87974152	94.36303933
230721A00003	7/21/2023	4.67	7/21/2026	107.4235	105.6640575	103.9422	102.2567857	100.606721	98.99095659	97.40848491	95.85833816	94.33958631
230721A00006	7/21/2023	4.32	7/21/2028	115.04696	111.1517967	107.4124814	103.8218544	100.3731338	97.05988969	93.8760241	90.8157511	87.87357892
230721A00028	7/21/2023	5.03	7/21/2025	103.25708	102.5232697	101.7999328	101.0868419	100.3837798	99.69053568	99.00690444	98.33268669	97.66768855
230721A00029	7/21/2023	4.67	7/21/2026	107.4235	105.6640575	103.9422	102.2567857	100.606721	98.99095659	97.40848491	95.85833816	94.33958631
230721A00031	7/21/2023	5.03	7/21/2025	103.25708	102.5232697	101.7999328	101.0868419	100.3837798	99.69053568	99.00690444	98.33268669	97.66768855
230721A00032	7/21/2023	5.03	7/21/2025	103.25708	102.5232697	101.7999328	101.0868419	100.3837798	99.69053568	99.00690444	98.33268669	97.66768855
230721A00038	7/21/2023	4.67	7/21/2026	107.4235	105.6640575	103.9422	102.2567857	100.606721	98.99095659	97.40848491	95.85833816	94.33958631
230721A00043	7/21/2023	4.98	7/21/2025	103.22064	102.4869763	101.7637847	101.0508377	100.3479181	99.65481498	98.9713234	98.29724395	97.63238277
230724A00037	7/24/2023	4.29	7/24/2028	114.96692	111.0650261	107.3195534	103.7233018	100.2694516	96.9515382	93.76343123	90.69931482	87.75366937
230724A00063	7/24/2023	5.08	7/24/2025	103.33232	102.5899331	101.8582481	101.1370386	100.4260801	99.72515501	99.03405147	98.35256372	97.68049171
230724A00064	7/24/2023	4.53	7/19/2027	111.54594	108.7320017	106.0045838	103.3604591	100.7965425	98.30988603	95.89767238	93.55720739	91.28591393
230724A00065	7/24/2023	4.37	7/18/2028	115.20132	111.3115101	107.5770124	103.9907108	100.5458591	97.23606098	94.05524914	90.99766628	88.05784718
230724A00066	7/24/2023	4.71	8/18/2026	107.85112	106.011622	104.2127543	102.4533313	100.7322099	99.04828961	97.40051031	95.78785066	94.20932619
230725A00004	7/25/2023	5.06	7/25/2025	103.33046	102.5853177	101.8509574	101.1271482	100.4136635	99.71028304	99.01679297	98.33298534	97.65865804
230725A00014	7/25/2023	5.32	1/27/2025	101.1255	100.8806691	100.6370262	100.3945651	100.1532772	99.91315398	99.6741871	99.43636815	99.19968887
230725A00016	7/25/2023	4.75	7/31/2026	107.69125	105.9022454	104.1518965	102.4390176	100.7624696	99.12116043	97.51404202	95.94010831	94.39839307
230725A00018	7/25/2023	4.4	7/25/2028	115.39136	111.4787662	107.7230371	104.1169483	100.6536585	97.32668289	94.1298719	91.05739179	88.10370609
230725A00023	7/25/2023	4.57	4/9/2027	110.45647	107.9373369	105.4894961	103.1105234	100.7980904	98.54996206	96.36399173	94.23811739	92.17035766
230725A00028	7/25/2023	4.46	7/25/2030	123.2744	117.1260639	111.3332492	105.8733421	100.7252974	95.86951624	91.28773924	86.962947	82.87926921
230725A00071	7/25/2023	4.4	7/25/2028	115.39136	111.4787662	107.7230371	104.1169483	100.6536585	97.32668289	94.1298719	91.05739179	88.10370609
230726A00011	7/26/2023	4.24	7/26/2028	115.12001	111.2013274	107.440108	103.8290853	100.3613796	97.03046984	93.83017326	90.75462489	87.7982593
230726A00012	7/26/2023	4.24	7/26/2028	115.12001	111.2013274	107.440108	103.8290853	100.3613796	97.03046984	93.83017326	90.75462489	87.7982593

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230726A00023	7/26/2023	4.24	7/26/2028	115.12001	111.2013274	107.440108	103.8290853	100.3613796	97.03046984	93.83017326	90.75462489	87.7982593
230726A00058	7/26/2023	4.99	7/28/2025	103.37681	102.6223996	101.8790341	101.1464718	100.4244782	99.71282538	99.01129203	98.31966309	97.63772958
230726A00060	7/26/2023	4.99	7/28/2025	103.37681	102.6223996	101.8790341	101.1464718	100.4244782	99.71282538	99.01129203	98.31966309	97.63772958
230727A00016	7/27/2023	4.51	7/27/2033	133.39783	123.8347586	115.0663229	107.0213898	99.63557784	92.85058276	86.61357269	80.87664685	75.59635037
230727A00020	7/27/2023	4.39	7/27/2028	115.37593	111.4581289	107.6975971	104.0870823	100.6197173	97.28899323	94.08873823	91.01309777	88.05651612
230727A00033	7/27/2023	4.82	7/27/2026	108.04836	106.2082853	104.4091748	102.6498634	100.9292238	99.24616799	97.59964628	95.98864535	94.41218678
230727A00037	7/27/2023	4.82	7/27/2026	108.04836	106.2082853	104.4091748	102.6498634	100.9292238	99.24616799	97.59964628	95.98864535	94.41218678
230727A00063	7/27/2023	4.38	7/27/2028	115.65893	111.7273697	107.9537749	104.33086	100.851721	97.50981442	94.29893603	91.21320082	88.24702444
230727A00070	7/27/2023	4.75	7/27/2026	107.63973	105.8620435	104.1225956	102.4202145	100.7537792	99.12221444	97.52448827	95.9596098	94.42662711
230727A00073	7/27/2023	4.81	7/27/2026	107.74493	105.9662915	104.2259096	102.5226114	100.8552754	99.2228261	97.62423098	96.05849874	94.52467706
230727A00075	7/27/2023	4.5	7/27/2028	115.79016	111.8645836	108.0965069	104.4786696	101.0041961	97.66656941	94.45961015	91.37745647	88.41454566
230728A00004	7/28/2023	4.77	7/28/2026	107.68773	105.9068929	104.1644032	102.4590866	100.7898177	99.1555167	97.55514755	95.9877154	94.45226464
230728A00005	7/28/2023	4.59	7/28/2027	111.81528	108.9729866	106.2186997	103.5491076	100.961049	98.45150493	96.01759095	93.6565501	91.36574615
230728A00006	7/28/2023	4.46	7/28/2028	115.65081	111.7250959	107.9570121	104.3392858	100.8650311	97.52772139	94.3211686	91.23950279	88.27715378
230728A00017	7/28/2023	5.15	7/22/2025	103.35766	102.6206903	101.8942693	101.1781736	100.4721837	99.77608639	99.08967424	98.41274573	97.74510488
230731A00012	7/31/2023	4.5	7/31/2029	119.93512	114.8839044	110.0810593	105.5129368	101.1667195	97.0303649	93.09255357	89.3426416	85.77061597
230731A00036	7/31/2023	5.1	7/31/2025	103.438	102.6758622	101.9249811	101.1851126	100.4560157	99.73745601	99.02920617	98.33104521	97.64275845
230731A00037	7/31/2023	4.74	7/31/2026	107.67361	105.8847623	104.134571	102.4218468	100.7454507	99.10429076	97.49731892	95.92352921	94.38195547
230801A00001	8/1/2023	5.14	8/1/2025	103.48173	102.7166512	101.9629188	101.2202817	100.4884959	99.76732456	99.05653769	98.35591188	97.6652301
230801A00021	8/1/2023	4.49	8/1/2028	115.80932	111.8696244	108.088473	104.4585439	100.9728987	97.6249619	94.40849919	91.31759731	88.34664542
230801A00022	8/1/2023	4.65	8/2/2027	112.04023	109.1811019	106.4108424	103.7261006	101.1236797	98.60052669	96.1537245	93.78048488	91.47814156
230801A00024	8/1/2023	4.82	8/3/2026	107.85408	106.0554209	104.295772	102.573941	100.888788	99.23921898	97.62418363	96.04267301	94.49371753
230801A00028	8/1/2023	5.14	8/1/2025	103.48173	102.7166512	101.9629188	101.2202817	100.4884959	99.76732456	99.05653769	98.35591188	97.6652301
230802A00017	8/2/2023	4.79	8/3/2026	107.8009	106.0027278	104.2435557	102.522193	100.8374998	99.18838237	97.57379059	95.99271575	94.44418847
230802A00022	9/8/2023	4.41	9/8/2028	115.93231	111.8845837	108.0036841	104.2818575	100.7117496	97.28638428	93.99914213	90.84374004	87.81421269
230802A00023	10/16/2023	4.37	10/16/2028	116.1975	112.0383734	108.0549124	104.2387444	100.581943	97.07700032	93.71680171	90.49460356	87.40401176
230803A00029	8/3/2023	5.24	2/3/2025	101.21718	100.9526224	100.6894507	100.427655	100.1672245	99.90814854	99.65041651	99.39401795	99.13894251
230804A00030	8/4/2023	4.88	8/4/2027	106.57385	105.0806313	103.6231777	102.2003296	100.8109783	99.45405998	98.12855314	96.8334769	95.56788888
230807A00010	8/7/2023	4.4	8/7/2028	115.53594	111.5848166	107.7933585	104.1541836	100.660301	97.30508356	94.08224676	90.98582849	88.01017052
230807A00018	8/7/2023	4.65	8/7/2026	107.60328	105.7960327	104.0281828	102.2985404	100.605966	98.94936504	97.32768602	95.73991789	94.18508833
230807A00023	8/7/2023	5.26	2/7/2025	101.25391	100.978476	100.7045457	100.4321093	100.1611546	99.89166951	99.62364201	99.35706025	99.09191248
230807A00024	8/7/2023	5.03	8/7/2025	103.47719	102.6955963	101.9258554	101.1676968	100.42086	99.68509236	98.96014856	98.24579056	97.54178727
230807A00025	8/7/2023	4.69	8/7/2026	107.67462	105.8667239	104.0982305	102.3679563	100.6747616	99.01755146	97.39527407	95.80691811	94.25151096



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230807A00033	8/7/2023	4.57	8/7/2026	107.60682	105.7969449	104.0265669	102.2944921	100.5995772	98.94072411	97.31687771	95.7270237	94.17018663
230807A00087	11/7/2023	4.75	11/7/2025	104.39797	103.3582418	102.3393141	101.3405621	100.3613898	99.40122451	98.45951564	97.53573375	96.6293695
230807A00093	2/7/2024	4.49	2/6/2026	105.13541	103.8428755	102.5799075	101.3454918	100.1386586	98.95848196	97.80407744	96.67459946	95.56923939
230808A00008	8/8/2023	4.67	4/24/2026	106.31254	104.8042232	103.3251599	101.8745684	100.4516972	99.05582066	97.68623833	96.34227331	95.02327156
230808A00010	8/8/2023	4.95	8/8/2025	103.42806	102.6439243	101.8717193	101.1111762	100.3620316	99.6240303	98.89692442	98.1804735	97.47444409
230808A00014	8/8/2023	4.6	8/7/2026	107.51409	105.7076687	103.9406232	102.2117705	100.5199714	98.86413201	97.24320095	95.65616762	94.10206005
230808A00029	8/8/2023	4.6	8/7/2026	107.51409	105.7076687	103.9406232	102.2117705	100.5199714	98.86413201	97.24320095	95.65616762	94.10206005
230808A00054	8/8/2023	4.19	8/8/2028	115.07185	111.1181929	107.3247039	103.6839681	100.1889623	96.83302949	93.60985663	90.51345492	87.53814098
230808A00057	8/8/2023	4.19	8/8/2028	115.07185	111.1181929	107.3247039	103.6839681	100.1889623	96.83302949	93.60985663	90.51345492	87.53814098
230808A00060	8/8/2023	4.19	8/8/2028	115.07185	111.1181929	107.3247039	103.6839681	100.1889623	96.83302949	93.60985663	90.51345492	87.53814098
230809A00020	8/9/2023	4.51	11/9/2026	108.50008	106.4254248	104.4015396	102.4268553	100.4998608	98.61910265	96.783182	94.99075218	93.2405164
230809A00026	8/9/2023	4.59	8/7/2026	107.49626	105.6899959	103.9231113	102.1944165	100.5027725	98.8470854	97.22630393	95.63941757	94.0854544
230809A00034	8/9/2023	4.59	8/10/2026	107.53367	105.7189062	103.943848	102.20731	100.5081526	98.84528026	97.21763988	95.62421831	94.06404057
230810A00001	8/10/2023	4.22	8/10/2028	115.20774	111.2459703	107.4448716	103.7970057	100.2953272	96.93315703	93.70416099	90.60232968	87.62195985
230810A00010	8/10/2023	4.62	8/10/2026	107.58743	105.7721685	103.9966233	102.2596073	100.5599805	98.89664727	97.26855417	95.67468786	94.11407315
230810A00013	8/10/2023	4.34	8/10/2028	115.34106	111.3853513	107.5898241	103.9470797	100.4501021	97.09223938	93.86718272	90.76894652	87.7918497
230810A00024	8/10/2023	4.34	8/7/2028	115.30818	111.361369	107.5740903	103.9389709	100.4490245	97.09762863	93.87850291	90.78568933	87.81353357
230810A00025	8/10/2023	4.37	5/8/2028	114.40233	110.724866	107.1882272	103.7862363	100.513024	97.36301021	94.33088823	91.41160946	88.6003695
230810A00026	8/10/2023	4.4	1/10/2028	113.1551	109.8327401	106.6272099	103.5336903	100.5475928	97.66454798	94.88039285	92.19115989	89.59306634
230810A00046	8/10/2023	4.88	11/18/2025	104.66576	103.5943324	102.5449442	101.5169221	100.5096169	99.52240576	98.55469037	97.60589614	96.67547086
230810A00053	8/10/2023	4.82	1/20/2026	105.34669	104.0983943	102.8798485	101.6899918	100.5278176	99.39236577	98.2827204	97.19800692	96.13738997
230810A00057	8/10/2023	4.62	8/10/2026	107.58743	105.7721685	103.9966233	102.2596073	100.5599805	98.89664727	97.26855417	95.67468786	94.11407315
230811A00017	8/11/2023	4.78	8/11/2026	107.88714	106.0663842	104.2855074	102.543318	100.8386745	99.17047936	97.53767732	95.93925293	94.37422883
230811A00018	8/11/2023	5.1	8/11/2025	103.58491	102.791831	102.0109426	101.2419693	100.4846392	99.73868868	99.00386214	98.27991151	97.56659606
230814A00028	8/14/2023	4.86	8/14/2026	108.07036	106.2397306	104.4493335	102.6979808	100.9845294	99.3078796	97.66697339	96.06079198	94.48835423
230814A00029	8/14/2023	4.71	2/12/2027	110.10159	107.7448763	105.4510876	103.2181246	101.0439774	98.92671754	96.86449437	94.85553091	92.89812047
230815A00031	8/15/2023	5.14	8/13/2025	103.64332	102.8444642	102.0579775	101.2835734	100.5209744	99.76991128	99.03012317	98.30135695	97.58336704
230815A00037	8/15/2023	4.53	8/15/2028	116.12127	112.1369089	108.3142441	104.6458031	101.1245044	97.74363257	94.49681721	91.37801321	88.38148209
230815A00038	8/15/2023	4.57	8/16/2027	112.21682	109.3114417	106.49751	103.7716027	101.1304465	98.57091123	96.09000256	93.68485518	91.35272627
230815A00084	8/15/2023	5.14	8/15/2025	103.67025	102.8657543	102.0738017	101.2940983	100.526361	99.7703151	99.02569437	98.29224063	97.56970344
230816A00025	8/16/2023	4.62	4/16/2027	110.87084	108.3225388	105.8469555	103.4415909	101.1040508	98.83203745	96.62334494	94.47585517	92.38753364
230817A00036	8/17/2023	4.91	8/17/2026	108.20057	106.36054	104.5610923	102.8010386	101.0792345	99.39457845	97.74600953	96.13250584	94.55308256
230817A00054	5/17/2024	4.5	5/15/2026	106.30793	104.7422924	103.2077658	101.7034922	100.2286464	98.78243258	97.36408323	95.97285799	94.60804231

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230817A00055	11/17/2023	5.28	11/15/2024	100.18853	100.146805	100.105131	100.0635082	100.0219366	99.98041602	99.93894645	99.89752776	99.85615985
230818A00005	8/18/2023	5.01	8/18/2025	103.67058	102.8569293	102.0561054	101.2678055	100.4917369	99.72761579	98.97516716	98.23412443	97.50422906
230818A00007	8/18/2023	4.73	8/18/2026	108.03641	106.1925129	104.3893872	102.6258364	100.9007125	99.21291046	97.56136579	95.94505299	94.36298363
230818A00024	8/18/2023	4.81	8/18/2026	108.03252	106.1913299	104.3908001	102.6297456	100.9070226	99.22152947	97.57220555	95.95802867	94.37801362
230818A00025	8/18/2023	4.68	8/18/2027	112.31427	109.4072606	106.591782	103.8644145	101.221888	98.66107442	96.17898103	93.77274324	91.43961843
230818A00064	8/18/2023	5.09	8/18/2025	103.67033	102.8575485	102.0575691	101.2700883	100.4948141	99.73146362	98.97976274	98.23944559	97.5102544
230818A00065	8/18/2023	4.82	8/18/2026	108.05066	106.2093007	104.4086047	102.6473871	100.9245038	99.23885346	97.58937508	95.97504647	94.39488236
230821A00004	8/21/2023	5.38	2/21/2025	101.47417	101.1596194	100.8470237	100.5363682	100.2276347	99.92080537	99.61586264	99.31278906	99.01156743
230821A00006	8/21/2023	4.66	8/21/2028	116.68862	112.6767897	108.8282626	105.1354959	101.5913364	98.18899891	94.92204541	91.78436537	88.77015713
230821A00035	8/21/2023	5.36	2/21/2025	101.4679	101.1533612	100.8407778	100.5301345	100.2214132	99.91459598	99.60966532	99.30660376	99.00539408
230821A00074	8/21/2023	5.18	8/21/2025	103.78361	102.9620402	102.1535346	101.3577836	100.5744865	99.80335197	99.04409769	98.29645002	97.5601437
230821A00085	8/21/2023	5.04	2/23/2026	106.08236	104.7392092	103.4212708	102.1278579	100.8583131	99.61200277	98.3883156	97.18666189	96.00647245
230821A00087	8/21/2023	5.37	3/3/2025	101.60505	101.2625735	100.9224061	100.5845282	100.2489164	99.91554804	99.58440067	99.25545209	98.92868042
230823A00036	8/23/2023	4.87	8/24/2026	108.22082	106.3614766	104.5434871	102.7656654	101.0268647	99.3259795	97.6619436	96.03372841	94.44034135
230823A00066	8/23/2023	4.68	8/23/2027	112.37387	109.452233	106.622959	103.8826064	101.2278813	98.65563215	96.16284173	93.74662128	91.40420385
230824A00008	8/24/2023	4.69	8/24/2028	113.98926	110.6497515	107.4400586	104.3542966	101.3868786	98.53250209	95.78613316	93.14299117	90.59853461
230824A00018	2/20/2024	4.78	2/20/2026	105.69639	104.3637306	103.0570206	101.7755179	100.5185096	99.28531012	98.07525932	96.88772185	95.72208571
230824A00019	2/20/2024	4.6	2/19/2027	109.93893	107.562969	105.250939	103.000729	100.8103131	98.67774524	96.60115592	94.57874834	92.6087951
230824A00031	8/24/2023	4.49	8/24/2028	116.39911	112.3757311	108.5167041	104.8144278	101.2616918	97.85165675	94.57783288	91.43406028	88.41449028
230824A00043	8/24/2023	4.89	8/24/2026	108.25743	106.3977431	104.5794153	102.8012614	101.0621347	99.36092938	97.69657912	96.06805518	94.47436482
230824A00061	8/24/2023	4.61	8/24/2028	116.532	112.5148251	108.6615071	104.964477	101.4165543	98.01092784	94.74113394	91.60103719	88.58481183
230825A00005	8/25/2023	5.14	11/21/2025	104.98017	103.898697	102.8396282	101.8022729	100.7859668	99.79007257	98.81397832	97.85709648	96.91886251
230825A00009	8/25/2023	4.91	8/25/2026	108.3074	106.4445025	104.6230889	102.8419685	101.0999939	99.39605836	97.72909468	96.09807288	94.50199888
230825A00010	8/25/2023	4.62	8/25/2028	116.58215	112.5612375	108.7044237	105.0041305	101.4531665	98.04470958	94.7722855	91.62974867	88.61126345
230825A00019	8/25/2023	5.41	2/25/2025	101.53741	101.2116513	100.8879873	100.5663964	100.2468588	99.92935492	99.61386527	99.30037076	98.98885249
230825A00037	8/25/2023	4.91	8/25/2026	108.3074	106.4445025	104.6230889	102.8419685	101.0999939	99.39605836	97.72909468	96.09807288	94.50199888
230825A00043	8/25/2023	4.89	8/25/2026	108.27073	106.4081819	104.5871077	102.8063204	101.0646727	99.36105821	97.69440979	96.06369764	94.46792782
230825A00044	8/25/2023	5.2	8/25/2025	103.85442	103.0214653	102.2019326	101.3954944	100.6018382	99.82066107	99.05166995	98.29458069	97.549118
230825A00062	8/25/2023	5.21	8/25/2025	103.86267	103.029684	102.2101145	101.40364	100.6099477	99.828735	99.05970867	98.3025846	97.55708746
230828A00036	8/28/2023	4.8	8/28/2026	108.29632	106.4225962	104.5907956	102.7997212	101.0482206	99.33518158	97.65953067	96.02023154	94.41628335
230828A00047	8/28/2023	4.92	8/28/2026	108.36588	106.4942187	104.664389	102.8751953	101.1254889	99.41416099	97.74014157	96.10239744	94.49993079
230828A00055	8/28/2023	5.24	8/28/2025	103.92865	103.087065	102.2591604	101.4446079	100.643086	99.85428312	99.0778979	98.31363826	97.56122125
230828A00056	8/28/2023	4.92	8/28/2026	108.36588	106.4942187	104.664389	102.8751953	101.1254889	99.41416099	97.74014157	96.10239744	94.49993079

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230829A00006	8/29/2023	5.21	8/29/2025	103.91729	103.0729864	102.2424527	101.4253554	100.6213699	99.83018205	99.05148755	98.28499171	97.53040906
230830A00028	8/30/2023	4.45	8/30/2027	112.04005	109.0985437	106.2507147	103.493075	100.8222886	98.23516114	95.72863329	93.29977422	90.94577549
230830A00029	8/30/2023	4.45	8/30/2027	112.04005	109.0985437	106.2507147	103.493075	100.8222886	98.23516114	95.72863329	93.29977422	90.94577549
230830A00034	8/30/2023	4.44	8/30/2028	115.94616	111.9235713	108.0657958	104.3652112	100.8145889	97.40707028	94.13614554	90.99563431	87.97966722
230830A00051	8/30/2023	4.45	8/30/2027	112.04005	109.0985437	106.2507147	103.493075	100.8222886	98.23516114	95.72863329	93.29977422	90.94577549
230830A00055	8/30/2023	4.47	8/30/2028	115.28764	111.4539643	107.7771369	104.2498425	100.865145	97.61646786	94.49757355	91.50254425	88.62576365
230830A00101	8/30/2023	5.06	8/31/2026	104.59561	103.5825531	102.5886903	101.6134809	100.6564069	99.71696978	98.7946891	97.88910212	96.99976281
230831A00001	8/31/2023	4.77	8/31/2026	108.12854	106.2509508	104.4154818	102.6209408	100.866179	99.150087	97.47159315	95.82966222	94.22329381
230831A00006	8/31/2023	4.61	8/31/2027	112.26932	109.3271418	106.4786008	103.7202167	101.0486598	98.46074143	95.95340718	93.52373066	91.16890729
230831A00007	8/31/2023	4.48	8/31/2028	116.11187	112.0833278	108.2199136	104.5139877	100.9583079	97.54600226	94.27054824	91.12575303	88.10573529
230831A00016	8/31/2023	4.65	8/31/2026	108.05848	106.1788151	104.341368	102.54494	100.7883784	99.07057033	97.39044076	95.74695127	94.1390984
230831A00041	8/31/2023	4.48	8/31/2028	116.11187	112.0833278	108.2199136	104.5139877	100.9583079	97.54600226	94.27054824	91.12575303	88.10573529
230831A00066	8/31/2023	4.77	8/31/2026	108.12854	106.2509508	104.4154818	102.6209408	100.866179	99.150087	97.47159315	95.82966222	94.22329381
230831A00069	8/31/2023	4.61	8/31/2027	112.26932	109.3271418	106.4786008	103.7202167	101.0486598	98.46074143	95.95340718	93.52373066	91.16890729
230831A00070	8/31/2023	4.48	8/31/2028	116.11187	112.0833278	108.2199136	104.5139877	100.9583079	97.54600226	94.27054824	91.12575303	88.10573529
230831A00079	8/30/2024	4.28	8/29/2031	125.57767	118.2433628	111.4030011	105.020509	99.06262496	93.49867099	88.30033946	83.44149864	78.89801511
230901A00007	9/1/2023	4.55	9/1/2027	112.10975	109.1670572	106.3181135	103.5594363	100.8876887	98.29967527	95.79233516	93.36273598	91.0080675
230901A00016	9/1/2023	4.6	8/3/2026	107.60944	105.8104504	104.0505211	102.3284637	100.6431355	98.99344004	97.37832447	95.79677765	94.24782786
230901A00029	9/1/2023	5.04	3/3/2025	101.51983	101.1772278	100.8369404	100.498947	100.1632244	99.82974984	99.49850061	99.16945449	98.84258949
230901A00037	9/1/2023	4.3	9/1/2028	115.75685	111.7235005	107.8558723	104.1462866	100.5874611	97.17248652	93.89480558	90.74819314	87.72673774
230901A00044	9/1/2023	4.55	9/1/2027	112.10975	109.1670572	106.3181135	103.5594363	100.8876887	98.29967527	95.79233516	93.36273598	91.0080675
230905A00030	9/5/2023	4.55	9/5/2028	116.44085	112.3917977	108.5091955	104.7853198	101.2128491	97.78483749	94.49469306	91.33615848	88.30329207
230905A00033	9/5/2023	4.71	9/4/2026	108.22249	106.3300464	104.4803246	102.6721111	100.9042332	99.17555906	97.48499546	95.83148663	94.21401256
230905A00037	9/5/2023	5.16	3/5/2025	101.58712	101.2388517	100.8929802	100.5494806	100.2083286	99.86950012	99.53297129	99.19871872	98.86671927
230905A00038	9/5/2023	5.16	3/5/2025	101.58712	101.2388517	100.8929802	100.5494806	100.2083286	99.86950012	99.53297129	99.19871872	98.86671927
230906A00020	9/6/2023	5.19	9/8/2025	104.03785	103.1654004	102.3076523	101.464233	100.6347849	99.81896211	99.01643027	98.22686578	97.44995551
230907A00012	9/7/2023	5.17	9/8/2025	104.02056	103.1481953	102.2905275	101.4471875	100.6178178	99.80207247	98.99961723	98.21012845	97.43329305
230907A00047	9/7/2023	5.08	9/5/2025	103.90241	103.0388696	102.1897448	101.3546717	100.533303	99.7253028	98.93034601	98.14811806	97.37831444
230907A00050	9/7/2023	5.05	9/5/2025	103.94554	103.0808618	102.2306277	101.3944762	100.572059	99.76303899	98.96709023	98.18389715	97.41315436
230907A00051	9/7/2023	4.79	9/8/2026	108.4253	106.5196772	104.6572954	102.8369209	101.0573607	99.31746327	97.61611711	95.95224871	94.3248212
230908A00009	9/8/2023	4.55	9/8/2028	116.02425	112.0738069	108.2868745	104.655759	101.1731713	97.83220335	94.62630544	91.54926612	88.59519275
230908A00010	9/8/2023	4.73	9/9/2030	113.80434	110.4872996	107.3135528	104.2755981	101.3663828	98.57927359	95.90802916	93.34677386	90.88997402
230911A00001	9/11/2023	4.49	9/11/2028	116.61048	112.5321735	108.6223716	104.8732158	101.2772591	97.82743889	94.51705426	91.33974605	88.28947752

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230911A00010	9/11/2023	4.9	9/11/2026	108.51772	106.6055859	104.7369607	102.9106013	101.1253037	99.37990627	97.67328751	96.00436452	94.37209146
230911A00014	9/11/2023	4.61	9/11/2028	116.74475	112.67278	108.7688034	105.0249954	101.4339405	97.98860483	94.6823149	91.50873693	88.46185792
230911A00026	9/11/2023	5.08	9/11/2025	103.98314	103.1026682	102.2371752	101.386279	100.549612	99.72681837	98.91755454	98.12148799	97.33829708
230911A00030	9/11/2023	5.09	9/11/2025	103.99186	103.1113529	102.2458191	101.3948826	100.5581756	99.73534257	98.92603977	98.12993469	97.3467057
230912A00026	9/12/2023	4.84	9/14/2026	108.44497	106.5251175	104.6491297	102.8157442	101.0237428	99.2719502	97.55923182	95.88449242	94.24667431
230912A00036	9/12/2023	4.57	9/12/2028	116.60085	112.528832	108.6249457	104.8813584	101.2906432	97.84575562	94.54001226	91.36707027	88.32090827
230912A00053	9/12/2023	4.74	9/7/2027	112.72674	109.7582191	106.8847069	104.1026551	101.4086657	98.79948565	96.27199975	93.82322413	91.45029992
230913A00013	9/13/2023	4.87	9/14/2026	108.50163	106.5812229	104.7046962	102.8707818	101.0782614	99.32595929	97.61274074	95.93751021	94.29920977
230913A00014	9/13/2023	5.34	3/13/2025	101.72927	101.3589263	100.9912901	100.6263361	100.264035	99.90435781	99.54727586	99.19276103	98.84078555
230913A00020	9/13/2023	5.37	3/17/2025	101.79445	101.4128991	101.0342266	100.658398	100.2853813	99.91514488	99.54765751	99.18288852	98.8208077
230913A00030	9/13/2023	5.16	9/15/2025	104.10765	103.2155389	102.3387893	101.477007	100.6298104	99.79683043	98.97771071	98.17210655	97.37968465
230913A00031	9/13/2023	4.91	9/15/2026	108.59071	106.6666366	104.7865763	102.9492611	101.1534672	99.39801387	97.68176149	96.00360985	94.3624966
230913A00032	9/13/2023	4.74	9/15/2027	112.8252	109.8326374	106.9365175	104.1332143	101.4192556	98.79131824	96.24622096	93.78091756	91.3924904
230913A00046	9/13/2023	4.91	9/14/2026	108.57716	106.6560301	104.7787847	102.9441652	101.1509528	99.39797142	97.68408597	96.00820059	94.36925704
230913A00049	9/13/2023	4.74	9/13/2027	112.80059	109.8140374	106.9235719	104.125583	101.4166172	98.79336896	96.2526736	93.7915006	91.40694705
230913A00050	9/13/2023	4.6	9/13/2028	116.72956	112.6522017	108.743281	104.994945	101.3997491	97.95063271	94.64089706	91.46418503	88.41446188
230914A00027	9/14/2023	4.76	1/8/2027	109.77044	107.5165065	105.32069	103.1810657	101.0957935	99.06310908	97.08132009	95.14880249	93.26399717
230914A00031	9/14/2023	5.08	9/15/2025	104.03696	103.1451842	102.2687693	101.4073177	100.5604479	99.72779083	98.90899024	98.1037015	97.31159138
230914A00050	9/14/2023	4.67	9/14/2027	112.61029	109.6236821	106.7332688	103.9354325	101.2267123	98.60379619	96.06351321	93.60282703	91.2188293
230914A00051	9/14/2023	4.84	9/14/2026	108.44497	106.5251175	104.6491297	102.8157442	101.0237428	99.2719502	97.55923182	95.88449242	94.24667431
230914A00059	7/26/2024	4.39	7/24/2026	106.97287	105.2093398	103.4836305	101.7945859	100.1411012	98.52211668	96.93661479	95.38361845	93.86218884
230914A00060	9/14/2023	5.28	3/14/2025	101.72042	101.3473246	100.9769865	100.6093706	100.2444468	99.88218542	99.52255727	99.16553357	98.81108593
230914A00069	7/26/2024	4.34	7/26/2027	111.10274	108.2758311	105.5363814	102.8811061	100.3068677	97.81066921	95.38964739	93.0410651	90.7623049
230914A00070	7/26/2024	4.3	7/26/2028	115.02617	111.1176831	107.3660591	103.764072	100.3048748	96.98197764	93.78922634	90.72078303	87.77110765
230914A00125	9/16/2024	4.46	9/16/2031	126.96712	119.5357475	112.6073299	106.1449274	100.1145032	94.48467853	89.22651263	84.31330117	79.72039293
230915A00026	9/15/2023	4.57	9/15/2028	116.6362	112.5549722	108.6425804	104.8911452	101.2931949	97.84164324	94.52976808	91.35119032	88.2998548
230915A00028	9/15/2023	4.57	9/15/2028	116.6362	112.5549722	108.6425804	104.8911452	101.2931949	97.84164324	94.52976808	91.35119032	88.2998548
230915A00030	9/15/2023	4.7	9/8/2027	112.62394	109.6540769	106.7793673	103.9962478	101.3013125	98.69130078	96.1630904	93.71369089	91.34023714
230915A00054	9/15/2023	4.88	9/15/2026	108.53397	106.6104501	104.7309302	102.8941453	101.0988719	99.34392949	97.62817867	95.95051952	94.30988993
230915A00055	9/15/2023	4.7	9/15/2027	112.70932	109.7184415	106.8239699	104.0222752	101.3098862	98.68348109	96.13987985	93.67603741	91.2890372
230915A00057	9/15/2023	4.75	6/15/2027	111.72986	109.0077906	106.3671422	103.8049669	101.318444	98.90487365	96.56167131	94.28636161	92.07657302
230918A00008	9/18/2023	4.91	9/18/2026	108.63135	106.6984523	104.8099441	102.9645398	101.1610005	99.39813115	97.67477852	95.98982937	94.34220892
230918A00010	9/18/2023	4.72	9/18/2029	121.53281	116.3054119	111.3410254	106.6249937	102.1435492	97.883758	93.83346459	89.98124161	86.31634233

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230918A00011	9/18/2023	4.91	9/18/2026	108.63135	106.6984523	104.8099441	102.9645398	101.1610005	99.39813115	97.67477852	95.98982937	94.34220892
230918A00013	9/18/2023	4.74	9/18/2030	125.42166	119.057602	113.0691935	107.4321567	102.1239072	97.12342704	92.41114777	87.96884373	83.77953324
230918A00018	9/18/2023	5.01	3/18/2026	106.34072	104.9341318	103.553111	102.1970148	100.8652249	99.5571433	98.27219098	97.00980748	95.76945001
230918A00023	9/18/2023	4.91	9/18/2026	108.63135	106.6984523	104.8099441	102.9645398	101.1610005	99.39813115	97.67477852	95.98982937	94.34220892
230918A00027	9/18/2023	5.11	9/30/2025	104.26651	103.3321322	102.4145648	101.5133583	100.6280775	99.75830229	98.90362738	98.06366143	97.23802655
230918A00030	9/18/2023	5.01	9/17/2027	106.96997	105.4294055	103.9265114	102.4600601	101.02887	99.63180729	98.26778342	96.93575322	95.63471266
230919A00010	9/19/2023	4.76	9/20/2027	112.94495	109.9364891	107.0253944	104.2079897	101.480755	98.84032239	96.28346824	93.80710645	91.40828169
230919A00029	9/19/2023	4.63	9/19/2028	116.91817	112.8200768	108.8919038	105.1257012	101.513932	98.04944933	94.72547405	91.53557412	88.47364491
230919A00043	9/19/2023	4.62	9/19/2028	116.87903	112.7817	108.8542662	105.0887804	101.4777064	98.01389811	94.6905773	91.50131263	88.44000018
230919A00044	9/19/2023	4.93	9/21/2026	108.71014	106.7680445	104.8707176	103.0168616	101.2052225	99.43459046	97.70379841	96.01171982	94.35726727
230919A00047	9/19/2023	4.98	8/19/2026	108.35445	106.5075198	104.7014165	102.9349527	101.2069825	99.51640267	97.86215021	96.24320071	94.6585666
230919A00055	9/19/2023	4.65	9/19/2028	116.99645	112.8968306	108.9671791	105.1995429	101.5863834	98.12055177	94.79526754	91.6040971	88.54093438
230919A00082	9/19/2023	5.17	9/19/2025	104.1713	103.2678222	102.3800919	101.5076987	100.6502465	99.80735322	98.97864941	98.16377816	97.36239444
230920A00002	9/20/2023	4.47	10/2/2028	116.77876	112.6374243	108.6695256	104.8668687	101.2216902	97.72663265	94.37472072	91.15933976	88.074215
230920A00025	9/20/2023	5.14	9/16/2025	104.1036	103.2087415	102.3293424	101.4650017	100.6153341	99.77996742	98.95854206	98.15071027	97.35613587
230920A00026	9/20/2023	4.9	9/16/2026	108.58532	106.6584866	104.7757915	102.9359575	101.1377559	99.38000143	97.66154985	95.98129679	94.33817581
230921A00021	9/21/2023	4.62	9/21/2028	117.23901	113.1199032	109.1719699	105.3871828	101.7579331	98.27700706	94.93756274	91.73310944	88.65748756
230921A00028	9/21/2023	5.07	9/21/2026	108.97724	107.0325214	105.1326291	103.276256	101.4621468	99.68909042	97.95591846	96.26150322	94.6047561
230921A00032	5/31/2024	5.03	5/30/2025	102.59736	102.0092644	101.4279208	100.8532136	100.2850296	99.72325819	99.16779112	98.61852263	98.07534933
230921A00033	6/7/2024	5.01	6/6/2025	102.67355	102.065932	101.4655299	100.8722115	100.2858516	99.70632817	99.13352188	98.56731622	98.00759737
230921A00034	6/14/2024	4.98	6/13/2025	102.74273	102.1155987	101.4961505	100.8842443	100.2797429	99.68251194	99.09242058	98.50934102	97.9331485
230921A00035	6/21/2024	4.96	6/20/2025	102.81717	102.1704718	101.5319402	100.9014169	100.2787515	99.66379746	99.05641189	98.45645537	97.86379191
230921A00036	6/28/2024	4.94	6/27/2025	102.89081	102.2245294	101.5668983	100.917749	100.2769178	99.64424552	99.01957682	98.40276033	97.7936485
230922A00020	9/22/2023	5.35	3/24/2025	101.88113	101.4800156	101.0820722	100.6872614	100.2955461	99.90688982	99.52125685	99.13861188	98.75892016
230922A00022	9/22/2023	4.99	9/22/2026	108.83838	106.8922102	104.9909612	103.1333244	101.31804	99.54389297	97.80971089	96.11436241	94.4567554
230922A00025	9/22/2023	5.18	9/22/2025	104.22144	103.3094162	102.413433	101.5330657	100.6679079	99.81756702	98.98166407	98.15983278	97.35171922
230925A00003	9/25/2023	4.99	9/25/2026	108.87968	106.9246613	105.0149417	103.1491967	101.3261514	99.54457587	97.80328408	96.10113139	94.43701306
230925A00004	9/25/2023	4.74	9/25/2028	117.4222	113.2971561	109.3437186	105.5538263	101.919842	98.43452502	95.09100896	91.88278012	88.80365762
230925A00028	12/22/2023	5.5	12/23/2024	100.6955	100.5481237	100.4011909	100.2546992	100.1086465	99.96303093	99.81785043	99.67310304	99.5287868
230925A00056	9/25/2023	5.19	9/25/2025	104.27174	103.351167	102.4469247	101.5585787	100.6857119	99.82792138	98.98481831	98.15602705	97.34118472
230925A00057	9/25/2023	5.19	9/30/2025	104.34052	103.4057729	102.4878396	101.5862719	100.7006344	99.83050688	98.97548397	98.13517425	97.30919972
230925A00080	9/25/2023	5.07	9/30/2025	104.3041	103.3684949	102.4497343	101.5473703	100.6609663	99.79010088	98.93436759	98.09337393	97.26674091
230925A00114	9/25/2023	5.09	3/25/2026	106.54202	105.115031	103.7142772	102.3390984	100.9888535	99.6629221	98.36070401	97.08161844	95.82510315



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230925A00121	9/25/2023	5.2	9/25/2025	104.28085	103.3602352	102.4559485	101.5675586	100.6946485	99.83681519	98.99366984	98.16483681	97.34995319
230926A00010	9/26/2023	4.74	9/26/2028	117.43445	113.306309	109.3500147	105.5574875	101.9210749	98.43352217	95.08794974	91.87783161	88.79697547
230926A00020	9/26/2023	5.2	9/26/2025	104.29464	103.3711825	102.464156	101.57312	100.6976537	99.83735081	98.99181913	98.16067988	97.34356717
230926A00021	9/26/2023	4.73	9/26/2028	117.39511	113.2677475	109.3121995	105.5203959	101.884685	98.39781294	95.05290094	91.84342379	88.76318988
230926A00048	9/26/2023	5.2	9/26/2025	104.29464	103.3711825	102.464156	101.57312	100.6976537	99.83735081	98.99181913	98.16067988	97.34356717
230926A00076	9/26/2023	4.73	9/26/2028	117.39511	113.2677475	109.3121995	105.5203959	101.884685	98.39781294	95.05290094	91.84342379	88.76318988
230927A00006	9/27/2023	5.36	3/27/2025	101.92561	101.5160813	101.1098542	100.7068856	100.3071364	99.91056807	99.51714271	99.126823	98.73957221
230927A00007	9/27/2023	5.19	9/29/2025	104.32676	103.3948416	102.4796383	101.5807066	100.697615	99.82994668	98.97729957	98.13928541	97.31552927
230927A00008	9/27/2023	4.98	9/28/2026	108.90171	106.9380258	105.0200181	103.1463453	101.3157172	99.52688942	97.77866199	96.06987706	94.3994173
230927A00020	9/27/2023	5.01	10/16/2026	109.19957	107.1838159	105.2160494	103.2948327	101.4187782	99.58654924	97.79685794	96.04846278	94.3401668
230927A00021	9/27/2023	4.96	1/29/2027	110.4842	108.1647777	105.9063342	103.7068072	101.5642243	99.47669668	97.44241454	95.4596431	93.52671872
230927A00031	9/27/2023	5.4	3/28/2025	101.95552	101.5431524	101.134126	100.7284007	100.3259365	99.9266944	99.53063561	99.13772216	98.74791665
230927A00032	9/27/2023	5.02	9/23/2026	108.90954	106.9598638	105.0552389	103.1943573	101.3759539	99.59880831	97.86174343	96.1636232	94.50335105
230927A00033	9/27/2023	4.78	9/25/2028	117.57941	113.4512966	109.4948778	105.7020952	102.0653078	98.57727172	95.23111733	92.02032789	88.93871961
230927A00034	9/27/2023	4.82	9/27/2028	117.76156	113.6241641	109.6590338	105.858075	102.213613	98.71837214	95.36545315	92.14831168	89.06073809
230928A00001	9/28/2023	4.91	9/28/2026	108.92587	106.9590317	105.0379856	103.1613923	101.3279565	99.53642966	97.78560735	96.0743277	94.40146949
230928A00014	9/28/2023	4.9	9/28/2027	113.45444	110.4158039	107.4761377	104.6316796	101.878829	99.21414177	96.63432263	94.13621768	91.71680765
230928A00016	9/28/2023	4.83	9/28/2028	117.81342	113.6721408	109.7033963	105.8990688	102.2514673	98.75330114	95.3976571	92.17797767	89.08804102
230928A00017	9/28/2023	4.83	9/28/2028	117.81342	113.6721408	109.7033963	105.8990688	102.2514673	98.75330114	95.3976571	92.17797767	89.08804102
230928A00033	9/28/2023	5.03	9/28/2026	108.99806	107.0334285	105.1144863	103.2398967	101.4083689	99.61865828	97.86956425	96.15992856	94.48863343
230928A00047	9/28/2023	5.21	9/29/2025	104.34521	103.413197	102.4979027	101.5988812	100.7157009	99.84794496	98.99521132	98.15711168	97.33327106
230928A00051	9/28/2023	5.04	9/28/2026	109.21428	107.2074829	105.2489661	103.3372612	101.4709532	99.64867962	97.86912866	96.13103652	94.43318546
230928A00058	9/28/2023	5.04	9/28/2026	109.21428	107.2074829	105.2489661	103.3372612	101.4709532	99.64867962	97.86912866	96.13103652	94.43318546
230928A00059	9/28/2023	4.84	9/28/2028	117.37116	113.3376123	109.4729324	105.7690768	102.2184298	98.81377915	95.54829159	92.41549133	89.4092392
230928A00060	9/28/2023	4.84	9/28/2028	117.37116	113.3376123	109.4729324	105.7690768	102.2184298	98.81377915	95.54829159	92.41549133	89.4092392
230928A00061	9/28/2023	4.84	9/28/2028	117.37116	113.3376123	109.4729324	105.7690768	102.2184298	98.81377915	95.54829159	92.41549133	89.4092392
230928A00064	9/28/2023	4.78	9/30/2027	113.3751	110.3263085	107.3771264	104.5237492	101.7625433	99.0900338	96.50289617	93.99794908	91.5721473
230929A00018	9/29/2023	5.14	9/29/2025	104.28065	103.3489532	102.4339772	101.5352701	100.6524003	99.78495095	98.93252019	98.09471976	97.27117477
230929A00031	9/29/2023	5.14	9/29/2025	104.28065	103.3489532	102.4339772	101.5352701	100.6524003	99.78495095	98.93252019	98.09471976	97.27117477
230929A00033	9/29/2023	4.92	9/29/2026	108.79965	106.8341669	104.9144583	103.039185	101.207052	99.41681076	97.66725712	95.95722934	94.28560632
230929A00046	9/29/2023	4.66	9/29/2027	113.00973	109.9691802	107.0279258	104.1821787	101.4283191	98.76288499	96.18256413	93.68418678	91.26471877
230929A00049	9/29/2023	4.87	9/30/2030	113.61295	110.4388636	107.3992721	104.4872102	101.6961306	99.01987262	96.45263652	93.98895986	91.62369561
230929A00059	9/29/2023	5.14	9/29/2025	104.28065	103.3489532	102.4339772	101.5352701	100.6524003	99.78495095	98.93252019	98.09471976	97.27117477

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230929A00061	9/29/2023	4.92	9/29/2026	108.79965	106.8341669	104.9144583	103.039185	101.207052	99.41681076	97.66725712	95.95722934	94.28560632
230929A00062	9/29/2023	4.78	9/29/2027	113.11491	110.0784431	107.1410062	104.2988258	101.548296	98.88596737	96.30853995	93.8128554	91.3958903
231002A00018	10/2/2023	4.87	10/1/2027	113.40407	110.3577661	107.4109515	104.5598294	101.8007715	99.13030751	96.54511743	94.04202423	91.61798676
231002A00042	10/2/2023	4.73	10/2/2028	117.8073	113.6457216	109.6582046	105.8365301	102.1729114	98.6599687	95.2907056	92.05848714	88.95701923
231003A00005	10/3/2023	4.84	10/3/2028	117.91423	113.7569807	109.773467	105.9554949	102.2952959	98.78550751	95.41914945	92.18960192	89.09058505
231003A00011	10/3/2023	4.89	10/15/2027	113.63562	110.5475006	107.5614372	104.6734916	101.8798974	99.17705442	96.56152056	94.03000379	91.57935479
231003A00036	10/3/2023	4.84	10/3/2028	117.91423	113.7569807	109.773467	105.9554949	102.2952959	98.78550751	95.41914945	92.18960192	89.09058505
231004A00006	10/4/2023	4.88	10/4/2028	118.08457	113.9211971	109.9319004	106.1084569	102.4430792	98.92838701	95.55738363	92.32343379	89.22024316
231004A00016	10/4/2023	5.36	4/4/2025	102.03371	101.6018348	101.1736221	100.7490269	100.3280034	99.91050646	99.49649195	99.08591633	98.67873679
231005A00003	10/5/2023	5.14	10/6/2025	104.37465	103.4231994	102.4891789	101.5721098	100.6715329	99.78700521	98.91809967	98.06440418	97.22552107
231005A00035	10/5/2023	4.98	10/5/2026	108.99515	107.0113508	105.0741122	103.1820599	101.3338666	99.52825296	97.76398526	96.0398738	94.35477085
231005A00037	10/5/2023	4.88	10/5/2027	113.48273	110.4243047	107.4661051	104.6042924	101.8351988	99.15531716	96.56129267	94.04991556	91.61811388
231005A00039	10/5/2023	5.16	10/6/2025	104.39348	103.4419383	102.5078232	101.5906609	100.6899918	99.8053732	98.93637783	98.08259362	97.24362288
231005A00040	10/5/2023	4.98	10/5/2026	108.99515	107.0113508	105.0741122	103.1820599	101.3338666	99.52825296	97.76398526	96.0398738	94.35477085
231005A00054	10/5/2023	4.98	10/5/2026	108.99515	107.0113508	105.0741122	103.1820599	101.3338666	99.52825296	97.76398526	96.0398738	94.35477085
231006A00009	10/6/2023	4.98	10/15/2027	113.9038	110.8116561	107.8216757	104.9299101	102.1325895	99.42611089	96.8070291	94.27204933	91.81801956
231006A00010	10/6/2023	4.93	10/16/2028	118.43079	114.2273575	110.2009661	106.3431906	102.6460532	99.10199658	95.70385933	92.44485297	89.31854063
231006A00015	10/6/2023	5.38	4/7/2025	102.08306	101.6427837	101.2063163	100.7736099	100.3446158	99.91928646	99.49757478	99.07943466	98.66482073
231006A00032	10/6/2023	5.08	10/6/2026	109.20326	107.2146667	105.2727984	103.3762749	101.5237627	99.71397608	97.94567568	96.21766624	94.52879472
231006A00033	10/6/2023	4.98	10/6/2027	113.79053	110.7247949	107.7595718	104.8910122	102.1154352	99.42932108	96.82930323	94.31216071	91.87481099
231010A00007	10/10/2023	4.83	10/12/2027	113.42033	110.3436529	107.3684218	104.4907267	101.7068329	99.01317014	96.40632457	93.88303072	91.44016426
231010A00025	10/10/2023	4.66	10/10/2028	117.62544	113.4452862	109.4409195	105.6039949	101.9266083	98.40127089	95.02088507	91.77872205	88.66840055
231010A00026	10/10/2023	4.66	10/10/2028	117.62544	113.4452862	109.4409195	105.6039949	101.9266083	98.40127089	95.02088507	91.77872205	88.66840055
231010A00030	10/10/2023	4.88	10/15/2026	108.92968	106.9193712	104.9568749	103.0407558	101.1696334	99.3421774	97.55710621	95.81318428	94.1092203
231010A00031	10/10/2023	5.08	10/10/2025	104.37106	103.4086095	102.4639918	101.5367174	100.6263108	99.73231386	98.85428476	97.99179751	97.14444117
231010A00057	10/10/2023	4.66	10/10/2028	117.62544	113.4452862	109.4409195	105.6039949	101.9266083	98.40127089	95.02088507	91.77872204	88.66840055
231010A00068	10/10/2023	4.83	10/8/2027	113.37164	110.3066491	107.3423739	104.4749472	101.7006736	99.01601981	96.41760679	93.90220182	91.46671139
231010A00075	10/10/2023	4.78	10/10/2028	117.76083	113.587262	109.5889461	105.7575693	102.0852608	98.56456294	95.18840726	91.95009206	88.84326141
231010A00076	10/10/2023	4.66	10/10/2028	117.62544	113.4452862	109.4409195	105.6039949	101.9266083	98.40127089	95.02088507	91.77872204	88.66840055
231010A00101	10/10/2023	4.78	10/10/2028	117.76083	113.587262	109.5889461	105.7575693	102.0852608	98.56456294	95.18840726	91.95009206	88.84326141
231010A00129	10/10/2023	4.93	10/13/2026	109.00227	106.9966649	105.0386312	103.1267468	101.2596415	99.43599501	97.65453505	95.91403506	94.21331224
231011A00004	10/11/2023	4.81	10/8/2027	113.31243	110.2483218	107.2849063	104.4183179	101.6448622	98.96100657	96.36337249	93.8487279	91.41397989
231011A00016	10/11/2023	4.75	10/11/2028	117.65356	113.4793526	109.4805594	105.6488552	101.9763562	98.45559327	95.07948691	91.84132539	88.73474351

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231011A00028	10/11/2023	4.92	10/9/2026	108.93048	106.9364609	104.9894972	103.0881873	101.231183	99.41718485	97.64494029	95.91324157	94.22092382
231011A00029	10/11/2023	4.81	10/8/2027	113.31243	110.2483218	107.2849063	104.4183179	101.6448622	98.96100657	96.36337249	93.8487279	91.41397989
231011A00030	10/11/2023	4.75	10/11/2028	117.65356	113.4793526	109.4805594	105.6488552	101.9763562	98.45559327	95.07948691	91.84132539	88.73474351
231012A00013	10/12/2023	5.07	3/16/2026	106.39864	104.997036	103.6208217	102.2693614	100.9420432	99.6382747	98.35748267	97.09911202	95.86262514
231012A00015	10/12/2023	5.33	4/11/2025	102.11493	101.6635286	101.2161355	100.7726965	100.3331591	99.89747177	99.4655839	99.0374458	98.61300859
231012A00016	10/12/2023	5.14	10/14/2025	104.48181	103.507753	102.5519508	101.6138938	100.6930899	99.78906513	98.90136291	98.02954296	97.1731808
231012A00017	10/12/2023	5.24	7/15/2025	103.32985	102.6123022	101.9047678	101.2070333	100.5188956	99.84015726	99.17062608	98.51011519	97.85844271
231012A00019	10/12/2023	5.39	2/18/2025	101.4371	101.1309192	100.8265989	100.5241206	100.2234677	99.92462351	99.62757169	99.33229607	99.03878069
231012A00020	10/12/2023	5.08	2/9/2026	105.93455	104.6288228	103.35197	102.1030272	100.8810764	99.68524047	98.51467986	97.36859127	96.24620545
231012A00021	10/12/2023	4.85	12/30/2027	114.46743	111.154148	107.9562996	104.869164	101.8882465	99.00926451	96.22813584	93.54096813	90.9440485
231012A00027	10/12/2023	4.78	10/16/2028	117.83259	113.6410225	109.6261303	105.7794996	102.0931665	98.55958687	95.17161175	91.92246473	88.80572039
231012A00039	10/12/2023	5.33	4/11/2025	102.11493	101.6635286	101.2161355	100.7726965	100.3331591	99.89747177	99.4655839	99.0374458	98.61300859
231013A00017	10/13/2023	5.13	10/14/2025	104.47217	103.4981646	102.5424117	101.6044034	100.6836476	99.77967031	98.89201496	98.0202413	97.16392483
231013A00020	10/13/2023	4.98	10/13/2026	109.10069	107.0940965	105.1350895	103.2222503	101.3542083	99.52964281	97.74728095	96.0058957	94.30430383
231016A00016	10/16/2023	5.01	10/16/2026	109.19957	107.1838159	105.2160494	103.2948327	101.4187782	99.58654924	97.79685794	96.04846278	94.3401668
231016A00047	10/16/2023	4.98	2/10/2027	110.69584	108.3382353	106.0433961	103.8092305	101.6337292	99.51496499	97.45108883	95.44032591	93.48097202
231016A00049	10/16/2023	4.95	7/19/2027	112.69568	109.8658636	107.1229422	104.4636757	101.8849673	99.38385831	96.95752084	94.60325062	92.31846079
231017A00008	10/17/2023	5.26	10/17/2025	104.63865	103.6554925	102.6909122	101.7443851	100.8154066	99.90349067	99.00816929	98.12899135	97.26552197
231017A00009	10/17/2023	5.42	4/17/2025	102.23751	101.7692112	101.305217	100.8454722	100.3899185	99.93849859	99.49115609	99.0478358	98.60848345
231017A00017	10/17/2023	5.11	10/16/2026	109.39725	107.3794903	105.4097611	103.4866194	101.6086765	99.7745948	97.98308528	96.23290556	94.52285777
231017A00029	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00032	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00033	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00034	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00035	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00036	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00037	10/17/2023	4.99	10/17/2028	118.20281	114.0963466	110.1635551	106.3960762	102.7859994	99.32583774	96.00850275	92.82728086	89.77581146
231017A00039	10/17/2023	5.12	10/16/2026	109.62755	107.5647066	105.552343	103.5888835	101.6728178	99.80269342	97.97711312	96.1947322	94.45425619
231017A00040	10/17/2023	5.12	10/16/2026	109.62755	107.5647066	105.552343	103.5888835	101.6728178	99.80269342	97.97711312	96.1947322	94.45425619
231017A00041	10/17/2023	5.12	10/16/2026	109.62755	107.5647066	105.552343	103.5888835	101.6728178	99.80269342	97.97711312	96.1947322	94.45425619
231017A00046	10/17/2023	5.26	10/17/2025	104.63865	103.6554925	102.6909122	101.7443851	100.8154066	99.90349067	99.00816929	98.12899135	97.26552197
231018A00026	10/18/2023	5.28	1/7/2026	105.74462	104.5294157	103.3423291	102.182389	101.0486697	99.94028726	98.85639704	97.79619167	96.75889895
231019A00006	10/19/2023	5.29	10/20/2025	104.70924	103.7174206	102.7444969	101.7899302	100.8532033	99.93381815	99.03129533	98.14517286	97.27500557

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231019A00007	10/19/2023	5.19	10/19/2026	109.5967	107.568743	105.5892355	103.6567182	101.7697851	99.92708211	98.12730435	96.36919445	94.65154026
231019A00009	10/19/2023	5.14	10/19/2027	114.43264	111.3215571	108.3135493	105.4046236	102.5909649	99.86892696	97.23502424	94.68592374	92.2184374
231019A00031	1/22/2024	5.12	1/30/2026	105.84334	104.5643305	103.3164234	102.0984928	100.9094656	99.74831967	98.61408064	97.505819	96.4226477
231019A00036	10/19/2023	5.27	10/20/2025	104.68963	103.6979153	102.7250937	101.7706277	100.834	99.91471292	99.01228687	98.12625994	97.25618697
231019A00041	10/19/2023	5.08	10/19/2028	119.06734	114.8429338	110.7966577	106.9200193	103.2049798	99.64392514	96.22964061	92.95528806	89.81438409
231019A00043	10/19/2023	5.19	10/19/2026	109.5967	107.568743	105.5892355	103.6567182	101.7697851	99.92708211	98.12730435	96.36919445	94.65154026
231019A00044	10/19/2023	5.14	10/19/2027	114.43264	111.3215571	108.3135493	105.4046236	102.5909649	99.86892696	97.23502424	94.68592374	92.2184374
231020A00041	10/20/2023	5.19	10/20/2025	104.6112	103.6198945	102.6474808	101.6934173	100.757187	99.83829201	98.93625303	98.05060823	97.18091256
231020A00048	10/20/2023	5.08	10/20/2026	109.39181	107.3632146	105.3831523	103.4501629	101.562836	99.71981302	97.91978548	96.16149219	94.44371748
231020A00049	10/20/2023	5.03	10/20/2027	114.11638	111.0073024	108.0013581	105.0945502	102.2830574	99.56322794	96.93157105	94.38474888	91.91956887
231020A00051	10/20/2023	5.02	10/20/2028	118.84018	114.6175125	110.5730649	106.6983348	102.9852735	99.42625743	96.0140636	92.74184602	89.60311421
231020A00061	10/20/2023	5.32	4/21/2025	102.24458	101.7651953	101.2903258	100.8199044	100.3538686	99.89215718	99.43470999	98.98146798	98.53237319
231020A00067	10/20/2023	5.32	4/15/2025	102.1641	101.7015191	101.2431485	100.7889276	100.3388002	99.89271084	99.45060516	99.01242978	98.57813229
231020A00069	10/20/2023	5.08	10/15/2026	109.32448	107.3101793	105.3437683	103.4238096	101.5489204	99.71776868	97.92907068	96.18158901	94.47413058
231020A00070	10/20/2023	5.19	10/15/2025	104.54354	103.5663973	102.6076221	101.6666952	100.7431203	99.83641957	98.94613247	98.07181513	97.21303961
231023A00028	10/23/2023	5.33	4/23/2025	102.27623	101.791224	101.3108374	100.8349996	100.3636462	99.89671386	99.43414039	98.97586485	98.5218274
231023A00029	10/23/2023	5.19	10/23/2025	104.65179	103.6519822	102.6713795	101.7094301	100.7656042	99.83939189	98.93030249	98.03786325	97.16161873
231023A00034	4/23/2024	4.95	4/23/2026	106.71788	105.2091988	103.7297223	102.2786698	100.8552923	99.45886663	98.08869446	96.74410105	95.42443437
231023A00048	10/23/2023	5.04	10/25/2027	114.21005	111.0857912	108.0656057	105.1454393	102.32142	99.58984862	96.94718949	94.3900627	91.9152361
231024A00010	12/18/2023	5.43	12/18/2024	100.61939	100.4859553	100.3528921	100.2201969	100.0878681	99.95590423	99.82430371	99.69306501	99.56218658
231024A00011	12/18/2023	5.43	12/18/2024	100.61939	100.4859553	100.3528921	100.2201969	100.0878681	99.95590423	99.82430371	99.69306501	99.56218658
231024A00017	10/24/2023	4.97	10/25/2027	113.99955	110.8784683	107.8613844	104.9442424	102.1231729	99.39447887	96.75462725	94.2002403	91.72808804
231024A00029	10/24/2023	4.97	10/25/2027	113.99955	110.8784683	107.8613844	104.9442424	102.1231729	99.39447887	96.75462725	94.2002403	91.72808804
231024A00030	10/24/2023	4.96	10/24/2028	118.65004	114.4200536	110.3690921	106.4885958	102.7704585	99.20700359	95.79095869	92.51543228	89.37389156
231024A00039	10/24/2023	5.06	10/26/2026	109.43253	107.3871556	105.3910998	103.4428587	101.5409885	99.68409907	97.8708518	96.09995693	94.37017157
231024A00046	10/24/2023	4.96	10/24/2028	118.65004	114.4200536	110.3690921	106.4885958	102.7704585	99.20700359	95.79095869	92.51543228	89.37389156
231024A00076	10/24/2023	5.31	4/24/2025	102.27996	101.7921805	101.3090684	100.8305556	100.3565764	99.8870666	99.42196301	98.96120371	98.50472791
231024A00079	10/24/2023	5.18	10/24/2025	104.6554	103.6528143	102.6695331	101.7050058	100.7586983	99.83009693	98.91870692	98.02405198	97.14567321
231024A00082	10/24/2023	5.05	10/23/2026	109.37233	107.3357564	105.3480979	103.4078748	101.5136602	99.66408026	97.8578115	96.09357871	94.37015285
231025A00003	10/25/2023	5.07	10/24/2025	104.62632	103.6227411	102.63851	101.6730689	100.7258824	99.79643512	98.88423121	97.98879299	97.10966035
231025A00004	10/25/2023	5.07	10/24/2025	104.62632	103.6227411	102.63851	101.6730689	100.7258824	99.79643512	98.88423121	97.98879299	97.10966035
231025A00013	10/25/2023	5.08	10/26/2026	109.47261	107.426831	105.430372	103.4817353	101.5794772	99.72220726	97.90858661	96.13732532	94.40718032
231025A00018	10/25/2023	5.19	10/27/2025	104.70591	103.6947534	102.7032253	101.7307566	100.7768005	99.84083093	98.92234178	98.02084564	97.13587314

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231025A00024	10/25/2023	5	10/25/2028	118.823	114.5867829	110.5299325	106.6438663	102.9204586	99.35201465	95.93124498	92.65124215	89.5054585
231025A00036	10/25/2023	5.08	10/21/2026	109.40528	107.3738193	105.3910254	103.4554289	101.5656138	99.72021653	97.91792329	96.15746821	94.43763109
231025A00068	10/25/2023	5.33	4/25/2025	102.3031	101.8124922	101.3265996	100.8453572	100.3686984	99.89655774	99.42887113	98.96557565	98.50660954
231027A00015	10/27/2023	5.08	2/23/2026	106.13549	104.791975	103.4736721	102.1799007	100.9100035	99.66334658	98.43931853	97.23732948	96.05681009
231027A00019	10/27/2023	4.99	10/27/2026	109.30544	107.2586485	105.2612747	103.3118136	101.4088165	99.55088895	97.73668769	95.96491891	94.23433577
231027A00021	10/27/2023	5.13	10/30/2025	104.68602	103.666681	102.6672878	101.6872554	100.7260242	99.78305609	98.85783327	97.94985739	97.05864861
231027A00028	10/27/2023	4.92	10/23/2028	118.4773	114.2535341	110.208453	106.3335185	102.6206439	99.06217077	95.65084384	92.37978743	89.2424836
231027A00035	10/27/2023	4.99	10/30/2026	109.34509	107.2897275	105.2841726	103.3269068	101.4164646	99.55143522	97.73046035	95.95223154	94.21548819
231027A00036	10/27/2023	5.13	11/3/2025	104.73798	103.7073675	102.6971375	101.7066875	100.7354397	99.78283856	98.84834978	97.93145939	97.03167268
231027A00043	10/27/2023	4.99	10/27/2026	109.30544	107.2586485	105.2612747	103.3118136	101.4088165	99.55088895	97.73668769	95.96491891	94.23433577
231030A00007	10/30/2023	5.32	4/30/2025	102.36528	101.8606587	101.3610195	100.866286	100.3763863	99.89124974	99.4108072	98.93499073	98.46373374
231030A00035	10/30/2023	4.85	10/30/2028	118.62928	114.3735585	110.2988887	106.3965692	102.6583631	99.07647206	95.64351048	92.35248159	89.19675465
231030A00061	10/30/2023	5.32	4/30/2025	102.36528	101.8606587	101.3610195	100.866286	100.3763863	99.89124974	99.4108072	98.93499073	98.46373374
231031A00021	10/31/2023	5.18	10/30/2025	104.73642	103.7168115	102.7171492	101.7368513	100.7753583	99.83213178	98.90665401	97.99842651	97.10696938
231031A00022	10/31/2023	5.04	10/30/2026	109.44586	107.3894564	105.3828825	103.4246174	101.5131951	99.64720433	97.82528619	96.04613177	94.30847997
231031A00033	10/31/2023	5.05	10/30/2026	109.46602	107.4094022	105.4026245	103.4441595	101.5325412	99.66635815	97.84425135	96.06491181	94.32707833
231031A00035	4/30/2024	5.25	4/30/2025	102.33015	101.8256292	101.3260916	100.831459	100.3416596	99.85662263	99.37627894	98.90056063	98.42940113
231031A00040	4/30/2024	5.1	10/31/2025	104.66906	103.6470594	102.6451073	101.6626156	100.6990206	99.75378014	98.82637251	97.91629573	97.02306648
231101A00016	11/1/2023	4.99	11/3/2025	104.67751	103.6460433	102.6349961	101.6437648	100.67177	99.71845477	98.78328335	97.86574044	96.96533008
231101A00017	11/1/2023	5.25	5/1/2025	102.34335	101.8360397	101.3337677	100.8364564	100.3440326	99.85642429	99.37356117	98.89537415	98.42179551
231102A00022	11/2/2023	4.91	11/10/2026	109.33064	107.2444821	105.2093818	103.2237555	101.2860826	99.39490026	97.54880092	95.74642945	93.98648101
231102A00024	11/2/2023	4.78	11/2/2028	118.03682	113.7939618	109.7318138	105.8416788	102.1153282	98.54497201	95.12323309	91.84312284	88.69801866
231102A00025	11/2/2023	4.9	12/8/2026	109.68043	107.5121575	105.398233	103.3369188	101.3265478	99.36551925	97.45229465	95.58539535	93.76339954
231102A00026	11/2/2023	4.9	1/12/2027	110.13078	107.8618819	105.6516867	103.4982475	101.399698	99.35424908	97.36018503	95.41585969	93.51969305
231102A00027	11/2/2023	4.89	2/9/2027	110.47512	108.1231171	105.8336813	103.6047197	101.4342268	99.32027961	97.26103325	95.25471718	93.29963156
231102A00028	11/2/2023	4.88	3/9/2027	110.82674	108.3883996	106.0168612	103.7099244	101.4654745	99.28147817	97.15598026	95.08709993	93.07302757
231102A00029	11/2/2023	4.88	4/13/2027	111.2701	108.7295551	106.2611555	103.8624357	101.5310307	99.26467003	97.06117382	94.91844843	92.8344825
231102A00030	11/2/2023	4.87	5/11/2027	111.60165	108.9787155	106.4322043	103.9594297	101.5578188	99.22490526	96.95832419	94.75580702	92.61517712
231102A00031	11/2/2023	5.1	11/3/2025	104.70741	103.6769609	102.6668956	101.6766081	100.7055206	99.75307754	98.81874477	97.90200833	97.00237355
231102A00032	11/2/2023	4.91	11/2/2026	109.22362	107.1611513	105.148822	103.1850925	101.2684825	99.39756729	97.57097533	95.78738568	94.04552586
231102A00033	11/2/2023	4.83	11/2/2027	113.67697	110.5386108	107.5055402	104.5736246	101.7389208	98.99766284	96.34625274	93.78125197	91.29937343
231102A00039	11/2/2023	4.91	10/28/2026	109.15787	107.1098707	105.1113888	103.1609136	101.2569919	99.3982244	97.58326383	95.81081223	94.07961895
231102A00041	11/2/2023	5.46	11/1/2024	100.02027	100.0174869	100.0147057	100.0119268	100.0091503	100.0063761	100.0036042	100.0008347	99.99806745



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231102A00064	1/22/2024	5.01	1/22/2026	105.6059	104.3504331	103.1249946	101.9285184	100.759984	99.61841887	98.50289483	97.41252607	96.34646658
231102A00070	2/15/2024	4.86	2/16/2027	110.50212	108.1285982	105.8186996	103.570313	101.3814157	99.25006621	97.17439972	95.15262494	93.18302041
231103A00002	11/3/2023	4.67	11/29/2027	113.52349	110.3106369	107.2075356	104.2097968	101.3132336	98.51385177	95.80783908	93.19155627	90.66152782
231103A00005	11/3/2023	5.12	5/5/2025	102.32911	101.8108262	101.2978098	100.7899768	100.2872485	99.78954824	99.29680065	98.80893194	98.32586977
231103A00007	11/3/2023	5.05	8/4/2025	103.45305	102.6798305	101.9182047	101.1679159	100.428712	99.70034814	98.98258681	98.27519734	97.57795572
231103A00008	11/3/2023	4.97	11/3/2025	104.57492	103.5451986	102.5358473	101.5462639	100.575871	99.62411312	98.69045641	97.77438706	96.87541063
231103A00029	11/3/2023	4.75	11/3/2026	108.91277	106.8507072	104.8388283	102.8755937	100.9595201	99.08917983	97.26319839	95.48025226	93.73906652
231103A00034	11/3/2023	4.49	11/3/2028	117.22451	112.9855962	108.927743	105.0422204	101.3207666	97.75556097	94.33919818	91.06466378	87.92531136
231106A00007	11/6/2023	4.78	11/5/2027	113.56322	110.4180652	107.37865	104.4408161	101.6005948	98.8541964	96.19800056	93.62854786	91.14253161
231106A00016	11/6/2023	5.39	11/6/2024	100.08184	100.0651427	100.0484618	100.0317972	100.0151489	99.99851703	99.98190141	99.96530205	99.94871893
231106A00020	11/6/2023	5.02	11/6/2025	104.66356	103.6251126	102.6073762	101.6097301	100.6315825	99.67236456	98.73152964	97.80855185	96.90292522
231107A00005	11/7/2023	5.39	11/15/2024	100.19319	100.1514612	100.1097832	100.0681565	100.026581	99.98505654	99.94358307	99.90216047	99.86078866
231107A00008	11/7/2023	5.17	5/7/2025	102.38085	101.8569053	101.338341	100.8250735	100.3170216	99.81410586	99.31624862	98.82337359	98.33540608
231107A00009	11/7/2023	5.03	11/7/2025	104.68642	103.645101	102.6246043	101.6243051	100.6436068	99.68193622	98.7387424	97.81349539	96.9056854
231107A00011	11/7/2023	4.84	11/9/2026	109.17425	107.0925556	105.0617676	103.0803151	101.1466835	99.25941554	97.41710882	95.6184133	93.86202889
231107A00028	11/7/2023	5.4	11/7/2024	100.09442	100.0749377	100.0554777	100.0360373	100.0166165	99.99721532	99.97783367	99.95847152	99.93912884
231108A00011	11/8/2023	5.06	5/8/2025	102.37821	101.8510069	101.3292573	100.8128723	100.3017692	99.795867	99.29508638	98.79934965	98.30858064
231108A00015	11/8/2023	4.83	11/9/2026	109.15382	107.0723395	105.0417607	103.0605133	101.1270828	99.24001212	97.39789892	95.59939327	93.84319518
231108A00026	11/8/2023	5.04	11/7/2025	104.69672	103.655346	102.6347933	101.6344387	100.653686	99.69196164	98.74871478	97.82341545	96.91555383
231108A00028	11/8/2023	4.83	11/9/2026	109.15382	107.0723395	105.0417607	103.0605133	101.1270828	99.24001212	97.39789892	95.59939327	93.84319518
231109A00014	5/17/2024	5.03	5/16/2025	102.44805	101.8802678	101.3186201	100.7630101	100.2133408	99.66951708	99.13144605	98.59903668	98.07219989
231109A00025	11/9/2023	4.75	11/9/2028	117.09175	113.043304	109.166927	105.454265	101.8974202	98.48892261	95.22170398	92.08907379	89.08469683
231109A00026	11/9/2023	5.19	5/9/2025	102.41734	101.8877748	101.3637053	100.8450461	100.3317137	99.82362606	99.32070281	98.82286532	98.33003651
231113A00007	11/13/2023	4.86	11/13/2028	118.49877	114.2150375	110.1147264	106.1889649	102.4293563	98.82795419	95.3772361	92.07007825	88.89973221
231113A00034	11/13/2023	5.16	11/13/2025	104.89801	103.8390235	102.801539	101.7849045	100.7884948	99.81170906	98.85397046	97.91472445	96.99343788
231113A00036	11/13/2023	5.3	5/15/2025	102.55531	102.0087672	101.4680792	100.9331472	100.4038794	99.88018583	99.36197853	98.84917134	98.34167988
231113A00038	11/13/2023	4.97	11/13/2026	109.49401	107.3976647	105.3527491	103.3576629	101.4108695	99.51089099	97.65630535	95.84574397	94.07788916
231114A00025	11/14/2023	5.13	5/14/2025	102.45006	101.9066073	101.3689434	100.8369756	100.3106135	99.78976846	99.27435389	98.76428489	98.25947835
231114A00026	11/14/2023	4.97	11/14/2025	104.71154	103.6508521	102.611759	101.593608	100.5957693	99.61763805	98.65863331	97.7181968	96.79579179
231114A00027	11/14/2023	4.76	11/13/2026	109.06267	106.9708574	104.9303805	102.939646	100.9971199	99.10132663	97.25084642	95.44431287	93.6804104
231114A00028	11/14/2023	4.68	11/15/2027	113.38242	110.2116023	107.1481185	104.187719	101.3263472	98.56013076	95.88537225	93.29853979	90.79625874
231114A00032	11/14/2023	5.35	11/14/2024	100.17923	100.1402852	100.1013845	100.0625307	100.0237235	99.98496293	99.94624888	99.90758126	99.86895999
231114A00046	11/14/2023	4.62	11/14/2028	117.53521	113.2680842	109.1839889	105.2740585	101.5299053	97.94359193	94.50760463	91.21482837	88.05852336

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231114A00072	11/14/2023	4.67	11/15/2027	113.35177	110.1814243	107.1184002	104.1584488	101.2975139	98.53172353	95.85738058	93.27095353	90.76906805
231114A00074	11/14/2023	4.6	11/14/2028	117.45386	113.1883781	109.1058758	105.1974887	101.4548308	97.86996673	94.4353845	91.1439708	87.98898744
231115A00039	11/15/2023	4.85	11/16/2026	109.28716	107.1845199	105.1335994	103.1327902	101.180542	99.2753636	97.41582066	95.6005328	93.82817122
231117A00001	11/17/2023	4.99	11/12/2025	104.70759	103.6524142	102.6186177	101.60555	100.6125909	99.6391447	98.68463906	97.74852383	96.83027002
231117A00002	11/17/2023	4.76	11/12/2026	109.04971	106.9608508	104.9232151	102.9352118	100.9953118	99.10204436	97.25399435	95.44979965	93.68814876
231117A00003	11/17/2023	4.59	11/17/2028	117.44892	113.17495	109.0846219	105.1690228	101.4197239	97.82874979	94.38855145	91.0919812	87.93226898
231120A00028	11/20/2023	5.38	11/13/2024	100.16808	100.1319088	100.0957835	100.0597006	100.0236601	99.9876619	99.9517059	99.91579204	99.87992023
231121A00015	11/21/2023	4.75	11/30/2026	109.26203	107.1200955	105.0314791	102.9944973	101.007528	99.06901271	97.17745322	95.33140874	93.52949335
231122A00029	11/22/2023	5.05	11/24/2025	104.92188	103.832479	102.7658146	101.7211827	100.6979044	99.69532844	98.7128299	97.74980878	96.80568882
231122A00032	11/22/2023	5.2	5/22/2025	102.59236	102.0263772	101.4666609	100.9131078	100.3656164	99.82408714	99.28842291	98.75852852	98.23431087
231122A00035	11/22/2023	5.2	5/22/2025	102.59236	102.0263772	101.4666609	100.9131078	100.3656164	99.82408714	99.28842291	98.75852852	98.23431087
231122A00044	11/22/2023	5.38	11/22/2024	100.27918	100.2179983	100.1568989	100.0958866	100.034961	99.97412198	99.91336943	99.85270314	99.7921229
231127A00024	11/27/2023	4.78	11/27/2026	109.28601	107.1522838	105.0715432	103.0421124	101.0623849	99.13081658	97.24592285	95.40627593	93.61050214
231127A00025	11/27/2023	4.68	11/29/2027	113.55453	110.3411882	107.2376158	104.2394179	101.3424073	98.5425891	95.83615098	93.21945323	90.68901999
231127A00026	11/27/2023	4.61	11/27/2028	117.65008	113.343377	109.2226631	105.2788696	101.5034175	97.88819247	94.42551625	91.10812116	87.92912556
231127A00065	11/27/2023	5.03	11/26/2025	104.9255	103.8305663	102.7585986	101.7088801	100.6807222	99.6734641	98.68647214	97.7191379	96.77087713
231128A00002	11/28/2023	4.41	11/30/2028	117.21621	112.89998	108.7708048	104.8195321	101.0375098	97.41655503	93.94892661	90.62729825	87.44473404
231128A00003	11/28/2023	4.41	11/30/2028	117.21621	112.89998	108.7708048	104.8195321	101.0375098	97.41655503	93.94892661	90.62729825	87.44473404
231128A00009	11/28/2023	4.73	12/14/2026	109.39416	107.2126203	105.0860701	103.012741	100.990936	99.01902515	97.09544312	95.2186857	93.38730698
231129A00006	11/29/2023	4.25	11/29/2028	116.54605	112.2463879	108.1331192	104.1971261	100.4297876	96.82295068	93.36890167	90.06034048	86.89035584
231129A00039	11/29/2023	4.97	5/30/2025	102.56226	101.9742852	101.3930573	100.8184649	100.2503948	99.68873635	99.13338131	98.58422396	98.04116091
231129A00073	11/29/2023	4.81	5/29/2025	102.50329	101.9176877	101.3387837	100.766468	100.2006285	99.64115573	99.08794249	98.54088406	97.99987802
231130A00057	11/30/2023	5.27	12/2/2024	100.39448	100.3055337	100.2167449	100.1281162	100.0396472	99.95133753	99.8631867	99.7751943	99.68735988
231130A00072	11/30/2023	4.83	12/1/2025	104.76887	103.6611013	102.5768611	101.5154034	100.4760142	99.45800956	98.46073335	97.48355609	96.52587359
231130A00073	11/30/2023	4.61	11/30/2026	108.96791	106.8291306	104.7436067	102.7096561	100.7256584	98.7900569	96.9013549	95.05811323	93.25894746
231130A00074	11/30/2023	4.45	11/30/2028	117.02815	112.725557	108.6092237	104.6700444	100.8994123	97.28918673	93.83166612	90.51956117	87.34597061
231201A00024	12/1/2023	4.36	12/1/2028	116.66898	112.3709762	108.259214	104.3245852	100.558477	96.952744	93.49968016	90.19199237	87.02277603
231201A00026	12/1/2023	4.51	12/1/2026	108.76966	106.630287	104.5442458	102.5098467	100.5254654	98.58954126	96.700574	94.85712107	93.05779488
231201A00027	12/1/2023	5.19	12/2/2024	100.38737	100.2984266	100.2096439	100.1210213	100.0325584	99.94425481	99.85611005	99.7681237	99.68029533
231201A00034	12/1/2023	4.62	3/2/2026	105.61296	104.2547264	102.9205138	101.609736	100.3218271	99.05623872	97.81243989	96.58991594	95.38816804
231204A00006	12/4/2023	4.86	8/4/2025	103.30722	102.5346163	101.7735997	101.0239137	100.2853062	99.55753263	98.8403555	98.13354426	97.43687499
231205A00025	12/5/2023	4.61	12/15/2025	104.77574	103.6282505	102.506002	101.4081703	100.3339635	99.2826232	98.25342364	97.24566931	96.25869362
231205A00026	12/5/2023	5.02	12/16/2024	100.55076	100.4228315	100.2952484	100.1680065	100.0411044	99.91454066	99.78831389	99.66242268	99.53686564

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231206A00003	12/6/2023	5.18	12/6/2024	100.43639	100.3363462	100.2365136	100.1368894	100.0374729	99.93826344	99.8392604	99.74046307	99.64187078
231206A00012	12/6/2023	4.31	12/6/2028	116.5169	112.2082403	108.0868256	104.1434682	100.3694865	96.75667092	93.2972564	89.98389508	86.80963172
231206A00016	12/6/2023	4.74	6/6/2025	102.55877	101.9509417	101.3503399	100.7568333	100.1702964	99.59060684	99.01764493	98.45129382	97.89143936
231206A00044	12/8/2023	4.71	12/8/2025	104.71748	103.5908662	102.4886034	101.4099069	100.3540253	99.32023904	98.30785842	97.31622228	96.34469646
231206A00046	12/6/2023	4.39	12/6/2027	112.73295	109.5131582	106.4039845	103.4009758	100.4998901	97.69668174	94.98749096	92.36863387	89.83659343
231206A00047	12/6/2023	4.31	12/6/2028	116.5169	112.2082403	108.0868256	104.1434682	100.3694865	96.75667092	93.2972564	89.98389508	86.80963172
231206A00070	12/6/2023	4.58	12/8/2025	104.66245	103.5348273	102.4315996	101.3519817	100.2952205	99.2605942	98.24741151	97.25500952	96.28275245
231207A00010	12/7/2023	4.38	12/7/2027	112.71285	109.4906357	106.3792001	103.3740801	100.471025	97.66598037	94.9550785	92.33462804	89.80110497
231207A00011	12/7/2023	4.28	12/7/2028	116.4037	112.094616	107.9729175	104.0294095	100.2553982	96.64266344	93.18343008	89.87034113	86.69643289
231207A00014	12/7/2023	4.7	12/8/2025	104.70632	103.5797742	102.4775767	101.3989444	100.3431262	99.30940231	98.29708319	97.30550767	96.33404162
231207A00016	12/7/2023	4.47	12/7/2026	108.75585	106.6003142	104.4988065	102.4496022	100.4510454	98.50154543	96.59957394	94.74366167	92.93239587
231207A00027	12/7/2023	4.15	12/7/2028	116.21918	111.9040425	107.7768476	103.8283632	100.0498591	96.43308132	92.97022316	89.65389836	86.47711596
231207A00034	12/7/2023	4.7	12/5/2025	104.67204	103.5539013	102.459754	101.3888303	100.3403954	99.31374494	98.3082039	97.32312488	96.35788674
231207A00035	12/7/2023	4.47	12/7/2026	108.75585	106.6003142	104.4988065	102.4496022	100.4510454	98.50154543	96.59957394	94.74366167	92.93239587
231208A00019	3/15/2024	4.95	3/14/2025	101.63997	101.2528453	100.8685895	100.4871674	100.1085477	99.73269934	99.35959201	98.98919564	98.62148064
231208A00020	3/15/2024	4.85	6/16/2025	102.69799	102.0627474	101.4353923	100.8157759	100.2037552	99.59919089	99.00194693	98.41189063	97.8288925
231208A00021	3/15/2024	4.75	9/15/2025	103.74535	102.8549711	101.9799369	101.1198495	100.2743275	99.44300245	98.62551827	97.82153065	97.03070666
231208A00022	3/15/2024	4.69	12/15/2025	104.77495	103.628829	102.5079019	101.4113414	100.3383577	99.28819467	98.26012848	97.25346551	96.267541
231208A00023	3/15/2024	4.61	3/16/2026	105.7609	104.3639268	102.9922632	101.6452765	100.322357	99.02291425	97.74637701	96.49219203	95.25982353
231211A00057	12/11/2023	4.58	12/11/2029	121.73011	116.2609698	111.0782919	106.1654568	101.5069008	97.08804228	92.89521461	88.91560348	85.13718919
231211A00071	12/11/2023	5.22	12/16/2024	100.56623	100.438393	100.3108965	100.1837399	100.0569216	99.93044047	99.80429495	99.6784837	99.55300535
231212A00007	12/12/2023	5.16	2/5/2025	101.2009	100.9310742	100.6626961	100.3957506	100.130226	99.86611118	99.60339479	99.34206571	99.08211295
231212A00008	12/12/2023	5.26	12/12/2024	100.52057	100.4038489	100.2874177	100.1712719	100.0554104	99.93983222	99.82453619	99.70952127	99.59478637
231212A00009	12/12/2023	5.01	6/12/2025	102.74889	102.1244876	101.5077058	100.8984008	100.2964366	99.70168108	99.11400484	98.53328174	97.95938861
231212A00016	12/12/2023	4.59	12/7/2026	109.01027	106.8519812	104.747776	102.695928	100.6947796	98.74273886	96.83827581	94.97991992	93.16625707
231212A00018	12/12/2023	4.5	12/6/2027	113.07645	109.8512764	106.7368586	103.7287399	100.8226739	98.01461066	95.30068619	92.67721265	90.14066917
231212A00067	12/12/2023	4.82	12/12/2025	104.88725	103.7486737	102.6349394	101.54524	100.478802	99.4348846	98.41277849	97.41180372	96.43130843
231213A00019	12/13/2023	4.97	6/13/2025	102.73649	102.1093838	101.4899572	100.8780726	100.2735924	99.67638257	99.08631215	98.50325335	97.92708141
231213A00044	12/13/2023	5.07	12/13/2024	100.51057	100.3910913	100.271915	100.1530375	100.0344576	99.91617417	99.79818599	99.68049195	99.56309089
231213A00049	12/13/2023	4.14	12/13/2028	115.88696	111.572005	107.4454228	103.4979312	99.72076163	96.10562472	92.6446816	89.33051662	86.156112
231214A00003	12/14/2023	4.7	6/16/2025	102.60319	101.9682865	101.3412647	100.7219786	100.1102854	99.50604568	98.90912354	98.31938632	97.73670455
231214A00029	12/14/2023	4.49	12/15/2025	104.54792	103.4031657	102.2835871	101.1883547	100.116679	99.06780465	98.04100811	97.03559628	96.05090484
231214A00036	12/14/2023	4.19	12/14/2026	108.23885	106.0699152	103.9557174	101.8944938	99.88455396	97.92427507	96.01209824	94.14652561	92.32611736

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231214A00058	12/14/2023	4.69	6/13/2025	102.56186	101.9353657	101.3165458	100.7052627	100.1013789	99.50476026	98.91527605	98.3327985	97.75720295
231214A00074	12/14/2023	4.69	6/13/2025	102.56186	101.9353657	101.3165458	100.7052627	100.1013789	99.50476026	98.91527605	98.3327985	97.75720295
231214A00075	12/14/2023	4.49	12/15/2025	104.54792	103.4031657	102.2835871	101.1883547	100.116679	99.06780465	98.04100811	97.03559628	96.05090484
231215A00004	12/15/2023	4.07	12/15/2028	115.61679	111.3019191	107.175681	103.2287715	99.45239923	95.83825428	92.37847873	89.06563946	85.89270269
231215A00018	12/15/2023	4.19	12/15/2027	112.20383	108.9677533	105.8435935	102.8268222	99.91311984	97.09836797	94.37863889	91.75018533	89.20943099
231218A00023	12/18/2023	4.76	6/18/2025	102.66483	102.0242001	101.3915873	100.7668446	100.1498256	99.5403874	98.93839054	98.34369904	97.75618021
231218A00027	12/18/2023	4.96	2/19/2025	101.31807	101.0093525	100.7025277	100.3975764	100.0944814	99.79322564	99.49379239	99.19616507	98.90032732
231218A00046	12/18/2023	4.76	6/18/2025	102.66483	102.0242001	101.3915873	100.7668446	100.1498256	99.5403874	98.93839054	98.34369904	97.75618021
231218A00052	12/18/2023	4.54	12/18/2025	104.63762	103.4841167	102.3561548	101.2528897	100.1735155	99.11726066	98.08338674	97.07118647	96.07998211
231218A00070	12/18/2023	4.6	6/18/2025	102.61391	101.9728171	101.3397568	100.7145814	100.0971441	99.48730136	98.88491345	98.28984393	97.70195973
231219A00009	12/19/2023	4.75	6/19/2025	102.67029	102.0268836	101.391564	100.7641813	100.1445872	99.53263681	98.92818916	98.33110654	97.74125464
231219A00011	12/19/2023	4.75	6/19/2025	102.67029	102.0268836	101.391564	100.7641813	100.1445872	99.53263681	98.92818916	98.33110654	97.74125464
231219A00012	12/19/2023	4.54	12/19/2025	104.6486	103.4922934	102.3616486	101.2558163	100.1739848	99.11537726	98.07925034	97.06489203	96.07162016
231219A00013	12/19/2023	4.27	12/18/2026	108.45468	106.2725251	104.1456234	102.072191	100.0505147	98.07894999	96.15591752	94.2799001	92.44943964
231219A00015	12/19/2023	4.17	12/20/2027	112.19362	108.9440381	105.8072209	102.7785878	99.85377142	97.0286092	94.29913183	91.66155319	89.11226057
231219A00016	12/19/2023	4.27	12/18/2026	108.45468	106.2725251	104.1456234	102.072191	100.0505147	98.07894999	96.15591752	94.2799001	92.44943964
231219A00017	12/19/2023	4.26	1/15/2027	108.74343	106.4820729	104.2794752	102.1336819	100.0428179	98.00508595	96.01876274	94.08219521	92.19379701
231219A00018	12/19/2023	4.25	2/16/2027	109.08941	106.7325162	104.4388879	102.206431	100.033133	97.9170619	95.85636224	93.84925167	91.89401736
231219A00019	12/19/2023	4.17	12/15/2027	112.14088	108.9057975	105.7826058	102.7667778	99.85399459	97.04013864	94.32128298	91.69368108	89.15375737
231219A00020	12/19/2023	4.16	2/1/2028	112.6138	109.2399751	105.9867147	102.8489691	99.8219319	96.90103003	94.08191019	91.36042679	88.7326305
231219A00021	12/19/2023	4.14	3/15/2028	113.01596	109.5126845	106.1386461	102.8883904	99.75672614	96.7387073	93.82962025	91.02497159	88.32047667
231219A00022	12/19/2023	4.13	4/14/2028	113.29685	109.7058157	106.2501994	102.9241589	99.7221378	96.63884869	93.66925836	90.80857423	88.05223148
231219A00023	12/19/2023	4.12	6/15/2028	113.9185	110.1440698	106.5175503	103.032299	99.68201285	96.46070824	93.36270221	90.38259563	87.51525723
231219A00025	12/19/2023	4.06	12/15/2028	115.57526	111.2612501	107.1358412	103.1897344	99.41413967	95.80074786	92.34170209	89.02957015	85.85731913
231219A00060	12/19/2023	4.22	6/21/2027	110.39509	107.6739588	105.0347355	102.4744348	99.99020289	97.57930917	95.23914033	92.96719424	90.76107442
231220A00008	12/20/2023	4.99	12/18/2024	100.56073	100.4273598	100.2943577	100.1617234	100.0294555	99.89755227	99.7660123	99.63483402	99.50401587
231220A00014	12/20/2023	4.99	12/20/2024	100.58462	100.4456781	100.3071389	100.1689964	100.0312487	99.89389412	99.75693102	99.62035765	99.48417231
231220A00015	12/20/2023	4.48	12/19/2025	104.57983	103.4239394	102.2937067	101.1882803	100.1068484	99.04863461	98.01289553	96.99891935	96.00602404
231220A00027	12/20/2023	4.99	12/16/2024	100.53685	100.4090372	100.2815704	100.1544433	100.0276547	99.90120294	99.77508682	99.64930491	99.52385583
231220A00028	12/20/2023	4.13	12/20/2027	112.06717	108.8195935	105.6847292	102.6579985	99.73503587	96.91168029	94.18396406	91.54810256	89.00048453
231220A00030	12/20/2023	4.48	12/22/2025	104.61227	103.4479729	102.3096956	101.1965718	100.107773	99.04250691	98.00001508	96.97957153	95.98048085
231220A00031	12/20/2023	4.23	12/21/2026	108.40184	106.2121082	104.0779784	101.9976447	99.96937796	97.99151849	96.06247283	94.18071039	92.34476042
231220A00032	12/20/2023	4.57	12/19/2025	104.68299	103.5264704	102.3956195	101.2895843	100.2075529	99.14874858	98.11242774	97.09787837	96.10441822

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231220A00034	12/20/2023	4.99	12/20/2024	100.58462	100.4456781	100.3071389	100.1689964	100.0312487	99.89389412	99.75693102	99.62035765	99.48417231
231221A00003	12/21/2023	4.39	12/22/2025	104.50837	103.3447052	102.2070548	101.0945482	100.0063573	98.94168982	97.89978766	96.87992504	95.88140677
231221A00006	12/21/2023	4.14	12/21/2026	108.20755	106.0199575	103.8879228	101.809642	99.78338717	97.80749991	95.88038784	94.00052142	92.16643096
231221A00008	12/21/2023	3.99	12/21/2028	115.34365	111.0179754	106.8820793	102.9265679	99.1425682	95.52169474	92.05601994	88.73804632	85.5606806
231221A00014	12/21/2023	4.14	6/21/2027	110.18226	107.4639897	104.8275599	102.2699889	99.78842466	97.38013863	95.04251928	92.77306625	90.56938477
231221A00022	12/21/2023	4.01	12/21/2028	113.90962	110.0064762	106.2708707	102.6945381	99.26967072	95.98889276	92.84523359	89.83210282	86.94326711
231221A00039	12/21/2023	3.99	12/21/2028	115.34365	111.0179754	106.8820793	102.9265679	99.1425682	95.52169474	92.05601994	88.73804632	85.5606806
231221A00086	12/21/2023	4.48	6/23/2025	102.59396	101.9391384	101.2927001	100.6544808	100.0243242	99.40207785	98.78759328	98.18072565	97.58133371
231221A00103	12/21/2023	4.3	12/30/2025	104.58178	103.3943342	102.2339388	101.099672	99.99065737	98.90605755	97.84507173	96.80693385	95.79091068
231221A00104	12/21/2023	4.3	12/30/2025	104.58178	103.3943342	102.2339388	101.099672	99.99065737	98.90605755	97.84507173	96.80693385	95.79091068
231222A00004	12/22/2023	4	12/22/2028	115.39521	111.0657276	106.9262786	102.9674529	99.18036109	95.55660282	92.08823658	88.76775197	85.5880437
231222A00014	12/22/2023	4.92	12/20/2024	100.5749	100.4359685	100.2974398	100.1593077	100.0215704	99.88422621	99.74727347	99.61071044	99.47453541
231222A00019	12/22/2023	4.92	12/23/2024	100.61014	100.4628567	100.3160204	100.1696249	100.0236683	99.87814848	99.73306352	99.58841145	99.4441903
231222A00027	12/22/2023	4.84	2/21/2025	101.30487	100.9906474	100.6783836	100.3680584	100.0596538	99.75315187	99.44853499	99.14578578	98.84488703
231222A00032	12/22/2023	4.94	12/16/2024	100.53046	100.4026556	100.2751952	100.1480745	100.0212923	99.89484696	99.76873722	99.64296169	99.51751898
231222A00039	12/22/2023	4.44	12/22/2025	104.56609	103.4020762	102.2640774	101.151228	100.0626994	98.99769932	97.95546956	96.9352842	95.93644793
231226A00016	12/26/2023	3.92	12/26/2028	114.89489	110.6972033	106.6843717	102.8471293	99.17673453	95.66493502	92.30393688	89.08637627	86.00529296
231226A00024	12/26/2023	4.03	12/26/2028	115.56017	111.2162971	107.0634537	103.0921629	99.2934715	95.65892	92.18051202	88.85068625	85.66229014
231226A00027	12/26/2023	4.22	12/28/2026	108.45746	106.2480859	104.095159	101.9968342	99.95134382	97.95699165	96.0121498	94.11525517	92.26480631
231226A00043	12/26/2023	4.46	12/26/2025	104.63221	103.4568389	102.3079724	101.1847225	100.0862379	99.01170503	97.96034532	96.93141379	95.92419709
231226A00095	12/26/2023	4.22	12/28/2026	108.45746	106.2480859	104.095159	101.9968342	99.95134382	97.95699165	96.0121498	94.11525517	92.26480631
231226A00098	12/26/2023	4.67	6/26/2025	102.70035	102.0375323	101.3832892	100.7374538	100.0998644	99.47036365	98.84879823	98.23501854	97.62887878
231227A00005	12/27/2023	4.17	12/28/2026	108.34855	106.1403916	103.9886491	101.8914848	99.84713156	97.853894	95.91014482	94.01432152	92.16492325
231227A00013	12/27/2023	4.44	6/27/2025	102.6127	101.9467747	101.2895077	100.6407305	100.0002792	99.36799424	98.74371988	98.12730443	97.5186
231227A00014	12/27/2023	4.29	12/26/2025	104.52796	103.3518113	102.2022182	101.0782847	99.97915744	98.9040206	97.85209385	96.82263037	95.81491513
231227A00023	12/27/2023	3.98	12/27/2028	115.36085	111.0183755	106.8670205	102.8972958	99.10023863	95.46738052	91.99071702	88.66267946	85.47610859
231227A00026	12/27/2023	4.6	6/27/2025	102.66559	102.0001444	101.3433407	100.6950111	100.0549922	99.42312475	98.79925367	98.18322765	97.57489925
231227A00027	12/27/2023	4.42	12/26/2025	104.58559	103.4105058	102.2619231	101.1389526	100.0407432	98.96648119	97.91538831	96.88671962	95.87976188
231227A00030	12/27/2023	4.44	6/27/2025	102.6127	101.9467747	101.2895077	100.6407305	100.0002792	99.36799424	98.74371988	98.12730443	97.5186
231227A00039	12/27/2023	4.6	6/27/2025	102.66559	102.0001444	101.3433407	100.6950111	100.0549922	99.42312475	98.79925367	98.18322765	97.57489925
231228A00020	12/28/2023	4.93	12/27/2024	100.6587	100.5002736	100.3423528	100.184934	100.0280148	99.87159275	99.71566558	99.56023092	99.40528642
231228A00022	12/28/2023	4.61	6/27/2025	102.67221	102.0067439	101.3499159	100.7015622	100.0615194	99.4296283	98.80573376	98.18968449	97.58133305
231228A00023	12/28/2023	4.4	12/26/2025	104.56228	103.3873392	102.2388984	101.1160676	100.0179958	98.94386927	97.89290981	96.86437254	95.85754427



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
231228A00024	12/28/2023	4.15	12/28/2026	108.30499	106.0973138	103.9460451	101.849345	99.80544666	97.81265495	95.86934283	93.97394806	92.12497003
231228A00025	12/28/2023	4.05	12/28/2027	111.896	108.6292975	105.4766022	102.433257	99.49482198	96.65706658	93.9159581	91.26765113	88.70847755
231228A00026	12/28/2023	3.96	12/28/2028	115.2869	110.9432228	106.7908373	102.8202407	99.02245712	95.38900612	91.9118722	88.58347651	85.39665042
231229A00017	12/29/2023	4.42	12/29/2025	104.61753	103.4340303	102.2774017	101.1467355	100.0411636	98.95985616	97.90201952	96.8668944	95.85375398
231229A00061	12/29/2023	4.74	4/29/2025	102.06237	101.5613924	101.0653311	100.5741184	100.0876835	99.6059569	99.12887043	98.65635728	98.18835192
231229A00062	12/29/2023	4.74	4/29/2025	102.06237	101.5613924	101.0653311	100.5741184	100.0876835	99.6059569	99.12887043	98.65635728	98.18835192
231229A00063	12/29/2023	4.74	4/29/2025	102.06237	101.5613924	101.0653311	100.5741184	100.0876835	99.6059569	99.12887043	98.65635728	98.18835192
231229A00065	12/29/2023	4.6	7/29/2025	103.03655	102.2815799	101.5376937	100.8046507	100.0822147	99.37015657	98.66825357	97.97628937	97.29405376
231229A00066	12/29/2023	4.6	7/29/2025	103.03655	102.2815799	101.5376937	100.8046507	100.0822147	99.37015657	98.66825357	97.97628937	97.29405376
231229A00067	12/29/2023	4.6	7/29/2025	103.03655	102.2815799	101.5376937	100.8046507	100.0822147	99.37015657	98.66825357	97.97628937	97.29405376
231229A00068	12/29/2023	4.42	12/29/2025	104.61753	103.4340303	102.2774017	101.1467355	100.0411636	98.95985616	97.90201952	96.8668944	95.85375398
231229A00070	12/29/2023	4.42	12/29/2025	104.61753	103.4340303	102.2774017	101.1467355	100.0411636	98.95985616	97.90201952	96.8668944	95.85375398
231229A00071	12/29/2023	4.42	12/29/2025	104.61753	103.4340303	102.2774017	101.1467355	100.0411636	98.95985616	97.90201952	96.8668944	95.85375398
240102A00029	1/2/2024	4.66	7/2/2025	102.76365	102.0840751	101.4135082	100.7517669	100.0986776	99.45407113	98.81778298	98.18965267	97.5695239
240102A00055	1/2/2024	4.23	1/4/2027	108.5562	106.3267587	104.1546448	102.0379724	99.97493311	97.96379252	96.00288654	94.09061796	92.22545312
240103A00003	1/3/2024	4.71	7/3/2025	102.80938	102.1268848	101.4534735	100.7889617	100.1331737	99.48593833	98.84708881	98.21646276	97.59390194
240103A00004	1/3/2024	4.48	1/5/2026	104.76394	103.5604208	102.3846619	101.2357108	100.1126568	99.01463005	97.94079928	96.89036975	95.86258122
240103A00005	1/3/2024	4.28	1/4/2027	108.66607	106.4353973	104.2620787	102.1442262	100.0800306	98.06775668	96.10573982	94.19238215	92.3261494
240103A00010	1/3/2024	4.84	1/18/2039	153.44545	137.3386225	123.2411538	110.8845168	100.0377277	90.50190372	82.10563434	74.70104199	68.1604263
240103A00011	1/3/2024	4.84	1/18/2039	153.44545	137.3386225	123.2411538	110.8845168	100.0377277	90.50190372	82.10563434	74.70104199	68.1604263
240103A00018	1/3/2024	4.28	1/4/2027	108.66607	106.4353973	104.2620787	102.1442262	100.0800306	98.06775668	96.10573982	94.19238215	92.3261494
240103A00023	3/29/2024	4.45	7/29/2025	102.92391	102.1694077	101.4259838	100.6933982	99.97141506	99.2598051	98.55834575	97.86682075	97.18501994
240103A00025	1/3/2024	4.48	1/2/2026	104.73133	103.5362058	102.3684566	101.2271518	100.1113992	99.02034631	97.95317843	96.9091162	95.88741393
240103A00026	1/3/2024	4.28	1/4/2027	108.66607	106.4353973	104.2620787	102.1442262	100.0800306	98.06775668	96.10573982	94.19238215	92.3261494
240103A00032	3/29/2024	4.45	7/29/2025	102.92391	102.1694077	101.4259838	100.6933982	99.97141506	99.2598051	98.55834575	97.86682075	97.18501994
240103A00033	3/29/2024	4.45	7/29/2025	102.92391	102.1694077	101.4259838	100.6933982	99.97141506	99.2598051	98.55834575	97.86682075	97.18501994
240103A00034	3/29/2024	4.45	7/29/2025	102.92391	102.1694077	101.4259838	100.6933982	99.97141506	99.2598051	98.55834575	97.86682075	97.18501994
240103A00035	3/29/2024	4.45	7/29/2025	102.92391	102.1694077	101.4259838	100.6933982	99.97141506	99.2598051	98.55834575	97.86682075	97.18501994
240103A00039	6/28/2024	4.11	10/29/2025	103.64724	102.6362694	101.6450596	100.6730347	99.71964096	98.78434605	97.86663763	96.96602254	96.08202595
240103A00042	6/28/2024	4.11	10/29/2025	103.64724	102.6362694	101.6450596	100.6730347	99.71964096	98.78434605	97.86663763	96.96602254	96.08202595
240103A00043	6/28/2024	4.11	10/29/2025	103.64724	102.6362694	101.6450596	100.6730347	99.71964096	98.78434605	97.86663763	96.96602254	96.08202595
240103A00044	6/28/2024	4.11	10/29/2025	103.64724	102.6362694	101.6450596	100.6730347	99.71964096	98.78434605	97.86663763	96.96602254	96.08202595
240103A00045	6/28/2024	4.11	10/29/2025	103.64724	102.6362694	101.6450596	100.6730347	99.71964096	98.78434605	97.86663763	96.96602254	96.08202595

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240103A00047	6/28/2024	4.05	1/29/2026	104.48315	103.2159213	101.9795129	100.772808	99.59474461	98.44431051	97.32054087	96.22251533	95.14935547
240103A00049	6/28/2024	4.05	1/29/2026	104.48315	103.2159213	101.9795129	100.772808	99.59474461	98.44431051	97.32054087	96.22251533	95.14935547
240103A00050	6/28/2024	4.05	1/29/2026	104.48315	103.2159213	101.9795129	100.772808	99.59474461	98.44431051	97.32054087	96.22251533	95.14935547
240103A00051	6/28/2024	4.05	1/29/2026	104.48315	103.2159213	101.9795129	100.772808	99.59474461	98.44431051	97.32054087	96.22251533	95.14935547
240103A00052	6/28/2024	4.05	1/29/2026	104.48315	103.2159213	101.9795129	100.772808	99.59474461	98.44431051	97.32054087	96.22251533	95.14935547
240103A00054	6/28/2024	3.94	6/29/2026	105.92115	104.2344748	102.5829313	100.9654893	99.38115574	97.82897604	96.30803244	94.81744212	93.35635551
240103A00056	6/28/2024	3.94	6/29/2026	105.92115	104.2344748	102.5829313	100.9654893	99.38115574	97.82897604	96.30803244	94.81744212	93.35635551
240103A00057	6/28/2024	3.94	6/29/2026	105.92115	104.2344748	102.5829313	100.9654893	99.38115574	97.82897604	96.30803244	94.81744212	93.35635551
240103A00058	6/28/2024	3.94	6/29/2026	105.92115	104.2344748	102.5829313	100.9654893	99.38115574	97.82897604	96.30803244	94.81744212	93.35635551
240103A00059	6/28/2024	3.94	6/29/2026	105.92115	104.2344748	102.5829313	100.9654893	99.38115574	97.82897604	96.30803244	94.81744212	93.35635551
240104A00064	1/4/2024	5.04	1/3/2025	100.76141	100.5835022	100.4062269	100.2295801	100.0535584	99.87815845	99.70337697	99.52921066	99.35565628
240104A00068	1/4/2024	4.76	7/3/2025	102.84333	102.1607069	101.4871682	100.8225302	100.1666172	99.519258	98.88028579	98.24953817	97.62685689
240105A00011	1/5/2024	5.06	12/5/2024	100.47751	100.3761303	100.274952	100.1739783	100.0732085	99.97264199	99.87227814	99.7721163	99.67215583
240105A00015	1/5/2024	4.99	1/6/2025	100.78909	100.6028585	100.4173276	100.2324893	100.0483399	99.86487538	99.68209189	99.4999856	99.31855273
240105A00017	1/5/2024	4.29	1/5/2027	108.69915	106.465403	104.289138	102.1684657	100.101571	98.08671295	96.1222136	94.20649329	92.33798962
240105A00019	1/5/2024	5.02	12/5/2024	100.47311	100.3717607	100.2706184	100.1696805	100.0689466	99.96841583	99.86808765	99.76796142	99.66803649
240105A00028	1/5/2024	4.76	7/7/2025	102.89155	102.1977484	101.5133296	100.8381045	100.1718883	99.51450149	98.86576888	98.22552011	97.59358925
240108A00018	1/8/2024	4.94	1/8/2025	100.80388	100.612108	100.4210763	100.2307809	100.0412175	99.85238181	99.66426959	99.47687662	99.29019874
240108A00020	1/8/2024	4.68	7/8/2025	102.84818	102.1517924	101.4648639	100.7872007	100.1186159	99.45892759	98.80795872	98.16553692	97.53149432
240108A00022	1/8/2024	4.46	1/8/2026	104.77252	103.5607521	102.3771307	101.2206795	100.0904691	98.98561215	97.90526099	96.84860537	95.81487045
240108A00023	1/8/2024	4.27	1/8/2027	108.68832	106.4465618	104.2626644	102.1347165	100.060885	98.03941236	96.06861275	94.14686838	92.2726262
240108A00033	1/8/2024	4.96	1/2/2025	100.79603	100.6133995	100.4314062	100.2500471	100.0693189	99.88921816	99.70974175	99.53088639	99.35264887
240108A00034	1/8/2024	5.07	11/4/2024	100.11513	100.1035785	100.0920385	100.0805092	100.0689906	100.0574826	100.0459853	100.0344986	100.0230224
240108A00035	1/8/2024	5.04	12/2/2024	100.43865	100.3460258	100.2535683	100.1612777	100.0691535	99.97719521	99.88540241	99.79377464	99.70231147
240108A00037	1/8/2024	4.69	7/8/2025	102.85511	102.1586942	101.4717393	100.7940499	100.1254392	99.46572516	98.81473086	98.17228386	97.53821629
240108A00038	1/8/2024	4.13	1/8/2029	116.11036	111.7194365	107.5228547	103.5108997	99.6744049	96.00471257	92.49364294	89.13346461	85.91686725
240108A00040	1/8/2024	4.13	1/8/2029	116.11036	111.7194365	107.5228547	103.5108997	99.6744049	96.00471257	92.49364294	89.13346461	85.91686725
240108A00041	1/9/2024	4.13	1/9/2029	116.12045	111.7265859	107.527293	103.512845	99.67405927	96.00226347	92.4892642	89.12731745	85.90910125
240108A00047	1/11/2024	4.95	1/10/2025	100.82994	100.6326098	100.4360607	100.2402921	100.0452994	99.85107775	99.65762266	99.46492949	99.27299368
240108A00049	1/11/2024	4.95	1/10/2025	100.82994	100.6326098	100.4360607	100.2402921	100.0452994	99.85107775	99.65762266	99.46492949	99.27299368
240109A00006	1/9/2024	4.71	7/9/2025	102.88088	102.1816178	101.4918895	100.811501	100.1402631	99.47799183	98.82450793	98.17963703	97.5432093
240109A00025	1/9/2024	4.47	1/9/2026	104.79537	103.5807302	102.3943624	101.2352877	100.1025707	98.99531811	97.91267657	96.85383065	95.81800059
240109A00030	1/9/2024	4.99	1/9/2025	100.82564	100.6310785	100.4372765	100.2442328	100.0519431	99.86040272	99.66960731	99.47955246	99.29023378

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240109A00031	1/9/2024	4.73	7/9/2025	102.89479	102.1954762	101.5056947	100.8252535	100.1539634	99.49164039	98.83810525	98.19318358	97.55670555
240109A00042	1/9/2024	3.99	1/9/2029	115.88895	111.4897517	107.2856853	103.2669803	99.42441615	95.74928576	92.23336329	88.86887465	85.64846991
240109A00048	1/9/2024	4.12	1/9/2029	116.07824	111.6852596	107.4868226	103.473203	99.63521912	95.96419977	92.45195254	89.09073441	85.87322431
240110A00001	1/10/2024	4.42	1/9/2026	104.73516	103.520904	102.3349135	101.1762102	100.0438587	98.93696576	97.85467834	96.79618109	95.76069439
240110A00003	1/10/2024	4.78	1/10/2025	100.8119	100.6144258	100.4177388	100.2218348	100.0267091	99.83235684	99.63877343	99.44595421	99.25389459
240110A00010	1/10/2024	4.42	1/12/2026	104.76727	103.5446101	102.3506086	101.1842607	100.0446121	98.93075189	97.84181037	96.77695651	95.73539595
240110A00017	1/10/2024	4.94	1/6/2025	100.83975	100.6455562	100.4520942	100.2593556	100.0673363	99.87603229	99.68543949	99.4955539	99.30637155
240110A00021	1/10/2024	4.13	1/10/2028	112.28597	108.9776373	105.7857603	102.7055366	99.7323901	96.86196303	94.09010368	91.41285527	88.82644539
240110A00029	1/10/2024	4.5	7/10/2025	102.80213	102.0996947	101.4068908	100.7235167	100.0493804	99.38429494	98.72807871	98.08055474	97.44155076
240111A00016	1/11/2024	4.63	7/11/2025	102.84862	102.1439819	101.4490274	100.7635586	100.0873818	99.42030863	98.7621557	98.11274458	97.47190158
240111A00020	1/11/2024	4.93	1/13/2025	100.86206	100.6563829	100.451564	100.2475931	100.044465	99.84217416	99.64071552	99.44008382	99.24027391
240111A00021	1/11/2024	4.47	7/11/2025	102.79264	102.0874923	101.3920473	100.7061055	100.0294725	99.36195938	98.70338229	98.05356225	97.41232506
240111A00025	1/11/2024	4.19	1/11/2027	108.54416	106.2958918	104.1058361	101.9720576	99.8927063	97.86600881	95.89026428	93.96384085	92.08517216
240111A00028	1/11/2024	4.09	1/11/2029	115.97158	111.5753672	107.3740836	103.3579708	99.51781854	95.84492945	92.33108689	88.96852552	85.74990372
240111A00031	1/11/2024	4.19	1/11/2027	108.54416	106.2958918	104.1058361	101.9720576	99.8927063	97.86600881	95.89026428	93.96384085	92.08517216
240111A00053	1/11/2024	4.93	1/10/2025	100.826	100.6286732	100.4321295	100.2363662	100.0413788	99.84716258	99.65371282	99.46102496	99.26909444
240112A00014	1/12/2024	4.8	1/10/2025	100.85793	100.6524204	100.4477306	100.243855	100.0407888	99.83852687	99.63706456	99.436397	99.23651944
240112A00015	1/12/2024	4.78	1/17/2025	100.87764	100.6608861	100.4450752	100.2302044	100.0162674	99.803258	99.59117018	99.37999785	99.16973504
240112A00021	1/12/2024	4.8	1/13/2025	100.83535	100.6297159	100.4249346	100.2210012	100.0179104	99.8156568	99.61423528	99.41364059	99.21386756
240112A00022	1/12/2024	4.24	1/12/2026	104.54902	103.3277629	102.1351379	100.9701443	99.83182825	98.71927959	97.63162909	96.56804629	95.52773731
240112A00027	1/12/2024	4.79	1/15/2025	100.85655	100.6453582	100.4350628	100.2256611	100.0171472	99.80951555	99.60276037	99.39687607	99.19185708
240112A00033	1/12/2024	4.46	7/11/2025	102.72943	102.025251	101.3307557	100.6457417	99.97001533	99.30338827	98.64567726	97.9967039	97.35629457
240112A00034	1/12/2024	4.46	7/11/2025	102.72943	102.025251	101.3307557	100.6457417	99.97001533	99.30338827	98.64567726	97.9967039	97.35629457
240112A00036	1/12/2024	4.07	1/12/2027	108.28866	106.0405738	103.8507632	101.7172923	99.63830688	97.61202954	95.63675568	93.71084993	91.83274269
240112A00040	1/12/2024	4.24	1/12/2026	104.54902	103.3277629	102.1351379	100.9701443	99.83182825	98.71927959	97.63162909	96.56804629	95.52773731
240112A00044	1/12/2024	4.24	1/12/2026	104.54902	103.3277629	102.1351379	100.9701443	99.83182825	98.71927959	97.63162909	96.56804629	95.52773731
240112A00047	1/12/2024	4.46	7/14/2025	102.7631	102.0505414	101.3478947	100.654952	99.97151302	99.29738272	98.63237146	97.97629472	97.32897295
240112A00050	1/12/2024	4.3	7/11/2025	102.67341	101.968725	101.2737398	100.5882533	99.9120712	99.24500474	98.58687005	97.93748825	97.29668521
240112A00052	1/12/2024	4.07	1/12/2027	108.28866	106.0405738	103.8507632	101.7172923	99.63830688	97.61202954	95.63675568	93.71084993	91.83274269
240116A00006	1/16/2024	4.5	7/16/2025	102.81414	102.0958835	101.3876885	100.689348	100.0006569	99.32141586	98.65143085	97.99051322	97.33847941
240116A00008	1/16/2024	4.81	1/17/2025	100.88414	100.6673719	100.4515515	100.2366712	100.0227247	99.80970589	99.59760866	99.38642697	99.17615482
240116A00052	1/16/2024	4.65	1/16/2025	100.85501	100.640875	100.4276622	100.2153688	100.003989	99.79351664	99.58394587	99.3752708	99.1674856
240116A00083	1/16/2024	4.53	7/16/2025	102.83559	102.1172479	101.4089688	100.7105451	100.0217716	99.34244886	98.67238301	98.01138531	97.3592722

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240117A00021	1/17/2024	4.06	1/17/2029	116.26612	111.8370194	107.6051512	103.560597	99.69399954	95.99652534	92.45983139	89.07603504	85.83768573
240117A00023	1/17/2024	4.13	1/19/2027	108.68082	106.4056804	104.1899563	102.0316618	99.92889094	97.87981753	95.88269102	93.93583264	92.03763174
240117A00024	1/17/2024	4.78	1/17/2025	100.89462	100.6776535	100.4616378	100.2465651	100.032429	99.81922348	99.60694229	99.39557937	99.18512867
240117A00054	1/17/2024	4.22	1/18/2028	112.66085	109.3246371	106.1064768	103.0014649	100.0049378	97.11245549	94.31978956	91.62291141	89.01798134
240118A00004	1/18/2024	4.74	1/17/2025	100.88596	100.6690048	100.4530018	100.2379417	100.0238183	99.81062535	99.59835671	99.38700629	99.17656805
240118A00020	1/18/2024	4.25	2/18/2027	109.11345	106.7502463	104.4506178	102.2124614	100.0337596	97.91257476	95.84704572	93.83538394	91.87587022
240119A00003	1/19/2024	4.68	7/21/2025	103.00199	102.2692156	101.5468961	100.8348124	100.1327475	99.44049075	98.75783716	98.08458754	97.42054814
240119A00007	1/19/2024	4.23	1/19/2029	116.64625	112.2139315	107.978845	103.9310732	100.0612616	96.36057902	92.8206848	89.43369844	86.19217138
240119A00008	1/19/2024	4.89	1/24/2025	100.98478	100.7484856	100.5133064	100.2792343	100.0462617	99.81438076	99.58358373	99.35386301	99.12521105
240119A00013	1/19/2024	4.88	1/31/2025	101.06554	100.8097431	100.5552368	100.3020122	100.0500597	99.79936965	99.54993269	99.30173947	99.05478072
240119A00022	1/19/2024	4.9	1/30/2025	101.05871	100.8056878	100.5539277	100.303424	100.0541673	99.80614836	99.55935803	99.3137872	99.06942685
240119A00024	1/19/2024	4.49	1/20/2026	104.93928	103.6936451	102.477712	101.290425	100.1307788	98.9978143	97.8906167	96.80831248	95.75006729
240119A00028	1/19/2024	4.48	1/13/2026	104.85088	103.6249564	102.4278231	101.2584733	100.1159461	98.99932453	97.90773315	96.8403355	95.79633209
240119A00029	1/19/2024	4.3	1/13/2027	108.81026	106.5535732	104.3554049	102.2138147	100.1269391	98.09299159	96.11025917	94.17709841	92.29193205
240119A00044	1/23/2024	4.23	1/23/2029	116.68771	112.2435443	107.9975561	103.9397643	100.0607497	96.35162123	92.80398304	89.40990353	86.16188689
240122A00002	1/22/2024	4.66	7/22/2025	102.99919	102.26367	101.5386838	100.8240086	100.1194249	99.42471984	98.73968625	98.06412282	97.39783377
240122A00005	1/22/2024	4.45	1/22/2026	104.91146	103.6605345	102.4395682	101.2474904	100.0832826	98.94597418	97.83463889	96.7483927	95.68639134
240122A00006	1/22/2024	4.25	1/22/2027	108.79815	106.517174	104.2958673	102.1322271	100.0243355	97.9703552	95.9685249	94.01715589	92.11462815
240122A00014	1/22/2024	4.93	1/16/2025	100.9547	100.731741	100.5097418	100.2886996	100.068608	99.84946076	99.63125184	99.41397511	99.19762454
240122A00015	1/22/2024	4.93	1/16/2025	100.9547	100.731741	100.5097418	100.2886996	100.068608	99.84946076	99.63125184	99.41397511	99.19762454
240122A00016	1/22/2024	4.66	7/22/2025	102.99919	102.26367	101.5386838	100.8240086	100.1194249	99.42471984	98.73968625	98.06412282	97.39783377
240122A00050	1/22/2024	4.25	1/22/2027	108.79815	106.517174	104.2958673	102.1322271	100.0243355	97.9703552	95.9685249	94.01715589	92.11462815
240122A00081	1/22/2024	4.93	1/22/2025	100.97019	100.7394575	100.5097899	100.2811811	100.0536238	99.82711059	99.60163428	99.37718771	99.15376378
240123A00017	1/23/2024	5.08	11/22/2024	100.32191	100.2583916	100.1949651	100.1316288	100.0683826	100.0052264	99.94215987	99.87918289	99.81629524
240123A00037	1/23/2024	4.2	1/17/2029	116.49822	112.0745113	107.8474677	103.8072148	99.94443389	96.25032681	92.71658351	89.33535193	86.09920987
240123A00057	1/23/2024	4.48	1/23/2026	104.95952	103.7055487	102.4816664	101.2868004	100.1199259	98.9800658	97.86628822	96.77770365	95.71346269
240125A00007	1/25/2024	4.27	1/25/2027	108.87625	106.586234	104.3562912	102.1843992	100.0686214	98.00710244	95.99806455	94.03980322	92.13068356
240125A00019	1/25/2024	4.98	12/18/2024	100.61827	100.4795698	100.3412571	100.2033274	100.065779	99.92861039	99.79181989	99.65540592	99.51936687
240125A00035	1/25/2024	4.89	1/24/2025	100.98478	100.7484856	100.5133064	100.2792343	100.0462617	99.81438076	99.58358373	99.35386301	99.12521105
240125A00040	1/25/2024	4.24	12/15/2026	108.35691	106.1839713	104.0659136	102.0009672	99.98743579	98.02369071	96.10816762	94.23936348	92.41583357
240125A00061	1/25/2024	4.64	7/25/2025	103.01972	102.2758434	101.5427402	100.8201754	100.1079225	99.40576143	98.71347864	98.03086633	97.3577226
240125A00068	1/25/2024	4.11	1/25/2028	112.65031	109.2885356	106.0464451	102.9190422	99.90157005	96.98950195	94.17852826	91.46454442	88.84363964
240125A00069	1/25/2024	4.11	1/25/2028	112.65031	109.2885356	106.0464451	102.9190422	99.90157005	96.98950195	94.17852826	91.46454442	88.84363964

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240126A00004	1/26/2024	4.9	1/21/2025	101.00642	100.7690765	100.5328237	100.2976502	100.0635485	99.83051145	99.59853158	99.36760168	99.13771459
240126A00006	1/26/2024	4.89	1/31/2025	101.06809	100.812292	100.5577814	100.3045525	100.0525957	99.80190139	99.55246019	99.30426274	99.05729978
240126A00007	1/26/2024	4.9	1/24/2025	101.04198	100.7958969	100.5509797	100.3072177	100.0646027	99.82312659	99.58278133	99.34355894	99.10545154
240126A00031	1/26/2024	4.31	1/26/2026	104.88024	103.6170159	102.384332	101.1810862	100.0062315	98.85877024	97.73775105	96.64226614	95.57144888
240126A00032	1/26/2024	4.31	1/26/2026	104.88024	103.6170159	102.384332	101.1810862	100.0062315	98.85877024	97.73775105	96.64226614	95.57144888
240129A00009	1/29/2024	4.72	1/29/2025	101.02139	100.7709738	100.5218005	100.2738618	100.0271485	99.78165152	99.53736195	99.29427085	99.05236942
240129A00030	1/29/2024	5.03	12/2/2024	100.43304	100.3406836	100.2484936	100.1564699	100.0646122	99.97291984	99.88139254	99.79002979	99.69883115
240129A00049	1/29/2024	4.48	7/29/2025	103.00662	102.2509768	101.5064446	100.7727765	100.0497356	99.33709197	98.6346224	97.94210987	97.25934353
240129A00054	1/29/2024	4.72	1/29/2025	101.02139	100.7709738	100.5218005	100.2738618	100.0271485	99.78165152	99.53736195	99.29427085	99.05236942
240129A00056	1/29/2024	4.72	1/29/2025	101.02139	100.7709738	100.5218005	100.2738618	100.0271485	99.78165152	99.53736195	99.29427085	99.05236942
240129A00066	1/29/2024	4.88	1/23/2025	101.02464	100.781613	100.5397246	100.2989654	100.0593273	99.82080243	99.58338313	99.34706162	99.11183026
240130A00003	1/30/2024	4.62	7/30/2025	103.06324	102.3054062	101.5587414	100.822997	100.0979344	99.38332203	98.67893504	97.98455487	97.29996917
240130A00005	1/30/2024	4.62	7/30/2025	103.06324	102.3054062	101.5587414	100.822997	100.0979344	99.38332203	98.67893504	97.98455487	97.29996917
240130A00034	1/30/2024	4.43	10/30/2025	104.06142	103.0442981	102.0471162	101.069289	100.1102564	99.16947991	98.24644109	97.34064119	96.45159995
240130A00036	1/30/2024	4.94	1/30/2025	101.06882	100.8157727	100.5639956	100.313475	100.0642015	99.81616583	99.5693588	99.32377133	99.07939441
240130A00037	1/30/2024	5.03	11/29/2024	100.39734	100.3136676	100.2301317	100.1467309	100.0634649	99.9803333	99.89733587	99.81447227	99.73174218
240130A00044	1/30/2024	4.14	1/30/2029	116.37519	111.9184519	107.6612921	103.5936188	99.70590941	95.9891778	92.43494039	89.03518484	85.78234086
240130A00047	1/30/2024	4.01	1/30/2029	116.18372	111.7206309	107.4577277	103.3848719	99.49250069	95.77159045	92.21362282	88.81055317	85.5547812
240130A00051	1/30/2024	4.94	1/24/2025	101.05105	100.805008	100.5601245	100.316396	100.0738144	99.83237155	99.59205936	99.3528699	99.11479527
240130A00057	1/30/2024	4.15	1/29/2027	108.8352	106.5310745	104.2876973	102.1030106	99.97504616	97.90191913	95.88182364	93.91302882	91.99387489
240130A00059	1/30/2024	4.33	1/30/2026	104.94796	103.6733353	102.429777	101.2161589	100.0314078	98.87450125	97.7444648	96.6403689	95.56132645
240130A00068	1/30/2024	4.17	1/30/2029	116.50355	112.0440853	107.7842893	103.7140655	99.82388816	96.10476764	92.54821721	89.14622149	85.8912073
240130A00070	1/30/2024	4.33	1/30/2026	104.94796	103.6733353	102.429777	101.2161589	100.0314078	98.87450125	97.7444648	96.6403689	95.56132645
240130A00076	1/30/2024	4.94	1/30/2025	101.06882	100.8157727	100.5639956	100.313475	100.0642015	99.81616583	99.5693588	99.32377133	99.07939441
240130A00089	1/30/2024	4.17	1/30/2029	116.50355	112.0440853	107.7842893	103.7140655	99.82388816	96.10476764	92.54821721	89.14622149	85.8912073
240131A00013	1/31/2024	4.13	2/1/2027	108.63621	106.329682	104.0840941	101.8973807	99.76756779	97.69276452	95.67115937	93.70101577	91.78066842
240131A00014	1/31/2024	4.04	1/31/2029	115.95718	111.5065844	107.2555131	103.1938619	99.3121039	95.60124898	92.05281035	88.65877299	85.41156437
240131A00015	1/31/2024	4.02	1/31/2029	108.56539	106.1851213	103.8895142	101.6747993	99.53740162	97.47393294	95.48118041	93.55609619	91.69578765
240131A00021	1/31/2024	4.8	1/27/2025	101.05102	100.7966028	100.5434248	100.2914773	100.0407514	99.79123816	99.54292881	99.29581465	99.04988705
240131A00022	3/1/2024	4.13	3/1/2027	108.96227	106.5680342	104.2389844	101.9729891	99.76799973	97.62204592	95.53323228	93.49973496	91.51979858
240131A00026	1/31/2024	4.31	1/30/2026	104.82099	103.5487903	102.3075781	101.0962299	99.91367571	98.75889653	97.63092078	96.52882178	95.45171518
240131A00028	1/31/2024	4.8	1/27/2025	101.05102	100.7966028	100.5434248	100.2914773	100.0407514	99.79123816	99.54292881	99.29581465	99.04988705
240131A00033	1/31/2024	4.18	1/30/2026	104.75854	103.4851736	102.2428569	101.0304594	99.84690872	98.6911829	97.56230795	96.45935485	95.38143704



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240131A00034	1/31/2024	4	1/29/2027	108.49494	106.1947429	103.9552106	101.7742894	99.65001312	97.58049926	95.56394412	93.59861889	91.68286579
240131A00036	1/31/2024	4.51	7/31/2025	102.99169	102.2314118	101.4823731	100.7443278	100.0170353	99.30026158	98.59377949	97.89736842	97.21081397
240131A00039	1/31/2024	4.22	7/31/2026	106.75614	104.9756424	103.2336452	101.5289658	99.86046948	98.22706819	96.62771778	95.06141596	93.52720009
240131A00044	1/31/2024	4.8	1/27/2025	101.05102	100.7966028	100.5434248	100.2914773	100.0407514	99.79123816	99.54292881	99.29581465	99.04988705
240131A00054	1/31/2024	4.8	1/31/2025	101.04512	100.7893521	100.5348803	100.28169	100.0297717	99.77911573	99.52971272	99.28155332	99.03462827
240131A00059	1/31/2024	4.57	7/31/2025	103.03708	102.2766102	101.527384	100.7891534	100.0616774	99.34472203	98.63806017	97.94147114	97.25474053
240131A00076	1/31/2024	4.35	1/30/2026	104.87148	103.5989404	102.3573977	101.1457243	99.96285052	98.80775693	97.67947188	96.57706856	95.49966247
240131A00080	1/31/2024	4.16	1/29/2027	108.67117	106.3726528	104.1346753	101.9551912	99.83224044	97.7639462	95.74851012	93.78420846	91.86938822
240201A00003	2/1/2024	4.17	2/2/2026	104.78032	103.4989107	102.2481519	101.026947	99.83425256	98.66907382	97.53046204	96.4175117	95.32935817
240201A00021	2/1/2024	4.81	2/3/2025	101.08308	100.8189781	100.5562605	100.2949142	100.0349284	99.77629259	99.51899621	99.26302888	99.00838029
240201A00023	2/1/2024	4.5	8/1/2025	102.99582	102.2327786	101.4810579	100.7404116	100.010596	99.29137455	98.58251768	97.88380231	97.19501174
240201A00027	2/1/2024	3.83	2/1/2029	115.43228	110.9794073	106.7266872	102.66397	98.78168355	95.07079548	91.52277951	88.12958371	84.88360118
240201A00029	2/1/2024	4.52	8/1/2025	103.01101	102.2478996	101.4961161	100.7554075	100.0255303	99.30624799	98.5973308	97.89855573	97.20970606
240201A00030	2/1/2024	4.35	2/2/2026	104.90666	103.6259952	102.3759327	101.1553763	99.963285	98.79866658	97.6605745	96.54810535	95.46039649
240201A00038	2/1/2024	4.3	2/2/2026	104.84313	103.5628987	102.3132545	101.0931093	99.90142244	98.73720176	97.59950091	96.48741668	95.40008659
240201A00040	2/1/2024	4.08	2/1/2030	119.61345	114.0552977	108.7959346	103.8175963	99.1036772	94.63864609	90.40797066	86.39804735	82.59613666
240201A00042	2/1/2024	4.24	2/1/2033	129.60999	120.691883	112.4812542	104.9176013	97.94592037	91.51617756	85.58283458	80.10442189	75.04315457
240201A00043	2/1/2024	4.27	2/1/2034	132.82972	122.7754698	113.6008524	105.2232021	97.56806571	90.56834707	84.16354284	78.29906166	72.92561687
240201A00051	2/1/2024	4.83	2/3/2025	101.08835	100.8242418	100.5615151	100.3001597	100.040165	99.78152022	99.52421492	99.2682387	99.01358126
240201A00052	2/1/2024	4.5	8/1/2025	102.99582	102.2327786	101.4810579	100.7404116	100.010596	99.29137455	98.58251768	97.88380231	97.19501174
240201A00054	2/1/2024	4.83	2/3/2025	101.08835	100.8242418	100.5615151	100.3001597	100.040165	99.78152022	99.52421492	99.2682387	99.01358126
240201A00056	2/1/2024	4.3	2/2/2026	104.84313	103.5628987	102.3132545	101.0931093	99.90142244	98.73720176	97.59950091	96.48741668	95.40008659
240201A00057	2/1/2024	4.83	2/3/2025	101.08835	100.8242418	100.5615151	100.3001597	100.040165	99.78152022	99.52421492	99.2682387	99.01358126
240201A00061	2/1/2024	4.5	8/1/2025	102.99582	102.2327786	101.4810579	100.7404116	100.010596	99.29137455	98.58251768	97.88380231	97.19501174
240201A00063	2/1/2024	4.81	2/3/2025	101.08308	100.8189781	100.5562605	100.2949142	100.0349284	99.77629259	99.51899621	99.26302888	99.00838029
240201A00064	2/1/2024	4.51	8/1/2025	103.00342	102.2403391	101.488587	100.7479096	100.0180632	99.29881127	98.58992424	97.89117902	97.2023589
240201A00065	2/1/2024	4.33	2/2/2026	104.88125	103.6007566	102.3508614	101.1304695	99.93853997	98.77408065	97.63614506	96.52382988	95.43627253
240201A00069	5/1/2024	4.44	4/30/2025	101.9509	101.4317572	100.9177633	100.408838	99.90490672	99.40589633	98.91173518	98.42235296	97.93768075
240201A00072	8/1/2024	4.1	7/31/2025	102.68154	101.9225564	101.174798	100.4380198	99.71198117	98.9964485	98.29119485	97.5959998	96.91064916
240202A00014	2/2/2024	4.51	8/1/2025	103.06426	102.3001265	101.5473426	100.8056586	100.0748301	99.35461989	98.64479747	97.94513911	97.25542743
240202A00016	2/2/2024	4.25	2/2/2027	108.92117	106.6083447	104.3566717	102.164085	100.0286061	97.94833999	95.9214706	93.94625688	92.02102896
240202A00017	2/2/2024	4.23	8/3/2026	106.95309	105.1600969	103.4060602	101.6897878	100.01014	98.36602317	96.75638732	95.18022393	93.63656387
240202A00022	2/2/2024	4.96	2/3/2025	101.12262	100.8584557	100.5956701	100.334256	100.0742028	99.81549981	99.55813652	99.30210253	99.04738755

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240202A00023	2/2/2024	4.96	2/3/2025	101.12262	100.8584557	100.5956701	100.334256	100.0742028	99.81549981	99.55813652	99.30210253	99.04738755
240202A00025	2/2/2024	4.82	2/3/2025	101.10644	100.8420704	100.5790892	100.3174833	100.0572419	99.79835417	99.54080968	99.28459792	99.02970854
240202A00029	2/2/2024	4.15	2/2/2029	116.4504	111.9832692	107.7165191	103.64001	99.74417361	96.01997994	92.45890402	89.05289428	85.79434328
240202A00030	2/2/2024	4.32	2/3/2031	124.10594	117.3966941	111.1063513	105.2063359	99.67017433	94.47333176	89.59305955	85.00825553	80.69933608
240205A00004	2/5/2024	5.19	11/6/2024	100.13545	100.1181743	100.1009121	100.0836669	100.0664386	100.0492272	100.0320326	100.0148549	99.99769397
240205A00020	2/5/2024	4.99	2/5/2025	101.15514	100.8853931	100.6170946	100.3502284	100.084783	99.82074686	99.55810888	99.29685792	99.03698295
240205A00044	2/5/2024	4.99	2/5/2025	101.15514	100.8853931	100.6170946	100.3502284	100.084783	99.82074686	99.55810888	99.29685792	99.03698295
240206A00017	2/6/2024	4.33	8/6/2027	111.19574	108.337489	105.5684584	102.8852944	100.2847917	97.76388785	95.31965595	92.94929727	90.65013479
240206A00026	2/6/2024	4.59	8/6/2025	103.18585	102.4074323	101.6407889	100.8856568	100.1417777	99.40890093	98.68678339	97.97518896	97.27388846
240207A00002	2/7/2024	4.81	2/7/2025	101.15197	100.8764717	100.6024871	100.3299998	100.0589975	99.78946787	99.52139898	99.25477886	98.98959572
240207A00006	2/7/2024	4.06	2/7/2029	116.48632	111.9927357	107.7016142	103.6026862	99.68626544	95.94321015	92.3648891	88.94314998	85.67028988
240207A00022	2/7/2024	4.25	2/7/2028	112.97758	109.580233	106.3047968	103.1461707	100.0994992	97.16016035	94.32375288	91.5860839	88.94315769
240207A00025	2/8/2024	4.2	1/8/2029	116.40564	112.0085366	107.8059707	103.7882246	99.94612356	96.27100264	92.75467492	89.38940225	86.16786787
240207A00039	2/7/2024	4.55	8/7/2025	103.16698	102.3858794	101.6166442	100.859001	100.1126889	99.37745454	98.6530522	97.93924335	97.23579643
240207A00040	2/7/2024	4.55	8/7/2025	103.16698	102.3858794	101.6166442	100.859001	100.1126889	99.37745454	98.6530522	97.93924335	97.23579643
240208A00053	2/8/2024	4.58	2/9/2026	105.28966	103.9883185	102.71577	101.4710583	100.2532676	99.06152243	97.89498543	96.75285505	95.63436379
240208A00055	2/8/2024	4.37	2/8/2027	109.26853	106.933627	104.6608413	102.4480966	100.2933982	98.19483367	96.15056877	94.15884335	92.21796778
240209A00007	2/9/2024	4.5	12/9/2025	104.58424	103.4543417	102.348952	101.2672787	100.2085633	99.17207906	98.15712997	97.16304868	96.18919523
240209A00019	2/9/2024	4.39	2/9/2027	109.32681	106.988216	104.7119016	102.4957881	100.3378781	98.23625634	96.18908533	94.19460172	92.25111255
240209A00020	2/9/2024	4.58	2/9/2026	105.28966	103.9883185	102.71577	101.4710583	100.2532676	99.06152243	97.89498543	96.75285505	95.63436379
240212A00029	2/12/2024	4.58	2/12/2026	105.32858	104.019202	102.7378338	101.4835752	100.2555654	99.05298009	97.87502986	96.72095802	95.59003904
240213A00017	2/13/2024	4.26	2/13/2029	117.41821	112.8863623	108.5592144	104.4263827	100.4780689	96.70502382	93.09851327	89.65028633	86.35254588
240213A00022	2/13/2024	4.6	8/13/2026	107.58909	105.7656462	103.9822468	102.2377024	100.5308724	98.86065987	97.22600938	95.62590506	94.05936873
240214A00001	2/14/2024	4.79	11/10/2025	104.47494	103.4265596	102.3993117	101.3925625	100.4057018	99.43814311	98.48932315	97.55870022	96.64575341
240214A00007	2/14/2024	4.7	2/17/2026	105.55087	104.2270007	102.9298558	101.6586296	100.4125532	99.19088861	97.99292692	96.81798683	95.66541337
240214A00012	2/14/2024	5.1	2/14/2025	101.29818	101.003326	100.7101991	100.4187849	100.1290684	99.84103466	99.554669	99.26995685	98.98688385
240214A00019	2/15/2024	4.41	1/26/2029	117.48699	113.0176568	108.7477502	104.6672148	100.7665617	97.03683497	93.46957819	90.05680327	86.79096161
240215A00013	2/15/2024	4.82	8/15/2025	103.41491	102.6115264	101.820677	101.0420648	100.2754069	99.52042875	98.77686443	98.04445594	97.32295302
240215A00026	2/15/2024	4.48	2/10/2027	109.54616	107.201987	104.9202997	102.6990119	100.5361224	98.42971163	96.37793815	94.37903428	92.43130275
240215A00033	2/15/2024	4.35	2/16/2027	109.51274	107.1470006	104.844811	102.6040628	100.4227329	98.29887907	96.23063646	94.21621349	92.25388859
240215A00046	4/1/2024	4.49	4/1/2027	110.1658	107.672697	105.2495671	102.8940465	100.6038697	98.37686067	96.21092898	94.10406564	92.05433959
240216A00012	2/16/2024	4.53	8/16/2027	111.86824	108.9730687	106.1689492	103.452479	100.8204017	98.26960288	95.79710349	93.4000525	91.0757207
240220A00031	2/20/2024	4.68	2/20/2026	105.56438	104.232633	102.9268234	101.6462058	100.3900678	99.15772408	97.94851498	96.76180551	95.59698404

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240220A00073	2/20/2024	5.08	2/20/2025	101.36757	101.0559932	100.7463397	100.4385927	100.1327345	99.82874777	99.52661521	99.22631986	98.92784495
240221A00012	2/21/2024	5.23	12/20/2024	100.67359	100.5293162	100.3854568	100.2420098	100.0989732	99.95634535	99.8141244	99.67230857	99.5308961
240221A00013	2/21/2024	5.23	12/23/2024	100.71118	100.5582063	100.4056972	100.2536465	100.102052	99.9509117	99.80022356	99.64998549	99.50019547
240221A00014	2/21/2024	4.53	2/22/2027	109.81461	107.4310487	105.1118414	102.8548693	100.6580996	98.51957907	96.43743017	94.40984777	92.43509575
240221A00015	2/21/2024	4.48	2/22/2028	113.91669	110.4597557	107.1281451	103.916632	100.8202343	97.8342046	94.95401784	92.17535972	89.49411551
240221A00022	2/21/2024	4.97	2/21/2025	101.37067	101.056047	100.7433821	100.4326614	100.1238667	99.81697995	99.51198353	99.2088599	98.90759179
240222A00007	2/22/2024	5.26	12/23/2024	100.71569	100.5627007	100.4101757	100.2581091	100.1064988	99.9553428	99.80463894	99.65438521	99.50457957
240222A00030	2/22/2024	4.99	2/21/2025	101.37695	101.0623062	100.749629	100.4388961	100.1300891	99.82319026	99.51818175	99.2150461	98.91376603
240222A00035	2/22/2024	5.17	2/24/2025	101.44671	101.1239058	100.8031601	100.4844534	100.1677662	99.85307943	99.54037406	99.22963142	98.92083305
240222A00036	2/22/2024	5.17	2/24/2025	101.44671	101.1239058	100.8031601	100.4844534	100.1677662	99.85307943	99.54037406	99.22963142	98.92083305
240222A00037	2/22/2024	5.17	2/24/2025	101.44671	101.1239058	100.8031601	100.4844534	100.1677662	99.85307943	99.54037406	99.22963142	98.92083305
240223A00004	2/23/2024	5	2/24/2025	101.41777	101.0947366	100.7737688	100.4548449	100.1379452	99.82305058	99.51014196	99.19920054	98.89020778
240223A00007	2/23/2024	4.81	8/22/2025	103.56037	102.7361438	101.9250892	101.1268882	100.3412365	99.56783923	98.80641067	98.05667401	97.31836092
240223A00020	2/23/2024	5.16	2/24/2025	101.44349	101.1206939	100.7999547	100.4812544	100.1645736	99.84989319	99.53719415	99.22645783	98.91766574
240223A00022	2/23/2024	5.22	1/23/2025	101.10234	100.8593667	100.6175302	100.3768226	100.1372359	99.89876225	99.66139388	99.42512307	99.18994217
240226A00010	2/26/2024	4.53	7/15/2027	111.49989	108.6975115	105.9810242	103.3472346	100.7930901	98.31567384	95.91219695	93.5799924	91.31650843
240226A00025	2/26/2024	4.43	2/26/2027	109.82594	107.4262133	105.0916241	102.8200421	100.6094163	98.45777466	96.36322091	94.3239307	92.33814867
240226A00037	2/26/2024	5.17	2/26/2025	101.47229	101.1438991	100.8176317	100.4934703	100.1713946	99.85138448	99.53342013	99.21748199	98.90355073
240227A00009	2/27/2024	5.24	1/27/2025	101.15754	100.9029997	100.6497023	100.397636	100.1467918	99.89716092	99.64873445	99.40150373	99.15546013
240227A00015	2/27/2024	5.18	2/27/2025	101.48839	101.1571889	100.8281531	100.5012572	100.1764802	99.85380171	99.53320141	99.21465927	98.89815556
240227A00020	2/27/2024	5.18	2/27/2025	101.48839	101.1571889	100.8281531	100.5012572	100.1764802	99.85380171	99.53320141	99.21465927	98.89815556
240227A00021	2/27/2024	4.97	8/27/2025	103.69051	102.8527715	102.0286163	101.2177162	100.419753	99.63441838	98.86141371	98.10044984	97.35124657
240227A00025	2/27/2024	5.02	2/27/2025	101.46206	101.1306192	100.8013493	100.4742242	100.1492231	99.82632534	99.50551051	99.18675852	98.87004951
240228A00007	2/28/2024	5.17	2/27/2025	101.48508	101.1538942	100.8248652	100.497976	100.1732058	99.85053399	99.52994034	99.21140484	98.89490772
240228A00035	5/28/2024	4.99	5/28/2025	102.54901	101.9665943	101.3908038	100.8215294	100.2586611	99.70209078	99.15171323	98.60742534	98.06912633
240229A00015	2/29/2024	5.25	12/30/2024	100.80064	100.6275193	100.4549757	100.283003	100.1115984	99.94075904	99.77048225	99.60076523	99.43160523
240229A00026	2/29/2024	4.74	2/27/2026	105.73749	104.3863567	103.0593403	101.7558421	100.4752824	99.21710044	97.98075325	96.76571528	95.57147754
240229A00027	2/29/2024	4.54	2/26/2027	109.8892	107.4926649	105.1611017	102.8923881	100.6844804	98.53541362	96.44329803	94.40631552	92.42271668
240301A00001	3/1/2024	5.03	6/2/2025	102.63518	102.0387006	101.4491699	100.8664641	100.2904651	99.7210575	99.15812852	98.60156794	98.05126801
240301A00002	3/1/2024	5.24	1/2/2025	100.83682	100.6550459	100.4739048	100.2933949	100.1135128	99.93425536	99.7556193	99.57760138	99.4001984
240301A00003	3/1/2024	5.19	2/3/2025	101.23318	100.9584716	100.6852009	100.4133595	100.1429361	99.87391966	99.60629925	99.340064	99.07520318
240301A00022	3/1/2024	4.94	3/3/2025	101.4857	101.1431707	100.8029552	100.4650334	100.129382	99.79597826	99.46479954	99.13582358	98.80902838
240301A00023	3/1/2024	4.17	3/1/2029	117.21126	112.6352224	108.2679578	104.0988479	100.1178647	96.3155384	92.68292362	89.21156751	85.89348036

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240301A00024	3/1/2024	4.17	3/1/2029	117.21126	112.6352224	108.2679578	104.0988479	100.1178647	96.3155384	92.68292362	89.21156751	85.89348036
240301A00025	3/1/2024	4.45	3/1/2027	109.71483	107.311606	104.97376	102.6991544	100.4857351	98.33152653	96.23462815	94.19321124	92.20551567
240301A00031	3/1/2024	5.1	3/3/2025	101.51292	101.1706344	100.8306611	100.4929762	100.1575565	99.82437929	99.49342211	99.16466278	98.83807942
240305A00008	3/5/2024	4.84	9/5/2025	103.69696	102.8343825	101.9862036	101.1520654	100.3316208	99.52453408	98.73048037	97.94914532	97.18022459
240305A00010	3/5/2024	4.66	3/5/2026	105.70188	104.3349446	102.9923125	101.6733858	100.3775889	99.10436474	97.85317343	96.62349204	95.41481378
240305A00011	3/5/2024	4.55	9/4/2026	107.77178	105.8864095	104.0435744	102.2420642	100.4807126	98.75839369	97.07402015	95.42654167	93.81494355
240305A00035	3/5/2024	5.11	2/28/2025	101.52443	101.17715	100.8321571	100.4894305	100.1489479	99.81068743	99.47462748	99.14074665	98.80902387
240306A00006	3/6/2024	4.65	9/5/2025	103.603	102.7399249	101.8912693	101.0566779	100.2358027	99.42830703	98.63386522	97.85216207	97.08289248
240306A00010	3/6/2024	4.22	3/6/2029	117.10598	112.5293248	108.1618156	103.9927882	100.0121811	96.21049347	92.57875186	89.10847766	85.79165761
240306A00014	3/6/2024	5.09	3/6/2025	101.54777	101.1971397	100.8489391	100.503143	100.1597266	99.81866522	99.47993464	99.14351095	98.80937054
240306A00015	3/6/2024	4.93	3/6/2025	101.51988	101.1689907	100.8205417	100.4745028	100.130849	99.78955555	99.45059811	99.11395264	98.77959544
240306A00025	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240306A00026	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240306A00027	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240306A00028	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240306A00029	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240306A00030	3/19/2024	5.07	3/19/2025	101.70583	101.3189554	100.9350413	100.5540513	100.1759521	99.80071061	99.42829446	99.05867167	98.69181074
240307A00022	3/7/2024	4.09	3/7/2029	116.92206	112.3357892	107.9595538	103.7826306	99.79489729	95.98679697	92.34930378	88.87389067	85.55249935
240308A00005	3/8/2024	4.03	3/8/2029	116.66884	112.0853261	107.7119097	103.5378554	99.55303087	95.74787049	92.11334029	88.64090595	85.32250261
240308A00008	3/8/2024	4.99	4/1/2025	101.83714	101.4140257	100.9944301	100.5783077	100.1656152	99.75631052	99.35035201	98.94769875	98.5483105
240308A00009	3/8/2024	4.74	9/8/2025	103.64891	102.7782866	101.9223442	101.0807094	100.2530249	99.43894536	98.63813677	97.85027591	97.07505001
240308A00011	3/8/2024	4.54	3/9/2026	105.5845	104.2076468	102.8554389	101.5272713	100.2225563	98.94072546	97.68122789	96.44353018	95.22711547
240308A00018	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00019	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00020	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00021	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00022	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00023	3/8/2024	5.06	3/10/2025	101.58796	101.2262112	100.8670484	100.5104471	100.15638	99.80482001	99.45574035	99.10911475	98.76491727
240308A00027	3/8/2024	4.23	3/8/2027	109.46944	107.0461538	104.6893623	102.3968742	100.1665833	97.99646483	95.88457151	93.82903029	91.82803899
240308A00031	3/8/2024	4.46	9/16/2026	107.75195	105.8332261	103.9584805	102.1264467	100.3359003	98.58565978	96.87458493	95.20157502	93.56556723
240311A00006	3/11/2024	4.6	3/11/2026	105.68953	104.3065387	102.9483895	101.6144682	100.3041808	99.01695223	97.75222587	96.50946245	95.28813959
240311A00009	3/11/2024	4.38	3/11/2027	109.66224	107.2325022	104.8695471	102.5711738	100.335263	98.15977738	96.0427577	93.98231963	91.9766503
240311A00010	3/11/2024	5.07	3/11/2025	101.60427	101.2397186	100.8778005	100.5184836	100.16174	99.80754188	99.45586193	99.10667323	98.75994925

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240311A00011	3/11/2024	4.89	7/11/2025	103.03092	102.3255703	101.6299135	100.9437492	100.2668835	99.59912799	98.94029919	98.29021857	97.64871231
240311A00012	3/11/2024	4.8	9/11/2025	103.73881	102.8594954	101.9951462	101.1453804	100.3098303	99.48814066	98.67996802	97.88498014	97.1028556
240311A00014	3/11/2024	5.07	3/11/2025	101.60427	101.2397186	100.8778005	100.5184836	100.16174	99.80754188	99.45586193	99.10667323	98.75994925
240312A00009	3/12/2024	4.68	3/12/2026	105.81106	104.4245004	103.0628895	101.7256088	100.4120609	99.12166738	97.85386827	96.60812125	95.38390098
240312A00013	3/12/2024	4.68	3/12/2026	105.81106	104.4245004	103.0628895	101.7256088	100.4120609	99.12166738	97.85386827	96.60812125	95.38390098
240312A00015	3/12/2024	4.13	3/12/2029	117.14824	112.5432849	108.1497611	103.9568439	99.95431798	96.1325407	92.48240647	88.99531431	85.66313737
240312A00019	3/12/2024	4.87	9/12/2025	103.81277	102.9303434	102.0629837	101.2103019	100.3719272	99.54750064	98.73667571	97.93911705	97.15450033
240312A00020	3/12/2024	4.82	11/3/2025	104.42205	103.3931652	102.3846377	101.3958668	100.4262753	99.47530803	98.54243137	97.62713176	96.72891496
240312A00028	3/12/2024	4.87	9/12/2025	103.81277	102.9303434	102.0629837	101.2103019	100.3719272	99.54750064	98.73667571	97.93911705	97.15450033
240313A00007	3/13/2024	4.88	9/12/2025	103.82152	102.9390555	102.0716547	101.2189324	100.3805175	99.55605129	98.74518716	97.94758976	97.16293473
240313A00023	3/13/2024	4.68	3/13/2026	105.82278	104.4334439	103.0691473	101.7292703	100.4132123	99.12039187	97.85024614	96.60223001	95.37581545
240314A00008	3/14/2024	4.55	3/10/2027	110.05506	107.6232925	105.2582741	102.9578001	100.7197548	98.54210423	96.42289258	94.3602385	92.35233194
240314A00009	3/14/2024	4.75	3/10/2026	105.8835	104.5018104	103.144893	101.812139	100.5029568	99.21677379	97.95303553	96.71120497	95.4907618
240314A00012	3/14/2024	4.62	3/13/2026	105.85221	104.460879	103.0946459	101.7528921	100.4350149	99.14043091	97.86857555	96.61890191	95.39088032
240314A00013	3/14/2024	4.62	3/13/2026	105.85221	104.460879	103.0946459	101.7528921	100.4350149	99.14043091	97.86857555	96.61890191	95.39088032
240314A00026	3/14/2024	5.25	1/14/2025	100.98986	100.7736274	100.5583104	100.3438983	100.1303853	99.91776566	99.70603368	99.49518377	99.28521032
240314A00027	3/14/2024	5.15	3/14/2025	101.67209	101.2991102	100.9288804	100.5613722	100.1965555	99.83440065	99.47487849	99.11796021	98.76361745
240315A00015	3/15/2024	4.8	3/16/2026	106.02431	104.6254284	103.2518852	101.9030507	100.5783143	99.27708487	97.99879022	96.74287637	95.5088068
240318A00014	3/18/2024	4.67	3/18/2026	105.98076	104.5749866	103.1947921	101.8395358	100.5085988	99.20138206	97.91730605	96.65580961	95.41634939
240318A00015	3/18/2024	4.47	2/20/2029	118.03845	113.4825525	109.1328791	104.9789786	101.0109815	97.21956848	93.59593714	90.1317701	86.81920585
240318A00020	3/18/2024	4.48	3/19/2029	116.54928	112.3729963	108.3845912	104.574443	100.9334817	97.45315015	94.12537177	90.94252131	87.89739694
240319A00003	3/19/2024	4.65	3/19/2026	105.96477	104.5564106	103.1737211	101.8160569	100.4827959	99.17333632	97.88709556	96.62350975	95.3820329
240319A00004	3/19/2024	4.47	3/19/2027	110.16759	107.7058587	105.3123923	102.9849131	100.7212362	98.51926202	96.37697236	94.29242689	92.26375951
240319A00007	3/19/2024	5.16	3/19/2025	101.74053	101.353576	100.9695817	100.588512	100.2103335	99.83501317	99.4625186	99.09281781	98.72587932
240319A00011	3/19/2024	5.12	5/1/2025	102.27774	101.7706266	101.2685453	100.7714233	100.2791873	99.79176568	99.30908787	98.83108486	98.35768895
240319A00012	3/19/2024	4.77	4/14/2026	106.33707	104.8564285	103.403993	101.9790288	100.5808229	99.2086869	97.8619553	96.53998495	95.24215395
240319A00014	3/19/2024	4.44	3/19/2029	118.20822	113.5718163	109.1485545	104.9274974	100.8983275	97.05130674	93.37724079	89.86744614	86.51371905
240319A00021	3/19/2024	4.83	9/19/2025	103.93906	103.0357135	102.1481317	101.2759045	100.4186352	99.57594066	98.74745075	97.93280775	97.13166591
240320A00010	3/20/2024	4.77	3/20/2036	144.19503	131.4447376	120.0177034	109.7667165	100.5617643	92.28794091	84.84361725	78.13884188	72.09394138
240320A00015	3/20/2024	5.35	12/11/2024	100.56932	100.4514634	100.3338889	100.2165961	100.0995843	99.98285212	99.8663987	99.75022297	99.63432387
240321A00006	3/21/2024	4.88	9/22/2025	103.95053	103.0398345	102.14516	101.2660854	100.4022045	99.55312522	98.71846876	97.89786917	97.09097283
240321A00007	3/21/2024	4.7	3/23/2026	105.9681	104.5507404	103.159362	101.7933088	100.4519476	99.13466637	97.84087251	96.56999265	95.3214716
240321A00019	3/21/2024	4.88	9/22/2025	103.95053	103.0398345	102.14516	101.2660854	100.4022045	99.55312522	98.71846876	97.89786917	97.09097283



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240321A00025	3/21/2024	5.06	4/17/2025	102.06979	101.601946	101.1384052	100.6791107	100.2240044	99.77302885	99.3261279	98.8832463	98.44432982
240321A00026	3/21/2024	5.03	5/19/2025	102.45893	101.9016543	101.3504635	100.8052576	100.2659394	99.73241359	99.20458688	98.68236809	98.16566795
240322A00007	3/22/2024	4.67	3/23/2026	105.92593	104.5088794	103.1178059	101.7520523	100.4109858	99.09399429	97.80048541	96.52988588	95.28164065
240322A00008	3/22/2024	4.65	4/22/2026	106.25835	104.7560275	103.2827405	101.8377162	100.4202111	99.02950737	97.66491181	96.32575451	95.01138809
240322A00012	3/22/2024	4.92	3/21/2025	101.74521	101.3376753	100.933315	100.532091	100.133967	99.73890682	99.34687525	98.95783742	98.57175902
240322A00013	3/22/2024	4.18	3/22/2029	117.47109	112.8315053	108.4060641	104.1837411	100.154138	96.30744202	92.6343905	89.12623665	85.77471847
240322A00014	3/22/2024	4.51	5/22/2026	106.53531	104.9466791	103.3898509	101.8639397	100.3680924	98.90148719	97.46333169	96.05286194	94.66934096
240322A00015	3/22/2024	4.65	11/21/2025	104.54263	103.4623919	102.4045685	101.3684676	100.353424	99.3587992	98.38398057	97.42837963	96.49143105
240322A00018	3/22/2024	4.34	3/22/2027	109.88908	107.4225636	105.0246718	102.69311	100.4256751	98.22025038	96.07480134	93.98737226	91.95608248
240322A00020	3/22/2024	4.92	3/21/2025	101.74521	101.3376753	100.933315	100.532091	100.133967	99.73890682	99.34687525	98.95783742	98.57175902
240322A00021	3/22/2024	4.93	3/21/2025	101.7492	101.3416319	100.9372327	100.5359701	100.1378077	99.74270947	99.35064014	98.96156483	98.57544924
240322A00022	3/22/2024	5.08	3/17/2025	101.72599	101.3299791	100.9369633	100.5469093	100.1597835	99.77555289	99.39418505	99.01564793	98.63990998
240322A00029	3/22/2024	4.36	3/22/2027	109.93732	107.4702136	105.0717444	102.7396176	100.4716297	98.26566363	96.11968461	94.03173654	91.99993846
240322A00032	3/22/2024	4.67	3/23/2026	105.92593	104.5088794	103.1178059	101.7520523	100.4109858	99.09399429	97.80048541	96.52988588	95.28164065
240325A00023	3/25/2024	4.71	9/25/2025	103.90762	102.9878235	102.0843691	101.1968215	100.3247625	99.46778869	98.62551045	97.79755153	96.98354842
240325A00024	3/25/2024	4.71	9/25/2025	103.90762	102.9878235	102.0843691	101.1968215	100.3247625	99.46778869	98.62551045	97.79755153	96.98354842
240325A00027	4/1/2024	4.91	10/1/2025	104.09425	103.157978	102.2386127	101.3356946	100.4487845	99.57745898	98.72130925	97.87994079	97.05297266
240325A00028	4/1/2024	4.91	10/1/2025	104.09425	103.157978	102.2386127	101.3356946	100.4487845	99.57745898	98.72130925	97.87994079	97.05297266
240325A00040	3/25/2024	4.46	4/30/2027	110.43076	107.8529702	105.3497903	102.91862	100.556969	98.26244834	96.03276657	93.86572443	91.75921085
240325A00060	3/25/2024	4.57	3/25/2026	105.92298	104.4987155	103.1006696	101.7281815	100.3806098	99.05733419	97.75775469	96.48129054	95.22737958
240326A00013	3/26/2024	4.91	9/26/2025	104.02955	103.107411	102.20168	101.3119235	100.437721	99.5786664	98.73436793	97.9044471	97.08853829
240326A00027	3/26/2024	4.95	3/26/2025	101.77847	101.3717002	100.9681896	100.5679009	100.1707956	99.77683568	99.38598385	98.99820331	98.61345788
240326A00042	3/26/2024	4.71	3/26/2026	106.01756	104.5917391	103.1921846	101.8182303	100.4692335	99.14457255	97.84364586	96.56587139	95.31068567
240327A00008	3/27/2024	4.72	10/1/2025	103.99264	103.0558334	102.1359618	101.2325643	100.3452009	99.47344685	98.61689245	97.77514214	96.94781404
240327A00014	3/27/2024	4.88	9/24/2025	103.97633	103.059981	102.1598461	101.2754974	100.4065214	99.55251907	98.71310521	97.88790761	97.0765667
240327A00016	3/27/2024	4.56	3/27/2026	105.93209	104.5023479	103.0990162	101.7214237	100.3689224	99.04088597	97.73670818	96.45580258	95.19760155
240327A00025	3/27/2024	4.35	3/26/2027	109.95861	107.4803255	105.071266	102.7291085	100.4516221	98.23666359	96.08217372	93.98617302	91.94675838
240327A00028	3/27/2024	4.4	3/27/2028	114.03266	110.4792179	107.0578383	103.7629074	100.5890794	97.53126373	94.58461066	91.74449914	89.00652453
240328A00016	3/29/2024	4.98	3/28/2025	101.85607	101.4281885	101.0037953	100.582844	100.1652929	99.75110105	99.34022793	98.9326338	98.52827952
240328A00017	3/28/2024	4.6	3/30/2026	106.02397	104.5854374	103.1736116	101.7878075	100.4273672	99.09165439	97.7800538	96.49197004	95.22682693
240328A00018	3/28/2024	4.39	3/29/2027	110.08992	107.6018254	105.18343	102.8323876	100.5464459	98.32344136	96.16129514	94.05800942	92.01166364
240328A00022	3/28/2024	4.3	3/28/2028	113.99058	110.4278716	106.9978384	103.6948314	100.5134705	97.44863287	94.49543853	91.64923805	88.90560015
240328A00023	3/28/2024	4.22	3/28/2029	117.71053	113.0491151	108.6035108	104.3625732	100.3157915	96.45324898	92.76558641	89.24396762	85.88004772

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240328A00024	3/28/2024	5.14	3/24/2025	101.83785	101.4214479	101.0083518	100.5985188	100.1919104	99.78848859	99.38821594	98.99105565	98.59697148
240328A00026	3/28/2024	4.6	3/27/2026	105.98879	104.5586305	103.1548855	101.7768866	100.4239859	99.09555659	97.79099244	96.50970681	95.2511319
240328A00027	3/28/2024	4.39	3/29/2027	110.08992	107.6018254	105.18343	102.8323876	100.5464459	98.32344136	96.16129514	94.05800942	92.01166364
240328A00031	3/28/2024	4.92	9/24/2025	104.01267	103.0961442	102.1958328	101.3113097	100.4421614	99.58798889	98.74840689	97.92304316	97.11153807
240328A00039	3/28/2024	5.14	3/28/2025	101.84879	101.4366858	101.0279205	100.6224548	100.2202488	99.82126324	99.42545951	99.03279965	98.64324625
240328A00052	3/28/2024	4.34	3/28/2029	117.86152	113.2079091	108.7694132	104.5349346	100.4940092	96.63676328	92.95387788	89.43655409	86.07648169
240328A00054	3/28/2024	5.2	2/27/2025	101.5377	101.1941411	100.8528255	100.5137355	100.1768496	99.84214616	99.50960423	99.17920292	98.85092165
240328A00055	3/28/2024	5.2	2/27/2025	101.5377	101.1941411	100.8528255	100.5137355	100.1768496	99.84214616	99.50960423	99.17920292	98.85092165
240328A00057	3/28/2024	5.2	2/27/2025	101.5377	101.1941411	100.8528255	100.5137355	100.1768496	99.84214616	99.50960423	99.17920292	98.85092165
240328A00061	3/28/2024	4.35	3/28/2029	117.90586	113.2512822	108.8118442	104.5764552	100.5346495	96.67655242	92.99284368	89.47472324	86.11387979
240328A00063	3/28/2024	4.47	3/28/2030	122.2217	116.4357407	110.9681123	105.7995559	100.9120755	96.2888491	91.91414693	87.77325455	83.85240249
240328A00064	3/28/2024	4.48	3/28/2031	125.59172	118.6837846	112.2157134	106.1569999	100.4794111	95.15680462	90.16496311	85.48144355	81.08543851
240328A00065	7/16/2024	4.46	7/16/2032	129.66787	121.2954917	113.5481614	106.3753961	99.7310646	93.57298616	87.86257155	82.56449896	77.6464207
240401A00003	4/1/2024	4.81	10/1/2025	104.07618	103.1389586	102.2186726	101.314866	100.4270986	99.55494561	98.69799712	97.85585754	97.02814486
240401A00004	4/1/2024	4.81	10/1/2025	104.07618	103.1389586	102.2186726	101.314866	100.4270986	99.55494561	98.69799712	97.85585754	97.02814486
240401A00006	4/1/2024	4.32	4/2/2029	117.10117	112.6973523	108.4963236	104.4875349	100.6610438	97.00747745	93.51799694	90.18426366	86.99840839
240401A00009	4/1/2024	4.79	4/1/2026	106.20333	104.759868	103.3432592	101.9528223	100.5878937	99.24783212	97.93201706	96.63984837	95.37074528
240401A00016	4/1/2024	4.47	4/1/2027	110.31973	107.8205377	105.3915554	103.0304118	100.7348314	98.50262875	96.33170441	94.2200409	92.16569901
240401A00023	4/1/2024	5.17	4/1/2025	101.91302	101.4897191	101.0699342	100.6536234	100.2407438	99.83125308	99.42510964	99.02227257	98.62270159
240401A00024	4/1/2024	4.97	10/1/2025	104.14992	103.2133728	102.2937317	101.3905412	100.5033622	99.63177096	98.77535883	97.93373117	97.10650696
240401A00027	4/1/2024	4.82	4/1/2026	106.24625	104.8024633	103.3855391	101.9947922	100.629559	99.28919769	97.97308792	96.68062935	95.41124106
240402A00015	4/2/2024	4.61	11/15/2027	113.16787	110.0003561	106.9400904	103.9828278	101.1245142	98.36128016	95.68943055	93.10543591	90.6059239
240402A00044	4/2/2024	4.83	4/2/2026	106.27321	104.8264417	103.4066407	102.013118	100.6452063	99.30226036	97.98365613	96.68879003	95.41707799
240403A00002	4/3/2024	5.01	10/3/2025	104.21311	103.270743	102.3454868	101.4368794	100.5444736	99.66783819	98.80655706	97.96022869	97.12846548
240403A00006	4/3/2024	4.71	4/3/2026	106.23052	104.7793949	103.3554006	101.9578385	100.5860353	99.23934044	97.91712467	96.61877941	95.34371585
240403A00008	4/3/2024	4.67	4/2/2027	110.61673	108.1152519	105.6840204	103.3206634	101.0229043	98.78855675	96.61552016	94.50177615	92.44538459
240403A00010	4/3/2024	4.54	4/5/2027	110.539	108.0258408	105.5835757	103.209799	100.9022033	98.658573	96.47678004	94.35477984	92.29060754
240403A00013	4/3/2024	4.58	4/17/2028	114.89852	111.2711411	107.7805856	104.4209476	101.1866058	98.07221099	95.07267194	92.18314121	89.39900215
240403A00018	4/3/2024	4.67	4/5/2027	110.65344	108.1430898	105.7034579	103.3321533	101.0268765	98.78541942	96.60566114	94.48556384	92.42316908
240403A00022	4/3/2024	4.53	4/3/2029	118.77069	114.0802935	109.6072128	105.3402065	101.2686746	97.38261732	93.67259816	90.12970908	86.74553829
240404A00004	4/4/2024	4.45	4/4/2029	118.42555	113.73994	109.2716427	105.0094124	100.9426407	97.06132057	93.35600882	89.81779167	86.43825221
240404A00012	4/4/2024	4.46	4/4/2029	118.47009	113.7834965	109.3142492	105.0511009	100.9834419	97.10126381	93.39512222	89.85610222	86.47578581
240404A00014	4/4/2024	4.78	4/6/2026	106.25161	104.7938816	103.3635243	101.9598352	100.5821319	99.22975512	97.90206733	96.59845199	95.31831267

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240404A00015	4/4/2024	4.6	4/5/2027	110.48207	107.973841	105.5362892	103.1670194	100.8637338	98.62422544	96.44637474	94.32814505	92.2675791
240404A00019	6/3/2024	4.55	6/1/2027	111.03328	108.3599971	105.7658546	103.2480196	100.803782	98.4305465	96.12582665	93.88723962	91.71250108
240404A00020	6/3/2024	4.55	6/1/2027	111.03328	108.3599971	105.7658546	103.2480196	100.803782	98.4305465	96.12582665	93.88723962	91.71250108
240404A00021	4/4/2024	4.57	4/1/2031	123.11937	117.0379848	111.3305309	105.9714092	100.9369189	96.20510872	91.75563822	87.56965115	83.62965921
240404A00022	4/4/2024	4.78	4/6/2026	106.25161	104.7938816	103.3635243	101.9598352	100.5821319	99.22975512	97.90206733	96.59845199	95.31831267
240404A00023	4/4/2024	4.51	4/24/2028	114.73613	111.0917711	107.585642	104.2117372	100.9643479	97.83804345	94.82765662	91.92826887	89.13519721
240404A00062	4/4/2024	5.13	4/4/2025	101.93484	101.5032123	101.0752499	100.6509035	100.2301272	99.81287601	99.39910576	98.98877292	98.5818347
240405A00004	4/5/2024	4.99	10/6/2025	104.23339	103.2826581	102.3493462	101.4329769	100.5330908	99.64924528	98.78101344	97.92798336	97.08975753
240405A00005	4/5/2024	4.81	4/6/2026	106.29494	104.8368849	103.4062066	102.0022017	100.6241882	99.27150626	97.9435184	96.63960791	95.35917824
240405A00006	4/5/2024	4.63	4/5/2027	110.55552	108.0463762	105.6079329	103.2377911	100.9336521	98.69330858	96.51464034	94.39561025	92.33426052
240405A00017	4/5/2024	4.5	4/5/2027	110.44097	107.9290317	105.4879576	103.1153461	100.8088905	98.56637601	96.38567526	94.26474436	92.20161913
240408A00015	4/8/2024	4.54	4/5/2029	118.83762	114.1400727	109.6604079	105.3873466	101.3102493	97.41907964	93.70436736	90.15717316	86.76905631
240408A00018	4/8/2024	4.87	10/6/2025	104.19625	103.2446371	102.3104813	101.3933	100.4926329	99.60803586	98.73908094	97.88535508	97.04645972
240408A00020	4/8/2024	4.86	4/8/2026	106.39263	104.9282717	103.4915074	102.0816262	100.697938	99.33977562	98.00649438	96.69747074	95.41210157
240408A00025	4/8/2024	5.03	10/8/2025	104.29724	103.340677	102.4017394	101.479944	100.5748235	99.68592761	98.81282186	97.95508738	97.11231995
240408A00026	4/8/2024	4.86	4/8/2026	106.39263	104.9282717	103.4915074	102.0816262	100.697938	99.33977562	98.00649438	96.69747074	95.41210157
240409A00021	4/9/2024	4.83	4/9/2026	106.36179	104.8948797	103.455664	102.0434263	100.6574728	99.29713293	97.96175858	96.65072302	95.3634201
240409A00035	4/9/2024	4.66	4/9/2027	110.6778	108.1559106	105.7053723	103.3237606	101.0087456	98.7580904	96.56964674	94.44135102	92.37122038
240410A00005	4/10/2024	5.14	4/10/2025	102.0524	101.6035086	101.15858	100.7175648	100.2804113	99.8470689	99.41748759	98.99161839	98.56941317
240410A00007	4/10/2024	4.64	4/10/2028	115.31858	111.6963176	108.2100678	104.8539783	101.6224857	98.51029462	95.51236398	92.62389285	89.84030787
240410A00008	4/10/2024	4.56	4/10/2029	119.37032	114.6354408	110.1209853	105.8154985	101.7081779	97.788836	94.04786197	90.4761862	87.06524687
240412A00005	4/12/2024	5.46	11/12/2024	100.20318	100.1688732	100.134601	100.1003681	100.0661745	100.03202	99.99790463	99.96382831	99.92979095
240412A00006	4/12/2024	5.44	12/12/2024	100.58818	100.4677642	100.3476445	100.2278197	100.1082884	99.98904973	99.87010245	99.75144549	99.63307772
240412A00010	4/12/2024	5.26	4/11/2025	102.12079	101.652033	101.1874535	100.7269962	100.2706066	99.81823058	99.36981545	98.92530923	98.48466088
240412A00012	4/12/2024	5.46	11/12/2024	100.20318	100.1688732	100.134601	100.1003681	100.0661745	100.03202	99.99790463	99.96382831	99.92979095
240412A00017	4/12/2024	4.84	4/10/2026	106.50774	105.0350021	103.5901503	102.1724573	100.7812226	99.41576953	98.07544393	96.75961342	95.4676664
240415A00018	4/15/2024	5.41	1/15/2025	101.0308	100.81239	100.5949153	100.3783662	100.1627369	99.94802144	99.7342139	99.52130849	99.30929942
240415A00019	4/15/2024	5.41	1/15/2025	101.0308	100.81239	100.5949153	100.3783662	100.1627369	99.94802144	99.7342139	99.52130849	99.30929942
240415A00020	4/15/2024	5.41	1/15/2025	101.0308	100.81239	100.5949153	100.3783662	100.1627369	99.94802144	99.7342139	99.52130849	99.30929942
240415A00060	4/15/2024	5.06	4/15/2026	106.77562	105.2888309	103.8304129	102.3996225	100.9957413	99.6180758	98.26595563	96.9387329	95.6357812
240416A00017	4/16/2024	5.17	10/16/2025	104.53768	103.5578121	102.59641	101.652955	100.7269466	99.81790311	98.92536025	98.04887062	97.1880029
240416A00018	4/16/2024	5.04	4/16/2026	106.75947	105.2700124	103.8090292	102.3757714	100.9695171	99.58956885	98.23525301	96.90591836	95.60093534
240416A00019	4/16/2024	4.91	4/16/2027	111.3829	108.8324843	106.3547167	103.947108	101.6072692	99.33290726	97.12182075	94.97189575	92.88110168

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240416A00020	4/16/2024	4.85	4/17/2028	115.84038	112.196573	108.6900574	105.3149028	102.0654717	98.9364	95.92258173	93.01915556	90.22149151
240416A00030	4/16/2024	4.78	4/16/2027	111.2678	108.7145166	106.2340542	103.8239173	101.4817083	99.20512632	96.99196262	94.84009619	92.74748975
240416A00050	4/16/2024	5.14	4/16/2025	102.13126	101.66557	101.2041474	100.7469323	100.2938674	99.84489588	99.3999624	98.9590124	98.52199235
240417A00015	4/17/2024	4.76	4/16/2027	111.21818	108.6655194	106.1856669	103.7761265	101.4345011	99.15849021	96.94588541	94.79456606	92.70249524
240417A00016	4/17/2024	4.63	4/17/2029	119.76583	115.0021091	110.4609709	106.1307948	102.0006321	98.0601606	94.2996446	90.70989897	87.28225491
240417A00017	4/17/2024	4.63	4/17/2029	119.76583	115.0021091	110.4609709	106.1307948	102.0006321	98.0601606	94.2996446	90.70989897	87.28225491
240418A00001	4/18/2024	5.15	4/18/2025	102.16223	101.6909244	101.2239871	100.7613568	100.302974	99.84878	99.39871748	98.95273003	98.51076226
240418A00004	4/18/2024	4.87	4/18/2031	128.30121	121.2483332	114.6468257	108.4651785	102.6742428	97.24704378	92.15860829	87.38580599	82.90720447
240418A00012	4/18/2024	5.19	10/17/2025	104.5706	103.5877988	102.6235697	101.6773892	100.7487527	99.83717445	98.94218642	98.06333759	97.2001932
240418A00018	4/18/2024	5.31	4/18/2025	102.19965	101.7286881	101.2620829	100.799776	100.3417079	99.88782018	99.43805578	98.99235846	98.55067304
240418A00019	4/18/2024	5.05	4/17/2026	106.78745	105.2949849	103.8311034	102.3950511	100.986102	99.60355511	98.24673301	96.91498109	95.60766649
240419A00026	4/23/2024	5.07	4/1/2026	106.60389	105.1574242	103.7378721	102.3445421	100.9767692	99.63391075	98.31534508	97.02047079	95.74870592
240422A00038	4/22/2024	5.03	10/22/2025	104.56002	103.5623262	102.5837682	101.6237945	100.6818784	99.75751266	98.8502091	97.95949743	97.08492455
240422A00040	4/22/2024	4.85	10/22/2026	109.12489	107.0904945	105.1049654	103.1668238	101.2746447	99.42705582	97.6227353	95.8604095	94.13885086
240422A00041	4/22/2024	4.92	4/22/2026	106.78188	105.2735054	103.7943	102.3434924	100.9203349	99.52410549	98.15410698	96.80966578	95.49013093
240423A00024	4/23/2024	5.33	3/31/2025	102.00335	101.567229	101.1347192	100.7057762	100.2803559	99.85841534	99.43991192	99.02480389	98.61305014
240423A00025	4/23/2024	5.28	6/30/2025	103.15593	102.4803784	101.8136996	101.1557155	100.5062566	99.86515797	99.23225877	98.60740229	97.9904358
240423A00027	4/23/2024	4.93	3/31/2027	111.2252	108.7218306	106.288555	103.923018	101.622953	99.38618343	97.21061769	95.09424582	93.03513564
240423A00028	4/23/2024	5.08	3/31/2026	106.60485	105.1611616	103.7442853	102.3535334	100.9882448	99.64778029	98.33152158	97.03887048	95.76924811
240423A00032	4/23/2024	5.06	4/20/2026	106.84205	105.3407934	103.8684346	102.4242134	101.0073921	99.61725832	98.25312391	96.91432396	95.6002158
240423A00033	4/23/2024	5.15	4/23/2025	102.22807	101.7427446	101.2620434	100.7859002	100.3142502	99.84702975	99.38417665	98.92562964	98.47132869
240423A00034	4/23/2024	4.92	4/19/2027	111.44646	108.8867808	106.4002418	103.9843294	101.6366307	99.3548301	97.13670516	94.98012182	92.88303052
240424A00008	4/24/2024	5.29	4/24/2025	102.27025	101.7825025	101.2994176	100.8209318	100.3469795	99.87749633	99.41241925	98.95168626	98.49523659
240424A00013	4/24/2024	5.13	4/24/2025	102.23153	101.7434256	101.2599974	100.7811777	100.3069005	99.83710144	99.37171703	98.91068514	98.45394477
240424A00014	4/24/2024	5.4	1/24/2025	101.1459	100.901765	100.6587833	100.4169478	100.1762501	99.93668238	99.69823654	99.4609047	99.22467904
240424A00015	4/24/2024	5.48	11/25/2024	100.36746	100.2959973	100.2246384	100.1533871	100.082243	100.0112059	99.94027564	99.86945193	99.79873454
240424A00030	4/24/2024	4.89	4/21/2027	111.39754	108.8328329	106.3415699	103.9212214	101.5693591	99.28365342	97.06186822	94.90185673	92.8015573
240425A00010	4/25/2024	4.83	4/26/2027	111.52108	108.9362995	106.4260051	103.9876165	101.6186559	99.31674665	97.07960812	94.90505151	92.79097535
240425A00019	4/25/2024	5.34	4/21/2025	102.28871	101.7910911	101.2981734	100.8098922	100.3261823	99.84697963	99.3722214	98.90184592	98.43579266
240425A00021	4/25/2024	4.83	4/26/2027	111.52108	108.9362995	106.4260051	103.9876165	101.6186559	99.31674665	97.07960812	94.90505151	92.79097535
240425A00028	4/25/2024	4.9	4/25/2028	116.11684	112.4454295	108.9131449	105.5139399	102.2420691	99.09206722	96.05873398	93.13711961	90.32251144
240425A00029	4/25/2024	4.85	4/25/2029	120.46035	115.6696816	111.1034014	106.749759	102.5976844	98.63674307	94.85709552	91.2494606	87.8050807
240425A00030	4/25/2024	4.85	4/25/2029	120.46035	115.6696816	111.1034014	106.749759	102.5976844	98.63674307	94.85709552	91.2494606	87.8050807

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240425A00032	4/25/2024	4.92	4/25/2030	124.96584	119.0263682	113.4169454	108.1173629	103.1087593	98.37352004	93.89518811	89.65838231	85.64872142
240425A00033	4/25/2024	4.96	4/27/2026	106.90769	105.3843342	103.8906948	102.4259779	100.9894156	99.58026667	98.19781556	96.84137107	95.51026544
240425A00034	4/25/2024	4.96	4/27/2026	106.90769	105.3843342	103.8906948	102.4259779	100.9894156	99.58026667	98.19781556	96.84137107	95.51026544
240426A00011	4/26/2024	5.17	10/27/2025	104.68591	103.6748653	102.6834431	101.7110789	100.7572259	99.82135816	98.90296944	98.00157241	97.11669774
240426A00012	4/26/2024	4.92	4/27/2026	106.84756	105.3246765	103.8314999	102.3672378	100.9311225	99.52241312	98.14039412	96.78437456	95.45368687
240426A00024	4/26/2024	4.79	4/26/2029	119.01441	114.5071104	110.209096	106.1093779	102.1976088	98.46404001	94.89948383	91.49527779	88.24325178
240426A00025	4/26/2024	5.32	4/21/2025	102.27884	101.7813877	101.288633	100.8005132	100.3169632	99.83791902	99.36331775	98.89309779	98.42719862
240426A00026	4/26/2024	5.05	4/30/2026	106.95981	105.4296842	103.9295362	102.4585554	101.0159643	99.60101248	98.21297556	96.85115398	95.51487197
240426A00027	4/26/2024	5.32	4/25/2025	102.33223	101.823013	101.3187166	100.8192671	100.3245949	99.83463155	99.34931022	98.86856515	98.39233186
240426A00029	4/26/2024	5.19	10/27/2025	104.70591	103.6947534	102.7032253	101.7307566	100.7768005	99.84083093	98.92234178	98.02084564	97.13587314
240426A00044	4/26/2024	4.78	4/26/2027	111.39565	108.8124604	106.3037241	103.8668592	101.4993892	99.1989381	96.96322647	94.79006636	92.6773572
240429A00006	4/29/2024	4.86	10/29/2026	109.2365	107.1818517	105.1769957	103.2204096	101.3106288	99.44624342	97.62589593	95.84827873	94.11213198
240429A00007	4/29/2024	5.04	10/29/2025	104.66326	103.6456407	102.6478957	101.6694483	100.7097417	99.76824018	98.84442857	97.93781079	97.04790921
240429A00008	4/29/2024	4.93	4/29/2026	106.88892	105.3601084	103.8612235	102.3914629	100.9500509	99.53623865	98.14930339	96.78854707	95.45329538
240429A00024	4/29/2024	5.5	11/26/2024	100.38066	100.3063747	100.2322016	100.1581424	100.0841966	100.0103642	99.93664476	99.86303813	99.78954401
240429A00028	4/29/2024	5.32	4/29/2025	102.35186	101.8500394	101.3531434	100.8611019	100.3738441	99.8913003	99.41340239	98.94008345	98.47127787
240429A00045	4/29/2024	5.1	8/5/2025	103.56667	102.7893888	102.0238199	101.2696976	100.5267662	99.79477731	99.07349012	98.36267072	97.662092
240429A00047	4/29/2024	5.46	1/6/2025	100.91775	100.725682	100.5343311	100.3436958	100.1537719	99.96455544	99.77604245	99.58822897	99.40111104
240429A00052	4/29/2024	4.91	5/3/2027	111.60166	109.0007147	106.4751072	104.022213	101.639512	99.32458757	97.07512169	94.88889001	92.76375756
240430A00016	4/30/2024	5.08	10/30/2025	104.71694	103.6962733	102.695588	101.7143053	100.7518639	99.80772401	98.88136644	97.97229139	97.08001763
240430A00017	4/30/2024	5.08	10/30/2025	104.71694	103.6962733	102.695588	101.7143053	100.7518639	99.80772401	98.88136644	97.97229139	97.08001763
240430A00029	4/30/2024	5.51	11/1/2024	100.05906	100.0562136	100.053367	100.0505228	100.047681	100.0448416	100.0420046	100.03917	100.0363377
240430A00030	4/30/2024	5.44	2/3/2025	101.28831	101.0153583	100.7438365	100.4737347	100.205042	99.93774716	99.67183945	99.40730804	99.14414226
240430A00031	4/30/2024	5.36	5/1/2025	102.39886	101.8913893	101.388956	100.8914845	100.3989016	99.91113542	99.4281155	98.94977278	98.47603952
240430A00034	4/30/2024	4.69	4/30/2029	120.1901	115.3795895	110.7954421	106.4257581	102.2593246	98.28557488	94.49454766	90.87684916	87.42361772
240430A00035	4/30/2024	4.94	4/30/2027	111.63897	109.0457832	106.5275481	104.0816551	101.7056035	99.39699481	97.15352819	94.97299545	92.85327687
240430A00038	4/30/2024	5.37	3/28/2025	101.97856	101.5514987	101.1279087	100.7077496	100.2909799	99.87755861	99.46744562	99.06060135	98.65698684
240430A00075	4/30/2024	5.2	4/30/2025	102.34534	101.840297	101.3402452	100.8451093	100.3548173	99.86929822	99.38848261	98.91230233	98.44069056
240501A00017	5/1/2024	5.13	5/1/2026	107.09432	105.5604202	104.0565955	102.5820335	101.1359527	99.71759927	98.32624527	96.96118791	95.6217483
240501A00054	5/6/2024	4.79	5/4/2029	120.29593	115.4834656	110.8975469	106.5262512	102.3583505	98.38326406	94.59101821	90.97220778	87.51796086
240502A00013	5/2/2024	4.68	5/2/2028	115.73021	112.0382227	108.4870708	105.0706013	101.7829624	98.61858976	95.57219048	92.63872844	89.81341023
240502A00014	5/2/2024	5.5	11/4/2024	100.09705	100.0856554	100.0742701	100.0628953	100.0515311	100.0401774	100.0288342	100.0175015	100.0061792
240502A00017	5/2/2024	4.81	5/2/2028	115.88823	112.2010731	108.6543632	105.2419695	101.9580633	98.79710164	95.75381186	92.82317663	90.00042026



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240502A00030	5/2/2024	4.75	5/2/2029	120.09129	115.2890047	110.7126251	106.350276	102.190769	98.22356079	94.43871174	90.82684861	87.37912903
240502A00048	5/2/2024	4.89	5/3/2027	111.55116	108.9508529	106.4258767	103.9735997	101.5915025	99.27716868	97.02828069	94.84261453	92.71803561
240503A00007	5/3/2024	5.22	4/28/2025	102.32063	101.8035933	101.2916256	100.7846556	100.2826106	99.78541909	99.2930111	98.80531789	98.32227208
240503A00009	5/3/2024	4.61	5/3/2029	119.46821	114.6771322	110.1117156	105.7600882	101.6110646	97.65410465	93.87927229	90.27719799	86.8390433
240503A00016	5/3/2024	4.72	5/3/2028	115.58272	111.8981804	108.3541261	104.9444159	101.6632153	98.50497618	95.464421	92.53652818	89.71651804
240503A00020	5/3/2024	5.46	11/4/2024	100.09603	100.0846381	100.0732568	100.061886	100.0505258	100.039176	100.0278368	100.016508	100.0051897
240503A00021	5/3/2024	5.3	3/3/2025	101.61695	101.2631942	100.9118341	100.5628455	100.2162046	99.87188774	99.52987157	99.19013309	98.8526496
240503A00022	5/3/2024	5.22	5/5/2025	102.38068	101.8622459	101.3490772	100.8410929	100.3382145	99.84036517	99.3474696	98.85945395	98.37624589
240503A00023	5/3/2024	5.13	8/4/2025	103.51446	102.7409733	101.979091	101.2285485	100.4890934	99.76048098	99.04247368	98.33484074	97.63735813
240503A00024	5/3/2024	5.04	11/3/2025	104.64626	103.6161475	102.6064118	101.6164493	100.6456823	99.6935555	98.75953476	97.84310621	96.94377528
240503A00035	5/3/2024	4.92	5/1/2026	106.77652	105.2451285	103.7437643	102.2716202	100.827916	99.41189878	98.02284177	96.66004318	95.32282513
240503A00044	5/3/2024	5.46	11/1/2024	100.05776	100.0549135	100.0520689	100.0492267	100.0463868	100.0435494	100.0407143	100.0378817	100.0350514
240503A00046	5/3/2024	5.46	12/2/2024	100.45384	100.3624351	100.2711934	100.1801164	100.0892035	99.99845442	99.90786864	99.81744572	99.72718522
240503A00047	5/3/2024	5.41	1/6/2025	100.90717	100.7152781	100.5241025	100.3336418	100.1438919	99.95484875	99.76650846	99.57886703	99.39192053
240503A00048	5/3/2024	5.35	2/3/2025	101.26329	100.9906343	100.7194104	100.4496049	100.181207	99.91420541	99.64858943	99.38434822	99.12147115
240503A00050	5/3/2024	5.3	3/3/2025	101.61695	101.2631942	100.9118341	100.5628455	100.2162046	99.87188774	99.52987157	99.19013309	98.8526496
240503A00051	5/3/2024	5.26	4/1/2025	101.98474	101.5465804	101.1120763	100.681181	100.2538497	99.83003835	99.40970372	98.9928032	98.5792949
240503A00052	5/3/2024	5.22	5/1/2025	102.35982	101.8339747	101.3133706	100.7979305	100.2875778	99.78223762	99.28183652	98.78630243	98.29556472
240506A00011	5/6/2024	4.46	5/4/2029	119.19162	114.3923744	109.8196784	105.4615892	101.3068584	97.34488722	93.56568574	89.9598345	86.51844885
240506A00012	5/6/2024	5.04	11/6/2025	104.6841	103.6455478	102.6277	101.6299439	100.6516878	99.69236288	98.75142241	97.82834047	96.92261108
240506A00016	5/6/2024	5.23	5/6/2025	102.39898	101.8777382	101.3618178	100.8511382	100.3456198	99.84518425	99.34975516	98.85925746	98.37361761
240506A00017	5/6/2024	5.48	11/6/2024	100.12129	100.1042085	100.0871395	100.0700873	100.0530519	100.0360331	100.019031	100.0020456	99.98507674
240506A00020	5/6/2024	4.73	5/6/2027	111.18382	108.5799825	106.051775	103.5965473	101.2117632	98.89499092	96.64389814	94.45624716	92.32989046
240506A00031	5/6/2024	5.08	5/6/2025	102.36279	101.8411577	101.3248554	100.8138046	100.3079251	99.80713857	99.31136816	98.8205386	98.33457611
240506A00040	5/6/2024	5.21	5/6/2025	102.38861	101.8673992	101.3515095	100.8408605	100.3353723	99.83496693	99.33956772	98.84909967	98.36348928
240507A00017	5/7/2024	4.51	5/8/2028	115.20021	111.5009522	107.9433916	104.5213111	101.2288016	98.06024504	95.01029909	92.07388137	89.24615555
240507A00019	5/7/2024	4.51	5/8/2028	115.20021	111.5009522	107.9433916	104.5213111	101.2288016	98.06024504	95.01029909	92.07388137	89.24615555
240507A00020	5/7/2024	4.6	5/7/2027	111.07808	108.4683887	105.9346501	103.4741971	101.084478	98.76304612	96.50755535	94.31575483	92.18548464
240507A00021	5/7/2024	4.77	5/7/2026	106.75057	105.2010164	103.6820515	102.1928404	100.7325804	99.30049713	97.8958437	96.51789902	95.16596691
240507A00034	5/7/2024	4.9	5/7/2026	106.82445	105.2763881	103.7588488	102.2710031	100.8120507	99.38121946	97.97776458	96.60096696	95.25013233
240507A00042	5/7/2024	4.57	5/7/2029	119.33128	114.5321651	109.9595569	105.6015168	101.446797	97.48479954	93.70553539	90.09958613	86.65806827
240507A00043	5/7/2024	4.9	5/7/2026	106.82445	105.2763881	103.7588488	102.2710031	100.8120507	99.38121946	97.97776458	96.60096696	95.25013233
240507A00048	5/7/2024	4.73	5/7/2027	111.19606	108.5893223	106.0583535	103.6004956	101.2132057	98.89404569	96.64067726	94.45085714	92.32243251

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240507A00049	5/7/2024	4.64	5/8/2028	115.35976	111.6653367	108.1122207	104.694216	101.4054368	98.2402869	95.19344414	92.25984526	89.4346718
240507A00051	5/7/2024	4.57	5/7/2029	119.33128	114.5321651	109.9595569	105.6015168	101.446797	97.48479954	93.70553539	90.09958613	86.65806827
240508A00005	5/8/2024	4.59	5/8/2031	127.25221	120.1545588	113.5159462	107.304019	101.4888741	96.04285935	90.94039327	86.15779929	81.67315449
240508A00006	5/8/2024	4.92	5/8/2026	106.86814	105.3170083	103.7964924	102.3057545	100.8439905	99.41042529	98.00431064	96.62492452	95.27156977
240508A00010	5/8/2024	5.48	12/9/2024	100.54733	100.4359403	100.3248052	100.2139234	100.1032941	99.99291622	99.882789	99.7729115	99.66328285
240509A00005	5/9/2024	4.62	5/9/2029	119.58098	114.7706715	110.1875492	105.8196223	101.6556013	97.68484979	93.89734306	90.28362949	86.83479476
240509A00007	5/9/2024	5.22	5/8/2025	102.45	101.9040556	101.3637719	100.8290613	100.299838	99.77601767	99.25751791	98.7442579	98.23615846
240509A00008	5/9/2024	4.6	5/10/2027	111.11443	108.4960283	105.9539916	103.4856356	101.0883885	98.75978466	96.49745985	94.29914636	92.16266829
240509A00009	5/9/2024	5.33	3/13/2025	101.75973	101.3771028	100.9972901	100.6202577	100.2459749	99.8744117	99.5055384	99.13932574	98.77574492
240509A00010	5/9/2024	4.6	5/10/2027	111.11443	108.4960283	105.9539916	103.4856356	101.0883885	98.75978466	96.49745985	94.29914636	92.16266829
240509A00011	5/9/2024	5.37	2/12/2025	101.38703	101.0885297	100.7917461	100.4966686	100.2032825	99.91157311	99.62152607	99.33312712	99.04636218
240509A00022	5/9/2024	4.66	5/9/2028	115.44266	111.7440027	108.1868817	104.7650876	101.4727218	98.30417661	95.25411871	92.31747456	89.48941602
240509A00023	5/9/2024	4.6	5/9/2029	119.48998	114.681726	110.1005839	105.7345691	101.5723954	97.60342894	93.8176477	90.20560251	86.75838143
240509A00039	5/9/2024	4.87	11/10/2025	104.64179	103.5912639	102.5619305	101.5531506	100.5643117	99.59482562	98.64412709	97.71167268	96.79693976
240510A00015	5/10/2024	4.91	11/10/2025	104.68335	103.63259	102.6030288	101.5940242	100.6049637	99.63525912	98.68434503	97.75167797	96.83673523
240510A00016	5/10/2024	4.91	11/10/2025	104.68335	103.63259	102.6030288	101.5940242	100.6049637	99.63525912	98.68434503	97.75167797	96.83673523
240510A00020	5/10/2024	4.63	5/10/2027	111.19085	108.5714626	106.0284629	103.5591655	101.1609976	98.83149318	96.56828734	94.36911176	92.23179001
240513A00020	5/13/2024	5.23	5/13/2025	102.49098	101.9501626	101.4150731	100.8856234	100.3617243	99.84328867	99.33023107	98.82246787	98.31991715
240513A00022	5/13/2024	4.92	5/13/2026	106.93357	105.3683285	103.834119	102.3300904	100.8554217	99.40932122	97.99102561	96.59979811	95.23492767
240513A00024	5/13/2024	4.74	5/13/2027	111.29502	108.6705446	106.1226776	103.6487182	101.2460829	98.91229535	96.64498122	94.44186319	92.30075638
240513A00025	5/13/2024	4.67	5/12/2028	115.51416	111.805941	108.2398503	104.8096485	101.5094022	98.33347105	95.27649165	92.33336212	89.4992279
240513A00026	5/13/2024	4.6	5/14/2029	119.54589	114.7224611	110.1273863	105.7485863	101.5746888	97.59498067	93.7993665	90.17832947	86.72289506
240513A00032	5/13/2024	5.5	11/13/2024	100.21011	100.1730995	100.1361299	100.0992038	100.0623211	100.0254816	99.98868529	99.95193212	99.91522198
240513A00041	5/13/2024	5.06	11/13/2025	104.79333	103.7349332	102.6980263	101.6819612	100.6861129	99.70988096	98.75268853	97.81398128	96.89322624
240513A00045	5/17/2024	4.73	6/17/2027	111.70195	108.9745871	106.328939	103.7620386	101.2710502	98.85326011	96.50607057	94.22699389	92.01364693
240514A00049	5/14/2024	4.84	2/5/2026	105.67379	104.3786018	103.1133689	101.8770543	100.6686658	99.48725616	98.33192111	97.20179652	96.09605632
240514A00065	5/14/2024	4.59	5/14/2029	119.50025	114.6778576	110.0837786	105.7059402	101.5329716	97.55416095	93.75941425	90.13921593	86.68459263
240515A00002	5/15/2024	4.4	11/13/2028	116.97703	112.7144446	108.6349673	104.729722	100.9903097	97.40878249	93.97761726	90.6896902	87.53825353
240515A00003	5/15/2024	4.36	5/15/2029	118.85571	114.0333904	109.4399995	105.0634013	100.8921725	96.91555332	93.1234054	89.50617258	86.05484426
240515A00014	5/15/2024	4.81	11/17/2025	104.6649	103.5949824	102.5470361	101.5203922	100.5144046	99.52845322	98.56194251	97.61430041	96.68497712
240515A00020	5/15/2024	5.45	1/15/2025	101.03281	100.8152923	100.5987023	100.3830341	100.168282	99.95443999	99.74150222	99.52946291	99.31831629
240515A00023	5/15/2024	4.51	5/15/2029	119.14611	114.3289388	109.7400492	105.367356	101.1994828	97.22571314	93.43594884	89.82067078	86.37090266
240515A00024	5/15/2024	4.59	5/15/2028	115.26496	111.5528709	107.9833522	104.5501289	101.2472385	98.06901371	95.01006585	92.06526966	89.22974878

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240515A00026	5/15/2024	4.64	5/17/2027	111.08768	108.4549156	105.8992374	103.4179237	101.0083661	98.66806487	96.39462353	94.18574406	92.03922207
240515A00027	5/15/2024	4.5	5/19/2027	110.96627	108.3250402	105.7613582	103.2724778	100.8557679	98.50870736	96.22887973	94.01396801	91.8617499
240515A00034	5/15/2024	5.2	5/15/2025	102.50096	101.9545943	101.4140739	100.8793082	100.3502054	99.82667561	99.30863087	98.79598502	98.28865371
240515A00035	5/15/2024	4.57	5/15/2028	115.19365	111.4828352	107.9145499	104.4825251	101.1807998	98.00370758	94.94586112	92.00213622	89.1676576
240515A00036	5/17/2024	4.63	6/17/2027	111.43701	108.7131983	106.0710139	103.5074983	101.019818	98.60526178	96.26123417	93.98524964	91.77492713
240515A00037	5/15/2024	4.5	5/15/2029	119.10044	114.2843092	109.6964165	105.324686	101.1577427	97.18487157	93.3959757	89.78153725	86.33258111
240515A00038	5/15/2024	4.5	5/15/2029	119.10044	114.2843092	109.6964165	105.324686	101.1577427	97.18487157	93.3959757	89.78153725	86.33258111
240515A00039	5/15/2024	4.57	5/15/2030	123.23085	117.2825473	111.6682849	106.3674215	101.3607018	96.63015441	92.15900023	87.93156671	83.93320932
240515A00041	7/1/2024	4.69	7/1/2027	111.76875	109.0009284	106.3169517	103.7137387	101.1883457	98.73795741	96.35988082	94.05153851	91.81046298
240515A00043	5/15/2024	5.2	5/15/2025	102.50096	101.9545943	101.4140739	100.8793082	100.3502054	99.82667561	99.30863087	98.79598502	98.28865371
240515A00044	5/15/2024	4.97	11/14/2025	104.71154	103.6508521	102.611759	101.593608	100.5957693	99.61763805	98.65863331	97.7181968	96.79579179
240515A00048	7/1/2024	4.55	7/2/2029	119.86314	114.8937353	110.1652158	105.6645334	101.379424	97.29835367	93.41047011	89.70555877	86.17400158
240515A00050	7/1/2024	4.55	7/2/2029	119.86314	114.8937353	110.1652158	105.6645334	101.379424	97.29835367	93.41047011	89.70555877	86.17400158
240515A00052	7/1/2024	4.79	7/3/2034	139.02402	128.262578	118.4735416	109.5623988	101.4443434	94.04322779	87.29063565	81.12505795	75.49116117
240515A00064	5/15/2024	5.45	1/15/2025	101.03281	100.8152923	100.5987023	100.3830341	100.168282	99.95443999	99.74150222	99.52946291	99.31831629
240515A00066	6/28/2024	4.8	6/29/2026	107.36259	105.6634071	103.9995891	102.370092	100.7739166	99.21010258	97.67772657	96.17590039	94.70376931
240515A00067	6/28/2024	4.8	6/29/2026	107.36259	105.6634071	103.9995891	102.370092	100.7739166	99.21010258	97.67772657	96.17590039	94.70376931
240515A00068	6/28/2024	4.8	6/29/2026	107.36259	105.6634071	103.9995891	102.370092	100.7739166	99.21010258	97.67772657	96.17590039	94.70376931
240515A00089	5/15/2024	4.5	5/15/2029	119.10044	114.2843092	109.6964165	105.324686	101.1577427	97.18487157	93.3959757	89.78153725	86.33258111
240516A00024	5/16/2024	5.29	4/16/2025	102.19404	101.7127518	101.2358833	100.7633752	100.2951678	99.83120238	99.37142143	98.91576844	98.46418791
240516A00025	5/17/2024	4.55	10/16/2028	116.91534	112.7419754	108.7447154	104.9151735	101.245407	97.72789198	94.3554988	91.12146944	88.01939604
240516A00026	5/16/2024	5.21	5/20/2025	102.57182	102.0114277	101.4571807	100.9089796	100.3667257	99.83032217	99.29967457	98.77469032	98.25527885
240516A00030	5/16/2024	5	11/17/2025	104.78053	103.7112021	102.6638118	101.6376895	100.6321909	99.64669717	98.68061442	97.73337191	96.80442113
240516A00038	5/16/2024	4.9	5/18/2026	106.9678	105.3886786	103.8410124	102.3239294	100.8365915	99.37819097	97.94794873	96.54511347	95.16896021
240517A00011	5/17/2024	4.61	5/17/2028	115.35995	111.6406332	108.0643158	104.624693	101.3157783	98.13188152	95.06759315	92.11776814	89.27751173
240517A00017	5/17/2024	4.4	5/17/2029	119.06046	114.2279295	109.6249669	105.239396	101.0597528	97.07524001	93.27568434	89.65149729	86.19363824
240517A00026	5/17/2024	4.68	5/17/2027	111.19024	108.5561434	105.9991651	103.5165804	101.10578	98.76426313	96.48963267	94.27958978	92.13192928
240517A00033	5/17/2024	5.3	4/17/2025	102.21183	101.7276373	101.2479202	100.7726151	100.3016611	99.83499852	99.37256892	98.91431476	98.4601796
240517A00034	5/17/2024	5.02	11/17/2025	104.80169	103.7322388	102.6847306	101.6584922	100.652879	99.66727234	98.7010782	97.75372583	96.82466667
240517A00038	5/17/2024	5.43	1/22/2025	101.12142	100.8838139	100.6473089	100.4118961	100.1775681	99.94431721	99.71213601	99.48101711	99.25095317
240520A00010	5/20/2024	5.35	3/20/2025	101.85884	101.4563819	101.0570316	100.6607539	100.2675132	99.87727464	99.49000386	99.10566702	98.72423076
240520A00011	5/20/2024	5.25	5/20/2025	102.59411	102.0336471	101.4793298	100.931059	100.3887359	99.85226372	99.32154798	98.79649611	98.27701754
240520A00012	5/20/2024	5.18	7/21/2025	103.3664	102.63215	101.9083771	101.1948545	100.4913651	99.7976978	99.11364756	98.4390149	97.77360586

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
240520A00016	5/20/2024	4.57	8/16/2027	112.21682	109.3114417	106.49751	103.7716027	101.1304465	98.57091123	96.09000256	93.68485518	91.35272627
240520A00017	5/20/2024	4.94	4/15/2026	106.59932	105.113881	103.6567902	102.2273042	100.8247053	99.44830061	98.09742024	96.77141689	95.46966468
240520A00018	5/20/2024	4.84	10/15/2026	108.85072	106.8412096	104.8794962	102.9641451	101.0937759	99.26705915	97.48271332	95.73950333	94.03623825
240520A00020	5/20/2024	4.79	1/15/2027	109.92411	107.6493634	105.4336548	103.2750191	101.1715731	99.12151212	97.12310567	95.17469371	93.27468319
240520A00025	5/20/2024	4.75	4/15/2027	110.97388	108.4314126	105.961324	103.5611352	101.2284679	98.96103958	96.7566588	94.61322106	92.52870476
240520A00027	5/20/2024	4.7	10/15/2027	113.06948	109.989839	107.0120447	104.1321637	101.3464362	98.65126853	96.04322474	93.51901876	91.07550694
240520A00031	5/20/2024	4.96	9/19/2025	104.05542	103.1515084	102.2633688	101.3905907	100.532777	99.68954468	98.86052332	98.04535512	97.2436942
240520A00040	5/20/2024	4.89	11/20/2025	104.78685	103.7079705	102.6514153	101.6164946	100.6025475	99.60893995	98.63506302	97.68033202	96.74418518
240520A00041	5/20/2024	4.83	11/25/2026	109.36432	107.2354219	105.159288	103.1342608	101.1587436	99.23120153	97.35015877	95.51419582	93.72194683
240521A00005	5/21/2024	5.04	11/21/2025	104.87329	103.7924206	102.733953	101.6971903	100.6814684	99.68615016	98.71062384	97.75430207	96.81662052
240521A00006	5/21/2024	4.9	5/21/2026	107.00689	105.4192876	103.8633953	102.3383321	100.8432493	99.37732929	97.93978363	96.52985206	95.14680115
240521A00033	5/21/2024	5.48	11/21/2024	100.30975	100.2499815	100.1902984	100.1306986	100.071182	100.0117484	99.95239754	99.89312933	99.83394356
240522A00012	5/22/2024	4.67	5/22/2028	115.63421	111.8961569	108.3021808	104.8459189	101.5213233	98.32264676	95.2444261	92.28146623	89.42882549
240522A00027	5/22/2024	4.62	5/21/2027	111.29927	108.6482008	106.0750499	103.5770556	101.1515702	98.79605726	96.50808554	94.28532419	92.12553778
240522A00028	5/22/2024	5.48	12/23/2024	100.72949	100.5782378	100.4274411	100.2770976	100.1272052	99.97776195	99.82876574	99.68021456	99.53210639
240522A00037	5/22/2024	5.11	5/22/2025	102.58681	102.0202938	101.4600553	100.9059929	100.3580049	99.81599128	99.27985459	98.74949933	98.22483211
240522A00039	5/22/2024	4.76	5/24/2027	111.48159	108.8244661	106.2455053	103.7419289	101.3110779	98.95040489	96.6574684	94.42992798	92.26553915
240523A00021	5/23/2024	4.96	11/24/2025	104.91199	103.8213644	102.7535261	101.7077646	100.6833992	99.67977668	98.69627049	97.73227897	96.7872243
240523A00025	5/23/2024	4.96	11/18/2025	104.83627	103.7626215	102.7110762	101.6809542	100.6716043	99.68240145	98.71274553	97.76206001	96.82979088
240523A00027	5/23/2024	4.49	5/24/2029	119.55058	114.6873652	110.0557978	105.643556	101.4390401	97.43132748	93.61012876	89.96574791	86.48904464
240523A00033	5/24/2024	4.8	12/24/2027	114.23432	110.9413325	107.7626422	104.6935967	101.7297624	98.86691421	96.10102387	93.42824937	90.84492513
240523A00035	5/24/2024	4.78	11/24/2027	113.80204	110.5991043	107.5051883	104.5159437	101.6272264	98.83508178	96.1357351	93.5255819	91.00117935
240523A00037	5/24/2024	4.78	1/24/2028	114.5489	111.1654934	107.9020402	104.7535386	101.7152352	98.78260565	95.95134196	93.21734072	90.5766917
240523A00043	5/24/2024	4.81	2/24/2028	115.04392	111.5622368	108.2067963	104.9723346	101.8538367	98.84652342	95.945839	93.14743905	90.44717972
240524A00001	5/24/2024	4.98	11/24/2025	104.93354	103.8427932	102.7748327	101.7289508	100.7044666	99.70072705	98.71710545	97.75300013	96.80783323
240524A00011	5/24/2024	5.02	5/19/2026	107.16839	105.5849168	104.0330134	102.511801	101.0204375	99.55811107	98.12403887	96.71746601	95.33766406
240524A00020	5/24/2024	5.31	5/19/2025	102.61419	102.05642	101.5047418	100.9590524	100.4192544	99.88525241	99.35695318	98.83426547	98.31709993
240524A00027	5/24/2024	4.82	6/30/2027	112.10586	109.3362006	106.6503389	104.0452006	101.5178467	99.06546615	96.68536993	94.37498426	92.131845
970806A00017	8/1/1997	7.02	7/23/2026	105.99169	105.0493683	104.1242534	103.2158628	102.3237341	101.4474224	100.5864993	99.74055242	98.90918441
970806A00018	8/1/1997	6.7	10/23/2026	106.51445	105.4414768	104.3893444	103.3574627	102.3452626	101.3521962	100.3777359	99.42137337	98.48261877
970806A00059	8/1/1997	8.25	9/22/2025	103.5627	103.0823658	102.6080899	102.1397478	101.6772158	101.2203739	100.7691057	100.3232977	99.88284023
ADV1006436	5/28/2024	5.272	6/30/2025	103.15056	102.4750328	101.808374	101.1504096	100.5009703	99.85989104	99.22701105	98.60217361	97.98522599
ADV1006437	5/28/2024	4.799	6/28/2027	112.02413	109.2612461	106.5818312	103.9828284	101.4613146	99.01449429	96.63969264	94.3343494	92.09601314

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1006438	5/28/2024	4.644	5/29/2029	119.91616	115.0425217	110.4011428	105.9796585	101.766429	97.7504942	93.92153071	90.26981088	86.78616529
ADV1006450	5/28/2024	5.047	5/28/2026	107.33151	105.7221658	104.1451737	102.5996227	101.0846385	99.5993793	98.14303376	96.71481977	95.31398318
ADV1006451	5/28/2024	5.204	11/28/2025	105.14001	104.0383163	102.9598379	101.9038437	100.8696347	99.85654044	98.86391777	97.89114951	96.93764305
ADV1006454	5/28/2024	5.333	5/28/2025	102.74775	102.1646719	101.5882312	101.0183121	100.4548041	99.89759931	99.34659235	98.80168005	98.26276156
ADV1006456	5/28/2024	5.456	11/26/2024	100.37019	100.2962396	100.2224008	100.1486754	100.075063	100.0015633	99.92817621	99.85490137	99.78173854
ADV1006457	5/28/2024	5.436	1/28/2025	101.20056	100.9460283	100.692751	100.4407166	100.1899159	99.94033998	99.69197982	99.44482656	99.19887144
ADV1006464	5/28/2024	5.174	5/28/2025	102.70206	102.1185593	101.5417092	100.9713931	100.4075004	99.84992274	99.29855439	98.75329188	98.21403403
ADV1006474	5/28/2024	5.044	5/28/2026	107.32674	105.7174416	104.1404881	102.594975	101.080028	99.59480543	98.13849584	96.71031722	95.30951539
ADV1006478	5/28/2024	4.775	5/30/2028	116.10892	112.340149	108.7172244	105.2336738	101.8833494	98.66041106	95.55930845	92.57476516	89.7017634
ADV1006508	5/29/2024	4.746	9/12/2028	117.28632	113.2010133	109.2842406	105.5281566	101.9253195	98.46867054	95.15151264	91.96748996	88.91056866
ADV1006512	5/29/2024	4.762	7/17/2028	116.65569	112.7415201	108.9832551	105.3737658	101.90629	98.57441585	95.37206087	92.29345305	89.33311278
ADV1006529	5/29/2024	5.175	5/29/2025	102.71584	102.1295286	101.5499254	100.9769163	100.410389	99.85023405	99.29634408	98.74861434	98.20694232
ADV1006531	5/29/2024	5.446	11/29/2024	100.40729	100.3247986	100.2424359	100.1602064	100.0781097	99.99614566	99.91431383	99.83261396	99.75104573
ADV1006532	5/29/2024	5.092	2/27/2026	106.20898	104.85453	103.5242521	102.2175475	100.933835	99.67255231	98.43315507	97.2151164	96.01792599
ADV1006538	5/29/2024	4.952	11/25/2026	109.61895	107.4873302	105.4085359	103.3809009	101.402827	99.47277772	97.58927603	95.75090105	93.95628562
ADV1006544	5/29/2024	5.306	5/29/2025	102.74545	102.1596158	101.5804774	101.00792	100.4418318	99.88210344	99.32862811	98.78130132	98.24002093
ADV1006550	5/29/2024	5.453	11/21/2024	100.30605	100.2463644	100.1867597	100.1272382	100.0677998	100.0084442	99.94917124	99.88998085	99.83087279
ADV1006558	5/29/2024	5.422	12/30/2024	100.81054	100.6394285	100.4688834	100.2989026	100.1294833	99.9606227	99.79231815	99.62456689	99.45736621
ADV1006559	5/29/2024	4.894	7/30/2027	112.68003	109.8202031	107.0489769	104.3630161	101.7591341	99.23428823	96.78557149	94.41020561	92.10553418
ADV1006562	5/29/2024	4.768	6/29/2029	120.85276	115.8687665	111.1257034	106.6105518	102.3110699	98.21574293	94.31373558	90.59484788	87.0494743
ADV1006570	5/29/2024	4.908	5/28/2027	111.91481	109.2409995	106.6460319	104.127096	101.6815016	99.30667204	97.00013826	94.75953367	92.5825891
ADV1006582	5/30/2024	5.037	5/29/2026	107.32904	105.7169867	104.137371	102.5892774	101.0718285	99.58417884	98.12551409	96.69504917	95.29202709
ADV1006583	5/30/2024	4.859	5/28/2027	111.78769	109.1155488	106.522211	104.004868	101.560831	99.18752436	96.88248009	94.64333257	92.4678136
ADV1006584	5/30/2024	5.447	11/27/2024	100.38172	100.3049384	100.2282794	100.1517401	100.0753203	99.99901967	99.92283795	99.84677487	99.77083016
ADV1006588	5/30/2024	5.446	11/29/2024	100.40706	100.3245731	100.2422225	100.160005	100.0779205	99.99596845	99.91414868	99.83246083	99.7509046
ADV1006589	5/30/2024	5.268	5/30/2025	102.73657	102.1480152	101.5662125	100.9910499	100.4224143	99.86019482	99.30428334	98.75457401	98.21096338
ADV1006595	5/30/2024	5.031	5/29/2026	107.31949	105.7075221	104.1279838	102.5799663	101.062592	99.57501583	98.11642326	96.68602929	95.28307698
ADV1006596	5/30/2024	4.859	5/28/2027	111.78769	109.1155488	106.522211	104.004868	101.560831	99.18752436	96.88248009	94.64333257	92.4678136
ADV1006597	5/30/2024	5.452	11/21/2024	100.30575	100.2460675	100.1864719	100.1269595	100.0675301	100.0081835	99.94891962	99.88973824	99.83063918
ADV1006598	5/30/2024	4.783	5/30/2028	116.13777	112.3684812	108.7450521	105.2610113	101.9102106	98.68680931	95.58525662	92.60027565	89.72684819
ADV1006599	5/30/2024	4.695	5/30/2029	120.16243	115.2803942	110.6310528	106.2020168	101.9816212	97.95888255	94.12345552	90.46559214	86.97610402
ADV1006606	5/30/2024	4.579	5/30/2029	117.99851	113.6053474	109.41715	105.4230388	101.6127753	97.97672271	94.50580699	91.19148032	88.02568765
ADV1006609	5/30/2024	5.445	11/29/2024	100.40697	100.3244863	100.2421361	100.159919	100.0778349	99.99588327	99.91406389	99.83237645	99.75082062



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1006611	5/30/2024	5.452	11/21/2024	100.30575	100.2460675	100.1864719	100.1269595	100.0675301	100.0081835	99.94891962	99.88973824	99.83063918
ADV1006633	5/31/2024	4.653	5/28/2027	111.47017	108.7975661	106.203899	103.6863527	101.2422306	98.86894974	96.56403542	94.32511558	92.149916
ADV1006634	5/31/2024	4.572	5/31/2028	115.69597	111.9239796	108.2983038	104.812438	101.4602032	98.23573017	95.13344151	92.14803557	89.27447107
ADV1006649	5/31/2024	5.135	5/30/2025	102.70565	102.1166102	101.5343441	100.9587313	100.3896583	99.82701381	99.27068941	98.72057889	98.17657846
ADV1006650	5/31/2024	4.854	5/29/2026	107.16811	105.5551923	103.9747646	102.4259115	100.9077534	99.4194427	97.96016305	96.52912748	95.12557719
ADV1006651	5/31/2024	5.134	5/30/2025	102.70506	102.1160271	101.5337629	100.958152	100.3890809	99.82643831	99.27011577	98.7200071	98.17600851
ADV1006652	5/31/2024	4.854	5/29/2026	107.16811	105.5551923	103.9747646	102.4259115	100.9077534	99.4194427	97.96016305	96.52912748	95.12557719
ADV1006656	5/31/2024	4.99	5/29/2026	107.25428	105.6428475	104.0638381	102.5163401	100.9994764	99.51240194	98.05430255	96.62439344	95.22191786
ADV1006657	5/31/2024	4.811	5/28/2027	111.66317	108.9926585	106.400917	103.8851344	101.4426231	99.07080828	96.7672231	94.52950291	92.35538045
ADV1006659	5/31/2024	4.732	5/31/2028	115.96602	112.1970521	108.5740493	105.0905273	101.7403297	98.51760812	95.41680469	92.43263604	89.56007793
ADV1006680	6/3/2024	4.924	6/3/2026	107.22195	105.5969627	104.0048442	102.4446633	100.9155243	99.4165645	97.94695323	96.50588992	95.09260286
ADV1006681	6/3/2024	4.731	6/3/2027	111.53517	108.8496686	106.2437563	103.7145769	101.2594011	98.8756151	96.56071508	94.31230179	92.12807537
ADV1006683	6/3/2024	4.637	6/5/2028	115.68926	111.9111221	108.2798055	104.7887706	101.4318049	98.20300743	95.09677198	92.10776996	89.23093517
ADV1006697	6/3/2024	5.459	11/4/2024	100.08835	100.0770088	100.0656796	100.0543608	100.0430526	100.0317548	100.0204674	100.0091905	99.99792401
ADV1006698	6/3/2024	5.407	1/3/2025	100.85973	100.6773004	100.4955176	100.3143802	100.1338847	99.95402762	99.77480558	99.59621523	99.4182532
ADV1006700	6/3/2024	5.362	3/3/2025	101.63201	101.2796363	100.9296529	100.5820318	100.2367492	99.89378143	99.5531054	99.21469814	98.87853703
ADV1006703	6/3/2024	5.223	6/3/2025	102.76875	102.1690656	101.5763929	100.9906136	100.4116078	99.83925823	99.27345049	98.71407274	98.16101566
ADV1006721	6/4/2024	5.207	6/4/2025	102.7723	102.1698355	101.5744546	100.9860316	100.4044451	99.82957607	99.26130854	98.69952905	98.14412678
ADV1006724	6/4/2024	4.536	6/4/2027	111.25606	108.5667362	105.9572914	103.4248588	100.9666933	98.58016638	96.26276047	94.01206326	91.8257626
ADV1006733	6/4/2024	5.194	6/4/2025	102.7645	102.1620632	101.5667085	100.9783116	100.3967508	99.82190738	99.25366522	98.6919109	98.1365336
ADV1006734	6/4/2024	4.987	12/4/2025	104.98335	103.8661142	102.7727838	101.7025919	100.654808	99.62873255	98.62369452	97.63905045	96.67418288
ADV1006742	6/4/2024	4.992	12/4/2025	104.98888	103.8716113	102.7782488	101.7080252	100.6602103	99.63410416	98.6290359	97.64436204	96.6794651
ADV1006757	6/5/2024	4.883	12/5/2025	104.96956	103.8483347	102.7511795	101.6773221	100.626025	99.59658121	98.5883132	97.60057118	96.63273172
ADV1006758	6/5/2024	5.431	12/5/2024	100.48261	100.3831168	100.2838207	100.1847253	100.0858301	99.98713441	99.88863759	99.79033902	99.69223808
ADV1006759	6/5/2024	4.502	6/5/2029	119.34441	114.4640697	109.8172825	105.3915672	101.1751774	97.15705542	93.32678827	89.67456628	86.19114488
ADV1006762	6/5/2024	5.197	6/5/2025	102.77914	102.1738863	101.5757867	100.98471	100.4005327	99.82313436	99.25239727	98.68820643	98.13044947
ADV1006779	6/5/2024	5.052	6/5/2025	102.73997	102.1342508	101.5356987	100.944183	100.35958	99.78176878	99.21063125	98.64605205	98.08791846
ADV1006780	6/5/2024	4.435	6/1/2029	118.99098	114.1301509	109.501583	105.0928803	100.8923812	96.88910623	93.07271486	89.43346452	85.96217272
ADV1006781	6/5/2024	4.998	10/31/2025	104.57142	103.5499773	102.5485759	101.5666273	100.6035679	99.65885576	98.7319693	97.82240672	96.92968485
ADV1006782	6/5/2024	5.4	12/19/2024	100.66186	100.5224255	100.383383	100.2447323	100.1064717	99.96859949	99.83111408	99.69401378	99.55729691
ADV1006791	6/6/2024	5.171	6/6/2025	102.77623	102.1682308	101.5674461	100.9737489	100.3870142	99.8071196	99.23394591	98.66737649	98.10729747
ADV1006792	6/6/2024	4.967	12/8/2025	105.00943	103.8810749	102.7770982	101.6967141	100.6391707	99.60374766	98.58975467	97.59652995	96.62343876
ADV1006793	6/6/2024	4.835	6/8/2026	107.14548	105.5071027	103.9020458	102.3293621	100.7881367	99.27748909	97.79657131	96.34456667	94.92068815

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1006802	6/6/2024	4.287	6/6/2029	118.75985	113.8780584	109.230511	104.8046597	100.5887007	96.57152358	92.74266706	89.09227705	85.61106814
ADV1006838	6/7/2024	4.941	1/7/2026	105.44015	104.2253729	103.0387448	101.8792908	100.7460831	99.63823608	98.55490343	97.49527621	96.45858076
ADV1006842	6/7/2024	5.458	12/9/2024	100.53772	100.4268381	100.3162066	100.2058273	100.0956992	99.98582156	99.87619336	99.76681377	99.65768189
ADV1006844	6/7/2024	4.772	6/7/2027	111.69199	108.9930783	106.3743849	103.8330301	101.366253	98.97141073	96.64597182	94.38751101	92.19370392
ADV1006845	6/7/2024	4.686	6/7/2028	115.89082	112.1033042	108.4631209	104.963698	101.5987944	98.36248288	95.24913239	92.25339123	89.37017154
ADV1006846	6/7/2024	4.579	6/7/2029	119.72268	114.8279422	110.1675677	105.7290245	101.5005167	97.47094128	93.62984281	89.96737232	86.47424866
ADV1006860	6/10/2024	4.544	6/10/2030	123.83489	117.7800194	112.0690533	106.6805085	101.594356	96.791918	92.25577001	87.96964975	83.91837356
ADV1006862	6/10/2024	4.698	6/12/2028	115.99502	112.1913177	108.5360184	105.0224769	101.6443886	98.39576675	95.27092508	92.26446031	89.37123645
ADV1006864	6/10/2024	4.684	6/10/2030	124.12707	118.0809696	112.3776269	106.9956607	101.9151352	97.11745816	92.58528299	88.30241887	84.25374746
ADV1006866	6/10/2024	4.751	6/10/2032	131.5614	123.218607	115.4902853	108.3274086	101.6851261	95.52238212	89.8015759	84.48825348	79.55082857
ADV1006868	6/10/2024	4.737	6/10/2031	127.94675	120.7562402	114.0349909	107.7496223	101.8693034	96.36554687	91.2120192	86.38436655	81.8600559
ADV1006872	6/10/2024	4.778	6/10/2027	111.74449	109.0363698	106.40893	103.8592645	101.3845898	98.98224136	96.64966756	94.38442409	92.18416861
ADV1006873	6/10/2024	4.612	6/4/2029	119.84031	114.9514567	110.2962997	105.8623585	101.6378887	97.61183416	93.77378267	90.113925	86.62301653
ADV1006874	6/11/2024	4.614	6/1/2029	119.8154	114.9357118	110.2889387	105.8626594	101.6451851	97.62551089	93.79327178	90.13870208	86.6525973
ADV1006899	6/11/2024	5.276	5/12/2025	102.52609	101.9706596	101.4211079	100.8773455	100.3392815	99.80682636	99.27989273	98.75839496	98.24224916
ADV1006901	6/11/2024	5.24	6/11/2025	102.88252	102.2603566	101.6457423	101.0385443	100.4386288	99.84586493	99.260125	98.6812844	98.10922144
ADV1006904	6/11/2024	5.456	11/12/2024	100.18836	100.1543554	100.1203858	100.0864552	100.0525635	100.0187107	99.98489656	99.95112115	99.91738435
ADV1006907	6/11/2024	5.438	12/11/2024	100.56078	100.4442657	100.3280356	100.2120841	100.0964103	99.98101306	99.86589133	99.75104411	99.63647036
ADV1006912	6/11/2024	4.816	6/11/2026	107.28656	105.6362763	104.0197021	102.4358701	100.88385	99.36274689	97.87169902	96.40987669	94.97648053
ADV1006931	6/12/2024	4.404	6/12/2029	118.96546	114.0737771	109.4171259	104.9828957	100.7592243	96.73494802	92.8995565	89.24315074	85.75640411
ADV1006934	6/12/2024	4.933	12/12/2025	105.01837	103.8789579	102.7644052	101.673901	100.6066715	99.56197546	98.53910319	97.5373744	96.5561369
ADV1006935	6/12/2024	4.796	6/12/2026	107.13409	105.4845491	103.8687095	102.2856012	100.7342939	99.21389211	97.72353411	96.26238994	94.82966006
ADV1006936	6/12/2024	4.561	6/14/2027	111.22167	108.5091964	105.8778422	103.3246705	100.8468726	98.44176023	96.10675968	93.83940588	91.6373371
ADV1006937	6/12/2024	4.656	6/12/2026	107.03915	105.3881398	103.770897	102.1864507	100.6338678	99.11225028	97.62073408	96.15848695	94.72470719
ADV1006940	6/12/2024	5.018	10/1/2025	104.19834	103.261573	102.3417094	101.4382988	100.5509018	99.67909496	98.82246936	97.98063038	97.15319698
ADV1006942	6/12/2024	4.955	11/28/2025	104.87289	103.7727742	102.6958515	101.6413896	100.6086898	99.59708239	98.6059248	97.63460035	96.68251694
ADV1006943	6/12/2024	5.018	10/1/2025	104.19834	103.261573	102.3417094	101.4382988	100.5509018	99.67909496	98.82246936	97.98063038	97.15319698
ADV1006944	6/12/2024	5.018	10/1/2025	104.19834	103.261573	102.3417094	101.4382988	100.5509018	99.67909496	98.82246936	97.98063038	97.15319698
ADV1006945	6/12/2024	5.018	10/1/2025	104.19834	103.261573	102.3417094	101.4382988	100.5509018	99.67909496	98.82246936	97.98063038	97.15319698
ADV1006946	6/12/2024	5.143	6/12/2025	102.83541	102.2106448	101.5934987	100.9838333	100.3815128	99.78640471	99.19837973	98.61731161	98.0430771
ADV1006947	6/12/2024	5.018	10/1/2025	104.19834	103.261573	102.3417094	101.4382988	100.5509018	99.67909496	98.82246936	97.98063038	97.15319698
ADV1006948	6/12/2024	4.955	11/28/2025	104.87289	103.7727742	102.6958515	101.6413896	100.6086898	99.59708239	98.6059248	97.63460035	96.68251694
ADV1006949	6/12/2024	4.955	11/28/2025	104.87289	103.7727742	102.6958515	101.6413896	100.6086898	99.59708239	98.6059248	97.63460035	96.68251694

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1006950	6/12/2024	4.952	11/28/2025	104.86962	103.7695263	102.6926222	101.6381787	100.605497	99.59390752	98.60276756	97.63146049	96.67939422
ADV1006953	6/12/2024	4.55	6/14/2027	111.19261	108.4805239	105.8495484	103.296747	100.8193109	98.41455231	96.07989764	93.8128821	91.6111442
ADV1006954	6/12/2024	4.466	6/12/2028	115.14986	111.3615176	107.7211345	104.2220808	100.8580675	97.62312331	94.51157611	91.51803646	88.63738159
ADV1006955	6/12/2024	4.371	6/12/2029	118.81222	113.9240596	109.2708068	104.8398565	100.6193518	96.59813383	92.76569681	89.11214618	85.62815948
ADV1006956	6/12/2024	4.382	6/12/2029	118.8633	113.9739654	109.3195798	104.8875363	100.665976	96.64373856	92.81031671	89.15581437	85.67090769
ADV1006960	6/12/2024	4.668	6/12/2026	107.05872	105.4075471	103.7901419	102.205536	100.6527962	99.13102464	97.63935702	96.17696105	94.74303497
ADV1006962	6/12/2024	4.822	6/12/2026	107.17647	105.5265702	103.9103791	102.3269256	100.7752791	99.25454401	97.76385845	96.3023923	94.86934588
ADV1006965	6/17/2024	4.601	7/1/2027	111.53183	108.7672503	106.0864408	103.4863207	100.9639485	98.51651133	96.14131816	93.83579371	91.59747246
ADV1006966	6/12/2024	4.44	6/12/2029	119.13263	114.2371052	109.5767468	105.1389384	100.9118125	96.88419987	93.04558524	89.38606479	85.89630734
ADV1006967	6/12/2024	4.643	6/14/2027	111.4383	108.7229374	106.0887591	103.5328277	101.0523323	98.64458296	96.30700397	94.03712854	91.83259323
ADV1006968	6/12/2024	5.195	6/12/2025	102.86774	102.2428586	101.6255999	101.015823	100.4133919	99.81817412	99.23004043	98.64886451	98.07452312
ADV1006980	6/13/2024	4.665	6/15/2026	107.09304	105.4331566	103.8073307	102.2145811	100.6539626	99.12456585	97.62551594	96.15597039	94.71511784
ADV1006988	6/13/2024	4.393	6/13/2029	118.92496	114.0313526	109.3729975	104.9372668	100.7122812	96.68686141	92.85048278	89.1932331	85.70577362
ADV1006989	6/13/2024	4.955	12/15/2025	105.07934	103.9313469	102.8085736	101.7101961	100.6354235	99.58349926	98.55369861	97.5453273	96.55771988
ADV1006993	6/13/2024	5.413	12/13/2024	100.58345	100.4612916	100.3394358	100.2178858	100.0966405	99.97569848	99.85505875	99.73472007	99.61468127
ADV1006998	6/13/2024	5.149	6/13/2025	102.85185	102.2242629	101.6043682	100.9920205	100.3870821	99.78941872	99.19889944	98.61539636	98.03878464
ADV1006999	6/13/2024	4.935	12/15/2025	105.05662	103.9087664	102.7861282	101.6878837	100.6132422	99.56144699	98.53177351	97.52352752	96.53604361
ADV1007000	6/13/2024	4.793	6/15/2026	107.16875	105.5105126	103.8862632	102.2950214	100.7358447	99.20782656	97.71009449	96.24180841	94.80215921
ADV1007001	6/13/2024	4.268	6/13/2029	117.51071	112.915904	108.5398523	104.3707812	100.3976246	96.6099736	92.99803409	89.55258622	86.26494747
ADV1007016	6/13/2024	4.324	6/13/2028	114.95309	111.1574778	107.5104248	104.0052638	100.635669	97.39563472	94.27945674	91.28171569	88.39726084
ADV1007017	6/13/2024	4.543	8/4/2027	111.76958	108.9087783	106.1370707	103.4511038	100.8476749	98.32372484	95.87633024	93.50269621	91.2001498
ADV1007019	6/13/2024	4.42	6/14/2027	111.06937	108.3541657	105.7202717	103.164741	100.6847553	98.27761707	95.94074407	93.67166314	91.4680049
ADV1007020	6/13/2024	4.251	2/2/2029	117.25379	112.7591375	108.4661731	104.3646811	100.445025	96.69811127	93.11535512	89.68864887	86.41033243
ADV1007052	6/14/2024	4.323	6/14/2029	118.61011	113.7208924	109.0669261	104.6355751	100.4149524	96.3938719	92.56180274	88.90882746	85.42560267
ADV1007058	6/14/2024	5.144	6/16/2025	102.88727	102.2513017	101.6232247	101.0028934	100.3901646	99.78489902	99.18696043	98.59621605	98.01253627
ADV1007059	6/14/2024	5.015	6/16/2025	102.85637	102.2198688	101.5912798	100.9704516	100.3572408	99.75150724	99.15311458	98.56192954	97.97782212
ADV1007060	6/14/2024	4.361	5/21/2029	118.53184	113.7119765	109.1213497	104.7477841	100.5798215	96.60667077	92.81816516	89.20472288	85.75731021
ADV1007061	6/14/2024	4.959	12/15/2025	105.08366	103.9356278	102.8128219	101.7144123	100.6396083	99.58765324	98.55782236	97.54942137	96.56178482
ADV1007063	6/14/2024	4.804	6/15/2026	107.18655	105.5281559	103.9037506	102.3123556	100.7530283	99.22486222	97.72698465	96.2585555	94.81876558
ADV1007066	6/14/2024	4.562	6/14/2027	111.2239	108.5113756	105.8799753	103.3267587	100.8489169	98.44376158	96.10871904	93.84132418	91.63921524
ADV1007068	6/18/2024	4.512	11/1/2027	112.7041	109.5834087	106.5674639	103.6521551	100.8335603	98.10793335	95.47169511	92.92142509	90.45385329
ADV1007070	6/14/2024	5.406	12/16/2024	100.6215	100.4908005	100.3604535	100.2304544	100.1008017	99.97149392	99.84252968	99.71390757	99.58562617
ADV1007075	6/14/2024	4.422	6/14/2027	111.07446	108.3591777	105.725209	103.1696054	100.6895484	98.28234052	95.94539942	93.67625189	91.47252852

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007076	6/14/2024	4.562	6/14/2027	111.2239	108.5113756	105.8799753	103.3267587	100.8489169	98.44376158	96.10871904	93.84132418	91.63921524
ADV1007096	6/17/2024	4.852	6/17/2026	107.29114	105.6262378	103.9955323	102.3980338	100.8327917	99.29889137	97.79545281	96.32162885	94.8766036
ADV1007098	6/17/2024	4.614	6/17/2027	111.39692	108.6736048	106.0319104	103.4688741	100.9816627	98.56756522	96.22398642	93.94844104	91.73854827
ADV1007099	6/17/2024	4.522	6/20/2028	115.4475	111.6309726	107.9641835	104.4403897	101.0531972	97.79653677	94.66464523	91.65204804	88.75354304
ADV1007100	6/17/2024	4.415	6/18/2029	119.08038	114.1689126	109.4940976	105.0432027	100.8042515	96.76597485	92.91776523	89.24963407	85.7521721
ADV1007107	6/17/2024	4.278	6/18/2029	118.84448	113.9263385	109.2455746	104.7894005	100.545788	96.50342004	92.65164494	88.98043317	85.48033759
ADV1007114	6/17/2024	4.74	6/18/2029	116.19109	112.365387	108.7098796	105.2157329	101.8746332	98.67874969	95.62070334	92.69353772	89.89069229
ADV1007138	6/18/2024	5.439	12/12/2024	100.5724	100.4531633	100.3342171	100.2155628	100.0971993	99.97912545	99.86134019	99.7438424	99.62663099
ADV1007146	6/18/2024	4.482	6/20/2028	115.30091	111.487067	107.8228799	104.3016129	100.916875	97.66259953	94.53302582	91.52268179	88.62636758
ADV1007153	6/20/2024	4.502	2/25/2028	114.02834	110.5607125	107.2190659	103.9981464	100.892947	97.89869609	95.01084438	92.22505385	89.5371865
ADV1007157	6/18/2024	4.969	12/18/2025	105.13061	103.9740559	102.8430931	101.7368743	100.6545921	99.59547407	98.55878041	97.54380278	96.54986238
ADV1007158	6/18/2024	5.434	12/18/2024	100.65056	100.5142214	100.3782573	100.2426696	100.1074568	99.97261733	99.83814955	99.7040519	99.5703228
ADV1007159	6/18/2024	5.336	3/18/2025	101.82059	101.4256327	101.0336824	100.6447067	100.2586715	99.87554355	99.49528999	99.11787845	98.74327705
ADV1007160	6/18/2024	4.638	1/19/2027	109.63608	107.3536669	105.1307362	102.9653001	100.8554532	98.79936958	96.79529911	94.84156315	92.93655116
ADV1007162	6/18/2024	5.159	6/18/2025	102.92175	102.2801281	101.6465374	101.0208264	100.4028483	99.79246015	99.18952228	98.5938986	98.00545627
ADV1007163	6/18/2024	5.032	6/18/2025	102.89189	102.2497303	101.6156183	100.9894014	100.3709324	99.76006771	99.15666746	98.56059504	97.9717172
ADV1007164	6/18/2024	5.032	6/18/2025	102.89189	102.2497303	101.6156183	100.9894014	100.3709324	99.76006771	99.15666746	98.56059504	97.9717172
ADV1007166	6/18/2024	4.965	12/18/2025	105.12603	103.969508	102.8385725	101.7323807	100.6501252	99.59103327	98.5543654	97.53941318	96.54549782
ADV1007167	6/18/2024	4.805	6/18/2026	107.22719	105.5600181	103.9271323	102.3275353	100.7602728	99.22442656	97.71911337	96.24348288	94.79671623
ADV1007168	6/18/2024	4.556	6/18/2027	111.25523	108.5309825	105.8884613	103.3246973	100.8368514	98.42220656	96.0781621	93.80222761	91.59201748
ADV1007170	6/18/2024	5.434	12/18/2024	100.65056	100.5142214	100.3782573	100.2426696	100.1074568	99.97261733	99.83814955	99.7040519	99.5703228
ADV1007171	6/18/2024	5.265	4/18/2025	102.2022	101.717409	101.2371206	100.7612746	100.2898097	99.82266534	99.35978231	98.90110242	98.44656854
ADV1007173	6/18/2024	4.389	6/20/2034	120.49235	114.8936002	109.6645077	104.776421	100.2031558	95.92076595	91.90733604	88.14279395	84.60874258
ADV1007194	6/20/2024	5.425	12/20/2024	100.67506	100.5330539	100.3914602	100.2502722	100.1094883	99.96910669	99.82912554	99.68954315	99.55035777
ADV1007195	6/20/2024	5.331	3/20/2025	101.84497	101.4443445	101.0468095	100.6523331	100.26088	99.8724153	99.48690493	99.10431515	98.72461277
ADV1007196	6/20/2024	5.165	6/20/2025	102.95107	102.3038333	101.6647612	101.0337028	100.4105078	99.79502956	99.18712498	98.58665459	97.99348232
ADV1007211	6/20/2024	4.562	9/27/2027	112.45317	109.4321469	106.5095543	103.681648	100.9448483	98.2957311	95.73102	93.24757922	90.84240669
ADV1007218	6/20/2024	4.777	8/20/2026	108.00059	106.1541882	104.3486675	102.5828373	100.8555534	99.16571335	97.51225515	95.89415496	94.31042555
ADV1007219	6/20/2024	4.682	12/21/2026	109.37951	107.1789852	105.0342823	102.943588	100.905167	98.91735371	96.97854904	95.0872169	93.24188127
ADV1007220	6/20/2024	4.59	6/21/2027	111.38129	108.6468792	105.9946806	103.4217018	100.9250793	98.50207384	96.15006348	93.86653787	91.64909261
ADV1007227	6/20/2024	4.835	6/22/2026	107.32962	105.6503671	104.0057905	102.3948833	100.8166747	99.27023123	97.75465493	96.2690816	94.81267926
ADV1007228	6/20/2024	4.588	6/21/2027	111.37597	108.6416291	105.9895005	103.4165899	100.9200341	98.49709388	96.14514728	93.86168401	91.64429973
ADV1007230	6/20/2024	4.494	6/20/2028	115.34448	111.5298232	107.8648484	104.3428167	100.9573361	97.7023392	94.57206459	91.56103939	88.66406305

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007240	6/20/2024	5.424	12/20/2024	100.67491	100.5329102	100.3913172	100.2501299	100.1093467	99.96896579	99.82898533	99.68940363	99.55021894
ADV1007258	6/21/2024	5.154	6/23/2025	102.98262	102.3270082	101.6797686	101.0407443	100.4097793	99.78672162	99.17142298	98.5637388	97.96352809
ADV1007267	6/21/2024	4.49	6/21/2028	115.34139	111.5239428	107.8563809	104.3319504	100.944247	97.68719166	94.55501217	91.54222565	88.64362223
ADV1007272	6/21/2024	5.405	12/23/2024	100.71108	100.5605487	100.4104751	100.2608525	100.1116789	99.96295223	99.81467048	99.66683163	99.51943366
ADV1007273	6/21/2024	5.309	3/21/2025	101.84943	101.4460202	101.0457504	100.648581	100.2544759	99.86339975	99.47531758	99.09019506	98.70799834
ADV1007274	6/21/2024	5.144	6/23/2025	102.97611	102.320515	101.673299	101.0342981	100.4033564	99.78032168	99.16504584	98.55738426	97.95719594
ADV1007299	6/24/2024	5.141	6/24/2025	102.98613	102.3277504	101.6778125	101.0361574	100.4026271	99.77706778	99.15932935	98.54926559	97.94673383
ADV1007300	6/24/2024	5.141	6/24/2025	102.98613	102.3277504	101.6778125	101.0361574	100.4026271	99.77706778	99.15932935	98.54926559	97.94673383
ADV1007302	6/24/2024	5.252	4/24/2025	102.27389	101.7720839	101.2750961	100.7828597	100.2953067	99.81237058	99.33398597	98.86008875	98.39061598
ADV1007304	6/24/2024	5.409	12/24/2024	100.72406	100.5707381	100.4178893	100.2655067	100.1135883	99.96213188	99.81113531	99.66059648	99.51051331
ADV1007305	6/24/2024	5.316	3/24/2025	101.89155	101.4796033	101.0709188	100.6654626	100.2631965	99.86408295	99.46808495	99.07516606	98.68529045
ADV1007306	6/24/2024	5.14	6/24/2025	102.98548	102.3270985	101.677163	101.0355103	100.4019823	99.77642528	99.15868916	98.54862767	97.94609817
ADV1007310	6/24/2024	5.207	5/27/2025	102.66261	102.0825647	101.5090914	100.9420782	100.381416	99.82699848	99.27872159	98.73648355	98.20018483
ADV1007317	6/25/2024	4.989	12/26/2025	105.24968	104.0704611	102.9178144	101.7908436	100.6886959	99.610556	98.55564407	97.5232137	96.51255018
ADV1007325	6/25/2024	5.406	12/18/2024	100.64506	100.5088758	100.3730695	100.2376394	100.1025836	99.96790073	99.83358912	99.69964721	99.56607343
ADV1007326	6/25/2024	5.271	4/15/2025	102.16398	101.6883701	101.2171003	100.7501144	100.2873541	99.82876222	99.37428249	98.92385969	98.47743959
ADV1007329	6/25/2024	4.377	6/25/2029	118.97708	114.0480189	109.3573203	104.8921116	100.6402902	96.59047093	92.73193956	89.05460931	85.54898052
ADV1007332	6/25/2024	5.15	6/25/2025	103.00496	102.3437441	101.6910436	101.0466941	100.4105356	99.78241246	99.16217286	98.54966883	97.94475604
ADV1007335	6/25/2024	5.154	6/25/2025	103.00759	102.3463626	101.6936526	101.0492935	100.4131256	99.7849931	99.16474424	98.55223103	97.94730914
ADV1007336	6/25/2024	5.155	6/25/2025	103.00824	102.3470172	101.6943048	101.0499434	100.4137731	99.78563826	99.16538709	98.55287158	97.94794742
ADV1007342	6/25/2024	4.995	12/26/2025	105.25667	104.0774121	102.9247228	101.79771	100.695521	99.6173405	98.56238852	97.52991869	96.5192163
ADV1007349	6/25/2024	5.141	6/25/2025	102.99905	102.3378523	101.6851735	101.0408454	100.4047081	99.77660601	99.15638726	98.54390387	97.93901156
ADV1007351	6/25/2024	4.983	12/26/2025	105.24268	104.06351	102.910906	101.7839771	100.6818707	99.6037715	98.54889963	97.51650871	96.50588406
ADV1007352	6/25/2024	4.827	6/25/2026	107.35532	105.6674184	104.014488	102.3955066	100.8094914	99.25549721	97.73261537	96.23997139	94.77672357
ADV1007353	6/25/2024	4.575	6/25/2027	111.38856	108.6427425	105.9797393	103.3965264	100.8902101	98.45802211	96.09731363	93.80554888	91.5802996
ADV1007354	6/25/2024	5.395	12/26/2024	100.74769	100.5886964	100.4302044	100.2722098	100.1147103	99.9577037	99.80118754	99.64515956	99.48961747
ADV1007355	6/25/2024	5.31	3/25/2025	101.90223	101.4874597	101.0759957	100.6678027	100.2628419	99.86107488	99.46246402	99.06697219	98.67456285
ADV1007356	6/25/2024	5.141	6/25/2025	102.99905	102.3378523	101.6851735	101.0408454	100.4047081	99.77660601	99.15638726	98.54390387	97.93901156
ADV1007378	6/26/2024	4.529	6/26/2030	123.40499	117.333169	111.608191	106.208263	101.1130802	96.30371616	91.76252147	87.47303079	83.41987703
ADV1007379	6/26/2024	4.573	6/26/2031	127.00639	119.8008498	113.068815	106.7763892	100.8922852	95.38760869	90.23566338	85.41177183	80.89311257
ADV1007380	6/26/2024	4.622	6/28/2032	130.74956	122.3858407	114.6422359	107.4689709	100.8205352	94.65529217	88.9351292	83.62514171	78.69334687
ADV1007385	6/26/2024	4.302	6/26/2029	119.04129	114.0956683	109.3896494	104.91027	100.645346	96.5834168	92.71369828	89.02603886	85.51087877
ADV1007401	6/27/2024	5.164	6/27/2025	103.03965	102.3727968	101.7145992	101.0648887	100.4235016	99.79027869	99.16506448	98.54770754	97.93806023



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007406	6/27/2024	4.515	6/27/2028	115.50287	111.6653986	107.9791158	104.4371903	101.033139	97.7608102	94.61436364	91.5882531	88.67720959
ADV1007409	6/27/2024	5.168	6/27/2025	103.0423	102.375437	101.7172296	101.0675094	100.4261128	99.79288039	99.16765677	98.55029052	97.94063398
ADV1007410	6/27/2024	4.998	12/29/2025	105.29645	104.1087284	102.9479408	101.8131807	100.7035782	99.61830186	98.55655645	97.51758121	96.50064782
ADV1007413	6/27/2024	4.827	6/29/2026	107.40828	105.7087125	104.0445077	102.4146292	100.8180778	99.25389309	97.72115154	96.21896489	94.74647831
ADV1007414	6/27/2024	4.997	12/29/2025	105.29528	104.1075618	102.9467814	101.8120284	100.7024329	99.61716337	98.55542473	97.51645614	96.49952931
ADV1007421	7/1/2024	4.411	6/18/2029	119.06516	114.1541966	109.4798732	105.0294539	100.7909629	96.75313162	92.90535333	89.23764002	85.740583
ADV1007425	6/27/2024	4.798	7/31/2026	107.77638	105.9866035	104.2354955	102.5218697	100.8445871	99.20255501	97.59472526	96.02009149	94.47768717
ADV1007426	6/27/2024	4.473	6/28/2027	111.37497	108.6159999	105.9405351	103.3455171	100.8280179	98.38523681	96.01449454	93.71322664	91.47897779
ADV1007429	6/27/2024	4.826	6/29/2026	107.40661	105.7070508	104.0428603	102.4129959	100.8164583	99.25228704	97.71955878	96.2173852	94.74491146
ADV1007430	6/27/2024	5.403	12/27/2024	100.76156	100.599752	100.4384618	100.2776849	100.1174188	99.95766098	99.79840915	99.63966087	99.48141372
ADV1007432	6/27/2024	5.316	3/27/2025	101.93091	101.5104383	101.0933622	100.6796435	100.2692419	99.86211751	99.45823126	99.05754461	98.66001966
ADV1007433	6/27/2024	5.178	6/27/2025	103.04892	102.3820374	101.7238056	101.0740613	100.4326408	99.79938463	99.17413751	98.55674797	97.94706836
ADV1007447	6/28/2024	4.576	6/28/2027	111.42657	108.6717726	106.0002562	103.4089701	100.8949971	98.45554702	96.08795033	93.7896518	91.55820482
ADV1007449	6/28/2024	4.391	6/28/2029	119.0741	114.1342456	109.4336014	104.959233	100.6989784	96.64139795	92.77572704	89.09183245	85.58017169
ADV1007450	6/28/2024	5.396	12/30/2024	100.79924	100.6289032	100.4591265	100.2899117	100.1212558	99.9531561	99.78560994	99.61861457	99.4521673
ADV1007452	6/28/2024	4.403	6/28/2029	119.13034	114.1891805	109.4872779	105.0116953	100.7502688	96.69155683	92.82479307	89.13984268	85.62716159
ADV1007460	6/28/2024	5.027	6/30/2025	103.04013	102.3643296	101.6974119	101.0392029	100.3895327	99.74823564	99.1151506	98.49012041	97.87299193
ADV1007484	6/28/2024	5.035	6/30/2025	103.0455	102.3696767	101.7027391	101.0445103	100.3948205	99.75350405	99.12039978	98.49535053	97.87820317
ADV1007487	6/28/2024	5.085	9/30/2025	104.24338	103.3091195	102.3916664	101.4905728	100.6054034	99.73573836	98.8811722	98.04131368	97.21578493
ADV1007489	6/28/2024	4.799	8/14/2026	107.96038	106.1307697	104.3413745	102.5910053	100.8785195	99.20281799	97.56284309	95.95757654	94.38603762
ADV1007493	6/28/2024	5.371	1/28/2025	101.17733	100.924048	100.6720084	100.4212056	100.1716305	99.92327413	99.6761276	99.43018209	99.18542885
ADV1007515	7/1/2024	5.041	1/2/2026	105.40247	104.2031568	103.031291	101.8859352	100.7661956	99.67121807	98.60018614	97.55231896	96.52686931
ADV1007518	7/1/2024	5.194	7/1/2025	103.11813	102.4399962	101.7708052	101.1103797	100.4585482	99.81514361	99.18000304	98.55296787	97.9338835
ADV1007520	7/1/2024	5.064	7/1/2025	103.08453	102.4058348	101.7360958	101.0751393	100.4227931	99.77888969	99.14326572	98.51576206	97.89622365
ADV1007522	7/1/2024	4.894	7/1/2026	107.55318	105.8468913	104.1761884	102.5400246	100.9373915	99.36732005	97.8288787	96.32117142	94.84333607
ADV1007536	7/1/2024	5.393	1/2/2025	100.83758	100.6587613	100.4805629	100.3029854	100.1260257	99.94968037	99.77394635	99.59882044	99.42429947
ADV1007539	7/1/2024	5.39	1/2/2025	100.83704	100.6582243	100.4800286	100.3024538	100.1254967	99.94915406	99.77342269	99.5982994	99.42378105
ADV1007540	7/1/2024	5.318	4/1/2025	101.9976	101.5628569	101.1317418	100.7042073	100.280209	99.85970327	99.4426471	99.02899824	98.61871516
ADV1007541	7/1/2024	5.18	7/1/2025	103.10868	102.4305851	101.7614292	101.1010386	100.4492416	99.80587117	99.17076445	98.54376283	97.92471171
ADV1007543	7/1/2024	5.329	3/14/2025	101.76174	101.3791046	100.9992967	100.6222897	100.2480527	99.87655505	99.50776664	99.1416578	98.7781993
ADV1007544	7/1/2024	5.286	4/18/2025	102.20956	101.7255712	101.246079	100.7710219	100.3003385	99.83396862	99.37185296	98.91393347	98.46015311
ADV1007585	7/2/2024	4.518	7/2/2029	119.71791	114.7520042	110.026855	105.5294257	101.2474575	97.16942098	93.28446843	89.5823896	86.05357049
ADV1007586	7/2/2024	4.518	7/2/2029	119.71791	114.7520042	110.026855	105.5294257	101.2474575	97.16942098	93.28446843	89.5823896	86.05357049

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007610	7/3/2024	4.582	7/6/2027	111.54194	108.763604	106.0698006	103.4574097	100.9234499	98.46507109	96.07954722	93.76427007	91.51674317
ADV1007622	7/3/2024	4.58	7/6/2027	111.53653	108.7582721	106.0645407	103.45222	100.918329	98.46001728	96.07455903	93.75934602	91.51188186
ADV1007623	7/8/2024	4.946	1/8/2026	105.36111	104.1455713	102.9582376	101.7981349	100.6643322	99.55594047	98.47211057	97.41203072	96.37492463
ADV1007640	7/5/2024	5.39	12/26/2024	100.74461	100.5858529	100.4275957	100.2698353	100.1125692	99.95579525	99.79951104	99.64371428	99.48840269
ADV1007642	7/5/2024	5.34	2/5/2025	101.27344	100.9975175	100.7230763	100.4501033	100.1785867	99.90851488	99.63987623	99.37265937	99.10685301
ADV1007648	7/5/2024	4.367	7/5/2029	118.23878	113.4844424	108.9605435	104.6545202	100.5545685	96.64959289	92.92916005	89.38345488	86.00324045
ADV1007651	7/5/2024	4.224	7/5/2029	118.77213	113.8076225	109.0847936	104.5905123	100.3124343	96.23895251	92.35914804	88.66274571	85.14007223
ADV1007656	7/5/2024	5.374	1/6/2025	100.8861	100.6959925	100.5065959	100.3179075	100.1299234	99.94263946	99.75605181	99.57015651	99.38494967
ADV1007657	7/5/2024	5.262	4/7/2025	102.05219	101.6004908	101.1527146	100.708812	100.2687327	99.83242758	99.39984807	98.9709466	98.54567635
ADV1007658	7/5/2024	5.098	7/7/2025	103.13036	102.4356279	101.7502902	101.0741554	100.4070387	99.74876019	99.09914465	98.45802156	97.82522484
ADV1007660	7/5/2024	4.343	7/6/2029	118.93606	113.977302	109.2596768	104.7700887	100.4962307	96.42653022	92.5501004	88.85669582	85.33667081
ADV1007673	7/5/2024	4.194	7/5/2029	118.63066	113.6694472	108.9497996	104.4585873	100.1834712	96.11284858	92.23580511	88.54206977	85.02197327
ADV1007693	7/8/2024	4.357	4/9/2029	118.06899	113.3771475	108.903654	104.6371739	100.5670155	96.68309509	92.9758991	89.43644896	86.05626822
ADV1007695	7/8/2024	4.378	1/10/2029	117.1822	112.7633766	108.5400789	104.5025333	100.6415129	96.94830405	93.41467425	90.03284266	86.79545251
ADV1007696	7/8/2024	4.411	9/13/2028	115.99712	111.9340211	108.0389243	104.3039955	100.7218061	97.2853105	93.98782451	90.82300483	87.78482993
ADV1007702	7/8/2024	4.744	1/8/2026	105.21529	103.9992025	102.8113611	101.6507924	100.5165632	99.40778243	98.32359884	97.26319884	96.22580441
ADV1007703	7/8/2024	4.366	7/8/2027	111.20553	108.4213476	105.722147	103.1047816	100.5662456	98.10366579	95.71429466	93.3955037	91.14477743
ADV1007706	7/8/2024	4.973	7/8/2025	103.11157	102.4134155	101.7247489	101.0453774	100.3751133	99.71377394	99.0611815	98.41716291	97.78154964
ADV1007707	7/8/2024	4.973	7/8/2025	103.11157	102.4134155	101.7247489	101.0453774	100.3751133	99.71377394	99.0611815	98.41716291	97.78154964
ADV1007720	7/9/2024	4.76	1/9/2026	105.24554	104.0265162	102.8358709	101.6726224	100.5358309	99.42459958	98.33807154	97.27542795	96.23588585
ADV1007722	7/9/2024	4.984	7/9/2025	103.13119	102.4302053	101.7387824	101.0567286	100.3838539	99.71997359	99.06490772	98.41848117	97.78052347
ADV1007723	7/9/2024	4.593	7/9/2026	107.28349	105.5553795	103.8637089	102.2073852	100.5853639	98.99664175	97.44025499	95.91527707	94.42081697
ADV1007732	7/9/2024	4.894	1/9/2026	105.30971	104.0917581	102.9021353	101.7398591	100.6039923	99.49364013	98.40794813	97.34609945	96.30731308
ADV1007736	7/9/2024	4.517	7/9/2027	111.39905	108.6144312	105.9147564	103.2968814	100.7578027	98.29464907	95.90467475	93.58525313	91.33387045
ADV1007750	7/10/2024	5.273	4/10/2025	102.09576	101.6356496	101.1796107	100.7275932	100.279544	99.83541087	99.39514263	98.95868888	98.52600012
ADV1007757	7/10/2024	4.96	7/10/2025	103.1273	102.4235649	101.7294691	101.0448161	100.3694137	99.70307485	99.04561761	98.39686482	97.75664402
ADV1007760	7/10/2024	5.365	1/14/2025	100.98872	100.7759345	100.5640407	100.3530374	100.1429189	99.93367953	99.72531374	99.51781597	99.31118076
ADV1007761	7/10/2024	4.57	7/10/2026	107.25687	105.5262807	103.8322215	102.1736017	100.5493725	98.95852665	97.40009665	95.87315245	94.3767997
ADV1007763	7/10/2024	5.37	1/10/2025	100.93701	100.7356313	100.535058	100.3352825	100.1363	99.93810569	99.7406949	99.5440629	99.348205
ADV1007764	7/10/2024	5.327	2/12/2025	101.36112	101.0653399	100.7712653	100.4788812	100.188173	99.89912619	99.61172661	99.32596006	99.04181261
ADV1007765	7/10/2024	5.275	4/9/2025	102.08342	101.6262012	101.1730033	100.7237767	100.2784692	99.8370296	99.39940759	98.96555374	98.53541947
ADV1007766	7/10/2024	5.108	7/9/2025	103.16167	102.4612825	101.7704425	101.0889535	100.4166261	99.75327602	99.098724	98.45279541	97.81532026
ADV1007770	7/10/2024	4.353	7/12/2027	111.21455	108.4192857	105.7096192	103.0823695	100.5344987	98.06310343	95.66540797	93.3387573	91.08061102

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007771	7/10/2024	4.96	7/10/2025	103.1273	102.4235649	101.7294691	101.0448161	100.3694137	99.70307485	99.04561761	98.39686482	97.75664402
ADV1007783	7/11/2024	5.432	11/13/2024	100.19282	100.1561351	100.1194982	100.0829043	100.0463534	100.0098453	99.9733801	99.9369576	99.90057775
ADV1007784	7/11/2024	5.301	1/15/2025	100.9879	100.7723523	100.5577268	100.344015	100.1312108	99.91930855	99.70830231	99.49818637	99.28895503
ADV1007786	7/11/2024	4.084	7/11/2029	118.16878	113.2017784	108.4774849	103.9826665	99.7048867	95.63245419	91.75437342	88.06029925	84.5404946
ADV1007787	7/11/2024	4.357	7/12/2027	110.99844	108.2111195	105.5090687	102.889127	100.3482706	97.88360965	95.49238095	93.1719415	90.91976229
ADV1007788	7/11/2024	4.292	7/11/2028	114.83707	110.973235	107.2630818	103.6995983	100.2761357	96.98638853	93.82437394	90.78441338	87.86111504
ADV1007789	7/11/2024	4.221	7/11/2029	118.40924	113.4489905	108.7306999	104.2411966	99.96809817	95.89976275	92.02524079	88.33422953	84.8170311
ADV1007791	7/11/2024	4.996	7/11/2025	103.10908	102.4033804	101.7073737	101.0208636	100.3436561	99.67556284	99.01640013	98.36598939	97.72415673
ADV1007793	7/11/2024	4.233	5/9/2029	117.82343	113.0527724	108.5079267	104.1769654	100.048655	96.11241221	92.3582626	88.77680254	85.35916332
ADV1007797	7/11/2024	4.612	6/30/2026	107.06381	105.3644562	103.7005163	102.0709437	100.4747363	98.91093118	97.37860247	95.87685969	94.40484592
ADV1007801	7/11/2024	4.829	11/28/2025	104.73568	103.6363594	102.5602212	101.5065323	100.4745944	99.46373795	98.47332069	97.50272617	96.55136255
ADV1007810	7/12/2024	4.851	7/14/2025	103.10118	102.3865063	101.6817821	100.9867959	100.3013463	99.62523757	98.95827926	98.30028602	97.65107754
ADV1007814	7/12/2024	4.764	1/12/2026	105.18801	103.9626039	102.7659018	101.5968983	100.454638	99.33820868	98.24673951	97.1793983	96.13538961
ADV1007817	7/12/2024	4.381	7/9/2027	111.03039	108.2508171	105.5560661	102.9430009	100.4086215	97.95006003	95.56457415	93.24954039	91.00244804
ADV1007822	7/12/2024	4.567	7/13/2026	107.14912	105.4137858	103.7151753	102.0521895	100.4237707	98.82890341	97.26661196	95.73595886	94.23604268
ADV1007827	7/12/2024	4.093	7/12/2029	118.22108	113.2500993	108.5221243	104.0239013	99.74297287	95.66762857	91.7868552	88.09029135	84.56818494
ADV1007828	7/12/2024	4.233	7/12/2029	118.47577	113.5112119	108.788928	104.2957185	100.0191797	95.94765029	92.07016263	88.37639739	84.85664132
ADV1007829	7/12/2024	4.234	7/12/2029	118.4805	113.5158271	108.7934367	104.3001244	100.0234864	95.95186128	92.07428118	88.38042666	84.86058433
ADV1007830	7/12/2024	4.234	7/12/2029	118.4805	113.5158271	108.7934367	104.3001244	100.0234864	95.95186128	92.07428118	88.38042666	84.86058433
ADV1007832	7/12/2024	5.388	12/12/2024	100.56061	100.4418153	100.3233142	100.205104	100.0871835	99.96955157	99.85220715	99.73514912	99.61837639
ADV1007834	7/12/2024	4.965	7/14/2025	103.12519	102.4111612	101.7070601	101.0126779	100.3278139	99.652273	98.98586524	98.32840585	97.67971506
ADV1007838	7/12/2024	5.308	1/13/2025	100.96314	100.7533259	100.5443845	100.3363095	100.1290957	99.92273761	99.71722984	99.51256707	99.30874403
ADV1007857	7/15/2024	4.945	7/15/2025	103.12287	102.4060787	101.6992925	101.0022998	100.3148975	99.63688822	98.96807991	98.30828573	97.65732391
ADV1007865	7/15/2024	4.703	1/15/2026	105.1478	103.9144382	102.7101589	101.5339392	100.3848046	99.26182545	98.16411422	97.09082314	96.04114208
ADV1007874	7/15/2024	4.332	7/15/2027	110.96279	108.1677687	105.4584733	102.8317092	100.2844292	97.81372107	95.41680086	93.09100609	90.83378939
ADV1007889	7/15/2024	4.252	3/12/2027	109.56868	107.1333044	104.7650191	102.4616086	100.2209392	98.04096032	95.91969999	93.85526181	91.84582147
ADV1007906	7/16/2024	4.081	7/16/2029	118.2019	113.2203344	108.4827827	103.9759072	99.68717545	95.60480791	91.71772802	88.01551612	84.48836658
ADV1007913	7/16/2024	4.594	1/16/2026	105.12399	103.8865402	102.6783569	101.4984106	100.345718	99.21934073	98.11838346	97.04199091	95.98934586
ADV1007923	7/16/2024	4.075	7/16/2029	118.17343	113.1925301	108.4556225	103.9493684	99.66123621	95.57944733	91.69292613	87.99125379	84.46462552
ADV1007924	7/16/2024	4.075	7/16/2029	118.17343	113.1925301	108.4556225	103.9493684	99.66123621	95.57944733	91.69292613	87.99125379	84.46462552
ADV1007925	7/16/2024	4.545	7/16/2026	107.14709	105.4036402	103.6972172	102.0267081	100.391042	98.78919139	97.22016909	95.68302673	94.17685259
ADV1007926	7/16/2024	4.942	7/16/2025	103.13261	102.4130403	101.7035455	101.0039187	100.3139545	99.63345329	98.96222086	98.30006833	97.64681191
ADV1007927	7/16/2024	4.54	7/16/2026	107.13848	105.3950995	103.6887518	102.0183166	100.3827231	98.78094383	97.21199161	95.67491811	94.16881164

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007928	7/16/2024	4.295	1/18/2028	112.90604	109.5658252	106.3437621	103.234951	100.2347243	97.33863867	94.54246231	91.84216345	89.23389934
ADV1007933	7/16/2024	4.933	7/16/2025	103.12617	102.4066266	101.6971572	100.9975554	100.3076161	99.62713947	98.9559314	98.29380299	97.64057046
ADV1007937	7/16/2024	5.265	1/16/2025	100.99196	100.7737563	100.5564942	100.3401686	100.1247733	99.91030223	99.69674947	99.484109	99.27237492
ADV1007938	7/16/2024	4.927	7/16/2025	103.12188	102.4023508	101.6928983	100.9933133	100.3033905	99.62293025	98.95173842	98.28962609	97.6364095
ADV1007939	7/16/2024	4.527	7/16/2026	107.11607	105.3728936	103.6667417	101.9964987	100.361094	98.75950018	97.19073016	95.6538357	94.14790519
ADV1007941	7/16/2024	4.12	7/17/2028	114.57449	110.6907608	106.9623305	103.3820751	99.94324334	96.63943433	93.46457663	90.41290923	87.47896355
ADV1007944	7/16/2024	4.512	7/16/2026	107.09022	105.3472714	103.6413454	101.9713242	100.3361374	98.7347575	97.16619772	95.62950984	94.12378236
ADV1007957	7/17/2024	4.221	7/19/2027	110.93039	108.119906	105.3959992	102.755437	100.1951277	97.71211804	95.30358503	92.96682963	90.6992701
ADV1007971	7/17/2024	4.949	7/17/2025	103.1502	102.4277922	101.715545	101.0132411	100.3206728	99.63763831	98.96394117	98.29939043	97.6438003
ADV1007997	7/18/2024	5.335	12/18/2024	100.62998	100.4942983	100.358989	100.2240543	100.0894927	99.95530263	99.82148245	99.68803061	99.55494556
ADV1008000	7/23/2024	4.195	7/2/2029	118.19627	113.2656312	108.5745004	104.1098896	99.85959267	95.81213001	91.95670127	88.28314114	84.78187831
ADV1008001	7/18/2024	4.526	7/20/2026	107.1634	105.4089712	103.6919802	102.0112942	100.3658249	98.75452813	97.17640133	95.63048134	94.11584252
ADV1008005	7/18/2024	5.26	1/21/2025	101.05489	100.8224825	100.5911417	100.3608579	100.1316237	99.9034318	99.67627519	99.45014673	99.22503938
ADV1008006	7/18/2024	4.957	7/18/2025	103.16854	102.4432997	101.7282965	101.0233121	100.3281365	99.64256563	98.96640085	98.29944913	97.64152265
ADV1008008	7/18/2024	5.337	12/18/2024	100.63026	100.4945725	100.3592621	100.2243263	100.0897636	99.95557236	99.82175107	99.68829813	99.55521197
ADV1008009	7/18/2024	4.713	1/20/2026	105.21692	103.9694308	102.7516778	101.5626019	100.4011966	99.2665023	98.15760311	97.07362482	96.0137323
ADV1008011	7/18/2024	4.532	7/20/2026	107.17381	105.4192851	103.7022027	102.0214268	100.3758693	98.76448592	97.186274	95.64027037	94.12554936
ADV1008030	7/19/2024	5.261	1/21/2025	101.0549	100.8225305	100.5912215	100.3609692	100.1317664	99.90360587	99.67648042	99.45038298	99.22530652
ADV1008031	7/19/2024	4.252	7/19/2027	111.01517	108.2035056	105.478448	102.8367618	100.2753547	97.79127245	95.38169131	93.04391149	90.77535054
ADV1008032	7/19/2024	4.839	7/21/2025	103.17855	102.4442572	101.7204492	101.006906	100.3034097	99.60974892	98.92571785	98.25111658	97.58575065
ADV1008041	7/19/2024	4.968	7/21/2025	103.21413	102.4804536	101.7572445	101.0442806	100.3413449	99.64822622	98.96471969	98.29062587	97.62575086
ADV1008042	7/19/2024	4.77	1/20/2026	105.2871	104.0391462	102.8209376	101.6314138	100.469568	99.33444035	98.22511488	97.14071712	96.08041177
ADV1008082	7/22/2024	5.349	12/20/2024	100.6568	100.5155107	100.3746253	100.2341438	100.0940642	99.95438489	99.81510408	99.67622002	99.53773099
ADV1008099	7/23/2024	4.563	7/23/2026	107.26323	105.4997743	103.7740847	102.085008	100.4314426	98.81233155	97.22666016	95.67345391	94.1517764
ADV1008100	7/23/2024	4.955	7/23/2025	103.22848	102.4892459	101.7606313	101.0424129	100.3343689	99.63628371	98.94794797	98.26915805	97.59971596
ADV1008102	7/23/2024	4.373	7/23/2027	111.16127	108.3417098	105.6091665	102.9603779	100.39223	97.9017485	95.48609089	93.14253973	90.86849603
ADV1008103	7/23/2024	4.746	1/23/2026	105.29096	104.0347875	102.8087396	101.6117444	100.442776	99.3008565	98.18505291	97.09447486	96.02827207
ADV1008104	7/23/2024	4.563	7/23/2026	107.26323	105.4997743	103.7740847	102.085008	100.4314426	98.81233155	97.22666016	95.67345391	94.1517764
ADV1008109	7/23/2024	4.252	7/23/2029	117.42155	112.7548917	108.3145607	104.0882309	100.0643127	96.23190753	92.58076308	89.10123155	85.78423066
ADV1008134	7/24/2024	4.357	7/24/2026	107.0588	105.2919649	103.5630567	101.8709175	100.2144385	98.59255592	97.00424882	95.44853661	93.92447717
ADV1008142	7/24/2024	5.379	11/20/2024	100.27538	100.2190203	100.1627412	100.1065391	100.0504138	99.99436523	99.93839319	99.88249754	99.8266781
ADV1008144	7/24/2024	5.322	12/18/2024	100.62683	100.4912722	100.3560875	100.2212772	100.0868396	99.95277311	99.81907623	99.68574736	99.55278492
ADV1008145	7/24/2024	4.328	7/26/2027	111.07045	108.2439702	105.504945	102.8500836	100.2762485	97.78044337	95.35980518	93.0115971	90.73320203

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008146	7/24/2024	4.302	11/29/2027	112.3822	109.1871362	106.1013696	103.120522	100.2404215	97.45708819	94.76672359	92.16570158	89.6505593
ADV1008164	7/25/2024	4.773	10/24/2025	104.25273	103.252255	102.2710622	101.3085958	100.3643224	99.43772862	98.52832056	97.63562234	96.75917563
ADV1008166	7/25/2024	4.782	7/25/2025	103.185	102.4396429	101.7050841	100.9810927	100.2674414	99.5639095	98.87028243	98.18635174	97.51191479
ADV1008181	7/25/2024	4.945	6/26/2025	102.88264	102.2191239	101.5641895	100.9176691	100.2794013	99.64922851	99.02699721	98.41255776	97.80576427
ADV1008182	7/25/2024	4.912	7/25/2025	103.22184	102.477108	101.7431551	101.0197495	100.3066647	99.60368043	98.91058298	98.22716442	97.55322267
ADV1008183	7/25/2024	4.912	7/25/2025	103.22184	102.477108	101.7431551	101.0197495	100.3066647	99.60368043	98.91058298	98.22716442	97.55322267
ADV1008184	7/25/2024	4.912	7/25/2025	103.22184	102.477108	101.7431551	101.0197495	100.3066647	99.60368043	98.91058298	98.22716442	97.55322267
ADV1008185	7/25/2024	4.918	7/25/2025	103.22628	102.4815301	101.7475592	101.0241358	100.3110333	99.6080316	98.91491686	98.23148119	97.55752249
ADV1008186	7/25/2024	4.918	7/25/2025	103.22628	102.4815301	101.7475592	101.0241358	100.3110333	99.6080316	98.91491686	98.23148119	97.55752249
ADV1008192	7/25/2024	4.92	7/25/2025	103.22776	102.4830041	101.7490272	101.0255979	100.3124895	99.60948199	98.91636149	98.23292011	97.55895577
ADV1008195	7/25/2024	4.41	7/26/2027	111.29651	108.4668949	105.7248005	103.0669417	100.490179	97.99151369	95.56808066	93.21714109	90.9360759
ADV1008196	7/25/2024	4.232	7/26/2027	111.03571	108.2046388	105.461268	102.8022976	100.2245782	97.72510196	95.30099489	92.94951004	90.66802065
ADV1008198	7/25/2024	4.133	7/25/2029	118.53579	113.5215517	108.753923	104.2193629	99.90515519	95.79935118	91.89071868	88.1686947	84.62334152
ADV1008199	7/25/2024	4.931	7/25/2025	103.2359	102.4911113	101.7571014	101.0336394	100.3204986	99.61745914	98.92430694	98.24083418	97.56683877
ADV1008208	7/26/2024	4.678	1/26/2026	105.24045	103.9763907	102.7428412	101.5387085	100.3629475	99.21456203	98.09260234	96.99616209	95.92437603
ADV1008214	7/26/2024	4.775	7/28/2025	103.21655	102.4627977	101.7200823	100.9881634	100.2668065	99.55578388	98.8548743	98.16386281	97.48254054
ADV1008216	7/26/2024	4.284	7/26/2029	117.74764	112.9359631	108.3582429	104.0016994	99.85431808	95.90480316	92.1425303	88.55750333	85.14031367
ADV1008218	7/26/2024	4.53	7/26/2033	133.56337	123.9959835	115.2232215	107.1739736	99.78388148	92.99465973	86.75349185	81.01248928	75.72820672
ADV1008219	7/26/2024	4.588	7/26/2035	140.31751	128.4234517	117.7062848	108.0411276	99.31704981	91.43544035	84.3085773	77.85837048	72.01525546
ADV1008220	7/26/2024	4.464	7/26/2032	129.78588	121.3818672	113.6071025	106.4106166	99.74584371	93.570218	87.84480875	82.53399137	77.60514968
ADV1008221	7/26/2024	4.2	7/26/2029	118.45383	113.4513218	108.6946413	104.1703021	99.86563555	95.76873748	91.86841697	88.15414953	84.61603336
ADV1008222	7/26/2024	4.478	7/27/2026	107.16344	105.3900489	103.6548178	101.9565759	100.2942044	98.66663004	97.07282296	95.51179419	93.98259367
ADV1008223	7/26/2024	4.252	7/26/2028	114.84612	110.9409996	107.1926383	103.5938172	100.137693	96.81777912	93.62792482	90.56229538	87.61535378
ADV1008224	7/26/2024	4.252	7/26/2028	114.84612	110.9409996	107.1926383	103.5938172	100.137693	96.81777912	93.62792482	90.56229538	87.61535378
ADV1008225	7/26/2024	4.588	7/26/2035	140.31751	128.4234517	117.7062848	108.0411276	99.31704981	91.43544035	84.3085773	77.85837048	72.01525546
ADV1008226	7/26/2024	4.2	7/26/2029	118.45383	113.4513218	108.6946413	104.1703021	99.86563555	95.76873748	91.86841697	88.15414953	84.61603336
ADV1008228	7/26/2024	4.498	7/26/2034	127.45309	119.6472207	112.4744763	105.8769724	99.80254478	94.20414719	89.03931784	84.26970459	79.86064174
ADV1008229	7/26/2024	4.903	7/28/2025	103.25231	102.4991928	101.7570972	101.0257776	100.3050001	99.59453778	98.89416995	98.20368233	97.52286662
ADV1008231	7/26/2024	4.099	11/26/2029	119.56415	114.1774456	109.0721935	104.2321273	99.64201073	95.2875641	91.15539935	87.23295945	83.50846245
ADV1008232	7/26/2024	4.673	1/26/2026	105.2342	103.9701757	102.736667	101.5325743	100.3568525	99.20850574	98.08658411	96.99018131	95.91843211
ADV1008233	7/26/2024	4.475	7/27/2026	107.15818	105.3848361	103.6496518	101.9514557	100.2891292	98.6615991	97.06783549	95.50684942	93.97769087
ADV1008245	7/29/2024	4.292	7/29/2027	111.00298	108.1692795	105.4234694	102.7622414	100.1824341	97.68102894	95.25514176	92.90201615	90.61901653
ADV1008247	7/29/2024	4.465	7/29/2026	107.16422	105.3854123	103.6449693	101.9417136	100.2745174	98.64229915	97.04402097	95.47868638	93.94533823



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008249	7/29/2024	4.664	1/29/2026	105.25642	103.984052	102.7425892	101.5309148	100.3479642	99.19272308	98.0642244	96.96154566	95.88380642
ADV1008250	7/29/2024	4.466	7/29/2026	107.16598	105.3871551	103.6466965	101.9434254	100.2762141	98.64398106	97.04568831	95.4803394	93.94697718
ADV1008251	7/29/2024	4.752	7/29/2026	103.92655	102.9977137	102.0858608	101.1905193	100.3112323	99.4475599	98.59907905	97.76538218	96.94607671
ADV1008257	7/29/2024	4.184	7/30/2029	118.41591	113.4033326	108.6375762	104.1050729	99.79307909	95.6896215	91.78344598	88.06396995	84.52123823
ADV1008260	7/29/2024	4.444	7/29/2032	129.65682	121.2495311	113.4724144	106.274377	99.60874274	93.43284842	87.70767809	82.39753232	77.46972922
ADV1008263	7/31/2024	4.308	5/25/2027	110.32504	107.6802929	105.1135002	102.6218903	100.2028074	97.85370769	95.57215303	93.35580637	91.20242661
ADV1008275	7/30/2024	4.123	7/31/2028	114.73206	110.8069326	107.0400873	103.4241953	99.95231861	96.61788266	93.41465489	90.33672441	87.37848327
ADV1008281	7/30/2024	5.355	11/29/2024	100.38486	100.3031428	100.2215564	100.1401019	100.058779	99.97758749	99.89652695	99.81559712	99.73479769
ADV1008282	7/30/2024	5.22	1/31/2025	101.17084	100.9103496	100.6511762	100.3933105	100.1367426	99.88146277	99.62746139	99.37472891	99.12325589
ADV1008284	7/30/2024	5.177	2/14/2025	101.3386	101.0381869	100.7395362	100.4426349	100.1474675	99.85401881	99.56227382	99.27221761	98.98383549
ADV1008287	7/30/2024	5.062	3/31/2025	101.87035	101.4410037	101.0152148	100.5929371	100.1741275	99.75874349	99.34674322	98.93808558	98.53273011
ADV1008291	7/30/2024	5.352	11/29/2024	100.38461	100.30289	100.2213044	100.1398507	100.0585286	99.97733787	99.89627815	99.81534912	99.7345505
ADV1008320	7/31/2024	4.126	7/30/2027	110.78494	107.9464537	105.1962098	102.5308741	99.94726668	97.44235142	95.01322785	92.65712412	90.37139018
ADV1008323	7/31/2024	4.191	7/31/2028	114.66871	110.7532481	106.9954826	103.388123	99.92426385	96.59736118	93.40121097	90.32992909	87.37793267
ADV1008345	8/1/2024	5.399	11/1/2024	100.03499	100.0321848	100.0293784	100.0265744	100.0237727	100.0209734	100.0181764	100.0153818	100.0125896
ADV1008348	8/1/2024	4.031	2/1/2029	115.93456	111.4815321	107.2282647	103.1646464	99.28113679	95.56873289	92.01893543	88.62371742	85.37549492
ADV1008352	8/1/2024	4.511	2/2/2026	105.11695	103.8349121	102.5834937	101.3616036	100.1682003	99.00229098	97.86292848	96.7492089	95.66026907
ADV1008361	8/1/2024	4.307	8/3/2026	106.9502	105.1598419	103.4083438	101.6945175	100.017227	98.37538211	96.76793624	95.19388399	93.6522592
ADV1008370	8/1/2024	4.912	5/1/2025	102.18615	101.6679892	101.1549945	100.6470882	100.144195	99.64624101	99.15315393	98.66486274	98.18129781
ADV1008374	8/1/2024	4.355	2/2/2026	105.02103	103.7380389	102.4857215	101.2629837	100.0687812	98.90211891	97.76204722	96.64766007	95.55809219
ADV1008382	8/2/2024	4.49	8/4/2025	103.02834	102.2569012	101.4970374	100.7484927	100.0110152	99.28436056	98.56829137	97.86257728	97.16699457
ADV1008387	8/2/2024	3.946	8/3/2026	106.45377	104.6653693	102.9158351	101.203985	99.52868147	97.88883286	96.28339126	94.71135012	93.17174217
ADV1008388	8/2/2024	4.208	2/2/2026	104.73105	103.4515791	102.2026877	100.9832807	99.79231804	98.62880799	97.49180464	96.38040519	95.29374754
ADV1008389	8/2/2024	3.794	8/2/2029	116.58413	111.6067142	106.8753371	102.3764446	98.09730747	94.02596688	90.15118285	86.46238673	82.94963713
ADV1008391	8/2/2024	3.99	9/16/2026	106.8663	104.9562237	103.0899619	101.2662543	99.48388068	97.74166375	96.03846728	94.37319444	92.74478609
ADV1008393	8/2/2024	4.823	3/3/2025	101.43375	101.0854817	100.7395763	100.3960057	100.0547463	99.71577481	99.37906832	99.04460417	98.71235999
ADV1008394	8/2/2024	4.446	8/4/2025	102.99452	102.2232229	101.4635006	100.7150958	99.97775675	99.25123906	98.53530545	97.82972555	97.13427566
ADV1008395	8/2/2024	5.326	11/1/2024	100.03425	100.0314387	100.0286333	100.0258301	100.0230294	100.020231	100.017435	100.0146413	100.0118499
ADV1008396	8/2/2024	3.86	8/2/2028	113.44227	109.5445031	105.8041591	102.2139584	98.76700127	95.45674873	92.27700124	89.22187865	86.28580165
ADV1008397	8/2/2024	5.326	11/1/2024	100.03425	100.0314387	100.0286333	100.0258301	100.0230294	100.020231	100.017435	100.0146413	100.0118499
ADV1008398	8/2/2024	3.791	8/2/2029	116.56978	111.5927032	106.8616533	102.3630763	98.08424347	94.01319654	90.13869596	86.45017353	82.93768827
ADV1008399	8/2/2024	4.399	8/4/2025	103.01988	102.2476567	101.487038	100.7377611	99.99957339	99.27222969	98.555492	97.84912926	97.15291708
ADV1008404	8/2/2024	3.886	8/2/2027	109.92375	107.0942965	104.3530064	101.6965535	99.12176279	96.62560181	94.20517341	91.85770843	89.58055895

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008405	8/2/2024	4.049	8/3/2026	106.49197	104.7057837	102.9583716	101.2485563	99.57520378	97.93722602	96.3335783	94.76325713	93.22529818
ADV1008406	8/2/2024	4.505	8/4/2025	103.03987	102.2683824	101.5084704	100.759878	100.0223534	99.29565198	98.57953657	97.87377674	97.17814874
ADV1008407	8/2/2024	3.891	8/2/2027	109.93764	107.107988	104.3665082	101.7098701	99.13489849	96.63856082	94.2179598	91.87032611	89.59301174
ADV1008409	8/2/2024	4.031	8/3/2026	106.46005	104.6741475	102.9270216	101.2174873	99.54441076	97.90670401	96.30332248	94.73326283	93.19556084
ADV1008410	8/2/2024	3.883	8/2/2027	109.91542	107.0860817	104.3449053	101.6885636	99.11388136	96.6178264	94.19750159	91.85013782	89.57308727
ADV1008411	8/2/2024	3.804	8/2/2029	116.63196	111.6534175	106.9209499	102.4210057	98.14085414	94.06853468	90.19280581	86.50309741	82.98946667
ADV1008412	8/2/2024	4.943	2/3/2025	101.13494	100.8663726	100.599217	100.3334586	100.0690866	99.80609003	99.54445825	99.28418064	99.0252467
ADV1008413	8/2/2024	4.029	8/3/2026	106.4565	104.6706323	102.9235383	101.2140352	99.54098932	97.90331268	96.29996073	94.72993013	93.19225669
ADV1008414	8/2/2024	4.946	2/3/2025	101.13574	100.8671697	100.60001	100.3342477	100.0698717	99.80687116	99.54523545	99.28495392	99.02601609
ADV1008415	8/2/2024	4.033	8/3/2026	106.46359	104.6776626	102.930505	101.2209394	99.54783221	97.91009535	96.30668424	94.73659553	93.19886499
ADV1008416	8/2/2024	3.874	8/2/2027	109.89042	107.061437	104.3206021	101.6645937	99.09023709	96.59450017	94.1744861	91.82742599	89.55067225
ADV1008417	8/2/2024	3.857	8/2/2028	113.43092	109.533367	105.7932306	102.2032312	98.75646955	95.44640681	92.26684363	89.2119001	86.27599707
ADV1008418	8/2/2024	3.791	8/2/2029	116.56978	111.5927032	106.8616533	102.3630763	98.08424347	94.01319654	90.13869596	86.45017353	82.93768827
ADV1008419	8/2/2024	3.865	8/2/2027	109.86543	107.0367924	104.2962989	101.6406239	99.06659282	96.57117395	94.15147061	91.80471417	89.52825722
ADV1008420	8/2/2024	4.48	8/4/2025	103.02066	102.249247	101.4894154	100.7409025	100.0034565	99.27683295	98.56079457	97.85511098	97.15955845
ADV1008424	8/2/2024	3.748	8/2/2028	113.33702	109.4327739	105.6864438	102.0907133	98.63865344	95.32369815	92.13962236	89.08052215	86.14079598
ADV1008425	8/2/2024	4.221	2/2/2026	104.74758	103.467999	102.2189987	100.9994848	99.80841689	98.64480337	97.50769823	96.39619863	95.30944242
ADV1008426	8/2/2024	3.679	8/2/2029	116.44231	111.4556848	106.7159446	102.2094753	97.92348861	93.84597075	89.96563106	86.27185403	82.75465485
ADV1008432	8/5/2024	3.693	8/5/2027	109.4152	106.5847051	103.8426756	101.1857831	98.61084501	96.11482077	93.69480468	91.34801873	89.07180593
ADV1008433	8/5/2024	5.203	12/5/2024	100.44525	100.3467226	100.2483904	100.1502569	100.0523217	99.95458409	99.8570434	99.75969903	99.66255038
ADV1008436	8/5/2024	5.06	1/15/2025	100.93076	100.7162207	100.5025919	100.2898725	100.0780566	99.8671384	99.65711205	99.44797187	99.23971217
ADV1008437	8/5/2024	4.732	5/5/2025	102.141	101.6122597	101.0889136	100.570878	100.0580725	99.55041814	99.04783763	98.55025519	98.05759654
ADV1008438	8/5/2024	4.458	8/12/2025	103.09618	102.3024494	101.5209762	100.7514781	99.99368103	99.24731898	98.51213404	97.78787601	97.07430213
ADV1008441	8/5/2024	3.734	8/6/2029	116.33069	111.3483029	106.6127822	102.1105125	97.82870979	93.75536295	89.87918217	86.18955163	82.67648525
ADV1008442	8/5/2024	3.826	8/7/2028	113.36122	109.4512895	105.6997911	102.0993933	98.64314995	95.3244765	92.13712909	89.07518451	86.1330217
ADV1008443	8/5/2024	3.838	9/7/2027	110.13755	107.2065388	104.369625	101.6232909	98.96416676	96.38902678	93.89478183	91.47847308	89.13726574
ADV1008444	8/5/2024	3.836	10/5/2027	110.40482	107.39213	104.4785362	101.660235	98.93359416	96.29514079	93.74155296	91.26965242	88.8763975
ADV1008448	8/5/2024	3.892	8/5/2027	109.96949	107.1312145	104.3815915	101.717285	99.13510625	96.63200949	94.20508368	91.85154575	89.56873386
ADV1008449	8/5/2024	3.821	8/6/2029	116.7478	111.7555245	107.0104735	102.4990144	98.20834803	94.12644889	90.24201363	86.54441353	83.02365028
ADV1008450	8/5/2024	3.892	8/5/2027	109.96949	107.1312145	104.3815915	101.717285	99.13510625	96.63200949	94.20508368	91.85154575	89.56873386
ADV1008451	8/5/2024	4.008	8/5/2031	123.54384	116.3432157	109.6246322	103.3530324	97.49609849	92.02402066	86.90928933	82.12650561	77.65220843
ADV1008452	8/5/2024	3.976	8/5/2026	106.52886	104.7343308	102.9788997	101.2613803	99.58063428	97.93556909	96.32513531	94.74832456	93.20416744
ADV1008453	8/5/2024	5.41	11/5/2024	100.08469	100.0706475	100.0566187	100.0426033	100.0286012	100.0146125	100.0006372	99.98667506	99.97272625

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008462	8/7/2024	3.893	8/2/2027	109.94266	107.1129372	104.3713814	101.7146684	99.13962278	96.64321204	94.22253888	91.87483397	89.59744929
ADV1008468	8/5/2024	4.047	8/5/2026	106.51019	104.7184064	102.9656191	101.2506461	99.57235325	97.92965151	96.32149502	94.74687874	93.20483642
ADV1008469	8/5/2024	4.42	8/5/2025	103.04752	102.2724191	101.5090079	100.7570213	100.0162037	99.2863073	98.56709161	97.85832303	97.15977482
ADV1008470	8/5/2024	5.396	11/5/2024	100.08444	100.0703985	100.0563702	100.0423553	100.0283537	100.0143655	100.0003906	99.98642903	99.97248071
ADV1008471	8/5/2024	4.406	8/5/2025	103.03672	102.261662	101.4982961	100.7463544	100.0055812	99.27572875	98.55655654	97.84783101	97.14932539
ADV1008472	8/5/2024	3.867	8/5/2027	109.89986	107.0625575	104.3138885	101.6505134	99.06924429	96.56703603	94.14097828	91.78828858	89.50630573
ADV1008476	8/5/2024	4.474	8/5/2025	103.02746	102.2532675	101.4907344	100.7396016	99.99961451	99.27052609	98.55209647	97.84409281	97.14628904
ADV1008490	8/6/2024	4.968	2/6/2025	101.17742	100.9004241	100.6249324	100.3509306	100.0784067	99.8073488	99.53774498	99.26958353	99.00285287
ADV1008499	8/6/2024	5.015	2/6/2025	101.19035	100.9132922	100.6377359	100.3636699	100.0910822	99.81996079	99.5502938	99.28206953	99.01527638
ADV1008502	8/6/2024	4.121	8/6/2026	106.65284	104.8570387	103.1003608	101.3816281	99.69970556	98.05350326	96.44197412	94.86411174	93.3189484
ADV1008505	8/6/2024	4.334	2/6/2026	104.94005	103.6488165	102.3871278	101.1539645	99.94835784	98.76938285	97.61615581	96.48783199	95.38360355
ADV1008507	8/6/2024	5.011	2/6/2025	101.18925	100.912197	100.6366462	100.3625857	100.0900034	99.81888743	99.54922582	99.28100689	99.01421906
ADV1008508	8/6/2024	4.559	8/6/2025	103.10468	102.3273993	101.5618686	100.8078232	100.0650055	99.33316587	98.61206173	97.90145778	97.2011255
ADV1008509	8/6/2024	4.127	8/6/2026	106.66354	104.8676323	103.1108581	101.3920309	99.71001553	98.06372207	96.45210339	94.87415305	93.32890329
ADV1008510	8/6/2024	3.806	8/6/2029	117.08614	112.0731999	107.3087496	102.7790763	98.47130351	94.37333406	90.47379783	86.76200396	83.22789633
ADV1008511	8/6/2024	3.955	8/6/2027	110.15472	107.3111082	104.5563754	101.8871739	99.30030883	96.79272812	94.36151454	92.00387881	89.71715294
ADV1008512	8/6/2024	3.806	8/6/2029	117.08614	112.0731999	107.3087496	102.7790763	98.47130351	94.37333406	90.47379783	86.76200396	83.22789633
ADV1008517	8/6/2024	4.462	8/6/2025	103.09153	102.3134874	101.5472145	100.7924497	100.0489347	99.31641908	98.59465955	97.88342011	97.18247159
ADV1008522	8/6/2024	4.109	8/7/2026	106.64261	104.8441885	103.0850048	101.3638719	99.67965476	98.03126315	96.41764942	94.83780643	93.29076557
ADV1008523	8/6/2024	3.939	8/6/2027	110.11011	107.2671257	104.5130046	101.8444003	99.25811852	96.75110754	94.32045056	91.96335871	89.67716441
ADV1008531	8/7/2024	4.353	2/9/2026	105.00125	103.7018544	102.431213	101.1883708	99.97241332	98.78246627	97.61769335	96.47729412	95.36050214
ADV1008533	8/7/2024	5.337	11/7/2024	100.1078	100.088147	100.0685129	100.0488986	100.0293041	100.0097293	99.9901742	99.97063881	99.95112307
ADV1008545	8/7/2024	4.577	8/7/2025	103.13031	102.3501649	101.5818529	100.825109	100.0796728	99.34529177	98.62172098	97.90872256	97.20606562
ADV1008546	8/7/2024	4.17	8/7/2026	106.75128	104.9518585	103.1916855	101.4695815	99.78441082	98.13508277	96.52054924	94.93980267	93.39187401
ADV1008547	8/7/2024	3.99	8/9/2027	110.28219	107.428611	104.6644289	101.9862848	99.39096942	96.87541618	94.4366931	92.07199613	89.77864249
ADV1008550	8/7/2024	5.339	11/7/2024	100.10785	100.0881935	100.0685593	100.0489448	100.0293502	100.0097753	99.99022016	99.97068467	99.95116883
ADV1008553	8/7/2024	5.324	11/6/2024	100.09509	100.0782435	100.0614161	100.0446053	100.027811	100.0110331	99.99427169	99.97752666	99.96079801
ADV1008557	8/7/2024	4.096	8/7/2026	106.61922	104.8210066	103.062025	101.3410905	99.65706809	98.0088677	96.39544178	94.81578329	93.2689237
ADV1008570	8/8/2024	3.887	8/8/2029	117.49307	112.4649291	107.6861508	103.1429742	98.82247565	94.71251299	90.8016735	87.07922587	83.53507563
ADV1008574	8/8/2024	5.34	11/8/2024	100.12009	100.0976242	100.0751865	100.052772	100.0303808	100.0080128	99.98566788	99.96334608	99.94104735
ADV1008575	8/8/2024	5.037	2/10/2025	101.24557	100.9571566	100.6703743	100.3852087	100.1016462	99.81967318	99.53927624	99.26044214	98.98315777
ADV1008577	8/8/2024	4.076	8/10/2026	106.76278	104.9525116	103.1819234	101.4498252	99.75507689	98.09658284	96.4732896	94.88418386	93.3282905
ADV1008595	8/9/2024	3.986	8/9/2027	110.2701	107.416673	104.6526381	101.9746367	99.37946005	96.86404147	94.42544922	92.06087939	89.76764936

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008596	8/9/2024	4.59	8/11/2025	103.18714	102.3957217	101.6164818	100.84914	100.093425	99.34907328	98.61582949	97.89344583	97.18168183
ADV1008597	8/9/2024	4.591	8/11/2025	103.18793	102.3965059	101.6172626	100.8499176	100.0941992	99.34984426	98.61659724	97.89421038	97.18244322
ADV1008598	8/9/2024	4.551	9/19/2025	103.62098	102.7201499	101.8350355	100.9652267	100.1103283	99.26995846	98.44374853	97.63134213	96.83239478
ADV1008604	8/12/2024	5.344	11/12/2024	100.16909	100.1354041	100.101756	100.0681464	100.0345754	100.0010429	99.96754871	99.93409288	99.9006753
ADV1008605	8/12/2024	5.344	11/12/2024	100.16909	100.1354041	100.101756	100.0681464	100.0345754	100.0010429	99.96754871	99.93409288	99.9006753
ADV1008606	8/12/2024	5.344	11/12/2024	100.16909	100.1354041	100.101756	100.0681464	100.0345754	100.0010429	99.96754871	99.93409288	99.9006753
ADV1008611	8/12/2024	5.055	2/12/2025	101.27479	100.9808113	100.688524	100.3979171	100.1089758	99.82168592	99.53603318	99.25200357	98.9695832
ADV1008612	8/12/2024	4.364	2/12/2026	105.05159	103.7440618	102.4645055	101.21202	99.98574591	98.78486043	97.60857527	96.45613496	95.3268151
ADV1008616	8/12/2024	4.385	8/12/2026	103.65169	102.728001	101.8213718	100.9313249	100.0574001	99.19915473	98.35616247	97.52801284	96.71431036
ADV1008617	8/12/2024	4.497	8/12/2025	103.18885	102.3938248	101.6110846	100.8403494	100.0813441	99.33380184	98.5974638	97.87207894	97.15740369
ADV1008618	8/12/2024	4.287	2/12/2026	105.0565	103.7473041	102.4661348	101.2120954	99.98432413	98.78199559	97.60431932	96.4505377	95.31992431
ADV1008632	8/13/2024	5.337	11/13/2024	100.18104	100.1445471	100.1080979	100.0716916	100.035328	99.99900709	99.96272877	99.92649295	99.89029956
ADV1008646	8/13/2024	3.838	8/13/2029	116.88893	111.8740453	107.1083327	102.5780372	98.2702416	94.17280793	90.27432608	86.56406605	83.03193363
ADV1008647	8/13/2024	3.885	8/13/2027	110.02645	107.165547	104.3945932	101.7102165	99.1091932	96.58844113	94.14501265	91.77608775	89.47896754
ADV1008648	8/15/2024	3.881	8/16/2027	110.04404	107.1747138	104.3958252	101.7039874	99.09596286	96.56865583	94.11910473	91.74447551	89.44205524
ADV1008651	8/13/2024	5.34	11/12/2024	100.1687	100.1350228	100.1013799	100.0677756	100.0342099	100.0006825	99.96719362	99.93374302	99.90033067
ADV1008656	8/13/2024	5.338	11/13/2024	100.18108	100.1445866	100.1081374	100.0717309	100.0353673	99.99904626	99.96276785	99.92653194	99.89033846
ADV1008666	8/14/2024	4.249	2/17/2026	104.96213	103.6422955	102.3491069	101.0817634	99.83949845	98.62157627	97.42728997	96.2559603	95.10693422
ADV1008670	8/14/2024	4.054	8/14/2026	106.61992	104.8027157	103.0254958	101.2870792	99.58632979	97.92215433	96.29350095	94.69935692	93.13874687
ADV1008673	8/14/2024	5.336	11/14/2024	100.1932	100.1539058	100.1146555	100.0754524	100.0362964	99.99718746	99.95812545	99.91911029	99.88014188
ADV1008677	8/14/2024	4.411	8/14/2025	103.14379	102.3434407	101.5555477	100.7798229	100.0159854	99.26376289	98.52289145	97.79311498	97.07418509
ADV1008678	8/14/2024	4.496	8/14/2025	103.14774	102.3482226	101.5611386	100.7861982	100.0231214	99.27163679	98.53148109	97.802399	97.08414287
ADV1008686	8/14/2024	3.893	8/16/2027	110.078	107.2081991	104.4288471	101.7365568	99.12809043	96.60035183	94.15037913	91.77533795	89.47251507
ADV1008693	8/15/2024	5.345	11/15/2024	100.20581	100.163709	100.1216569	100.0796566	100.0377078	99.99581064	99.95396488	99.91217046	99.87042728
ADV1008705	8/15/2024	5.059	2/18/2025	101.35006	101.0390865	100.7300015	100.4227925	100.1174424	99.81393425	99.51225139	99.21237732	98.91429576
ADV1008713	8/15/2024	3.965	8/15/2029	116.71209	111.9029823	107.3320058	102.9860049	98.85262011	94.92023577	91.17793138	87.61543646	84.22308859
ADV1008716	8/15/2024	4.461	12/18/2025	104.5501	103.3970984	102.2696281	101.166848	100.087952	99.03216899	97.99876048	96.98701938	95.99626807
ADV1008717	8/15/2024	4.437	1/15/2026	104.82291	103.5916476	102.3894331	101.2152446	100.0681084	98.94709584	97.85132016	96.77993444	95.73212931
ADV1008720	8/15/2024	4.228	8/17/2026	106.96798	105.1394129	103.3512127	101.6022003	99.89123714	98.21722702	96.57911449	94.97588276	93.40655197
ADV1008726	8/15/2024	5.257	12/19/2024	100.62562	100.4876976	100.350161	100.2130119	100.0762487	99.9398698	99.80387342	99.66825798	99.53302181
ADV1008732	8/16/2024	5.356	11/18/2024	100.24356	100.1930244	100.1425555	100.0921529	100.0418164	99.99154592	99.94134133	99.89120247	99.84112923
ADV1008743	8/16/2024	4.747	6/17/2025	102.64707	102.0091915	101.3792702	100.7571535	100.1426964	99.53575796	98.93620038	98.34388932	97.75869367
ADV1008752	8/19/2024	5.264	12/20/2024	100.63838	100.4976993	100.3574273	100.2175573	100.0780875	99.9390162	99.80034168	99.6620622	99.52417602

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008753	8/19/2024	5.169	1/16/2025	100.96379	100.7467299	100.5306045	100.3154106	100.1011422	99.88779319	99.67535767	99.46382967	99.25320332
ADV1008754	8/19/2024	5.074	2/13/2025	101.29141	100.9948301	100.6999799	100.4068409	100.1153981	99.82563664	99.53754204	99.25109985	98.96629579
ADV1008766	8/26/2024	4.144	8/26/2026	106.91488	105.0623838	103.2512335	101.4802479	99.74828572	98.05424642	96.39706799	94.77572549	93.18922947
ADV1008768	8/26/2024	3.971	8/26/2027	110.39513	107.4935275	104.6840992	101.9634065	99.32816315	96.7752236	94.30157618	91.90433649	89.58074129
ADV1008771	8/19/2024	3.982	8/19/2027	110.35765	107.4756824	104.6847397	101.9814205	99.36247085	96.82477792	94.36536328	91.98137594	89.67008616
ADV1008800	8/20/2024	3.845	8/20/2029	116.98256	111.946205	107.1609368	102.6128779	98.28899376	94.17703467	90.2654845	86.5435127	83.00092993
ADV1008812	8/20/2024	5.291	11/20/2024	100.26379	100.2076649	100.1516212	100.0956543	100.0397639	99.98394988	99.92821208	99.87255033	99.81696449
ADV1008813	8/20/2024	5.226	12/20/2024	100.63276	100.492125	100.3518909	100.2120586	100.0726265	99.93359283	99.79495577	99.65671364	99.51886471
ADV1008819	8/20/2024	4.106	8/20/2026	106.77941	104.9444493	103.150156	101.3953462	99.67888126	97.99966452	96.35663915	94.74878645	93.17512417
ADV1008823	8/21/2024	4.976	2/21/2025	101.35998	101.0408341	100.7236791	100.4084979	100.0952722	99.78398364	99.47461434	99.16714655	98.86156274
ADV1008825	8/21/2024	4.509	8/21/2025	103.23868	102.4194868	101.6133312	100.8199048	100.0389075	99.27004813	98.51304497	97.76762476	97.03352264
ADV1008826	8/21/2024	4.509	8/21/2025	103.23868	102.4194868	101.6133312	100.8199048	100.0389075	99.27004813	98.51304497	97.76762476	97.03352264
ADV1008827	8/21/2024	4.231	2/23/2026	105.00921	103.6735288	102.362923	101.0767135	99.81424684	98.57489288	97.35804386	96.16311337	94.98953542
ADV1008829	8/21/2024	4.056	8/21/2026	106.69923	104.8623076	103.0661512	101.3095738	99.59143724	97.91064445	96.26613828	94.65689945	93.08194496
ADV1008832	8/21/2024	3.867	8/23/2027	110.07136	107.1825764	104.385365	101.676309	99.05213947	96.50972812	94.04608061	91.65832986	89.34372984
ADV1008835	8/21/2024	4.973	2/21/2025	101.35903	101.0398908	100.7227405	100.4075641	100.094343	99.7830591	99.47369443	99.16623123	98.86065199
ADV1008837	8/21/2024	4.507	8/21/2025	103.23705	102.4178643	101.6117159	100.8182966	100.0373063	99.26845393	98.51145765	97.76604425	97.03194887
ADV1008838	8/21/2024	5.285	11/21/2024	100.2755	100.2165748	100.1577337	100.0989748	100.0402978	99.98170264	99.92318911	99.86475703	99.80640624
ADV1008840	8/21/2024	5.28	11/21/2024	100.27519	100.2162684	100.157428	100.0986698	100.0399936	99.98139914	99.92288635	99.864455	99.80610495
ADV1008841	8/21/2024	4.884	3/21/2025	101.66974	101.2707939	100.8749486	100.4821693	100.0924205	99.70566709	99.32187462	98.94100908	98.56303699
ADV1008842	8/21/2024	4.074	8/21/2026	106.73203	104.8948076	103.098349	101.3414753	99.62304758	97.941969	96.29718215	94.68766765	93.11244233
ADV1008843	8/21/2024	4.244	2/23/2026	105.02648	103.6906823	102.3799579	101.0936318	99.83105043	98.59158367	97.37462369	96.17958403	95.00589865
ADV1008846	8/21/2024	4.493	8/21/2025	103.22564	102.4065066	101.6004086	100.8070392	100.0260981	99.2572945	98.50034642	97.7549807	97.02093247
ADV1008855	8/22/2024	4.962	2/24/2025	101.39191	101.064271	100.7387293	100.4152626	100.093851	99.77447509	99.45711551	99.14175321	98.82836939
ADV1008861	8/22/2024	4.111	8/24/2026	106.83273	104.9864394	103.1812578	101.4160067	99.68954603	98.00077672	96.34863867	94.73210923	93.15020153
ADV1008862	8/22/2024	3.953	8/23/2027	110.31492	107.422655	104.6220453	101.9096722	99.28226416	96.73669044	94.26995428	91.87918629	89.56163825
ADV1008863	8/22/2024	5.278	11/21/2024	100.27484	100.2159212	100.1570896	100.0983402	100.0396728	99.98108711	99.92258307	99.86416048	99.80581916
ADV1008865	8/22/2024	5.166	12/20/2024	100.62382	100.4832453	100.3430788	100.2033139	100.063949	99.92498224	99.78641198	99.64823645	99.51045394
ADV1008866	8/22/2024	4.983	2/21/2025	101.362	101.0428808	100.7257576	100.4106079	100.0974135	99.78615615	99.47681782	99.1693808	98.86382758
ADV1008867	8/22/2024	4.765	5/21/2025	102.33719	101.7747352	101.2184837	100.6683314	100.1241781	99.58592601	99.05347911	98.52674368	98.00562795
ADV1008875	8/22/2024	4.288	2/23/2026	105.08475	103.748543	102.4374145	101.150691	99.88771852	98.64786692	97.43052818	96.23511569	95.06106327
ADV1008895	8/23/2024	4.498	8/25/2025	103.27565	102.4452832	101.6283015	100.824386	100.0332246	99.25451505	98.48796463	97.73328973	96.99021553
ADV1008903	8/23/2024	4.418	8/25/2025	103.27573	102.4444656	101.626617	100.8218611	100.029885	99.25038542	98.48306892	97.727651	96.98385605



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1008904	8/23/2024	5.308	11/4/2024	100.06618	100.0549784	100.0437886	100.0326091	100.02144	100.0102811	99.99913264	99.98799445	99.97686653
ADV1008905	8/23/2024	3.952	8/24/2026	106.69041	104.8427716	103.0363232	101.2698813	99.54230248	97.85248449	96.19936433	94.58191652	92.99915153
ADV1008907	8/26/2024	5.046	1/16/2025	100.9357	100.7189541	100.5031447	100.2882654	100.0743103	99.86127326	99.64914836	99.43792966	99.22761128
ADV1008938	8/26/2024	3.994	8/26/2026	106.63945	104.7895534	102.9809568	101.2124776	99.48297591	97.79135238	96.13654625	94.51753374	92.93332653
ADV1008945	8/26/2024	3.761	8/26/2027	110.03399	107.1322579	104.32285	101.6023217	98.9673771	96.41486189	93.94175597	91.5451671	89.22232468
ADV1008946	8/26/2024	3.841	8/26/2027	110.02564	107.1293285	104.3250629	101.6094093	98.97908552	96.43094981	93.96199412	91.56933756	89.25022029
ADV1008967	8/26/2024	4.397	8/26/2025	103.26981	102.4358201	101.61533	100.8080167	100.013564	99.23166611	98.46202669	97.70435867	96.95838393
ADV1008968	8/26/2024	4.95	2/26/2025	101.41153	101.0783888	100.7474084	100.4185702	100.0918534	99.76723761	99.44470264	99.12422853	98.80579562
ADV1008970	8/26/2024	4.476	8/26/2025	103.26891	102.4358192	101.6162035	100.8097376	100.0161067	99.23500554	98.46613879	97.70922021	96.96397246
ADV1008974	8/26/2024	4.187	2/26/2026	104.98545	103.6421801	102.3231942	101.0278777	99.75563434	98.50588783	97.27808075	96.07167394	94.88614574
ADV1009003	8/26/2024	3.951	8/26/2026	106.71028	104.8570156	103.0451708	101.2735566	99.54102872	97.84648377	96.188857	94.56712092	92.98028361
ADV1009012	8/26/2024	4.489	8/26/2025	103.27968	102.4465409	101.6268769	100.8203633	100.0266852	99.24553742	98.47662454	97.71966033	96.97436746
ADV1009013	8/26/2024	4.034	8/26/2026	106.7129	104.8623082	103.0530306	101.283883	99.55372519	97.86145746	96.20601871	94.58638488	93.00156731
ADV1009014	8/26/2024	3.869	8/26/2027	110.10522	107.2077714	104.4023938	101.6856549	99.05427147	96.50510109	94.03513487	91.64149118	89.32140943
ADV1009023	8/26/2024	4.492	8/26/2025	103.28217	102.4490151	101.62934	100.8228154	100.0291264	99.24796786	98.47904433	97.72206959	96.9767663
ADV1009026	8/26/2024	4.206	2/26/2026	105.01085	103.6674016	102.3482402	101.0527512	99.78033826	98.53042493	97.30245374	96.09588547	94.91019838
ADV1009074	8/27/2024	3.885	8/27/2027	110.16025	107.2592929	104.450585	101.7306916	99.09632439	96.54433559	94.07171109	91.67556395	89.35312832
ADV1009082	8/27/2024	4.187	8/26/2033	130.83047	121.2948939	112.5607528	104.5556963	97.21427616	90.47725787	84.29100094	78.60690389	73.38090686
ADV1009083	8/27/2024	4.027	8/27/2026	106.71078	104.8575023	103.0456469	101.2740311	99.54151452	97.8469968	96.18941605	94.56774724	92.98100059
ADV1009084	8/27/2024	3.811	8/27/2029	116.87757	111.8245153	107.0242916	102.4629098	98.1272244	94.00488015	90.08426068	86.35444049	82.80514038
ADV1009085	8/27/2024	3.854	8/25/2028	113.63698	109.6724657	105.8703514	102.2231188	98.72363915	95.36514974	92.14123347	89.04579911	86.07306299
ADV1009086	8/27/2024	3.817	8/1/2029	115.50511	110.8757334	106.4721765	102.2821059	98.29392422	94.49672521	90.8802491	87.43484096	84.15141199
ADV1009092	8/27/2024	4.029	8/27/2026	106.71446	104.8611453	103.0492558	101.2776065	99.54505703	97.850507	96.19289454	94.57119457	92.98441732
ADV1009097	8/27/2024	3.831	8/28/2028	113.57722	109.6056374	105.797059	102.143938	98.63911676	95.27580468	92.04755724	88.94825668	85.97209368
ADV1009119	8/28/2024	5.04	1/28/2025	101.08146	100.8307562	100.581283	100.3330339	100.0860001	99.84017268	99.59554273	99.35210155	99.10984052
ADV1009120	8/28/2024	4.918	2/26/2025	101.4006	101.067594	100.7367546	100.4080564	100.0814788	99.75700132	99.43460375	99.11426617	98.79596891
ADV1009121	8/28/2024	4.836	3/26/2025	101.70961	101.2968303	100.8873709	100.4811871	100.0782397	99.67849033	99.28190085	98.88843394	98.49805281
ADV1009134	8/28/2024	3.914	8/28/2026	106.66342	104.8051831	102.988577	101.2124151	99.47555262	97.77688507	96.11534624	94.48990679	92.89957262
ADV1009135	8/28/2024	4.91	2/28/2025	101.42204	101.0833455	100.7468878	100.4126403	100.0805814	99.75068957	99.42294381	99.09732327	98.77380738
ADV1009139	8/28/2024	3.999	8/28/2026	106.66976	104.8141751	103.0001123	101.2263932	99.49187698	97.79546285	96.13608825	94.51272727	92.92438909
ADV1009152	8/29/2024	4.198	2/27/2026	105.0115	103.6654764	102.3434818	101.0449207	99.76921565	98.51580808	97.28415726	96.0737397	94.8840484
ADV1009154	8/29/2024	3.884	8/30/2027	110.18624	107.276744	104.4599966	101.7325464	99.09109082	96.53246759	94.05364797	91.65173034	89.32393414
ADV1009155	8/29/2024	3.862	8/29/2028	113.70597	109.729181	105.9156809	102.2579146	98.74871158	95.38126866	92.14912926	89.04616393	86.06655204

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009156	8/29/2024	3.808	8/29/2029	116.87994	111.8213405	107.016108	102.4502125	98.11047531	93.98450974	90.06066944	86.32800056	82.77619711
ADV1009157	8/29/2024	5.236	11/29/2024	100.36794	100.2866063	100.2054018	100.1243286	100.0433865	99.96257506	99.88189402	99.80134307	99.72092191
ADV1009159	8/29/2024	5.237	11/29/2024	100.36803	100.2866893	100.2054846	100.1244113	100.0434689	99.96265728	99.88197604	99.80142489	99.72100353
ADV1009168	8/29/2024	4.039	8/31/2026	106.77628	104.9115576	103.088711	101.3065579	99.56395605	97.85980215	96.1930307	94.56261228	92.96755209
ADV1009169	8/29/2024	3.827	8/29/2029	116.9722	111.9113915	107.1040244	102.5360715	98.19435063	94.06647179	90.14078557	86.40633517	82.85281179
ADV1009179	8/29/2024	5.245	11/27/2024	100.34432	100.268607	100.193013	100.1175371	100.042179	99.96693845	99.89181514	99.81680883	99.74191924
ADV1009197	8/30/2024	5.123	12/30/2024	100.73881	100.5701902	100.4021263	100.2346185	100.0676641	99.9012603	99.73540442	99.57009377	99.40532569
ADV1009198	8/30/2024	4.425	8/29/2025	103.32754	102.4850212	101.6562702	100.8409525	100.0387431	99.24932729	98.47240056	97.70766787	96.95484347
ADV1009199	8/30/2024	4.049	8/31/2026	106.79478	104.9298803	103.1068611	101.3245386	99.58177032	97.8774531	96.21052129	94.57994538	92.9847305
ADV1009202	8/30/2024	3.898	8/30/2027	110.22618	107.3161134	104.4988059	101.770809	99.12881977	96.56967548	94.09034699	91.6879323	89.35965048
ADV1009204	8/30/2024	5.336	11/1/2024	100.02752	100.024725	100.0219309	100.0191392	100.0163498	100.0135628	100.0107782	100.0079959	100.0052159
ADV1009205	8/30/2024	4.755	4/30/2025	102.0896	101.576815	101.0691162	100.5664239	100.0686643	99.57576546	99.08765643	98.60426781	98.1255315
ADV1009206	8/30/2024	4.054	8/31/2026	106.80403	104.9390417	103.1159361	101.3335289	99.59067745	97.88627858	96.21926659	94.58861193	92.9933197
ADV1009228	9/3/2024	3.768	9/3/2027	110.13551	107.2103297	104.3788393	101.6375449	98.98309917	96.41229732	93.92207016	91.50947757	89.1717024
ADV1009240	9/3/2024	3.792	9/4/2029	116.85841	111.7837406	106.9640428	102.3851644	98.03381135	93.89748957	89.96445323	86.22365613	82.66470661
ADV1009241	9/3/2024	5.331	11/4/2024	100.06385	100.0526683	100.0414959	100.030334	100.0191823	100.008041	99.9969099	99.98578914	99.97467865
ADV1009242	9/3/2024	5.004	2/3/2025	101.14476	100.8772759	100.6111975	100.3465107	100.0832046	99.82126849	99.56069164	99.30146349	99.0435736
ADV1009243	9/3/2024	4.931	3/3/2025	101.46475	101.1177581	100.7731118	100.4307919	100.0907747	99.75303719	99.4175564	99.08430977	98.75327504
ADV1009244	9/3/2024	3.868	9/3/2027	110.18438	107.2638668	104.4367767	101.6996295	99.04909128	96.48196945	93.99520653	91.58587347	89.25116353
ADV1009248	9/3/2024	3.937	12/16/2026	107.72254	105.5538674	103.4400556	101.3793317	99.36999763	97.41042342	95.49904347	93.63435362	91.81490815
ADV1009249	9/3/2024	3.843	12/15/2027	111.11601	107.8971694	104.7898047	101.7893978	98.89164327	96.09243678	93.3878639	90.77419015	88.24785149
ADV1009260	9/4/2024	5.337	11/4/2024	100.06369	100.0525106	100.0413398	100.0301793	100.0190292	100.0078894	99.99675983	99.98564059	99.97453161
ADV1009261	9/4/2024	4.365	9/4/2025	103.28384	102.4259237	101.5822941	100.7525944	99.9364812	99.13362244	98.3436967	97.5663929	96.80140989
ADV1009270	9/4/2024	4.291	9/4/2025	103.28896	102.4300881	101.5855308	100.7549321	99.93794747	99.13424384	98.34349887	97.56540058	96.79964696
ADV1009271	9/4/2024	4.291	9/4/2025	103.28896	102.4300881	101.5855308	100.7549321	99.93794747	99.13424384	98.34349887	97.56540058	96.79964696
ADV1009277	9/4/2024	5.341	11/4/2024	100.06375	100.0525653	100.0413944	100.0302338	100.0190836	100.0079437	99.99681414	99.98569482	99.97458577
ADV1009291	9/5/2024	3.683	12/5/2028	113.92369	109.6710089	105.603648	101.7125112	97.98899596	94.42496846	91.01273493	87.74501536	84.61491891
ADV1009292	9/5/2024	5.2	12/10/2024	100.5005	100.3883526	100.2764638	100.1648367	100.0534704	99.94236386	99.83151623	99.72092651	99.61059378
ADV1009293	9/5/2024	5.219	12/5/2024	100.43986	100.3417583	100.2438551	100.1461498	100.0486419	99.95133068	99.85421556	99.7572959	99.66057111
ADV1009297	9/5/2024	3.631	9/5/2029	116.49796	111.4161937	106.5903741	102.0062682	97.6505065	93.51052573	89.57451619	85.83137289	82.27065003
ADV1009298	9/5/2024	3.617	9/5/2029	116.42956	111.3494415	106.525212	101.9426385	97.58835414	93.44979798	89.51516268	85.77334547	82.21390265
ADV1009301	9/5/2024	5.225	12/5/2024	100.44046	100.3423542	100.2444496	100.1467428	100.0492335	99.95192079	99.85480421	99.75788311	99.66115687
ADV1009305	9/5/2024	3.995	3/5/2026	104.9143	103.5512398	102.2124416	100.8973113	99.60527425	98.33577363	97.08827032	95.86224196	94.65718235

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009307	9/5/2024	3.699	9/5/2029	113.88289	109.6012279	105.5259427	101.6457414	97.95000972	94.42877077	91.07264397	87.87280591	84.82095434
ADV1009308	9/5/2024	3.871	9/8/2026	106.55517	104.6703294	102.8282879	101.0278197	99.26774513	97.54692538	95.86426107	94.21869043	92.60918786
ADV1009312	9/5/2024	3.873	9/8/2026	106.55891	104.6740394	102.8319626	101.0314598	99.27135112	97.55049796	95.86780084	94.222198	92.61266379
ADV1009314	9/5/2024	3.781	1/5/2028	111.11945	107.8435044	104.6826369	101.6321151	98.68743011	95.84428719	93.098594	90.44644957	87.88413402
ADV1009327	9/6/2024	4.029	3/6/2026	104.86035	103.4967285	102.1573949	100.8417558	99.54923505	98.27927511	97.03133576	95.80489369	94.59944177
ADV1009332	9/6/2024	4.267	9/8/2025	103.24455	102.3758099	101.5217267	100.6819299	99.85606276	99.04378016	98.24474847	97.45864486	96.68515692
ADV1009333	9/6/2024	5.371	11/8/2024	100.11388	100.0915126	100.0691689	100.0468484	100.024551	100.0022767	99.98002538	99.95779712	99.93559183
ADV1009336	9/6/2024	3.698	9/8/2026	106.38343	104.4974664	102.654374	100.8529299	99.0919511	97.37029577	95.68686145	94.04058353	92.43043368
ADV1009337	9/6/2024	3.786	9/4/2026	106.354	104.4822072	102.6526893	100.8642498	99.1157292	97.40600811	95.73400545	94.09867703	92.49901395
ADV1009347	9/9/2024	5.331	11/8/2024	100.11217	100.0898163	100.067484	100.0451748	100.0228888	100.0006258	99.97838587	99.95616893	99.93397495
ADV1009353	9/9/2024	3.541	9/10/2029	116.09831	111.012139	106.1829404	101.5963871	97.23901981	93.09819309	89.1620221	85.41933316	81.85961767
ADV1009354	9/9/2024	3.541	9/10/2029	116.09831	111.012139	106.1829404	101.5963871	97.23901981	93.09819309	89.1620221	85.41933316	81.85961767
ADV1009355	9/9/2024	3.541	9/10/2029	116.09831	111.012139	106.1829404	101.5963871	97.23901981	93.09819309	89.1620221	85.41933316	81.85961767
ADV1009369	9/9/2024	4.827	3/10/2025	101.51189	101.1454173	100.7815807	100.4203469	100.0616879	99.70557627	99.35198475	99.0008866	98.65225541
ADV1009390	9/10/2024	3.564	9/10/2029	115.79425	110.7284498	105.9183266	101.3496408	97.00901346	92.8838735	88.96240544	85.23350002	81.6867086
ADV1009392	9/10/2024	4.128	10/10/2025	103.46719	102.509348	101.5692806	100.6464986	99.74052773	98.85091099	97.97720775	97.1189931	96.2758572
ADV1009393	9/10/2024	4.128	10/10/2025	103.46719	102.509348	101.5692806	100.6464986	99.74052773	98.85091099	97.97720775	97.1189931	96.2758572
ADV1009394	9/10/2024	3.563	9/10/2029	115.78937	110.7236783	105.9136689	101.3450928	97.00457119	92.8795332	88.95816349	85.22935297	81.68265315
ADV1009395	9/10/2024	4.122	10/10/2025	103.46147	102.5036561	101.5636177	100.6408644	99.73492182	98.84533302	97.97165736	97.11346997	96.27036098
ADV1009397	9/10/2024	4.2	9/10/2025	103.20746	102.3333776	101.4741342	100.6293556	99.7986782	98.9817505	98.17823263	97.38779583	96.61012206
ADV1009404	9/10/2024	3.947	3/10/2026	104.78656	103.412728	102.0635339	100.7383735	99.43665872	98.1578203	96.90130703	95.66658497	94.45313682
ADV1009405	9/10/2024	3.947	3/10/2026	104.78656	103.412728	102.0635339	100.7383735	99.43665872	98.1578203	96.90130703	95.66658497	94.45313682
ADV1009406	9/10/2024	3.947	3/10/2026	104.78656	103.412728	102.0635339	100.7383735	99.43665872	98.1578203	96.90130703	95.66658497	94.45313682
ADV1009407	9/10/2024	3.95	9/10/2026	106.72368	104.8316213	102.9826337	101.1754797	99.40896908	97.68195307	95.99332275	94.34200725	92.72697228
ADV1009409	9/10/2024	3.95	9/10/2026	106.72368	104.8316213	102.9826337	101.1754797	99.40896908	97.68195307	95.99332275	94.34200725	92.72697228
ADV1009412	9/11/2024	5.137	12/11/2024	100.50436	100.3895162	100.274944	100.1606465	100.0466226	99.9328713	99.81939163	99.70618255	99.59324305
ADV1009418	9/11/2024	4.04	12/11/2025	104.00178	102.8712038	101.7652707	100.6831817	99.62417082	98.58750427	97.57247929	96.5784223	95.60468745
ADV1009420	9/11/2024	3.627	3/11/2027	107.87341	105.4652551	103.1234284	100.8457348	98.63006829	96.47440414	94.37679554	92.33536993	90.34832581
ADV1009421	9/11/2024	3.91	3/11/2026	104.74545	103.3692227	102.017726	100.6903457	99.38649063	98.10558882	96.84708628	95.61044644	94.39514952
ADV1009423	9/11/2024	3.892	3/11/2026	104.83182	103.4532086	102.0993897	100.769753	99.46370507	98.1806719	96.92009749	95.68144345	94.46418816
ADV1009445	9/12/2024	4.26	9/12/2025	103.28207	102.4021212	101.537204	100.6869367	99.85094885	99.0288823	98.22039082	97.42513961	96.64280478
ADV1009446	9/12/2024	3.779	9/14/2026	106.4442	104.5437279	102.686752	100.8720229	99.0983323	97.36451437	95.6694437	94.0120338	92.39123545
ADV1009447	9/12/2024	3.644	9/13/2027	109.63415	106.6936758	103.8481597	101.0940332	98.42787772	95.84642138	93.34653188	90.9252097	88.57958179

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009462	9/12/2024	3.629	9/13/2027	109.59077	106.6509212	103.8060212	101.0524958	98.38692704	95.80604342	93.3067131	90.885937	88.54084248
ADV1009463	9/12/2024	3.626	9/12/2028	112.927	108.9262206	105.0914025	101.4147962	97.88905447	94.50720953	91.26265083	88.14910518	85.16061771
ADV1009470	9/12/2024	5.124	11/26/2024	100.31992	100.2471837	100.1745599	100.1020476	100.0296464	99.95735613	99.88517655	99.81310739	99.74114841
ADV1009481	9/13/2024	4.073	9/13/2034	132.68584	122.0278193	112.3576023	103.5771878	95.5988108	88.34382315	81.74170314	75.7291773	70.24944103
ADV1009482	9/13/2024	4.294	9/13/2039	147.75732	131.410476	117.1973672	104.8207172	94.02646495	84.5972634	76.3469882	69.11609281	62.76767578
ADV1009483	9/13/2024	4.073	9/15/2025	103.22086	102.3319749	101.4584384	100.5998505	99.75582929	98.92600569	98.11002309	97.30753675	96.51821329
ADV1009484	9/13/2024	4.986	1/13/2025	100.88258	100.6748894	100.4680592	100.2620868	100.0569668	99.85269385	99.64926265	99.44666792	99.24490443
ADV1009485	9/13/2024	4.158	9/15/2025	103.22523	102.3373082	101.4646959	100.607002	99.76384585	98.93485945	98.11968721	97.31798533	96.52942139
ADV1009486	9/13/2024	3.937	3/13/2026	104.80169	103.4196916	102.0626109	100.7298287	99.42074758	98.13478921	96.87139377	95.63001906	94.41013988
ADV1009487	9/13/2024	3.722	9/14/2026	106.33635	104.4369106	102.5809547	100.7672265	98.99451823	97.26166447	95.56754036	93.91105987	92.29117426
ADV1009490	9/13/2024	4.881	2/13/2025	101.22979	100.9344672	100.6408665	100.3489697	100.0587618	99.77022827	99.48335449	99.1981261	98.91452892
ADV1009492	9/13/2024	3.58	9/13/2029	115.89662	110.819961	105.9999061	101.4221344	97.0732	92.94047041	89.01207346	85.27684773	81.72429646
ADV1009493	9/13/2024	3.602	9/13/2028	112.84247	108.8405361	105.0047363	101.32731	97.8008973	94.41851866	91.17355265	88.05971596	85.07104433
ADV1009494	9/13/2024	3.577	9/13/2027	109.4402	106.5025372	103.6597681	100.9083221	98.24478276	95.66588027	93.16848429	90.74959724	88.40634787
ADV1009495	9/13/2024	4.158	9/15/2025	103.22523	102.3373082	101.4646959	100.607002	99.76384585	98.93485945	98.11968721	97.31798533	96.52942139
ADV1009496	9/13/2024	3.583	9/13/2027	109.45755	106.5196387	103.6766232	100.9249368	98.26116273	95.68203114	93.18441148	90.76530599	88.42184326
ADV1009502	9/13/2024	3.563	9/13/2027	109.39971	106.4626336	103.6204395	100.8695546	98.20656284	95.6281949	93.13132084	90.71294348	88.37019195
ADV1009505	9/13/2024	5.117	12/13/2024	100.52616	100.4057304	100.2856039	100.1657788	100.046254	99.92702831	99.80810057	99.68946961	99.57113427
ADV1009506	9/13/2024	3.587	6/14/2027	108.64835	105.9702024	103.3723882	100.8519926	98.40623044	96.03243631	93.72805831	91.49065245	89.31787722
ADV1009507	9/13/2024	3.566	9/13/2027	109.40838	106.4711843	103.6288671	100.8778619	98.21475282	95.63627033	93.13928444	90.72079786	88.37793965
ADV1009508	9/13/2024	3.569	12/13/2027	110.23403	107.034451	103.9456553	100.9631529	98.08266932	95.30012895	92.61164467	90.01350781	87.50217872
ADV1009539	9/16/2024	4.402	6/16/2025	102.41704	101.7827421	101.1563241	100.5376371	99.92653834	99.32288848	98.72655164	98.13739523	97.55528982
ADV1009545	9/16/2024	3.674	9/16/2026	106.2651	104.3608005	102.5002071	100.6820602	98.90514269	97.16828015	95.47033918	93.81022565	92.18688305
ADV1009546	9/16/2024	3.542	9/16/2027	109.3652	106.4202763	103.5707428	100.8129979	98.14359867	95.55925033	93.05679907	90.63322515	88.28563646
ADV1009547	9/16/2024	3.57	9/18/2028	112.76212	108.7477743	104.9006451	101.2128938	97.67708976	94.28618712	91.03350301	87.9126969	84.9177513
ADV1009550	9/16/2024	3.67	9/16/2026	106.25752	104.3532962	102.4927751	100.6746992	98.8978513	97.16105711	95.46318326	93.80313562	92.17985773
ADV1009552	9/16/2024	3.676	9/16/2026	106.26889	104.3645526	102.5039231	100.6857407	98.90878838	97.17189166	95.47391714	93.81377067	92.19039571
ADV1009554	9/16/2024	4.127	9/16/2025	103.2077	102.3171004	101.4419109	100.5817299	99.73617311	98.9048693	98.08745971	97.28359756	96.49294752
ADV1009561	9/17/2024	4.119	9/17/2025	103.2114	102.3180288	101.4401618	100.5773947	99.72933983	98.89562251	98.07588083	97.26976495	96.47693663
ADV1009578	9/17/2024	4.818	2/13/2025	101.21056	100.9154701	100.6221004	100.3304332	100.0404537	99.75214719	99.46549911	99.18049514	98.89712108
ADV1009579	9/17/2024	3.902	3/24/2026	104.85786	103.4459804	102.0600307	100.6993589	99.36333257	98.05133995	96.76278904	95.49710689	94.25373883
ADV1009582	9/17/2024	4.388	6/17/2025	102.41901	101.7819564	101.1528444	100.5315297	99.91786764	99.31171725	98.71294088	98.12140428	97.53697643
ADV1009583	9/17/2024	4.14	9/17/2025	103.23008	102.3366221	101.4586659	100.5958107	99.74766874	98.91386539	98.09403869	97.28783879	96.49492743

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009587	9/17/2024	4.703	3/17/2025	101.54705	101.1612681	100.7784085	100.3984341	100.0213122	99.64701078	99.2754981	98.90674298	98.54071471
ADV1009588	9/17/2024	4.061	9/17/2025	103.23104	102.336597	101.4576838	100.5939024	99.74486378	98.9101923	98.08952494	97.28251084	96.48881079
ADV1009589	9/17/2024	3.82	3/17/2026	104.78927	103.394842	102.0257501	100.6813637	99.36107082	98.06427949	96.79041658	95.53892723	94.3092741
ADV1009590	9/17/2024	3.63	9/17/2026	106.34626	104.4355601	102.5688183	100.7447624	98.96216561	97.21984432	95.51665633	93.85149914	92.22330826
ADV1009591	9/17/2024	3.571	9/17/2029	115.88402	110.7965066	105.9666823	101.3801431	97.02335943	92.88362218	88.94898859	85.20823239	81.6507972
ADV1009597	9/17/2024	4.391	6/17/2025	102.42092	101.7838553	101.1547365	100.5334151	99.91974643	99.31358945	98.71480656	98.12326348	97.53882922
ADV1009601	9/17/2024	4.143	9/17/2025	103.23275	102.3392783	101.4613093	100.5984416	99.75028715	98.91647151	98.09663267	97.29042076	96.49749754
ADV1009610	9/18/2024	4.149	9/18/2025	103.24897	102.3526617	101.471955	100.6064416	99.75573044	98.91944345	98.09721548	97.2886936	96.49353662
ADV1009613	9/18/2024	3.635	9/20/2027	109.672	106.7114551	103.8471088	101.0753153	98.39259177	95.79560539	93.28116661	90.84622191	88.48784728
ADV1009618	9/18/2024	4.736	3/18/2025	101.57119	101.1825488	100.7968719	100.4141218	100.0342653	99.6572695	99.28310207	98.91173117	98.54312544
ADV1009619	9/18/2024	4.172	9/18/2025	103.26949	102.3730888	101.4922837	100.6266733	99.77586616	98.93948438	98.11716274	97.30854829	96.51329982
ADV1009620	9/18/2024	3.927	3/18/2026	104.83522	103.4395708	102.0692959	100.7237637	99.40236099	98.10449443	96.82958963	95.5770905	94.34645851
ADV1009621	9/18/2024	3.762	9/18/2026	106.45258	104.5408862	102.6731812	100.8481893	99.06468274	97.32147677	95.61742818	93.95143346	92.32242716
ADV1009622	9/18/2024	5.14	11/13/2024	100.16496	100.1286734	100.0924272	100.0562235	100.0200624	99.9839437	99.94786735	99.91183327	99.87584139
ADV1009625	9/18/2024	3.596	9/18/2029	116.01487	110.9213908	106.0859933	101.4942463	97.13259404	92.98830332	89.04940904	85.30466426	81.74349348
ADV1009627	9/18/2024	4.943	12/18/2024	100.56295	100.4286158	100.2946532	100.1610616	100.0278393	99.89498487	99.76249664	99.63037308	99.49861267
ADV1009628	9/18/2024	3.804	3/18/2026	104.77655	103.3795247	102.0079275	100.6611229	99.33849597	98.03945157	96.76341376	95.50982492	94.27814508
ADV1009629	9/18/2024	3.639	9/18/2026	106.37363	104.4598709	102.5902014	100.7633396	98.97805372	97.23315525	95.52749738	93.85997321	92.22951403
ADV1009631	9/18/2024	3.804	3/18/2026	104.77655	103.3795247	102.0079275	100.6611229	99.33849597	98.03945157	96.76341376	95.50982492	94.27814508
ADV1009637	9/18/2024	4.054	9/18/2025	103.23566	102.338431	101.4568318	100.5904562	99.73891168	98.90181924	98.07881266	97.26953801	96.47365316
ADV1009638	9/18/2024	3.651	9/18/2026	106.39644	104.4824663	102.6125781	100.7855019	99.00000551	97.25490044	95.54903976	93.88131646	92.25066174
ADV1009640	9/18/2024	4.045	9/18/2025	103.22762	102.3304348	101.4488741	100.5825365	99.73102958	98.89397428	98.07100439	97.26176601	96.465917
ADV1009641	9/18/2024	3.641	9/18/2026	106.37743	104.4636368	102.5939308	100.7670333	98.98171235	97.23677945	95.53108778	93.86353042	92.23303865
ADV1009656	9/19/2024	4.077	9/19/2025	103.19521	102.2964107	101.4133065	100.5454839	99.69254816	98.85411812	98.02982544	97.21931418	96.42224029
ADV1009657	9/19/2024	4.642	3/19/2025	101.54639	101.1551327	100.7668801	100.3815944	99.99924157	99.61978804	99.24320086	98.86944755	98.49849611
ADV1009658	9/19/2024	3.859	3/19/2026	104.74982	103.3521101	101.9798589	100.6324284	99.30920267	98.00958543	96.7329997	95.47888686	94.24670598
ADV1009659	9/19/2024	5.053	11/7/2024	100.0914	100.0718733	100.0523701	100.0328866	100.0134228	99.99397858	99.97455395	99.95514887	99.9357633
ADV1009661	9/19/2024	5.05	11/8/2024	100.103	100.0806833	100.0583925	100.0361247	100.01388	99.99165829	99.96945961	99.94728388	99.92513106
ADV1009662	9/19/2024	3.613	9/20/2027	109.60778	106.6481752	103.7847413	101.0138381	98.33198338	95.73584509	93.22223432	90.78809819	88.4305133
ADV1009663	9/19/2024	3.613	9/20/2027	109.60778	106.6481752	103.7847413	101.0138381	98.33198338	95.73584509	93.22223432	90.78809819	88.4305133
ADV1009675	9/19/2024	3.692	11/19/2026	106.93081	104.844578	102.8099199	100.8252188	98.88892236	96.99953839	95.15563142	93.35582037	91.59877596
ADV1009678	9/19/2024	3.707	10/19/2026	106.65458	104.6564922	102.7062798	100.8024948	98.94374691	97.12869714	95.35605534	93.6245782	91.93306713
ADV1009680	9/19/2024	4.076	9/19/2025	103.19431	102.2955199	101.4124199	100.5446016	99.69167008	98.85324418	98.02895559	97.21844838	96.42137849



	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009685	9/19/2024	5.076	11/8/2024	100.10362	100.0813094	100.0590177	100.0367491	100.0145036	99.99228112	99.97008164	99.94790512	99.92575151
ADV1009688	9/19/2024	3.858	3/19/2026	104.74842	103.3507252	101.978484	100.6310634	99.3078473	98.00823958	96.73166322	95.4775596	94.24538778
ADV1009690	9/19/2024	5.049	11/8/2024	100.10297	100.0806593	100.0583684	100.0361007	100.013856	99.99163433	99.96943568	99.94725998	99.92510719
ADV1009692	9/19/2024	5.017	11/19/2024	100.22947	100.1764208	100.1234397	100.0705296	100.0176903	99.96492185	99.91222398	99.85959656	99.80703946
ADV1009695	9/19/2024	4.932	12/19/2024	100.57302	100.4358959	100.2991605	100.1628103	100.0268438	99.89125934	99.75605519	99.62122974	99.48678137
ADV1009696	9/19/2024	4.827	1/21/2025	100.94209	100.7121093	100.4831773	100.2552911	100.0284437	99.80262773	99.57783627	99.35406224	99.13129871
ADV1009711	9/20/2024	4.977	11/7/2024	100.08955	100.0700321	100.0505337	100.0310549	100.0115957	99.99215616	99.97273619	99.95333577	99.93395486
ADV1009713	9/20/2024	4.657	2/20/2025	101.24228	100.9276844	100.6150334	100.3043122	99.99550297	99.68858812	99.38355018	99.08037193	98.77903635
ADV1009716	9/20/2024	4.944	11/20/2024	100.23663	100.1807961	100.1250369	100.0693541	100.0137473	99.95821659	99.90276168	99.84738244	99.79207872
ADV1009720	9/20/2024	4.844	12/20/2024	100.57221	100.4323261	100.2928451	100.1537639	100.0150806	99.87679362	99.73890114	99.60140146	99.46429287
ADV1009728	9/20/2024	3.503	9/20/2027	109.52824	106.5642941	103.6967852	100.9220592	98.23662003	95.63712326	93.12036795	90.68328995	88.32295519
ADV1009737	9/23/2024	4.941	11/25/2024	100.29258	100.2227806	100.1530856	100.0834957	100.0140105	99.94462991	99.87535359	99.80618134	99.73711293
ADV1009744	9/23/2024	3.597	10/23/2029	116.72039	111.5004227	106.5499261	101.8535374	97.39685109	93.16635276	89.14935932	85.33396357	81.70898277
ADV1009746	9/23/2024	4.057	9/23/2025	103.2187	102.3088058	101.4149849	100.5368132	99.67388193	98.82579628	97.99217508	97.17265009	96.36686549
ADV1009747	9/23/2024	4.77	1/23/2025	100.95135	100.7158858	100.4815242	100.2482565	100.0160751	99.78497235	99.55494071	99.3259727	99.09806092
ADV1009752	9/23/2024	3.597	9/23/2027	109.58771	106.6200439	103.7490681	100.9711104	98.28266107	95.68036245	93.16100124	90.72150165	88.35891869
ADV1009753	9/23/2024	4.842	12/23/2024	100.60585	100.4575985	100.3097934	100.1624326	100.015514	99.86903549	99.72299521	99.57739114	99.43222129
ADV1009754	9/23/2024	4.94	11/25/2024	100.29251	100.2227096	100.1530148	100.083425	100.01394	99.94455944	99.87528324	99.80611111	99.73704282
ADV1009757	9/23/2024	4.841	12/23/2024	100.6057	100.4574502	100.3096455	100.162285	100.0153668	99.86888866	99.72284875	99.57724504	99.43207555
ADV1009762	9/23/2024	4.22	7/16/2025	102.61471	101.8972232	101.1897933	100.4922105	99.80426988	99.12577211	98.45652334	97.79633502	97.14502369
ADV1009763	9/23/2024	4.131	8/20/2025	102.91923	102.1042388	101.3021828	100.5127561	99.73566186	98.97061214	98.21732806	97.47553927	96.74498366
ADV1009764	9/23/2024	4.064	9/19/2025	103.18246	102.2837614	101.4007469	100.5330124	99.68016319	98.84181809	98.01760883	97.20717953	96.41018618
ADV1009766	9/23/2024	4.848	12/20/2024	100.57215	100.432324	100.2928972	100.1538701	100.0152408	99.87700761	99.73916878	99.60172261	99.46466737
ADV1009770	9/23/2024	3.596	9/23/2027	109.58479	106.6171675	103.7462334	100.9683165	98.27990708	95.67764733	93.15832406	90.71886152	88.35631475
ADV1009788	9/24/2024	4.798	12/23/2024	100.59911	100.4508898	100.3031204	100.1557952	100.008912	99.86246892	99.71646393	99.57089502	99.42576023
ADV1009789	9/24/2024	3.584	9/24/2027	109.55888	106.5888527	103.7156781	100.935677	98.24533071	95.64127312	93.12028302	90.67927716	88.31530354
ADV1009790	9/27/2024	4.708	1/23/2025	100.93604	100.7007468	100.4665543	100.2334549	100.001441	99.77050505	99.54063939	99.31183659	99.08408926
ADV1009791	9/27/2024	4.625	2/18/2025	101.20849	100.8998725	100.5931302	100.2882498	99.98521403	99.68400633	99.38461007	99.08700891	98.79118666
ADV1009792	9/24/2024	4.101	8/25/2025	102.94782	102.1189301	101.3034133	100.500946	99.71121661	98.93392313	98.16877315	97.41548334	96.67377916
ADV1009793	9/24/2024	3.611	3/24/2027	107.95127	105.5071438	103.1312238	100.8212262	98.57495799	96.3903118	94.26526247	92.19786318	90.18624195
ADV1009795	9/24/2024	4.726	1/15/2025	100.84941	100.6365633	100.4246212	100.2135813	100.0034377	99.79418476	99.58581663	99.37832766	99.17171224
ADV1009796	9/24/2024	3.931	9/24/2025	103.18763	102.2741224	101.3768153	100.4952798	99.62910214	98.77788315	97.94123732	97.11879229	96.31018831
ADV1009799	9/24/2024	4.608	2/24/2025	101.2711	100.9453997	100.6217793	100.3002215	99.98070684	99.66321577	99.34772915	99.03422803	98.7226937

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009800	9/24/2024	4.43	4/24/2025	101.85634	101.363309	100.8750119	100.3913832	99.912356	99.43786494	98.96784579	98.50223556	98.04097242
ADV1009801	9/24/2024	4.252	6/24/2025	102.40447	101.7482214	101.1004004	100.4608428	99.82939113	99.20589173	98.59019487	97.98215454	97.38162837
ADV1009802	9/24/2024	4.015	9/24/2025	103.19116	102.2786451	101.3822999	100.5016945	99.63641643	98.78606757	97.95026352	97.128633	96.32081724
ADV1009803	9/24/2024	4.522	3/24/2025	101.55484	101.1498506	100.7480713	100.3494658	99.95399645	99.56162643	99.1723193	98.78603928	98.4027511
ADV1009804	9/24/2024	4.022	9/24/2025	103.19752	102.2849749	101.3885988	100.5079628	99.64265449	98.7922758	97.95644229	97.13478264	96.32693812
ADV1009805	9/24/2024	3.791	3/24/2026	104.70026	103.2895247	101.9047023	100.5451383	99.21020095	97.89927886	96.61178061	95.34713375	94.10478408
ADV1009806	9/24/2024	4.811	12/17/2024	100.53247	100.4010881	100.2700669	100.139402	100.0090919	99.87913507	99.74953006	99.6202754	99.49136963
ADV1009807	9/24/2024	4.79	12/24/2024	100.60928	100.4582637	100.307704	100.1576035	100.0079602	99.85877195	99.71003669	99.56175233	99.41391679
ADV1009808	9/24/2024	4.703	1/24/2025	100.94681	100.708607	100.4715321	100.2355754	100.000729	99.76698494	99.53433555	99.30277309	99.0722899
ADV1009809	9/24/2024	4.519	3/24/2025	101.55364	101.1486554	100.746882	100.3482823	99.95281887	99.56045463	99.17115324	98.78487891	98.40159639
ADV1009813	9/24/2024	3.936	9/24/2025	103.19218	102.2786454	101.3813162	100.4997588	99.63355957	98.78231925	97.94565234	97.12318649	96.31456193
ADV1009817	9/24/2024	4.787	12/24/2024	100.60883	100.4578107	100.307252	100.1571527	100.0075105	99.8583234	99.70958925	99.561306	99.41347157
ADV1009833	9/25/2024	4.031	9/25/2025	103.21625	102.3008594	101.4017339	100.5184419	99.65056739	98.79770888	97.95947866	97.13550228	96.32541799
ADV1009834	9/25/2024	3.664	9/25/2026	106.33597	104.4059804	102.5208071	100.6791439	98.87972878	97.12134458	95.40281711	93.72301335	92.08083972
ADV1009835	9/25/2024	3.941	9/25/2025	103.20725	102.2908913	101.3908268	100.5066274	99.63787598	98.7841698	97.94512009	97.12035135	96.30950083
ADV1009836	9/25/2024	3.705	3/25/2026	104.70222	103.286954	101.8977532	100.5339592	99.19493465	97.88006339	96.58874911	95.32041477	94.07450178
ADV1009839	9/25/2024	3.939	9/25/2025	103.20543	102.2890766	101.389021	100.5048304	99.63608768	98.78239009	97.94334885	97.11858849	96.30774625
ADV1009840	9/25/2024	3.701	3/25/2026	104.69657	103.2813468	101.8921871	100.5284334	99.18944854	97.8746163	96.58334039	95.3150438	94.06916794
ADV1009841	9/25/2024	3.577	9/25/2026	106.32533	104.3925675	102.5047364	100.6605247	98.85866602	97.09793886	95.37716505	93.69520772	92.05096965
ADV1009842	9/25/2024	3.585	9/25/2026	106.3407	104.4077803	102.5198006	100.6754432	98.87344141	97.11257386	95.39166223	93.70956961	92.0651987
ADV1009845	9/25/2024	4.533	3/25/2025	101.57025	101.1624434	100.757892	100.3565567	99.95839925	99.56338199	99.17146783	98.78262029	98.39680346
ADV1009846	9/25/2024	4.769	12/26/2024	100.62852	100.4719127	100.3157939	100.1601651	100.0050241	99.85036851	99.69619605	99.54250444	99.38929145
ADV1009847	9/25/2024	4.773	12/24/2024	100.60651	100.4555143	100.3049806	100.1549062	100.0052888	99.85612648	99.70741702	99.55915838	99.41134848
ADV1009849	9/25/2024	4.448	4/25/2025	101.87589	101.3800133	100.8889238	100.4025541	99.92083666	99.44370482	98.97109339	98.50293837	98.03917697
ADV1009850	9/25/2024	4.767	12/26/2024	100.62821	100.4715997	100.3154817	100.1598537	100.0047135	99.85005866	99.69588697	99.54219615	99.38898393
ADV1009853	9/25/2024	3.941	9/25/2025	103.20725	102.2908913	101.3908268	100.5066274	99.63787598	98.7841698	97.94512009	97.12035135	96.30950083
ADV1009854	9/25/2024	4.768	12/26/2024	100.62837	100.4717562	100.3156378	100.1600094	100.0048688	99.85021359	99.69604151	99.5423503	99.38913769
ADV1009855	9/25/2024	4.534	3/25/2025	101.57065	101.1628445	100.7582911	100.3569539	99.95879445	99.56377524	99.17185916	98.78300971	98.39719099
ADV1009857	9/25/2024	3.597	9/25/2026	106.36374	104.4305996	102.5423969	100.6978208	98.89560449	97.13452635	95.41340801	93.73111245	92.08654226
ADV1009858	9/25/2024	4.893	11/25/2024	100.28874	100.218964	100.1492937	100.0797283	100.0102676	99.94091149	99.8716596	99.80251175	99.73346771
ADV1009867	9/26/2024	3.668	9/26/2029	116.43386	111.3078399	106.4424965	101.8231964	97.4361983	93.26859804	89.30827306	85.54383122	81.96456318
ADV1009868	9/26/2024	3.558	9/27/2027	109.75265	106.7658562	103.8768077	101.0817811	98.37721313	95.75969543	93.22596705	90.77290717	88.39752831
ADV1009872	9/26/2024	3.719	9/28/2026	106.47213	104.5324722	102.6380254	100.7874662	98.97951665	97.21294469	95.48656183	93.79922143	92.14981692

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009875	9/26/2024	3.644	9/27/2027	109.76191	106.7805405	103.8966228	101.1064462	98.40646201	95.79327557	93.26363886	90.81444331	88.44271297
ADV1009876	9/26/2024	3.64	9/28/2026	106.477	104.5343934	102.6371195	100.7838465	98.97329189	97.2042192	95.47543578	93.78579105	92.13417468
ADV1009880	9/26/2024	3.727	9/28/2026	106.48755	104.5477377	102.6531414	100.8024354	98.99434195	97.22762871	95.50110717	93.81363062	92.16409243
ADV1009882	9/26/2024	3.658	9/1/2027	109.39839	106.5374313	103.7691523	101.0900347	98.49670958	95.98595488	93.55468775	91.19995785	88.91894084
ADV1009890	9/26/2024	4.987	11/4/2024	100.05393	100.0427916	100.0316611	100.0205409	100.009431	99.99833138	99.98724201	99.97616289	99.965094
ADV1009896	9/26/2024	3.656	9/27/2027	109.79707	106.8151857	103.9307623	101.1400924	98.43962691	95.82597071	93.29587544	90.84623217	88.47406462
ADV1009897	9/26/2024	3.687	9/26/2028	113.29334	109.246262	105.3685328	101.6521752	98.08962942	94.67372903	91.39767873	88.25503305	85.23967652
ADV1009907	9/27/2024	4.769	12/27/2024	100.63943	100.4800519	100.3211808	100.1628153	100.0049529	99.84759121	99.6907279	99.53436057	99.37848687
ADV1009908	9/27/2024	3.634	9/27/2027	109.73244	106.7515036	103.8680063	101.07824	98.37865628	95.76586074	93.23660571	90.78778291	88.41641668
ADV1009916	9/27/2024	3.624	9/27/2029	116.22488	111.1011563	106.2382054	101.6213727	97.23690412	93.07188347	89.11417758	85.35238475	81.77578706
ADV1009920	9/27/2024	4.756	12/30/2024	100.67118	100.5033716	100.3361243	100.1694303	100.003287	99.8376917	99.67264162	99.50813413	99.34416657
ADV1009921	9/27/2024	3.546	9/27/2028	113.07851	109.0238296	105.1391956	101.4165846	97.84839179	94.42740874	91.14680107	88.00008686	84.98111668
ADV1009923	9/27/2024	4.963	11/8/2024	100.09911	100.0768257	100.0545619	100.0323211	100.0101035	99.98790879	99.96573709	99.9435883	99.92146241
ADV1009926	9/27/2024	4.945	11/12/2024	100.14419	100.1107425	100.0773379	100.0439717	100.0106437	99.97735391	99.94410223	99.9108886	99.87771294
ADV1009927	9/27/2024	4.059	9/26/2025	103.25203	102.3337269	101.4317816	100.545764	99.67525448	98.81984809	97.97915382	97.15279408	96.34040412
ADV1009928	9/27/2024	4.767	12/27/2024	100.63911	100.4797336	100.3208633	100.1624985	100.0046369	99.84727602	99.69041349	99.53404694	99.37817402
ADV1009930	9/27/2024	3.605	9/27/2027	109.64747	106.6677791	103.7855038	100.9969296	98.29850911	95.68684884	93.158702	90.71096118	88.34065155
ADV1009933	9/27/2024	3.522	9/27/2027	109.64688	106.6616377	103.7741088	100.9805647	98.27744332	95.66133751	93.12898742	90.67727329	88.30320867
ADV1009935	9/27/2024	3.525	9/27/2027	109.65568	106.6703091	103.7826534	100.9889857	98.28574374	95.66952023	93.13705524	90.68522894	88.31105478
ADV1009937	9/27/2024	3.522	9/27/2027	109.64688	106.6616377	103.7741088	100.9805647	98.27744332	95.66133751	93.12898742	90.67727329	88.30320867
ADV1009938	9/27/2024	3.676	9/29/2028	113.2779	109.2227424	105.3376073	101.6144698	98.04572597	94.62416865	91.34296447	88.19563254	85.17602445
ADV1009939	9/27/2024	3.676	9/22/2028	113.21259	109.1782968	105.3123894	101.6069602	98.05450989	94.64792892	91.38047465	88.24575075	85.23768754
ADV1009941	9/27/2024	3.675	9/15/2028	113.14338	109.1300175	105.2834144	101.5957739	98.05970086	94.66818241	91.41456617	88.29253978	85.29611183
ADV1009942	9/27/2024	3.674	9/8/2028	113.0742	109.0817474	105.2544352	101.5845776	98.06488242	94.68843289	91.44866601	88.33935278	85.35457944
ADV1009943	9/27/2024	4.023	9/29/2025	103.25072	102.324172	101.4142762	100.5205856	99.64266955	98.78011295	97.93251495	97.09948858	96.28066012
ADV1009955	9/30/2024	4.846	12/31/2024	100.6972	100.5266094	100.3565954	100.187151	100.0182733	99.8499595	99.68220681	99.51501245	99.34837365
ADV1009957	9/30/2024	4.527	3/31/2025	101.63393	101.2093251	100.7882385	100.3706243	99.95643993	99.54564328	99.13819302	98.73404848	98.33316964
ADV1009958	9/30/2024	4.053	9/30/2025	103.28864	102.3591549	101.4464208	100.5499869	99.66941932	98.80429913	97.95422221	97.11879841	96.29765097
ADV1009963	9/30/2024	4.529	3/31/2025	101.63477	101.21016	100.7890692	100.3714509	99.95726238	99.54646167	99.13900738	98.73485885	98.33397604
ADV1009965	9/30/2024	4.056	9/30/2025	103.29141	102.3619164	101.4491686	100.5527212	99.6721402	98.8070068	97.95691683	97.12148014	96.30031996
ADV1009970	9/30/2024	3.7	11/3/2028	113.68887	109.5304438	105.5502044	101.7395505	98.09034278	94.59487688	91.24585744	88.03637429	84.95987998
ADV1009971	9/30/2024	3.7	11/10/2028	113.75517	109.5757329	105.5760414	101.7473876	98.08153187	94.57067682	91.20744078	87.9848334	84.89623269
ADV1009973	9/30/2024	3.7	11/17/2028	113.82147	109.6209946	105.6018387	101.7551801	98.07267834	94.54644213	91.16900281	87.93328921	84.83260428

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1009975	9/30/2024	3.7	11/17/2028	113.82147	109.6209946	105.6018387	101.7551801	98.07267834	94.54644213	91.16900281	87.93328921	84.83260428
ADV1009978	9/30/2024	4.85	12/31/2024	100.69788	100.5272898	100.3572741	100.187828	100.0189486	99.85063305	99.68287867	99.51568261	99.34904214
ADV1009979	9/30/2024	4.85	12/31/2024	100.69788	100.5272898	100.3572741	100.187828	100.0189486	99.85063305	99.68287867	99.51568261	99.34904214
ADV1009984	9/30/2024	4.102	9/30/2025	103.33397	102.4042598	101.4913016	100.5946465	99.71386043	98.84852444	97.99823437	97.16260001	96.34124454
ADV1009987	9/30/2024	3.6	9/30/2027	109.90361	106.9062014	104.007127	101.2026285	98.48911263	95.86314278	93.32143144	90.86083271	88.47833546
ADV1009989	9/30/2024	3.6	9/30/2027	109.90361	106.9062014	104.007127	101.2026285	98.48911263	95.86314278	93.32143144	90.86083271	88.47833546
230406A00049	10/31/2024	3.29	10/29/2027	108.97888	105.9229577	102.9698365	100.115484	97.35605215	94.68786538	92.10741175	89.61133465	87.19642498
240503A00029	10/21/2024	4.85	10/21/2025	104.29044	103.2980724	102.3246729	101.3697014	100.4326369	99.51297839	98.61024303	97.72396589	96.8536989
ADV1008503	10/4/2024	3.864	10/4/2027	110.47817	107.4671035	104.5549814	101.7380125	99.01257345	96.37519951	93.82257638	91.351533	88.95903446
ADV1008506	10/4/2024	3.867	10/4/2027	110.48702	107.4758239	104.5635737	101.74648	99.02091911	96.38342628	93.8306871	91.35953044	88.96692129
ADV1009087	10/1/2024	3.806	10/1/2027	110.27949	107.2794957	104.3778428	101.5707775	98.85470734	96.22619649	93.6819581	91.21884693	88.83385238
ADV1010423	10/21/2024	5.006	11/4/2024	100.04851	100.0374047	100.0263125	100.0152305	100.0041588	99.99309729	99.98204604	99.971005	99.95997415
ADV1010238	10/10/2024	4.797	1/10/2025	100.80317	100.6047675	100.407159	100.2103366	100.0142954	99.81903083	99.62453817	99.43081277	99.23785004
ADV1010022	10/1/2024	4.732	1/16/2025	100.86077	100.645293	100.4307485	100.2171289	100.0044279	99.79263967	99.5817582	99.37177761	99.16269208
ADV1010530	10/25/2024	4.072	10/25/2027	111.29981	108.2195148	105.2421908	102.363818	99.58055971	96.88875028	94.28488663	91.76561997	89.32774802
ADV1010585	10/29/2024	4.936	11/19/2024	100.2163	100.1635461	100.1108603	100.0582451	100.0057004	99.95322606	99.90082194	99.84848789	99.79622376
ADV1010086	10/3/2024	3.641	10/3/2029	116.78394	111.6168517	106.7137492	102.0597448	97.64086322	93.44398394	89.45678513	85.66769082	82.06582198
ADV1010587	10/29/2024	4.204	10/29/2027	111.73781	108.6400293	105.6461036	102.7519654	99.95373302	97.24769856	94.6303191	92.09820826	89.64812839
ADV1010250	10/11/2024	3.987	10/13/2026	107.31018	105.3186228	103.3744306	101.476187	99.62252579	97.81213062	96.043733	94.3161101	92.62808277
ADV1010084	10/3/2024	3.638	10/4/2027	110.05603	107.0456005	104.1342612	101.3182136	98.59382438	95.95761937	93.40627549	90.93661343	88.54559057
ADV1010613	10/30/2024	4.207	10/30/2028	115.69267	111.5052523	107.4964047	103.6575351	99.98051405	96.45764514	93.08163939	89.84559137	86.74295699
ADV1010597	10/29/2024	5.07	11/5/2024	100.05915	100.0452822	100.0314311	100.0175932	100.0037685	99.98995699	99.9761586	99.96237333	99.94860117
ADV1010610	10/30/2024	4.887	11/29/2024	100.32566	100.2450733	100.1646147	100.0842863	100.0040876	99.92401847	99.84407853	99.76426748	99.68458503
ADV1010252	10/11/2024	4.958	11/12/2024	100.14153	100.1081524	100.0748113	100.0415084	100.0082438	99.97501719	99.94182867	99.90867813	99.87556549
ADV1010560	10/28/2024	4.956	11/19/2024	100.21758	100.1648146	100.112121	100.059498	100.0069454	99.9544633	99.90205138	99.84970953	99.79743761
ADV1010635	10/31/2024	4.867	11/29/2024	100.32384	100.2432622	100.1628158	100.0824995	100.0023129	99.92225589	99.84232803	99.76252906	99.68285866
ADV1010652	10/31/2024	4.766	1/31/2025	101.03535	100.7785785	100.5231016	100.2689137	100.0160051	99.76436628	99.51398763	99.26485978	99.01697342
ADV1010263	10/11/2024	4.777	1/14/2025	100.84532	100.6357158	100.4269986	100.2191585	100.0121899	99.8060873	99.60084517	99.39645805	99.19292055
ADV1010286	10/15/2024	4.92	11/15/2024	100.17328	100.1315665	100.0899053	100.0482954	100.0067366	99.96522884	99.92377207	99.88236617	99.84101102
ADV1010568	10/28/2024	4.853	12/27/2024	100.64649	100.4877381	100.3294897	100.1717449	100.0145012	99.85775628	99.70150778	99.54575331	99.39049055
ADV1010225	10/10/2024	4.003	10/10/2029	117.33933	112.3761472	107.6654065	103.1927789	98.94482357	94.90893187	91.07327112	87.4267328	83.95888438
ADV1010400	10/18/2024	4.992	11/1/2024	100.01447	100.0116972	100.0089236	100.0061524	100.0033835	100.0006169	99.99785263	99.9950907	99.9923311
ADV1010538	10/25/2024	4.963	11/14/2024	100.16146	100.122582	100.083753	100.0449706	100.0062349	99.96754571	99.92890295	99.89030653	99.85175636

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010583	10/29/2024	4.87	11/29/2024	100.32451	100.2439069	100.1634386	100.0831005	100.0028922	99.92281334	99.84286376	99.76304308	99.68335102
ADV1010556	10/28/2024	4.796	1/28/2025	101.00872	100.7602577	100.5130226	100.2670007	100.0221832	99.77856112	99.53612584	99.29486867	99.05478105
ADV1010593	10/29/2024	5.051	11/8/2024	100.09393	100.0717367	100.04957	100.0274263	100.0053055	99.98320763	99.96113263	99.93908046	99.91705107
ADV1010449	10/21/2024	3.958	10/21/2027	111.16844	108.0951912	105.1244678	102.2522762	99.47480468	96.78841128	94.18961502	91.67508785	89.24164701
ADV1010399	10/18/2024	4.921	11/18/2024	100.2066	100.1565483	100.1065646	100.0566465	100.0067939	99.9570067	99.90728473	99.85762786	99.80803598
ADV1010466	10/22/2024	4.995	11/5/2024	100.05968	100.0458015	100.0319371	100.018086	100.0042481	99.99042336	99.97661179	99.96281335	99.94902803
ADV1010103	10/3/2024	4.91	12/6/2024	100.41485	100.3143963	100.2141537	100.1141206	100.0142963	99.91468	99.81527113	99.71606898	99.61707288
ADV1010522	10/25/2024	4.07	10/15/2027	111.19301	108.1414697	105.1910751	102.3379151	99.57825225	96.90851424	94.32528567	91.82530016	89.40543299
ADV1010125	10/4/2024	4.926	12/4/2024	100.39274	100.2978899	100.2032248	100.1087446	100.0144486	99.92033631	99.82640712	99.73266051	99.63909592
ADV1010204	10/9/2024	4.959	11/12/2024	100.14201	100.1086213	100.075271	100.041959	100.0086852	99.97544948	99.94225183	99.90909216	99.87597041
ADV1010638	10/31/2024	4.871	11/29/2024	100.32416	100.2435839	100.1631372	100.0828207	100.0026339	99.9225766	99.84264849	99.76284926	99.68317861
ADV1010402	10/18/2024	4.299	10/20/2025	103.73977	102.753027	101.7851095	100.8354833	99.90363258	98.98906091	98.09129008	97.20985942	96.34432502
ADV1010118	10/4/2024	4.004	10/5/2026	107.09999	105.1351285	103.2164648	101.3426357	99.51232388	97.7242591	95.97721685	94.27001612	92.60151758
ADV1010262	10/11/2024	4.958	11/12/2024	100.14153	100.1081524	100.0748113	100.0415084	100.0082438	99.97501719	99.94182867	99.90867813	99.87556549
ADV1010251	10/11/2024	4.561	4/11/2025	101.77044	101.315088	100.8637977	100.4165117	99.97317692	99.53374104	99.09815271	98.66636147	98.23831774
ADV1010479	10/22/2024	4.632	3/20/2025	101.54807	101.1556286	100.7662151	100.3797977	99.99634171	99.6158132	99.23817863	98.86340497	98.49145973
ADV1010632	10/31/2024	4.195	10/31/2029	118.88544	113.8076072	108.9903518	104.4187441	100.0787937	95.95738449	92.04221548	88.32174564	84.78514274
ADV1010491	10/23/2024	4.954	11/12/2024	100.13873	100.1054099	100.0721237	100.0388757	100.0056658	99.97249401	99.93936017	99.90626425	99.87320617
ADV1010123	10/4/2024	5.025	11/4/2024	100.05259	100.0414658	100.0303472	100.0192389	100.0081409	99.99705313	99.98597562	99.97490835	99.9638513
ADV1010108	10/3/2024	3.82	10/5/2026	106.74164	104.7803536	102.865196	100.9948064	99.16786887	97.38311532	95.63932287	93.93531219	92.26994556
ADV1010333	10/15/2024	4.976	11/5/2024	100.06098	100.0470914	100.0332138	100.0193494	100.0054982	99.99166022	99.97783541	99.96402375	99.95022522
ADV1010381	10/17/2024	4.984	11/7/2024	100.08363	100.0641869	100.0447607	100.025354	100.005967	99.98659941	99.96725137	99.94792281	99.92861369
ADV1010083	10/3/2024	5.045	11/4/2024	100.05307	100.0419391	100.0308188	100.0197087	100.008609	99.9975195	99.98644026	99.97537125	99.96431247
ADV1010557	10/28/2024	4.796	1/28/2025	101.00872	100.7602577	100.5130226	100.2670007	100.0221832	99.77856112	99.53612584	99.29486867	99.05478105
ADV1010287	10/15/2024	4.933	11/13/2024	100.15114	100.1149952	100.0788936	100.0428344	100.0068176	99.97084298	99.93491058	99.89902027	99.86317199
ADV1010639	10/31/2024	4.871	11/29/2024	100.32416	100.2435839	100.1631372	100.0828207	100.0026339	99.9225766	99.84264849	99.76284926	99.68317861
ADV1010328	10/15/2024	4.925	11/15/2024	100.17349	100.1317781	100.0901168	100.0485066	100.0069477	99.96543978	99.92398283	99.88257675	99.84122142
ADV1010662	10/31/2024	4.602	4/30/2025	102.00198	101.4936462	100.9903541	100.492025	99.99858594	99.50996534	99.02609301	98.54690012	98.07231916
ADV1010331	10/15/2024	4.936	11/13/2024	100.15125	100.1151056	100.0790039	100.0429446	100.0069277	99.970953	99.9350205	99.89913011	99.86328174
ADV1010146	10/7/2024	3.988	10/7/2027	110.87306	107.8479949	104.9225467	102.0928891	99.35536556	96.70647976	94.14288785	91.66139082	89.25892738
ADV1010605	10/30/2024	4.993	11/13/2024	100.15	100.1139302	100.0779016	100.0419154	100.0059715	99.97006969	99.93421001	99.89839235	99.86261663
ADV1010619	10/30/2024	4.585	4/30/2025	101.99362	101.4852742	100.9819615	100.483612	99.99015272	99.50151211	99.01761997	98.53840746	98.06380707
ADV1010512	10/24/2024	4.99	11/7/2024	100.08218	100.0627514	100.0433439	100.0239559	100.0045876	99.98523868	99.9659093	99.94659937	99.92730886



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010237	10/10/2024	4.788	1/13/2025	100.83621	100.6293824	100.423419	100.2183099	100.0140496	99.81063279	99.6080542	99.40630858	99.20539072
ADV1010500	10/23/2024	4.906	11/22/2024	100.24983	100.1886752	100.127609	100.0666296	100.005737	99.94493104	99.88421142	99.823578	99.7630306
ADV1010517	10/24/2024	4.892	11/25/2024	100.28244	100.2129365	100.1435385	100.0742451	100.0050561	99.93597112	99.86699001	99.79811254	99.72933846
ADV1010018	10/1/2024	5.039	11/1/2024	100.01853	100.0157442	100.012964	100.0101861	100.0074106	100.0046374	100.0018665	99.99909794	99.99633173
ADV1010424	10/21/2024	4.913	11/21/2024	100.2394	100.1810206	100.122718	100.0644968	100.0063569	99.94829797	99.89031994	99.83242262	99.77460585
ADV1010326	10/15/2024	4.925	11/15/2024	100.17349	100.1317781	100.0901168	100.0485066	100.0069477	99.96543978	99.92398283	99.88257674	99.84122142
ADV1010355	10/16/2024	4.769	1/15/2025	100.85421	100.6419467	100.4305851	100.2201232	100.0105552	99.80187532	99.59407786	99.38715716	99.18110761
ADV1010573	10/28/2024	5.084	11/1/2024	100.01247	100.0096992	100.0069294	100.0041619	100.0013968	99.99863404	99.99587359	99.99311546	99.99035964
ADV1010302	10/15/2024	4.924	11/15/2024	100.17345	100.1317358	100.0900745	100.0484644	100.0069055	99.96539759	99.92394068	99.88253463	99.84117934
ADV1010644	10/31/2024	4.95	11/15/2024	100.17102	100.1293985	100.0878275	100.0463077	100.0048389	99.96342101	99.92205399	99.88073773	99.83947212
ADV1010607	10/30/2024	4.919	11/21/2024	100.2378	100.1794888	100.1212573	100.0631072	100.0050381	99.94704997	99.88914264	99.83131593	99.77356965
ADV1010056	10/2/2024	5.08	11/4/2024	100.05373	100.0426005	100.0314782	100.0203663	100.0092646	99.9981732	99.98709206	99.97602116	99.96496048
ADV1010129	10/4/2024	3.951	10/5/2026	107.156	105.187623	103.2655838	101.3885051	99.55506397	97.76398577	96.01404138	94.30404545	92.63285455
ADV1010478	10/22/2024	4.827	12/19/2024	100.55177	100.4152839	100.2791819	100.1434634	100.0081267	99.87317033	99.7385925	99.60439162	99.47056608
ADV1010361	10/16/2024	4.925	11/18/2024	100.20724	100.1571737	100.1071762	100.0572444	100.007378	99.95757706	99.90784137	99.85817081	99.80856525
ADV1010405	10/18/2024	4.96	11/12/2024	100.14005	100.1066989	100.0733897	100.0401188	100.006886	99.97369129	99.94053458	99.90741581	99.87433491
ADV1010448	10/21/2024	4.483	5/21/2025	102.17937	101.6174213	101.0616663	100.5120068	99.96834246	99.43057551	98.89861011	98.37235253	97.85171104
ADV1010545	10/25/2024	4.521	5/27/2025	102.26692	101.6881742	101.1159913	100.550258	99.9908655	99.43770753	98.89068016	98.34968175	97.81461293
ADV1010157	10/7/2024	4.119	7/10/2026	106.3481	104.6279799	102.9441533	101.2955379	99.68109227	98.09981636	96.55074924	95.0329673	93.54558232
ADV1010553	10/28/2024	4.792	1/28/2025	101.00773	100.7592726	100.51204	100.2660206	100.0212055	99.7775859	99.53515307	99.29389834	99.05381314
ADV1010079	10/3/2024	5.043	11/4/2024	100.05305	100.0419144	100.0307941	100.0196841	100.0085843	99.99749484	99.98641562	99.97534663	99.96428787
ADV1010150	10/7/2024	4.94	11/6/2024	100.07361	100.0569216	100.0402493	100.0235934	100.0069539	99.99033068	99.97372374	99.95713305	99.94055859
ADV1010555	10/28/2024	4.924	11/26/2024	100.29512	100.2228701	100.1507284	100.0786974	100.0067768	99.93496633	99.86326584	99.79167505	99.7201937
ADV1010651	10/31/2024	4.321	10/31/2025	103.96246	102.9431485	101.9438677	100.9640353	100.0030872	99.06048081	98.13569406	97.22822465	96.33758897
ADV1010493	10/23/2024	4.879	11/25/2024	100.28175	100.2122359	100.1428294	100.0735274	100.0043298	99.93523634	99.86624672	99.79736075	99.72857818
ADV1010229	10/10/2024	4.957	11/12/2024	100.14172	100.1083355	100.0749898	100.0416824	100.0084132	99.97518215	99.94198911	99.90883405	99.8757169
ADV1010543	10/25/2024	4.153	10/26/2026	107.61535	105.5886074	103.610818	101.6804895	99.79618792	97.956533	96.1601952	94.40589368	92.69239415
ADV1010172	10/8/2024	4.484	10/8/2036	142.46665	129.2673279	117.4990203	106.9957699	97.6117933	89.21893388	81.70444368	74.96905495	68.92530163
ADV1010142	10/7/2024	4.859	12/6/2024	100.40885	100.3084605	100.2082806	100.10831	100.0085481	99.90899408	99.80964735	99.71050721	99.61157299
ADV1010559	10/28/2024	4.985	11/15/2024	100.17315	100.1315049	100.0899161	100.0483784	100.0068918	99.96545615	99.92407138	99.88273739	99.84145407
ADV1010282	10/15/2024	4.92	11/15/2024	100.17328	100.1315665	100.0899053	100.0482954	100.0067366	99.96522884	99.92377207	99.88236617	99.84101102
ADV1010051	10/2/2024	5.079	11/4/2024	100.05372	100.042588	100.0314658	100.0203539	100.0092522	99.99816083	99.9870797	99.97600881	99.96494814
ADV1010054	10/2/2024	5.08	11/4/2024	100.05373	100.0426005	100.0314782	100.0203663	100.0092646	99.9981732	99.98709206	99.97602116	99.96496048

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010654	10/31/2024	5.023	11/7/2024	100.08125	100.061837	100.0424481	100.0230788	100.0037291	99.9843988	99.96508801	99.94579665	99.9265247
ADV1010404	10/18/2024	4.141	4/20/2026	105.48127	103.9904907	102.5284329	101.094336	99.68746689	98.30711791	96.95260531	95.62326843	94.3184687
ADV1010521	10/24/2024	4.965	11/14/2024	100.16176	100.1228764	100.084042	100.0452543	100.0065132	99.96781868	99.92917056	99.89056879	99.85201328
ADV1010398	10/18/2024	4.245	11/24/2025	104.05689	102.9724461	101.9106699	100.8708555	99.85232569	98.85443098	97.87654796	96.91807816	95.97844679
ADV1010533	10/25/2024	4.877	11/25/2024	100.28118	100.2116869	100.1422993	100.0730162	100.0038374	99.93476264	99.86579175	99.79692448	99.72816059
ADV1010451	10/21/2024	4.34	10/21/2025	103.79058	102.8008064	101.8299705	100.8775293	99.94296273	99.02577018	98.12546962	97.24159675	96.37370413
ADV1010499	10/23/2024	4.9	11/22/2024	100.24946	100.1883069	100.127241	100.0662619	100.0053697	99.94456396	99.88384464	99.82321153	99.76266443
ADV1010023	10/1/2024	3.703	10/1/2026	106.4756	104.5277204	102.6254224	100.7673686	98.95226584	97.17886716	95.44597005	93.75241451	92.09708121
ADV1010642	10/31/2024	5.041	11/5/2024	100.05829	100.044425	100.0305779	100.0167439	100.0029232	99.98911556	99.9753211	99.96153977	99.94777155
ADV1010351	10/16/2024	4.52	4/16/2025	101.80702	101.3378248	100.8729438	100.4123136	99.95587583	99.5035735	99.05535044	98.61115158	98.17092281
ADV1010623	10/30/2024	5.075	11/6/2024	100.07074	100.0540998	100.0374795	100.0208756	100.0042879	99.98771648	99.9711613	99.95462233	99.93809953
ADV1010036	10/1/2024	5.04	11/7/2024	100.08839	100.0689023	100.049432	100.0299814	100.0105504	99.99113895	99.97174707	99.95237471	99.93302183
ADV1010563	10/28/2024	4.914	11/27/2024	100.30569	100.2306506	100.1557295	100.0809254	100.0062381	99.93166718	99.85721253	99.78287383	99.70865083
ADV1010034	10/1/2024	4.786	1/2/2025	100.70997	100.533818	100.3582812	100.1833561	100.0090394	99.83532806	99.66221885	99.48970867	99.31779439
ADV1010536	10/25/2024	4.738	1/27/2025	100.98351	100.737802	100.4932935	100.2499733	100.0078329	99.76686356	99.52705693	99.28840457	99.05089813
ADV1010264	10/11/2024	4.777	1/14/2025	100.84532	100.6357158	100.4269986	100.2191585	100.0121899	99.8060873	99.60084517	99.39645805	99.19292055
ADV1010636	10/31/2024	4.765	1/31/2025	101.0351	100.778324	100.5228478	100.2686606	100.0157526	99.7641144	99.51373638	99.26460916	99.01672342
ADV1010198	10/9/2024	4.789	1/9/2025	100.79017	100.5945606	100.3997162	100.2056355	100.0123139	99.81974696	99.6279302	99.43685917	99.24652946
ADV1010524	10/24/2024	4.969	11/13/2024	100.15047	100.1143656	100.0783076	100.042292	100.0063187	99.97038758	99.9344986	99.89865167	99.86284671
ADV1010124	10/4/2024	3.91	10/4/2027	110.61389	107.6008163	104.6867311	101.8678474	99.14054024	96.50134329	93.94694085	91.47416047	89.0799659
ADV1010339	10/16/2024	3.955	1/18/2028	111.80394	108.4816255	105.276989	102.1851461	99.20144519	96.32145797	93.54096715	90.85595481	88.26259152
ADV1010520	10/24/2024	4.965	11/14/2024	100.16176	100.1228764	100.084042	100.0452543	100.0065132	99.96781868	99.92917056	99.89056879	99.85201328
ADV1010156	10/7/2024	4.94	11/7/2024	100.08498	100.0655047	100.0460523	100.0266196	100.0072065	99.98781297	99.96843896	99.94908444	99.92974939
ADV1010558	10/28/2024	5.065	11/8/2024	100.09447	100.0722738	100.0501039	100.027957	100.005833	99.98373196	99.96165378	99.93959842	99.91756585
ADV1010603	10/30/2024	4.18	10/30/2029	119.27542	113.9866802	108.9706399	104.211743	99.69540183	95.40793272	91.33649486	87.46903422	83.79423119
ADV1010471	10/22/2024	4.618	3/31/2025	101.66823	101.2446036	100.8244893	100.4078395	99.99461155	99.58476351	99.17825414	98.77504285	98.37508972
ADV1010539	10/25/2024	5.006	11/8/2024	100.09382	100.0716222	100.0494434	100.0272877	100.0051549	99.98304506	99.96095807	99.93889393	99.91685258
ADV1010188	10/8/2024	4.34	9/2/2025	103.23887	102.3866782	101.5485813	100.7242327	99.91329578	99.11544498	98.33036502	97.55775076	96.79730669
ADV1010514	10/24/2024	5.002	11/6/2024	100.07087	100.0542213	100.0375874	100.0209699	100.0043686	99.98778366	99.97121493	99.95466242	99.9381261
ADV1010664	10/31/2024	5.015	11/7/2024	100.08109	100.0616815	100.0422926	100.0229234	100.0035737	99.98424342	99.96493266	99.94564134	99.92636941
ADV1010015	10/1/2024	4.777	1/2/2025	100.70839	100.5322378	100.356705	100.1817839	100.0074713	99.83376393	99.6606587	99.48815248	99.31624215
ADV1010544	10/25/2024	4.675	2/25/2025	101.29842	100.9710875	100.6458654	100.3227324	100.0016682	99.68265316	99.36566765	99.05069237	98.73770825
ADV1010033	10/30/2024	3.564	10/29/2027	109.806	106.7375279	103.772172	100.9058901	98.13482426	95.45528915	92.86376354	90.3568819	87.93142657

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010450	10/21/2024	4.021	10/21/2026	107.46177	105.4470322	103.4807086	101.5613302	99.6874864	97.85781892	96.07101917	94.32582627	92.62102487
ADV1010017	10/1/2024	3.694	10/1/2026	106.45817	104.5104634	102.608335	100.7504476	98.93550807	97.16226959	95.42952972	93.73612852	92.08094677
ADV1010495	10/23/2024	4.996	11/6/2024	100.071	100.0543427	100.0377066	100.0210868	100.0044832	99.987896	99.97132501	99.95477024	99.93823167
ADV1010432	10/21/2024	4.914	11/21/2024	100.23946	100.1810793	100.1227767	100.0645554	100.0064154	99.94835647	99.89037839	99.83248102	99.7746642
ADV1010554	10/28/2024	4.918	11/27/2024	100.30599	100.2309507	100.1560293	100.081225	100.0065374	99.93196627	99.85751138	99.78317243	99.70894918
ADV1010494	10/23/2024	4.995	11/5/2024	100.05945	100.0455776	100.0317152	100.017866	100.0040299	99.99020712	99.97639746	99.96260093	99.94881752
ADV1010426	10/21/2024	4.961	11/12/2024	100.13941	100.1060804	100.072785	100.0395277	100.0063086	99.97312752	99.93998445	99.9068793	99.873812
ADV1010063	10/2/2024	5.077	11/4/2024	100.0537	100.0425632	100.031441	100.0203291	100.0092275	99.99813609	99.98705498	99.9759841	99.96492345
ADV1010284	10/15/2024	4.933	11/13/2024	100.15114	100.1149952	100.0788936	100.0428344	100.0068176	99.97084298	99.93491058	99.89902027	99.86317199
ADV1010369	10/17/2024	4.772	1/17/2025	100.87777	100.6599153	100.4430087	100.2270485	100.0120285	99.79794237	99.58478408	99.3725475	99.16122658
ADV1010330	10/15/2024	3.881	10/15/2027	110.8797	107.8271115	104.8758673	102.0220429	99.26188874	96.59182139	94.00841495	91.50839319	89.08862213
ADV1010487	10/23/2024	4.191	7/23/2026	106.61502	104.8574029	103.1374358	101.4539779	99.80593066	98.19223974	96.61189315	95.06391892	93.54738311
ADV1010199	10/9/2024	4.245	10/9/2025	103.64414	102.6870566	101.7477017	100.8255806	99.92022144	99.03116958	98.15798657	97.3002496	96.4575508
ADV1010541	10/25/2024	4.141	10/25/2029	109.674	107.050605	104.5240866	102.0900127	99.74418848	97.48264104	95.30160579	93.19751426	91.16698249
ADV1010497	10/23/2024	4.901	11/22/2024	100.24952	100.1883683	100.1273023	100.0663232	100.0054309	99.94462514	99.88390577	99.8232726	99.76272545
ADV1010661	10/31/2024	5.015	11/7/2024	100.08109	100.0616815	100.0422926	100.0229234	100.0035737	99.98424342	99.96493266	99.94564134	99.92636941
ADV1010462	10/22/2024	4.761	1/23/2025	100.94359	100.7090251	100.475555	100.2431748	100.0118766	99.78165304	99.5524965	99.32439954	99.09735479
ADV1010218	10/9/2024	4	10/9/2029	118.18996	112.9854067	108.0467106	103.3588615	98.90777165	94.68021693	90.66377915	86.84679296	83.21829642
ADV1010582	10/29/2024	4.881	11/27/2024	100.303	100.2279714	100.1530624	100.0782705	100.0035952	99.92903647	99.85459391	99.78026729	99.70605634
ADV1010622	10/30/2024	5.075	11/6/2024	100.07074	100.0540998	100.0374795	100.0208756	100.0042879	99.98771648	99.9711613	99.95462233	99.93809953
ADV1010630	10/31/2024	4.42	10/31/2025	103.98131	102.9630569	101.964803	100.9859593	100.0259633	99.08427384	98.16037033	97.25375181	96.36393597
ADV1010027	10/1/2024	4.903	12/2/2024	100.36779	100.2785003	100.1893676	100.1003957	100.0115842	99.92293271	99.83444074	99.74610788	99.65793368
ADV1010470	10/22/2024	4.234	3/30/2026	105.38781	103.9558987	102.5505488	101.1710799	99.81683849	98.48719241	97.18153024	95.89926041	94.63981037
ADV1010189	10/8/2024	4.412	6/30/2025	102.57797	101.9046145	101.2401044	100.5842684	99.93693751	99.29794702	98.6671364	98.04434926	97.42943318
ADV1010283	10/15/2024	4.92	11/15/2024	100.17328	100.1315665	100.0899053	100.0482954	100.0067366	99.96522884	99.92377207	99.88236617	99.84101102
ADV1010488	10/23/2024	4.143	10/23/2026	107.56265	105.5445522	103.5750075	101.6525482	99.77575744	97.94327073	96.15377373	94.40600007	92.69872914
ADV1010498	10/23/2024	4.901	11/22/2024	100.24952	100.1883683	100.1273023	100.0663232	100.0054309	99.94462514	99.88390577	99.8232726	99.76272545
ADV1010186	10/8/2024	4.94	11/8/2024	100.09612	100.0738673	100.0516375	100.0294308	100.007247	99.98508624	99.9629484	99.94083344	99.91874134
ADV1010663	10/31/2024	4.483	7/31/2025	102.97088	102.2107012	101.4617667	100.7238249	99.99663479	99.27996264	98.57358128	97.87727008	97.19081467
ADV1010584	10/29/2024	4.87	11/29/2024	100.32451	100.2439069	100.1634386	100.0831005	100.0028922	99.92281334	99.84286376	99.76304308	99.68335102
ADV1010463	10/22/2024	4.9	11/22/2024	100.24968	100.1885148	100.1274405	100.0664532	100.0055527	99.94473874	99.8840112	99.82336986	99.76281455
ADV1010594	10/29/2024	4.246	10/1/2029	117.16707	112.5443129	108.1498462	103.9709306	99.99561304	96.21267122	92.61156488	89.18239059	85.91583985
ADV1010081	10/3/2024	4.114	10/10/2025	103.45535	102.4976101	101.5576431	100.6349599	99.72908613	98.83956489	97.96595559	97.10783339	96.26478847

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010130	10/4/2024	3.864	10/4/2028	114.40522	110.3052127	106.3776555	102.6143753	99.00763204	95.55009155	92.23480155	89.05516987	86.00494392
ADV1010591	10/29/2024	4.884	11/27/2024	100.30322	100.2281963	100.1532872	100.078495	100.0038196	99.92926069	99.85481795	99.78049115	99.70628002
ADV1010535	10/25/2024	4.878	11/27/2024	100.30363	100.2285601	100.1536109	100.0787788	100.0040634	99.92946459	99.85498202	99.78061545	99.70636461
ADV1010312	10/15/2024	4.756	1/15/2025	100.85166	100.6393739	100.4279915	100.217509	100.0079204	99.79922008	99.59140225	99.38446126	99.1783915
ADV1010153	10/7/2024	4.94	11/7/2024	100.08498	100.0655047	100.0460523	100.0266196	100.0072065	99.98781297	99.96843896	99.94908444	99.92974939
ADV1010409	10/18/2024	4.756	1/17/2025	100.87411	100.6562863	100.4394168	100.2234935	100.0085102	99.79446069	99.58133884	99.36913853	99.15785373
ADV1010647	10/31/2024	4.967	11/14/2024	100.16028	100.1214406	100.0826436	100.0438932	100.0051893	99.966532	99.92792105	99.88935641	99.85083799
ADV1010155	10/7/2024	4.622	4/7/2025	101.75274	101.3084076	100.8679377	100.4312782	99.99837974	99.56919376	99.14367264	98.72176954	98.3034384
ADV1010397	10/18/2024	4.918	11/18/2024	100.20645	100.1563968	100.1064132	100.0564952	100.0066428	99.95685567	99.90713383	99.8574771	99.80788534
ADV1010507	10/23/2024	4.276	10/23/2025	103.82829	102.8317	101.8542954	100.8955251	99.95485887	99.03178685	98.12581797	97.23647936	96.36331544
ADV1010572	10/28/2024	5.078	11/4/2024	100.04773	100.0366384	100.0255568	100.0144855	100.0034243	99.99237346	99.98133279	99.97030232	99.95928204
ADV1010542	10/25/2024	4.738	1/27/2025	100.98351	100.737802	100.4932935	100.2499733	100.0078329	99.76686356	99.52705693	99.28840457	99.05089813
ADV1010211	10/9/2024	4.122	8/14/2026	106.74295	104.9246111	103.1462833	101.4067793	99.70496227	98.03973848	96.41005548	94.81490003	93.25329627
ADV1010358	10/16/2024	4.926	11/18/2024	100.20729	100.1572243	100.1072268	100.0572949	100.0074285	99.95762748	99.90789174	99.85822114	99.80861553
ADV1010020	10/1/2024	4.045	10/1/2025	103.29677	102.3645278	101.4491393	100.550148	99.66711598	98.79962067	97.94725432	97.10962337	96.28634778
ADV1010588	10/29/2024	5.057	11/5/2024	100.05896	100.0451006	100.0312495	100.0174116	100.003587	99.98977545	99.9759771	99.96219187	99.94841974
ADV1010078	10/3/2024	5.043	11/4/2024	100.05305	100.0419144	100.0307941	100.0196841	100.0085843	99.99749484	99.98641562	99.97534663	99.96428787
ADV1010581	10/29/2024	4.871	11/29/2024	100.32459	100.2439874	100.1635191	100.0831809	100.0029725	99.92289359	99.84294393	99.76312319	99.68343106
ADV1010589	10/29/2024	5.06	11/6/2024	100.07071	100.0540753	100.0374527	100.0208465	100.0042566	99.98768286	99.97112541	99.95458416	99.9380591
ADV1010598	10/29/2024	4.188	10/29/2031	115.35836	111.1453562	107.1543934	103.3715558	99.78391151	96.37943359	93.1469306	90.07598277	87.15688351
ADV1010179	10/8/2024	3.997	10/8/2027	110.90939	107.8810669	104.9525543	102.1200112	99.37977097	96.72832795	94.16232939	91.67856792	89.27397436
ADV1010149	10/7/2024	4.086	10/8/2026	107.29132	105.3164386	103.3881754	101.5051403	99.66599895	97.86946514	96.114299	94.39930496	92.7233298
ADV1010552	10/28/2024	4.924	11/26/2024	100.29512	100.2228701	100.1507284	100.0786974	100.0067768	99.93496633	99.86326584	99.79167505	99.7201937
ADV1010580	10/29/2024	5.073	11/5/2024	100.05919	100.0453242	100.0314731	100.0176351	100.0038104	99.98999888	99.97620048	99.96241521	99.94864304
ADV1010374	10/17/2024	4.929	11/18/2024	100.20722	100.1571643	100.1071734	100.0572482	100.0073884	99.95759408	99.90786499	99.85820102	99.80860203
ADV1010335	10/15/2024	4.22	10/15/2025	103.68622	102.7123899	101.7569055	100.8192497	99.8989262	98.99545669	98.10838053	97.23725372	96.38164815
ADV1010433	10/21/2024	4.914	11/21/2024	100.23946	100.1810793	100.1227767	100.0645554	100.0064154	99.94835647	99.89037839	99.83248102	99.7746642
ADV1010032	10/30/2024	3.564	10/29/2027	109.806	106.7375279	103.772172	100.9058901	98.13482426	95.45528915	92.86376354	90.3568819	87.93142657
ADV1010477	10/22/2024	4.898	11/22/2024	100.24955	100.1883919	100.1273178	100.0663306	100.0054302	99.94461631	99.88388887	99.82324764	99.76269243
ADV1010618	10/30/2024	4.761	1/30/2025	101.02274	100.7687499	100.5160294	100.2645724	100.0143696	99.76541154	99.51768903	99.27119292	99.02591413
ADV1010590	10/29/2024	5.06	11/7/2024	100.08242	100.0630069	100.0436125	100.0242376	100.0048823	99.98554646	99.9662301	99.94693319	99.92765569
ADV1010447	10/21/2024	4.411	7/21/2025	102.80753	102.075488	101.3538976	100.6425363	99.94118717	99.24963965	98.56768889	97.89513576	97.23178661
ADV1010640	10/31/2024	5	11/12/2024	100.13849	100.1052051	100.0719549	100.0387429	100.005569	99.97243311	99.93933514	99.90627505	99.87325275

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010519	10/24/2024	5.012	11/7/2024	100.08261	100.0631859	100.0437782	100.0243901	100.0050215	99.9856725	99.96634295	99.94703286	99.92774218
ADV1010364	10/16/2024	4.927	11/18/2024	100.20734	100.1572749	100.1072773	100.0573454	100.0074789	99.9576779	99.90794212	99.85827146	99.80866581
ADV1010352	10/16/2024	4.269	10/16/2025	103.6664	102.6910317	101.734073	100.795004	99.87332553	98.96855692	98.08023512	97.20791383	96.35116282
ADV1010445	10/21/2024	4.121	4/21/2026	105.58241	104.0860838	102.6186648	101.1793859	99.76750772	98.38231598	97.02312101	95.68925638	94.38007805
ADV1010231	10/10/2024	4.783	1/10/2025	100.8004	100.6020052	100.4044037	100.2075882	100.011554	99.81629633	99.62181054	99.42809199	99.23513607
ADV1010019	10/1/2024	5.039	11/1/2024	100.01853	100.0157442	100.012964	100.0101861	100.0074106	100.0046374	100.0018665	99.99909794	99.99633173
ADV1010645	10/31/2024	5.033	11/7/2024	100.08144	100.0620313	100.0426424	100.0232731	100.0039233	99.98459302	99.9652822	99.9459908	99.92671881
ADV1010014	10/1/2024	3.62	10/2/2028	113.08817	109.0286351	105.1396859	101.4132534	97.84169332	94.41776098	91.13458828	87.98566217	84.96480441
ADV1010144	10/7/2024	4.94	11/7/2024	100.08498	100.0655047	100.0460523	100.0266196	100.0072065	99.98781297	99.96843896	99.94908444	99.92974939
ADV1010040	10/2/2024	3.63	10/18/2027	109.91193	106.8715623	103.9323945	101.0904982	98.34212179	95.68368017	93.11174608	90.62304234	88.2144343
ADV1010107	10/3/2024	3.82	10/5/2026	106.74164	104.7803536	102.865196	100.9948064	99.16786887	97.38311532	95.63932287	93.93531219	92.26994556
ADV1010279	10/11/2024	4.218	10/14/2025	103.67379	102.7027968	101.7500392	100.8150101	99.89721723	98.99618634	98.11146051	97.2425993	96.38917803
ADV1010614	10/30/2024	4.641	3/26/2025	101.61903	101.2099747	100.8042024	100.4016764	100.0023577	99.60620815	99.21319005	98.82326639	98.43640073
ADV1010540	10/25/2024	4.738	1/27/2025	100.98351	100.737802	100.4932935	100.2499733	100.0078329	99.76686356	99.52705693	99.28840457	99.05089813
ADV1010043	10/1/2024	4.786	1/2/2025	100.70997	100.533818	100.3582812	100.1833561	100.0090394	99.83532806	99.66221885	99.48970867	99.31779439
ADV1010586	10/29/2024	4.219	10/29/2026	107.78015	105.743624	103.7564627	101.8171616	99.92426928	98.07638856	96.27217412	94.51033002	92.78960762
ADV1010455	10/21/2024	4.042	10/21/2027	111.17031	108.1028149	105.1375302	102.2704777	99.49786168	96.81605485	94.22159026	91.71115305	89.28157293
ADV1010050	10/2/2024	5.079	11/4/2024	100.05372	100.042588	100.0314658	100.0203539	100.0092522	99.99816083	99.9870797	99.97600881	99.96494814
ADV1010387	10/17/2024	4.984	11/7/2024	100.08363	100.0641869	100.0447607	100.025354	100.005967	99.98659941	99.96725137	99.94792281	99.92861369
ADV1010534	10/25/2024	4.877	11/25/2024	100.28118	100.2116869	100.1422993	100.0730162	100.0038374	99.93476264	99.86579175	99.79692448	99.72816059
ADV1010259	10/11/2024	3.99	4/11/2029	116.44769	111.7860973	107.3421543	103.1045337	99.06255537	95.20614794	91.52581044	88.01257718	84.6579848
ADV1010285	10/15/2024	4.933	11/13/2024	100.15114	100.1149952	100.0788936	100.0428344	100.0068176	99.97084298	99.93491058	99.89902027	99.86317199
ADV1010053	10/2/2024	5.079	11/4/2024	100.05372	100.042588	100.0314658	100.0203539	100.0092522	99.99816083	99.9870797	99.97600881	99.96494814
ADV1010427	10/21/2024	4.92	11/20/2024	100.22851	100.1729099	100.1173873	100.0619406	100.0065698	99.95127456	99.89605488	99.84091055	99.78584142
ADV1010097	10/3/2024	4.89	12/11/2024	100.4711	100.3566634	100.2424998	100.1286099	100.0149927	99.90164708	99.78857212	99.67576678	99.56323006
ADV1010368	10/17/2024	4.776	1/15/2025	100.8555	100.6432536	100.431916	100.221478	100.0119338	99.80327764	99.59550379	99.3886066	99.18258045
ADV1010657	10/31/2024	5.024	11/7/2024	100.08126	100.0618564	100.0424675	100.0230982	100.0037485	99.98441822	99.96510743	99.94581607	99.92654411
ADV1010604	10/30/2024	4.127	10/30/2026	107.77092	105.7286948	103.7360907	101.7915916	99.89373545	98.04111485	96.23237475	94.46621003	92.74136327
ADV1010026	10/1/2024	5.041	11/1/2024	100.01854	100.0157525	100.0129722	100.0101944	100.0074188	100.0046456	100.0018747	99.99910619	99.99633998
ADV1010340	10/15/2024	4.219	10/15/2025	103.68525	102.7114273	101.7559479	100.8182971	99.89797836	98.99451364	98.10744222	97.23632007	96.38071911
ADV1010085	10/3/2024	5.045	11/4/2024	100.05307	100.0419391	100.0308188	100.0197087	100.008609	99.9975195	99.98644026	99.97537125	99.96431247
ADV1010309	10/15/2024	4.942	11/12/2024	100.1401	100.1067389	100.0734165	100.0401323	100.0068863	99.97367834	99.94050844	99.90737648	99.87428242
ADV1010564	10/28/2024	4.909	11/29/2024	100.32786	100.2472505	100.1667686	100.0864168	100.0061949	99.92610258	99.84613946	99.76630528	99.68659973



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010372	10/17/2024	4.93	11/18/2024	100.20727	100.1572148	100.1072239	100.0572986	100.0074389	99.95764446	99.90791532	99.85825131	99.80865228
ADV1010430	10/21/2024	5.003	11/4/2024	100.04847	100.03737	100.0262778	100.0151958	100.0041241	99.99306267	99.98201143	99.9709704	99.95993957
ADV1010561	10/28/2024	5.036	11/12/2024	100.14037	100.1070666	100.0738021	100.0405758	100.0073876	99.97423738	99.94112515	99.90805081	99.87501429
ADV1010214	10/9/2024	4.281	10/9/2025	103.67838	102.7211234	101.781595	100.8593026	99.95377443	99.06455564	98.1912078	97.33330806	96.49044849
ADV1010562	10/28/2024	4.906	11/29/2024	100.32762	100.2470088	100.1665271	100.0861756	100.0059539	99.92586175	99.84589884	99.76606487	99.68635954
ADV1010224	10/10/2024	4.956	11/12/2024	100.14169	100.1083013	100.0749556	100.0416483	100.0083791	99.97514803	99.94195503	99.9088	99.87568288
ADV1010515	10/24/2024	4.994	11/7/2024	100.08226	100.0628304	100.0434229	100.0240349	100.0046665	99.98531756	99.96598814	99.94667818	99.92738764
ADV1010532	10/25/2024	4.936	11/15/2024	100.17176	100.1301012	100.0884963	100.0469426	100.00544	99.96398837	99.92258763	99.88123769	99.83993844
ADV1010537	10/25/2024	5.006	11/8/2024	100.09382	100.0716222	100.0494434	100.0272877	100.0051549	99.98304506	99.96095807	99.93889393	99.91685258
ADV1010009	10/1/2024	3.613	10/1/2026	106.45908	104.5084468	102.6035113	100.7429304	98.92540631	97.14968787	95.41456842	93.71888405	92.06151174
ADV1010486	10/23/2024	4.879	11/25/2024	100.28175	100.2122359	100.1428294	100.0735274	100.0043298	99.93523634	99.86624672	99.79736075	99.72857818
ADV1010202	10/9/2024	4.567	4/9/2025	101.75087	101.3010882	100.8552607	100.4133398	99.9752742	99.54101364	99.1105086	98.68371043	98.26057135
ADV1010174	10/8/2024	4.94	11/8/2024	100.09612	100.0738673	100.0516375	100.0294308	100.007247	99.98508624	99.9629484	99.94083344	99.91874134
ADV1010570	10/28/2024	5.08	11/4/2024	100.04775	100.0366609	100.0255793	100.0145079	100.0034468	99.99239593	99.98135526	99.97032478	99.95930449
ADV1010021	10/1/2024	3.817	4/1/2026	104.81628	103.383208	101.9768204	100.5964326	99.24138591	97.91104323	96.60478843	95.32202544	94.06217745
ADV1010139	10/7/2024	4.939	11/7/2024	100.08496	100.0654842	100.0460318	100.0265992	100.0071861	99.98779253	99.96841853	99.94906404	99.929729
ADV1010353	10/16/2024	4.117	4/16/2026	105.40292	103.9238386	102.4730465	101.0498054	99.65339812	98.28313179	96.93833703	95.61836684	94.32259572
ADV1010127	10/4/2024	4.326	10/6/2025	103.613	102.665427	101.7352314	100.821939	99.92509147	99.04424686	98.17897904	97.32887683	96.49354348
ADV1010655	10/31/2024	4.239	10/30/2026	107.83118	105.7914473	103.8012174	101.8589799	99.96327738	98.11270734	96.30591911	94.54161175	92.81853184
ADV1010154	10/7/2024	4.744	1/21/2025	100.91958	100.6901934	100.4618599	100.2345695	100.0083151	99.78308957	99.55888581	99.33569682	99.11351568
ADV1010411	10/18/2024	4.757	1/17/2025	100.87433	100.6565026	100.4396325	100.2237087	100.0087249	99.79467486	99.58155247	99.36935163	99.15806631
ADV1010518	10/24/2024	4.892	11/25/2024	100.28244	100.2129365	100.1435385	100.0742451	100.0050561	99.93597112	99.86699001	99.79811254	99.72933846
ADV1010191	10/8/2024	4.853	12/9/2024	100.4427	100.3339367	100.2254241	100.1171588	100.00914	99.90136683	99.79383834	99.68655368	99.579512
ADV1010649	10/31/2024	4.869	11/29/2024	100.324	100.243423	100.1629765	100.0826601	100.0024734	99.92241625	99.84248826	99.76268916	99.68301863
ADV1010117	10/4/2024	4.813	1/3/2025	100.7258	100.546895	100.3686304	100.1909986	100.0139962	99.83762	99.66186651	99.48673248	99.31221462
ADV1010465	10/22/2024	4.899	11/22/2024	100.24961	100.1884533	100.1273791	100.0663919	100.0054914	99.94467753	99.88395003	99.82330875	99.76275349
ADV1010637	10/31/2024	4.871	11/29/2024	100.32416	100.2435839	100.1631372	100.0828207	100.0026339	99.9225766	99.84264849	99.76284926	99.68317861
ADV1010055	10/2/2024	5.08	11/4/2024	100.05373	100.0426005	100.0314782	100.0203663	100.0092646	99.9981732	99.98709206	99.97602116	99.96496048
ADV1010551	10/28/2024	4.906	11/29/2024	100.32762	100.2470088	100.1665271	100.0861756	100.0059539	99.92586175	99.84589884	99.76606487	99.68635954
ADV1010401	10/18/2024	4.921	11/18/2024	100.2066	100.1565483	100.1065646	100.0566465	100.0067939	99.9570067	99.90728473	99.85762786	99.80803598
ADV1010446	10/21/2024	4.363	9/22/2025	103.48525	102.576786	101.6843195	100.8074265	99.94570135	99.09875235	98.26620122	97.44768252	96.64284308
ADV1010643	10/31/2024	4.363	1/30/2026	104.8875	103.6148778	102.373247	101.1614874	99.97852907	98.82335264	97.69498636	96.5925034	95.51501921
ADV1010403	10/18/2024	4.038	10/19/2026	107.31196	105.3071918	103.3504292	101.4402199	99.57517021	97.75393765	95.9752288	94.23779718	92.54044117

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010223	10/10/2024	4.254	10/10/2025	103.66386	102.7039267	101.7618179	100.8370426	99.92912491	99.03760619	98.16204429	97.3020129	96.45710076
ADV1010298	10/15/2024	4.923	11/15/2024	100.17341	100.1316935	100.0900322	100.0484221	100.0068632	99.9653554	99.92389853	99.88249251	99.84113726
ADV1010373	10/17/2024	4.929	11/18/2024	100.20722	100.1571643	100.1071734	100.0572482	100.0073884	99.95759408	99.90786499	99.85820102	99.80860203
ADV1010382	10/17/2024	4.985	11/7/2024	100.08365	100.064207	100.0447807	100.0253741	100.005987	99.98661942	99.96727138	99.9479428	99.92863367
ADV1010428	10/21/2024	4.918	11/20/2024	100.2284	100.1727981	100.1172755	100.0618289	100.0064582	99.95116308	99.89594349	99.84079925	99.78573021
130416A00025	4/16/2013	2.27	4/18/2028	100.12096	100.0061852	99.43172846	98.18806485	96.62952528	95.01707209	93.43536802	91.89590304	90.39778333
150202A00006	2/2/2015	1.92	2/3/2025	100.09283	100.0083066	99.86181396	99.67563598	99.48956479	99.30429178	99.1198114	98.93611837	98.75320722
151223A00007	12/23/2015	3.76	12/23/2030	100.23427	100.1537533	99.89283576	98.58255688	95.83797258	92.12248341	88.02611249	83.97003525	80.12484392
161012A00020	10/11/2016	2.96	10/14/2031	100.1765	99.93276324	98.71607693	95.91775586	91.93174653	87.43915987	82.95179864	78.69519395	74.70842602
170515A00052	5/15/2017	3.78	5/15/2042	100.00195	99.94575977	99.10936647	96.30746305	91.78311715	86.33950838	80.72003766	75.40371653	70.56810358
170519A00006	5/19/2017	3	5/19/2032	100.17972	100.0746437	99.5397956	97.84617378	95.19610643	92.13067378	89.03628975	86.06508801	83.24117504
170705A00037	7/5/2017	2.85	7/6/2032	105.5845	103.0751682	100.4070217	97.48682937	94.30429691	90.998673	87.74454848	84.63892377	81.69499046
170802A00074	8/2/2017	2.92	8/2/2027	99.992896	99.99023963	99.76842683	98.63991597	96.82451619	94.74471536	92.65183426	90.61408828	88.63596516
170809A00042	8/9/2017	2.35	8/9/2027	100.1274	100.0288071	99.60751975	98.59944593	97.31667516	95.98601659	94.67716668	93.39832943	92.14888558
171004A00022	10/4/2017	2.74	10/4/2027	100.15879	100.0681523	99.68787762	98.43839308	96.52372655	94.36917226	92.21245873	90.11655382	88.08508177
171005A00047	10/5/2017	3.29	10/5/2032	100.20307	100.0756786	99.3709913	97.21328771	93.7706656	89.67321193	85.47051612	81.44515049	77.67313529
180105A00005	1/5/2018	3.07	1/5/2028	100.18536	100.1048209	99.96059334	99.30232595	98.06847862	96.60274205	95.10979268	93.64846837	92.22411373
180105A00006	1/5/2018	3.07	1/5/2028	100.18536	100.1048209	99.96059334	99.30232595	98.06847862	96.60274205	95.10979268	93.64846837	92.22411373
180130A00087	1/30/2018	2.92	1/31/2028	100.17329	100.0927558	99.90408212	99.11792367	97.79845687	96.28436444	94.75861893	93.26797001	91.81578018
180302A00003	3/2/2018	3.89	3/2/2033	100.25137	100.1707717	99.84180285	98.28477313	95.13110289	90.88247476	86.19501654	81.55192794	77.19124454
180315A00030	3/15/2018	3.76	3/15/2033	101.52448	100.8819427	99.83046155	97.73595007	94.26783152	89.85281231	85.11639516	80.49863375	76.18080651
180504A00024	5/4/2018	3.62	5/4/2028	100.0014	99.99864903	99.96331138	99.32586374	97.54803772	95.03230509	92.24727057	89.47824082	86.80516109
180627A00005	6/27/2018	3.63	6/30/2033	100.23044	100.1498601	99.93820278	98.81795155	96.43569182	93.26978324	89.84853034	86.49207342	83.30941445
180703A00033	7/3/2018	3.4	7/3/2028	100.2053	100.1248072	100.0143134	99.46271766	98.21075999	96.59702774	94.90353773	93.23891604	91.62062846
190111A00040	1/11/2019	3.74	1/11/2034	100.00162	99.99883654	99.64269968	97.78664031	94.45049615	90.23138424	85.73559266	81.37173751	77.29777776
190116A00015	1/16/2019	3.61	1/17/2034	100.2222	100.1416913	99.84353129	98.45803812	95.80380599	92.40946588	88.80695454	85.30275604	81.99308089
190204A00054	2/4/2019	3.98	2/6/2034	100.25198	100.1606658	99.75996713	97.97776157	94.55197869	90.01718159	85.05559492	80.16310747	75.59153858
190222A00023	2/22/2019	3.66	2/22/2034	103.96047	102.2238928	99.98447129	96.84663125	92.61447564	87.58154003	82.32330908	77.2626251	72.57519301
190301A00015	3/1/2019	3.86	3/1/2034	104.23645	102.5969747	100.4893304	97.53356629	93.48897785	88.5680341	83.29883619	78.1637946	73.3904778
190409A00016	4/9/2019	2.91	4/9/2029	100.17248	100.0747567	99.61470392	98.0820124	95.63645333	92.78377254	89.88336834	87.07753139	84.38866578
190409A00017	4/9/2019	3.01	4/9/2029	100.18053	100.0851212	99.6476586	98.08917735	95.50037038	92.40724848	89.22668209	86.14450261	83.19565946
190430A00020	4/30/2019	3.41	4/28/2034	103.76042	101.817796	99.23564445	95.67350689	91.01820926	85.6963068	80.28496317	75.15424346	70.42310988
190520A00018	5/20/2019	3.7	5/20/2044	100.22242	99.93286112	98.4682077	94.98348247	89.90763352	84.08507799	78.24074028	72.80311844	67.90787922

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
190530A00044	5/30/2019	2.85	5/30/2034	100.16765	99.99111308	98.90146941	96.43474103	93.01221275	89.24174446	85.52345209	82.00248895	78.69565096
190807A00041	8/7/2019	2.27	8/7/2034	100.07316	99.46292297	97.50177184	94.30137335	90.49909605	86.63616289	82.94620601	79.48014729	76.22962581
190807A00044	8/7/2019	2.27	8/7/2034	100.07316	99.46292297	97.50177184	94.30137335	90.49909605	86.63616289	82.94620601	79.48014729	76.22962581
190827A00044	8/27/2019	1.9	8/27/2029	100.08428	99.78101004	98.63360086	96.77222628	94.63772827	92.49129378	90.40875206	88.39836835	86.45756984
190930A00079	9/30/2019	2.04	10/1/2029	100.10244	99.85435778	98.80310201	96.96993846	94.79570667	92.58390072	90.43408029	88.36030164	86.36024816
190930A00083	9/30/2019	2.04	10/1/2029	100.10244	99.85435777	98.80310201	96.96993846	94.79570667	92.58390072	90.43408029	88.36030164	86.36024816
191007A00012	10/7/2019	2	10/5/2029	100.08558	99.78153253	98.61951676	96.71847771	94.52695801	92.3192519	90.17792741	88.11265614	86.12074621
191007A00013	10/7/2019	2	10/5/2029	100.08558	99.78153253	98.61951676	96.71847771	94.52695801	92.3192519	90.17792742	88.11265614	86.12074622
191028A00015	10/28/2019	2.49	10/27/2034	100.1148	99.69294236	98.01053394	95.00171688	91.24987134	87.33934372	83.57220251	80.03009249	76.71099015
191031A00036	10/31/2019	2.9	10/31/2039	100.10242	99.44518538	97.1698771	93.20652993	88.23031817	83.02207708	78.0402114	73.45343861	69.26658284
191031A00037	10/31/2019	2.59	10/30/2034	100.11755	99.707005	98.04370782	95.04337154	91.28576018	87.35887226	83.57309303	80.01376118	76.67963835
191220A00029	12/20/2019	2.57	12/19/2031	100.43075	100.0166227	98.92677174	96.78074024	93.96765745	90.97578752	88.05178328	85.26003061	82.60149869
200108A00009	1/8/2020	2.4	1/8/2035	100.40714	99.5239917	97.50881608	94.2548307	90.34619805	86.35313364	82.53915512	78.97000002	75.63826467
200108A00040	1/8/2020	2.52	1/8/2030	100.54421	99.96018731	98.5883331	96.03282402	92.68271076	89.0997354	85.58976247	82.24223559	79.06062237
200110A00012	1/10/2020	2.57	1/10/2035	100.4941	99.73490368	97.93421224	94.86117958	91.04025487	87.06391916	83.23683185	79.64257337	76.27888969
200115A00023	1/15/2020	2.16	1/15/2030	100.44518	99.92660057	98.79980393	96.91516262	94.6579354	92.35280729	90.11232324	87.95396867	85.87538797
200115A00025	1/15/2020	2.1	1/15/2025	99.990437	99.98182711	99.8200631	99.54448309	99.26444721	98.98599027	98.70909812	98.43375822	98.1599574
200306A00021	3/6/2020	1.16	3/6/2030	99.972721	98.74081428	96.74554074	94.37391828	91.96999266	89.64195557	87.40270135	85.24911654	83.17718708
200309A00013	3/9/2020	1.1	3/8/2030	99.918985	98.6408212	96.60514997	94.22121173	91.81817652	89.49367877	87.25806435	85.10799059	83.03944406
200316A00030	3/16/2020	1.35	3/15/2030	100.19536	99.15200781	97.3447762	95.04163625	92.63575804	90.28904361	88.03010771	85.85765455	83.76768353
200316A00032	3/16/2020	1.35	3/15/2030	100.19536	99.15200781	97.3447762	95.04163625	92.63575804	90.28904361	88.03010771	85.85765455	83.76768353
200318A00015	3/18/2020	1.69	3/18/2030	99.972264	99.48894689	97.90405372	95.60732869	93.08257475	90.58347429	88.17465265	85.86046208	83.63672944
200326A00035	3/26/2020	1.68	3/26/2030	100.37658	99.48260898	97.87720264	95.67245843	93.28281369	90.92657276	88.65477295	86.46970297	84.36751982
200423A00008	4/23/2020	1.59	4/23/2030	100.14663	98.60502296	95.85505331	92.16551687	88.17971208	84.27932675	80.57142119	77.0614368	73.73835605
200423A00009	4/23/2020	1.59	4/23/2030	100.14663	98.60502296	95.85505331	92.16551687	88.17971208	84.27932675	80.57142119	77.0614368	73.73835605
200423A00010	4/23/2020	1.59	4/23/2030	100.14663	98.60502296	95.85505331	92.16551687	88.17971208	84.27932675	80.57142119	77.0614368	73.73835605
200430A00021	4/30/2020	1.2	4/30/2030	99.992784	98.75696651	96.73487812	94.30836052	91.83992905	89.44928572	87.15189736	84.94461359	82.82312186
200505A00010	5/5/2020	0.89	5/6/2030	99.836145	98.351844	96.16861033	93.69325116	91.22642186	88.84729759	86.56194832	84.36636144	82.2562172
200512A00023	5/12/2020	1.78	5/11/2035	99.627394	97.29629352	93.48089465	88.62855439	83.51024815	78.59836988	74.04805985	69.86712936	66.02544674
200609A00003	6/9/2020	1.66	6/8/2035	99.074096	96.18788911	91.67384349	86.15276825	80.4387764	75.01543984	70.02928736	65.4781464	61.32341286
200612A00001	6/12/2020	0.75	6/12/2030	99.687727	98.04722042	95.75317256	93.22700213	90.7338307	88.33435986	86.03089888	83.81903713	81.69431282
201022A00008	10/22/2020	1.02	10/22/2035	98.962431	96.0823526	92.1517904	87.79125031	83.51771127	79.50503433	75.76975906	72.29309262	69.05392131
201029A00008	10/29/2020	0.92	10/29/2030	99.86394	98.11147474	95.73765788	93.09555266	90.4758394	87.95668971	85.54296647	83.22979119	81.0120564

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
201030A00025	10/30/2020	2.02	10/28/2050	98.32687	94.24296904	88.18328167	80.92023852	73.5240805	66.70232948	60.70768055	55.51521692	51.01057877
201116A00019	11/16/2020	1.32	11/15/2030	99.961014	97.64537444	94.30995198	90.3256662	86.25073744	82.34456679	78.65493854	75.17430478	71.88958001
201118A00015	11/18/2020	1.66	11/18/2036	100.2108	95.4284826	89.69399764	83.34466115	76.96032979	70.97937401	65.55040532	60.65941821	56.25180049
201118A00017	11/18/2020	1.66	11/18/2036	100.2108	95.4284826	89.69399764	83.34466115	76.96032979	70.97937401	65.55040532	60.65941821	56.25180049
201118A00018	11/18/2020	1.85	11/18/2036	100.74258	96.07562047	90.45595045	84.19002823	77.82176213	71.81717119	66.35260055	61.42624598	56.98539921
201202A00016	12/2/2020	1.32	12/3/2035	99.522054	96.79369154	93.00898645	88.67296241	84.33927223	80.24760546	76.43781659	72.89444246	69.59574754
201202A00017	12/2/2020	1.32	12/3/2035	99.522054	96.79369154	93.00898645	88.67296241	84.33927223	80.24760546	76.43781659	72.89444246	69.59574754
201229A00003	12/29/2020	1.28	12/30/2030	99.836065	97.43949187	94.00618914	89.94526609	85.81753701	81.87011	78.14583613	74.63584842	71.32648744
201230A00018	12/30/2020	1.52	12/28/2035	100.05809	95.27271864	89.60674845	83.39932195	77.20433173	71.40914611	66.13100516	61.35084564	57.01975939
210108A00007	1/8/2021	1.65	1/8/2036	99.225792	95.8674896	91.0649222	85.3412078	79.46116456	73.9062021	68.8204917	64.19717188	59.99300343
210225A00010	2/25/2021	2.02	2/25/2041	100.18856	97.13566757	92.78140752	87.41090511	81.77212823	76.39554029	71.47337281	67.01343004	62.97129193
210405A00013	4/5/2021	1.82	4/7/2036	100.87136	98.3394761	94.88491089	90.69079129	86.26443165	81.9963706	78.00779199	74.30287336	70.86001619
210622A00004	6/22/2021	2.42	6/20/2036	101.5464	98.58759218	94.47681927	89.2344652	83.40119415	77.61092153	72.21350327	67.29709488	62.83564631
210623A00024	6/23/2021	1.56	6/23/2026	99.981776	99.65473885	98.56048949	97.09234213	95.56361966	94.05827398	92.58297476	91.13702602	89.71961286
210910A00009	9/10/2021	1.77	9/10/2036	101.31552	98.44108785	94.75433092	90.41117499	85.8570083	81.47044078	77.37868902	73.5868758	70.07162887
210924A00016	9/24/2021	1.91	9/24/2036	101.69438	98.90710016	95.34526561	91.08060904	86.54581512	82.13720407	78.01336094	74.1902565	70.64596893
211019A00005	10/19/2021	2.49	10/20/2036	102.40099	99.23166234	95.03084213	89.78352992	83.89725992	78.00114576	72.48090612	67.45473342	62.90318297
211110A00017	11/10/2021	2.01	11/10/2036	102.14118	99.26770174	95.68245627	91.41452059	86.84782828	82.3831758	78.2004979	74.32489319	70.73509067
211116A00012	11/16/2021	2.22	12/18/2034	102.81307	100.2869855	97.2270173	93.58967826	89.62568218	85.67650529	81.92652853	78.41272476	75.12334099
211124A00008	11/24/2021	2.62	11/22/2041	103.01053	99.87486871	95.82816378	90.80344384	85.14829844	79.46793963	74.15196716	69.32449339	64.96648717
211215A00020	12/15/2021	1.85	12/15/2031	102.4395	100.1754423	97.60143135	94.70542511	91.66654895	88.67878579	85.82080491	83.10000393	80.50924309
211227A00012	12/27/2021	2.39	12/29/2036	105.0682	100.0201882	94.36137889	88.18151412	81.7654138	75.51587034	69.72560822	64.48642306	59.76730362
220217A00024	2/17/2022	2.43	2/17/2027	100.71178	100.2294987	99.45161226	98.11404949	96.3995794	94.6026585	92.83576986	91.11365207	89.43542521
220617A00069	6/17/2022	4.06	6/17/2027	102.52396	101.7935647	101.047401	100.1981953	99.03097054	97.38901848	95.45530577	93.480029	91.55304873
220831A00108	8/31/2022	4.07	8/31/2027	103.57339	102.535399	101.4752387	100.2952406	98.79502747	96.84717556	94.61236457	92.34329204	90.13583888
221212A00004	12/12/2022	4.36	12/10/2032	110.93356	108.0876665	105.2443926	102.3621317	99.38001621	96.26130256	93.02661794	89.77023616	86.63391658
221214A00057	12/14/2022	4.65	12/14/2027	104.93661	103.6965839	102.4595411	101.1702098	99.68330764	97.8093361	95.51594056	93.02657066	90.57160882
221222A00137	12/22/2022	5.4	12/22/2037	113.69068	110.603619	107.4433851	104.1459121	100.6144514	96.75791036	92.56147409	88.11120874	83.7291798
230804A00039	8/4/2023	5.02	8/4/2028	108.17023	106.3688662	104.5821702	102.7843405	100.9124506	98.87363476	96.59563995	94.09690504	91.56795207
240403A00012	4/3/2024	4.82	4/3/2029	110.3636	107.9435768	105.5494128	103.1526479	100.6930876	98.10682319	95.35423842	92.46703506	89.6062153
ADV1007645	7/5/2024	4.781	7/5/2029	110.51558	108.0528838	105.6143717	103.1718511	100.666481	98.03881557	95.25221881	92.33349326	89.44040228
ADV1007841	7/12/2024	0	7/12/2029	97.244579	93.75007334	89.68234533	85.64444231	81.78850819	78.12222626	74.63603966	71.32022738	68.1656416
ADV1007842	7/12/2024	0	7/12/2029	97.244579	93.75007334	89.68234533	85.64444231	81.78850819	78.12222626	74.63603966	71.32022738	68.1656416

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007970	7/17/2024	0	7/17/2029	97.239644	93.731033	89.6508618	85.60266873	81.73775218	78.06342799	74.5700363	71.24778639	68.08746709
ADV1008036	7/19/2024	0	7/19/2029	97.238116	93.72341432	89.63826985	85.58596712	81.71746118	78.03992358	74.54365357	71.2188326	68.05622419
ADV1008090	7/23/2024	0	7/23/2029	97.234058	93.70816229	89.61308838	85.5525773	81.67689872	77.99294029	74.49091998	71.16096375	67.99378446
ADV1008152	7/24/2024	0	7/24/2029	97.233123	93.70434781	89.60679349	85.54423263	81.66676217	77.98119978	74.47774322	71.1465046	67.97818413
ADV1008200	7/25/2024	0	7/25/2029	97.232186	93.70053251	89.60049878	85.53588906	81.65662725	77.9694614	74.46456911	71.13204867	67.96258762
ADV1008212	7/26/2024	0	7/26/2029	97.231578	93.69671832	89.59420425	85.5275466	81.64649395	77.95772514	74.45139766	71.11759596	67.94699495
ADV1008308	7/31/2024	0	7/31/2029	97.225777	93.67735733	89.56269131	85.48584762	81.59585182	77.89907569	74.38558016	71.04538075	67.86908909
ADV1008367	8/1/2024	0	8/1/2029	97.181323	93.65776626	89.55352281	85.47719845	81.58561482	77.88725941	74.37236482	71.0309373	67.85357609
ADV1008427	8/2/2024	0	8/2/2029	97.18082	93.65390869	89.54714376	85.46875409	81.57538361	77.8754453	74.35915215	71.01649707	67.83806689
ADV1008515	8/6/2024	0	8/6/2029	97.176677	93.63845252	89.5216311	85.43498839	81.53447545	77.82821048	74.30632827	70.9587684	67.7760681
ADV1008530	8/7/2024	0	8/7/2029	97.175743	93.63458796	89.5152538	85.42654988	81.52425257	77.81640717	74.29312899	70.94434429	67.7605779
ADV1008591	8/9/2024	0	8/9/2029	97.174294	93.62686096	89.50250024	85.40967637	81.50381182	77.79280705	74.26673846	70.91550573	67.72960888
ADV1008654	8/13/2024	0	8/13/2029	97.170108	93.6113871	89.47699835	85.3759433	81.46295029	77.74563269	74.21398948	70.85786724	67.66771636
ADV1008769	8/19/2024	0	8/20/2029	97.163257	93.58428525	89.43238703	85.31695496	81.39150664	77.6631606	74.12178161	70.75712368	67.55955033
ADV1008780	8/19/2024	0	8/20/2029	97.163257	93.58428525	89.43238703	85.31695496	81.39150664	77.6631606	74.12178161	70.75712368	67.55955033
ADV1008881	8/22/2024	0	8/22/2029	97.161563	93.57653773	89.41964478	85.30011157	81.37110913	77.63961653	74.09546052	70.72836871	67.52867981
ADV1008893	8/23/2024	0	8/23/2029	97.161031	93.57266633	89.41327427	85.29169163	81.36091286	77.62784773	74.08230397	70.71399604	67.51325022
ADV1008894	8/23/2024	0	8/23/2029	97.161031	93.57266633	89.41327427	85.29169163	81.36091286	77.62784773	74.08230397	70.71399604	67.51325022
ADV1008939	8/26/2024	0	8/27/2029	97.156553	93.5571544	89.3877974	85.25802353	81.32014439	77.58079403	74.02970444	70.65653744	67.45156966
ADV1008940	8/26/2024	0	8/27/2029	97.156553	93.5571544	89.3877974	85.25802353	81.32014439	77.58079403	74.02970444	70.65653744	67.45156966
ADV1009099	8/27/2024	0	8/27/2029	97.156768	93.55715645	89.3877974	85.25802353	81.32014439	77.58079403	74.02970444	70.65653744	67.45156966
ADV1009133	8/28/2024	0	8/28/2029	97.155805	93.55327885	89.38142967	85.24960942	81.30995643	77.56903598	74.01656122	70.64218081	67.43615897
ADV1009166	8/29/2024	0	8/29/2029	97.154744	93.54937494	89.37505838	85.24119612	81.29977012	77.55728008	74.00342065	70.62782738	67.42075204
ADV1009167	8/29/2024	0	8/29/2029	97.154744	93.54937494	89.37505838	85.24119612	81.29977012	77.55728008	74.00342065	70.62782738	67.42075204
ADV1009212	8/30/2024	0	8/30/2029	97.153448	93.54545354	89.3686849	85.23278386	81.28958546	77.54552633	73.99028275	70.61347715	67.4053489
ADV1009568	9/17/2024	0	9/17/2029	97.093296	93.45973463	89.25076111	85.07999178	81.1044154	77.3314422	73.75055412	70.35109771	67.12305759
ADV1009810	9/24/2024	0	9/24/2029	97.086719	93.43260465	89.20604779	85.02072826	81.03250637	77.24831407	73.65748114	70.24924502	67.01349057
ADV1009878	9/26/2024	0	9/26/2029	97.084827	93.42485097	89.19327751	85.00380672	81.01197619	77.22458298	73.63091347	70.220174	66.98222094
ADV1010151	10/7/2024	0	10/9/2029	97.027745	93.35623596	89.10515425	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010067	10/2/2024	0	10/2/2029	97.036487	93.38529422	89.15160374	84.9524706	80.95020489	77.15338776	73.55137479	70.13328298	66.88888287
ADV1010205	10/9/2024	0	10/9/2029	97.028295	93.35624597	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010407	10/18/2024	0	10/18/2029	97.018161	93.31886675	89.04545307	84.81433506	80.78464382	76.96363189	73.34027741	69.90344222	66.64266623
ADV1010414	10/18/2024	0	10/18/2029	97.018161	93.31886675	89.04545307	84.81433506	80.78464382	76.96363189	73.34027741	69.90344222	66.64266623



	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1010209	10/9/2024	0	10/9/2029	97.028295	93.35624597	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010140	10/7/2024	0	10/9/2029	97.027745	93.35623596	89.10515425	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010510	10/24/2024	0	10/24/2029	97.010427	93.29390311	89.00566604	84.76261425	80.72267272	76.8926196	73.26129504	69.81746606	66.55058625
ADV1010064	10/2/2024	0	10/2/2029	97.036487	93.38529422	89.15160374	84.9524706	80.95020489	77.15338776	73.55137479	70.13328298	66.88888287
ADV1010158	10/7/2024	0	10/9/2029	97.027745	93.35623596	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010208	10/9/2024	0	10/9/2029	97.028295	93.35624597	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010633	10/31/2024	5.44	10/29/2049	122.57259	117.2748913	111.8529373	106.2674552	100.4633583	94.35502955	87.94835422	81.41166719	75.15231855
ADV1010416	10/18/2024	0	10/18/2029	97.018161	93.31886675	89.04545307	84.81433506	80.78464382	76.96363189	73.34027741	69.90344222	66.64266623
ADV1010210	10/9/2024	0	10/9/2029	97.028295	93.35624597	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010203	10/9/2024	0	10/9/2029	97.028295	93.35624597	89.10515426	84.89199795	80.8777173	77.07029973	73.45893408	70.03262532	66.78104301
ADV1010261	10/11/2024	0	10/11/2029	97.026745	93.34795613	89.09188558	84.87473103	80.85702218	77.04658026	73.43254692	70.00389525	66.75026595
ADV1010126	10/4/2024	4.138	10/4/2029	109.87081	107.2064243	104.5557721	101.877939	99.10982247	96.20923649	93.18770958	90.13712253	87.18501194
ADV1010356	10/16/2024	0	10/16/2029	97.020006	93.32717014	89.05871832	84.83158499	80.80531469	76.98732035	73.36662656	69.93212687	66.67338998
ADV1010068	10/2/2024	0	10/2/2029	97.036487	93.38529422	89.15160374	84.9524706	80.95020489	77.15338776	73.55137479	70.13328298	66.88888287
211124A00005	11/26/2021	5.18	11/26/2025	99.975585	99.97541106	99.97403226	99.97149152	99.96782963	99.96308566	99.95729699	99.95049943	99.94272731
211124A00006	11/26/2021	5.23	11/25/2026	99.860334	99.88493071	99.89415582	99.88891229	99.87005265	99.83838186	99.79466017	99.73960579	99.67389735
220608A00012	6/8/2022	5.56	6/8/2029	100.6658	100.7120747	100.7247296	100.7067823	100.6610085	100.5899617	100.4959908	100.3812566	100.2477468
220913A00024	9/13/2022	5.26	5/12/2025	100.10039	100.0966896	100.0919858	100.0863065	100.0796767	100.0721204	100.063661	100.0543216	100.0441242
220929A00039	9/29/2022	5.6	9/28/2029	100.80586	100.8521432	100.8611896	100.836669	100.7819243	100.7000025	100.5936806	100.4654898	100.3177371
221017A00025	10/17/2022	5.21	1/6/2025	100.04305	100.0395282	100.0356761	100.031499	100.027	100.0221823	100.0170489	100.0116027	100.0058469
221115A00039	11/15/2022	5.38	11/16/2026	100.17217	100.1931505	100.1988879	100.1902994	100.168252	100.1335632	100.087004	100.0293016	99.96114217
221118A00020	11/18/2022	5.36	11/18/2024	100.02752	100.0247463	100.0219635	100.0191754	100.0163819	100.0135833	100.0107794	100.0079703	100.005156
221216A00018	12/16/2022	5.38	12/16/2026	100.16903	100.1916608	100.1987998	100.1913472	100.1701545	100.1360261	100.0897228	100.0319637	99.96342887
230215A00013	2/15/2023	5.26	8/21/2025	100.08794	100.0850771	100.0803453	100.0738172	100.0655605	100.0556397	100.0441169	100.0310517	100.0165011
230215A00017	2/15/2023	5.24	3/27/2025	100.08564	100.082199	100.0779947	100.0730368	100.0673391	100.0609155	100.0537795	100.0459443	100.0374228
230307A00025	3/7/2023	5.38	3/7/2028	100.05894	100.1000343	100.1170005	100.1116612	100.0857133	100.0407361	99.97819952	99.89947218	99.80582834
230313A00111	3/13/2023	5.53	2/13/2026	100.3298	100.3337258	100.3348958	100.3334044	100.3293458	100.3228105	100.3138857	100.3026555	100.2892006
230313A00120	3/13/2023	5.53	4/13/2026	100.33925	100.349161	100.3506029	100.3439951	100.3297376	100.3082107	100.2797757	100.2447763	100.2035392
230313A00124	3/13/2023	5.53	5/13/2026	100.34703	100.3579546	100.3598343	100.3531021	100.3381721	100.3154388	100.2852774	100.2480457	100.2040843
230410A00022	4/10/2023	5.49	4/10/2028	100.42285	100.4599133	100.4726342	100.462873	100.4323631	100.3827157	100.3154297	100.2318988	100.1334197
230511A00058	5/11/2023	5.45	5/11/2028	100.28061	100.3214668	100.3373196	100.3300704	100.3014911	100.2532302	100.1868217	100.1036932	100.0051734
230816A00019	8/16/2023	5.43	8/16/2028	100.19388	100.241161	100.2600012	100.2526938	100.2213619	100.1679739	100.0943555	100.0021997	99.8930767
230914A00009	9/14/2023	5.35	9/14/2028	99.878597	99.93290124	99.95763866	99.95528918	99.92814369	99.87831831	99.80776791	99.71829859	99.61157917

	Parallel-Shift Sensitivity Analysis											
10/31/2024				Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
230922A00036	9/22/2023	5.32	9/22/2028	99.759387	99.8161077	99.84293498	99.84239181	99.81680686	99.76832992	99.69894584	99.61048734	99.50464688
231018A00011	10/18/2023	5.14	11/15/2024	100.01561	100.0124526	100.0092935	100.0061374	100.0029843	99.99983405	99.9966867	99.99354232	99.99040086
231025A00027	10/25/2023	5.35	10/25/2028	99.862012	99.92503393	99.96292293	99.97787154	99.97189828	99.94686166	99.90447298	99.84630809	99.7738184
231106A00009	11/6/2023	5.32	10/15/2026	100.05048	100.0713736	100.0777639	100.070533	100.0505097	100.0184749	99.97516525	99.92127511	99.85745962
231115A00005	11/15/2023	5.31	11/16/2026	100.02807	100.0507357	100.0581039	100.0511024	100.0306046	99.99743374	99.95236589	99.89613299	99.82942541
231130A00028	11/30/2023	4.91	11/29/2024	100.01222	100.0087023	100.0051322	100.0015073	99.99782788	99.99409409	99.9903062	99.98646443	99.98256902
231215A00007	12/15/2023	5.3	12/1/2026	100.00508	100.0281594	100.0359488	100.0293544	100.0092273	99.97637111	99.93154488	99.87546567	99.80881109
240111A00009	1/11/2024	5.05	1/13/2025	100.0145	100.0119235	100.0091989	100.0063251	100.0033035	100.0001359	99.99682384	99.99336889	99.98977264
240112A00007	1/12/2024	5.07	1/13/2025	100.0186	100.0160233	100.0132927	100.0104128	100.0073852	100.0042116	100.0008935	99.99743259	99.9938304
240112A00017	1/12/2024	5.37	1/12/2029	99.888406	99.95046485	99.98037696	99.98087863	99.95449587	99.90356094	99.83022734	99.73648354	99.62416582
240116A00030	1/16/2024	5.25	1/15/2027	99.87102	99.90055413	99.9141351	99.91267712	99.89704495	99.86805657	99.82648591	99.77306541	99.70848834
240118A00010	1/18/2024	4.86	1/21/2025	100.00964	100.0067558	100.0037077	100.0004977	99.99712792	99.99360006	99.98991602	99.98607764	99.98208673
240201A00010	2/1/2024	5.05	11/1/2024	100.01133	100.008444	100.0055629	100.0026843	99.99980798	99.99693411	99.99406262	99.99119353	99.98832683
240206A00016	2/6/2024	4.83	2/6/2025	100.00073	99.99787352	99.99483273	99.99161002	99.98820775	99.98462823	99.98087374	99.97694652	99.97284879
240215A00011	2/15/2024	5.23	2/16/2027	99.819067	99.84789923	99.86059015	99.85810921	99.84137098	99.81123805	99.76852419	99.71399732	99.64838223
240227A00010	2/27/2024	5.02	2/27/2025	100.00281	100.0004779	99.99787629	99.99501424	99.99189587	99.98852522	99.98490624	99.98104283	99.9769388
240301A00012	3/1/2024	4.85	3/3/2025	100.00156	99.9987058	99.99561319	99.99228304	99.9887191	99.98492509	99.98090462	99.97666129	99.97219859
240314A00006	3/14/2024	5.33	3/14/2029	99.685359	99.7500108	99.78215317	99.78464486	99.76011508	99.71098258	99.63947269	99.54763298	99.43734758
240315A00011	3/15/2024	5.21	3/15/2027	99.762191	99.79075179	99.80311139	99.80029261	99.78325702	99.75290892	99.71009896	99.65562756	99.59024801
240327A00032	3/27/2024	5.19	3/26/2027	99.704488	99.73470465	99.7487723	99.74750558	99.73187778	99.7028041	99.66114535	99.60771143	99.54326446
240328A00053	3/28/2024	5.32	3/28/2029	99.625981	99.69347306	99.72819517	99.73303443	99.71064532	99.66346908	99.59375107	99.50355673	99.39478607
240415A00006	4/15/2024	5.18	4/15/2027	99.666221	99.69705421	99.71234247	99.71209615	99.69730825	99.66891202	99.62778478	99.57475155	99.51058827
240417A00013	4/17/2024	5.51	4/17/2031	99.290321	99.40429442	99.46803339	99.4871541	99.46669966	99.4111984	99.32471633	99.2109041	99.07303912
240423A00053	4/23/2024	4.85	4/23/2025	99.984094	99.98139543	99.97832997	99.97490609	99.97113172	99.9670146	99.96256225	99.95778202	99.95268109
240515A00015	5/15/2024	5.17	5/17/2027	99.617518	99.64968243	99.66664454	99.66734134	99.65279127	99.6239532	99.58173013	99.52697264	99.46048211
ADV1006428	5/28/2024	5.182	5/28/2027	99.637864	99.67176055	99.68881987	99.68924483	99.67405812	99.64422442	99.60065387	99.54420531	99.47568928
ADV1006699	6/3/2024	5.201	6/3/2027	99.682494	99.7168467	99.73328328	99.73290415	99.71674693	99.68579037	99.6409579	99.58312085	99.51310154
ADV1006738	6/4/2024	4.878	6/4/2025	99.97055	99.96815117	99.96527671	99.96193982	99.95815307	99.95392863	99.94927827	99.94421344	99.9387452
ADV1006870	6/10/2024	5.217	6/10/2027	99.721093	99.75485282	99.77049787	99.76914658	99.75185391	99.7196148	99.67336774	99.61399811	99.54234131
ADV1007038	6/14/2024	5.224	6/14/2027	99.737787	99.77130341	99.78659073	99.78477754	99.76692772	99.73404458	99.68707447	99.62691011	99.55439382
ADV1007043	6/14/2024	5.284	6/14/2029	99.384929	99.46160321	99.50340042	99.5134098	99.49447436	99.44921035	99.38002533	99.28913485	99.17857768
ADV1007203	6/20/2024	5.223	6/21/2027	99.732201	99.76579204	99.78093032	99.77876365	99.76037407	99.72678185	99.67894912	99.61778336	99.54414062
ADV1007514	7/1/2024	5.235	7/1/2027	99.759866	99.7931838	99.80772728	99.80467434	99.78513523	99.75015632	99.70072399	99.63776819	99.56216577

	Parallel-Shift Sensitivity Analysis											
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REFERENCE	SETTLEMENT	Rate	MATURITY	-400	-300	-200	-100	Base	100	200	300	400
ADV1007705	7/8/2024	4.925	7/8/2025	99.975335	99.9731982	99.97053247	99.96735428	99.96367939	99.95952304	99.95489991	99.9498242	99.9443096
ADV1007965	7/17/2024	5.232	7/19/2027	99.738099	99.77353576	99.78950707	99.78724692	99.7679174	99.73261333	99.68236625	99.61814826	99.54087556
ADV1008702	8/15/2024	5.263	8/16/2027	99.803902	99.84058346	99.85677771	99.85385866	99.83311512	99.79575644	99.7429175	99.67566357	99.59499463
ADV1008824	8/21/2024	5.263	8/23/2027	99.799147	99.83632007	99.8527697	99.84991328	99.82907836	99.79150883	99.73837034	99.67075543	99.58968826
ADV1009264	9/4/2024	5.28	9/7/2027	99.839565	99.8765692	99.89238349	99.88850171	99.86632085	99.82714723	99.77220259	99.70262978	99.61949798
ADV1010293	10/15/2024	5.297	10/15/2027	99.871889	99.91441811	99.93892234	99.94675253	99.93916687	99.91733747	99.88235634	99.83524109	99.77694009
ADV1010616	10/30/2024	5.268	10/30/2026	99.946103	99.97274226	99.98724535	99.99038706	99.98289641	99.96545938	99.93872166	99.90329112	99.85974016
ADV1010016	10/1/2024	5.258	10/1/2026	99.930972	99.95169667	99.95833194	99.95173085	99.93269778	99.90199113	99.86032613	99.80837752	99.74678194
ADV1009630	9/18/2024	5.425	9/18/2029	100.43173	100.1161142	100.0662778	100.0345815	99.96135424	99.85297426	99.73514869	99.5993881	99.44002142
ADV1010025	10/1/2024	5.436	10/1/2029	100.28117	99.96440954	99.97133612	99.98517002	99.95396811	99.88458611	99.80881548	99.71216883	99.59111364
ADV1010137	10/7/2024	5.429	10/9/2029	100.35016	99.99785998	99.97459441	99.97383143	99.92735868	99.84569286	99.75786752	99.64924061	99.51628149
ADV1010509	10/24/2024	5.446	10/24/2029	100.59032	100.2204494	100.1643375	100.1172154	100.0258029	99.89894249	99.76644295	99.61375628	99.43720595