

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												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
050812A00050	8/12/2005	4.97	8/12/2025	8/12/2005	103.39641	102.4990666	101.6157925	100.7462612	99.89015733	99.04717509	98.21701816	97.39939918	96.59403947
050823A00085	8/23/2005	4.78	8/25/2025	8/23/2005	103.44697	102.5297316	101.6272175	100.739077	99.8649727	99.00457778	98.15757578	97.32366003	96.50253332
050823A00088	8/23/2005	4.78	8/25/2025	8/23/2005	103.44697	102.5297316	101.6272175	100.739077	99.86497271	99.00457778	98.15757578	97.32366003	96.50253332
050902A00032	9/2/2005	4.69	8/22/2025	9/2/2005	105.26293	103.8612073	102.4850989	101.1339642	99.80718128	98.5041489	97.22428502	95.96702626	94.7318271
050923A00096	9/23/2005	4.86	9/22/2025	9/23/2005	105.88863	104.3976962	102.935517	101.5013284	100.0943967	98.71401324	97.35949363	96.03017645	94.7254224
051003A00009	10/3/2005	5.15	10/15/2025	10/3/2005	106.37912	104.8259729	103.3035385	101.8109757	100.3474738	98.91225119	97.50455393	96.12365437	94.76885016
051107A00075	11/7/2005	5.29	11/17/2025	11/7/2005	107.31318	105.657448	104.0356133	102.446698	100.8897637	99.36390752	97.8682606	96.40198627	94.96427863
060308A00014	3/8/2006	5.44	3/16/2026	3/8/2006	109.0482	107.0507223	105.1005974	103.1964085	101.336792	99.52043436	97.74606955	96.01247702	94.31847979
060808A00022	8/8/2006	5.57	6/15/2026	8/8/2006	110.63023	108.365167	106.1585575	104.0084623	101.9130271	99.87047431	97.87909884	95.93726477	94.04340173
070518A00023	5/18/2007	5.46	5/18/2027	5/18/2007	107.76801	106.0608924	104.4027065	102.7916381	101.225954	99.70399833	98.22418868	96.78501194	95.38502092
091112A00011	11/12/2009	4.77	11/15/2024	11/12/2009	102.2216	101.5889307	100.9641197	100.3470223	99.73749594	99.13540157	98.5406035	97.95296933	97.37236987
091210A00005	12/10/2009	5.08	12/16/2024	12/10/2009	102.62887	101.9123403	101.2058507	100.5091957	99.82217042	99.14457572	98.47621795	97.81690871	97.16646474
100809A00029	8/9/2010	4.23	8/15/2025	8/9/2010	104.32351	102.9507677	101.6027888	100.2789562	98.97867627	97.70137458	96.44649485	95.21349836	94.00186325
100824A00009	8/24/2010	3.91	9/2/2025	8/24/2010	104.04666	102.6282004	101.2360919	99.86966535	98.52827236	97.2112857	95.91809867	94.64812424	93.40079426
100930A00008	9/30/2010	3.82	9/30/2025	9/30/2010	104.17872	102.6831491	101.2167854	99.7788522	98.36859563	96.98528805	95.6282268	94.29673313	92.99015122
110414A00007	4/14/2011	3.95	1/21/2025	4/14/2011	101.3343	100.8357263	100.3452279	99.86259849	99.38763492	98.92014121	98.45992804	98.00681247	97.5606177
110505A00022	5/5/2011	4.59	5/15/2026	5/5/2011	108.09387	105.9419049	103.844034	101.798525	99.80371377	97.85800191	95.95985396	94.10779422	92.300404
110701A00011	7/1/2011	3.87	7/1/2026	7/1/2011	103.53687	102.3101038	101.1093012	99.93368477	98.78251072	97.65506373	96.5506558	95.46862493	94.40833389
110719A00017	7/19/2011	3.68	7/20/2026	7/19/2011	103.30657	102.0808184	100.8810609	99.70652082	98.55645424	97.43014583	96.32690739	95.24607658	94.18701571
110805A00014	8/5/2011	4.06	8/17/2026	8/5/2011	107.936	105.5314183	103.1931871	100.9191074	98.70706694	96.55503541	94.46106069	92.42326543	90.4398437
110824A00006	8/24/2011	2.69	8/24/2026	8/24/2011	102.71618	101.2889056	99.8941948	98.53105401	97.19852856	95.89569948	94.62168184	93.37562329	92.15670259
110909A00006	9/9/2011	2.26	9/9/2026	9/9/2011	101.70161	100.4135927	99.15408164	97.92220803	96.71713872	95.53807265	94.38423922	93.25489693	92.149332
111006A00023	10/6/2011	3.81	10/15/2026	10/6/2011	107.9096	105.3455923	102.8564681	100.4395958	98.09245208	95.81261825	93.59777493	91.44569742	89.35425115
111007A00007	10/7/2011	3.92	10/7/2031	10/7/2011	120.19959	113.7186966	107.6798873	102.0493636	96.79612091	91.89170587	87.30999156	83.02697442	79.02058975
111216A00001	12/16/2011	3.95	12/30/2031	12/16/2011	126.13867	117.8971123	110.2740219	103.219273	96.68706809	90.63554371	85.026412	79.82463701	74.99814192
120113A00012	1/13/2012	3.62	1/15/2027	1/13/2012	108.27281	105.4556217	102.7269154	100.0833829	97.52186574	95.03934337	92.63292585	90.29984749	88.03746053
120113A00013	1/13/2012	3.87	1/15/2032	1/13/2012	125.65121	117.3851175	109.7428642	102.6736736	96.13116313	90.07294452	84.46025973	79.25765233	74.43267002
120127A00018	1/27/2012	3.64	2/1/2027	1/27/2012	108.4844	105.6186008	102.8441206	100.1575727	97.55570989	95.03542247	92.59373165	90.22778332	87.9348421
120127A00019	1/27/2012	3.87	1/30/2032	1/27/2012	125.77088	117.4600159	109.7792554	102.6771255	96.1066192	90.02478506	84.39235852	79.17342781	74.33513188
120330A00013	3/30/2012	2.98	4/2/2024	3/30/2012	100.13571	100.0477911	99.96002783	99.87242277	99.7849755	99.69768559	99.61055261	99.52357613	99.43675572
120410A00005	4/10/2012	2.35	4/12/2027	4/10/2012	102.67683	101.0977007	99.56341672	98.07235479	96.62296174	95.21375154	93.84330181	92.51025068	91.21329376
120411A00013	4/11/2012	3.59	4/15/2027	4/11/2012	109.03372	105.9567862	102.984068	100.1114418	97.33497519	94.65091389	92.05567244	89.54582567	87.11810044
120517A00021	5/17/2012	1.85	5/17/2024	5/17/2012	100.05221	99.945552	99.83914223	99.73297833	99.6270594	99.5213845	99.41595273	99.31076318	99.20581494

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
120621A00009	6/21/2012	3.18	6/21/2032	6/21/2012	114.82702	108.9513765	103.4880675	98.40420965	93.66977269	89.25731675	85.14175304	81.30012821	77.71142961
120709A00016	7/9/2012	3.2	7/15/2027	7/9/2012	108.61091	105.2942126	102.0972531	99.01502883	96.04278116	93.17597753	90.41029928	87.74163017	85.1660456
120806A00015	8/6/2012	2.38	8/6/2027	8/6/2012	102.80285	101.0455602	99.3367335	97.67464008	96.05762639	94.48410988	92.95257541	91.46157184	90.00970889
120807A00026	8/7/2012	2.42	8/9/2027	8/7/2012	102.87484	101.1162568	99.40617407	97.74286161	96.12466449	94.5499988	93.0173481	91.52526003	90.0723431
120808A00006	8/8/2012	2.06	8/9/2027	8/8/2012	102.46001	100.704984	98.99844223	97.33865713	95.72397141	94.15279908	92.62362184	91.13498566	89.68549758
120827A00048	8/27/2012	2.01	8/27/2027	8/27/2012	102.65728	100.757649	98.91397864	97.12417274	95.38622707	93.69822582	92.05833711	90.46480878	88.91596438
120827A00052	8/27/2012	2.01	8/27/2027	8/27/2012	102.65728	100.757649	98.91397864	97.12417274	95.38622707	93.69822582	92.05833711	90.46480878	88.91596438
121116A00006	11/16/2012	2.64	11/13/2025	11/16/2012	102.67866	101.0775636	99.50913026	97.9724287	96.46656024	94.99065997	93.54389513	92.12546366	90.73459272
121116A00021	11/16/2012	2.35	11/17/2025	11/16/2012	102.49006	100.8752144	99.29353411	97.74406366	96.22588386	94.73811048	93.27989247	91.85041042	90.44887504
121116A00022	11/16/2012	2.78	11/16/2029	11/16/2012	113.85689	108.0917416	102.6580409	97.53494037	92.70301781	88.14416728	83.84150286	79.77926999	75.94276378
121120A00010	11/20/2012	1.93	11/22/2027	11/20/2012	102.89084	100.7276959	98.63190596	96.60079248	94.63180422	92.72251058	90.87059496	89.07384852	87.33016436
121120A00011	11/20/2012	2.22	11/22/2027	11/20/2012	105.35662	102.2954304	99.34890919	96.5119567	93.77973602	91.14765674	88.61136063	86.16670828	83.80976654
121217A00009	12/17/2012	2.02	12/17/2027	12/17/2012	103.22399	100.9757663	98.79887231	96.69042142	94.64766369	92.66798212	90.7488851	88.88799945	87.08306381
130107A00002	1/7/2013	3.22	1/18/2028	1/7/2013	110.27773	106.4289112	102.7370084	99.19477411	95.79533468	92.53217079	89.39909695	86.39024242	83.50003337
130206A00004	2/6/2013	2.14	2/7/2028	2/6/2013	103.35767	101.2008429	99.11193488	97.08827014	95.12730067	93.2265954	91.38383403	89.59680127	87.86338142
130206A00009	2/6/2013	2.83	2/7/2028	2/6/2013	107.17844	104.0022552	100.950491	98.01746883	95.19780074	92.48637499	89.87834017	87.36909043	84.95425169
130207A00012	2/7/2013	2.9	2/7/2033	2/7/2013	111.41631	106.3549686	101.6118986	97.16349393	92.98809884	89.0658354	85.37844471	81.90914343	78.64249394
130211A00017	2/11/2013	3.27	2/15/2028	2/11/2013	110.71829	106.783777	103.0125809	99.39707404	95.93002509	92.60457573	89.41421953	86.35278207	83.41440228
130405A00006	4/5/2013	2.41	4/7/2025	4/5/2013	101.35905	100.3452789	99.35173467	98.37782018	97.42295796	96.48659294	95.56819144	94.66724015	93.78324515
130405A00007	4/5/2013	2.91	4/17/2028	4/5/2013	110.35573	106.2443968	102.3108838	98.54654232	94.94318997	91.49308498	88.18889996	85.02369735	81.99090652
130424A00004	4/24/2013	2.46	4/24/2025	4/24/2013	101.48867	100.4289044	99.39121366	98.37491785	97.3793603	96.40391106	95.44796544	94.5109428	93.59228534
130424A00005	4/24/2013	3.07	4/24/2030	4/24/2013	116.53965	110.2623121	104.3696031	98.83586342	93.63727549	88.75172403	84.15866581	79.83900993	75.77500785
130531A00021	5/31/2013	3.22	5/30/2028	5/31/2013	112.00014	107.7382078	103.6644813	99.76960379	96.0447345	92.48152077	89.07206811	85.80891232	82.68499342
130821A00019	8/21/2013	3.81	8/29/2025	8/21/2013	104.09415	102.6824014	101.2967568	99.93655201	98.60114775	97.28992563	96.0022874	94.73765412	93.49546539
130904A00039	9/4/2013	4.19	9/15/2028	9/4/2013	117.2829	112.6099583	108.1549779	103.9066078	99.85415199	95.9875241	92.29720959	88.77423035	85.41011157
130913A00018	9/13/2013	3.72	9/13/2028	9/13/2013	107.67692	105.0967253	102.6095116	100.2111203	97.89760977	95.66524171	93.5104691	91.42992522	89.42041336
130925A00035	9/25/2013	1.53	6/25/2025	9/25/2013	100.48156	99.54749296	98.63216699	97.73498563	96.85538233	95.99281476	95.14676347	94.31673069	93.50223917
130926A00009	9/26/2013	4	10/2/2028	9/26/2013	116.61865	111.9127192	107.4286294	103.1547087	99.07996491	95.19403918	91.48716599	87.95013611	84.57426187
131018A00006	10/18/2013	3.28	10/20/2025	10/18/2013	103.73056	102.2089004	100.7182113	99.25760169	97.82621305	96.42321956	95.04782653	93.69926888	92.37680976
131217A00024	12/17/2013	4.34	1/2/2029	12/17/2013	118.55111	113.5647151	108.8230293	104.3126408	100.0209528	95.93612715	92.04703385	88.34320462	84.8147896
140219A00005	2/19/2014	3.13	2/20/2029	2/19/2014	106.7638	104.1639912	101.6602198	99.2481074	96.92351114	94.68250602	92.52137189	90.43658135	88.42478844
140414A00009	4/14/2014	2.32	4/30/2024	4/14/2014	100.06854	100.0288393	99.98918623	99.94958135	99.91002451	99.87051562	99.83105458	99.7916413	99.75227568
140423A00036	4/23/2014	4.03	4/23/2029	4/23/2014	118.19332	112.9030674	107.8877057	103.1314301	98.61943086	94.3378235	90.27358585	86.41450005	82.74909862

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
140428A00015	4/28/2014	2.35	4/29/2024	4/28/2014	100.07678	99.99910359	99.92155456	99.8441297	99.76682872	99.68965131	99.61259718	99.53566603	99.45885758
140521A00019	5/21/2014	3.43	5/22/2028	5/21/2014	112.80073	108.5438881	104.4740421	100.5819318	96.85881316	93.29642253	89.88694729	86.62299855	83.49758563
140618A00019	6/18/2014	3.08	6/18/2024	6/18/2014	100.25309	100.0962311	99.93992761	99.78417646	99.62897445	99.47431844	99.32020532	99.16663199	99.01359541
140626A00036	6/26/2014	3.55	6/26/2029	6/26/2014	117.02739	111.5662664	106.3983572	101.5062749	96.87375697	92.48559078	88.32753939	84.38627342	80.64930801
140703A00026	7/3/2014	3.11	7/3/2024	7/3/2014	100.57108	100.2302577	99.8917583	99.55555951	99.2216378	98.88997002	98.56053336	98.23330526	97.90826353
140717A00027	7/17/2014	3.14	7/17/2026	7/17/2014	105.12805	102.9794467	100.8887276	98.85398869	96.87340255	94.94521242	93.06772921	91.23932838	89.45844711
140815A00032	8/15/2014	3.59	10/15/2029	8/15/2014	117.38267	111.634315	106.2098016	101.0891136	96.25357368	91.68574918	87.36936318	83.28921173	79.43108768
140821A00030	8/21/2014	2.27	8/21/2024	8/21/2014	100.23231	99.9853619	99.73988017	99.49584875	99.25325345	99.0120803	98.77231553	98.53394553	98.29695689
140827A00038	8/27/2014	3.07	8/30/2024	8/27/2014	100.68644	100.2682176	99.8534682	99.44214438	99.03420391	98.62960518	98.22830731	97.83027003	97.43545377
140911A00027	9/11/2014	3.18	9/16/2024	9/11/2014	100.81965	100.3549913	99.89461985	99.43848006	98.98651364	98.53866335	98.094873	97.65508742	97.21925245
140911A00033	9/11/2014	3.02	9/13/2027	9/11/2014	105.94803	103.3891674	100.9173945	98.52911047	96.22088858	93.98946511	91.83173053	89.74472122	87.72561171
140917A00030	9/17/2014	3.23	9/17/2029	9/17/2014	113.26769	108.5204407	104.0252606	99.7670383	95.73165962	91.90593386	88.27752822	84.83490724	81.56727683
140922A00026	9/22/2014	3.02	9/30/2024	9/22/2014	100.87456	100.3709893	99.87243751	99.37883185	98.89009899	98.40616705	97.92696557	97.45242545	96.98247894
140924A00057	9/24/2014	3.25	9/25/2028	9/24/2014	112.18252	107.8966882	103.8102618	99.91276586	96.19433875	92.64568916	89.25806003	86.02319477	82.93330587
141015A00029	10/15/2014	2.32	10/15/2024	10/15/2014	100.63811	100.0395682	99.44834634	98.86430799	98.28732149	97.71725837	97.15399329	96.59740392	96.04737088
141017A00022	10/17/2014	2.78	10/17/2024	10/17/2014	100.8387	100.2209996	99.61096759	99.00846248	98.41334488	97.82547879	97.24473154	96.6709737	96.10407896
141117A00011	11/17/2014	3.81	11/17/2034	11/17/2014	132.71166	121.3234813	111.0600762	101.8027676	93.44603832	85.89600604	79.06908358	72.89079973	67.29476057
141208A00008	12/8/2014	3.02	12/16/2024	12/8/2014	101.14988	100.4392036	99.73851661	99.04760707	98.36627111	97.6943105	97.03153249	96.37774955	95.73277926
141215A00062	12/15/2014	2.65	12/16/2024	12/15/2014	101.0175	100.3056102	99.6037546	98.91171863	98.22929702	97.5562902	96.89250406	96.23774982	95.59184383
150203A00027	2/3/2015	2.26	2/4/2030	2/3/2015	105.58546	102.511506	99.57015711	96.75448523	94.05797237	91.47448768	88.99826178	86.62386299	84.34617527
150213A00014	2/13/2015	2.41	2/13/2025	2/13/2015	100.58784	100.088301	99.59501201	99.10783881	98.62665548	98.1513398	97.68177303	97.21783979	96.75942799
150219A00016	2/19/2015	2.68	2/19/2025	2/19/2015	101.35867	100.3915001	99.4425899	98.51142177	97.59750205	96.70035529	95.81952335	94.95456464	94.10505341
150220A00022	2/20/2015	2.8	2/20/2025	2/20/2015	101.35056	100.4618314	99.58867411	98.73067917	97.88745397	97.05861939	96.24380919	95.44266948	94.65485817
150224A00010	2/24/2015	2.34	2/24/2025	2/24/2015	100.94429	100.0361775	99.14422342	98.2680037	97.4071055	96.56113031	95.72969332	94.91242284	94.10895974
150227A00011	2/27/2015	2.33	2/27/2025	2/27/2015	101.13046	100.2168518	99.32045454	98.44078359	97.57736779	96.72975363	95.89750444	95.08019958	94.27743376
150311A00003	3/11/2015	2.72	3/31/2025	3/11/2015	101.55763	100.5253832	99.51458896	98.5245839	97.55472708	96.60440379	95.67302415	94.76002191	93.86485323
150317A00013	3/17/2015	2.58	3/17/2025	3/17/2015	101.4256	100.4675773	99.52762207	98.60523072	97.6999141	96.81120109	95.93863777	95.08178663	94.24022587
150319A00012	3/19/2015	3.13	3/19/2029	3/19/2015	113.38631	108.3114782	103.4976852	98.93012178	94.59489176	90.47895426	86.57006656	82.8567312	79.32814684
150319A00013	3/19/2015	3.25	3/19/2030	3/19/2015	116.5508	110.4014071	104.6225097	99.18977962	94.08060964	89.27398278	84.75035244	80.49153232	76.4805951
150320A00019	3/20/2015	2.25	3/20/2025	3/20/2015	101.14042	100.171867	99.22271331	98.29237079	97.38027637	96.48588939	95.60869048	94.74818054	93.90387974
150401A00008	4/1/2015	2.62	4/1/2025	4/1/2015	101.38526	100.3895909	99.41343274	98.45621894	97.51740206	96.59645561	95.69287299	94.8061666	93.93586695
150410A00021	4/10/2015	2.27	4/10/2025	4/10/2015	100.53778	99.95796659	99.38660523	98.82349041	98.26842479	97.72121764	97.18168457	96.64964723	96.1249331
150414A00037	4/14/2015	2.34	4/14/2025	4/14/2015	100.58013	99.99926064	99.42687466	98.86277033	98.3067488	97.75861793	97.21819196	96.68529128	96.15974213

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150422A00019	4/22/2015	2.62	4/22/2025	4/22/2015	101.48192	100.4299649	99.39978536	98.39070574	97.40208252	96.43329813	95.48375969	94.5528977	93.64016497
150427A00014	4/27/2015	2.98	4/27/2035	4/27/2015	113.97455	107.9414239	102.357369	97.183381	92.38419826	87.9279161	83.78564191	79.93118793	76.34079731
150512A00029	5/12/2015	3.03	5/12/2025	5/12/2015	102.03312	100.9249161	99.84077623	98.77992195	97.74160845	96.72512242	95.72978038	94.75492715	93.79993439
150519A00013	5/19/2015	2.98	5/19/2025	5/19/2015	102.01581	100.8891479	99.78735696	98.70962069	97.65515713	96.62321797	95.61308666	94.6240768	93.65553053
150601A00261	6/1/2015	3.19	2/11/2033	6/1/2015	112.21592	107.5661992	103.1971563	99.08865916	95.22219557	91.58072882	88.14856928	84.91125804	81.85546139
150601A00270	6/1/2015	3.12	3/21/2031	6/1/2015	109.39333	105.7675272	102.3197824	99.03956734	95.91706149	92.94309812	90.10911611	87.40711581	84.82961826
150601A00342	6/1/2015	3.97	8/26/2033	6/1/2015	115.84484	110.8609587	106.1902232	101.8092604	97.69665257	93.83275596	90.19954018	86.78044391	83.56024413
150601A00396	6/1/2015	3.61	1/3/2029	6/1/2015	107.16795	104.6744793	102.2705719	99.95222765	97.71565924	95.55727523	93.4736687	91.46160644	89.51801888
150601A00404	6/1/2015	4.29	1/17/2029	6/1/2015	118.1706	113.1522444	108.3821957	103.8468005	99.53322912	95.42942235	91.52404066	87.80641754	84.26651585
150601A00405	6/1/2015	4.63	1/17/2034	6/1/2015	138.06753	127.2486418	117.4167905	108.4752196	100.3371803	92.92484873	86.16836348	80.00497166	74.37827067
150601A00411	6/1/2015	3.38	1/24/2029	6/1/2015	106.61335	104.1279168	101.7318717	99.42122612	97.19219646	95.0411948	92.96481762	90.959835	89.02318056
150601A00426	6/1/2015	3.37	2/21/2029	6/1/2015	106.71776	104.1893842	101.7532178	99.4050954	97.14106924	94.95739784	92.85053389	90.81711283	88.85394217
150601A00440	6/1/2015	3.27	3/16/2029	6/1/2015	106.59469	104.0274685	101.5551826	99.17348949	96.87827805	94.66565432	92.53192848	90.47360275	88.48736012
150601A00448	6/1/2015	2.61	4/26/2024	6/1/2015	100.07814	100.0061104	99.9341913	99.86238248	99.79068371	99.71909473	99.6476153	99.57624517	99.5049841
150601A00450	6/1/2015	3.28	4/27/2029	6/1/2015	106.7457	104.1341899	101.6205959	99.20038832	96.86927619	94.62319785	92.45830697	90.3709596	88.35770225
150601A00459	6/1/2015	2.42	5/16/2024	6/1/2015	100.09499	99.98982425	99.88489734	99.78020767	99.67575436	99.57153658	99.46755348	99.36380419	99.26028789
150601A00460	6/1/2015	3.05	5/16/2029	6/1/2015	106.27323	103.6292345	101.0857534	98.63807379	96.28174132	94.01254201	91.82648763	89.71980203	87.68890845
150601A00470	6/1/2015	2.98	5/31/2024	6/1/2015	100.26648	100.0975272	99.92913925	99.76131666	99.59405662	99.42735633	99.26121297	99.09562377	98.93058596
150601A00473	6/1/2015	2.22	5/31/2024	6/1/2015	100.10406	99.97806081	99.85241757	99.7271256	99.6021833	99.47758911	99.35334146	99.22943878	99.10587953
150601A00475	6/1/2015	3.04	6/1/2029	6/1/2015	106.35977	103.6738463	101.091344	98.60735927	96.21725967	93.91666515	91.70143274	89.56764202	87.51158165
150601A00477	6/1/2015	3.21	6/1/2029	6/1/2015	107.16524	104.4559208	101.8510613	99.34570251	96.93515919	94.61500184	92.38104105	90.22931279	88.15606474
150601A00485	6/1/2015	3.09	6/21/2024	6/1/2015	100.38496	100.1581258	99.93233283	99.70757013	99.48383062	99.26110725	99.03939302	98.81868103	98.59896442
150601A00490	6/1/2015	3.19	7/2/2024	6/1/2015	100.43263	100.1758307	99.9203438	99.66616006	99.4132695	99.16166225	98.91132857	98.66225881	98.4144434
150601A00495	6/1/2015	2.99	6/27/2024	6/1/2015	100.38955	100.1462113	99.90405953	99.66308276	99.42327245	99.18462011	98.94711735	98.71075585	98.47552738
150601A00496	6/1/2015	2.27	6/27/2024	6/1/2015	100.14578	99.98075942	99.81636844	99.65260298	99.48945912	99.32693299	99.16502074	99.00371857	98.8430227
150601A00506	6/1/2015	3.14	7/6/2029	6/1/2015	106.74079	104.0068086	101.379448	98.85359532	96.42442177	94.08736466	91.83811086	89.67258141	87.58691719
150601A00509	6/1/2015	2.52	7/8/2024	6/1/2015	100.19704	100.0031187	99.8100616	99.61786028	99.42650859	99.23600046	99.04632989	98.85749091	98.66947765
150601A00512	6/1/2015	3.79	7/16/2029	6/1/2015	117.43114	111.9290784	106.7243363	101.7992154	97.13716689	92.72270894	88.54135166	84.57952848	80.82453249
150601A00522	6/1/2015	4.52	7/25/2030	6/1/2015	124.95559	118.2015725	111.8706433	105.9338938	100.3645388	95.1377499	90.2305032	85.62143903	81.29073362
150601A00523	6/1/2015	4.55	7/25/2031	6/1/2015	128.69884	120.7990436	113.4608553	106.6410129	100.299812	94.40079378	88.91046368	83.79803628	79.03520291
150601A00527	6/1/2015	2.5	7/26/2024	6/1/2015	100.20522	99.99901014	99.79380436	99.58959673	99.38637923	99.18414394	98.98288304	98.78258878	98.58325351
150601A00528	6/1/2015	3.08	7/27/2029	6/1/2015	106.58274	103.8506926	101.225273	98.70136268	96.27412988	93.93900903	91.69168434	89.52807444	87.44431798
150601A00530	6/1/2015	3.08	7/24/2024	6/1/2015	100.54143	100.2238846	99.90834971	99.59481086	99.28324906	98.97364556	98.66598185	98.36023967	98.05640095

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00531	6/1/2015	3.28	7/24/2024	6/1/2015	100.56369	100.2465499	99.93141454	99.61826729	99.30708932	98.99786205	98.69056713	98.38518642	98.08170202
150601A00558	6/1/2015	2.51	8/30/2024	6/1/2015	100.25529	100.0040677	99.75437537	99.50619927	99.25952406	99.01433464	98.77061612	98.52835384	98.28753331
150601A00559	6/1/2015	3.06	8/31/2029	6/1/2015	106.64346	103.8690952	101.2044228	98.64411966	96.18316051	93.81679971	91.54055384	89.35018544	87.24168782
150601A00664	6/1/2015	3.78	1/16/2032	6/1/2015	124.54398	116.3169178	108.7118229	101.6780182	95.16921757	89.14312302	83.56106149	78.38765643	73.59053073
150601A00665	6/1/2015	3.82	1/14/2033	6/1/2015	127.68229	118.3418684	109.7845821	101.9399467	94.74419202	88.13958616	82.07383457	76.49954129	71.3737263
150601A00666	6/1/2015	3.88	1/16/2035	6/1/2015	133.18847	121.6175024	111.2041398	101.8247137	93.3694317	85.74075102	78.85195217	72.62588572	66.99386968
150601A00667	6/1/2015	3.88	1/16/2036	6/1/2015	135.00906	122.3772163	111.1094355	101.0487147	92.05697748	84.01269991	76.80884601	70.35107	64.55614984
150601A00668	6/1/2015	3.89	1/16/2037	6/1/2015	136.77694	123.0979208	111.0026144	100.295826	90.80750569	82.38938439	74.9120781	68.26258992	62.34215389
150601A00677	6/1/2015	2.39	1/30/2025	6/1/2015	100.99073	100.1580679	99.33910015	98.53349156	97.74091728	96.961063	96.1936244	95.43830682	94.69482486
150601A00678	6/1/2015	2.12	1/30/2025	6/1/2015	100.31008	99.85144125	99.39809768	98.9499502	98.50689937	98.06884846	97.63570329	97.20737222	96.78376599
150601A00684	6/1/2015	2.25	2/7/2025	6/1/2015	100.40649	99.91172867	99.42310176	98.94047898	98.46373798	97.99275991	97.52742927	97.06763381	96.61326442
150601A00688	6/1/2015	2.61	2/21/2025	6/1/2015	101.28886	100.395792	99.51844425	98.6564061	97.80927929	96.97667929	96.15823469	95.35358666	94.56238841
150601A00689	6/1/2015	2.81	2/28/2025	6/1/2015	101.36189	100.4516891	99.55780092	98.67979289	97.81724466	96.96975066	96.13691939	95.31837282	94.5137458
150601A00690	6/1/2015	2.34	2/28/2025	6/1/2015	100.45856	99.95851069	99.46476837	98.97720131	98.49568064	98.02008129	97.55028183	97.08616434	96.62761426
150601A00696	6/1/2015	2.83	3/13/2025	6/1/2015	101.45015	100.5048176	99.57709013	98.66647536	97.77250273	96.8947188	96.03268645	95.18598419	94.35420548
150601A00733	6/1/2015	2.72	5/1/2025	6/1/2015	101.75854	100.6785517	99.62144051	98.58648382	97.57299074	96.5802988	95.60777253	94.65480214	93.72080218
150601A00734	6/1/2015	2.92	5/1/2025	6/1/2015	101.80098	100.723282	99.66836516	98.63551633	97.62404836	96.63330239	95.66264637	94.71147372	93.77920207
150601A00736	6/1/2015	2.87	5/1/2030	6/1/2015	107.05556	103.9058607	100.8949463	98.01538911	95.26021907	92.62288936	90.09724792	87.67751092	85.35823815
150601A00737	6/1/2015	2.68	12/31/2024	6/1/2015	101.07631	100.3238267	99.58252795	98.85216274	98.13249055	97.42327789	96.72429804	96.03533076	95.3561621
150601A00739	6/1/2015	2.35	5/6/2025	6/1/2015	100.61163	99.99370252	99.38539316	98.78645659	98.19665336	97.61575258	97.04353151	96.47977524	95.92427631
150601A00832	6/1/2015	7.17	8/28/2025	6/1/2015	104.37338	103.610254	102.8601165	102.1226136	101.3974048	100.6841625	99.98257121	99.29232692	98.61313669
150601A00851	6/1/2015	7.12	4/30/2027	6/1/2015	110.00052	108.3462361	106.7338758	105.1620297	103.629349	102.13454	100.6763621	99.25362463	97.86518496
150601A00864	6/1/2015	7.37	3/31/2028	6/1/2015	113.64991	111.4760712	109.3689919	107.326064	105.3447976	103.4228179	101.5578595	99.74776012	97.99045559
150601A00868	6/1/2015	7.08	6/5/2028	6/1/2015	113.91537	111.6085469	109.3759543	107.2145684	105.1215152	103.0940579	101.12959	99.22562781	97.37980404
150601A00871	6/1/2015	6.74	7/31/2028	6/1/2015	113.46969	111.1243124	108.8556924	106.6606653	104.5362174	102.4794812	100.4877271	98.55835555	96.68889049
150601A00872	6/1/2015	7.42	7/31/2028	6/1/2015	114.95464	112.5874196	110.2975476	108.0818344	105.937246	103.8608955	101.8500347	99.90204647	98.01443766
150601A00875	6/1/2015	7.14	9/29/2028	6/1/2015	114.92268	112.4683419	110.0966791	107.8041929	105.5875595	103.4436198	101.3693694	99.3619506	97.41864384
150601A00883	6/1/2015	6.21	11/30/2028	6/1/2015	113.31928	110.8026193	108.3734351	106.0279217	103.7624721	101.5736617	99.45823812	97.41311107	95.43534322
150601A00888	6/1/2015	5.92	3/1/2029	6/1/2015	113.58856	110.895765	108.3018901	105.802427	103.3931067	101.0698854	98.82893067	96.66660931	94.57947535
150601A00889	6/1/2015	6.55	3/2/2029	6/1/2015	115.17082	112.4513398	109.831579	107.306999	104.8733008	102.5264115	100.2624713	98.07782087	95.96898923
150601A00893	6/1/2015	6.49	4/6/2029	6/1/2015	115.28354	112.5182131	109.8556927	107.29124	104.8203707	102.4388396	100.1426256	97.9279187	95.79110734
150601A00897	6/1/2015	6.15	5/28/2029	6/1/2015	114.66911	111.8696745	109.1758567	106.5827256	104.0856168	101.6801173	99.36205008	97.12745999	94.97260025
150601A00899	6/1/2015	7.07	6/14/2029	6/1/2015	116.955	114.0820044	111.3182661	108.6586419	106.0982711	103.6325567	101.2571496	98.96793304	96.7610089

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00900	6/1/2015	6.06	6/28/2024	6/1/2015	100.76677	100.5999785	100.4338267	100.2683115	100.1034288	99.93917458	99.77554496	99.61253603	99.4501439
150601A00905	6/1/2015	6.14	10/29/2029	6/1/2015	115.87371	112.8344489	109.9173589	107.1163979	104.4258735	101.8404158	99.35495665	96.96471112	94.66515925
150601A00906	6/1/2015	6.2	11/1/2029	6/1/2015	116.28261	113.1931659	110.2293177	107.3847979	104.653698	102.0304474	99.50979163	97.08677208	94.75670737
150601A00912	6/1/2015	5.96	11/30/2029	6/1/2015	115.6073	112.5293417	109.5766961	106.7431	104.0226508	101.4097842	98.89925168	96.48610087	94.16565665
150601A00916	6/1/2015	7.27	4/5/2030	6/1/2015	140.12123	133.2309127	126.7468235	120.6425042	114.8933641	109.476538	104.3707564	99.55622556	95.01451787
150601A00918	6/1/2015	5.62	4/28/2025	6/1/2015	102.55229	101.9613967	101.3791913	100.8054561	100.2399858	99.68258173	99.13305215	98.59121167	98.05688105
150601A00927	6/1/2015	6.08	8/7/2030	6/1/2015	118.09577	114.5748204	111.2125918	108.0003816	104.9300318	101.9938922	99.18478499	96.4959726	93.92112746
150601A00928	6/1/2015	5.94	8/21/2030	6/1/2015	117.64898	114.1370235	110.7835085	107.5797401	104.5175695	101.5893558	98.78792996	96.10656308	93.53893587
150601A00929	6/1/2015	5.91	8/30/2030	6/1/2015	117.55428	114.0439909	110.6921133	107.4899503	104.4293529	101.5026793	98.70276064	96.02286766	93.45668117
150601A00935	6/1/2015	6.46	11/21/2030	6/1/2015	120.0723	116.3753567	112.8502605	109.4873107	106.2774326	103.2121319	100.283453	97.48394125	94.80660806
150601A00939	6/1/2015	5.79	1/17/2031	6/1/2015	118.2843	114.5395349	110.9729156	107.5741745	104.3337213	101.2425905	98.29239592	95.47528953	92.78392293
150601A00943	6/1/2015	6.44	5/9/2031	6/1/2015	121.49443	117.4989039	113.7006353	110.0878558	106.649591	103.375605	100.2563457	97.28289375	94.44691679
150601A00948	6/1/2015	6.04	10/22/2031	6/1/2015	120.65589	116.4767684	112.5139295	108.7538898	105.1841173	101.792958	98.56956811	95.50385183	92.58640467
150601A01024	6/1/2015	5.33	2/27/2026	6/1/2015	108.44818	106.5024424	104.6018347	102.7450416	100.9307917	99.15785872	97.42505988	95.73125382	94.07533894
150601A01041	6/1/2015	5.99	10/2/2036	6/1/2015	133.98262	126.6773098	119.9530982	113.7553759	108.03523	102.7488035	97.85673078	93.32363944	89.11771153
150603A00012	6/3/2015	2.77	6/3/2030	6/3/2015	107.63489	104.3310375	101.1765468	98.16326951	95.28356465	92.530263	89.89663463	87.37635907	84.96349753
150603A00017	6/3/2015	2.84	6/3/2025	6/3/2015	102.12094	100.9510319	99.80788988	98.69060073	97.59829476	96.53014082	95.48534431	94.46314514	93.46281588
150603A00032	6/3/2015	2.21	6/3/2025	6/3/2015	100.70428	100.041168	99.38912456	98.74784214	98.11702671	97.49639545	96.88567624	96.28460714	95.69293587
150604A00039	6/4/2015	2.82	6/4/2030	6/4/2015	107.80254	104.4935017	101.3340656	98.3160669	95.43185228	92.674241	90.03649232	87.51227563	85.0956426
150610A00008	6/10/2015	3.58	6/10/2030	6/10/2015	119.99822	113.4883018	107.3826319	101.6538263	96.27650599	91.227136	86.48388181	82.02647727	77.83610371
150610A00009	6/10/2015	3.03	6/10/2025	6/10/2015	102.39014	101.1999332	100.0373807	98.90152519	97.79145449	96.70629744	95.64522179	94.60743199	93.59216723
150615A00024	6/15/2015	2.26	6/16/2025	6/15/2015	100.74131	100.0758353	99.42152904	98.77808179	98.14519453	97.5225798	96.90996112	96.30707241	95.71365752
150617A00017	6/17/2015	2.27	6/17/2025	6/17/2015	100.74863	100.0827523	99.42806167	98.78424654	98.15100711	97.52805516	96.91511344	96.31191519	95.7182036
150617A00018	6/17/2015	2.45	6/17/2025	6/17/2015	100.76456	100.0998141	99.4462204	98.80346405	98.1712468	97.54928186	96.93729338	96.33501592	95.74219392
150617A00030	6/17/2015	2.91	6/16/2025	6/17/2015	102.17416	100.9519929	99.7548657	98.58200885	97.43268427	96.30618407	95.20182896	94.11896686	93.05697144
150701A00056	7/1/2015	2.34	7/1/2025	7/1/2015	100.85421	100.1493109	99.45688939	98.77658334	98.10804207	97.4509291	96.8049214	96.16970868	95.54499278
150714A00003	7/14/2015	3.76	7/12/2030	7/14/2015	111.14036	107.684649	104.3869742	101.2386249	98.23143578	95.35775023	92.61038556	89.98260026	87.46806391
150720A00012	7/20/2015	2.99	7/21/2025	7/20/2015	102.64115	101.3421974	100.0687979	98.82020798	97.59571774	96.39464442	95.21633127	94.06014629	92.92548103
150721A00027	7/21/2015	3.74	7/22/2030	7/21/2015	120.4361	113.8300755	107.6397687	101.8367104	96.39452706	91.28877517	86.49679064	81.99755031	77.77154516
150722A00033	7/22/2015	2.47	7/22/2025	7/22/2015	100.84376	100.1369145	99.44220638	98.75929513	98.0878527	97.42756376	96.77812507	96.1392449	95.51064248
150722A00035	7/22/2015	2.92	7/22/2025	7/22/2015	102.41881	101.1078729	99.82077256	98.55691054	97.31570712	96.09660157	94.89905133	93.72253124	92.5665329
150727A00013	7/27/2015	3.04	7/28/2025	7/27/2015	102.55441	101.2414219	99.95233021	98.68652027	97.44339904	96.22239348	95.02294975	93.84453234	92.68662334
150729A00028	7/29/2015	2.25	7/29/2025	7/29/2015	100.80091	100.0919112	99.3949922	98.70981887	98.03606869	97.37343157	96.72160915	96.08031428	95.44927041

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150729A00041	7/29/2015	2.44	7/29/2025	7/29/2015	100.82501	100.1171789	99.42138892	98.73730384	98.06460279	97.40297722	96.75213026	96.11177614	95.48163969
150731A00016	7/31/2015	3.04	7/31/2025	7/31/2015	102.57839	101.2575652	99.95998195	98.68508162	97.43231998	96.20116981	94.99112019	93.80167593	92.63235693
150803A00033	8/3/2015	3.41	8/2/2030	8/3/2015	115.70499	110.0890742	104.8131424	99.85425663	95.19115872	90.80413724	86.67490666	82.78649679	79.12315129
150803A00036	8/3/2015	3.41	8/2/2030	8/3/2015	115.70499	110.0890742	104.8131424	99.85425663	95.19115872	90.80413724	86.67490666	82.78649679	79.12315129
150803A00037	8/3/2015	3.41	8/2/2030	8/3/2015	115.70499	110.0890742	104.8131424	99.85425663	95.19115872	90.80413724	86.67490666	82.78649679	79.12315129
150803A00038	8/3/2015	3.41	8/2/2030	8/3/2015	115.70499	110.0890742	104.8131424	99.85425663	95.19115872	90.80413724	86.67490666	82.78649679	79.12315129
150803A00039	8/3/2015	3.01	8/2/2030	8/3/2015	108.22638	104.8278779	101.5862076	98.49265538	95.53905642	92.71775837	90.02158566	87.4438065	84.97810247
150803A00041	8/3/2015	3.01	8/2/2030	8/3/2015	108.22638	104.8278779	101.5862076	98.49265538	95.53905642	92.71775837	90.02158566	87.4438065	84.97810247
150803A00042	8/3/2015	3.01	8/2/2030	8/3/2015	108.22638	104.8278779	101.5862076	98.49265538	95.53905642	92.71775837	90.02158566	87.4438065	84.97810247
150812A00052	8/14/2015	2.13	8/14/2025	8/14/2015	100.7703	100.0230298	99.28854142	98.56648835	97.85653455	97.15835668	96.47164337	95.7960947	95.13142164
150814A00029	8/14/2015	2.39	8/14/2025	8/14/2015	100.84888	100.1024542	99.36877103	98.64748622	97.93826529	97.24078635	96.55473943	95.87982594	95.21575811
150817A00099	8/17/2015	3.19	8/17/2027	8/17/2015	108.85038	105.4420547	102.1597372	98.99811109	95.95211258	93.01691717	90.18792692	87.46075864	84.83123272
150819A00012	8/19/2015	3.04	8/19/2025	8/19/2015	102.7067	101.3351286	99.98846738	98.66609945	97.36742453	96.09186167	94.83884847	93.60784038	92.39830995
150819A00013	8/19/2015	3.51	8/19/2030	8/19/2015	119.18347	112.5411995	106.322197	100.4971727	95.0390122	89.92260187	85.12467135	80.62364965	76.3995329
150821A00018	8/21/2015	2.6	8/21/2024	8/21/2015	100.50837	100.1145013	99.72373061	99.33602002	98.95133357	98.56963583	98.19089193	97.81506756	97.4421289
150824A00033	8/24/2015	2.22	8/25/2025	8/24/2015	100.72248	99.97544597	99.24119854	98.51938418	97.8096671	97.11172411	96.425244	95.74992699	95.08548414
150824A00050	8/24/2015	2.03	8/25/2025	8/24/2015	100.69698	99.9487055	99.2132628	98.49029683	97.77947008	97.0804577	96.39294692	95.71663647	95.05123602
150826A00038	8/26/2015	2.94	8/26/2026	8/26/2015	105.64629	103.2390899	100.8992095	98.62438937	96.41246312	94.26134926	92.16904744	90.13363472	88.15326214
150826A00039	8/26/2015	3.22	8/27/2029	8/26/2015	115.74885	110.1531002	104.8670784	99.87200146	95.15031786	90.68562263	86.46257677	82.4668327	78.68496538
150827A00029	8/27/2015	2.74	8/27/2024	8/27/2015	100.58845	100.1780389	99.77097591	99.36722326	98.96674061	98.56948829	98.17542725	97.7845191	97.39672606
150925A00034	9/25/2015	2.36	9/25/2025	9/25/2015	100.89435	100.1049839	99.32932958	98.56701436	97.81767881	97.08097685	96.35657512	95.64415242	94.94339905
150929A00076	9/29/2015	2.28	9/29/2025	9/29/2015	100.83118	100.0417141	99.26597053	98.50357976	97.7541817	97.01742965	96.29298971	95.58054009	94.8797706
150929A00083	9/29/2015	2.09	9/29/2025	9/29/2015	100.80431	100.0135216	99.23650758	98.47289362	97.72231773	96.98443146	96.25889921	95.54539758	94.84361487
150929A00087	9/29/2015	2.09	9/29/2025	9/29/2015	100.80431	100.0135216	99.23650758	98.47289362	97.72231773	96.98443146	96.25889921	95.54539758	94.84361487
151001A00023	10/1/2015	2.02	10/1/2025	10/1/2015	100.7997	99.97213838	99.15917299	98.36040396	97.57544843	96.80393767	96.04551646	95.29984244	94.56658551
151013A00033	10/13/2015	2.23	10/14/2025	10/13/2015	100.8479	100.0198944	99.20648147	98.40726533	97.62186299	96.8499056	96.09103779	95.34491709	94.61121329
151029A00008	10/29/2015	2.28	10/29/2025	10/29/2015	100.89453	100.0639223	99.24798189	98.44631027	97.65852137	96.8842435	96.12311863	95.37480171	94.63896011
151030A00026	10/30/2015	3.29	10/30/2030	10/30/2015	115.45877	109.6825113	104.2667187	99.1863209	94.41814157	89.94074397	85.7342905	81.78041462	78.06210356
151106A00011	11/6/2015	3.1	1/15/2026	11/6/2015	103.92907	102.1492317	100.4084859	98.70568975	97.03973998	95.40957461	93.81417124	92.25254514	90.72374752
151116A00025	11/16/2015	3.04	11/14/2025	11/16/2015	103.35356	101.743785	100.1668747	98.62189152	97.1079298	95.62411818	94.16961772	92.74362044	91.34534786
151118A00037	11/18/2015	2.75	11/18/2025	11/18/2015	102.71093	101.2037791	99.72794784	98.28250192	96.86654695	95.47922401	94.11970777	92.7872049	91.4809524
151120A00019	11/20/2015	2.72	11/20/2030	11/20/2015	107.99876	104.4703301	101.1105624	97.90977745	94.8589249	91.94953951	89.17369931	86.52398709	83.99345473
151125A00037	11/25/2015	2.41	11/25/2025	11/25/2015	101.08387	100.2111257	99.35405465	98.5122222	97.68521295	96.87262702	96.07407927	95.28919864	94.51762744

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
151204A00011	12/4/2015	2.28	12/4/2025	12/4/2015	101.16752	100.2541332	99.35742881	98.47693871	97.61221679	96.76283364	95.92837585	95.10844517	94.30265787
151209A00024	12/9/2015	2.22	12/9/2025	12/9/2015	101.11306	100.1995446	99.30271876	98.42212047	97.55730288	96.7078359	95.87330545	95.05331271	94.24747335
151211A00055	12/11/2015	2.62	12/11/2024	12/11/2015	100.97321	100.2749398	99.58632681	98.90716809	98.23726968	97.57644292	96.92450422	96.28127493	95.64658117
151223A00036	12/23/2015	2.64	12/23/2025	12/23/2015	102.58264	101.0343239	99.51876366	98.03502319	96.5821967	95.15941184	93.76582821	92.4006358	91.0630537
151223A00072	12/23/2015	2.81	12/23/2025	12/23/2015	103.50977	101.789815	100.1066255	98.45909032	96.84614158	95.2667542	93.71994398	92.20476543	90.72030982
151223A00074	12/23/2015	3.01	12/23/2027	12/23/2015	109.77633	105.9928056	102.3614142	98.87516043	95.52741111	92.31187782	89.22259669	86.25390943	83.40044559
151223A00077	12/23/2015	3.57	12/24/2035	12/23/2015	133.68696	121.0902333	109.8547025	99.82382791	90.85991683	82.84176576	75.66260503	69.2283092	63.45583776
151223A00078	12/23/2015	2.28	12/23/2025	12/23/2015	101.1728	100.2569835	99.35793673	98.47518956	97.60829203	96.75681116	95.92033018	95.09844767	94.29077686
151228A00013	12/28/2015	2.27	12/29/2025	12/28/2015	101.16485	100.2484825	99.34890303	98.46564438	97.59825566	96.74630302	95.90936879	95.08705073	94.27896131
151229A00026	12/29/2015	2.28	12/29/2025	12/29/2015	101.17446	100.2578811	99.3580955	98.47463681	97.60705389	96.75491266	95.91779521	95.09529911	94.28703662
151229A00079	12/29/2015	3	12/30/2025	12/29/2015	103.63145	101.8965237	100.198899	98.53744241	96.91106258	95.31871264	93.75938769	92.23212268	90.7359904
151229A00080	12/29/2015	3.49	12/30/2030	12/29/2015	119.98598	112.957866	106.399531	100.2768931	94.55852753	89.21544309	84.22088036	79.55012833	75.18035689
151229A00081	12/29/2015	3.76	12/31/2035	12/29/2015	134.19926	121.6538056	110.4599749	100.4625728	91.52507286	83.52728164	76.36330371	69.93977046	64.17429633
160106A00042	1/6/2016	2.43	1/6/2026	1/6/2016	101.24717	100.2934466	99.35745129	98.43868534	97.53666963	96.65094313	95.78106211	94.92659929	94.08714305
160113A00030	1/13/2016	2.52	1/13/2025	1/13/2016	101.05081	100.2635291	99.48850669	98.7254549	97.9740977	97.23416751	96.50540487	95.78755813	95.08038317
160115A00011	1/15/2016	2.18	1/15/2026	1/15/2016	101.00618	100.0536507	99.11885603	98.20129484	97.30048887	96.41597796	95.54731908	94.69408555	93.85586628
160119A00019	1/19/2016	2.95	1/19/2027	1/19/2016	106.42814	103.6263908	100.9131387	98.28508284	95.73906515	93.27206422	90.88118858	88.5636702	86.31685843
160119A00025	1/19/2016	3.05	1/19/2028	1/19/2016	109.63991	105.8005233	102.1179011	98.58479858	95.19434532	91.94002484	88.81565419	85.81536497	82.9335855
160119A00026	1/19/2016	3.14	1/19/2029	1/19/2016	112.97607	108.0756584	103.4196153	98.99445562	94.78750555	90.7868535	86.98130016	83.36031214	79.91397881
160119A00027	1/19/2016	3.25	1/18/2030	1/19/2016	116.14255	110.1716862	104.5513035	99.2589323	94.27365893	89.57601039	85.14784774	80.97226785	77.03351304
160119A00028	1/19/2016	3.34	1/21/2031	1/19/2016	119.11921	112.0615056	105.4798872	99.33960445	93.60861691	88.25737151	83.25859737	78.58711836	74.21968202
160119A00029	1/19/2016	3.39	1/20/2032	1/19/2016	121.97246	113.8324397	106.3106275	99.3565203	92.92399267	86.97090021	81.45871657	76.35220536	71.61912346
160119A00030	1/19/2016	3.44	1/18/2033	1/19/2016	124.8856	115.6534409	107.1989658	99.45198912	92.34901743	85.8325805	79.85063102	74.35600682	69.30594898
160119A00072	1/19/2016	2.77	1/21/2031	1/19/2016	108.72344	104.6925076	100.868481	97.2387509	93.79157418	90.51600743	87.40184702	84.43957419	81.62030448
160122A00029	1/22/2016	2.48	1/22/2025	1/22/2016	101.06137	100.2498705	99.45138939	98.66561137	97.89223488	97.13096786	96.38152737	95.64363924	94.91703769
160126A00004	1/26/2016	2.52	1/26/2026	1/26/2016	103.33214	101.4913876	99.69327613	97.93656196	96.22004373	94.54256291	92.90300197	91.30028264	89.73336426
160129A00066	1/29/2016	3.04	1/29/2031	1/29/2016	118.08008	110.9984828	104.397938	98.24316226	92.50163174	87.14335528	82.14066527	77.46802661	73.10186227
160129A00067	1/29/2016	2.53	1/29/2026	1/29/2016	103.26271	101.4472255	99.67247602	97.93730502	96.24059664	94.5812738	92.95829659	91.37066068	89.81739591
160201A00016	2/1/2016	2.1	2/2/2026	2/1/2016	100.99879	100.0068698	99.03377362	98.07897377	97.14196366	96.22225553	95.31937949	94.43288271	93.56232863
160209A00006	2/9/2016	1.91	2/9/2026	2/9/2016	100.8082	99.81714653	98.84492467	97.8910059	96.95488293	96.03606727	95.13408838	94.24849279	93.37884334
160209A00008	2/9/2016	2.45	2/10/2031	2/9/2016	106.82718	103.2212499	99.79285852	96.53153613	93.42751231	90.47166401	87.65546821	84.97095834	82.41068417
160210A00042	2/10/2016	2.57	2/10/2026	2/10/2016	103.16475	101.3205935	99.51842836	97.75705753	96.03532226	94.35210413	92.70632331	91.09693697	89.52293778
160210A00049	2/10/2016	1.78	2/10/2026	2/10/2016	100.81571	99.8226812	98.84856044	97.89281304	96.95492892	96.03441694	95.13080402	94.24363433	93.37246843

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160210A00051	2/10/2016	2.28	2/10/2031	2/10/2016	106.6836	103.0726685	99.63988582	96.37472691	93.26737101	90.30864924	87.48999688	84.80340932	82.24140167
160210A00054	2/10/2016	1.78	2/10/2026	2/10/2016	100.81571	99.8226812	98.84856044	97.89281304	96.95492892	96.03441694	95.13080402	94.24363433	93.37246843
160211A00035	2/11/2016	2.25	2/11/2025	2/11/2016	100.82073	99.95859993	99.11118288	98.27810226	97.45899643	96.65351587	95.86132261	95.08208979	94.31550119
160211A00036	2/11/2016	2.41	2/11/2026	2/11/2016	102.87222	101.0279678	99.22578624	97.46446671	95.742847	94.05980533	92.4142587	90.80516126	89.23150281
160211A00038	2/11/2016	1.83	2/11/2026	2/11/2016	100.7276	99.73708458	98.76539986	97.812014	96.87641967	95.95812836	95.0566695	94.17158962	93.30245156
160212A00037	2/12/2016	3.03	2/12/2031	2/12/2016	117.15342	110.1002103	103.5280551	97.40153378	91.688011	86.35740127	81.38195773	76.73607932	72.3961348
160212A00047	2/12/2016	1.94	2/12/2026	2/12/2016	100.83933	99.84759579	98.87471298	97.92015453	96.98341234	96.06399715	95.16143768	94.27527975	93.40508554
160222A00005	2/22/2016	2.79	2/22/2028	2/22/2016	108.91385	104.9944564	101.2389095	97.63951156	94.18896818	90.88036341	87.707138	84.66306911	81.74225139
160222A00018	2/22/2016	2.59	2/23/2026	2/22/2016	103.31597	101.4323023	99.59230339	97.79469997	96.03826697	94.32182263	92.64422672	91.00437878	89.40121647
160222A00019	2/22/2016	3.09	2/21/2031	2/22/2016	117.62427	110.5292	103.9194583	97.75919747	92.01539723	86.65762566	81.65782397	76.99011023	72.63060026
160303A00020	3/3/2016	2.97	3/3/2031	3/3/2016	117.82329	110.6550971	103.9803434	97.7623745	91.96744	86.56444976	81.52475167	76.82192885	72.43161461
160303A00035	3/3/2016	2.14	3/3/2026	3/3/2016	101.21517	100.1030706	99.01336782	97.94540134	96.89854038	95.87217857	94.86573268	93.8786416	92.91036521
160307A00024	3/7/2016	2.17	3/6/2026	3/7/2016	101.15067	100.1154628	99.10035138	98.104773	97.12818175	96.17005199	95.22987733	94.30716979	93.40145893
160307A00027	3/7/2016	2.71	3/6/2026	3/7/2016	103.62188	101.7050235	99.83325339	98.0052351	96.21968568	94.47536831	92.7710903	91.10570122	89.4780911
160307A00028	3/7/2016	2.91	3/7/2028	3/7/2016	109.49173	105.5228979	101.7213923	98.07927936	94.58904756	91.24357855	88.03612453	84.96028699	82.00999676
160307A00029	3/7/2016	3.21	3/7/2031	3/7/2016	118.5392	111.3746673	104.7022163	98.48533681	92.69040747	87.28645521	82.24493402	77.53952314	73.14594304
160328A00038	3/28/2016	2.54	3/30/2026	3/28/2016	103.33437	101.419359	99.55123673	97.72853444	95.94983853	94.21379026	92.51908311	90.86446036	89.24871276
160328A00045	3/28/2016	2.49	3/27/2026	3/28/2016	103.57873	101.6025635	99.67425555	97.7923468	95.95543593	94.16217366	92.41126045	90.70144422	89.03151832
160329A00017	3/29/2016	2.48	3/30/2026	3/29/2016	103.21718	101.3038776	99.43743155	97.61636746	95.83927292	94.1047903	92.41161414	90.75848874	89.14420584
160330A00054	3/30/2016	2.9	3/31/2031	3/30/2016	117.49601	110.2653008	103.5376383	97.27525807	91.44342358	86.01016512	80.94604616	76.22395038	71.8188876
160330A00056	3/30/2016	2.26	3/31/2025	3/30/2016	101.17668	100.1825208	99.2078327	98.25204944	97.3146253	96.39503536	95.49277454	94.60735667	93.73831362
160401A00016	4/1/2016	2.42	4/1/2025	4/1/2016	101.18346	100.1888754	99.21379246	98.25763925	97.3198687	96.39995463	95.49739076	94.6116898	93.74238252
160404A00019	4/4/2016	2.48	4/4/2031	4/4/2016	107.10995	103.4109808	99.89791173	96.55957345	93.38555284	90.36613883	87.49227027	84.75548791	82.14789037
160412A00029	4/12/2016	2.48	4/14/2031	4/12/2016	107.11039	103.4111492	99.89784809	96.55930878	93.38511475	90.36555187	87.49155626	84.75466627	82.1469783
160413A00014	4/13/2016	2.55	4/14/2031	4/13/2016	107.37466	103.666263	100.1442663	96.79746636	93.61542058	90.58839047	87.70728946	84.96363469	82.34950284
160413A00016	4/13/2016	2.55	4/14/2031	4/13/2016	107.37466	103.666263	100.1442663	96.79746636	93.61542058	90.58839047	87.70728946	84.96363469	82.34950284
160413A00021	4/13/2016	2.48	4/13/2026	4/13/2016	103.38933	101.3931285	99.44667504	97.54838421	95.69673265	93.89025723	92.12755205	90.4072658	88.72809911
160413A00033	4/13/2016	2.32	4/13/2026	4/13/2016	102.73698	100.923363	99.15388923	97.42716921	95.74186387	94.09668684	92.49040185	90.92182037	89.38979934
160414A00042	4/13/2016	2.48	4/13/2026	4/13/2016	103.38933	101.3931285	99.44667504	97.54838421	95.69673265	93.89025723	92.12755205	90.4072658	88.72809911
160421A00016	4/21/2016	2.26	4/21/2026	4/21/2016	103.14368	101.1800949	99.26555181	97.39847445	95.57735101	93.80073004	92.06721756	90.37547417	88.72421254
160422A00026	4/22/2016	2.62	4/22/2026	4/22/2016	103.75237	101.7087989	99.7158038	97.7717974	95.87525803	94.02472256	92.21878362	90.45608709	88.7353296
160427A00004	4/27/2016	2.09	4/27/2026	4/27/2016	101.13684	100.0586207	99.00186148	97.96594996	96.95029494	95.95432727	94.97749885	94.01928166	93.07916682
160428A00028	4/28/2016	2	4/28/2026	4/28/2016	101.17859	100.0979793	99.03891662	98.0007831	96.98298424	95.98494783	95.00612284	94.04597846	93.10400317

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160504A00004	5/4/2016	2.3	5/4/2026	5/4/2016	103.4337	101.3558849	99.33013736	97.35479956	95.42828254	93.54905957	91.7156632	89.92668247	88.18076023
160511A00015	5/11/2016	2.42	5/11/2026	5/11/2016	103.42257	101.3566206	99.34351064	97.38150645	95.46894223	93.60422049	91.78580866	90.0122358	88.28208959
160511A00016	5/11/2016	2.48	5/12/2031	5/11/2016	107.19628	103.452283	99.89838433	96.52305023	93.31553838	90.26583708	87.36461053	84.60314858	81.97332049
160520A00017	9/20/2017	2.34	9/20/2024	9/20/2017	100.4381	99.96365092	99.49368474	99.02813914	98.56695186	98.11006181	97.65740903	97.20893465	96.76458093
160520A00018	9/20/2017	2.34	9/20/2024	9/20/2017	100.4381	99.96365092	99.49368474	99.02813914	98.56695186	98.11006181	97.65740903	97.20893465	96.76458093
160523A00086	5/23/2016	2.2	5/26/2026	5/23/2016	103.20116	101.1544261	99.16050967	97.21764804	95.32415399	93.47841078	91.67886857	89.92404097	88.21250186
160524A00015	11/25/2016	2.71	11/25/2026	11/25/2016	105.3903	102.7482375	100.1860332	97.70076889	95.28965783	92.95003406	90.67934607	88.47515102	86.33510928
160524A00027	5/24/2016	3.06	5/27/2031	5/24/2016	117.98694	110.6256594	103.7844577	97.42368175	91.50690622	86.00065436	80.87414431	76.09905873	71.64933517
160603A00014	6/3/2016	1.74	6/3/2026	6/3/2016	101.00482	99.84674906	98.71271148	97.60200006	96.51393561	95.44786477	94.40315884	93.37921253	92.37544295
160603A00029	6/3/2016	2.18	6/3/2031	6/3/2016	106.62961	102.8535351	99.27149172	95.87157913	92.64272051	89.57460013	86.65760582	83.88277609	81.24175165
160606A00004	6/6/2016	2.43	6/8/2026	6/6/2016	103.64028	101.472844	99.361369	97.30400673	95.29898929	93.34462131	91.43927622	89.58139285	87.76947223
160606A00005	6/6/2016	2.92	6/6/2031	6/6/2016	117.04802	109.6928859	102.859794	96.50878637	90.60316859	85.10922766	79.9959746	75.23491068	70.79981477
160606A00018	6/6/2016	1.74	6/5/2026	6/6/2016	101.00533	99.846956	98.71262578	97.60163508	96.51330403	95.44697869	94.40202973	93.37785135	92.37386013
160608A00019	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00020	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00023	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00024	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00025	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00026	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00027	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00028	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00029	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00030	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00031	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00032	6/8/2016	2.36	6/8/2026	6/8/2016	103.43752	101.3064998	99.23143623	97.21046706	95.24180852	93.32375004	91.45465054	89.63293494	87.85709099
160608A00033	6/8/2016	2.44	6/9/2031	6/8/2016	107.12736	103.3440749	99.75480879	96.34767983	93.11162975	90.03635891	87.11226903	84.3304105	81.68243415
160608A00034	6/8/2016	2.44	6/9/2031	6/8/2016	107.12736	103.3440749	99.75480879	96.34767983	93.11162975	90.03635891	87.11226903	84.3304105	81.68243415
160609A00075	6/9/2016	1.94	6/9/2026	6/9/2016	101.09149	99.93382774	98.80016774	97.68980283	96.60205517	95.5362727	94.49182793	93.46811673	92.46455732
160613A00047	6/15/2016	2.18	6/16/2025	6/15/2016	101.20076	100.0051609	98.83772125	97.69745067	96.58340906	95.49469924	94.43046453	93.38988652	92.37218291
160615A00031	6/15/2016	2.51	6/17/2030	6/15/2016	113.40277	107.074587	101.1439209	95.58365261	90.36865471	85.47563603	80.88299769	76.57070122	72.52014758
160616A00027	6/16/2016	2.27	6/16/2026	6/16/2016	103.33475	101.1490999	99.02033979	96.94657646	94.92599707	92.95686396	91.03751079	89.16633889	87.34181393
160616A00029	6/16/2016	1.58	6/16/2026	6/16/2016	100.81753	99.66030999	98.52713492	97.41730031	96.33012538	95.2649553	94.22116	93.19813295	92.19529009
160616A00034	6/16/2016	1.97	6/17/2024	6/16/2016	100.10935	99.89418846	99.67996625	99.46667528	99.25430942	99.04286261	98.83232882	98.62270208	98.41397648

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160628A00038	6/28/2016	1.88	6/27/2025	6/28/2016	101.0622	99.83550032	98.63843034	97.46992759	96.3289794	95.21462045	94.12593005	93.06202953	92.02207996
160628A00039	6/28/2016	2.01	6/29/2026	6/28/2016	103.11586	100.8916953	98.72627586	96.61761816	94.56382198	92.56306735	90.61361033	88.71377914	86.8619704
160628A00049	6/28/2016	1.88	6/27/2025	6/28/2016	101.0622	99.83550032	98.63843034	97.46992759	96.3289794	95.21462045	94.12593005	93.06202953	92.02207996
160629A00066	6/29/2016	2.61	6/30/2036	6/29/2016	118.81428	108.9088046	100.0398704	92.08850813	84.95022918	78.53318426	72.75656196	67.54919841	62.84836915
160630A00012	6/30/2016	2.11	6/30/2025	6/30/2016	101.16292	99.93068391	98.72833598	97.55480355	96.40906068	95.29012958	94.19707788	93.12901594	92.08509451
160701A00020	7/1/2016	2.13	7/1/2026	7/1/2016	103.10363	100.8801558	98.71542406	96.60745249	94.55434408	92.55428158	90.60552341	88.70639978	86.85530904
160701A00039	7/1/2016	1.92	7/1/2026	7/1/2016	102.92277	100.6954875	98.52716621	96.41581485	94.35952616	92.35647329	90.40490556	88.5031446	86.64958062
160705A00104	7/5/2016	2.1	7/6/2026	7/5/2016	103.06005	100.8240132	98.64737503	96.52814075	94.4644022	92.45433018	90.4961705	88.58824021	86.72892406
160706A00010	7/6/2016	1.99	7/7/2025	7/6/2016	101.04812	99.79889831	98.57800149	97.38447126	96.21738816	95.07587378	93.9590885	92.86622936	91.79652803
160706A00026	7/6/2016	2.19	7/6/2027	7/6/2016	105.239	102.0013969	98.88039388	95.87110888	92.96889662	90.16933517	87.4682136	84.86152038	82.34543254
160706A00027	7/6/2016	2.29	7/6/2028	7/6/2016	107.78878	103.5306317	99.46516011	95.58258828	91.87369551	88.32977904	84.94262173	81.70446197	78.60796569
160706A00028	7/6/2016	2.39	7/6/2029	7/6/2016	110.28255	104.9930346	99.99075386	95.25856943	90.78045871	86.54143584	82.52747875	78.72546182	75.1230937
160706A00029	7/6/2016	2.49	7/8/2030	7/6/2016	112.52316	106.1977946	100.272514	94.71986389	89.51442056	84.63262569	80.05264002	75.75420891	71.71853927
160706A00030	7/6/2016	2.59	7/7/2031	7/6/2016	114.84155	107.4818746	100.6516752	94.30996787	88.41914619	82.94468964	77.85489494	73.12063207	68.71512256
160711A00004	7/11/2016	1.51	7/13/2026	7/11/2016	100.78385	99.58668913	98.41492741	97.2678118	96.14461379	95.04463292	93.96719542	92.91165296	91.87738139
160712A00019	7/12/2017	2.32	7/12/2027	7/12/2017	105.69854	102.4377113	99.2947828	96.26481839	93.34312387	90.52522909	87.80687577	85.18400601	82.65275155
160713A00015	7/13/2016	1.57	7/13/2026	7/13/2016	100.85765	99.65942276	98.48662601	97.33850292	96.21432428	95.11338894	94.03502245	92.97857577	91.94342413
160714A00018	9/6/2016	2.28	9/4/2026	9/6/2016	103.78825	101.386493	99.05254878	96.78412538	94.57902264	92.43512742	90.35040957	88.3229182	86.35077801
160714A00020	9/6/2016	2.28	9/4/2026	9/6/2016	103.78825	101.386493	99.05254878	96.78412538	94.57902264	92.43512742	90.35040957	88.3229182	86.35077801
160714A00023	8/10/2016	2.49	8/10/2028	8/10/2016	108.86034	104.4874777	100.3161853	96.33614608	92.53762283	88.91142274	85.44886418	82.14174573	78.98231721
160714A00024	9/20/2016	2.5	9/20/2028	9/20/2016	109.1631	104.674475	100.3976186	96.32143199	92.4354589	88.72984168	85.19528408	81.82301625	78.60476227
160714A00029	8/10/2016	2.27	8/10/2026	8/10/2016	103.63085	101.2966077	99.02663947	96.81882465	94.67112726	92.58158968	90.54832925	88.56953491	86.64346404
160714A00054	7/14/2016	2.03	7/15/2024	7/14/2016	100.16715	99.8753522	99.58526542	99.29687503	99.0101661	98.72512385	98.44173367	98.15998113	97.87985197
160719A00026	7/19/2016	1.87	7/20/2026	7/19/2016	101.06987	99.87066216	98.69688071	97.54777063	96.42260419	95.32068153	94.24132935	93.18389966	92.14776856
160726A00005	7/26/2016	2.28	7/27/2026	7/26/2016	103.58013	101.2830868	99.048393	96.87400924	94.75797233	92.69839493	90.69346211	88.74142809	86.8406132
160729A00017	7/31/2017	2.47	7/31/2029	7/31/2017	110.82455	105.4556382	100.3814848	95.58439926	91.04784298	86.75634512	82.69542832	78.85154019	75.21198982
160801A00001	8/1/2016	1.97	8/1/2024	8/1/2016	100.17613	99.83793789	99.50202732	99.16837136	98.8369474	98.50773311	98.18070649	97.85584582	97.53312965
160801A00002	8/1/2016	1.58	8/3/2026	8/1/2016	100.92153	99.68272453	98.47076494	97.28484105	96.12417791	94.98803019	93.87568081	92.78643958	91.71964199
160802A00003	8/2/2016	2.53	8/1/2031	8/2/2016	115.52303	108.0328171	101.0870786	94.64333366	88.66261739	83.10917742	77.95019406	73.15552616	68.69748015
160804A00014	8/4/2016	1.99	8/5/2024	8/4/2016	100.18973	99.84065386	99.49400646	99.14976722	98.80791105	98.46841322	98.13124934	97.79639537	97.46382758
160810A00025	8/10/2016	2.17	8/10/2026	8/10/2016	103.31367	101.0353692	98.82085647	96.6679716	94.5746432	92.53888225	90.55877827	88.63249575	86.75827071
160810A00027	8/10/2016	2.13	8/10/2026	8/10/2016	103.10714	100.8968504	98.74794478	96.65834858	94.62607471	92.649215	90.72593658	88.85447841	87.03314801
160810A00028	8/10/2016	2.19	8/10/2026	8/10/2016	103.42483	101.1091699	98.85861655	96.67096511	94.54409782	92.47598122	90.46466219	88.50826429	86.60498425

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160810A00029	8/10/2016	2.17	8/10/2026	8/10/2016	103.31367	101.0353692	98.82085647	96.6679716	94.5746432	92.53888225	90.55877827	88.63249575	86.75827071
160810A00030	8/10/2016	2.24	8/11/2031	8/10/2016	106.5061	102.6617422	99.01846881	95.56373815	92.28589359	89.17409165	86.21823955	83.40893812	80.73742928
160811A00011	8/11/2016	2.25	8/11/2026	8/11/2016	103.58877	101.2524257	98.98047749	96.77080238	94.62135837	92.53018221	90.49538586	88.5151532	86.58773681
160812A00006	8/12/2016	2.16	8/12/2026	8/12/2016	103.47652	101.25097	99.0874447	96.98384123	94.93814459	92.9484202	91.01281013	89.12952955	87.29686336
160815A00005	8/15/2016	2.23	8/17/2026	8/15/2016	103.57246	101.2206496	98.93405159	96.71050576	94.54793244	92.44433261	90.39778433	88.40643927	86.46851947
160815A00006	8/15/2016	2.23	8/17/2026	8/15/2016	103.57246	101.2206496	98.93405159	96.71050576	94.54793244	92.44433261	90.39778433	88.40643927	86.46851947
160815A00007	8/15/2016	2.23	8/17/2026	8/15/2016	103.57246	101.2206496	98.93405159	96.71050576	94.54793244	92.44433261	90.39778433	88.40643927	86.46851947
160819A00015	10/12/2016	2.3	10/13/2026	10/12/2016	104.05491	101.5457867	99.11017941	96.74549954	94.44926934	92.21911358	90.05275457	87.94800745	85.9027758
160824A00019	8/24/2016	1.98	8/25/2031	8/24/2016	105.9986	102.1613315	98.52523102	95.07772555	91.80713108	88.70258027	85.7539597	82.95185235	80.28748481
160830A00035	8/30/2016	2.06	8/30/2024	8/30/2016	100.26156	99.8444103	99.43072056	99.02045	98.61355641	98.20999828	97.80973474	97.41272563	97.01893142
160830A00037	8/30/2016	2.16	8/29/2025	8/30/2016	101.52492	100.1358478	98.77242582	97.43401036	96.11997466	94.82971243	93.562637	92.31818057	91.09579344
160830A00038	8/30/2016	2.24	8/28/2026	8/30/2016	103.65353	101.2720004	98.95722912	96.70697839	94.51909747	92.39152004	90.32226027	88.30940927	86.35113157
160906A00027	9/6/2016	2.03	9/8/2031	9/6/2016	106.26485	102.3769292	98.69477386	95.20541366	91.89680062	88.75773547	85.7778021	82.9473073	80.25722564
160908A00022	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00023	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00024	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00025	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00026	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00027	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00028	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00030	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00031	9/8/2016	2.21	9/8/2026	9/8/2016	103.54053	101.1922493	98.91146046	96.69581171	94.54305196	92.45102246	90.41765242	88.44095477	86.5190222
160908A00032	9/8/2016	2.17	9/8/2026	9/8/2016	103.32148	101.0449389	98.83326771	96.6842186	94.59563539	92.56545024	90.59167938	88.67241912	86.80584209
160908A00033	9/8/2016	2.17	9/8/2026	9/8/2016	103.32148	101.0449389	98.83326771	96.6842186	94.59563539	92.56545024	90.59167938	88.67241912	86.80584209
160908A00034	9/8/2016	2.17	9/8/2026	9/8/2016	103.32148	101.0449389	98.83326771	96.6842186	94.59563539	92.56545024	90.59167938	88.67241912	86.80584209
160908A00035	9/8/2016	2.3	9/8/2031	9/8/2016	106.81875	102.9216052	99.2302865	95.73184803	92.4142579	89.26633045	86.27766091	83.43856538	80.74002601
160908A00036	9/8/2016	2.3	9/8/2031	9/8/2016	106.81875	102.9216052	99.2302865	95.73184803	92.4142579	89.26633046	86.27766091	83.43856538	80.74002601
160922A00014	9/22/2016	2.06	9/22/2026	9/22/2016	103.66541	101.2100642	98.82554706	96.50941281	94.25931469	92.07300099	89.94831054	87.88316851	85.87558231
160923A00009	9/23/2016	2.24	9/23/2031	9/23/2016	106.5806	102.6917095	99.00825384	95.51730621	92.20685453	89.06573183	86.083551	83.25064484	80.55801127
160928A00029	9/28/2016	2.52	9/29/2036	9/28/2016	111.98465	105.3859462	99.33729746	93.78501573	88.68119458	83.98304093	79.65228762	75.6546776	71.95951045
160928A00030	9/28/2016	2.52	9/29/2036	9/28/2016	111.98465	105.3859462	99.33729746	93.78501573	88.68119458	83.98304093	79.65228762	75.6546776	71.95951045
160928A00032	9/28/2016	2.52	9/29/2036	9/28/2016	111.98465	105.3859462	99.33729746	93.78501573	88.68119458	83.98304093	79.65228762	75.6546776	71.95951045
160928A00033	9/28/2016	2.46	9/29/2036	9/28/2016	111.60007	105.0190704	98.98692352	93.45004535	88.36062013	83.67593692	79.35780303	75.37202895	71.6879757

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160928A00041	9/28/2016	3.26	9/29/2036	9/30/2019	116.72776	109.9107476	103.6585759	97.91631712	92.63494615	87.77065704	83.28426433	79.14067754	75.30843905
160928A00042	9/28/2016	3.05	9/29/2036	9/28/2021	115.38174	108.6266823	102.4322672	96.74392078	91.51293557	86.69579301	82.25356824	78.15140729	74.35806742
160928A00044	9/28/2016	2.89	9/29/2036	9/28/2023	114.3562	107.6483469	101.4979367	95.85066642	90.65807037	85.87684899	81.46827598	77.39767757	73.63397475
160930A00005	9/30/2016	2.03	9/30/2024	9/30/2016	100.30426	99.80319522	99.30711819	98.81595674	98.32963816	97.84809118	97.37124592	96.89903385	96.43138777
160930A00032	9/30/2016	2.15	9/30/2031	9/30/2016	106.04433	102.2703627	98.69347074	95.30133331	92.08250199	89.0263302	86.12291137	83.36302239	80.73807161
160930A00033	9/30/2016	1.8	9/30/2026	9/30/2016	101.08904	99.81608144	98.57129096	97.35381129	96.16281781	94.99751764	93.85714817	92.74097564	91.64829379
161005A00016	10/5/2016	2.32	10/6/2031	10/5/2016	106.97562	103.0312635	99.29723958	95.76019643	92.40773684	89.2283427	86.21130664	83.34666933	80.62516202
161014A00019	10/14/2016	2.39	10/15/2031	10/14/2016	107.25835	103.303312	99.55920224	96.01262636	92.65115047	89.46322265	86.43810421	83.56580681	80.83703483
161014A00026	10/14/2016	2.16	10/14/2031	10/14/2016	106.85907	102.9074674	99.16704976	95.62438197	92.26699382	89.08330116	86.06253675	83.19468703	80.47043405
161014A00029	10/14/2016	2.51	10/15/2031	10/14/2016	108.27703	104.2729994	100.4829482	96.89327095	93.49133189	90.26539318	87.2045447	84.29864001	81.53823752
161109A00018	11/9/2016	2.63	11/9/2026	11/9/2016	105.06994	102.4756985	99.95891468	97.516798	95.14668121	92.84601057	90.61234015	88.44332649	86.33672354
161116A00006	11/16/2016	2.39	11/16/2026	11/16/2016	102.04188	100.6665645	99.32303272	98.01028896	96.72737641	95.4733758	94.24740365	93.04861051	91.87617939
161118A00026	12/20/2016	3.03	12/21/2026	12/20/2016	106.43673	103.7114571	101.0701688	98.50973438	96.02716093	93.61958853	91.28428341	89.01863128	86.82013111
161207A00014	12/7/2016	2.75	12/8/2031	12/7/2016	109.46203	105.3289693	101.4209867	97.72351599	94.22304942	90.90705456	87.76389727	84.78277099	81.95363209
161214A00023	12/14/2016	3.3	12/15/2031	12/14/2016	122.12809	114.0308254	106.5432854	99.6160311	93.20389057	87.26556859	81.76329418	76.66250206	71.9315446
161214A00034	12/14/2016	2.65	12/14/2026	12/14/2016	102.50313	101.0804487	99.69132609	98.33469061	97.00951699	95.71482068	94.44965591	93.21311384	92.00432082
161222A00013	12/22/2016	2.93	12/22/2026	12/22/2016	106.08853	103.5222439	101.0352173	98.62452422	96.28736639	94.0210656	91.82305779	89.69088738	87.62220197
161222A00030	12/22/2016	3.09	12/22/2026	12/22/2016	106.96986	104.2265983	101.5680531	98.99105685	96.4925842	94.06974461	91.71977534	89.44003468	87.22799567
161222A00036	12/22/2016	2.69	12/22/2026	12/22/2016	102.52645	101.1193593	99.74534391	98.40334997	97.09236797	95.81142853	94.55960045	93.33598892	92.13973372
161222A00037	12/22/2016	3.08	12/22/2031	12/22/2016	109.8764	105.8851844	102.1072593	98.52898285	95.13769654	91.92164827	88.86992117	85.97236828	83.21955284
161227A00073	12/27/2016	2.83	12/28/2026	12/27/2016	105.34988	102.976841	100.6755981	98.44353192	96.27813895	94.17702164	92.1378831	90.15852221	88.23682913
161229A00018	12/29/2016	2.46	12/29/2026	12/29/2016	102.41676	100.9914668	99.59988317	98.24093654	96.91359378	95.61686294	94.34979129	93.11146345	91.90099958
161229A00019	12/29/2016	2.46	12/29/2026	12/29/2016	102.41676	100.9914668	99.59988317	98.24093654	96.91359378	95.61686294	94.34979129	93.11146345	91.90099958
170105A00010	1/5/2017	2.61	1/5/2027	1/5/2017	102.53808	101.0742688	99.64567298	98.25115162	96.88961312	95.56000988	94.26133607	92.9926256	91.75295025
170106A00030	1/6/2017	2.39	1/6/2027	1/6/2017	102.40165	100.936995	99.50763551	98.11242874	96.75027899	95.42013469	94.12098629	92.85186419	91.61183684
170111A00009	1/11/2017	3.16	1/11/2028	1/11/2017	109.99171	106.1669239	102.4974271	98.97604688	95.59598556	92.35079742	89.23436825	86.24089626	83.36487414
170111A00011	1/11/2017	3.24	1/11/2029	1/11/2017	113.3939	108.5049063	103.8585782	99.44154587	95.24125064	91.24589049	87.44436989	83.82625356	80.38172356
170111A00012	1/11/2017	3.31	1/11/2030	1/11/2017	116.4436	110.4827754	104.8706597	99.58493882	94.60484595	89.91104471	85.48552299	81.31149523	77.37331254
170111A00013	1/11/2017	3.4	1/10/2031	1/11/2017	119.45367	112.4139702	105.8470414	99.71847361	93.99654299	88.65198587	83.65779522	78.98903523	74.62267194
170111A00014	1/11/2017	3.47	1/12/2032	1/11/2017	122.5369	114.3966001	106.872519	99.91442814	93.47645249	87.51667125	81.99675725	76.88165119	72.139267
170111A00016	1/11/2017	3.51	1/11/2033	1/11/2017	125.4485	116.2107927	107.7491613	99.99369855	92.88115978	86.35429207	80.36123741	74.85499798	69.79295704
170112A00015	1/12/2017	2.32	1/12/2027	1/12/2017	102.29816	100.8345199	99.40616808	98.01196212	96.65080662	95.32165025	94.02348363	92.75533731	91.51627984
170119A00006	1/19/2017	2.85	1/21/2025	1/19/2017	101.22339	100.4156905	99.62087141	98.83862743	98.06866164	97.31068641	96.56442303	95.82960138	95.10595961

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170120A00008	1/20/2017	3.63	1/20/2034	1/20/2017	129.06765	118.6649134	109.2223505	100.6452194	92.84861912	85.75642084	79.30031964	73.4189929	68.05735309
170120A00009	1/20/2017	3.67	1/22/2035	1/20/2017	131.58189	120.0785943	109.729957	100.4123499	92.01603421	84.44353454	77.60820999	71.43299791	65.84930919
170120A00010	1/20/2017	3.71	1/22/2036	1/20/2017	133.71416	121.1401074	109.9276807	99.91984911	90.97853896	82.98225331	75.82400224	69.40950082	63.65559907
170120A00011	1/20/2017	3.75	1/20/2037	1/20/2017	135.75178	122.1248581	110.0787555	99.41837141	89.97375811	81.59675868	74.15810731	67.54492864	61.65857941
170123A00039	1/23/2017	2.79	1/23/2026	1/23/2017	103.69808	101.8943707	100.1307986	98.40620615	96.71947947	95.06954464	93.45536608	91.87594488	90.33031719
170124A00017	1/24/2017	2.82	1/23/2032	1/24/2017	109.8623	105.6708406	101.7098269	97.96421007	94.42004551	91.06440401	87.88529079	84.8715714	82.01290403
170130A00010	1/30/2017	2.92	1/30/2025	1/30/2017	101.33793	100.5054662	99.6866601	98.88117738	98.08869477	97.30889946	96.54148857	95.78616882	95.0426561
170130A00031	1/30/2017	2.96	7/30/2025	1/30/2017	102.46339	101.1459275	99.85191196	98.58076636	97.33193057	96.10486235	94.89903676	93.71394542	92.54909588
170130A00036	1/30/2017	3.11	1/31/2033	1/30/2017	111.64073	106.9199944	102.4866246	98.31986575	94.40063958	90.71139601	87.23598002	83.95951079	80.86827201
170130A00039	1/30/2017	2.74	1/31/2028	1/30/2017	104.20262	102.1106158	100.0832004	98.11787798	96.21226139	94.3640714	92.57113105	90.83136049	89.14277197
170130A00043	1/30/2017	2.64	1/29/2027	1/30/2017	102.81987	101.2370202	99.69321399	98.18720346	96.71778647	95.28380715	93.88415381	92.51775701	91.18358763
170130A00046	1/30/2017	2.52	1/30/2026	1/30/2017	101.57031	100.4897163	99.42916401	98.38813224	97.36611967	96.36264148	95.37722865	94.40942738	93.45879845
170203A00012	2/3/2017	3.63	2/2/2035	2/3/2017	131.21043	119.6974669	109.3435736	100.0243397	91.62935714	84.06058198	77.23089084	71.06281311	65.48741572
170203A00013	2/3/2017	3.67	2/1/2036	2/3/2017	133.29236	120.7165524	109.506066	99.503105	90.56895558	82.58158699	75.433566	69.03024115	63.28816092
170207A00055	2/7/2017	2.36	2/8/2027	2/7/2017	102.44707	100.940228	99.47045449	98.03653557	96.63730757	95.2716538	93.93850225	92.63682342	91.36562834
170215A00043	2/15/2017	2.7	8/28/2024	2/15/2017	100.52349	100.1111205	99.70213292	99.29648436	98.89413401	98.49504176	98.09916814	97.70647434	97.31692215
170216A00043	2/16/2017	3.17	2/16/2027	2/16/2017	107.28144	104.3890517	101.5902653	98.88155464	96.25954573	93.72100967	91.26285539	88.882123	86.57597755
170216A00044	2/16/2017	3.52	2/17/2032	2/16/2017	123.18833	114.9249758	107.2939654	100.2432566	93.72534788	87.69686393	82.11817763	76.95306849	72.16841384
170216A00045	2/16/2017	3.73	2/17/2037	2/16/2017	135.63224	121.9386223	109.8426246	99.14599643	89.67617925	81.28285284	73.8349624	67.21815634	61.33257628
170224A00020	2/24/2017	3.08	2/24/2027	2/24/2017	107.09094	104.1779515	101.3599523	98.63333489	95.99465164	93.44060411	90.96803573	88.57392489	86.2553784
170224A00021	2/24/2017	3.4	2/24/2032	2/24/2017	122.30152	114.0523694	106.4366776	99.40215828	92.90110084	86.88994984	81.32892356	76.1816692	71.41495122
170224A00039	5/24/2017	3.17	5/24/2027	5/24/2017	108.07827	104.9107777	101.8535162	98.90200433	96.05196921	93.29933791	90.64022686	88.07093175	85.58791799
170224A00044	5/24/2017	3.29	5/24/2029	5/24/2017	114.68886	109.4023683	104.3956466	99.65235735	95.15720376	90.89585964	86.85490267	83.02175235	79.38461261
170228A00014	2/28/2017	2.89	3/1/2027	2/28/2017	106.96591	104.031532	101.1934767	98.44806455	95.79177818	93.22125366	90.73327261	88.32475518	85.9927532
170228A00015	2/28/2017	2.87	5/28/2025	2/28/2017	101.93745	100.7873977	99.66326275	98.56417491	97.48930378	96.43785533	95.40906992	94.40222046	93.41661064
170309A00014	3/9/2017	2.58	3/9/2027	3/9/2017	102.8862	101.3312587	99.81535179	98.33718715	96.89552179	95.48916337	94.1169677	92.77783644	91.47071484
170313A00032	3/13/2017	3.69	6/14/2032	3/13/2017	125.43041	116.7597065	108.7746694	101.4169504	94.63347568	88.37594017	82.60035493	77.26663997	72.33825738
170313A00033	3/13/2017	3.31	3/15/2027	3/13/2017	107.9189	104.9425196	102.0647285	99.28172206	96.58986476	93.98568126	91.4658484	89.0271876	86.66665774
170313A00034	3/13/2017	3.31	3/15/2027	3/13/2017	107.9189	104.9425196	102.0647285	99.28172206	96.58986476	93.98568126	91.4658484	89.0271876	86.66665774
170313A00035	3/13/2017	3.31	3/15/2027	3/13/2017	107.9189	104.9425196	102.0647285	99.28172206	96.58986476	93.98568126	91.4658484	89.0271876	86.66665774
170313A00041	3/13/2017	3.21	3/15/2032	3/13/2017	110.81933	106.6401965	102.6924018	98.96065399	95.43079492	92.08971218	88.92525444	85.92615409	83.08195671
170313A00045	3/13/2017	3.22	3/15/2032	3/13/2017	111.23452	106.917167	102.8410481	98.99016839	95.34972558	91.90601037	88.64631801	85.55886764	82.63272868
170317A00044	3/17/2017	3.11	3/17/2027	3/17/2017	106.79465	104.0274305	101.3515174	98.76333761	96.25948433	93.83670413	91.49188917	89.22206974	87.02440723

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170322A00022	3/22/2017	3.89	9/23/2041	3/22/2017	149.34593	130.4680331	114.4145568	100.7351196	89.05406155	79.05765985	70.48359154	63.1122379	56.75950017
170322A00023	3/22/2017	3.82	9/22/2039	3/22/2017	142.20622	125.7018646	111.4394721	99.09508589	88.39348948	79.10063335	71.01727095	63.97360696	57.82479292
170322A00024	3/22/2017	3.72	9/22/2036	3/22/2017	134.86971	121.6002685	109.8375248	99.39941562	90.12687113	81.88080356	74.5395008	67.9963715	62.15799297
170322A00025	3/22/2017	3.58	3/22/2033	3/22/2017	126.56131	117.0842666	108.4185243	100.4896531	93.23043603	86.58013335	80.48382734	74.89183661	69.75919181
170322A00026	3/22/2017	3.22	3/22/2028	3/22/2017	110.83619	106.8012689	102.9378065	99.23760405	95.69289857	92.29633757	89.04095501	85.92014893	82.92766046
170322A00033	3/22/2017	3.61	3/24/2042	3/22/2017	128.36234	117.2237464	107.3964623	98.70358751	90.99415625	84.13910328	78.02788623	72.56565426	67.67087132
170327A00070	3/29/2017	3.05	3/29/2027	3/29/2017	107.65348	104.6348514	101.7176556	98.8979201	96.17185344	93.53583381	90.98640032	88.52024487	86.13420452
170327A00072	3/29/2017	3.09	3/29/2027	3/29/2017	107.77353	104.7530889	101.8341271	99.0126695	96.2849233	93.64726523	91.09623309	88.6285175	86.24095427
170327A00078	3/27/2019	3.04	3/27/2026	3/27/2019	104.41595	102.4361432	100.5041494	98.61852097	96.77786012	94.98082099	93.22610717	91.51246958	89.83870432
170327A00079	3/27/2019	3.19	3/29/2027	3/27/2019	107.67397	104.6643323	101.755622	98.94389553	96.22538665	93.5964973	91.05378898	88.59397475	86.21391163
170327A00080	3/27/2019	3.43	3/27/2029	3/27/2019	114.93732	109.8030798	104.9334767	100.313444	95.92885405	91.76645189	87.81379664	84.05920747	80.49171325
170328A00015	3/28/2017	2.75	11/29/2024	3/28/2017	100.86851	100.2046645	99.54954214	98.90296919	98.26477913	97.6348098	97.01290317	96.39890525	95.79266595
170406A00024	4/6/2017	2.61	4/8/2024	4/6/2017	100.12053	100.015611	99.91092931	99.80647931	99.70226022	99.59827124	99.49451157	99.39098042	99.287677
170406A00026	4/6/2017	2.61	4/8/2024	4/6/2017	100.12053	100.015611	99.91092931	99.80647931	99.70226022	99.59827124	99.49451157	99.39098042	99.287677
170406A00027	4/6/2017	2.61	4/8/2024	4/6/2017	100.12053	100.015611	99.91092931	99.80647931	99.70226022	99.59827124	99.49451157	99.39098042	99.287677
170406A00029	4/6/2017	3.01	4/6/2027	4/6/2017	106.90611	103.9981719	101.1884098	98.47291708	95.84796553	93.30999828	90.8556205	88.48159096	86.1848141
170406A00031	4/6/2017	3.01	4/6/2027	4/6/2017	106.90611	103.9981719	101.1884098	98.47291708	95.84796553	93.30999828	90.8556205	88.48159096	86.1848141
170406A00032	4/6/2017	3.01	4/6/2027	4/6/2017	106.90611	103.9981719	101.1884098	98.47291708	95.84796553	93.30999828	90.8556205	88.48159096	86.1848141
170406A00033	4/6/2017	3.01	4/6/2027	4/6/2017	106.90611	103.9981719	101.1884098	98.47291708	95.84796553	93.30999828	90.8556205	88.48159096	86.1848141
170406A00034	4/6/2017	3.01	4/6/2027	4/6/2017	106.90611	103.9981719	101.1884098	98.47291708	95.84796553	93.30999828	90.8556205	88.48159096	86.1848141
170406A00036	4/6/2017	3.07	4/6/2032	4/6/2017	110.69329	106.3543039	102.2599463	98.39386553	94.74093421	91.28715044	88.01954638	84.92610454	81.99568154
170407A00001	4/6/2017	2.97	4/6/2027	4/6/2017	106.52698	103.7224411	101.0115797	98.39068885	95.85622922	93.40482336	91.03324729	88.73842246	86.51740822
170412A00019	4/12/2017	2.56	4/12/2024	4/12/2017	100.03801	100.0047258	99.9714823	99.9382769	99.90510956	99.87198021	99.83888877	99.80583517	99.77281936
170417A00068	4/17/2019	2.59	4/17/2024	4/17/2019	100.05378	100.0066421	99.95956539	99.91254916	99.8655933	99.81869769	99.77186221	99.72508675	99.67837118
170427A00044	4/27/2017	3.02	4/27/2027	4/27/2017	107.39635	104.3114702	101.3321237	98.45409365	95.67336221	92.98609521	90.38863288	87.87748066	85.44930073
170427A00046	4/27/2017	3.1	4/27/2028	4/27/2017	110.6632	106.533277	102.5824798	98.80206137	95.18375444	91.71973856	88.40261349	85.22537423	82.18138766
170427A00047	4/27/2017	3.18	4/27/2029	4/27/2017	113.92851	108.7337609	103.8109377	99.14433603	94.71924211	90.52186462	86.53927196	82.75933408	79.17066854
170502A00028	5/2/2017	2.84	5/3/2027	5/2/2017	107.29836	104.1890462	101.1867438	98.28715927	95.48619436	92.77993963	90.16466461	87.63680839	85.19297082
170504A00049	5/4/2017	2.63	5/6/2024	5/4/2017	100.2153	100.0304651	99.8463246	99.66287015	99.48009784	99.29800384	99.11658432	98.93583551	98.75575365
170508A00010	5/8/2017	2.43	5/8/2024	5/8/2017	100.11265	100.0073494	99.90227984	99.79744438	99.69284218	99.58847241	99.48433425	99.38042688	99.27674949
170511A00011	5/11/2017	2.41	5/11/2027	5/11/2017	102.80451	101.1676913	99.57362743	98.02085154	96.50796177	95.03361475	93.5965226	92.19545029	90.82921298
170515A00010	5/15/2017	2.58	5/15/2024	5/15/2017	100.13777	100.0132791	99.88911239	99.76527008	99.64175085	99.51855338	99.39567637	99.27311855	99.1508786
170524A00011	5/24/2017	2.54	5/24/2024	5/24/2017	100.15968	100.0103581	99.86149266	99.71308059	99.56511981	99.41760824	99.27054382	99.12392448	98.97774821

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170524A00027	5/24/2017	2.32	5/24/2027	5/24/2017	102.6565	101.0211336	99.42851705	97.87718264	96.36572728	94.89280653	93.45713157	92.05746651	90.69262576
170524A00037	5/24/2017	2.46	5/24/2024	5/24/2017	100.23393	100.0005452	99.76826124	99.53706559	99.30695064	99.07790878	98.84993247	98.62301427	98.39714678
170526A00017	5/26/2017	2.16	5/28/2024	5/26/2017	100.08534	99.96085471	99.83671528	99.71291718	99.58945889	99.46633893	99.3435558	99.22110803	99.09899415
170531A00080	5/31/2017	2.3	5/31/2024	5/31/2017	100.15972	99.99090237	99.82264917	99.65496099	99.48783498	99.32126834	99.15525826	98.98980196	98.82489669
170602A00019	6/2/2017	2.42	6/3/2024	6/2/2017	100.2498	99.99131084	99.73415976	99.4783347	99.2238254	98.97062169	98.71871354	98.468091	98.21874422
170602A00026	6/2/2017	2.25	6/3/2024	6/2/2017	100.15903	99.98196878	99.80554134	99.62974124	99.45456509	99.28000954	99.10607129	98.93274702	98.76003345
170608A00020	6/8/2017	2.27	6/10/2024	6/8/2017	100.18106	99.98475133	99.78922336	99.59447338	99.40049669	99.20728859	99.01484444	98.82315963	98.63222961
170609A00043	6/9/2017	3.07	6/9/2032	6/9/2017	121.5063	112.9536491	105.081796	97.83260458	91.15320651	84.9954941	79.31566788	74.07382956	69.23361528
170609A00052	6/11/2018	2.9	6/9/2027	6/11/2018	107.34993	104.1508574	101.06447	98.08612382	95.21140011	92.43608989	89.75618264	87.16785545	84.66746295
170612A00039	6/12/2017	2.29	6/12/2024	6/12/2017	100.19039	99.98857227	99.78758343	99.58741699	99.3880678	99.18953079	98.99180091	98.79487316	98.59874257
170613A00032	6/13/2017	2.45	6/13/2025	6/13/2017	101.70727	100.5134454	99.34757478	98.20868475	97.0958467	96.00817426	94.94482086	93.90497752	92.88787083
170613A00033	6/13/2017	2.3	6/13/2024	6/13/2017	100.19513	99.99056502	99.78684567	99.58397114	99.38193608	99.1807352	98.98036324	98.78081501	98.58208535
170614A00019	6/14/2017	2.48	6/13/2025	6/14/2017	101.55272	100.3627885	99.20067771	98.06542094	96.95609514	95.87181921	94.81175159	93.77508804	92.76105961
170615A00006	6/15/2017	2.15	6/17/2024	6/15/2017	100.11472	99.94710852	99.7801442	99.61382752	99.44815438	99.28312069	99.1187224	98.95495551	98.79181605
170619A00089	6/16/2017	2.79	6/16/2027	6/16/2017	106.70829	103.640855	100.682123	97.82760164	95.07300889	92.41426479	89.84748074	87.36894928	84.97513446
170619A00092	6/16/2017	2.79	6/16/2027	6/16/2017	106.70829	103.640855	100.682123	97.82760164	95.07300889	92.41426479	89.84748074	87.36894928	84.97513446
170619A00095	6/16/2017	2.79	6/16/2027	6/16/2017	106.70829	103.640855	100.682123	97.82760164	95.07300889	92.41426479	89.84748074	87.36894928	84.97513446
170619A00096	6/16/2017	2.79	6/16/2027	6/16/2017	106.70829	103.640855	100.682123	97.82760164	95.07300889	92.41426479	89.84748074	87.36894928	84.97513446
170619A00101	6/16/2017	2.74	6/16/2027	6/16/2017	106.2855	103.3330919	100.4841268	97.73434594	95.07969667	92.51631706	90.04052575	87.64881229	85.33782813
170622A00036	6/22/2017	3.23	6/22/2032	6/22/2017	121.74116	113.1955765	105.330613	98.08807175	91.41503312	85.26335116	79.58919912	74.35266037	69.51736022
170622A00037	6/22/2017	3.27	6/22/2033	6/22/2017	124.37716	114.7497329	105.9690762	97.95554768	90.63740889	83.95000354	77.83502361	72.23985482	67.11699281
170622A00038	6/22/2017	3.32	6/22/2034	6/22/2017	126.90426	116.1956081	106.5161501	97.76039903	89.83423783	82.65363491	76.14351409	70.23675661	64.87331898
170622A00039	6/22/2017	3.36	6/22/2035	6/22/2017	128.91254	117.1512132	106.6149712	97.16802409	88.69035863	81.07582545	74.23047021	68.07107333	62.52387137
170622A00040	6/22/2017	3.41	6/23/2036	6/22/2017	130.79394	117.992616	106.6262361	96.52390625	87.53600642	79.53144116	72.39525609	66.02657209	60.33679333
170623A00028	6/23/2017	2.79	6/23/2027	6/23/2017	107.10314	103.8698956	100.7517183	97.74381564	94.84162937	92.04082061	89.33725749	86.72700374	84.20630802
170630A00027	6/30/2017	2.35	6/28/2024	6/30/2017	100.24826	100.0024039	99.75775817	99.5143112	99.27205419	99.03097843	98.79107527	98.55233616	98.31475264
170707A00007	7/7/2017	2.65	7/8/2024	7/7/2017	100.43398	100.0777054	99.72396667	99.3727408	99.024001	98.6777208	98.33387416	97.99243536	97.65337907
170711A00010	7/11/2017	2.38	7/12/2027	7/11/2017	102.94128	101.2192818	99.54398825	97.91375238	96.32699738	94.78221386	93.27795644	91.81284052	90.38553925
170713A00021	7/13/2017	3.25	7/13/2037	7/13/2017	126.41135	115.260076	105.3512046	96.53274787	88.67242905	81.65500893	75.37999017	69.75964283	64.71730457
170727A00003	7/27/2017	1.97	7/29/2024	7/27/2017	100.1306	99.92336879	99.71716213	99.51196741	99.30777641	99.104581	98.90237315	98.70114493	98.50088849
170728A00040	7/28/2017	2.44	1/27/2025	7/28/2017	101.05154	100.2266598	99.41521885	98.61689174	97.83136246	97.05832508	96.29748333	95.54855025	94.81124784
170802A00013	8/2/2017	2.5	8/2/2024	8/2/2017	100.45373	100.0302373	99.61031689	99.19392743	98.7810245	98.37156441	97.9655042	97.5628016	97.16341508
170803A00020	8/3/2017	2.84	8/3/2027	8/3/2017	107.56486	104.2152208	100.9883812	97.87920483	94.88279943	91.99450176	89.20986547	86.52464989	83.93480947

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170803A00021	8/3/2017	2.5	8/5/2024	8/3/2017	100.36908	100.0196117	99.67257962	99.32795771	98.98572082	98.64584422	98.30830349	97.97307457	97.64013372
170804A00005	8/4/2017	1.94	8/5/2024	8/4/2017	100.14395	99.90648894	99.6703495	99.43552338	99.20199871	98.96976373	98.73880686	98.50911664	98.28068177
170809A00005	8/9/2017	2.61	8/11/2025	8/9/2017	102.06341	100.7174355	99.39559221	98.09728854	96.82195004	95.56902052	94.33796133	93.12825068	91.93938295
170815A00006	8/15/2017	2.5	8/15/2024	8/15/2017	100.40014	100.0234184	99.64953453	99.27845484	98.91014772	98.54458205	98.18172718	97.82155291	97.4640295
170818A00003	8/18/2017	2.23	8/20/2024	8/18/2017	100.35916	99.96837212	99.58063429	99.19591359	98.81417476	98.4353831	98.05950441	97.68650506	97.31635191
170821A00038	8/23/2017	2.39	8/23/2024	8/23/2017	100.4315	100.0323708	99.63641773	99.24360621	98.85389879	98.46725867	98.08364962	97.70303598	97.32538267
170822A00019	8/22/2017	2.44	8/22/2024	8/22/2017	100.39794	100.0021959	99.60957571	99.22004366	98.83356335	98.45009893	98.0696151	97.69207712	97.3174508
170822A00020	8/22/2017	2.59	8/22/2025	8/22/2017	102.09673	100.7217406	99.37185177	98.04643857	96.74489367	95.46662941	94.21107694	92.97768552	91.76592181
170822A00023	8/23/2017	3.95	8/23/2028	8/23/2017	115.35456	110.8058438	106.4665303	102.3258677	98.37371407	94.6004972	90.99717957	87.55522583	84.26657235
170829A00066	8/29/2017	2.11	8/29/2024	8/29/2017	100.40832	99.9122215	99.42103506	98.93468824	98.45310969	97.97622946	97.50397898	97.03629099	96.57309952
170908A00017	9/9/2019	2.32	9/9/2024	9/9/2019	100.3983	99.95373024	99.51309952	99.07635578	98.64344763	98.21432461	97.78893713	97.36723645	96.94917472
170914A00039	9/14/2017	2.23	9/16/2024	9/14/2017	100.43459	99.97027757	99.51026054	99.05448343	98.60288761	98.15541558	97.71201088	97.27261806	96.83718269
170915A00001	9/15/2017	2.43	9/16/2024	9/15/2017	100.46897	100.0052676	99.54584546	99.09064869	98.63961909	98.19269947	97.74983372	97.31096674	96.87604441
170918A00007	9/18/2017	2.8	9/20/2027	9/18/2017	107.7832	104.301799	100.952592	97.72985643	94.62814624	91.64227976	88.76732528	85.99858757	83.33159522
170919A00073	9/19/2017	2.28	9/19/2024	9/19/2017	100.46696	99.99441944	99.52632829	99.06262471	98.60324704	98.1481348	97.69722864	97.25047028	96.80780255
170921A00055	9/21/2017	2.82	9/21/2027	9/21/2017	107.42469	104.1198976	100.9401355	97.87993588	94.93410635	92.09771048	89.3660537	86.73467004	84.19930954
170921A00056	9/21/2017	2.82	9/21/2027	9/21/2017	107.42469	104.1198976	100.9401355	97.87993588	94.93410635	92.09771048	89.3660537	86.73467004	84.19930954
170921A00057	9/21/2017	2.79	9/21/2027	9/21/2017	107.01062	103.835217	100.7784545	97.83517616	95.00048461	92.26972321	89.63846259	87.10248824	84.65778874
170929A00046	9/29/2017	2.49	9/30/2027	9/29/2017	103.04549	101.2659027	99.5361064	97.85430196	96.2187684	94.62785948	93.07999981	91.57368133	90.10745994
171005A00006	10/5/2017	2.32	10/7/2024	10/5/2017	100.54267	100.021166	99.50506741	98.99429473	98.48876564	97.98839957	97.49311757	97.00284233	96.51749807
171011A00013	10/11/2017	2.77	10/13/2026	10/11/2017	105.24869	102.7242311	100.273629	97.89428701	95.58371721	93.33953468	91.15945236	89.04127643	86.98290178
171013A00024	10/13/2017	2.47	10/15/2024	10/13/2017	100.64266	100.0274886	99.41990608	98.81977631	98.22696217	97.64132995	97.06274913	96.49109238	95.92623542
171018A00011	10/18/2017	2.68	10/18/2027	10/18/2017	108.04016	104.4671584	101.0325209	97.73013468	94.55419032	91.49916656	88.55981441	85.7311421	83.00840089
171025A00026	10/25/2017	2.64	10/25/2024	10/25/2017	100.67266	100.1034878	99.54074065	98.98431494	98.4341045	97.89000559	97.35191673	96.81973869	96.29337442
171026A00008	10/26/2017	2.6	10/25/2024	10/26/2017	100.64967	100.0805662	99.51789345	98.96154153	98.41140431	97.86737803	97.32936122	96.79725467	96.27096134
171026A00009	10/26/2017	2.75	10/27/2025	10/26/2017	102.74163	101.185929	99.66140351	98.16718221	96.7024282	95.26633505	93.85812542	92.47704972	91.12238492
171026A00010	10/26/2017	2.84	10/26/2026	10/26/2017	105.51786	102.95549	100.4687601	98.05498734	95.71159754	93.43612441	91.22620422	89.0795708	86.99405085
171026A00011	10/26/2017	2.94	10/26/2027	10/26/2017	108.55179	104.9606097	101.5087578	98.19005848	94.99864769	91.92895355	88.97567981	86.13379058	83.39849596
171030A00023	10/30/2017	2.9	11/1/2027	10/30/2017	108.45565	104.8501362	101.3850091	98.05402504	94.85125533	91.77106763	88.80810937	85.95729218	83.21377721
171109A00016	11/9/2017	2.94	11/9/2032	11/9/2017	118.74976	110.8023585	103.4903782	96.75823751	90.55554748	84.83659668	79.55989191	74.6877464	70.18591027
171129A00020	11/29/2017	2.89	11/30/2026	11/29/2017	105.90582	103.243184	100.6612876	98.15717521	95.72801829	93.37111148	91.08386611	88.86380434	86.70855353
171204A00009	12/4/2017	2.23	12/4/2024	12/4/2017	100.39137	99.97977735	99.57237452	99.16908682	98.7698456	98.37458381	97.98323595	97.59573802	97.2120275
171204A00024	12/4/2017	2.71	12/4/2024	12/4/2017	100.98511	100.2320381	99.49025232	98.75949894	98.03953269	97.33011552	96.63101636	95.94201085	95.26288109

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
171206A00020	12/6/2017	2.62	12/6/2027	12/6/2017	103.56744	101.6606674	99.81003049	98.01341814	96.26881103	94.57428051	92.92798385	91.32815983	89.77312447
171206A00038	12/6/2017	2.69	12/6/2027	12/6/2017	108.45347	104.7397928	101.1741598	97.74982697	94.46039899	91.29980911	88.26230014	85.34240661	82.53493805
171206A00041	12/6/2017	2.44	12/6/2024	12/6/2017	100.82609	100.1418303	99.46684747	98.80095333	98.14396507	97.49570476	96.85599922	96.22467981	95.60158229
171206A00048	12/6/2017	3.04	12/6/2032	12/6/2017	122.38429	113.3132775	105.0021742	97.3828597	90.39366933	83.97875137	78.08749058	72.67399159	67.69661584
171207A00024	12/7/2017	2.93	12/7/2027	12/7/2017	108.53531	104.9504147	101.5084175	98.20277291	95.0272758	91.97604159	89.04348769	86.22431598	83.51349652
171207A00025	12/7/2017	2.91	12/7/2027	12/7/2017	108.25574	104.7522443	101.3874385	98.15499359	95.04890729	92.06348697	89.19333145	86.43331419	83.77856754
171207A00026	12/7/2017	2.93	12/7/2027	12/7/2017	108.53531	104.9504147	101.5084175	98.20277291	95.0272758	91.97604159	89.04348769	86.22431598	83.51349652
171219A00009	12/19/2017	2.3	12/19/2024	12/19/2017	100.42657	100.0103535	99.59844851	99.19078124	98.78727927	98.3878719	97.99249014	97.60106659	97.21353548
171219A00063	12/19/2017	2.8	12/20/2027	12/19/2017	108.9682	105.207738	101.5983701	98.13315397	94.80551005	91.60920036	88.53830821	85.58721959	82.75060558
171219A00067	12/19/2017	2.72	12/20/2027	12/19/2017	107.7663	104.3711233	101.1098925	97.97651833	94.965223	92.07052337	89.28721433	86.61035305	84.03524418
171227A00018	12/27/2017	2.83	12/27/2024	12/27/2017	101.07153	100.3315626	99.60242041	98.88386371	98.17566324	97.47759622	96.78944626	96.11100308	95.44206232
171228A00024	12/28/2017	2.71	6/28/2024	12/28/2017	100.3081	100.0624566	99.81802061	99.57477868	99.3327221	99.09184222	98.8521305	98.61357846	98.37617771
180102A00021	1/2/2018	2.82	1/2/2026	1/2/2018	103.35355	101.6129288	99.90989098	98.24329892	96.61205722	95.01511459	93.45146156	91.92012841	90.42018312
180104A00017	1/4/2018	2.77	1/3/2025	1/4/2018	101.05961	100.3009372	99.55363586	98.81745412	98.09214516	97.37746939	96.67319422	95.97909379	95.29494876
180104A00018	1/4/2018	2.97	1/4/2027	1/4/2018	106.37523	103.6138202	100.938498	98.34603054	95.83332978	93.39744525	91.03555695	88.74496842	86.52310039
180104A00023	1/4/2018	2.91	1/4/2028	1/4/2018	107.48768	104.2820236	101.2008215	98.23847095	95.38965239	92.64931458	90.01265932	87.47512741	85.03238551
180104A00024	1/4/2018	2.98	1/4/2028	1/4/2018	108.69539	105.1171825	101.6830886	98.38649988	95.22114551	92.18107401	89.26063521	86.45446341	83.75746157
180104A00041	1/4/2018	3.08	1/4/2033	1/4/2018	120.20742	112.0270276	104.5103913	97.59871726	91.23875695	85.38225696	79.98546489	75.00868654	70.41588871
180109A00028	1/9/2018	2.6	1/9/2025	1/9/2018	101.09429	100.3175625	99.55276287	98.79961393	98.05785078	97.32721645	96.60746167	95.89834458	95.19963044
180110A00028	1/10/2018	2.85	1/10/2025	1/10/2018	101.16542	100.3874452	99.62143265	98.8671041	98.12419347	97.39244272	96.67160157	95.96142717	95.26168383
180110A00029	1/10/2018	3.13	1/10/2028	1/10/2018	109.8701	106.0502619	102.3854384	98.86846694	95.49256211	92.25129022	89.13854871	86.14854699	83.27578857
180111A00007	1/11/2018	2.66	1/14/2025	1/11/2018	101.16738	100.3769128	99.5987854	98.83271493	98.07842241	97.3356375	96.60409807	95.8835499	95.17374641
180116A00014	1/16/2018	3.01	1/19/2027	1/16/2018	106.59657	103.7924407	101.076863	98.44653673	95.89830199	93.42913572	91.03614482	88.71655973	86.46772826
180116A00015	1/16/2018	3.06	1/18/2028	1/16/2018	109.6699	105.8326011	102.1518728	98.62048092	95.23156446	91.97861612	88.85546186	85.85624187	82.97539282
180118A00004	1/18/2018	2.88	1/17/2025	1/18/2018	101.22649	100.4294987	99.64505043	98.87285249	98.11261926	97.36407399	96.62694839	95.90098236	95.18592363
180118A00037	1/18/2018	2.88	1/21/2025	1/18/2018	101.2479	100.4400887	99.64516175	98.86281107	98.09273975	97.33466014	96.58829352	95.85336975	95.12962694
180118A00039	1/18/2018	3.09	1/19/2027	1/18/2018	106.82115	104.0138406	101.2951621	98.66180858	96.11061778	93.63856438	91.24275315	88.92041242	86.66888804
180125A00027	1/25/2018	2.69	1/24/2025	1/25/2018	100.85071	100.2232983	99.6052459	98.99633137	98.39633825	97.80505708	97.22228514	96.64782618	96.08149014
180126A00011	1/26/2018	2.72	1/26/2028	1/26/2018	104.20544	102.2098849	100.2746305	98.39736126	96.57586627	94.8080355	93.0918544	91.42539895	89.80683083
180126A00029	1/26/2018	2.88	1/27/2025	1/26/2018	101.28814	100.4639491	99.65315851	98.85544106	98.07048234	97.29797798	96.53763321	95.78916253	95.05228928
180130A00070	1/30/2018	3.14	1/29/2027	1/30/2018	107.03883	104.201945	101.4553796	98.79577942	96.21993168	93.72476015	91.30731844	88.96478383	86.69445133
180130A00085	1/30/2018	2.79	1/30/2025	1/30/2018	101.36012	100.5257656	99.70512347	98.89785969	98.10364908	97.32217696	96.55313866	95.7962392	95.05119282
180131A00022	1/31/2018	2.96	1/30/2025	1/31/2018	101.3716	100.5389781	99.72001951	98.91438602	98.12175437	97.34181169	96.5742551	95.81879125	95.07513603

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180201A00022	2/1/2018	2.99	2/3/2025	2/1/2018	101.42037	100.5768116	99.74727521	98.9314093	98.12887793	97.33935607	96.5625292	95.79809287	95.04575228
180205A00019	2/5/2018	2.88	2/5/2025	2/5/2018	101.47234	100.6213506	99.78462183	98.96179627	98.15252937	97.35648791	96.57334949	95.80280212	95.04454381
180207A00002	2/7/2018	3.13	2/6/2026	2/7/2018	104.17737	102.3351381	100.5345879	98.77453294	97.05382946	95.37137304	93.72609721	92.11697186	90.54300174
180207A00003	2/7/2018	3.28	2/7/2028	2/7/2018	110.68277	106.7716798	103.0220694	99.42643589	95.97766474	92.66900638	89.49405572	86.44673283	83.52126473
180222A00025	2/22/2018	3.48	2/22/2033	2/22/2018	126.76187	117.2913426	108.6274811	100.6967108	93.43253815	86.77483888	80.66921742	75.06643425	69.92189282
180222A00026	2/22/2018	2.98	2/21/2025	2/22/2018	101.66052	100.7656362	99.88650027	99.02269577	98.17382398	97.33949996	96.51935187	95.71302047	94.92015857
180222A00027	2/22/2018	3.24	2/22/2028	2/22/2018	111.19466	107.2166335	103.4047574	99.7512242	96.24863431	92.88997234	89.66858506	86.57816086	83.61271039
180305A00030	3/5/2018	3.12	3/5/2025	3/5/2018	101.88681	100.8907332	99.91428235	98.95687847	98.01796666	97.09701347	96.1935058	95.30694996	94.43687077
180309A00011	3/9/2018	3.19	3/10/2025	3/9/2018	101.98751	100.9778288	99.98830363	99.01833157	98.06733551	97.13476084	96.22007445	95.32276363	94.44233514
180313A00026	3/13/2018	3.34	3/13/2028	3/13/2018	111.23478	107.2158728	103.3666627	99.6790895	96.14551436	92.75869981	89.51178644	86.39827109	83.41198649
180321A00015	3/21/2018	3.02	3/21/2025	3/21/2018	101.27914	100.5445667	99.82278716	99.11344226	98.41618938	97.73069884	97.05665325	96.39374694	95.74168541
180322A00030	3/22/2018	2.79	3/24/2025	3/22/2018	100.86521	100.319631	99.78153825	99.25075949	98.72712911	98.21048676	97.70067717	97.19754993	96.70095927
180322A00040	3/22/2018	3.16	3/21/2031	3/22/2018	112.40379	107.7454876	103.3559528	99.21713335	95.31232434	91.626056	88.14399456	84.85285158	81.74030109
180322A00044	3/22/2018	3.18	3/22/2033	3/22/2018	113.10357	108.1748701	103.5522035	99.21317715	95.13722917	91.30546213	87.70049665	84.30633844	81.10825801
180323A00013	3/23/2018	3.18	3/23/2028	3/23/2018	111.22512	107.1649875	103.2777811	99.55521079	95.9894306	92.57301041	89.29891157	86.16046411	83.15134549
180328A00010	3/28/2018	3.1	3/28/2025	3/28/2018	101.84497	100.857503	99.88916915	98.93941921	98.00772181	97.09356566	96.19645863	95.31592685	94.45151386
180329A00003	3/29/2018	3.08	3/29/2028	3/29/2018	110.87668	106.8074527	102.9122891	99.18280778	95.61108029	92.18960027	88.9112585	85.76931967	82.75740075
180402A00013	4/2/2018	2.99	4/3/2028	4/2/2018	108.45338	105.1301933	101.9413692	98.88057332	95.94180729	93.11939116	90.40794429	87.80236782	85.29782812
180403A00006	4/3/2018	3.07	4/3/2028	4/3/2018	110.88	106.7970336	102.8892182	99.14810077	95.56568123	92.13438663	88.84704594	85.6968665	82.67741195
180403A00014	4/3/2018	3.11	4/3/2025	4/3/2018	102.03839	100.9690221	99.92225417	98.89737021	97.89368731	96.91055074	95.9473325	95.00343	94.07826475
180403A00041	4/3/2018	2.91	4/3/2025	4/3/2018	101.84886	100.8430692	99.85711826	98.89042547	97.94243058	97.01259486	96.1004001	95.20534768	94.32695756
180410A00002	4/10/2018	3.14	4/11/2033	4/10/2018	113.0239	108.0554048	103.3978887	99.02843198	94.92599591	91.07125694	87.44645463	84.03525395	80.82262059
180412A00034	4/12/2018	3.23	4/15/2030	4/12/2018	117.44678	111.1675011	105.2711857	99.73238476	94.52746948	89.63449361	85.03306518	80.70422858	76.63035617
180412A00036	4/12/2018	3.54	4/15/2038	4/12/2018	137.06748	122.0880552	108.9978678	97.544065	87.50904941	78.70539603	70.9715218	64.16799607	58.17439439
180503A00040	5/3/2018	3.3	5/5/2025	5/3/2018	102.29098	101.1998259	100.1319559	99.08662891	98.06313625	97.06079857	96.07896449	95.11700913	94.17433281
180508A00038	5/8/2018	3.57	5/9/2033	5/8/2018	114.6388	109.5714042	104.823014	100.3699875	96.19063144	92.26503094	88.57489038	85.1033903	81.83505758
180514A00035	5/14/2018	3.07	5/14/2024	5/14/2018	100.20881	100.0868569	99.96521981	99.84389563	99.72288309	99.60218094	99.48178793	99.36170281	99.24192435
180517A00018	5/17/2018	3.46	5/17/2033	5/17/2018	114.76299	109.6736721	104.9054844	100.4345758	96.23906867	92.29888205	88.59557099	85.11218147	81.83311915
180517A00024	5/17/2018	3.46	5/17/2033	5/17/2018	114.76299	109.6736721	104.9054844	100.4345758	96.23906867	92.29888205	88.59557099	85.11218147	81.83311915
180521A00025	5/21/2018	3.24	5/21/2025	5/21/2018	102.50647	101.3688173	100.2564161	99.1684354	98.10407692	97.06257692	96.04320425	95.0452587	94.06806932
180529A00042	5/29/2018	3.42	5/30/2028	5/29/2018	112.26542	108.0140394	103.949927	100.0637886	96.34684432	92.79079841	89.3878092	86.13046163	83.01174147
180529A00044	5/29/2018	3.11	5/29/2024	5/29/2018	100.26786	100.1046224	99.94192125	99.77975068	99.61810813	99.45699102	99.29639682	99.13632297	98.97676697
180529A00057	5/29/2018	3.09	5/30/2028	5/29/2018	107.41793	104.5614752	101.8146994	99.17252474	96.63014289	94.18300074	91.82678498	89.55740777	87.37099342

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180530A00024	5/30/2018	3.44	5/30/2029	5/30/2018	115.50678	110.1833522	105.142088	100.3664774	95.8410635	91.55137273	87.4838468	83.62577975	79.96525966
180530A00025	5/30/2018	3.49	5/30/2030	5/30/2018	118.49242	112.0902896	106.0837514	100.4461548	95.15278339	90.18070665	85.50864154	81.11682549	76.98689991
180530A00026	5/30/2018	3.55	5/30/2031	5/30/2018	121.49394	114.0023337	107.038084	100.5610454	94.5343355	88.9240556	83.69903422	78.83059385	74.29233895
180530A00027	5/30/2018	3.61	6/1/2032	5/30/2018	124.6809	116.0755842	108.1487683	100.8429061	94.10563295	87.88927266	82.15039432	76.84941322	71.95023124
180530A00028	5/30/2018	3.67	5/31/2033	5/30/2018	127.86578	118.1431606	109.266907	101.1580584	93.74543362	86.9648278	80.75829451	75.07350489	69.86317556
180530A00030	5/30/2018	3.68	5/30/2034	5/30/2018	130.38969	119.572099	109.7839208	100.9204691	92.8882562	85.60374364	78.9922347	72.98689537	67.52788842
180530A00072	5/30/2018	3.06	5/30/2024	5/30/2018	100.2641	100.0981132	99.9326743	99.76778181	99.60343305	99.43962535	99.27635605	99.11362253	98.95142217
180604A00050	6/4/2018	3.15	6/4/2024	6/4/2018	100.30275	100.1229838	99.94386422	99.76539031	99.58755856	99.41036548	99.23380761	99.05788153	98.88258381
180605A00031	6/5/2018	3.37	6/5/2030	6/5/2018	109.20958	105.8659645	102.6732139	99.62311503	96.70796243	93.92052543	91.25401574	88.70205736	86.25865871
180615A00039	6/15/2018	3.49	6/15/2028	6/15/2018	112.7075	108.4027616	104.2892446	100.3573727	96.59810611	93.00290836	89.56371495	86.27290434	83.12327089
180618A00036	6/18/2018	3.89	6/18/2048	6/18/2018	164.70748	138.3419819	117.0817542	99.8685075	85.87190708	74.4391233	65.05579206	57.31575699	50.89757946
180619A00020	6/19/2018	3.1	6/19/2025	6/19/2018	102.53316	101.3180902	100.1318057	98.97329398	97.84158761	96.73576363	95.65494107	94.59827853	93.56497203
180619A00021	6/19/2018	3.24	6/19/2028	6/19/2018	112.2666	107.9436167	103.8136274	99.86692784	96.09435606	92.48726255	89.03747813	85.73728429	82.57938551
180620A00014	6/20/2018	3.4	6/20/2028	6/20/2018	112.37504	108.0634307	103.9439691	100.0070034	96.24342386	92.64462962	89.20249678	85.90934913	82.75793065
180620A00038	6/20/2018	3.4	6/20/2028	6/20/2018	112.37504	108.0634307	103.9439691	100.0070034	96.24342386	92.64462962	89.20249678	85.90934913	82.75793065
180621A00017	6/21/2018	3.42	6/21/2028	6/21/2018	112.46865	108.1523146	104.028418	100.0872927	96.31981056	92.71735373	89.27178258	85.97540625	82.82095512
180621A00068	6/21/2018	3.32	6/23/2025	6/21/2018	102.63523	101.411848	100.2176458	99.05158557	97.91268044	96.79998919	95.7126137	94.64969646	93.61041834
180622A00004	6/22/2018	3.47	12/22/2028	6/22/2018	114.3232	109.4659008	104.8469793	100.4533957	96.27290244	92.29398742	88.50582556	84.89823371	81.46162879
180622A00005	6/22/2018	3.5	7/2/2029	6/22/2018	116.08436	110.6549718	105.5175715	100.6548216	96.0505125	91.68948117	87.5575375	83.64139638	79.92861486
180622A00006	6/22/2018	3.53	12/21/2029	6/22/2018	117.55991	111.6236365	106.0310823	100.7604171	95.79131908	91.10485961	86.68340005	82.51049677	78.5708136
180628A00068	6/28/2018	3.12	6/28/2028	6/28/2018	109.37542	105.8771012	102.5263496	99.31596312	96.23913123	93.28941371	90.4607184	87.7472804	85.14364271
180713A00031	7/13/2018	3.06	7/14/2025	7/13/2018	101.26356	100.5552077	99.85917253	99.1751002	98.50265227	97.84150359	97.19134172	96.55186627	95.92278832
180716A00054	7/16/2018	3.59	7/16/2040	7/16/2018	143.35589	125.8547281	110.8468258	97.9550278	86.86149737	77.29808892	69.03832951	61.89073039	55.6932025
180716A00062	7/16/2018	2.91	7/16/2025	7/16/2018	101.26997	100.5597557	99.86186096	99.17593475	98.50163982	97.83865214	97.18666027	96.54536473	95.91447745
180717A00021	7/17/2018	3.34	7/17/2028	7/17/2018	110.95189	107.0335511	103.2882526	99.70731242	96.28252987	93.00615811	89.87087676	86.86976615	83.99628328
180717A00026	7/17/2018	3.24	7/16/2025	7/17/2018	102.84709	101.5301659	100.2369881	98.96696233	97.71951666	96.49409762	95.29016947	94.10721353	92.94472745
180717A00047	7/17/2018	3.3	9/17/2025	7/17/2018	103.29243	101.8390003	100.4133298	99.01469371	97.64239101	96.2957443	94.97409894	93.6768221	92.40330186
180718A00008	7/18/2018	3.37	7/18/2028	7/18/2018	111.90363	107.6454594	103.579767	99.69677025	95.98723851	92.44245561	89.05418855	85.81465821	82.71651205
180719A00063	7/19/2018	3.21	7/19/2024	7/19/2018	100.53359	100.2301829	99.92861385	99.62887085	99.33093731	99.03479677	98.74043299	98.44782993	98.15697173
180719A00064	7/19/2018	3.3	7/21/2025	7/19/2018	102.83981	101.5427603	100.2711657	99.02429475	97.80144109	96.60192533	95.42509391	94.27031784	93.13699154
180719A00065	7/19/2018	3.36	7/20/2026	7/19/2018	106.03563	103.7281459	101.4826669	99.29715155	97.16963698	95.09823809	93.0811437	91.1166131	89.20297281
180727A00028	7/27/2018	3.25	7/27/2026	7/27/2018	106.14445	103.8108701	101.5405724	99.33147947	97.18159752	95.08901	93.05187402	91.06841705	89.13693375
180727A00038	7/27/2018	3.36	7/25/2025	7/27/2018	102.95407	101.6459853	100.3624948	99.10293514	97.86666336	96.6530598	95.46152679	94.29148772	93.1423861

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180727A00039	7/27/2018	3.48	7/27/2028	7/27/2018	113.04877	108.6228222	104.3981504	100.3645478	96.51237462	92.83252725	89.31640519	85.95588085	82.7432711
180730A00023	7/30/2018	3.13	7/30/2024	7/30/2018	100.6041	100.2699836	99.93808803	99.60838871	99.28086383	98.95549194	98.63225184	98.31112264	97.99208369
180730A00081	7/30/2018	3.5	7/28/2028	7/30/2018	113.14418	108.713491	104.4843897	100.4466462	96.59060462	92.90714603	89.38765525	86.02399067	82.8084558
180813A00045	8/13/2018	2.89	8/13/2025	8/13/2018	101.34813	100.5967305	99.85818041	99.13213187	98.41824713	97.71620113	97.02568089	96.34638495	95.67802275
180814A00010	8/14/2018	3.1	8/14/2025	8/14/2018	102.97472	101.6108509	100.2715973	98.95635387	97.66453084	96.39555715	95.14887993	93.92396377	92.72029
180814A00032	8/14/2018	3.1	8/14/2025	8/14/2018	102.97472	101.6108509	100.2715973	98.95635387	97.66453084	96.39555715	95.14887993	93.92396377	92.72029
180814A00033	8/14/2018	3.25	8/13/2027	8/14/2018	109.47209	106.0526162	102.7593592	99.58699721	96.53046494	93.58493599	90.74581043	88.00870284	85.36943128
180816A00038	8/16/2018	3.38	8/16/2028	8/16/2018	112.79019	108.3161827	104.0480224	99.97516179	96.08765125	92.37609825	88.83163353	85.44587928	82.21091941
180820A00055	8/20/2018	3.37	8/21/2028	8/20/2018	112.7896	108.3022073	104.0218492	99.93789517	96.04031205	92.31963015	88.76690875	85.37370385	82.13203807
180823A00035	8/23/2018	3.05	8/22/2025	8/23/2018	102.96345	101.5785554	100.2189924	98.88412322	97.57333385	96.28603019	95.02163723	93.77959836	92.55937459
180823A00053	8/23/2018	3.2	8/23/2028	8/23/2018	112.66045	108.152938	103.8541212	99.75325122	95.84018519	92.10535158	88.53971509	85.13474386	81.88237889
180823A00055	8/23/2018	3.44	8/23/2033	8/23/2018	127.66388	117.6598269	108.5493157	100.2470432	92.67628177	85.76797956	79.45995679	73.6961893	68.42617025
180827A00020	8/27/2018	3.21	8/27/2025	8/27/2018	103.00111	101.6063655	100.2372823	98.89321443	97.57353639	96.27764306	95.00494886	93.75488702	92.52690878
180828A00032	8/28/2018	3.49	8/29/2033	8/28/2018	128.17137	118.1281062	108.9827254	100.6494039	93.05096051	86.11794552	79.78782954	74.00428127	68.71652386
180829A00008	8/29/2018	3.23	8/30/2027	8/29/2018	109.55381	106.0873979	102.7504797	99.53753812	96.44331743	93.46281278	90.59125693	87.82410765	85.1570359
180831A00019	8/31/2018	3.21	9/2/2025	8/31/2018	103.04526	101.6342684	100.249498	98.89028527	97.55598496	96.24597315	94.95964624	93.69642022	92.45572981
180904A00012	9/4/2018	3.35	9/4/2030	9/4/2018	119.16962	112.4508606	106.1640749	100.2791231	94.76812262	89.60526463	84.76665002	80.23013872	75.97521179
180904A00014	9/4/2018	3.37	9/1/2028	9/4/2018	112.88465	108.3656109	104.0563299	99.94597194	96.02431467	92.28171334	88.70906516	85.29777609	82.03972978
180905A00017	9/5/2018	3.43	9/6/2033	9/5/2018	124.15629	115.4362976	107.4653019	100.1729808	93.49603987	87.37747231	81.76590098	76.61499263	71.88293586
180906A00032	9/6/2018	3.24	9/5/2025	9/6/2018	103.27281	101.7993775	100.354795	98.93828639	97.54910138	96.18651581	94.84983072	93.53837121	92.25148537
180907A00013	9/7/2018	3.27	9/8/2025	9/7/2018	103.31317	101.8424714	100.4006218	98.98683722	97.60036387	96.24047473	94.90646812	93.59766668	92.31341624
180910A00028	9/10/2018	3.56	9/9/2033	9/10/2018	128.90284	118.796295	109.5951445	101.2126321	93.57076182	86.59937135	80.23530801	74.42169516	69.10727874
180910A00032	9/10/2018	3.22	9/10/2024	9/10/2018	100.80697	100.3586135	99.91425123	99.47383053	99.03729902	98.60460522	98.17569854	97.75052931	97.32904869
180910A00033	9/10/2018	3.43	9/8/2028	9/10/2018	113.21209	108.6666365	104.3329597	100.2000722	96.2576144	92.49581474	88.90545295	85.47782629	82.20471776
180912A00011	9/12/2018	3.41	9/11/2026	9/12/2018	106.59862	104.1431595	101.7573299	99.43876053	97.18517787	94.99439906	92.8643277	90.79294984	88.77833023
180913A00012	9/13/2018	3.31	9/13/2033	9/13/2018	114.50697	109.2530062	104.3411458	99.74521617	95.44127336	91.40739484	87.62349429	84.07115439	80.73347598
180913A00030	9/13/2018	3.33	9/12/2025	9/13/2018	103.2967	101.8567727	100.4440999	99.05797667	97.69772036	96.36267137	95.05219204	93.76566574	92.50249603
180913A00033	9/13/2018	3.31	9/13/2033	9/13/2018	114.50697	109.2530062	104.3411458	99.74521617	95.44127336	91.40739484	87.62349429	84.07115439	80.73347598
180914A00013	9/14/2018	3.48	9/14/2028	9/14/2018	113.4882	108.9201613	104.5656262	100.4134846	96.45325868	92.67506731	89.06958896	85.62802713	82.3420781
180914A00028	9/14/2018	3.37	9/12/2025	9/14/2018	103.35502	101.914647	100.5015395	99.11498896	97.75431257	96.41885052	95.10796495	93.82103906	92.55747623
180914A00029	9/14/2018	3.48	9/14/2028	9/14/2018	113.4882	108.9201613	104.5656262	100.4134846	96.45325868	92.67506731	89.06958896	85.62802713	82.3420781
180914A00049	9/14/2018	3.37	9/14/2033	9/14/2018	114.82285	109.5543712	104.6289415	100.020318	95.70448999	91.65947408	87.86512808	84.30298348	80.95609421
180918A00041	9/18/2018	3.18	9/18/2024	9/18/2018	100.8899	100.4189006	99.95231332	99.49007221	99.03211655	98.57838675	98.12882435	97.68337195	97.2419732

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180920A00014	9/20/2018	3.59	9/20/2028	9/20/2018	114.03408	109.437411	105.0561972	100.8791841	96.89576641	93.09594478	89.47028828	86.00989897	82.70637902
180925A00013	9/25/2018	3.41	9/25/2028	9/25/2018	106.45629	104.0816107	101.7883668	99.57307885	97.43244329	95.36332072	93.36272668	91.42782292	89.55590924
180925A00116	9/25/2018	3.28	9/25/2028	9/25/2018	106.45813	104.078149	101.7799291	99.55997599	97.41496719	95.34174581	93.33731098	91.39880912	89.52352564
181003A00019	10/3/2018	3.44	10/3/2025	10/3/2018	103.80829	102.2554806	100.7338966	99.24265701	97.78091584	96.34785828	94.94269928	93.56468217	92.21307741
181003A00032	10/3/2018	3.23	10/3/2025	10/3/2018	101.69013	100.8566063	100.0377571	99.233183	98.44249952	97.66533637	96.90133679	96.15015692	95.41146518
181004A00029	10/4/2018	3.7	10/4/2028	10/4/2018	114.66019	110.0110919	105.581427	101.3596457	97.33487156	93.49685509	89.83593375	86.34299538	83.00944393
181005A00012	10/5/2018	3.33	10/4/2024	10/5/2018	101.05557	100.5406345	100.0309508	99.52643754	99.02701619	98.53260984	98.04314312	97.55854218	97.07873461
181010A00023	10/10/2018	3.41	4/1/2024	10/10/2018	100.01	100.0072212	100.0044463	100.0016738	99.99890365	99.99613582	99.99337031	99.99060713	99.98784627
181010A00025	10/10/2018	3.48	10/10/2030	10/10/2018	110.59772	107.028275	103.6275858	100.3860676	97.29475046	94.34523868	91.52967057	88.84068061	86.27136481
181029A00051	2/5/2019	3.69	2/5/2029	2/5/2019	115.77192	110.757801	105.9950477	101.4697361	97.16878207	93.07988811	89.19149184	85.4927185	81.97333675
181029A00097	10/29/2018	3.53	10/27/2028	10/29/2018	111.96831	107.9401894	104.0968989	100.4287358	96.92656723	93.58179213	90.38630674	87.33247301	84.41308905
181031A00070	3/1/2019	3.77	3/1/2029	3/1/2019	116.40019	111.2997597	106.4582391	101.8610986	97.49470256	93.34624516	89.40369607	85.65574943	82.09177665
181105A00015	11/5/2018	3.57	11/5/2025	11/5/2018	104.31071	102.6691056	101.0616726	99.48740378	97.94533193	96.43452778	94.95409786	93.50318282	92.08095573
181109A00027	11/13/2018	3.48	4/15/2024	11/13/2018	100.08556	100.0439363	100.0023594	99.9608336	99.91935883	99.87793498	99.83656198	99.7952397	99.75396807
181109A00028	11/9/2018	3.72	11/9/2026	11/9/2018	107.91877	105.2869073	102.7333585	100.2553078	97.85006257	95.51504439	93.2477837	91.04591432	88.9071683
181109A00029	11/9/2018	3.72	11/9/2026	11/9/2018	107.91877	105.2869073	102.7333585	100.2553078	97.85006257	95.51504439	93.2477837	91.04591432	88.9071683
181116A00006	11/16/2018	3.18	11/17/2025	11/16/2018	101.76664	100.8892366	100.0275667	99.18119801	98.34971413	97.53271417	96.72981195	95.94063538	95.16482579
181211A00042	12/11/2018	3.7	12/11/2028	12/11/2023	113.20494	108.9063375	104.8094901	100.9035725	97.17840634	93.62441801	90.23259885	86.99446845	83.90204058
181214A00030	12/14/2018	3.47	12/14/2033	12/14/2018	125.18561	116.0024979	107.6279694	99.98425335	93.00153287	86.61708989	80.77454527	75.42318402	70.51735587
181218A00040	12/18/2018	3.23	6/18/2030	12/18/2018	108.73877	105.4090955	102.229692	99.1923778	96.28947526	93.51378009	90.85852893	88.31736934	85.88433205
181220A00041	12/20/2018	3.36	12/18/2026	12/20/2018	107.3119	104.582542	101.9370102	99.37218549	96.88508935	94.47287538	92.13282224	89.86232715	87.65889976
181226A00030	12/26/2018	2.91	12/26/2028	12/26/2018	105.93981	103.4444027	101.0385953	98.71840843	96.48006488	94.31998211	92.23476082	90.22117428	88.27615836
181227A00019	12/28/2020	3.1	12/29/2025	12/28/2020	103.79941	102.0656045	100.3690306	98.70855708	97.08309623	95.49160437	93.93307966	92.40655992	90.91112069
181227A00027	12/27/2018	3.24	12/26/2025	12/27/2018	104.02081	102.2929309	100.6020272	98.94697615	97.32670161	95.74017086	94.18639237	92.66441374	91.17331968
181227A00028	12/27/2018	3.46	12/27/2028	12/27/2018	114.31869	109.4480539	104.8170353	100.4124967	96.22209836	92.23424362	88.43802972	84.82320207	81.38011186
190102A00015	1/2/2019	2.97	1/3/2034	1/2/2019	112.54078	107.429485	102.6541564	98.18867784	94.00919999	90.09392425	86.4229109	82.97790658	79.74218899
190102A00020	1/2/2019	2.97	1/3/2034	1/2/2019	112.54078	107.429485	102.6541564	98.18867784	94.00919999	90.09392425	86.4229109	82.97790658	79.74218899
190102A00022	1/2/2019	2.97	1/3/2034	1/2/2019	112.54078	107.429485	102.6541564	98.18867784	94.00919999	90.09392425	86.4229109	82.97790658	79.74218899
190102A00024	1/2/2019	2.97	1/3/2034	1/2/2019	112.54078	107.429485	102.6541564	98.18867784	94.00919999	90.09392425	86.4229109	82.97790658	79.74218899
190102A00050	1/2/2019	3.38	1/3/2034	1/2/2019	127.95539	117.5788045	108.1604465	99.60580954	91.83020265	84.7576844	78.32011582	72.45632054	67.11133934
190103A00020	1/3/2019	3.12	1/5/2026	1/3/2019	104.02132	102.2265398	100.4721152	98.75690318	97.07979809	95.43973259	93.835676	92.26663272	90.73164089
190104A00006	1/4/2019	2.83	1/5/2026	1/4/2019	101.63623	100.6790844	99.73972213	98.81764544	97.91237337	97.02344318	96.15040951	95.29284352	94.45033211
190104A00033	1/4/2019	3.37	1/31/2029	1/4/2019	114.1768	109.2156837	104.5031006	100.025306	95.76938365	91.72319175	87.87531302	84.21500777	80.7321704

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190104A00034	1/4/2019	3.18	1/4/2029	1/4/2019	110.18745	106.3242399	102.6392385	99.12300118	95.76664019	92.5617877	89.50056252	86.5755391	83.77971872
190104A00035	1/4/2019	3.1	1/5/2026	1/4/2019	103.94456	102.1663437	100.4280427	98.7285238	97.06669384	95.44149736	93.85191519	92.29696293	90.77568949
190104A00038	1/4/2019	3.25	1/4/2029	1/4/2019	112.31603	107.8077069	103.5192861	99.43875408	95.55482009	91.85686621	88.33490375	84.97953274	81.78190431
190108A00039	1/8/2019	3.04	4/30/2024	1/8/2019	100.12949	100.0463376	99.96332526	99.88044936	99.79770961	99.71510569	99.63263727	99.55030403	99.46810566
190110A00004	1/10/2019	3.09	1/10/2025	1/10/2019	101.35422	100.5754411	99.80862477	99.053501	98.30980361	97.57727442	96.85566301	96.14472637	95.44422869
190110A00005	1/10/2019	3.2	1/9/2026	1/10/2019	104.06165	102.2964248	100.5696614	98.88021025	97.22697026	95.60888311	94.02493114	92.47413534	90.95555354
190111A00026	1/11/2019	3.48	1/11/2034	1/11/2019	128.9741	118.5283568	109.0479257	100.4375073	92.61170551	85.4939535	79.01555801	73.1148515	67.73643961
190114A00040	1/14/2019	2.89	1/14/2025	1/14/2019	101.35099	100.5597138	99.78079387	99.0139394	98.25887136	97.51531925	96.78302079	96.06172163	95.35117502
190118A00006	1/18/2019	3.14	1/18/2034	1/18/2019	114.08298	108.6734704	103.6270781	98.91521207	94.51178369	90.39296739	86.53698789	82.92392868	79.53555966
190122A00043	1/22/2019	2.96	1/22/2025	1/22/2019	101.4551	100.6418386	99.8416153	99.05411454	98.27903442	97.51608254	96.7649756	96.02543909	95.29720693
190122A00045	1/22/2019	3.17	1/22/2027	1/22/2019	107.4429	104.6104375	101.8677376	99.21145291	96.63837931	94.14545095	91.72973329	89.3884166	87.11880989
190122A00046	1/22/2019	3.29	1/22/2029	1/22/2019	114.3815	109.4191314	104.7047232	100.2245615	95.96576571	91.91623073	88.06457573	84.40009717	80.91272497
190129A00073	1/29/2019	3.11	1/29/2029	1/29/2019	106.24222	103.7029482	101.2560081	98.89725039	96.62274323	94.42875896	92.31176229	90.26839898	88.29548534
190131A00013	1/31/2019	3.48	1/31/2034	1/31/2019	124.29838	115.1021116	106.7230363	99.08191816	92.10767902	85.73651957	79.9111358	74.58002358	69.69686108
190131A00019	1/31/2019	3.44	1/30/2034	1/31/2019	128.70157	118.2183952	108.7089357	100.0766559	92.23508169	85.1067074	78.62202375	72.7186553	67.34059477
190131A00023	1/31/2019	3.02	1/30/2034	1/31/2019	113.43325	108.0542643	103.0363837	98.35117158	93.97268085	89.87721558	86.04311924	82.45058416	79.08148007
190205A00017	2/5/2019	3.36	2/5/2029	2/5/2019	113.02975	108.4293242	104.0566202	99.89901374	95.94464837	92.18238491	88.6017543	85.19291376	81.94660614
190205A00020	2/5/2019	3.32	2/5/2029	2/5/2019	112.84538	108.2509246	103.8839272	99.73177428	95.78262246	92.02534498	88.44948445	85.0452091	81.80327212
190205A00021	2/5/2019	3.32	2/5/2029	2/5/2019	112.84538	108.2509246	103.8839272	99.73177428	95.78262246	92.02534498	88.44948445	85.0452091	81.80327212
190205A00022	2/5/2019	3.32	2/5/2029	2/5/2019	112.84538	108.2509246	103.8839272	99.73177428	95.78262246	92.02534498	88.44948445	85.0452091	81.80327212
190205A00023	2/5/2019	3.32	2/5/2029	2/5/2019	112.84538	108.2509246	103.8839272	99.73177428	95.78262246	92.02534498	88.44948445	85.0452091	81.80327212
190211A00016	2/11/2019	3.01	2/11/2025	2/11/2019	101.48543	100.6201509	99.76962277	98.93346794	98.11132404	97.30284083	96.50767966	95.725513	94.95602397
190211A00017	2/11/2019	3.12	2/11/2026	2/11/2019	104.20245	102.3454281	100.5307112	98.75708974	97.02339503	95.32849908	93.67131291	92.0507849	90.46589927
190222A00021	2/22/2019	2.95	8/21/2024	2/22/2019	100.59688	100.2033847	99.81297278	99.42561069	99.04126268	98.65989356	98.2814687	97.905954	97.53331588
190225A00026	2/25/2019	3.43	2/27/2034	2/25/2019	128.79932	118.2299603	108.6497251	99.9598197	92.07182414	84.90655581	78.39306063	72.4677192	67.07345395
190227A00033	2/27/2019	2.65	2/27/2026	2/27/2019	101.70629	100.7023315	99.71753752	98.75136978	97.80330987	96.87285869	95.95953552	95.0628772	94.18243725
190301A00012	3/1/2019	3.41	3/1/2029	3/1/2019	114.63277	109.5752917	104.7751348	100.2178462	95.88985835	91.77843014	87.87159253	84.15809779	80.62737245
190305A00015	3/5/2019	3.32	3/5/2029	3/5/2019	113.04717	108.3778936	103.9432033	99.72989956	95.72559418	91.91866042	88.29818195	84.85390563	81.57619771
190305A00017	3/5/2019	3.12	3/5/2026	3/5/2019	104.37978	102.4764437	100.618943	98.80587922	97.0359034	95.30771726	93.62007081	91.97176024	90.36162581
190308A00016	3/8/2019	3.18	3/8/2034	3/8/2019	121.93528	113.1833781	105.2008647	97.91330132	91.2539365	85.1628686	79.58630474	74.47590372	69.78819295
190308A00026	3/8/2019	3.18	3/8/2034	3/8/2019	121.93528	113.1833781	105.2008647	97.91330132	91.2539365	85.1628686	79.58630474	74.47590372	69.78819295
190314A00027	3/22/2019	2.92	3/21/2025	3/22/2019	101.62513	100.6575383	99.70835888	98.77707016	97.86316949	96.96617293	96.08561436	95.22104465	94.37203093
190315A00017	3/15/2019	2.88	3/15/2034	3/15/2019	112.88375	107.4448423	102.376475	97.64906207	93.23564109	89.1116196	85.25454928	81.64392319	78.26099355

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190315A00019	3/15/2019	2.88	3/15/2034	3/15/2019	112.88375	107.4448423	102.376475	97.64906207	93.23564109	89.1116196	85.25454928	81.64392319	78.26099354
190315A00023	3/15/2019	2.88	3/15/2034	3/15/2019	112.88375	107.4448423	102.376475	97.64906207	93.23564109	89.1116196	85.25454928	81.64392319	78.26099354
190315A00029	3/15/2019	2.88	3/15/2034	3/15/2019	112.88375	107.4448423	102.376475	97.64906207	93.23564109	89.1116196	85.25454928	81.64392319	78.26099354
190322A00008	3/22/2019	2.64	3/20/2026	3/22/2019	101.65236	100.6103801	99.58867735	98.58667837	97.60383123	96.6396045	95.69348629	94.76498333	93.85362015
190327A00027	3/27/2019	2.66	1/15/2025	3/27/2019	101.03969	100.2488739	99.47042575	98.70405745	97.94948916	97.20644965	96.47467597	95.75391311	95.04391372
190327A00030	3/27/2019	2.9	3/27/2036	3/27/2019	113.67569	107.5096768	101.8238278	96.57423185	91.72142323	87.2298979	83.06768395	79.20596183	75.61872792
190328A00003	3/28/2019	2.64	9/30/2024	3/28/2019	100.61301	100.111038	99.61406206	99.12200811	98.63480341	98.15237662	97.67465776	97.20157824	96.7330708
200401A00012	4/2/2020	1	4/2/2025	4/2/2020	99.7508	98.76132425	97.79134647	96.8402953	95.90762158	94.99279718	94.09531404	93.21468321	92.35043393
200611A00010	6/11/2020	1.08	6/11/2027	6/11/2020	101.54699	98.43553449	95.43467454	92.53982694	89.74663317	87.05094257	84.44880094	81.93643983	79.51026642
190328A00031	4/25/2019	2.56	4/25/2024	4/25/2019	100.0753	100.0060077	99.93682481	99.8677461	99.79877135	99.72990031	99.66113277	99.59246849	99.52390724
190328A00033	4/25/2019	2.56	4/25/2024	4/25/2019	100.0753	100.0060077	99.93682481	99.8677461	99.79877135	99.72990031	99.66113277	99.59246849	99.52390724
190328A00046	3/28/2019	2.7	3/4/2025	3/28/2019	101.32237	100.4016994	99.49773633	98.6100259	97.73813267	96.8816366	96.04013239	95.2132289	94.40054846
190401A00010	4/1/2019	2.62	4/1/2024	4/1/2019	100.00673	100.0039522	100.0011792	99.99840859	99.9956403	99.99287435	99.99011072	99.98734941	99.98459042
190402A00004	4/2/2019	2.9	4/2/2029	4/2/2019	113.02206	107.8970708	103.0383201	98.43055854	94.05949041	89.91170785	85.97463128	82.23645392	78.68609033
190402A00005	4/2/2019	2.77	4/2/2032	4/2/2019	111.85146	106.6093699	101.7126336	97.13507534	92.85270239	88.84350602	85.08728487	81.56548485	78.26105425
190403A00006	4/3/2019	2.48	4/3/2024	4/3/2019	100.01243	100.0040966	99.99577034	99.98745163	99.97914049	99.97083689	99.96254083	99.9542523	99.94597128
190403A00010	4/3/2019	3.08	4/3/2029	4/3/2019	112.46246	107.6286712	103.0430925	98.69151743	94.56062774	90.63793657	86.91173208	83.37102506	80.00550043
190403A00013	4/3/2019	3.05	4/3/2029	4/3/2019	111.95701	107.2605748	102.8031236	98.57103794	94.55155359	90.73270096	87.10325102	83.65266547	80.37105042
190403A00014	4/3/2019	3.05	4/3/2029	4/3/2019	111.95701	107.2605748	102.8031236	98.57103794	94.55155359	90.73270096	87.10325102	83.65266547	80.37105042
190404A00003	4/4/2019	2.47	4/4/2024	4/4/2019	100.01528	100.0041729	99.99307214	99.98198182	99.97090188	99.95983231	99.9487731	99.93772422	99.92668566
190404A00015	4/4/2019	2.88	4/3/2026	4/4/2019	104.23335	102.2110264	100.2388674	98.31529207	96.43877742	94.60785983	92.82113229	91.07724169	89.37488635
190409A00019	4/9/2019	2.91	4/9/2029	4/9/2019	113.12358	107.9766391	103.0978766	98.47189192	94.08424468	89.92139447	85.97063991	82.22006232	78.65847341
190409A00031	4/9/2019	2.64	4/9/2024	4/9/2019	100.03148	100.0065173	99.98157674	99.95666273	99.93177521	99.90691414	99.88207946	99.85727113	99.83248911
190411A00017	4/15/2019	2.65	4/15/2024	4/15/2019	100.05042	100.0088221	99.96727478	99.92577857	99.88433335	99.84293903	99.8015955	99.76030268	99.71906045
190422A00030	4/22/2019	2.93	12/22/2025	4/22/2019	103.45117	101.7389486	100.0632126	98.42286346	96.81684435	95.24414063	93.70377795	92.19482016	90.71636742
190424A00007	4/24/2019	2.66	4/24/2024	4/24/2019	100.07912	100.0125906	99.94616378	99.87983521	99.81360461	99.74747178	99.68143651	99.61549858	99.54965777
190426A00009	4/26/2019	2.63	4/26/2024	4/26/2019	100.08323	100.0111703	99.93922176	99.86738351	99.79565535	99.72403703	99.6525283	99.58112892	99.50983864
190426A00023	4/26/2019	2.91	6/24/2026	4/26/2019	104.81186	102.5877768	100.421938	98.31239349	96.25727315	94.25478518	92.30321199	90.40090647	88.54628837
190429A00004	4/29/2019	2.65	4/15/2024	4/29/2019	100.05042	100.0088221	99.96727478	99.92577857	99.88433335	99.84293903	99.8015955	99.76030268	99.71906045
190430A00001	4/30/2019	2.47	5/2/2024	4/30/2019	100.09816	100.0094198	99.9208427	99.83242645	99.74417058	99.65607464	99.56813818	99.48036075	99.39274192
190501A00014	5/1/2019	2.62	5/1/2024	5/1/2019	100.09775	100.0118707	99.9261411	99.84055938	99.75512519	99.66983815	99.58469788	99.499704	99.41485615
190501A00015	5/1/2019	2.78	5/1/2029	5/1/2019	105.83486	103.1383696	100.5454342	98.05117674	95.65098291	93.34048833	91.11556319	88.97229809	86.90699074
190501A00017	5/1/2019	2.61	5/1/2024	5/1/2019	100.09689	100.0110114	99.92528248	99.83970148	99.754268	99.66898166	99.5838421	99.49884894	99.41400179

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190501A00028	5/1/2019	2.42	5/1/2024	5/1/2019	100.09074	100.0047639	99.91893994	99.83326513	99.74773907	99.66236136	99.57713162	99.49204946	99.40711448
190502A00016	5/2/2019	2.87	5/1/2026	5/2/2019	104.4063	102.3096666	100.2663787	98.27469932	96.33296125	94.43956468	92.59297403	90.7917148	89.03437054
190506A00026	5/6/2019	3.03	5/4/2029	5/6/2019	112.40999	107.5047277	102.8548443	98.44551677	94.26286664	90.29389456	86.52641973	82.94902366	79.55099816
190507A00027	5/7/2019	2.59	5/7/2024	5/7/2019	100.11397	100.0115479	99.90934466	99.80736131	99.70559716	99.60405146	99.50272348	99.40161249	99.30071775
190510A00049	5/10/2019	2.58	5/8/2026	5/10/2019	101.76671	100.6404168	99.53703421	98.45589428	97.39635763	96.35780899	95.33965605	94.34132839	93.36227647
190513A00013	5/13/2019	2.52	5/13/2024	5/13/2019	100.12441	100.005443	99.88677376	99.76840186	99.65032616	99.5325455	99.41505874	99.29786473	99.18096233
190514A00020	5/14/2019	2.66	5/14/2025	5/14/2019	101.62753	100.5164451	99.42961765	98.36625947	97.32561612	96.30696519	95.30961464	94.33290122	93.37618895
190514A00021	5/14/2019	2.72	11/14/2025	5/14/2019	102.83189	101.2265018	99.65390652	98.11316228	96.60336563	95.12364712	93.67316975	92.25112736	90.85674326
190514A00024	5/14/2019	2.34	5/14/2024	5/14/2019	100.1197	99.99783599	99.87628375	99.75504426	99.63411624	99.51349845	99.39318962	99.27318851	99.15349389
190514A00073	5/14/2019	2.53	5/14/2024	5/14/2019	100.12857	100.0068397	99.88542409	99.76431933	99.64352412	99.52303725	99.40285747	99.28298358	99.16341437
190515A00032	5/15/2019	2.49	5/15/2024	5/15/2019	100.12654	100.0020561	99.8779003	99.75406882	99.63056039	99.50737371	99.38450748	99.26196039	99.13973117
190515A00035	5/15/2019	2.82	2/15/2029	5/15/2019	110.93369	106.2601288	101.8216266	97.60501217	93.59792086	89.78874275	86.16657245	82.72116275	79.44288144
190517A00005	5/17/2019	2.31	5/17/2024	5/17/2019	100.12405	99.99390634	99.86411355	99.73467485	99.60558875	99.47685374	99.34846835	99.22043108	99.09274048
190520A00007	5/20/2019	2.52	5/20/2024	5/20/2019	100.14495	100.0066739	99.86879005	99.73130078	99.59420432	99.45749895	99.32118296	99.18525466	99.04971236
190520A00020	5/20/2019	2.39	5/20/2026	5/20/2019	101.67606	100.5590431	99.46469943	98.39237246	97.34142979	96.3112629	95.30128597	94.31093482	93.33966592
190520A00048	5/20/2019	2.53	5/20/2024	5/20/2019	100.14634	100.0080591	99.87017386	99.73268314	99.59558523	99.45887842	99.32256099	99.18663125	99.05108752
190522A00003	5/22/2019	2.55	5/22/2024	5/22/2019	100.15515	100.0113428	99.86796501	99.72501091	99.58247856	99.44036608	99.29867157	99.15739318	99.01652904
190522A00019	5/23/2019	2.55	5/15/2024	5/23/2019	100.13403	100.0095381	99.88537503	99.76153633	99.6380207	99.51482682	99.39195341	99.26939916	99.14716279
190523A00015	5/23/2019	2.51	4/1/2024	5/23/2019	100.00627	100.003497	100.0007243	99.99795394	99.99518591	99.99242022	99.98965685	99.9868958	99.98413708
190524A00040	5/24/2019	2.47	5/24/2024	5/24/2019	100.1492	99.99988738	99.8510337	99.70263337	99.55468429	99.40718439	99.26013161	99.11352389	98.96735919
190528A00009	5/28/2019	2.45	5/15/2024	5/28/2019	100.12154	99.99706817	99.87291715	99.74909048	99.62558686	99.50240498	99.37954352	99.25700121	99.13477676
190529A00013	5/29/2019	2.38	5/29/2024	5/29/2019	100.14843	99.98534642	99.82279094	99.66076567	99.49926801	99.33829542	99.17784532	99.01791521	98.85850256
190529A00023	5/29/2019	2.38	5/29/2024	5/29/2019	100.14843	99.98534642	99.82279094	99.66076567	99.49926801	99.33829542	99.17784532	99.01791521	98.85850256
190529A00028	5/29/2019	2.38	5/29/2024	5/29/2019	100.14843	99.98534642	99.82279094	99.66076567	99.49926801	99.33829542	99.17784532	99.01791521	98.85850256
190529A00032	5/29/2019	2.38	5/29/2024	5/29/2019	100.14843	99.98534642	99.82279094	99.66076567	99.49926801	99.33829542	99.17784533	99.01791521	98.85850256
190529A00061	5/29/2019	2.46	5/29/2026	5/29/2019	101.62868	100.5040179	99.40222855	98.32264744	97.26463624	96.22758072	95.21088955	94.21399327	93.23634325
190529A00089	5/29/2019	2.38	5/29/2024	5/29/2019	100.14843	99.98534642	99.82279094	99.66076567	99.49926801	99.33829542	99.17784533	99.01791521	98.85850256
190530A00006	5/30/2019	2.25	5/30/2024	5/30/2019	100.14877	99.98271771	99.81722157	99.65227437	99.48787338	99.3240159	99.16069923	98.9979207	98.83567765
190530A00008	5/30/2019	2.38	5/30/2025	5/30/2019	101.55882	100.4030336	99.27346763	98.16924006	97.08950578	96.03345689	95.00032068	93.9893577	92.99986002
190530A00024	5/30/2019	2.25	5/30/2024	5/30/2019	100.14877	99.98271771	99.81722157	99.65227437	99.48787338	99.3240159	99.16069923	98.9979207	98.83567765
190530A00029	5/30/2019	2.25	5/30/2024	5/30/2019	100.14877	99.98271771	99.81722157	99.65227437	99.48787338	99.3240159	99.16069923	98.9979207	98.83567765
190530A00034	5/30/2019	2.44	5/30/2024	5/30/2019	100.16096	99.99509855	99.82978758	99.66502267	99.50080113	99.33712031	99.17397755	99.01137022	98.8492957
190530A00045	5/30/2019	2.44	5/30/2024	5/30/2019	100.16096	99.99509855	99.82978758	99.66502267	99.50080113	99.33712031	99.17397755	99.01137022	98.8492957

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190531A00037	5/31/2019	2.61	5/31/2029	5/31/2019	111.93708	106.6789564	101.7016579	96.98867441	92.52455223	88.29482433	84.28594209	80.4852118	76.88073608
190531A00038	5/31/2019	2.82	5/31/2034	5/31/2019	123.20759	112.6627484	103.1343215	94.51815285	86.72129225	79.66073576	73.26231372	67.45970836	62.19358527
190603A00003	6/3/2019	2.05	6/3/2024	6/3/2019	100.12353	99.94652145	99.77013965	99.59438505	99.41925429	99.244744	99.07085087	98.89757159	98.72490289
190603A00005	6/3/2019	2.25	6/3/2024	6/3/2019	100.13831	99.96149361	99.78530763	99.60974572	99.43480454	99.2604808	99.08677122	98.91367254	98.74118154
190603A00033	6/3/2019	2.05	6/3/2024	6/3/2019	100.12353	99.94652145	99.77013965	99.59438505	99.41925429	99.244744	99.07085087	98.89757159	98.72490289
190605A00007	6/5/2019	2.47	6/5/2026	6/5/2019	103.75153	101.5791978	99.46401865	97.40407713	95.39754223	93.44265873	91.53774349	89.68118171	87.87142364
190605A00023	6/5/2019	2.64	6/5/2029	6/5/2019	110.64817	105.7317329	101.0751617	96.66316899	92.48145158	88.51662369	84.75615305	81.1883015	77.80207022
190605A00024	6/5/2019	2.64	6/5/2029	6/5/2019	110.64817	105.7317329	101.0751617	96.66316899	92.48145158	88.51662369	84.75615305	81.1883015	77.80207022
190605A00025	6/5/2019	2.64	6/5/2029	6/5/2019	110.64817	105.7317329	101.0751617	96.66316899	92.48145158	88.51662369	84.75615305	81.1883015	77.80207022
190605A00027	6/5/2019	2.64	6/5/2029	6/5/2019	110.64817	105.7317329	101.0751617	96.66316899	92.48145158	88.51662369	84.75615305	81.1883015	77.80207022
190606A00023	6/6/2019	2.23	6/6/2024	6/6/2019	100.14136	99.95632045	99.7719682	99.58830345	99.40532232	99.22302096	99.04139555	98.8604423	98.68015743
190606A00027	6/6/2019	2.51	6/5/2026	6/6/2019	103.79675	101.6356969	99.53026412	97.47862354	95.4790237	93.52978467	91.62929445	89.77600557	87.96843198
190606A00028	6/6/2019	2.74	6/6/2029	6/6/2019	111.94157	106.6900039	101.7190338	97.01214177	92.55387514	88.32976934	84.32627893	80.5307142	76.9311823
190606A00029	6/6/2019	2.96	6/6/2034	6/6/2019	123.21082	112.7250929	103.2480775	94.67651663	86.9182518	79.89097946	73.52114992	67.74299428	62.49766413
190607A00018	6/7/2019	2.19	6/7/2024	6/7/2019	100.13602	99.94824601	99.76118034	99.57482358	99.38917168	99.20422058	99.01996628	98.8364048	98.6535322
190613A00011	6/13/2019	2.26	6/13/2024	6/13/2019	100.16292	99.95865157	99.75522912	99.55264741	99.35090118	99.14998519	98.94989426	98.75062325	98.55216706
190618A00002	6/18/2019	2.11	6/18/2025	6/18/2019	101.31494	100.1103888	98.9343738	97.78588742	96.6639718	95.56771302	94.49623867	93.44871547	92.42434717
190619A00009	6/19/2019	2.26	6/19/2024	6/19/2019	100.17661	99.95586439	99.73610625	99.51732593	99.29951687	99.08267255	98.86678651	98.65185234	98.43786371
190620A00027	6/20/2019	2.14	6/20/2024	6/20/2019	100.15195	99.92849899	99.70605896	99.48461998	99.26417526	99.04471804	98.82624166	98.60873949	98.39220498
190620A00033	6/20/2019	2.1	6/20/2029	6/20/2019	104.4192	101.7101079	99.10670161	96.60393287	94.19702823	91.88147619	89.65301103	87.50759773	85.44141787
190620A00045	6/20/2019	2.14	6/20/2024	6/20/2019	100.15195	99.92849899	99.70605896	99.48461998	99.26417526	99.04471804	98.82624166	98.60873949	98.39220498
190621A00015	6/21/2019	2.2	6/21/2024	6/21/2019	100.16753	99.94131694	99.71613503	99.49197775	99.26883806	99.046709	98.82558367	98.60545523	98.3863169
190621A00037	6/21/2019	2.21	5/15/2024	6/21/2019	100.09159	99.96714031	99.84301823	99.71922045	99.59574566	99.47259254	99.3497598	99.22724614	99.10505027
190621A00039	6/21/2019	2.21	6/17/2024	6/21/2019	100.16124	99.94600078	99.73170317	99.51833705	99.3058963	99.09437484	98.88376664	98.67406574	98.46526621
190625A00012	6/25/2019	2.12	6/25/2024	6/25/2019	100.15692	99.91974996	99.6837125	99.44879505	99.21498964	98.98228836	98.7506834	98.52016699	98.29073146
190625A00023	6/25/2019	2.47	6/25/2027	6/25/2019	106.08281	102.8606689	99.75351649	96.75655066	93.86520714	91.07514173	88.38221796	85.78249558	83.27221985
190625A00024	6/25/2019	2.26	6/25/2025	6/25/2019	101.33228	100.1121109	98.92122408	97.75857856	96.6231789	95.51407593	94.43036412	93.37117909	92.3356953
190626A00004	6/26/2019	2.15	6/26/2024	6/26/2019	100.16604	99.92611704	99.68734756	99.44972237	99.21323326	98.97787207	98.74363076	98.51050132	98.27847586
190626A00015	6/26/2019	2.15	6/26/2024	6/26/2019	100.16604	99.92611704	99.68734756	99.44972237	99.21323326	98.97787207	98.74363076	98.51050132	98.27847586
190627A00010	6/27/2019	1.97	6/27/2024	6/27/2019	100.15272	99.9097665	99.66799757	99.42740222	99.1879719	98.94969814	98.71257254	98.47658681	98.24173272
190628A00007	6/28/2019	2.28	6/28/2034	6/28/2019	109.4719	104.2586712	99.40233099	94.87408268	90.64771847	86.69936332	83.00724964	79.5515153	76.3140223
190701A00009	7/3/2019	2.14	7/2/2024	7/3/2019	100.17553	99.91916922	99.66411603	99.41036427	99.157904	98.90672537	98.65681864	98.40817418	98.16078243
190701A00023	7/1/2019	1.95	7/1/2024	7/1/2019	100.15494	99.90101518	99.64837758	99.39701718	99.14692429	98.89808936	98.65050288	98.40415549	98.15903787

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190702A00002	7/2/2019	2.16	7/2/2024	7/2/2019	100.18069	99.92431425	99.66925237	99.41549195	99.16302305	98.91183583	98.66192055	98.41326756	98.16586732
190702A00068	7/2/2019	2.69	7/1/2039	7/2/2019	122.17723	110.1726126	99.66450051	90.44811395	82.34831532	75.2151377	68.92001001	63.35256839	58.41795982
190702A00071	7/2/2019	2.69	7/1/2039	7/2/2019	122.17723	110.1726126	99.66450051	90.44811395	82.34831532	75.2151377	68.92001001	63.35256839	58.41795982
190703A00017	7/3/2019	2.33	5/4/2026	7/3/2019	103.22365	101.1533629	99.13486943	97.16652606	95.24675443	93.37403785	91.54691841	89.76399422	88.02391678
190708A00011	7/8/2019	2.2	7/8/2024	7/8/2019	100.20436	99.93156566	99.6602677	99.39045093	99.12210316	98.85521235	98.58976658	98.32575405	98.06316313
190708A00025	7/8/2019	2.21	7/1/2024	7/8/2019	100.26017	99.92303312	99.58816063	99.25553239	98.9251259	98.59691896	98.27088968	97.94701645	97.62527793
190708A00026	7/8/2019	2.21	7/1/2024	7/8/2019	100.26017	99.92303312	99.58816063	99.25553239	98.9251259	98.59691896	98.27088968	97.94701645	97.62527793
190708A00028	7/8/2019	2.57	7/2/2029	7/8/2019	110.42547	105.4543017	100.7492764	96.29461824	92.07557093	88.07832389	84.28994708	80.69833041	77.29212778
190708A00029	7/8/2019	2.57	7/2/2029	7/8/2019	110.42547	105.4543017	100.7492764	96.29461824	92.07557093	88.07832389	84.28994708	80.69833041	77.29212778
190708A00030	7/8/2019	2.57	7/2/2029	7/8/2019	110.42547	105.4543017	100.7492764	96.29461824	92.07557093	88.07832389	84.28994708	80.69833041	77.29212778
190708A00032	7/8/2019	2.58	7/2/2029	7/8/2019	110.47584	105.5028982	100.7961834	96.33991628	92.11933605	88.12062799	84.3308581	80.73791264	77.33044201
190709A00018	7/9/2019	2.24	7/9/2024	7/9/2019	100.21767	99.94212041	99.66810014	99.39559159	99.12458219	98.8550595	98.58701124	98.32042525	98.05528951
190710A00022	7/10/2019	2.22	7/10/2024	7/10/2019	100.2144	99.93613621	99.6594229	99.38425185	99.11061013	98.8384849	98.5678635	98.2987334	98.03108221
190712A00001	7/12/2019	2.05	7/12/2024	7/12/2019	100.20386	99.91978342	99.63733028	99.35648725	99.07724047	98.79957624	98.52348099	98.24894134	97.97594404
190712A00016	7/12/2019	2.39	7/12/2029	7/12/2019	104.95393	102.1961655	99.54718453	97.00173788	94.55486688	92.20188729	89.93837223	87.76013624	85.66322049
190715A00010	7/15/2019	2.23	7/15/2024	7/15/2019	100.22588	99.93397102	99.64377606	99.35527796	99.06846177	98.78331272	98.4998162	98.21795778	97.93772319
190717A00008	7/17/2019	2.22	7/17/2024	7/17/2019	100.22745	99.93007715	99.63448407	99.34065089	99.04856184	98.7582013	98.46955389	98.18260436	97.89733768
190718A00012	7/18/2019	2.55	7/18/2029	7/18/2019	109.53733	104.9157988	100.5365764	96.38541246	92.44897602	88.71478856	85.17116527	81.80716035	78.61251646
190719A00006	7/19/2019	2.17	7/19/2024	7/19/2019	100.21671	99.91390714	99.61293989	99.31379604	99.01645897	98.72091225	98.42713967	98.13512519	97.84485297
190724A00021	7/24/2019	2.33	7/23/2027	7/24/2019	106.23404	102.9246647	99.73608886	96.66325328	93.70134316	90.84577102	88.09216457	85.43635534	82.87436802
190724A00023	7/24/2019	2.13	7/24/2025	7/24/2019	101.52859	100.2296584	98.95548441	97.7053854	96.47870304	95.27480317	94.09307464	92.93292825	91.79379574
190724A00024	7/24/2019	2.49	7/24/2029	7/24/2019	111.61774	106.2222747	101.1224442	96.30051808	91.73991573	87.42512889	83.34164705	79.47588818	75.81513475
190726A00014	7/26/2019	2.23	7/24/2024	7/26/2019	100.24639	99.92987381	99.61536532	99.302842	98.99228506	98.68367593	98.37699626	98.07222797	97.76935317
190726A00017	7/26/2019	2.44	7/24/2026	7/26/2019	103.93524	101.6418685	99.41053411	97.23919421	95.12589077	93.06874215	91.06593963	89.11574402	87.21648255
190730A00007	7/30/2019	2.19	7/30/2024	7/30/2019	100.24664	99.91375018	99.58306496	99.25456348	98.9282242	98.60402587	98.28194751	97.96196839	97.64406807
190730A00016	7/30/2019	2	7/30/2024	7/30/2019	100.22536	99.89203647	99.56092733	99.23201047	98.90526419	98.58066704	98.25819788	97.93783584	97.61956029
190731A00004	7/31/2019	2.18	7/31/2024	7/31/2019	100.24543	99.90980952	99.57643141	99.24527064	98.91630518	98.58951332	98.26487361	97.94236491	97.62196632
190802A00003	8/2/2019	2.01	8/2/2024	8/2/2019	100.1915	99.8505683	99.5119481	99.1756208	98.84156319	98.50975236	98.18016569	97.85278089	97.52757596
190802A00011	8/2/2019	2.01	8/2/2029	8/2/2019	104.33085	101.5418178	98.86443286	96.29323581	93.82307592	91.44909054	89.16668705	86.97152602	84.85950552
190802A00032	8/2/2019	2.01	8/2/2024	8/2/2019	100.1915	99.8505683	99.5119481	99.1756208	98.84156319	98.50975236	98.18016569	97.85278089	97.52757596
190805A00009	8/5/2019	1.91	8/5/2024	8/5/2019	100.1616	99.81258205	99.46599499	99.12181577	98.78001932	98.4405809	98.10347614	97.76868099	97.43617172
190805A00011	8/5/2019	1.91	8/5/2024	8/5/2019	100.1616	99.81258205	99.46599499	99.12181577	98.78001932	98.4405809	98.10347614	97.76868099	97.43617172
190805A00050	8/5/2019	1.91	8/5/2024	8/5/2019	100.1616	99.81258205	99.46599499	99.12181577	98.78001932	98.4405809	98.10347614	97.76868099	97.43617172

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190807A00005	8/7/2019	1.77	8/7/2024	8/7/2019	100.11455	99.7602026	99.40836509	99.05901243	98.7121183	98.36765673	98.02560214	97.68592929	97.34861329
190807A00021	8/7/2019	2	8/7/2026	8/7/2019	102.97856	100.6599554	98.40504688	96.2117408	94.07802462	92.00196308	89.98169479	88.01542894	86.1014422
190808A00009	8/8/2019	1.89	8/8/2024	8/8/2019	100.15884	99.80167402	99.44706455	99.09497943	98.74539168	98.3982747	98.05360228	97.7113486	97.37148816
190808A00025	8/8/2019	1.7	8/8/2024	8/8/2019	100.1359	99.7782683	99.42320093	99.07066748	98.72064076	98.37309398	98.02800075	97.68533502	97.34507113
190808A00050	8/8/2019	1.7	8/8/2024	8/8/2019	100.1359	99.7782683	99.42320093	99.07066748	98.72064076	98.37309398	98.02800075	97.68533502	97.34507113
190808A00052	8/8/2019	1.7	8/8/2024	8/8/2019	100.1359	99.7782683	99.42320093	99.07066748	98.72064076	98.37309398	98.02800075	97.68533502	97.34507113
190809A00010	8/9/2019	1.88	8/8/2024	8/9/2019	100.15524	99.79808246	99.44348085	99.09140353	98.74182354	98.39471429	98.05004956	97.70780352	97.36795069
190809A00011	8/9/2019	1.69	8/9/2024	8/9/2019	100.13351	99.77316608	99.41542399	99.06025504	98.70763139	98.35752563	98.00991072	97.66476003	97.3220473
190809A00012	8/9/2019	1.69	8/9/2024	8/9/2019	100.13351	99.77316608	99.41542399	99.06025504	98.70763139	98.35752563	98.00991072	97.66476003	97.3220473
190809A00020	8/9/2019	2.44	8/9/2034	8/9/2019	119.58388	109.0380828	99.53093244	90.9540562	83.21092031	76.21548263	69.89100455	64.16900271	58.98832337
190809A00021	8/9/2019	2.12	8/9/2029	8/9/2019	109.71669	104.3291904	99.23987411	94.43072402	89.88490302	85.58666776	81.52129229	77.67499744	74.03488542
190809A00022	8/9/2019	1.88	8/9/2024	8/9/2019	100.15663	99.79675774	99.43947736	99.08476041	98.73257929	98.38290678	98.03571604	97.69098063	97.34867449
190812A00003	8/12/2019	1.67	8/12/2024	8/12/2019	100.12972	99.76123057	99.39545827	99.03237763	98.67195888	98.31417265	97.95899004	97.60638255	97.25632211
190812A00006	8/12/2019	1.86	8/12/2024	8/12/2019	100.15339	99.78537885	99.42007959	99.05746194	98.69749635	98.34015367	97.9854052	97.63322266	97.28357816
190813A00008	8/13/2019	1.88	8/13/2024	8/13/2019	100.1622	99.79145632	99.42346232	99.05818973	98.69560833	98.33568833	97.97840038	97.62371559	97.27160545
190813A00016	8/13/2019	1.88	8/13/2024	8/13/2019	100.1622	99.79145632	99.42346232	99.05818973	98.69560833	98.33568833	97.97840038	97.62371559	97.27160545
190813A00051	8/13/2019	2.19	8/13/2029	8/13/2019	108.66416	103.6633	98.93559813	94.46454798	90.23472681	86.23171984	82.44204915	78.85310807	75.45310043
190813A00052	8/13/2019	2.24	8/13/2029	8/13/2019	108.91933	103.909227	99.17273408	94.69332162	90.45554262	86.44495957	82.64807326	79.05225704	75.645696
190813A00057	8/13/2019	1.9	8/13/2024	8/13/2019	100.21506	99.76274539	99.31452926	98.87035626	98.43017168	97.99392179	97.56155383	97.13301599	96.70825736
190813A00064	8/13/2019	1.9	8/13/2024	8/13/2019	100.21506	99.76274539	99.31452926	98.87035626	98.43017168	97.99392179	97.56155383	97.13301599	96.70825736
190813A00067	8/13/2019	1.9	8/13/2024	8/13/2019	100.21506	99.76274539	99.31452926	98.87035626	98.43017168	97.99392179	97.56155383	97.13301599	96.70825736
190814A00003	8/14/2019	2.01	8/14/2029	8/14/2019	109.1461	103.7606253	98.6741438	93.86854432	89.3269021	85.03339456	80.97322419	77.13254717	73.49840736
190814A00005	8/14/2019	1.65	8/14/2024	8/14/2019	100.12451	99.75058404	99.37946545	99.01111823	98.64551125	98.28261385	97.92239585	97.56482749	97.20987946
190814A00008	8/14/2019	1.84	8/14/2024	8/14/2019	100.14853	99.77510392	99.40446587	99.03658889	98.6714421	98.30899506	97.94921779	97.59208075	97.23755484
190814A00009	8/14/2019	1.84	8/14/2024	8/14/2019	100.14853	99.77510392	99.40446587	99.03658889	98.6714421	98.30899506	97.94921779	97.59208075	97.23755484
190814A00015	8/14/2019	1.84	8/14/2024	8/14/2019	100.14853	99.77510392	99.40446587	99.03658889	98.6714421	98.30899506	97.94921779	97.59208075	97.23755484
190815A00041	8/15/2019	1.86	8/15/2024	8/15/2019	100.1574	99.7812359	99.40790318	99.03737162	98.66960966	98.30458619	97.94227059	97.5826327	97.2256428
190816A00006	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472
190816A00011	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472
190816A00020	8/16/2019	1.79	8/16/2024	8/16/2019	100.132	99.75317326	99.37722412	99.00411592	98.63381643	98.2662939	97.90151707	97.53945512	97.18007772
190816A00022	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472
190816A00031	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472
190816A00033	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190816A00036	8/16/2019	1.77	8/16/2024	8/16/2019	100.12436	99.74555008	99.36961838	98.99652754	98.62624531	98.25873996	97.89398019	97.53193523	97.17257472
190819A00004	8/20/2019	1.81	5/24/2024	8/20/2019	100.05036	99.90116356	99.75242073	99.60413098	99.45629221	99.30890234	99.16195933	99.0154611	98.86940564
190819A00026	8/19/2019	1.62	8/19/2024	8/19/2019	100.1183	99.73079216	99.34629654	98.96477407	98.5861902	98.21051095	97.83770282	97.46773287	97.10056862
190819A00030	8/19/2019	2.01	8/20/2029	8/19/2019	109.16964	103.7678459	98.66676911	93.84814492	89.2949087	84.99111003	80.92183458	77.07313178	73.4319479
190820A00008	8/20/2019	1.76	8/20/2024	8/20/2019	100.12478	99.73511078	99.34848398	98.96485986	98.58420344	98.20648029	97.8316565	97.45969867	97.09057394
190820A00020	8/20/2019	1.76	8/20/2024	8/20/2019	100.12478	99.73511078	99.34848398	98.96485986	98.58420344	98.20648029	97.8316565	97.45969867	97.09057394
190820A00021	8/20/2019	2.13	8/20/2029	8/20/2019	109.09263	103.7173568	98.64063393	93.84436233	89.31163051	85.02662928	80.97457451	77.14163573	73.51487002
190820A00029	8/20/2019	1.76	8/20/2024	8/20/2019	100.12478	99.73511078	99.34848398	98.96485986	98.58420344	98.20648029	97.8316565	97.45969867	97.09057394
190820A00038	8/20/2019	1.76	8/20/2024	8/20/2019	100.12478	99.73511078	99.34848398	98.96485986	98.58420344	98.20648029	97.8316565	97.45969867	97.09057394
190821A00017	8/21/2019	1.8	8/21/2024	8/21/2019	100.14167	99.74924935	99.35990969	98.97361376	98.59032587	98.21001089	97.83263424	97.45816188	97.08656028
190821A00030	8/21/2019	1.8	8/21/2024	8/21/2019	100.14167	99.74924935	99.35990969	98.97361376	98.59032587	98.21001089	97.83263424	97.45816188	97.08656028
190823A00005	8/23/2019	1.62	8/23/2024	8/23/2019	100.12236	99.72397401	99.32875932	98.93668187	98.54770429	98.16178981	97.77890226	97.39900601	97.02206602
190823A00009	8/23/2019	1.8	8/23/2029	8/23/2019	103.66103	100.9315649	98.31068174	95.79308475	93.37378043	91.04805414	88.81145257	86.65976747	84.58902047
190826A00018	8/26/2019	1.9	8/27/2029	8/26/2019	108.60148	103.1965445	98.09370584	93.27455261	88.72188533	84.41963134	80.35276545	76.50723664	72.86990017
190826A00029	8/26/2019	1.53	8/26/2024	8/26/2019	100.08853	99.68207036	99.27890789	98.87900667	98.48232717	98.08883052	97.69847845	97.31123333	96.9270581
190826A00030	8/26/2019	1.72	8/26/2026	8/26/2019	102.7026	100.3314212	98.02677728	95.78643716	93.60825696	91.49017688	89.43021741	87.42647571	85.47712211
190826A00032	8/26/2019	1.72	8/24/2029	8/26/2019	103.50689	100.7389257	98.08183269	95.53018494	93.07886366	90.72303667	88.45814041	86.27986309	84.18412917
190826A00056	8/26/2019	1.72	8/26/2024	8/26/2019	100.11474	99.70881769	99.30617985	98.90679152	98.51061346	98.11760704	97.72773427	97.34095775	96.95724067
190826A00057	8/26/2019	1.87	8/26/2025	8/26/2019	101.10258	99.7244395	98.37163262	97.04352262	95.73949333	94.45894857	93.20131141	91.96602337	90.75254367
190826A00058	8/26/2019	1.91	8/26/2026	8/26/2019	102.84816	100.4816879	98.18148772	95.94533746	93.7711054	91.65674333	89.60028274	87.59983116	85.65356884
190826A00060	8/26/2019	2.02	8/26/2027	8/26/2019	104.94231	101.5766781	98.33692779	95.21769764	92.2138873	89.32063921	86.53332568	83.84753678	81.25906891
190826A00063	8/26/2019	2.05	8/28/2028	8/26/2019	107.03385	102.6536223	98.47786388	94.4959908	90.69802249	87.07454225	83.61666254	80.31599261	77.16460815
190826A00065	8/26/2019	2.09	8/28/2029	8/26/2019	108.90774	103.5166427	98.42614473	93.61796044	89.07500328	84.78130441	80.72193415	76.88292931	73.25122597
190827A00001	8/27/2019	1.74	8/27/2024	8/27/2019	100.12394	99.71527673	99.30994466	98.9079039	98.50911445	98.11353699	97.72113281	97.33186384	96.9456926
190827A00002	8/27/2019	1.74	8/27/2024	8/27/2019	100.12394	99.71527673	99.30994466	98.9079039	98.50911445	98.11353699	97.72113281	97.33186384	96.9456926
190828A00009	8/28/2019	1.71	8/28/2024	8/28/2019	100.11249	99.70113925	99.29316371	98.88852109	98.48717068	98.08907244	97.69418696	97.30247547	96.91389983
190828A00015	8/28/2019	2.04	8/28/2029	8/28/2019	108.63783	103.2539233	98.17033022	93.36877758	88.83219205	84.5446173	80.49113545	76.65779445	73.03154092
190828A00019	8/28/2019	2	3/28/2028	8/28/2019	106.01907	102.0639773	98.27869765	94.65505574	91.18531102	87.8621346	84.67858512	81.62808613	78.70440497
190828A00020	8/28/2019	1.95	5/28/2027	8/28/2019	104.25711	101.1395582	98.13132425	95.22794164	92.42515168	89.7188961	87.10530621	84.58069267	82.14153595
190828A00031	8/28/2019	1.71	8/28/2024	8/28/2019	100.11249	99.70113925	99.29316371	98.88852109	98.48717068	98.08907244	97.69418696	97.30247547	96.91389983
190829A00031	8/29/2019	1.54	8/29/2024	8/29/2019	100.09502	99.6803818	99.26917649	98.86135827	98.45688541	98.05571687	97.65781227	97.26313189	96.87163664
190829A00032	8/29/2019	1.69	8/28/2026	8/29/2019	101.06496	99.82188102	98.60581229	97.4159436	96.25149271	95.11170737	93.99586389	92.90326583	91.83324273
190829A00039	8/29/2019	1.85	8/29/2034	8/29/2019	107.59469	102.2052021	97.19640193	92.536832	88.19791887	84.15368325	80.38048526	76.85679622	73.56299435

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190829A00045	8/29/2019	1.9	8/28/2026	8/29/2019	102.83261	100.4611326	98.15619234	95.9155616	93.73709593	91.61873504	89.55849892	87.55448427	85.60486102
190829A00050	8/29/2019	1.73	8/29/2024	8/29/2019	100.12177	99.70768025	99.29701042	98.88971558	98.48575429	98.08508576	97.6876699	97.29346724	96.90243894
190830A00002	8/30/2019	1.93	8/28/2026	8/30/2019	102.90505	100.5326797	98.22687206	95.9853925	93.80609607	91.68692195	89.62588963	87.6210953	85.67070842
190830A00012	8/30/2019	1.76	8/30/2024	8/30/2019	100.13536	99.71852693	99.30515195	98.89519424	98.48861161	98.08536256	97.68540626	97.28870254	96.89521191
190830A00021	8/30/2019	1.76	8/30/2024	8/30/2019	100.13536	99.71852693	99.30515195	98.89519424	98.48861161	98.08536256	97.68540626	97.28870254	96.89521191
190904A00001	9/4/2019	1.5	9/4/2024	9/4/2019	100.08304	99.65216706	99.22500221	98.80149602	98.38160157	97.96527274	97.5524642	97.14313139	96.73723049
190904A00019	9/4/2019	1.69	9/4/2024	9/4/2019	100.11083	99.68053317	99.25392698	98.83096656	98.41160528	97.99579734	97.58349769	97.17466204	96.76924687
190905A00019	9/5/2019	2.08	9/5/2029	9/5/2019	108.17625	103.1438342	98.38911292	93.89513216	89.64606518	85.62713038	81.82451685	78.22531551	74.81745564
190905A00021	9/5/2019	2.08	9/5/2029	9/5/2019	108.17625	103.1438342	98.38911292	93.89513216	89.64606518	85.62713038	81.82451685	78.22531551	74.81745564
190905A00023	9/5/2019	2.08	9/5/2029	9/5/2019	108.17625	103.1438342	98.38911292	93.89513216	89.64606518	85.62713038	81.82451685	78.22531551	74.81745564
190905A00024	9/5/2019	2.08	9/5/2029	9/5/2019	108.17625	103.1438342	98.38911292	93.89513216	89.64606518	85.62713038	81.82451685	78.22531551	74.81745564
190905A00025	9/5/2019	2.08	9/5/2029	9/5/2019	108.17625	103.1438342	98.38911292	93.89513216	89.64606518	85.62713038	81.82451685	78.22531551	74.81745564
190906A00012	9/6/2019	1.76	9/6/2024	9/6/2019	100.14366	99.70786645	99.27586598	98.84760596	98.4230379	98.00211415	97.58478788	97.17101307	96.76074446
190909A00025	9/9/2019	1.88	9/9/2024	9/9/2019	100.20106	99.75701319	99.31689833	98.88066715	98.44826832	98.01965139	97.59476682	97.17356591	96.75600083
190910A00004	9/11/2019	1.86	9/11/2024	9/11/2019	100.19506	99.74561735	99.3002083	98.85877841	98.4212744	97.98764396	97.5578357	97.13179913	96.70948467
190910A00017	9/16/2019	1.86	9/16/2024	9/16/2019	100.20246	99.7394776	99.28077692	98.82629685	98.37597922	97.92976692	97.48760387	97.04943501	96.6152063
190910A00030	9/10/2019	1.86	9/10/2024	9/10/2019	100.19358	99.74684455	99.30409425	98.86527523	98.43033517	97.99922272	97.57188741	97.14827964	96.72835071
190910A00044	9/10/2019	2.02	9/10/2026	9/10/2019	103.18074	100.7811782	98.45113175	96.1881717	93.98996932	91.85429178	89.7789975	87.76203177	85.80142265
190911A00016	9/11/2019	1.9	9/11/2029	9/11/2019	104.09305	101.2686416	98.55878869	95.95782584	93.46040868	91.06149493	88.75632531	86.54040563	84.40949032
190913A00014	9/13/2019	2.08	9/13/2024	9/13/2019	100.29907	99.84393667	99.39294108	98.94602257	98.50312589	98.06419682	97.62918209	97.19802938	96.77068732
190913A00018	9/13/2019	2.11	9/11/2026	9/13/2019	101.50495	100.2190694	98.9616563	97.73184646	96.52880738	95.35173858	94.19987008	93.07246097	91.96879805
190919A00007	9/19/2019	2.04	9/19/2024	9/19/2019	100.29255	99.82120574	99.35429631	98.89175564	98.4335225	97.97953682	97.52973963	97.08407306	96.64248031
190919A00025	9/19/2019	1.8	9/19/2024	9/19/2019	100.23848	99.76656672	99.29910444	98.83602548	98.37726824	97.9227723	97.47247832	97.0263281	96.58426449
190923A00012	9/23/2019	2.43	9/25/2034	9/23/2019	119.60734	108.9407638	99.33662229	90.68281244	82.87961502	75.83826992	69.47972119	63.73351133	58.53680648
190923A00017	9/23/2019	1.74	9/23/2024	9/23/2019	100.21593	99.73324505	99.25521279	98.78176126	98.31282477	97.84833885	97.38824027	96.93246698	96.48095813
190923A00020	9/23/2019	2.05	9/24/2029	9/23/2019	109.52867	104.0242388	98.83122179	93.93039007	89.30380149	84.93470528	80.80745697	76.9074398	73.22099213
190923A00078	9/23/2019	1.96	6/28/2024	9/23/2019	100.12313	99.87779116	99.63365707	99.3907159	99.14895894	98.90837757	98.66896322	98.43070745	98.19360186
190923A00081	9/23/2019	1.96	9/20/2024	9/23/2019	100.25623	99.78228833	99.31282461	98.84777808	98.38708652	97.93068885	97.47852516	97.03053664	96.58666555
190924A00035	9/24/2019	1.88	9/13/2024	9/24/2019	100.20721	99.75232351	99.30157289	98.85489776	98.41224289	97.97355406	97.53877803	97.10786249	96.68075609
190925A00004	9/25/2019	1.7	9/24/2024	9/25/2019	100.19784	99.71249806	99.23185933	98.75585079	98.2844057	97.81745858	97.3549452	96.89680256	96.44296884
190925A00009	9/25/2019	2	9/25/2026	9/25/2019	103.07003	100.7139416	98.42619712	96.20439223	94.04621939	91.94946728	89.91201612	87.93183325	86.00696887
190925A00011	9/25/2019	1.89	9/25/2024	9/25/2019	100.23053	99.74313971	99.26048096	98.78248652	98.30908899	97.84022227	97.37582151	96.91582312	96.46016468
190926A00002	9/30/2019	2.01	9/29/2034	9/30/2019	108.54264	103.0643501	97.97576039	93.24445305	88.84100036	84.73866337	80.91312617	77.34225821	74.00590145

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190926A00015	9/26/2019	2.32	11/26/2030	9/26/2019	111.99904	105.3218453	99.09041877	93.27262473	87.83880704	82.76158628	78.01567333	73.57769927	69.42605992
190926A00016	9/26/2019	2.28	5/24/2030	9/26/2019	111.03863	104.8772237	99.09953278	93.6796285	88.59346589	83.81873911	79.3347467	75.12226788	71.16344908
190926A00017	9/26/2019	2.23	9/26/2029	9/26/2019	109.78586	104.2944059	99.11306133	94.2226993	89.60547289	85.24471907	81.1248743	77.23139643	73.55069267
190927A00012	10/1/2019	1.96	10/1/2024	10/1/2019	100.27069	99.76702993	99.26841379	98.77476713	98.28601599	97.80208788	97.32291173	96.84841785	96.37853791
190927A00036	9/27/2019	1.94	9/6/2024	9/27/2019	100.22285	99.78685843	99.35465374	98.92619077	98.50142103	98.08029687	97.66277142	97.24879866	96.83833333
190930A00012	9/30/2019	1.93	9/30/2024	9/30/2019	100.25365	99.75272919	99.25679953	98.76578438	98.27961107	97.79820832	97.32150628	96.84943641	96.38193154
190930A00026	9/30/2019	1.95	9/30/2024	9/30/2019	100.31382	99.7399108	99.17259975	98.61177715	98.05733198	97.5091557	96.96714225	96.43118793	95.90119137
190930A00028	9/30/2019	1.95	9/30/2024	9/30/2019	100.31382	99.7399108	99.17259975	98.61177715	98.05733198	97.5091557	96.96714225	96.43118793	95.90119137
190930A00035	9/30/2019	1.93	9/30/2024	9/30/2019	100.25365	99.75272919	99.25679953	98.76578438	98.27961107	97.79820832	97.32150628	96.84943641	96.38193154
190930A00070	9/30/2019	1.93	9/27/2024	9/30/2019	100.25357	99.76070029	99.27267037	98.78940524	98.31083537	97.83689261	97.36751009	96.90262225	96.44216477
190930A00071	9/30/2019	2.05	9/29/2025	9/30/2019	101.50665	100.0346794	98.59145125	97.17620141	95.78818942	94.42670046	93.0910442	91.78055378	90.49458477
190930A00075	9/30/2019	2.19	9/29/2027	9/30/2019	105.71761	102.2479619	98.91132773	95.70190272	92.61416378	89.64285804	86.78298809	84.02979803	81.37876049
190930A00077	9/30/2019	2.23	9/28/2029	9/30/2019	109.7943	104.2973071	99.11102152	94.21626956	89.5951534	85.23096372	81.10809475	77.21196595	73.52894952
191001A00023	10/1/2019	1.85	9/27/2024	10/1/2019	100.21373	99.72098373	99.23306797	98.74991618	98.27145886	97.79762786	97.32835633	96.8635787	96.40323069
191002A00006	10/2/2019	1.84	10/2/2024	10/2/2019	100.21115	99.7049729	99.20389477	98.7078396	98.21673217	97.73049878	97.24906716	96.77236647	96.30032727
191002A00017	10/2/2019	1.84	10/2/2024	10/2/2019	100.21115	99.7049729	99.20389477	98.7078396	98.21673217	97.73049878	97.24906716	96.77236647	96.30032727
191003A00014	10/3/2019	1.71	9/20/2024	10/3/2019	100.13658	99.66297083	99.19383769	98.72911949	98.26875405	97.81268032	97.36083841	96.91316952	96.46961596
191003A00019	10/3/2019	1.71	9/27/2024	10/3/2019	100.14403	99.65147975	99.16376375	98.68081031	98.20254996	97.72891454	97.25983724	96.7952525	96.33509603
191004A00001	10/4/2019	2.47	10/4/2034	10/4/2019	118.60015	108.0400725	98.53180539	89.96432741	82.23889028	75.26760292	68.97218743	63.28288329	58.13748122
191004A00002	10/4/2019	2.08	10/4/2029	10/4/2019	108.99436	103.5033151	98.32378905	93.43649603	88.8234401	84.46782385	80.3539625	76.46720467	72.79385909
191004A00003	10/4/2019	1.89	10/5/2026	10/4/2019	102.97801	100.5036594	98.10147736	95.76894495	93.50364416	91.30325616	89.16555656	87.08841092	85.06977053
191004A00004	10/4/2019	1.54	10/4/2024	10/4/2019	100.12945	99.61727766	99.11033712	98.60854696	98.11182891	97.62010631	97.13330401	96.65134841	96.17416732
191004A00005	10/4/2019	1.54	10/4/2024	10/4/2019	100.12945	99.61727766	99.11033712	98.60854696	98.11182891	97.62010631	97.13330401	96.65134841	96.17416732
191004A00012	10/4/2019	1.78	10/4/2024	10/4/2019	100.18318	99.6716971	99.16543018	98.66429549	98.16821528	97.67711333	97.19091497	96.70954702	96.23293773
191004A00017	10/4/2019	2.02	10/4/2029	10/4/2019	107.95912	102.8691484	98.06338172	93.52426947	89.23544122	85.18162048	81.34854579	77.7228978	74.29223205
191004A00019	10/4/2019	2.02	10/4/2029	10/4/2019	107.95912	102.8691484	98.06338172	93.52426947	89.23544122	85.18162048	81.34854579	77.7228978	74.29223205
191004A00022	10/4/2019	2.02	10/4/2029	10/4/2019	107.95912	102.8691484	98.06338172	93.52426947	89.23544122	85.18162048	81.34854579	77.7228978	74.29223205
191004A00023	10/4/2019	2.02	10/4/2029	10/4/2019	107.95912	102.8691484	98.06338172	93.52426947	89.23544122	85.18162048	81.34854579	77.7228978	74.29223205
191004A00025	10/4/2019	1.74	10/4/2024	10/4/2019	100.19991	99.60969341	99.02644646	98.45004466	97.88036786	97.31729871	96.76072258	96.21052747	95.66660395
191004A00026	10/4/2019	1.74	10/4/2024	10/4/2019	100.19991	99.60969341	99.02644646	98.45004466	97.88036786	97.31729871	96.76072258	96.21052747	95.66660395
191004A00032	10/4/2019	2.01	1/3/2028	10/4/2019	105.60352	101.8823112	98.31227169	94.8864083	91.59809069	88.44103439	85.40928039	82.49717609	79.69935757
191007A00029	10/7/2019	1.88	10/9/2029	10/7/2019	108.6487	103.1285635	97.92314991	93.01289032	88.37953353	84.00604876	79.87653778	75.97615393	72.29102727
191008A00007	10/8/2019	1.67	10/9/2029	10/8/2019	103.4936	100.6444972	97.91243064	95.29154071	92.77630863	90.36153073	88.04229835	85.81397905	83.67219925

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191008A00014	10/8/2019	1.85	10/8/2026	10/8/2019	102.88156	100.4169421	98.0252607	95.70390126	93.45036305	91.26225146	89.1372727	87.07322877	85.06801276
191008A00031	10/8/2019	1.52	10/8/2024	10/8/2019	100.12316	99.60022219	99.0827422	98.57063449	98.06381559	97.56220376	97.06571892	96.57428265	96.08781811
191008A00033	10/8/2019	1.71	10/8/2024	10/8/2019	100.14138	99.61938946	99.10283038	98.59162111	98.08567877	97.5849222	97.08927188	96.59864992	96.11298002
191009A00009	10/9/2019	1.8	10/9/2026	10/9/2019	101.15527	99.83336669	98.54136369	97.27834022	96.04340973	94.83572002	93.65445165	92.49881639	91.36805576
191009A00017	10/9/2019	1.76	10/4/2024	10/9/2019	100.17283	99.66138444	99.15514811	98.6540438	98.15799373	97.66692171	97.18075307	96.69941462	96.22283463
191009A00028	10/9/2019	1.76	10/9/2024	10/9/2019	100.16904	99.64427662	99.12500087	98.6111312	98.10258341	97.59927504	97.10112534	96.60805519	96.1199871
191011A00027	10/11/2019	1.84	10/11/2029	10/11/2019	103.99159	101.1286661	98.3833487	95.74975433	93.22233656	90.79586576	88.46540877	86.2263101	84.07417441
191015A00013	10/15/2019	1.72	10/15/2024	10/15/2019	100.2398	99.6976261	99.16131492	98.63077265	98.10590638	97.58662519	97.0728401	96.56446402	96.06141169
191015A00025	10/15/2019	2.01	10/15/2029	10/15/2019	104.10977	101.2504272	98.50833164	95.87762552	93.35278805	90.92861314	88.60018942	86.36288148	84.21231256
191015A00029	10/15/2019	1.91	10/15/2024	10/15/2019	100.24804	99.7070105	99.17182001	98.64237119	98.11857188	97.60033186	97.08756284	96.58017841	96.07809395
191017A00022	10/17/2019	2.25	7/17/2028	10/17/2019	107.68012	103.3955312	99.30607595	95.40183823	91.6734595	88.11210457	84.70942934	81.45755078	78.34901887
191017A00026	10/17/2019	2.3	7/17/2029	10/17/2019	109.85811	104.5510104	99.53376197	94.78901958	90.30056629	86.05323353	82.03282789	78.22606329	74.62049832
191021A00021	10/21/2019	2.22	12/21/2027	10/21/2019	106.31743	102.6168125	99.06518144	95.65569234	92.38185365	89.23751074	86.21682603	83.3142606	80.52455682
191023A00006	10/23/2019	1.95	10/23/2024	10/23/2019	100.27264	99.71014719	99.1539555	98.60395939	98.0600557	97.52214356	96.9901243	96.46390143	95.94338053
191025A00005	10/28/2019	1.98	10/28/2024	10/28/2019	100.2928	99.7168661	99.14752483	98.58466762	98.02818421	97.47796686	96.93391021	96.39591128	95.86386934
191025A00009	10/25/2019	2.26	5/25/2029	10/25/2019	109.40167	104.2468297	99.36688066	94.74570046	90.36820052	86.22025249	82.28862182	78.56090627	75.02547914
191025A00010	10/25/2019	2.24	7/25/2028	10/25/2019	107.68194	103.3763993	99.26784945	95.34626568	91.60218562	88.02667439	84.6112924	81.34806533	78.22945602
191025A00013	10/25/2019	1.98	10/25/2024	10/25/2019	100.29322	99.7252814	99.16376181	98.60855378	98.05955132	97.5166508	96.97975086	96.44875242	95.92355853
191031A00025	10/31/2019	1.91	10/31/2024	10/31/2019	100.13442	99.79953549	99.46743665	99.13808177	98.81143303	98.48745333	98.16610633	97.84735634	97.53116837
191031A00033	10/31/2019	2.2	5/31/2028	10/31/2019	107.19454	103.0455113	99.08058315	95.29058185	91.66684378	88.20118404	84.88586708	81.71357929	78.67740347
191101A00004	11/1/2019	1.91	11/1/2029	11/1/2019	107.45967	102.6913061	98.18480263	93.92404872	89.89401554	86.0806814	82.47095849	79.05262537	75.81426476
191101A00005	11/1/2019	1.83	11/2/2026	11/1/2019	103.26577	100.7293284	98.26947193	95.88339145	93.56840497	91.32194739	89.14156448	87.02490724	84.96972651
191104A00018	11/5/2019	1.96	11/5/2024	11/5/2019	100.29515	99.69773639	99.10742669	98.52409092	97.94760604	97.37785186	96.81471102	96.25806886	95.70781337
191104A00022	11/4/2019	2.17	8/4/2027	11/4/2019	105.33167	102.0168092	98.82391488	95.74787759	92.78382875	89.92712792	87.17335079	84.51827801	81.95788463
191104A00023	11/4/2019	2.24	8/4/2028	11/4/2019	107.73771	103.4048313	99.27130815	95.32696535	91.5621956	87.96792714	84.53559122	81.25709171	78.12477669
191104A00024	11/4/2019	2.26	8/3/2029	11/4/2019	109.71957	104.3719033	99.31867631	94.54218909	90.0258876	85.75428831	81.71290382	77.88817402	74.26740231
191104A00025	11/4/2019	2.33	8/2/2030	11/4/2019	111.61555	105.2537376	99.29879272	93.72259976	88.49911898	83.604226	79.01556186	74.71239561	70.67549815
191105A00007	11/5/2019	1.98	11/5/2026	11/5/2019	103.69031	101.117759	98.62204158	96.20039905	93.85018831	91.56887849	89.35404532	87.20336589	85.11461362
191105A00008	11/5/2019	1.83	11/5/2024	11/5/2019	100.34	99.74088638	99.14891715	98.5639613	97.98589467	97.41459601	96.84994692	96.29183174	95.74013748
191105A00012	11/5/2019	2.07	11/3/2034	11/5/2019	109.00252	103.4186952	98.23757431	93.42522261	88.95087189	84.78659975	80.90704512	77.28915403	73.91195236
191106A00012	11/6/2019	2.02	10/11/2024	11/6/2019	100.31102	99.78043879	99.2554644	98.73601105	98.22199184	97.71332169	97.20991732	96.71169713	96.21858124
191106A00022	11/6/2019	2.34	1/2/2030	11/6/2019	110.81449	105.0368833	99.59853896	94.47771425	89.65417514	85.10908479	80.8248994	76.78527234	72.97496607
191108A00011	11/8/2019	2.08	10/18/2024	11/8/2019	100.34734	99.7979255	99.25452643	98.71704163	98.18537479	97.6594317	97.13912017	96.62434997	96.11503281

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191108A00013	11/8/2019	2.25	11/8/2029	11/8/2019	110.83247	105.1729664	99.83908644	94.81037378	90.06776706	85.59349395	81.37097722	77.3847481	73.62036644
191108A00014	11/8/2019	2.25	11/8/2029	11/8/2019	110.83247	105.1729664	99.83908644	94.81037378	90.06776706	85.59349395	81.37097722	77.3847481	73.62036644
191112A00022	11/12/2019	2.36	11/13/2029	11/12/2019	109.88434	104.6362378	99.68537624	95.01312486	90.60212627	86.43620169	82.50026427	78.78023935	75.2629909
191112A00023	11/12/2019	2.36	11/13/2029	11/12/2019	109.88434	104.6362378	99.68537624	95.01312486	90.60212627	86.43620169	82.50026427	78.78023935	75.2629909
191112A00024	11/12/2019	2.09	11/12/2024	11/12/2019	100.45348	99.76272529	99.08150222	98.40961835	97.74688216	97.09310734	96.4481126	95.81172153	95.18376243
191113A00013	11/13/2019	2.17	11/13/2026	11/13/2019	103.86525	101.2971498	98.80708893	96.39218919	94.0496974	91.77698153	89.57152441	87.43091777	85.35285668
191113A00016	11/15/2019	2.02	8/15/2024	11/15/2019	100.21809	99.84178151	99.46831102	99.09764243	98.72974417	98.36458515	98.00213474	97.64236275	97.28523947
191115A00014	11/18/2019	2.45	11/18/2024	11/18/2019	100.63259	99.99914454	99.373669	98.75601113	98.14602493	97.54356797	96.94850136	96.3606896	95.7800005
191115A00015	11/18/2019	2.61	11/18/2024	11/18/2019	100.73514	100.1013265	99.47548675	98.85746795	98.24712398	97.64431239	97.04889424	96.46073397	95.87969935
191115A00016	11/18/2019	2.48	11/18/2024	11/18/2019	100.65182	100.0183037	99.39275982	98.77503429	98.164981	97.56245755	96.96732502	96.37944792	95.79869403
191115A00028	11/15/2019	2.34	9/28/2029	11/15/2019	110.39735	104.8840423	99.68210481	94.77232846	90.1367847	85.75873517	81.62254677	77.71361306	74.01828182
191115A00029	11/15/2019	2.07	11/15/2029	11/15/2019	104.26222	101.4105985	98.67641228	96.05375217	93.53705533	91.12107834	88.80087663	86.57178542	84.429402
191115A00030	11/15/2019	2.35	11/9/2029	11/15/2019	110.63943	105.0088487	99.70165235	94.69755381	89.97764814	85.52430717	81.32108657	77.35264016	73.60464089
191119A00027	11/19/2019	1.8	11/19/2024	11/19/2019	100.34889	99.71211124	99.08340454	98.46261432	97.84959162	97.24419117	96.64627134	96.05569396	95.47232429
191120A00005	11/20/2019	2.63	11/20/2034	11/20/2019	120.38397	109.6154806	99.928257	91.20716643	83.34991465	76.26555661	69.87318382	64.1007696	58.88415239
191120A00006	11/20/2019	2.67	11/20/2035	11/20/2019	121.59606	109.8553186	99.38935774	90.05172422	81.71353378	74.26128434	67.59494808	61.62630877	56.27751173
191120A00024	11/20/2019	2.23	11/16/2029	11/20/2019	109.99765	104.3660192	99.05907089	94.05637307	89.33888591	84.88885968	80.68974056	76.72608372	72.98347333
191121A00004	11/21/2019	1.77	11/21/2024	11/21/2019	100.33326	99.69116395	99.05727222	98.43142759	97.81347744	97.20327298	96.60066914	96.00552445	95.41770096
191121A00009	11/21/2019	2.55	11/21/2036	11/21/2019	122.44537	109.6582663	98.36896895	88.39240315	79.56730671	71.75305543	64.82692604	58.68173427	53.22379503
191121A00010	11/21/2019	2.59	11/20/2037	11/21/2019	123.68583	109.9428165	97.91809456	87.38528398	78.14900039	70.04046729	62.91376898	56.64264765	51.11776322
191121A00034	11/21/2019	2.28	11/2/2029	11/21/2019	110.217	104.6168645	99.3375998	94.35913602	89.66275943	85.23101653	81.04762265	77.09737759	73.36608791
191122A00003	11/22/2019	2.32	11/22/2039	11/22/2019	116.54569	105.8620129	96.45567774	88.15554598	80.81501956	74.30834597	68.52750125	63.37955803	58.7844607
191122A00018	11/26/2019	3.11	11/22/2039	11/26/2019	132.04482	116.1298666	102.4235718	90.6016966	80.38943915	71.55365599	63.8963448	57.24917581	51.46889848
191122A00020	11/26/2019	3.2	11/23/2037	11/26/2019	129.89978	115.8733106	103.5801576	92.79347865	83.31735458	74.982423	67.64215118	61.16964892	55.45494051
191122A00021	11/26/2019	3.4	11/22/2038	11/26/2019	134.20612	119.0113767	105.8026977	94.30486983	84.28237009	75.53344887	67.8851224	61.18893002	55.31733633
191125A00036	11/25/2019	2.29	11/23/2029	11/25/2019	110.36542	104.7048082	99.37134104	94.34437738	89.60468689	85.13434597	80.91664203	76.9359852	73.17782708
191126A00023	11/26/2019	1.81	5/27/2025	11/26/2019	100.88262	99.7389595	98.62110543	97.52819011	96.45938654	95.41390393	94.39098574	93.3899078	92.40997666
191126A00026	11/26/2019	1.91	11/25/2026	11/26/2019	103.6107	100.9849413	98.43886249	95.96955274	93.57422409	91.25020962	88.99495717	86.80602356	84.68106904
191129A00012	11/29/2019	1.99	11/29/2024	11/29/2019	100.35842	99.69648374	99.04325249	98.39855307	97.76221926	97.13408916	96.51400501	95.90181307	95.2973635
191202A00005	12/2/2019	2.03	12/2/2024	12/2/2019	100.39199	99.72190531	99.06074009	98.40831547	97.76445908	97.12900304	96.50178382	95.88264214	95.27142276
191203A00004	12/4/2019	1.87	12/4/2024	12/4/2019	100.28714	99.61210998	98.9461423	98.28905314	97.64066588	97.00080855	96.36931366	95.74601813	95.13076305
191203A00009	12/3/2019	2.21	12/3/2029	12/3/2019	109.15388	103.8871708	98.92142989	94.23763982	89.8180909	85.6462853	81.70684724	77.98544042	74.46869195
191203A00010	12/3/2019	2.21	12/3/2029	12/3/2019	109.15388	103.8871708	98.92142989	94.23763982	89.8180909	85.6462853	81.70684724	77.98544042	74.46869195

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191203A00011	12/3/2019	2.21	12/3/2029	12/3/2019	109.15388	103.8871708	98.92142989	94.23763982	89.8180909	85.6462853	81.70684724	77.98544042	74.46869195
191204A00013	12/4/2019	1.72	12/4/2024	12/4/2019	100.32445	99.64747902	98.97961673	98.32068205	97.67049686	97.02888774	96.39568582	95.77072666	95.15385007
191206A00005	12/6/2019	2.18	12/7/2026	12/6/2019	104.01067	101.3799265	98.83074538	96.36007559	93.96500565	91.6427528	89.39065633	87.20617124	85.08686234
191206A00008	12/6/2019	2.44	12/6/2030	12/6/2019	112.83598	106.1054305	99.82529123	93.96299689	88.48850409	83.37408324	78.59412849	74.12498425	69.94478676
191206A00009	12/6/2019	2.87	12/4/2037	12/6/2019	125.56982	111.7956909	99.73648917	89.16667679	79.89157426	71.74299224	64.57550197	58.26324735	52.6972177
191206A00013	12/6/2019	3.05	12/6/2044	12/6/2019	142.0912	121.0217126	103.6181205	89.2039892	77.23218964	67.25950983	58.92636715	51.94057413	46.06433065
191206A00021	12/6/2019	2.02	12/6/2024	12/6/2019	100.40128	99.72038534	99.04870581	98.38605335	97.73224685	97.08711003	96.45047126	95.82216341	95.20202372
191206A00044	12/10/2019	2.01	10/31/2024	12/10/2019	100.31571	99.73162689	99.15432064	98.58367447	98.01957374	97.46190648	96.91056321	96.36543695	95.82642311
191209A00005	12/9/2019	2.22	12/10/2029	12/9/2019	108.44552	103.5801897	98.98550372	94.64460765	90.54179272	86.66241399	82.99281228	79.52024232	76.23280646
191217A00012	12/20/2019	2.03	12/20/2024	12/20/2019	100.44877	99.73017742	99.0218483	98.32356098	97.63510292	96.95626756	96.28685409	95.62666726	94.97551718
191218A00014	12/18/2019	2.04	12/18/2024	12/18/2019	100.45117	99.73791494	99.03477245	98.34152587	97.65796725	96.98389443	96.31911085	95.66342533	95.01665194
191219A00036	12/20/2019	2.1	12/20/2024	12/20/2019	100.49979	99.78099895	99.07246688	98.37397863	97.68532163	97.00628929	96.33668077	95.67630078	95.02495942
191220A00001	12/20/2019	2.62	12/19/2031	12/20/2019	115.85678	108.0305708	100.7976325	94.10969659	87.92266863	82.1962463	76.89357412	71.98093155	67.4274508
191220A00002	12/20/2019	3.02	12/20/2038	12/20/2019	128.97247	114.0714255	101.1396473	89.90205455	80.12350232	71.60279244	64.16761001	57.6702377	51.98392511
191223A00055	12/23/2019	2.46	12/7/2029	12/23/2019	111.38838	105.6622323	100.2684761	95.18603419	90.39527781	85.87791932	81.61691346	77.59636623	73.80145099
191223A00056	12/23/2019	2.46	12/14/2029	12/23/2019	111.41948	105.6742332	100.2634328	95.16581394	90.36157445	85.83226927	81.5607101	77.53087296	73.72781303
191224A00002	12/24/2019	2.17	12/24/2029	12/24/2019	104.74002	101.7802294	98.94488249	96.22761597	93.62244383	91.12372848	88.72615812	86.42472565	84.21470913
191226A00019	12/26/2019	2.4	12/22/2028	12/26/2019	109.27082	104.5317339	100.0268051	95.74317996	91.6687877	87.79228433	84.10300423	80.59091565	77.24657932
191226A00020	12/26/2019	2.44	12/21/2029	12/26/2019	111.33638	105.5752348	100.1504687	95.04062962	90.22574729	85.68722449	81.40773487	77.3711292	73.56234901
191230A00013	12/30/2019	1.84	12/2/2024	12/30/2019	100.4019	99.72999615	99.06705677	98.4129054	97.7673682	97.1302759	96.50146363	95.88077078	95.26804088
191230A00031	12/30/2019	1.85	12/30/2024	12/30/2019	100.47667	99.72937764	98.99316743	98.26778994	97.55300753	96.84858947	96.15431166	95.46995643	94.79531231
200103A00002	1/3/2020	2.07	1/3/2030	1/3/2020	108.42332	103.4966998	98.84738254	94.45795023	90.31217573	86.39493472	82.69212502	79.19059226	75.87806134
200108A00021	1/13/2020	1.97	1/13/2025	1/13/2020	100.48168	99.69864337	98.92778062	98.16881069	97.42145982	96.68546258	95.96056159	95.2465072	94.54305722
200109A00006	1/9/2020	1.95	1/9/2030	1/9/2020	104.54196	101.5395764	98.66517317	95.91213182	93.27422381	90.7455873	88.32070298	85.99437175	83.76169391
200109A00008	1/9/2020	1.95	1/9/2030	1/9/2020	104.54196	101.5395764	98.66517317	95.91213182	93.27422381	90.7455873	88.32070298	85.99437175	83.76169391
200110A00022	1/13/2020	2	1/6/2025	1/13/2020	100.48497	99.72060592	98.96784071	98.22641011	97.49605951	96.77654192	96.06761762	95.36905393	94.68062492
200110A00037	1/10/2020	2.32	1/10/2030	1/10/2020	109.87988	104.5013802	99.43501669	94.66084538	90.16029919	85.91608713	81.9121003	78.13332523	74.56576399
200110A00038	1/10/2020	2.32	1/10/2030	1/10/2020	109.87988	104.5013802	99.43501669	94.66084538	90.16029919	85.91608713	81.9121003	78.13332523	74.56576399
200110A00039	1/10/2020	2.32	1/10/2030	1/10/2020	109.87988	104.5013802	99.43501669	94.66084538	90.16029919	85.91608713	81.9121003	78.13332523	74.56576399
200110A00043	1/10/2020	2.32	1/10/2030	1/10/2020	109.87988	104.5013802	99.43501669	94.66084538	90.16029919	85.91608713	81.9121003	78.13332523	74.56576399
200110A00053	1/10/2020	1.99	1/10/2025	1/10/2020	100.57373	99.72537134	98.89138924	98.07141624	97.26510083	96.47210316	95.69209459	94.92475724	94.16978353
200114A00006	1/15/2020	1.99	1/15/2025	1/15/2020	100.5034	99.71492518	98.93879509	98.17471956	97.42241924	96.68162335	95.95206936	95.23350271	94.52567644
200115A00013	1/15/2020	2.18	1/15/2030	1/15/2020	107.41258	102.9981798	98.82180353	94.86884314	91.12567305	87.57958114	84.21870247	81.03195817	78.00899908

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200116A00012	1/16/2020	2.16	1/19/2027	1/16/2020	104.1757	101.4346961	98.78192353	96.21406503	93.72794254	91.32051472	88.98887022	86.73022144	84.54189851
200121A00009	1/24/2020	1.94	1/24/2025	1/24/2020	100.49633	99.68375208	98.88427174	98.09757857	97.3233676	96.56134351	95.81122023	95.07272058	94.34557594
200122A00035	1/22/2020	1.94	1/22/2025	1/22/2020	100.48277	99.6756979	98.88155409	98.10003048	97.33082796	96.57365683	95.8282364	95.09429466	94.37156794
200123A00013	1/27/2020	1.89	1/27/2025	1/27/2020	100.46305	99.64260753	98.83551928	98.04146213	97.2601225	96.49119679	95.73439099	94.98942032	94.25600885
200123A00048	1/23/2020	1.7	1/23/2025	1/23/2020	100.42412	99.61279696	98.81454346	98.02904329	97.25599262	96.49509722	95.74607206	95.00864097	94.28253628
200124A00008	1/24/2020	1.92	1/22/2027	1/24/2020	103.91711	101.1347548	98.44096066	95.83241741	93.30595824	90.85855301	88.4873015	86.18942694	83.96227002
200127A00016	1/27/2020	1.81	1/27/2025	1/27/2020	100.39638	99.5762365	98.76944742	97.97568605	97.19463888	96.42600235	95.66948253	94.92479468	94.19166295
200127A00023	1/27/2020	1.8	1/27/2025	1/27/2020	100.38804	99.56794012	98.76118844	97.96746404	97.18645342	96.41785304	95.66136897	94.91671648	94.18361972
200127A00030	1/27/2020	1.8	1/27/2025	1/27/2020	100.38804	99.56794012	98.76118844	97.96746404	97.18645342	96.41785304	95.66136897	94.91671648	94.18361972
200128A00028	1/28/2020	1.81	1/28/2025	1/28/2020	100.39882	99.57599475	98.76661064	97.97033648	97.18685584	96.41586238	95.65705949	94.91015988	94.17488522
200130A00006	1/30/2020	1.77	1/30/2025	1/30/2020	100.37003	99.54199858	98.72757719	97.92642886	97.13823134	96.36267273	95.59945109	94.848274	94.10885823
200130A00016	1/30/2020	1.58	1/30/2025	1/30/2020	100.34098	99.51130611	98.69528879	97.89259666	97.10290557	96.32590183	95.56128176	94.80875128	94.06802558
200130A00027	1/31/2020	1.79	1/31/2025	1/31/2020	100.17333	99.71488176	99.26173306	98.81378459	98.3709367	97.93309243	97.50015741	97.07203978	96.6486501
200130A00046	1/30/2020	1.81	1/29/2027	1/30/2020	101.35037	99.90160587	98.48776395	97.10771608	95.76037994	94.44471658	93.15972829	91.90445668	90.67798074
200131A00015	2/5/2020	1.73	2/5/2025	2/5/2020	100.35101	99.50709055	98.67730641	97.86130936	97.05875804	96.26932228	95.49268267	94.72853006	93.9765652
200131A00016	1/31/2020	1.73	1/31/2025	1/31/2020	100.33858	99.50802662	98.69116494	97.88765716	97.09717813	96.31941318	95.55405769	94.80081669	94.05940451
200131A00029	1/31/2020	1.78	10/31/2024	1/31/2020	100.17969	99.59606036	99.0192063	98.44900857	97.88535261	97.32812647	96.77722074	96.23252848	95.69394514
200131A00032	1/31/2020	2.1	1/31/2030	1/31/2020	109.5324	103.7165135	98.24702435	93.1015471	88.2592524	83.70074982	79.40798162	75.36412492	71.55350144
200131A00038	1/31/2020	1.73	1/30/2025	1/31/2020	100.33636	99.50848667	98.69421779	97.89322022	97.10517174	96.3297605	95.56668457	94.81565157	94.07637831
200203A00006	2/3/2020	1.76	2/3/2025	2/3/2020	100.37162	99.53292627	98.70819371	97.89707593	97.09923805	96.31435612	95.54211664	94.78221612	94.03436076
200203A00046	2/3/2020	1.98	2/3/2040	2/3/2020	110.69776	102.8276247	95.74703878	89.36399862	83.59825505	78.37971135	73.64704828	69.34654563	65.43107081
200204A00001	2/4/2020	1.79	2/4/2025	2/4/2020	100.39985	99.55836281	98.7309273	97.9171947	97.11682689	96.32949677	95.55488782	94.79269372	94.04261791
200204A00012	2/4/2020	1.98	2/4/2027	2/4/2020	103.7825	100.9754049	98.25853728	95.62853034	93.08215993	90.61633887	88.22811046	85.91464218	83.67321981
200204A00020	2/4/2020	1.6	2/4/2025	2/4/2020	100.37052	99.52734889	98.69828342	97.88297468	97.08108256	96.29227806	95.51624288	94.75266897	94.00125811
200206A00008	2/6/2020	1.64	2/6/2025	2/6/2020	100.47146	99.56902706	98.68297378	97.81285649	96.95824652	96.11873046	95.29390952	94.48339887	93.68682703
200206A00027	2/6/2020	2.15	2/6/2030	2/6/2020	109.03603	103.634374	98.5497001	93.76153423	89.25083172	84.99987095	80.99215478	77.21231981	73.64605279
200206A00031	2/6/2020	2.15	2/6/2030	2/6/2020	109.03603	103.634374	98.5497001	93.76153423	89.25083172	84.99987095	80.99215478	77.21231981	73.64605279
200206A00032	2/6/2020	2.15	2/6/2030	2/6/2020	109.03603	103.634374	98.5497001	93.76153423	89.25083172	84.99987095	80.99215478	77.21231981	73.64605279
200206A00033	2/6/2020	2.15	2/6/2030	2/6/2020	109.03603	103.634374	98.5497001	93.76153423	89.25083172	84.99987095	80.99215478	77.21231981	73.64605279
200206A00034	2/6/2020	1.84	2/6/2025	2/6/2020	100.51789	99.60758542	98.71383581	97.83619463	96.97422844	96.12751922	95.29566373	94.47827285	93.67497095
200207A00009	2/7/2020	1.58	2/7/2025	2/7/2020	100.36104	99.50989845	98.67313548	97.85039047	97.04131347	96.24556607	95.46282099	94.69276156	93.93508133
200207A00017	2/7/2020	1.96	2/8/2027	2/7/2020	103.74778	100.9296824	98.20251314	95.56286287	93.00747104	90.53321617	88.13710919	85.81628705	83.56800673
200207A00018	2/7/2020	2.14	2/7/2030	2/7/2020	109.7958	103.9524515	98.45814072	93.2902489	88.42772921	83.85099315	79.54180266	75.48317061	71.65926912

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200210A00005	2/10/2020	1.77	2/10/2027	2/10/2020	103.58778	100.7576959	98.01929111	95.36911798	92.80387727	90.32041112	87.91569608	85.58683669	83.33105929
200210A00007	2/10/2020	1.78	2/10/2025	2/10/2023	100.57421	99.70634957	98.85411145	98.01706624	97.19480484	96.38693278	95.59306963	94.81284834	94.04591465
200210A00009	2/10/2020	1.57	2/10/2025	2/10/2020	100.35995	99.50080305	98.6563053	97.82608837	97.00979235	96.20706934	95.41758297	94.64100789	93.87702935
200210A00021	2/10/2020	1.76	2/10/2025	2/10/2020	100.3896	99.53218105	98.68935439	97.86075269	97.04601813	96.24480479	95.45677819	94.68161479	93.91900158
200212A00003	2/12/2020	1.63	2/12/2025	2/12/2020	100.41767	99.55290296	98.7029747	97.8675064	97.04613141	96.23849541	95.44425585	94.66308149	93.89465196
200212A00013	2/12/2020	1.98	2/12/2027	2/12/2020	103.76895	100.9840845	98.29055151	95.68484863	93.16362702	90.72368474	88.36195943	86.07552137	83.86156701
200214A00002	2/14/2020	1.58	11/15/2024	2/14/2020	100.20187	99.57636697	98.95866211	98.34860856	97.74606464	97.15089217	96.56295633	95.9821256	95.40827162
200214A00005	2/14/2020	1.59	2/14/2025	2/14/2020	100.3877	99.51772817	98.66278153	97.82246962	96.99641912	96.1842693	95.38567152	94.60028872	93.82779492
200214A00007	2/14/2020	1.59	2/14/2025	2/14/2020	100.3877	99.51772817	98.66278153	97.82246962	96.99641912	96.1842693	95.38567152	94.60028872	93.82779492
200214A00014	2/18/2020	1.8	2/18/2025	2/18/2020	100.4459	99.56689534	98.70322368	97.85448422	97.02029225	96.20027618	95.39407699	94.6013477	93.82175286
200214A00015	2/18/2020	1.76	8/6/2024	2/18/2020	100.10992	99.75829309	99.40914116	99.06243519	98.7181495	98.37625874	98.03673793	97.69956242	97.36470793
200214A00020	2/18/2020	1.78	1/15/2025	2/18/2020	100.33531	99.54756813	98.77216458	98.00880768	97.25721822	96.51712555	95.78826729	95.070389	94.36324386
200220A00013	2/20/2020	2.09	12/14/2029	2/20/2020	109.31392	103.6277228	98.27351269	93.23014261	88.47792837	83.9985361	79.7748823	75.79104178	72.03216295
200220A00014	2/20/2020	2.09	12/21/2029	2/20/2020	109.338	103.6330874	98.26219832	93.20400061	88.43863708	83.94761689	79.71371394	75.72087355	71.95412644
200220A00015	2/20/2020	1.57	2/20/2025	2/20/2020	100.38513	99.49914641	98.62873764	97.77349591	96.9330275	96.10695221	95.29490279	94.4965244	93.71147408
200220A00026	2/20/2020	2.22	2/21/2040	2/20/2020	112.49657	103.7171123	95.85914249	88.81146512	82.47751616	76.77331641	71.62572235	66.97093275	62.75321203
200221A00003	2/25/2020	1.69	2/25/2025	2/25/2020	100.3642	99.46694878	98.58567276	97.7199469	96.86936259	96.03352546	95.2120547	94.40458252	93.61075358
200221A00004	2/21/2020	1.69	2/21/2025	2/21/2020	100.3547	99.46815095	98.59720215	97.74144637	96.90048879	96.07394817	95.26145626	94.46265727	93.67720733
200221A00011	2/21/2020	1.69	8/21/2024	2/21/2020	100.09813	99.70581032	99.31657322	98.93037927	98.54719278	98.16697864	97.78970225	97.41532959	97.04382714
200221A00012	2/21/2020	2.14	2/21/2040	2/21/2020	111.78701	103.0632181	95.25510142	88.25216047	81.95843679	76.29047857	71.17560219	66.55040807	62.35951186
200221A00013	2/21/2020	1.69	2/21/2025	2/21/2020	100.3547	99.46815095	98.59720215	97.74144637	96.90048879	96.07394817	95.26145626	94.46265727	93.67720733
200221A00016	2/21/2020	1.69	2/21/2025	2/21/2020	100.3547	99.46815095	98.59720215	97.74144637	96.90048879	96.07394817	95.26145626	94.46265727	93.67720733
200221A00023	2/21/2020	2.05	12/7/2029	2/21/2020	109.06295	103.4018149	98.07036423	93.04765718	88.31419407	83.85180907	79.6435717	75.67369621	71.92745812
200221A00024	2/21/2020	2.05	12/28/2029	2/21/2020	109.13293	103.4157625	98.03439363	92.96731511	88.19450897	83.69733881	79.45844683	75.46165912	71.69189848
200221A00031	2/21/2020	1.69	2/21/2025	2/21/2020	100.3547	99.46815095	98.59720215	97.74144637	96.90048879	96.07394817	95.26145626	94.46265727	93.67720733
200224A00001	2/24/2020	1.59	2/24/2025	2/24/2020	100.2708	99.37666882	98.4984163	97.63561901	96.78787193	95.95478409	95.13597794	94.3310888	93.53976431
200224A00006	2/24/2020	1.58	11/15/2024	2/24/2020	100.07272	99.44930816	98.83364791	98.22559365	97.62500498	97.03174494	96.44567992	95.86667954	95.29461653
200224A00007	2/24/2020	1.59	2/24/2025	2/24/2020	100.2708	99.37666882	98.4984163	97.63561901	96.78787193	95.95478409	95.13597794	94.3310888	93.53976431
200224A00019	2/24/2020	1.59	2/18/2025	2/24/2020	100.2582	99.3801003	98.51732437	97.66946981	96.83615212	96.01699994	95.21165445	94.41976886	93.64100792
200224A00020	2/24/2020	1.59	2/24/2025	2/24/2020	100.2708	99.37666882	98.4984163	97.63561901	96.78787193	95.95478409	95.13597794	94.3310888	93.53976431
200224A00021	2/24/2020	1.58	9/24/2024	2/24/2020	100.07719	99.59293498	99.11336165	98.63839982	98.1679832	97.70204674	97.24052661	96.78336021	96.33048613
200224A00024	2/24/2020	1.59	2/24/2025	2/24/2020	100.2708	99.37666882	98.4984163	97.63561901	96.78787193	95.95478409	95.13597794	94.3310888	93.53976431
200224A00025	2/24/2020	1.59	1/23/2025	2/24/2020	100.20568	99.39707517	98.60146878	97.81855351	97.04802754	96.28959858	95.54298344	94.80790772	94.08410547

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200224A00046	2/24/2020	1.59	2/24/2025	2/24/2020	100.2708	99.37666882	98.4984163	97.63561901	96.78787193	95.95478409	95.13597794	94.3310888	93.53976431
200225A00012	2/25/2020	1.57	2/25/2025	2/25/2020	100.25464	99.35792574	98.47718302	97.61198387	96.76191983	95.92659664	95.10563363	94.29866314	93.50532994
200225A00017	2/25/2020	1.94	2/25/2030	2/25/2020	108.69681	102.8341041	97.32507968	92.14661039	87.2771916	82.69682168	78.38688972	74.33007223	70.51023791
200225A00018	2/25/2020	1.94	2/25/2030	2/25/2020	108.69681	102.8341041	97.32507968	92.14661039	87.2771916	82.69682168	78.38688972	74.33007223	70.51023791
200225A00023	2/25/2020	1.62	2/25/2025	2/25/2020	100.30029	99.40335201	98.52238708	97.65696846	96.80668765	95.97115032	95.14997574	94.34279621	93.54925645
200225A00028	2/25/2020	1.89	12/21/2029	2/25/2020	108.19607	102.5232889	97.18318666	92.15449832	87.41743125	82.9535554	78.74570198	74.77787033	71.03514211
200225A00029	2/25/2020	1.89	12/28/2029	2/25/2020	108.21636	102.5250644	97.16848386	92.12516221	87.37513369	82.89981113	78.6818831	74.7052194	70.95478405
200225A00049	2/25/2020	1.79	2/24/2040	2/25/2020	109.17037	101.4137896	94.43351802	88.13936111	82.45261576	77.30450377	72.63483221	68.3908445	64.52623391
200225A00050	2/25/2020	1.57	2/25/2025	2/25/2020	100.25464	99.35792574	98.47718302	97.61198387	96.76191983	95.92659664	95.10563363	94.29866314	93.50532994
200226A00004	2/26/2020	1.58	2/26/2025	2/26/2020	100.26584	99.36641107	98.48304519	97.61531298	96.76280251	95.92511619	95.10187019	94.29269381	93.49722894
200226A00006	2/26/2020	1.57	2/26/2025	2/26/2020	100.25668	99.35729865	98.47397747	97.60628941	96.75382255	95.91617931	95.09297586	94.28384152	93.48841819
200226A00008	2/26/2020	1.38	2/26/2025	2/26/2020	100.2261	99.32487389	98.43977383	97.57036824	96.71624285	95.87699785	95.05224726	94.24161833	93.444751
200226A00009	2/26/2020	1.75	2/26/2030	2/26/2020	108.36903	102.4844065	96.95601998	91.76050861	86.87615834	82.28277645	77.96157763	73.89507919	70.06700452
200226A00016	2/26/2020	1.57	2/26/2025	2/26/2020	100.25668	99.35729865	98.47397747	97.60628941	96.75382255	95.91617931	95.09297586	94.28384152	93.48841819
200226A00025	2/26/2020	1.38	2/26/2025	2/26/2020	100.2261	99.32487389	98.43977383	97.57036824	96.71624285	95.87699785	95.05224725	94.24161833	93.444751
200227A00004	2/27/2020	1.65	2/27/2030	2/27/2020	107.78111	101.9107465	96.39621219	91.21415888	86.34287912	81.76218738	77.45330606	73.39876053	69.58228257
200227A00006	2/27/2020	1.47	2/27/2025	2/27/2020	100.16687	99.26527551	98.37982563	97.51009296	96.65566221	95.81613262	94.99111728	94.18024259	93.38314767
200227A00009	2/27/2020	1.47	2/27/2025	2/27/2020	100.16687	99.26527551	98.37982563	97.51009296	96.65566221	95.81613262	94.99111728	94.18024259	93.38314767
200227A00016	2/27/2020	1.47	2/27/2025	2/27/2020	100.16687	99.26527551	98.37982563	97.51009296	96.65566221	95.81613262	94.99111728	94.18024259	93.38314766
200227A00027	2/27/2020	1.47	2/27/2025	2/27/2020	100.16687	99.26527551	98.37982563	97.51009296	96.65566221	95.81613262	94.99111728	94.18024259	93.38314766
200227A00030	2/27/2020	1.59	2/27/2026	2/27/2020	101.42777	99.55103918	97.71813042	95.92776037	94.178693	92.46973621	90.79974001	89.16759472	87.5722293
200227A00046	2/27/2020	1.52	3/1/2027	2/27/2020	100.96861	99.48465787	98.03721213	96.62507659	95.2471048	93.9021966	92.58929586	91.30738833	90.0554997
200228A00012	3/3/2020	1.4	3/3/2025	3/3/2020	100.10889	99.19696353	98.3015702	97.42226022	96.55860353	95.71018524	94.87660504	94.05747651	93.25242655
200228A00014	2/28/2020	1.4	2/28/2025	2/28/2020	100.10416	99.20020919	98.3125003	97.44059443	96.58407289	95.74253167	94.91558076	94.10284361	93.3039565
200228A00019	2/28/2020	1.21	2/20/2025	2/28/2020	100.06113	99.17672477	98.30787358	97.45417045	96.61522204	95.79064852	94.98008301	94.18317103	93.39956995
200228A00025	2/28/2020	1.57	3/2/2027	2/28/2020	102.72879	99.86300164	97.09169647	94.4112567	91.81822746	89.30930441	86.88132627	84.53126782	82.25623325
200228A00026	2/28/2020	2.14	2/28/2035	2/28/2020	115.3837	104.6224247	94.97453792	86.31841975	78.54632571	71.56273963	65.28293076	59.6316873	54.54220416
200228A00059	2/28/2020	1.79	2/28/2030	2/28/2020	107.82387	101.9780105	96.4857488	91.3239145	86.47096855	81.90687984	77.61301245	73.57202181	69.76775907
200228A00067	2/28/2020	1.4	2/28/2025	2/28/2020	100.10416	99.20020919	98.3125003	97.44059443	96.58407289	95.74253167	94.91558076	94.10284361	93.3039565
200228A00071	2/28/2020	1.74	12/14/2029	2/28/2020	107.32216	101.6918347	96.39115585	91.39910217	86.696101	82.26392365	78.08558574	74.14525554	70.42816963
200228A00091	2/28/2020	1.72	12/7/2029	2/28/2020	107.19126	101.5824545	96.30115228	91.32652447	86.63917546	82.2210374	78.05527223	74.12618132	70.41912239
200302A00002	3/2/2020	1.12	3/3/2025	3/2/2020	99.994068	99.08068942	98.1839001	97.30325206	96.43831286	95.58866542	94.75390727	93.93364998	93.12751851
200302A00005	3/2/2020	1.31	3/3/2025	3/2/2020	100.02523	99.11372852	98.21874892	97.33984748	96.47659423	95.62857441	94.7953878	93.97664808	93.17198226

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200302A00011	3/2/2020	1.31	2/27/2025	3/2/2020	100.01991	99.11904213	98.23431169	97.36528952	96.51156052	95.6727241	94.84839353	94.03819538	93.24176893
200302A00016	3/2/2020	1.36	3/3/2025	3/2/2020	100.07171	99.15997019	98.26476074	97.38563234	96.52215495	95.67391376	94.84050849	94.02155276	93.21667353
200302A00033	3/2/2020	1.31	3/3/2025	3/2/2020	100.02523	99.11372852	98.21874892	97.33984748	96.47659423	95.62857441	94.7953878	93.97664808	93.17198226
200302A00036	3/2/2020	1.45	3/2/2026	3/2/2020	101.1696	99.28737609	97.44928821	95.6540419	93.90038719	92.1871187	90.51307383	88.87713093	87.27820754
200302A00045	3/4/2020	1.31	3/4/2025	3/4/2020	100.02656	99.11240166	98.21486308	97.33349631	96.46786758	95.61755849	94.78216535	93.96129855	93.15458194
200302A00053	3/2/2020	1.31	3/3/2025	3/2/2020	100.02523	99.11372852	98.21874892	97.33984748	96.47659423	95.62857441	94.7953878	93.97664808	93.17198226
200302A00054	3/2/2020	1.31	3/3/2025	3/2/2020	100.02523	99.11372852	98.21874892	97.33984748	96.47659423	95.62857441	94.7953878	93.97664808	93.17198226
200302A00060	3/2/2021	1.44	3/3/2025	3/2/2021	100.14607	99.23395686	98.33837966	97.45888811	96.5950521	95.74645672	94.91270159	94.09340025	93.28817957
200303A00001	3/3/2020	1.15	3/3/2025	3/3/2020	100.02198	99.10845612	98.21152855	97.33074398	96.46566997	95.61588937	94.78099971	93.9606125	93.15435267
200303A00010	3/3/2020	1.34	3/3/2025	3/3/2020	100.05312	99.14147352	98.24635601	97.3673184	96.50393066	95.65577802	94.82246021	94.00359089	93.19879702
200303A00012	3/3/2020	1.71	3/1/2030	3/3/2020	107.35426	101.5195154	96.0380845	90.88679891	86.04412116	81.49002268	77.20587076	73.1743247	69.37924001
200303A00018	3/3/2020	1.27	3/3/2025	3/3/2020	99.988053	99.07673519	98.18193947	97.3032196	96.44014566	95.59230293	94.75929125	93.94072434	93.13622923
200303A00028	3/3/2020	1.54	3/4/2030	3/3/2020	105.22734	100.3241781	95.70381926	91.34806638	87.23999691	83.36386652	79.70502073	76.24981371	72.98553347
200303A00034	3/3/2020	1.21	3/3/2025	3/3/2020	99.932283	99.02124518	98.12672528	97.24827777	96.38547279	95.53789571	94.70514643	93.88683872	93.0825997
200304A00002	3/4/2020	0.98	3/4/2025	3/4/2020	99.864684	98.94929865	98.05059237	97.16811321	96.30142508	95.4501074	94.6137544	93.79197448	92.98438959
200304A00005	3/4/2020	0.98	3/4/2025	3/4/2020	99.864684	98.94929865	98.05059237	97.16811321	96.30142508	95.4501074	94.6137544	93.79197448	92.98438959
200304A00010	3/4/2020	1.2	3/4/2027	3/4/2020	102.03166	99.16218688	96.38775273	93.70470795	91.10956393	88.59898471	86.1697793	83.81889461	81.54340865
200304A00012	3/4/2020	0.98	3/4/2025	3/4/2020	99.864684	98.94929865	98.05059237	97.16811321	96.30142508	95.4501074	94.6137544	93.79197448	92.98438959
200304A00018	3/4/2020	0.98	3/4/2025	3/4/2020	99.864684	98.94929865	98.05059237	97.16811321	96.30142508	95.4501074	94.6137544	93.79197448	92.98438959
200304A00020	3/4/2020	0.98	3/4/2025	3/4/2020	99.864684	98.94929865	98.05059237	97.16811321	96.30142508	95.4501074	94.6137544	93.79197448	92.98438959
200304A00030	3/4/2020	1.6	12/22/2028	3/4/2020	105.49333	100.8426371	96.42293665	92.22152333	88.22645893	84.42652501	80.81117519	77.37049094	74.09514047
200304A00032	3/4/2020	1.6	12/15/2028	3/4/2020	105.46895	100.8368267	96.43399635	92.24788531	88.2666815	84.47928229	80.87524776	77.44475721	74.17856888
200304A00033	3/4/2020	1.17	3/4/2025	3/4/2020	99.896049	98.98254433	98.08565282	97.20492499	96.33992721	95.49024127	94.65546363	93.83520484	93.02908891
200304A00035	3/4/2020	1.17	3/4/2025	3/4/2020	99.896049	98.98254433	98.08565282	97.20492499	96.33992721	95.49024127	94.65546363	93.83520484	93.02908891
200304A00052	3/6/2020	2.11	3/8/2027	3/6/2020	104.33597	101.4310107	98.62213058	95.90563481	93.27799486	90.73583682	88.27593361	85.8951978	83.59067472
200304A00053	3/6/2020	2.33	3/6/2025	3/6/2020	100.9857	100.0613968	99.15397495	98.26297284	97.3879478	96.52847291	95.68413634	94.85454068	94.03930236
200304A00054	3/6/2020	2.35	3/8/2027	3/6/2020	105.0411	102.1257218	99.30667624	96.58026409	93.94294868	91.39134829	88.92222839	86.53249439	84.21918472
200305A00001	3/5/2020	1.14	3/5/2025	3/5/2020	99.868945	98.9529286	98.05362118	97.1705694	96.30333584	95.45149868	94.61465096	93.79239995	92.98436654
200305A00002	3/5/2020	1.14	3/5/2025	3/5/2020	99.868945	98.9529286	98.05362118	97.1705694	96.30333584	95.45149868	94.61465096	93.79239995	92.98436654
200305A00007	3/5/2020	1.14	3/5/2025	3/5/2020	99.868945	98.9529286	98.05362118	97.1705694	96.30333584	95.45149868	94.61465096	93.79239995	92.98436654
200305A00012	3/5/2020	1.14	3/5/2025	3/5/2020	99.868945	98.9529286	98.05362118	97.1705694	96.30333584	95.45149868	94.61465096	93.79239995	92.98436654
200305A00020	3/5/2020	0.95	3/5/2025	3/5/2020	99.83746	98.91955572	98.0184272	97.13361811	96.26468858	95.41121438	94.5727863	93.74900945	92.93950265
200305A00029	3/5/2020	1.14	3/5/2025	3/5/2020	99.868945	98.9529286	98.05362118	97.1705694	96.30333584	95.45149868	94.61465096	93.79239995	92.98436654

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200305A00030	3/5/2020	1.58	3/5/2030	3/5/2020	106.59434	100.7716179	95.30247975	90.16368109	85.33362245	80.79222079	76.52079568	72.50196468	68.71954699
200305A00032	3/5/2020	1.58	3/5/2030	3/5/2020	106.59434	100.7716179	95.30247975	90.16368109	85.33362245	80.79222079	76.52079568	72.50196468	68.71954699
200305A00035	3/5/2020	1.25	3/5/2026	3/5/2020	100.79194	98.90571491	97.0639152	95.26523167	93.50840095	91.79220501	90.11546922	88.47706049	86.87588551
200305A00036	3/5/2020	1.36	3/5/2027	3/5/2020	102.12383	99.25925271	96.48944294	93.81076105	91.21973159	88.71303095	86.28747991	83.94003648	81.66778918
200305A00037	3/5/2020	1.43	3/6/2028	3/5/2020	103.6683	99.81615275	96.12759357	92.59484998	89.21055546	85.96772968	82.8597562	79.88036157	77.02359577
200305A00038	3/5/2020	1.51	3/5/2029	3/5/2020	105.31562	100.4743759	95.88314719	91.52777057	87.39495676	83.47223087	79.7478784	76.21089513	72.85094056
200305A00039	3/5/2020	1.58	3/5/2030	3/5/2020	106.59434	100.7716179	95.30247975	90.16368109	85.33362245	80.79222079	76.52079568	72.50196468	68.71954699
200306A00001	3/6/2020	1.11	3/6/2026	3/6/2020	100.52331	98.63716947	96.79552702	94.99706605	93.24051947	91.52466571	89.84832679	88.21036647	86.60968843
200306A00013	3/6/2020	1.01	3/6/2025	3/6/2020	99.747905	98.82985075	97.92859633	97.04368368	96.17467174	95.32113518	94.48266371	93.65886145	92.84934626
200306A00014	3/6/2020	1.38	3/6/2030	3/6/2020	105.4136	99.62273971	94.18428376	89.07503547	84.27344111	79.75946161	75.51445883	71.52109091	67.76321606
200306A00022	3/6/2020	1.2	3/8/2027	3/6/2020	101.66233	98.79689794	96.02656162	93.34766544	90.75671165	88.25035582	85.8253992	83.47878155	81.20757433
200306A00028	3/6/2020	1.01	3/6/2025	3/6/2020	99.747905	98.82985075	97.92859633	97.04368368	96.17467174	95.32113518	94.48266371	93.65886145	92.84934626
200306A00031	3/6/2020	1.01	3/6/2025	3/6/2020	99.747905	98.82985075	97.92859633	97.04368368	96.17467174	95.32113518	94.48266371	93.65886145	92.84934626
200306A00040	3/6/2020	1.01	3/6/2025	3/6/2020	99.747905	98.82985075	97.92859633	97.04368368	96.17467174	95.32113518	94.48266371	93.65886145	92.84934626
200306A00046	3/6/2020	1.01	3/3/2025	3/6/2020	99.746385	98.83627851	97.942678	97.06513834	96.20322991	95.35653832	94.52466368	93.70722	92.9038346
200306A00048	3/6/2020	1.04	3/6/2035	3/6/2020	103.27455	97.82757754	92.78427213	88.10972952	83.77238178	79.74365309	75.99765356	72.51090637	69.26210449
200306A00050	3/6/2020	0.87	3/6/2030	3/6/2020	101.31149	98.32176217	95.46257015	92.72701259	90.10860771	87.60126241	85.19924638	82.897168	80.68995201
200306A00055	3/6/2020	0.82	3/6/2025	3/6/2020	99.716224	98.79627691	97.89319625	97.00652152	96.13580912	95.28063135	94.44057563	93.61524389	92.80425193
200306A00057	3/6/2020	0.92	3/8/2027	3/6/2020	101.10868	98.41203836	95.80500491	93.2840757	90.8459044	88.48729501	86.20519416	83.99668387	81.8589746
200306A00058	3/6/2020	1.06	3/6/2030	3/6/2020	101.50165	98.51388442	95.65630809	92.92205737	90.304678	87.79810209	85.39662243	83.0948685	80.88778444
200306A00064	3/6/2020	1.2	3/8/2027	3/6/2020	101.66233	98.79689794	96.02656162	93.34766544	90.75671165	88.25035582	85.8253992	83.47878155	81.20757433
200306A00065	3/6/2020	1.38	3/6/2030	3/6/2020	105.4136	99.62273971	94.18428376	89.07503547	84.27344111	79.75946161	75.51445883	71.52109091	67.76321606
200306A00066	3/6/2020	1.2	3/8/2027	3/6/2020	101.66233	98.79689794	96.02656162	93.34766544	90.75671165	88.25035582	85.8253992	83.47878155	81.20757433
200306A00077	3/6/2020	1.06	3/6/2025	3/6/2020	99.794791	98.87650023	97.97501218	97.08986888	96.22062917	95.36686767	94.52817404	93.70415233	92.89442035
200306A00087	3/8/2021	1.26	3/7/2025	3/8/2021	99.983527	99.06163501	98.15665521	97.26812597	96.39560207	95.53865421	94.69686833	93.86984493	93.05719843
200309A00005	3/9/2020	0.77	3/7/2025	3/9/2020	99.66957	98.74720607	97.84180329	96.9528977	96.08004193	95.22280464	94.38076981	93.5535361	92.74071619
200309A00007	3/9/2020	1.11	3/9/2027	3/9/2020	101.40009	98.53598125	95.76704159	93.08960773	90.5001757	87.99539532	85.57206247	83.22711194	80.95761055
200309A00020	3/9/2020	0.96	3/10/2025	3/9/2020	99.702494	98.77408697	97.86286859	96.96836526	96.09012054	95.22769447	94.38066283	93.54861647	92.7311606
200309A00021	3/9/2020	1.05	3/9/2026	3/9/2020	100.41295	98.52019167	96.67227338	94.86786085	93.10567216	91.38447167	89.70306803	88.06031226	86.45509597
200309A00027	3/9/2020	0.97	3/10/2025	3/9/2020	99.711981	98.78352558	97.87225944	96.97770898	96.09941772	95.23694569	94.38986867	93.55777748	92.74027734
200309A00030	3/9/2020	1.11	3/9/2027	3/9/2020	101.40009	98.53598125	95.76704159	93.08960773	90.5001757	87.99539532	85.57206247	83.22711194	80.95761055
200309A00033	3/9/2020	1.06	3/9/2026	3/9/2020	100.43239	98.53944616	96.69133803	94.88673927	93.12436785	91.40298803	89.72140838	88.07847982	86.47309387
200309A00034	3/9/2020	0.96	3/9/2035	3/9/2020	102.81997	97.39691844	92.37577227	87.72177499	83.40349604	79.39248405	75.66296194	72.19155528	68.95705002

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200309A00038	3/9/2020	1.26	3/11/2030	3/9/2020	104.70844	98.92568049	93.49594455	88.39593947	83.60401932	79.10006316	74.86536024	70.88250444	67.1352971
200309A00046	3/9/2020	0.78	3/11/2025	3/9/2020	99.680172	98.74714117	97.83146684	96.93266854	96.05028333	95.18386503	94.33298353	93.49722405	92.67618643
200309A00081	3/9/2020	1.18	3/8/2030	3/9/2020	103.77063	98.5099927	93.56333354	88.91005583	84.53102631	80.40846087	76.52582254	72.8677276	69.41985933
200309A00082	3/9/2020	1.18	3/8/2030	3/9/2020	103.77063	98.5099927	93.56333354	88.91005583	84.53102631	80.40846087	76.52582254	72.8677276	69.41985933
200309A00084	3/9/2020	1.06	3/9/2027	3/9/2020	101.21822	98.4203357	95.71640714	93.10274099	90.57581357	88.13225979	85.76886505	83.48255752	81.27040095
200310A00003	3/10/2020	1.1	3/10/2025	3/10/2020	99.835312	98.90622743	97.99434058	97.09917733	96.22028105	95.3572116	94.50954459	93.6768707	92.858795
200310A00005	3/10/2020	1.41	3/8/2030	3/10/2020	105.59351	99.79241851	94.34456092	89.22667175	84.41713182	79.89584238	75.64411091	71.64454601	67.88096066
200310A00015	3/10/2020	1.37	3/11/2030	3/10/2020	105.36029	99.5585066	94.11057505	88.99315367	84.18455603	79.66462308	75.41460823	71.4170716	67.65578275
200310A00020	3/10/2020	1.1	3/10/2025	3/10/2020	99.835312	98.90622743	97.99434058	97.09917733	96.22028105	95.3572116	94.50954459	93.6768707	92.858795
200310A00021	3/10/2020	1.1	3/10/2025	3/10/2020	99.835312	98.90622743	97.99434058	97.09917733	96.22028105	95.3572116	94.50954459	93.6768707	92.858795
200310A00028	3/10/2020	1.1	3/10/2025	3/10/2020	99.835312	98.90622743	97.99434058	97.09917733	96.22028105	95.3572116	94.50954459	93.6768707	92.858795
200310A00033	3/10/2020	0.91	3/10/2025	3/10/2020	99.803305	98.87229809	97.95855727	97.06160571	96.18098418	95.31625009	94.46697668	93.63275238	92.81318012
200310A00034	3/10/2020	1.41	3/11/2030	3/10/2020	105.59732	99.78862518	94.33407705	89.21032247	84.39566029	79.8699176	75.61433477	71.61145965	67.84505026
200310A00038	3/10/2020	1.41	3/11/2030	3/10/2020	105.59732	99.78862518	94.33407705	89.21032247	84.39566029	79.8699176	75.61433477	71.61145965	67.84505026
200310A00040	3/10/2020	1.36	3/10/2028	3/10/2020	103.40641	99.54918231	95.85624704	92.3197753	88.932349	85.68694004	82.57688779	79.59587786	76.73792236
200310A00041	3/10/2020	1.39	3/12/2029	3/10/2020	104.74192	99.89690501	95.30321349	90.94655154	86.8135091	82.8915012	79.16871308	75.63404919	72.27708587
200310A00042	3/10/2020	1.41	3/11/2030	3/10/2020	105.59732	99.78862518	94.33407705	89.21032247	84.39566029	79.8699176	75.61433477	71.61145965	67.84505026
200310A00051	3/10/2020	1.41	3/8/2030	3/10/2020	105.59351	99.79241851	94.34456092	89.22667175	84.41713182	79.89584238	75.64411091	71.64454601	67.88096066
200310A00054	3/10/2020	1.1	3/10/2025	3/10/2020	99.835312	98.90622743	97.99434058	97.09917733	96.22028105	95.3572116	94.50954459	93.6768707	92.858795
200310A00065	3/13/2020	1.1	3/13/2025	3/13/2020	99.83757	98.90053258	97.98098856	97.07845183	96.19245406	95.32254399	94.46828664	93.62926259	92.8050673
200310A00067	3/10/2020	0.94	3/10/2025	3/10/2020	99.762698	99.2292434	98.70298097	98.18374977	97.67139402	97.1657628	96.6667098	96.1740932	95.68777544
200310A00073	3/12/2020	2.12	3/11/2027	3/12/2020	104.38016	101.4667765	98.649996	95.92609535	93.29151768	90.74286239	88.27687729	85.89045136	83.58060768
200311A00006	3/13/2020	1.12	3/10/2025	3/13/2020	99.854286	98.92510464	98.0131223	97.11786477	96.23887541	95.37571404	94.52795627	93.69519274	92.87702848
200311A00015	3/11/2020	1.26	3/11/2027	3/11/2020	101.80259	98.98751017	96.26704655	93.63747601	91.09524594	88.6369639	86.25938937	83.95942601	81.7341143
200311A00026	3/11/2020	1.34	3/11/2030	3/11/2020	104.48842	99.34833407	94.51171871	89.95877855	85.67111398	81.63161903	77.82438369	74.23460405	70.84849966
200311A00031	3/11/2020	1.41	12/24/2027	3/11/2020	103.31287	99.66035906	96.15577475	92.79228937	89.56343383	86.46307589	83.48540029	80.62489023	77.87631005
200311A00040	3/12/2020	1.3	3/11/2025	3/12/2020	100.02635	99.0936447	98.17824515	97.27967594	96.39747629	95.5312021	94.68042522	93.84473273	93.02372626
200311A00050	3/2/2021	1.46	3/2/2026	3/2/2021	101.18886	99.30644296	97.4681688	95.67273975	93.91890569	92.2054612	90.53124356	88.89513103	87.29604107
200311A00052	3/2/2021	1.43	2/28/2025	3/2/2021	100.13179	99.22770943	98.33986486	97.46782499	96.61117112	95.76949917	94.94241914	94.12955442	93.33054126
200311A00055	3/11/2020	1.66	12/17/2027	3/11/2020	104.21561	100.5643918	97.06023997	93.69639792	90.4664646	87.3643705	84.3843582	81.52096426	78.76900224
200311A00056	3/13/2020	1.27	4/10/2024	3/13/2020	99.995252	99.9675453	99.9398685	99.9122219	99.88460546	99.85701913	99.82946285	99.80193656	99.77444022
200312A00004	3/13/2020	1.23	1/24/2025	3/13/2020	99.910453	99.10050456	98.30362846	97.51951028	96.7478456	95.98833963	95.24070683	94.50467053	93.77996258
200312A00006	3/12/2020	1.23	3/12/2025	3/12/2020	99.960861	99.02583917	98.10821989	97.20752127	96.32327872	95.45504453	94.60238709	93.76489021	92.94215239

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200312A00009	3/12/2020	1.46	3/12/2027	3/12/2020	102.43878	99.55160631	96.76048973	94.06172344	91.45176375	88.92722287	86.48486112	84.12157963	81.83441331
200312A00014	3/12/2020	1.04	3/12/2025	3/12/2020	99.928758	98.991798	98.07230984	97.16980878	96.2838276	95.41391608	94.55964022	93.72058155	92.89633639
200312A00015	3/12/2020	1.23	3/10/2025	3/12/2020	99.958642	99.02892929	98.11642172	97.22064568	96.34114438	95.4774775	94.62922051	93.79596393	92.97731266
200312A00037	3/12/2020	1.3	3/12/2025	3/12/2020	100.02765	99.09228977	98.17433262	97.27330046	96.38872862	95.52016929	94.6671908	93.82937684	93.00632585
200313A00032	3/18/2020	1.46	3/18/2025	3/18/2020	100.19076	99.23865222	98.30455455	97.38796291	96.48838877	95.60536162	94.73842818	93.88715158	93.05111065
200316A00008	3/16/2020	1.31	3/15/2030	3/16/2020	102.19815	99.26637574	96.46017156	93.77300366	91.19872704	88.73156042	86.3660622	84.09710823	81.91987108
200316A00009	3/16/2020	1.25	3/14/2025	3/16/2020	99.982273	99.04184324	98.11901526	97.21329883	96.3242215	95.45132809	94.59417987	93.75235386	92.92544212
200316A00037	3/16/2020	1.06	3/14/2025	3/16/2020	99.949991	99.00760801	98.08289761	97.17536595	96.28453791	95.40995577	94.55117836	93.70778041	92.87935174
200316A00043	3/16/2020	1.3	3/14/2025	3/16/2020	100.03026	99.08957959	98.16650764	97.26055039	96.37123532	95.49810719	94.6407272	93.79867232	92.97153454
200316A00049	3/16/2020	1.25	3/14/2025	3/16/2020	99.982273	99.04184324	98.11901526	97.21329883	96.3242215	95.45132809	94.59417987	93.75235386	92.92544212
200316A00050	3/16/2020	1.54	3/16/2027	3/16/2020	102.68812	99.78697262	96.98265147	94.27140756	91.64965705	89.11397438	86.66108432	84.28785448	81.99128825
200316A00055	3/16/2020	1.06	3/14/2025	3/16/2020	99.949991	99.00760801	98.08289761	97.17536595	96.28453791	95.40995577	94.55117836	93.70778041	92.87935174
200317A00009	3/17/2020	1.61	3/16/2035	3/17/2020	105.79652	100.2362346	95.08705399	90.3134949	85.88346346	81.76790259	77.94048173	74.37732036	71.0567413
200317A00023	3/17/2020	1.1	3/17/2025	3/17/2020	99.991937	99.04136718	98.10877083	97.19364238	96.29549474	95.41385883	94.54828268	93.69833069	92.8635829
200317A00024	3/17/2020	1.09	3/17/2025	3/17/2020	99.844508	99.30919517	98.78113549	98.26016555	97.74612723	97.23886738	96.73823757	96.24409394	95.75629701
200317A00027	3/17/2020	1.29	3/17/2025	3/17/2020	100.02448	99.07588477	98.14519127	97.23189732	96.3355186	95.4555886	94.59165786	93.74329313	92.91007672
200317A00043	3/17/2020	1.29	3/15/2030	3/17/2020	102.61747	99.58881665	96.69243012	93.92131456	91.2689003	88.72901186	86.29584151	83.96392496	81.72811867
200317A00045	3/19/2020	1.43	3/19/2025	3/19/2020	100.1633	99.20868179	98.27217356	97.35326503	96.45146371	95.56629538	94.69730318	93.84404686	93.00610202
200317A00065	3/19/2020	2.05	3/19/2025	3/19/2020	100.7668	99.8090304	98.86941387	97.94743772	97.04260859	96.15445139	95.28250842	94.42633862	93.58551681
200318A00012	3/18/2020	1.68	3/18/2033	3/18/2020	107.26499	101.4037811	95.96478987	90.91315767	86.21717418	81.84797432	77.77926443	73.98707626	70.44954603
200318A00013	3/18/2020	1.5	3/18/2025	3/18/2020	100.22959	99.2772758	98.34297867	97.42619018	96.52642174	95.64320278	94.77607997	93.92461639	93.08839081
200318A00038	3/18/2020	1.48	3/18/2025	3/18/2020	100.21018	99.25796401	98.32376661	97.40707655	96.50740525	95.6242822	94.75725408	93.90588399	93.06975073
200318A00047	3/18/2020	1.29	3/18/2025	3/18/2020	100.17769	99.2234914	98.28738207	97.36884885	96.4674004	95.58256359	94.71388258	93.8609181	93.02324667
200318A00054	3/18/2020	1.56	3/18/2025	3/18/2020	100.28783	99.33521115	98.40061485	97.48353109	96.58347119	95.69996452	94.83255765	93.9808136	93.14431104
200319A00035	3/19/2020	1.72	3/18/2033	3/19/2020	107.50383	101.6299176	96.17912579	91.11651697	86.41031435	82.03159231	77.95400191	74.1535245	70.60825028
200320A00049	3/25/2020	1.47	3/25/2025	3/25/2020	100.21284	99.24204577	98.28997208	97.35607717	96.43984444	95.54077668	94.65839519	93.79223893	92.94186371
200320A00052	3/25/2020	1.47	3/25/2025	3/25/2020	100.21284	99.24204577	98.28997208	97.35607717	96.43984444	95.54077668	94.65839519	93.79223893	92.94186371
200323A00090	3/23/2020	1.55	3/23/2027	3/23/2020	101.32707	99.58482099	97.89036007	96.24199991	94.63812443	93.0771862	91.55770306	90.07825485	88.63748038
200324A00012	3/25/2020	1.78	3/25/2025	3/25/2020	100.51968	99.54726801	98.5935889	97.65810994	96.74031405	95.83970357	94.95579936	94.08813994	93.23628069
200324A00013	3/25/2020	1.78	3/25/2025	3/25/2020	100.51968	99.54726801	98.5935889	97.65810994	96.74031405	95.83970357	94.95579936	94.08813994	93.23628069
200324A00029	3/24/2020	1.86	3/24/2025	3/24/2020	100.59604	99.62587195	98.67434995	97.74093701	96.82511996	95.92640487	95.04431615	94.1783957	93.3282021
200324A00051	3/24/2020	1.73	11/1/2024	3/24/2020	100.15129	99.56507648	98.98570381	98.41304928	97.84699667	97.28743242	96.73424555	96.18732761	95.6465726
200324A00066	3/26/2020	1.81	3/26/2025	3/26/2020	100.55208	99.57683282	98.6204284	97.68232291	96.76199517	95.85894362	94.9726854	94.1027555	93.24870595

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200325A00009	3/27/2020	1.67	3/27/2025	3/27/2020	100.41543	99.43825786	98.48001645	97.54016101	96.61816651	95.71352772	94.82575832	93.95439	93.09897163
200325A00016	3/30/2020	1.67	3/31/2025	3/30/2020	100.42469	99.43684437	98.4683401	97.51861014	96.58711308	95.67332813	94.77675417	93.89690881	93.03332753
200325A00030	3/25/2020	1.5	3/25/2025	3/25/2020	100.39761	99.42363075	98.46845661	97.5315479	96.61238477	95.71046693	94.82531273	93.95645831	93.10345677
200325A00043	3/25/2020	1.62	6/25/2024	3/25/2020	100.03775	99.80077416	99.56492501	99.33019518	99.09657672	98.86406171	98.63264234	98.40231086	98.17305959
200325A00044	3/25/2020	1.7	12/23/2024	3/25/2020	100.21991	99.49413366	98.77884005	98.07380149	97.37879859	96.6936182	96.01805315	95.35190209	94.69496923
200325A00046	3/25/2020	1.76	3/25/2025	3/25/2020	100.49989	99.52757625	98.57400072	97.63862395	96.72092891	95.82041796	94.93661199	94.06904955	93.21728605
200325A00047	3/25/2020	1.68	9/25/2024	3/25/2020	100.12713	99.64003459	99.15766906	98.67996579	98.20685741	97.73827785	97.27416228	96.81444712	96.35906998
200326A00009	3/27/2020	1.54	3/27/2025	3/27/2020	100.28604	99.30955609	98.35199524	97.41281124	96.49147928	95.58749431	94.70037021	93.82963886	92.97484931
200326A00011	3/30/2020	1.54	3/31/2025	3/30/2020	100.29387	99.30673234	98.33892347	97.38987949	96.4590592	95.54594202	94.65002703	93.77083204	92.90789271
200326A00016	3/26/2020	1.54	3/25/2025	3/26/2020	100.28212	99.31096692	98.35853072	97.42427812	96.50769242	95.6082763	94.72555097	93.85905529	93.00834496
200326A00028	3/26/2020	1.54	3/26/2025	3/26/2020	100.28408	99.31026159	98.35526301	97.4185446	96.49958559	95.59788482	94.71295983	93.84434599	92.99159569
200326A00029	3/26/2020	1.82	3/26/2027	3/26/2020	103.55807	100.6181627	97.77711564	95.03106578	92.3763248	89.80936882	87.32683005	84.92548886	82.60226647
200326A00032	3/26/2020	1.49	3/26/2030	3/26/2020	102.83877	99.81094511	96.91511602	94.14431448	91.49199342	88.95199799	86.51853943	84.18617073	81.94976421
200326A00037	3/26/2020	1.78	3/26/2035	3/26/2020	106.56603	101.1308922	96.09180252	91.41488281	87.06946534	83.02776685	79.26459509	75.75708725	72.48447645
200327A00031	3/27/2020	1.18	3/27/2025	3/27/2020	99.927724	98.9531512	97.99747496	97.06015034	96.14065309	95.23847871	94.35314161	93.48417417	92.63112595
200327A00037	3/27/2020	1.18	3/27/2026	3/27/2020	100.96314	99.013687	97.11156504	95.25533791	93.44361844	91.67507098	89.94840907	88.26239328	86.61582914
200327A00043	3/27/2020	1.48	3/27/2028	3/27/2020	104.46421	100.527948	96.76131121	93.15611466	89.70460984	86.39946108	83.23372123	80.20080898	77.29448767
200327A00045	3/27/2020	2.24	3/27/2034	3/27/2020	117.17266	107.0889366	97.97015507	89.7184692	82.24643001	75.47583674	69.33671613	63.76641901	58.7088201
200327A00046	3/27/2020	1.23	3/27/2025	3/27/2020	99.97749	99.00265188	98.04671389	97.10913102	96.18937895	95.2869531	94.40136781	93.53215538	92.6788653
200327A00047	3/27/2020	0.99	3/27/2025	3/27/2020	99.894117	98.91750156	97.95985795	97.02063806	96.09931467	95.19538048	94.30834724	93.43774478	92.58312025
200327A00048	3/27/2020	1.18	3/24/2025	3/27/2020	99.924811	98.95819723	98.01017781	97.08022096	96.16781454	95.27246562	94.39369956	93.53105921	92.68410405
200327A00051	3/27/2020	0.99	3/27/2025	3/27/2020	99.894117	98.91750156	97.95985795	97.02063806	96.09931467	95.19538048	94.30834724	93.43774478	92.58312025
200327A00056	3/27/2020	1.18	3/27/2025	3/27/2020	99.927724	98.9531512	97.99747496	97.06015034	96.14065309	95.23847871	94.35314161	93.48417417	92.63112595
200327A00060	3/27/2020	1.18	3/27/2025	3/27/2020	99.927724	98.9531512	97.99747496	97.06015034	96.14065309	95.23847871	94.35314161	93.48417417	92.63112595
200327A00061	3/31/2020	1.18	3/31/2025	3/31/2020	99.931606	98.94642211	97.98053895	97.0333946	96.10444845	95.19318049	94.29909036	93.42169638	92.56053474
200327A00073	3/27/2020	0.99	3/27/2025	3/27/2020	99.894117	98.91750156	97.95985795	97.02063806	96.09931467	95.19538048	94.30834724	93.43774478	92.58312025
200327A00084	3/27/2020	1.1	3/27/2025	3/27/2020	99.862167	98.83589218	97.83094831	96.84667279	95.88243047	94.93761205	94.01163271	93.10393097	92.21396751
200327A00094	3/27/2020	1.6	3/27/2030	3/27/2020	105.56586	100.6100597	95.9423058	91.54391846	87.39753814	83.48702365	79.79736012	76.3145742	73.02565629
200330A00006	3/30/2020	0.9	3/28/2025	3/30/2020	99.805089	98.82629494	97.86656776	96.92535488	96.00212516	95.09636754	94.20759021	93.33531962	92.47909968
200330A00007	3/30/2020	0.93	4/1/2024	3/30/2020	99.99973	99.99695901	99.99419008	99.99142348	99.98865921	99.98589727	99.98313765	99.98038036	99.97762537
200330A00008	3/30/2020	1.09	3/28/2025	3/30/2020	99.838869	98.8621237	97.9043692	96.96505657	96.04365762	95.13966414	94.25258698	93.38195516	92.52731503
200330A00011	3/30/2020	0.93	4/1/2024	3/30/2020	99.99973	99.99695901	99.99419008	99.99142348	99.98865921	99.98589727	99.98313765	99.98038036	99.97762537
200330A00028	3/30/2020	1.09	3/28/2025	3/30/2020	99.838869	98.8621237	97.9043692	96.96505657	96.04365762	95.13966414	94.25258698	93.38195516	92.52731503

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200330A00037	3/30/2020	1.09	3/28/2025	3/30/2020	99.838869	98.8621237	97.9043692	96.96505657	96.04365762	95.13966414	94.25258698	93.38195516	92.52731503
200330A00038	3/30/2020	1.79	3/29/2030	3/30/2020	107.89046	101.9693604	96.41083319	91.19082346	86.2869903	81.67857704	77.34629107	73.27219343	69.43959735
200330A00041	4/1/2020	1.09	4/1/2025	4/1/2020	99.84145	98.85411759	97.88618461	96.93708434	96.00627187	95.09322316	94.19743399	93.31841905	92.45571106
200330A00044	3/30/2020	1.09	3/28/2025	3/30/2020	99.838869	98.8621237	97.9043692	96.96505657	96.04365762	95.13966414	94.25258698	93.38195516	92.52731503
200330A00045	3/30/2020	1.47	3/30/2027	3/30/2020	102.52523	99.59057536	96.75507147	94.01483415	91.36614949	88.80546975	86.32940496	83.93471493	81.61830169
200330A00047	3/30/2020	1.5	3/30/2035	3/30/2020	105.16359	99.63635419	94.51780497	89.77267071	85.36904257	81.27803141	77.47345923	73.9315842	70.63085532
200330A00054	3/30/2021	1.19	3/30/2026	3/30/2021	100.73408	98.78407422	96.88152878	95.02499347	93.2130744	91.44442952	89.71776632	88.03183967	86.38544967
200330A00058	3/30/2020	1.49	3/29/2030	3/30/2020	105.00696	100.0700956	95.42046781	91.03943462	86.90967117	83.01506967	79.34064714	75.87246082	72.59753033
200330A00066	3/30/2020	1.08	3/31/2025	3/30/2020	99.830978	98.84633594	97.8809877	96.93437102	96.00594547	95.09519118	94.20160794	93.32471425	92.46404642
200330A00079	3/30/2020	1.51	3/30/2035	3/30/2020	105.22102	99.69076575	94.56942128	89.8216957	85.41566273	81.32241746	77.5157676	73.97195834	70.66942693
200331A00011	3/31/2020	1.09	3/31/2025	3/31/2020	99.841041	98.85634455	97.89094282	96.94427338	96.01579577	95.10499011	94.21135619	93.33441246	92.47369525
200331A00016	3/31/2020	1.11	3/31/2026	3/31/2020	100.83321	98.87473918	96.96407423	95.0997518	93.28036389	91.50455505	89.77102005	88.07850162	86.42578834
200331A00017	3/31/2020	0.9	3/31/2025	3/31/2020	99.806967	98.8202015	97.85280747	96.9042193	95.9738935	95.06130732	94.16595778	93.28736075	92.42505007
200331A00022	4/1/2020	1.07	4/1/2025	4/1/2020	99.821269	98.83404604	97.86622059	96.91722637	95.98651854	95.07357307	94.17788577	93.29897137	92.43636262
200331A00056	3/31/2020	0.96	3/29/2030	3/31/2020	101.53734	98.60722294	95.80306856	93.11830289	90.54674423	88.08257783	85.72033151	83.45485318	81.2812899
200331A00060	3/31/2020	1.09	3/31/2025	3/31/2020	99.841041	98.85634455	97.89094283	96.94427338	96.01579577	95.10499011	94.21135619	93.33441246	92.47369525
200401A00001	4/1/2020	1.01	4/1/2025	4/1/2020	99.760728	98.77383141	97.8063285	96.85765246	95.92725853	95.01462278	94.1192411	93.24062833	92.37831729
200401A00013	4/1/2020	1.01	4/1/2025	4/1/2020	99.760728	98.77383141	97.8063285	96.85765246	95.92725853	95.01462278	94.1192411	93.24062832	92.37831729
200401A00023	4/1/2020	0.82	4/1/2025	4/1/2020	99.7265	98.73752781	97.76802672	96.81742644	95.88517918	94.97075809	94.07365631	93.19338604	92.32947762
200402A00009	4/2/2020	1.03	4/2/2025	4/2/2020	99.781153	98.79151303	97.82137316	96.87016212	95.93733067	95.02235066	94.12471396	93.24393158	92.37953273
200402A00010	4/2/2020	0.89	4/2/2024	4/2/2020	99.997873	99.99233108	99.98679386	99.98126147	99.97573389	99.97021111	99.96469313	99.95917994	99.95367154
200402A00013	4/2/2020	0.89	4/2/2024	4/2/2020	99.997873	99.99233108	99.98679386	99.98126147	99.97573389	99.97021111	99.96469313	99.95917994	99.95367154
200402A00014	4/2/2020	0.84	4/2/2025	4/2/2020	99.746857	98.75513345	97.7829881	96.82984594	95.89515468	94.97838321	94.07902064	93.19657533	92.33057396
200402A00021	4/2/2020	0.77	10/2/2024	4/2/2020	99.73317	99.22756504	98.7270693	98.23160528	97.74109739	97.25547158	96.77465523	96.29857719	95.82716768
200402A00036	4/2/2020	0.71	4/2/2024	4/2/2020	99.997295	99.99174686	99.98620401	99.98066605	99.97513296	99.96960475	99.96408141	99.95856292	99.95304929
200402A00038	4/2/2020	0.84	4/2/2025	4/2/2020	99.746857	98.75513345	97.7829881	96.82984594	95.89515468	94.97838321	94.07902064	93.19657533	92.33057396
200402A00041	4/2/2020	1.03	4/2/2025	4/2/2020	99.781153	98.79151303	97.82137316	96.87016212	95.93733067	95.02235066	94.12471396	93.24393158	92.37953273
200402A00044	4/2/2020	1.65	4/2/2030	4/2/2020	107.06273	101.1556779	95.611354	90.40564088	85.51614233	80.92205348	76.60403984	72.54412624	68.72559462
200402A00048	4/2/2020	0.71	4/2/2024	4/2/2020	99.997295	99.99174686	99.98620401	99.98066605	99.97513296	99.96960475	99.96408141	99.95856292	99.95304929
200402A00050	4/6/2020	0.73	4/5/2024	4/6/2020	99.989194	99.97396061	99.95874203	99.94353818	99.92834902	99.91317454	99.89801472	99.88286952	99.86773893
200403A00006	4/3/2020	1.05	4/3/2025	4/3/2020	99.801688	98.80930324	97.83652552	96.88277872	95.94750915	95.03018439	94.13029229	93.24734003	92.38085318
200403A00018	4/3/2020	0.91	4/3/2024	4/3/2020	99.996291	99.98797956	99.97967509	99.97137807	99.9630885	99.95480635	99.94653162	99.93826429	99.93000436
200403A00025	4/3/2020	0.91	4/3/2024	4/3/2020	99.996291	99.98797956	99.97967509	99.97137807	99.9630885	99.95480635	99.94653162	99.93826429	99.93000436

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200406A00006	4/6/2020	1.13	4/7/2025	4/6/2020	99.884924	98.88154957	97.89821142	96.93431405	95.98928572	95.06257691	94.15365925	93.26202452	92.38718369
200406A00014	4/6/2020	1.33	4/6/2035	4/6/2020	104.95827	99.38280937	94.22330719	89.44356753	85.01087451	80.89563201	77.07104253	73.51282128	70.19894139
200406A00027	4/6/2020	1.31	4/5/2030	4/6/2020	104.76375	99.80583248	95.1377257	90.74054093	86.59673092	82.68998604	79.0051402	75.5280844	72.24568734
200406A00029	4/6/2020	1.61	4/5/2030	4/6/2020	106.18374	100.7670681	95.67634501	90.89000694	86.38803069	82.15181833	78.16408819	74.40877477	70.87093686
200406A00030	4/6/2020	1.61	4/5/2030	4/6/2020	106.18374	100.7670681	95.67634501	90.89000694	86.38803069	82.15181833	78.16408819	74.40877477	70.87093686
200406A00032	4/6/2020	1.09	4/4/2025	4/6/2020	99.854413	98.79795952	97.76394451	96.7516576	95.7604181	94.78957353	93.83849812	92.90659151	91.99327745
200406A00033	4/6/2020	1.09	4/4/2025	4/6/2020	99.854413	98.79795952	97.76394451	96.7516576	95.7604181	94.78957353	93.83849812	92.90659151	91.99327745
200406A00035	4/6/2020	1.05	4/4/2025	4/6/2020	99.811818	98.78358109	97.77696396	96.79128612	95.82589498	94.88016492	93.95349586	93.04531201	92.15506061
200406A00036	4/6/2020	1.09	4/4/2025	4/6/2020	99.854413	98.79795952	97.7639445	96.7516576	95.7604181	94.78957353	93.83849812	92.90659151	91.99327745
200406A00053	4/6/2020	1.13	4/7/2025	4/6/2020	99.884924	98.88154957	97.89821142	96.93431405	95.98928572	95.06257691	94.15365925	93.26202452	92.38718369
200406A00060	4/6/2020	1.03	4/5/2024	4/6/2020	99.99477	99.98091708	99.96707717	99.95325045	99.93943688	99.92563646	99.91184915	99.89807494	99.88431381
200407A00001	4/8/2020	2.41	4/7/2025	4/8/2020	101.19754	100.1869763	99.19654799	98.225658	97.27373237	96.34021941	95.42458866	94.52632985	93.644952
200407A00002	4/8/2020	1.82	4/8/2024	4/8/2020	100.00912	99.98694601	99.96479262	99.94266217	99.92055462	99.89846993	99.87640805	99.85436896	99.8323526
200407A00004	4/7/2020	0.99	4/7/2025	4/7/2020	99.901607	98.89583009	97.91017233	96.94403562	95.99684495	95.06804768	94.15711246	93.26352824	92.3868033
200407A00019	4/7/2020	1.06	4/8/2024	4/7/2020	99.991459	99.96929733	99.94715842	99.92504243	99.90294932	99.88087906	99.8588316	99.83680691	99.81480494
200408A00021	4/8/2020	0.99	4/4/2025	4/8/2020	99.899895	98.90205523	97.92401685	96.96519508	96.02502843	95.10297706	94.19852177	93.31116306	92.44042015
200413A00009	4/13/2020	0.77	4/13/2027	4/13/2020	100.06693	98.51390567	97.00067882	95.52590313	94.08829235	92.68661323	91.31968293	89.98636649	88.6855746
200413A00011	4/13/2020	0.94	4/12/2024	4/13/2020	99.982675	99.94943947	99.91624222	99.88308304	99.84996187	99.81687862	99.78383325	99.75082566	99.7178558
200413A00013	4/13/2020	1.19	4/12/2030	4/13/2020	101.93917	98.89811201	95.99116585	93.21117642	90.55142655	88.00560526	85.56778041	83.23237339	80.99413565
200413A00027	4/13/2020	0.94	4/12/2024	4/13/2020	99.982675	99.94943947	99.91624222	99.88308304	99.84996187	99.81687862	99.78383325	99.75082566	99.7178558
200414A00009	4/14/2020	0.82	4/14/2025	4/14/2020	99.687025	99.11130939	98.54400595	97.98491063	97.43382634	96.89056264	96.35493542	95.82676668	95.30588418
200414A00014	4/14/2020	0.76	4/12/2024	4/14/2020	99.980473	99.94720219	99.91397006	99.88077645	99.84762126	99.81450444	99.7814259	99.74838557	99.71538337
200414A00016	4/16/2020	1.64	4/15/2024	4/16/2020	100.00766	99.9660927	99.92458145	99.88312125	99.84171199	99.80035359	99.75904594	99.71778894	99.6765825
200414A00024	4/14/2020	1.37	4/14/2027	4/14/2020	102.2239	99.32145759	96.5186557	93.81147956	91.19610521	88.66888596	86.22634292	83.86515617	81.58215638
200415A00020	4/15/2020	0.86	4/15/2024	4/15/2020	99.974628	99.93309377	99.89161036	99.85017797	99.80879649	99.76746582	99.72618588	99.68495656	99.64377776
200415A00021	4/15/2020	1.37	4/15/2027	4/15/2020	102.28132	99.30759147	96.43546197	93.66089746	90.98004933	88.38924364	85.88497211	83.46388358	81.12277598
200415A00023	4/15/2020	1.71	4/15/2030	4/15/2020	107.45553	101.5026319	95.91689408	90.67379481	85.75057067	81.12608323	76.78069498	72.69615538	68.85549607
200415A00024	4/15/2020	2.2	4/16/2035	4/15/2020	116.07279	105.1623077	95.39137319	86.63428256	78.77981823	71.72951075	65.39611919	59.70229939	54.57943609
200415A00027	4/15/2020	0.86	4/15/2024	4/15/2020	99.974628	99.93309377	99.89161036	99.85017797	99.80879649	99.76746582	99.72618588	99.68495656	99.64377776
200415A00031	4/15/2020	0.97	4/15/2025	4/15/2020	99.721482	98.69794822	97.69528888	96.71287111	95.75008714	94.8063533	93.88110886	92.97381488	92.08395322
200415A00035	4/17/2020	2.16	4/16/2025	4/17/2020	100.97124	99.93808397	98.92600539	97.93436749	96.96255562	96.00997957	95.07607236	94.16028911	93.26210597
200415A00036	4/15/2020	0.91	10/15/2024	4/15/2020	99.700616	99.16129728	98.62780134	98.10003413	97.57790364	97.06131982	96.55019455	96.04444156	95.54397638
200415A00037	4/15/2020	0.97	4/15/2025	4/15/2020	99.721482	98.69794822	97.69528888	96.71287111	95.75008714	94.8063533	93.88110886	92.97381488	92.08395322

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200415A00038	4/15/2020	1.37	4/15/2027	4/15/2020	102.28132	99.30759147	96.43546197	93.66089746	90.98004933	88.38924364	85.88497211	83.46388358	81.12277598
200417A00002	4/17/2020	0.96	4/17/2025	4/17/2020	99.711112	98.68237256	97.67472158	96.68751582	95.72013832	94.77199672	93.84252207	92.93116762	92.03740782
200417A00004	4/17/2020	0.86	4/17/2024	4/17/2020	99.971086	99.92401914	99.87701239	99.83006604	99.78317997	99.73635407	99.68958821	99.64288227	99.59623614
200417A00008	4/17/2020	0.96	4/17/2025	4/17/2020	99.711112	98.68237256	97.67472158	96.68751582	95.72013832	94.77199672	93.84252207	92.93116762	92.03740782
200417A00009	4/17/2020	1.35	4/16/2027	4/17/2020	102.22396	99.24843578	96.37464113	93.59853945	90.9162742	88.32416404	85.81869375	83.39650568	81.05439172
200417A00014	4/17/2020	0.96	4/17/2025	4/17/2020	99.711112	98.68237256	97.67472158	96.68751582	95.72013832	94.77199672	93.84252207	92.93116762	92.03740782
200417A00016	4/21/2020	2.18	4/21/2025	4/21/2020	101.00922	99.96260274	98.93760937	97.93357472	96.94986088	95.9858556	95.040971	94.11464239	93.20632712
200417A00019	4/17/2020	0.77	4/17/2025	4/17/2020	99.67547	98.64453827	97.63477838	96.64554421	95.67621538	94.72619627	93.79491481	92.88182134	91.98638749
200421A00026	4/21/2020	1.34	4/19/2030	4/21/2020	104.26484	99.319614	94.66432007	90.28000546	86.14906388	82.25513511	78.58300986	75.11854249	71.84857078
200421A00031	4/21/2020	0.84	4/19/2024	4/21/2020	99.96648	99.91388217	99.86135481	99.80889785	99.75651114	99.70419454	99.65194791	99.5997711	99.54766397
200421A00032	4/21/2020	1.31	4/21/2027	4/21/2020	102.11904	99.13172903	96.24690966	93.46049276	90.76857979	88.16745005	85.65355149	83.22349191	80.87403082
200423A00006	4/23/2020	0.82	4/23/2025	4/23/2020	99.728782	98.68171175	97.65646666	96.65237033	95.66877429	94.70505633	93.76061916	92.83488922	91.9273155
200423A00017	4/23/2020	1.82	4/23/2035	4/23/2020	113.42474	102.5520211	92.82501451	84.11658616	76.31432123	69.3187518	63.04180714	57.40545632	52.34051844
200423A00027	4/28/2020	0.88	4/15/2024	4/28/2020	99.975475	99.9339399	99.89245577	99.85102267	99.80964047	99.7683091	99.72702845	99.68579841	99.6446189
200424A00014	4/28/2020	1.01	4/23/2025	4/28/2020	99.764887	98.72005481	97.6969609	96.69493273	95.71332541	94.75152013	93.80892283	92.88496302	91.97909258
200424A00022	4/24/2020	1.39	4/24/2030	4/24/2020	104.52549	99.56161909	94.88922318	90.48921175	86.34385899	82.43669573	78.75241343	75.27677588	71.99653824
200427A00017	4/27/2020	1.02	4/25/2025	4/27/2020	99.776011	98.7258523	97.69764874	96.69071826	95.70440655	94.73808591	93.79115386	92.86303192	91.9531644
200427A00018	4/27/2020	1.51	4/27/2028	4/27/2020	104.18987	100.1911464	96.36739445	92.71003307	89.21095282	85.86248384	82.65736945	79.58874157	76.65009766
200428A00002	4/28/2020	1.47	4/26/2030	4/28/2020	106.83447	100.8412475	95.22051728	89.9472333	84.99816281	80.35174198	75.98794759	71.88817933	68.0351516
200428A00003	4/29/2020	1.01	4/29/2025	4/29/2020	99.766015	98.70538715	97.66714843	96.65059626	95.65505748	94.67988653	93.72446405	92.78819551	91.87051006
200428A00009	4/28/2020	1.08	4/29/2030	4/28/2020	101.59357	98.56229097	95.66473049	92.89375246	90.24265699	87.70514955	85.27531361	82.94758541	80.71673053
200428A00011	4/30/2020	1.95	4/29/2025	4/30/2020	100.78664	99.72011352	98.6760651	97.65378768	96.65260606	95.6718727	94.71096632	93.76929057	92.84627279
200428A00013	4/30/2020	1.49	4/29/2024	4/30/2020	100.00059	99.92031029	99.84015844	99.76013615	99.68024312	99.60047903	99.52084359	99.4413365	99.36195746
200428A00018	4/28/2020	1.33	4/27/2035	4/28/2020	104.1101	98.72475997	93.73583088	89.10911577	84.81368196	80.82152813	77.10728402	73.64794295	70.4226233
200429A00009	4/29/2020	0.78	4/29/2025	4/29/2020	99.685929	98.62327154	97.58308823	96.56467338	95.5673502	94.59046966	93.63340913	92.69557098	91.77638141
200429A00010	4/29/2020	0.78	4/29/2025	4/29/2020	99.685929	98.62327154	97.58308823	96.56467338	95.5673502	94.59046966	93.63340913	92.69557098	91.77638141
200429A00015	4/29/2020	0.66	4/29/2024	4/29/2020	99.94327	99.8629433	99.78274769	99.7026827	99.62274802	99.54294334	99.46326833	99.38372269	99.30430609
200429A00021	5/4/2020	0.97	4/29/2025	5/4/2020	99.722584	98.66220731	97.62421581	96.60790726	95.6126086	94.63767436	93.68248523	92.74644678	91.82898824
200429A00030	4/29/2020	1.41	4/29/2030	4/29/2020	104.92005	99.66873067	94.73273029	90.09112517	85.72450045	81.61483032	77.74537109	74.10056301	70.6659402
200429A00035	5/1/2020	1.41	4/30/2024	5/1/2020	99.993821	99.91078475	99.82788485	99.74512125	99.6624936	99.5800016	99.49764492	99.41542323	99.33333623
200429A00043	5/1/2020	1.56	4/30/2025	5/1/2020	100.36488	99.29815433	98.25397596	97.23163781	96.23046078	95.24979365	94.28901165	93.34751516	92.42472843
200429A00044	5/1/2020	1.86	4/30/2025	5/1/2020	100.69143	99.62281533	98.57677358	97.55259921	96.54961246	95.56716146	94.60462085	93.66139039	92.73689377
200429A00045	5/1/2020	1.54	4/30/2025	5/1/2020	100.34311	99.27651026	98.23245612	97.21024038	96.20918401	95.2286358	94.26797104	93.32659015	92.40391741

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200429A00046	5/1/2020	2.07	4/30/2025	5/1/2020	100.92002	99.85007803	98.80273191	97.77727219	96.77301863	95.78931893	94.82554728	93.88110305	92.9554095
200429A00047	5/1/2020	2.7	4/30/2025	5/1/2020	101.60578	100.5318661	99.48060692	98.45129113	97.44323715	96.45579133	95.48832659	94.54024102	93.61095671
200429A00049	4/29/2020	1.25	4/29/2026	4/29/2020	100.94451	98.91168207	96.92960505	94.99667879	93.11136338	91.27217876	89.47770181	87.72656379	86.01744772
200429A00050	5/1/2020	2.61	4/30/2025	5/1/2020	101.50781	100.4344678	99.38376763	98.35500271	97.34749164	96.36058099	95.39364383	94.44607845	93.51730711
200429A00051	5/1/2020	2.54	4/30/2025	5/1/2020	101.43162	100.3587136	99.30844819	98.28011171	97.27302292	96.2865285	95.32000168	94.3728409	93.44446853
200429A00052	5/1/2020	1.43	4/30/2024	5/1/2020	99.995486	99.91244798	99.8295467	99.74678171	99.66415269	99.58165932	99.49930126	99.41707821	99.33498984
200429A00053	5/1/2020	2.18	4/30/2025	5/1/2020	101.03976	99.9691204	98.92109104	97.89495803	96.89004091	95.90568713	94.94127065	93.99619063	93.06987013
200429A00054	4/29/2020	1.04	4/29/2025	4/29/2020	99.798588	98.73777204	97.6993479	96.68261301	95.68689414	94.71154567	93.75594816	92.81950705	91.90165142
200429A00056	5/1/2020	1.54	4/30/2025	5/1/2020	100.34311	99.27651026	98.23245612	97.21024038	96.20918401	95.2286358	94.26797104	93.32659015	92.40391741
200429A00057	4/29/2020	1.4	4/29/2027	4/29/2020	102.42317	99.40974082	96.50020026	93.69038334	90.97631771	88.35421347	85.82045359	83.37158489	81.00430957
200429A00058	5/1/2020	1.83	4/30/2025	5/1/2020	100.65878	99.59034923	98.54449382	97.52050307	96.51769729	95.53542468	94.57305993	93.63000287	92.70567723
200429A00061	4/29/2020	1.66	10/29/2029	4/29/2020	106.74873	101.2543911	96.07589646	91.19346578	86.58866247	82.24429135	78.14430864	74.273739	70.61859891
200430A00008	4/30/2020	0.94	4/30/2025	4/30/2020	99.690007	98.62718825	97.58686087	96.56831759	95.57088066	94.59390018	93.63675266	92.69883969	91.77958674
200430A00009	4/30/2020	1.16	4/30/2026	4/30/2020	100.75972	98.72616768	96.74343602	94.80992197	92.9240818	91.0844318	89.28954547	87.53805085	85.82862797
200430A00016	4/30/2020	0.82	4/30/2024	4/30/2020	99.944715	99.8617196	99.77886041	99.69613745	99.61355038	99.53109889	99.44878265	99.36660135	99.28455466
200430A00017	4/30/2020	0.94	4/30/2025	4/30/2020	99.690007	98.62718825	97.58686087	96.56831759	95.57088066	94.59390018	93.63675266	92.69883969	91.77958674
200430A00027	4/30/2020	1.31	4/30/2035	4/30/2020	104.09508	98.58486177	93.48479846	88.75926641	84.3760588	80.30603517	76.52280626	73.00245333	69.72327801
200430A00030	4/30/2020	0.96	4/30/2025	4/30/2020	99.711777	98.64883232	97.60838071	96.58971501	95.59215744	94.61505803	93.65779327	92.71976471	91.80039776
200501A00002	5/1/2020	1.3	5/1/2035	5/1/2020	104.0558	98.50908853	93.37791792	88.62597589	84.22045472	80.13168803	76.33282625	72.79954766	69.50980107
200501A00009	5/4/2020	0.67	5/1/2025	5/4/2020	99.583501	98.96969414	98.36545577	97.77053915	97.18470615	96.60772713	96.03938057	95.47945272	94.92773721
200504A00004	5/4/2020	0.75	5/5/2025	5/4/2020	99.652494	98.57424424	97.51914262	96.48645125	95.4754629	94.48549979	93.51591212	92.56607657	91.63539504
200504A00006	5/4/2020	0.94	5/5/2025	5/4/2020	99.689765	98.61384016	97.56097191	96.53042578	95.52149842	94.53351576	93.56583147	92.61782557	91.68890308
200504A00007	5/4/2020	1.47	5/4/2028	5/4/2020	104.05432	100.0400038	96.20202711	92.53171478	89.02086396	85.66171825	82.44694089	79.3695896	76.42309312
200505A00004	5/5/2020	0.77	5/5/2025	5/5/2020	99.674559	98.59617947	97.54095037	96.5081334	95.49702129	94.50693621	93.53722831	92.58727424	91.65647585
200505A00005	5/5/2020	0.77	5/5/2025	5/5/2020	99.674559	98.59617947	97.54095037	96.5081334	95.49702129	94.50693621	93.53722831	92.58727424	91.65647585
200506A00002	5/8/2020	0.97	5/5/2025	5/8/2020	99.722831	98.64671286	97.59365391	96.56291988	95.55380738	94.56564224	93.59777808	92.64959485	91.72049752
200506A00005	5/6/2020	0.97	5/6/2025	5/6/2020	99.722865	98.64412456	97.58855716	96.55542267	95.54401253	94.55364771	93.58367722	92.63347669	91.70244695
200506A00010	5/6/2020	0.94	5/6/2026	5/6/2020	100.58099	98.52855447	96.52779133	94.57705752	92.67477077	90.81941095	89.00951717	87.24368495	85.52056356
200511A00006	5/11/2020	1.65	5/13/2030	5/11/2020	107.15719	101.1406594	95.49933621	90.20789965	85.24286183	80.58242965	76.20637384	72.09590882	68.23358245
200511A00017	5/11/2020	0.83	2/3/2025	5/11/2020	99.578666	98.74364713	97.92254672	97.11501898	96.32072985	95.53935616	94.77058518	94.01411419	93.26965009
200511A00018	5/11/2020	0.98	2/2/2026	5/11/2020	100.167	98.37445818	96.62238848	94.90964934	93.23513546	91.59777944	89.99655027	88.43045183	86.8985215
200511A00019	5/11/2020	1.18	2/1/2027	5/11/2020	101.49151	98.72583862	96.04907917	93.45791329	90.94916874	88.51980781	86.16692079	83.88771995	81.6795337
200511A00020	5/11/2020	1.4	2/1/2028	5/11/2020	103.41339	99.65846965	96.05946651	92.60913645	89.300605	86.12734986	83.08318116	80.16222275	77.35889479

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200511A00021	5/11/2020	1.53	2/1/2029	5/11/2020	105.29243	100.5410054	96.0306592	91.74797245	87.68033722	83.81590476	80.14353616	76.65275635	73.33371138
200511A00022	5/11/2020	1.6	2/1/2030	5/11/2020	106.62506	100.8897327	95.49757541	90.42636058	85.65540295	81.16544864	76.93856935	72.95806494	69.20837354
200511A00023	5/11/2020	1.7	2/3/2031	5/11/2020	108.03592	101.3134363	95.05365242	89.22239691	83.78818663	78.72199961	73.99707134	69.58870877	65.47412054
200511A00028	5/13/2020	1.02	5/13/2024	5/13/2020	99.945494	99.82669416	99.70819253	99.58998793	99.47207919	99.35446518	99.23714473	99.1201167	99.00337996
200512A00001	5/12/2020	1.17	5/12/2027	5/12/2020	101.70117	98.74222204	95.88689433	93.13092146	90.47024677	87.90100638	85.4195186	83.02227401	80.70592614
200512A00010	5/12/2020	1.48	5/10/2030	5/12/2020	105.50877	100.0447311	94.91400479	90.0942429	85.56471794	81.30619817	77.30083153	73.53203917	69.98441786
200512A00011	5/12/2020	1.48	5/10/2030	5/12/2020	105.50877	100.0447311	94.91400479	90.0942429	85.56471794	81.30619817	77.30083153	73.53203917	69.98441786
200512A00013	5/12/2020	1.17	5/12/2027	5/12/2020	101.70117	98.74222204	95.88689433	93.13092146	90.47024677	87.90100638	85.4195186	83.02227401	80.70592614
200512A00014	5/12/2020	1.17	5/12/2027	5/12/2020	101.70117	98.74222204	95.88689433	93.13092146	90.47024677	87.90100638	85.4195186	83.02227401	80.70592614
200512A00017	5/12/2020	0.85	5/12/2025	5/12/2020	99.589797	98.45256142	97.34162506	96.2560797	95.19505843	94.15773351	93.14331415	92.15104446	91.18020157
200512A00018	5/12/2020	0.85	5/12/2025	5/12/2020	99.589797	98.45256142	97.34162506	96.2560797	95.19505843	94.15773351	93.14331415	92.15104446	91.18020157
200512A00020	5/12/2020	0.86	5/12/2025	5/12/2020	99.598488	98.44579853	97.31989995	96.21986431	95.14480632	94.09388072	93.06628006	92.0612326	91.07800032
200512A00021	5/12/2020	0.86	5/12/2025	5/12/2020	99.598488	98.44579853	97.31989995	96.21986431	95.14480632	94.09388072	93.06628006	92.0612326	91.07800032
200513A00002	5/13/2020	0.56	5/13/2024	5/13/2020	99.904609	99.7857039	99.66709915	99.54879326	99.43078504	99.31307331	99.1956569	99.07853463	98.96170536
200513A00003	5/13/2020	0.68	5/13/2025	5/13/2020	99.572541	98.47373492	97.39898558	96.34751012	95.31855969	94.31141724	93.32539587	92.35983726	91.41411018
200514A00008	5/14/2020	1.23	5/14/2030	5/14/2020	103.72424	98.75277829	94.07564504	89.67340889	85.52803866	81.62279202	77.942116	74.47155584	71.19767126
200518A00019	5/19/2020	0.9	5/19/2025	5/19/2020	99.643456	98.53111969	97.44343557	96.37959172	95.33881163	94.32035222	93.323502	92.34757944	91.39193139
200520A00009	5/20/2020	1.63	5/20/2038	5/20/2020	109.39823	99.02111459	89.87590866	81.80280285	74.66389586	68.34006138	62.72827994	57.73936376	53.29601505
200521A00005	5/21/2020	0.75	5/21/2030	5/21/2020	100.96864	97.93154449	95.02977977	92.25604714	89.60350136	87.06571543	84.6366521	82.3106376	80.08233725
200521A00013	5/21/2020	2.09	5/21/2035	5/21/2020	114.90696	103.9733729	94.19218566	85.43525125	77.58930136	70.55414977	64.24112128	58.57167633	53.4762061
200521A00015	5/21/2020	2.14	5/21/2036	5/21/2020	115.6211	103.7786604	93.28194283	83.96995834	75.70177172	68.35391042	61.81812108	55.99942424	50.81442622
200521A00016	5/21/2020	2.18	5/21/2037	5/21/2020	116.26821	103.5403609	92.36195032	82.53472311	73.88677755	66.268941	59.55166133	53.62233709	48.38302251
200521A00017	5/21/2020	2.22	5/21/2038	5/21/2020	117.20635	103.5906619	91.74011962	81.41442551	72.40720542	64.54106436	57.66338564	51.64275704	46.36592793
200522A00009	5/22/2020	0.96	5/22/2030	5/22/2020	101.2757	98.16816961	95.20307249	92.37252154	89.66912926	87.08597136	84.61655434	82.25478574	79.99494653
200527A00012	5/27/2020	1.2	5/27/2027	5/27/2020	101.88524	98.80786762	95.8386746	92.97323402	90.20732845	87.53693893	84.95823422	82.46756074	80.06143309
200527A00013	5/27/2020	1.13	11/25/2026	5/27/2020	101.19185	98.60613041	96.09896725	93.66748595	91.30893892	89.02069768	86.80024679	84.64517807	82.55318523
200527A00014	5/27/2020	1.06	5/27/2026	5/27/2020	100.60797	98.50608623	96.45802976	94.46204493	92.51645024	90.61963204	88.77004122	86.96619003	85.20664913
200527A00015	5/27/2020	0.99	11/26/2025	5/27/2020	100.03731	98.42323819	96.84263641	95.2945279	93.77797448	92.29207413	90.83595912	89.40879442	88.00977613
200527A00016	5/27/2020	0.92	5/27/2025	5/27/2020	99.665431	98.53200441	97.42415802	96.34103412	95.28181329	94.24571194	93.23198038	92.23990101	91.26878662
200529A00004	5/29/2020	0.56	5/29/2024	5/29/2020	99.869755	99.70680813	99.54439617	99.38251634	99.22116603	99.06034264	98.90004357	98.74026627	98.58100817
200529A00022	6/1/2020	0.98	6/1/2026	6/1/2020	100.44483	98.33172898	96.27299379	94.26684606	92.31157855	90.40555337	88.54719856	86.73500483	84.96752251
200601A00009	6/1/2020	0.84	6/2/2025	6/1/2020	99.570961	98.42241503	97.30014742	96.20326542	95.13091645	94.08228569	93.05659402	92.05309612	91.0710786
200604A00004	6/4/2020	0.76	6/4/2024	6/4/2020	99.872054	99.69284355	99.51428106	99.33636264	99.15908478	98.98244401	98.80643689	98.63105998	98.45630988

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200604A00005	6/4/2020	0.89	6/4/2025	6/4/2020	99.63	98.47585624	97.34823847	96.24624169	95.16900145	94.11569176	93.08552302	92.07773999	91.09161996
200604A00009	6/4/2020	0.7	6/4/2025	6/4/2020	99.589736	98.43304301	97.30298249	96.1986447	95.11916042	94.0636992	93.03146718	92.02170513	91.03368656
200604A00010	6/4/2020	0.89	6/4/2025	6/4/2020	99.63	98.47585624	97.34823847	96.24624169	95.16900145	94.11569176	93.08552302	92.07773999	91.09161996
200604A00012	6/4/2020	1.59	6/4/2030	6/4/2020	106.83348	100.7706514	95.08925892	89.76334433	84.76884533	80.08345081	75.68646424	71.55867851	67.68226114
200604A00013	6/4/2020	2.21	6/4/2035	6/4/2020	116.23163	105.1938138	95.32068318	86.4824755	78.56453004	71.46545845	65.09554693	59.37535789	54.23450545
200604A00014	6/4/2020	2.42	6/4/2040	6/4/2020	122.60516	106.9417951	93.54361237	82.06616101	72.21921272	63.75797631	56.47577257	50.19792151	44.77663658
200605A00005	6/5/2020	0.99	6/5/2025	6/5/2020	99.748757	98.59125342	97.46040919	96.35531255	95.27509287	94.21891833	93.18599385	92.17555902	91.18688626
200605A00014	6/5/2020	1.02	6/5/2025	6/5/2020	99.806593	98.59470559	97.41072062	96.25367437	95.12264756	94.01676256	92.93518102	91.87710171	90.84175847
200605A00016	6/5/2020	1.02	6/5/2025	6/5/2020	99.806593	98.59470559	97.41072062	96.25367437	95.12264756	94.01676256	92.93518102	91.87710171	90.84175847
200605A00017	6/5/2020	1.02	6/5/2025	6/5/2020	99.806593	98.59470559	97.41072062	96.25367437	95.12264756	94.01676256	92.93518102	91.87710171	90.84175847
200605A00018	6/5/2020	0.91	6/5/2025	6/5/2020	99.669754	98.45913192	97.27638607	96.12055358	94.99071598	93.88599643	92.80555732	91.74859815	90.71435342
200608A00001	6/8/2020	1.34	6/7/2030	6/8/2020	104.3176	99.27845306	94.54008916	90.08250456	85.88714287	81.93678273	78.21543424	74.70824405	71.40140825
200610A00006	6/10/2020	1.11	6/10/2027	6/10/2020	101.58747	98.56537671	95.6512435	92.84057467	90.12909222	87.51272226	84.98758382	82.5499784	80.19638013
200611A00011	6/11/2020	1.2	6/9/2028	6/11/2020	103.05949	98.9723464	95.06853062	91.33883769	87.77457412	84.36753047	81.10995132	77.99450746	75.01426981
200611A00019	6/11/2020	0.88	12/11/2025	6/11/2020	99.879034	98.2271416	96.61010363	95.02688149	93.47647837	91.95793682	90.47033675	89.01279358	87.5844565
200611A00020	6/11/2020	0.81	6/11/2025	6/11/2020	99.534051	98.36221283	97.21774232	96.09969085	95.0071528	93.93926351	92.89519701	91.87416382	90.87540901
200611A00021	6/11/2020	0.72	6/11/2024	6/11/2020	99.850982	99.6526266	99.45507148	99.2583113	99.06234121	98.86715639	98.67275206	98.47912348	98.28626596
200612A00004	6/12/2020	1.42	6/12/2040	6/12/2020	105.37052	97.27661746	90.04680755	83.5750116	77.76935297	72.55013184	67.84810406	63.60301587	59.76235501
200615A00019	6/17/2020	1.34	6/16/2025	6/17/2020	100.17831	98.98927155	97.82828274	96.69435882	95.58656246	94.50399918	93.44581488	92.41119366	91.39935563
200616A00005	6/16/2020	0.74	6/17/2030	6/16/2020	100.97042	97.87068706	94.91112328	92.08407851	89.3823799	86.7992976	84.32851435	81.96409732	79.70047216
200623A00028	6/23/2020	1.23	6/23/2038	6/23/2020	104.70593	98.20403215	92.26389665	86.82928681	81.85014674	77.2818755	73.08468899	69.22306084	65.66523221
200626A00014	6/26/2020	0.62	6/26/2025	6/26/2020	99.489231	98.27549777	97.09109614	95.93497503	94.80613261	93.70361385	92.62650779	91.57394506	90.5450955
200629A00020	6/29/2020	1.4	6/28/2030	6/29/2020	105.70173	99.61104485	93.90781516	88.56540085	83.55913095	78.8661484	74.46526693	70.33684022	66.46264184
200629A00021	6/29/2020	1.21	6/29/2028	6/29/2020	103.16597	99.02373135	95.06937182	91.29334161	87.6866365	84.24075994	80.94769123	77.79985579	74.79009759
200629A00023	6/29/2020	0.95	6/29/2026	6/29/2020	100.43761	98.2499662	96.12016749	94.04626296	92.02638176	90.05873195	88.14159641	86.27332901	84.45235095
200630A00004	6/30/2020	0.66	7/1/2024	6/30/2020	99.796189	99.5431921	99.29147472	99.04102687	98.79183898	98.54390159	98.29720533	98.0517409	97.80749911
200708A00011	7/10/2020	2.87	7/10/2031	7/10/2020	116.87973	109.4401293	102.5348192	96.12246789	90.16515192	84.62805789	79.47921203	74.68923441	70.23111576
200709A00002	7/10/2020	1.66	7/10/2025	7/10/2020	100.64015	99.38606461	98.15960044	96.95984424	95.78592399	94.6370056	93.51229092	92.41101575	91.33244809
200709A00003	7/10/2020	1.63	7/10/2026	7/10/2020	102.00738	99.77310054	97.59849066	95.48156252	93.42040582	91.41318837	89.45815215	87.55360973	85.69794078
200709A00004	7/10/2020	1.4	7/10/2025	7/10/2020	100.30661	99.05476757	97.83051146	96.6329261	95.46114047	94.31432151	93.19167203	92.09242875	91.01586057
200709A00005	7/10/2020	2.23	7/10/2030	7/10/2020	110.90581	104.6250044	98.74266656	93.23141558	88.0658893	83.22258823	78.67972903	74.41711046	70.41599043
200709A00006	7/10/2020	2.58	7/10/2030	7/10/2020	113.09405	106.7459735	100.7994126	95.22681884	90.00267409	85.10333229	80.50687262	76.19296469	72.14274511
200709A00007	7/10/2020	1.67	7/9/2027	7/10/2020	103.55339	100.3356189	97.23425039	94.24441106	91.36145935	88.58097617	85.89875273	83.31077908	80.81323331

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200709A00008	7/10/2020	1.88	7/10/2026	7/10/2020	102.57757	100.3366751	98.15559585	96.03233238	93.96497047	91.95167411	89.99068169	88.08030225	86.21891211
200709A00019	7/9/2020	0.77	7/9/2025	7/9/2020	99.54476	98.25056623	96.97948649	95.73095292	94.50441627	93.29934472	92.1152232	90.95155275	89.80784988
200709A00021	7/9/2020	0.83	7/9/2025	7/9/2020	99.624851	98.32986128	97.05799939	95.80869728	94.58140535	93.37559143	92.19074016	91.02635224	89.88194388
200709A00025	7/9/2020	1.37	7/9/2030	7/9/2020	104.95179	99.38665659	94.16890518	89.27479627	84.6823383	80.37114761	76.32232293	72.51833039	68.94289788
200716A00004	7/16/2020	0.97	7/16/2027	7/16/2020	101.22379	98.12579855	95.14148158	92.2660603	89.49498354	86.82391462	84.24872008	81.76545905	79.37037326
200716A00015	7/20/2020	1.54	7/19/2024	7/20/2020	100.02476	99.722317	99.42171432	99.12293341	98.82595767	98.53077067	98.23735621	97.94569827	97.65578103
200720A00012	7/20/2020	0.77	7/15/2025	7/20/2020	99.507325	98.24829442	97.01564988	95.80856649	94.62625359	93.46795326	92.33293867	91.22051246	90.13000523
200720A00034	7/20/2020	0.77	7/21/2025	7/20/2020	99.51803	98.24383523	96.9947082	95.76992536	94.56879078	93.39063526	92.234815	91.10071041	89.98772493
200720A00035	7/20/2020	1.81	7/20/2035	7/20/2020	111.83686	100.9251136	91.18359078	82.48025441	74.69859414	67.73573095	61.50076129	55.91330958	50.90226197
200720A00037	7/22/2020	2.1	7/21/2025	7/22/2020	101.26426	99.97805275	98.71711469	97.48072033	96.26816822	95.07878379	93.91191814	92.76694672	91.64326824
200720A00039	7/22/2020	2.48	7/21/2025	7/22/2020	101.76319	100.4735435	99.20923083	97.9695189	96.75370463	95.56111195	94.39109047	93.24301424	92.11628062
200720A00042	7/22/2020	2.04	7/21/2026	7/22/2020	102.99369	100.7192499	98.5061983	96.35251481	94.25625558	92.21555342	90.22861416	88.29371329	86.4091927
200720A00044	7/22/2020	2.22	7/21/2026	7/22/2020	103.40963	101.130305	98.91247541	96.7541137	94.65327309	92.60808356	90.61674824	88.67754001	86.78879824
200722A00010	7/22/2020	0.66	7/22/2024	7/22/2020	99.75045	99.4403654	99.13221468	98.82597967	98.52164247	98.21918542	97.91859107	97.6198422	97.32292178
200724A00011	7/24/2020	1.41	7/26/2038	7/24/2020	107.08679	96.64986485	87.47621183	79.39933901	72.27588714	65.98228514	60.41190425	55.4726357	51.08482715
200730A00001	7/30/2020	0.46	7/30/2024	7/30/2020	99.709205	99.37695816	99.04692071	98.71907023	98.39338503	98.06984374	97.74842524	97.42910869	97.11187354
200730A00002	7/30/2020	0.67	11/6/2024	7/30/2020	99.51273	98.9153207	98.32505381	97.74180171	97.16543995	96.59584702	96.03290423	95.47649569	94.92650815
200730A00011	7/30/2020	1.15	7/28/2028	7/30/2020	102.98796	98.77537913	94.75713965	90.92331427	87.26453378	83.77195162	80.43721202	77.25242033	74.21011525
200730A00013	7/30/2020	0.74	1/30/2025	7/30/2020	99.503121	98.67906675	97.8685725	97.07130628	96.2869467	95.51518271	94.75571317	94.00824647	93.27250014
200731A00005	7/31/2020	0.45	7/31/2024	7/31/2020	99.703556	99.36859676	99.0358806	98.70538496	98.37708768	98.05096693	97.72700112	97.40516898	97.08544951
200803A00011	8/3/2020	0.72	8/4/2025	8/3/2020	99.470485	98.16114468	96.87502078	95.61154933	94.3701845	93.15039754	91.95167613	90.77352373	89.61545901
220408A00013	4/8/2022	3.15	1/14/2027	4/8/2022	106.95078	104.1548759	101.4468432	98.82339845	96.28140174	93.81785025	91.42987151	89.11471672	86.86975458
200806A00002	8/6/2020	0.43	8/6/2024	8/6/2020	99.683179	99.33197302	98.98324359	98.63696495	98.29311125	97.951657	97.61257705	97.27584662	96.94144127
200810A00004	8/10/2020	0.43	8/9/2024	8/10/2020	99.676371	99.31703651	98.96029798	98.60612731	98.2544967	97.9053788	97.55874661	97.21457354	96.87283337
200811A00003	8/11/2020	0.57	8/11/2025	8/11/2020	99.481566	98.15066066	96.84368513	95.56005056	94.29918723	93.06054349	91.84358512	90.64779461	89.47267051
200812A00004	8/12/2020	0.59	8/12/2025	8/12/2020	99.509479	98.1757827	96.86610588	95.57985722	94.31646394	93.0753715	91.85604288	90.65795791	89.48061256
200813A00019	8/13/2020	1.44	8/13/2030	8/13/2020	105.39673	99.74065219	94.44220319	89.47662794	84.82101175	80.45413761	76.35635193	72.50944156	68.89652106
200813A00020	8/13/2020	1.44	8/13/2030	8/13/2020	105.39673	99.74065219	94.44220319	89.47662794	84.82101175	80.45413761	76.35635193	72.50944156	68.89652106
200813A00023	8/13/2020	0.86	10/14/2025	8/13/2020	99.779029	98.24028112	96.73290148	95.25599174	93.80868819	92.39015959	90.99960573	89.63625587	88.29936742
200814A00003	8/14/2020	0.96	8/14/2035	8/14/2020	102.86083	97.24139936	92.05235593	87.25529916	82.81561148	78.70205562	74.88641874	71.34319637	68.04931147
200814A00009	8/18/2020	1.36	8/16/2028	8/18/2020	103.95567	99.67358172	95.59089684	91.69734551	87.9832344	84.43941489	81.05724975	77.82858197	74.74570573
200814A00011	8/18/2020	1.58	8/16/2030	8/18/2020	106.90402	100.653147	94.80693343	89.33716874	84.21774363	79.42448337	74.93499539	70.7285296	66.78585033
200818A00004	8/18/2020	0.92	8/18/2026	8/18/2020	100.45044	98.13381056	95.88172188	93.69202836	91.56266735	89.4916563	87.47708918	85.51713307	83.6100249

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200818A00005	8/18/2020	1.05	8/18/2027	8/18/2020	101.62075	98.3322192	95.16652566	92.11846465	89.1830755	86.35563252	83.63163265	81.00678374	78.4769936
200818A00006	8/18/2020	1.18	8/18/2028	8/18/2020	103.17378	98.90356191	94.83264522	90.95074318	87.24815268	83.71571664	80.34479054	77.12721121	74.05526759
200818A00007	8/18/2020	1.31	8/20/2029	8/18/2020	104.68386	99.42560518	94.46123959	89.77289441	85.34387207	81.15856535	77.20238094	73.46166867	69.92365613
200818A00008	8/18/2020	1.5	8/18/2031	8/18/2020	107.03985	99.85246661	93.19539704	87.02685983	81.3085638	76.0053982	71.08515398	66.51827073	62.27760686
200818A00009	8/18/2020	1.7	8/18/2033	8/18/2020	110.15713	101.0236898	92.72181155	85.17140492	78.30046591	72.04422759	66.34440019	61.14849444	56.40921855
200818A00010	8/18/2020	1.88	8/20/2035	8/18/2020	112.60692	101.5813037	91.74468004	82.96212165	75.11465606	68.09730655	61.81738363	56.19299233	51.15172732
200818A00012	8/18/2020	0.97	8/18/2027	8/18/2020	101.29386	98.11819445	95.06187721	92.11976433	89.28696637	86.55883028	83.93092657	81.39903734	78.95914496
200818A00016	3/31/2021	0.57	4/1/2024	3/31/2021	99.99824	99.99546934	99.99270127	99.98993553	99.98717211	99.98441103	99.98165227	99.97889582	99.9761417
200818A00018	3/31/2021	0.57	4/1/2024	3/31/2021	99.99824	99.99546934	99.99270127	99.98993553	99.98717211	99.98441103	99.98165227	99.97889582	99.9761417
200824A00020	8/26/2020	1.57	8/26/2025	8/26/2020	100.67915	99.30412728	97.95438406	96.62928594	95.32821813	94.05058582	92.79581338	91.56334355	90.35263679
200825A00007	8/27/2020	4.79	8/27/2026	8/27/2020	109.79825	107.3441953	104.958391	102.6385518	100.3824864	98.18808944	96.05333748	93.97628533	91.95506251
200826A00019	8/26/2020	0.98	8/26/2026	8/26/2020	100.60778	98.26867767	95.99524883	93.78529605	91.63670475	89.54744312	87.51555844	85.53917347	83.61648308
200826A00021	8/26/2020	0.83	8/26/2025	8/26/2020	99.634693	98.26735714	96.92517094	95.60750211	94.3137393	93.04329105	91.79558489	90.57006669	89.36619983
200826A00028	8/28/2020	1.08	8/28/2024	8/28/2020	99.850944	99.44024213	99.03291058	98.6289081	98.22819402	97.83072832	97.43647165	97.04538528	96.65743108
200826A00029	8/28/2020	1.16	11/27/2024	8/28/2020	99.802154	99.14764349	98.50168021	97.86409732	97.23473266	96.61342824	96.00003009	95.39438814	94.79635609
200826A00038	8/28/2020	1.11	8/28/2024	8/28/2020	99.863399	99.4526658	99.04530358	98.64127062	98.24052624	97.84303043	97.44874381	97.05762767	96.66964388
200826A00039	8/28/2020	1.03	7/29/2024	8/28/2020	99.85899	99.52962981	99.20243752	98.8773916	98.55447102	98.233655	97.91492305	97.59825492	97.28363065
200827A00007	8/27/2020	0.77	8/27/2025	8/27/2020	99.55055	98.18125216	96.83718159	95.51770339	94.22220348	92.95008772	91.70078113	90.47372715	89.26838686
200828A00002	8/28/2020	0.73	8/28/2026	8/28/2020	100.31673	97.96958602	95.68862125	93.47160979	91.31641315	89.2209769	87.18332687	85.20156551	83.27386844
200909A00001	9/9/2020	0.98	9/8/2028	9/9/2020	102.92149	98.58529284	94.45446047	90.51824538	86.76651636	83.18972046	79.778847	76.52539404	73.42133708
200910A00006	9/10/2020	0.96	9/10/2027	9/10/2020	101.30928	98.08236927	94.97850131	91.99229524	89.1186379	86.35266747	83.68975954	81.12551417	78.65574365
200911A00011	9/11/2020	1.18	9/11/2030	9/11/2020	103.89865	98.24984848	92.96228163	88.01066647	83.37162591	79.02353372	74.94637444	71.12161526	67.53208869
200911A00012	9/11/2020	1.18	9/11/2030	9/11/2020	103.89865	98.24984848	92.96228163	88.01066647	83.37162591	79.02353372	74.94637444	71.12161526	67.53208869
200911A00013	9/11/2020	0.69	9/11/2025	9/11/2020	99.475488	98.02480331	96.60272405	95.20847201	93.84129656	92.50047367	91.18530471	89.89511534	88.62925443
200916A00015	9/16/2020	0.72	9/16/2025	9/16/2020	99.494908	98.07318578	96.67862314	95.31051141	93.96816628	92.65092656	91.35815316	90.08922823	88.84355423
200916A00016	9/16/2020	0.6	9/16/2024	9/16/2020	99.613317	99.1519418	98.69483593	98.24194014	97.79319636	97.34854759	96.90793787	96.47131225	96.0386168
200916A00019	9/16/2020	0.42	9/16/2024	9/16/2020	99.587994	99.12598773	98.66826554	98.21476804	97.7654368	97.32021447	96.87904474	96.44187233	96.00864299
200916A00023	9/16/2020	0.42	9/16/2024	9/16/2020	99.587994	99.12598773	98.66826554	98.21476804	97.7654368	97.32021447	96.87904474	96.44187233	96.00864299
200922A00015	9/24/2020	1.09	9/24/2025	9/24/2020	100.05319	98.60589367	97.1866362	95.79467637	94.42929798	93.08980933	91.77554224	90.48585103	89.22011156
200922A00027	9/24/2020	1.65	9/23/2025	9/24/2020	100.88461	99.43354988	98.01053802	96.61483463	95.24572435	93.9025163	92.58454304	91.29115957	90.02174237
200922A00033	9/24/2020	2.37	9/23/2024	9/24/2020	100.46111	99.97847402	99.50047411	99.02704351	98.55811685	98.09363003	97.63352013	97.17772544	96.72618538
200922A00034	9/24/2020	2.24	9/23/2026	9/24/2020	103.79431	101.3414762	98.95933621	96.64544507	94.39746225	92.21314189	90.09032839	88.02695215	86.02102561
200922A00035	9/24/2020	2.94	9/23/2024	9/24/2020	100.73863	100.2552062	99.77642756	99.30222357	98.83252882	98.36727915	97.90641157	97.44986433	96.99757678

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200922A00036	9/24/2020	1.55	9/23/2025	9/24/2020	100.73581	99.28590185	97.86402052	96.4694283	95.10141034	93.75927628	92.44235916	91.15001444	89.88161906
200922A00037	9/24/2020	2.76	9/23/2025	9/24/2020	102.53627	101.072443	99.63688227	98.22884492	96.8476098	95.49248045	94.16278408	92.85787049	91.57711119
200922A00039	9/24/2020	3	9/23/2025	9/24/2020	102.89339	101.4267983	99.98852427	98.57782012	97.19396341	95.83625649	94.50402538	93.19661879	91.91340715
200922A00040	9/24/2020	2	9/23/2024	9/24/2020	100.28097	99.79884083	99.32134643	98.84841786	98.37998979	97.91599815	97.45638007	97.00107387	96.55001903
200922A00041	9/24/2020	2.68	9/23/2024	9/24/2020	100.61204	100.1289775	99.65055405	99.17670284	98.70735845	98.24245674	97.78193478	97.3257308	96.87378421
200925A00002	9/25/2020	0.74	9/25/2025	9/25/2020	99.532334	98.08641401	96.66856546	95.27804397	93.91413135	92.57613407	91.26338221	89.9752284	88.71104695
200925A00003	9/25/2020	0.59	9/25/2024	9/25/2020	99.590434	99.10486995	98.62402634	98.14783439	97.67622685	97.20913777	96.74650244	96.28825741	95.83434039
200925A00008	9/25/2020	0.74	9/25/2025	9/25/2020	99.532334	98.08641401	96.66856546	95.27804397	93.91413135	92.57613407	91.26338221	89.9752284	88.71104695
200928A00003	9/28/2020	0.55	9/26/2025	9/28/2020	99.482561	98.03050244	96.60674379	95.21053215	93.84114103	92.49786902	91.18003865	89.8869954	88.61810674
200928A00009	9/28/2020	1.51	9/28/2032	9/28/2020	107.88298	99.6487417	92.10294245	85.18448801	78.83799354	73.01322529	67.66459792	62.75072307	58.23400388
201001A00011	10/1/2020	0.71	6/17/2025	10/1/2020	99.411027	98.22430055	97.06566422	95.93413091	94.82875936	93.74865145	92.69294974	91.66083517	90.65152496
201001A00012	10/1/2020	0.74	9/16/2025	10/1/2020	99.524285	98.10233841	96.70755528	95.33922682	93.99666863	92.6792194	91.38623997	90.11711239	88.87123902
201007A00008	10/7/2020	1.22	10/7/2030	10/7/2020	104.00993	98.47844303	93.29951923	88.44843285	83.902328	79.64006867	75.64210025	71.89032285	68.36797554
201007A00010	10/7/2020	1.22	10/7/2030	10/7/2020	104.00993	98.47844303	93.29951923	88.44843285	83.902328	79.64006867	75.64210025	71.89032285	68.36797554
201007A00014	10/7/2020	0.8	10/7/2025	10/7/2020	99.67278	98.16294155	96.68362037	95.23395231	93.81310553	92.42027911	91.05470159	89.71562963	88.4023467
201014A00002	10/14/2020	0.61	10/15/2024	10/14/2020	99.53639	98.99758331	98.46459574	97.93733301	97.41570316	96.89961621	96.38898407	95.88372051	95.38374112
201015A00002	10/15/2020	0.61	10/15/2024	10/15/2020	99.53639	98.99758331	98.46459574	97.93733301	97.41570316	96.89961621	96.38898407	95.88372051	95.38374112
201015A00003	10/15/2020	0.75	10/15/2025	10/15/2020	99.567393	98.06888824	96.60013948	95.16033203	93.7486804	92.36442709	91.00684136	89.67521803	88.36887633
201015A00020	10/15/2020	0.94	10/15/2027	10/15/2020	101.32254	98.01268097	94.83166438	91.77373553	88.83343002	86.00555881	83.28519257	80.66764702	78.14846924
201015A00024	10/19/2020	1.53	10/18/2027	10/19/2020	103.48588	100.0058868	96.66120539	93.4458493	90.35413104	87.38064524	84.52025306	81.76806743	79.11943924
201015A00025	10/19/2020	1.54	10/18/2027	10/19/2020	103.52136	100.0407409	96.69544784	93.47949738	90.38720136	87.41315382	84.55221534	81.79949831	79.1503531
201015A00030	10/19/2020	2.39	10/18/2027	10/19/2020	106.53747	103.0033365	99.60605616	96.33958387	93.19817835	90.17638283	87.26900926	84.47112352	81.77803145
201015A00032	10/19/2020	2.33	10/19/2026	10/19/2020	104.16494	101.638608	99.18660769	96.80630749	94.49519024	92.25084362	90.07095496	87.95330642	85.89577046
201019A00005	10/19/2020	0.79	10/20/2025	10/19/2020	99.635036	98.12297623	96.64107998	95.18851452	93.76447778	92.36819657	90.99892522	89.65594438	88.33855984
201019A00007	10/19/2020	0.64	10/21/2024	10/19/2020	99.536042	98.98122137	98.43256666	97.88997582	97.35334869	96.82258732	96.29759588	95.77828062	95.26454983
201021A00011	10/21/2020	1.11	10/21/2027	10/21/2020	102.00414	98.54270203	95.21636337	92.01912862	88.94530442	85.98948061	83.14651445	80.41151584	77.77983335
201021A00012	10/21/2020	1.85	10/19/2035	10/21/2020	112.25763	101.1101834	91.18094224	82.32987147	74.43370617	67.38386694	61.08464425	55.45161523	50.4102621
201022A00012	10/26/2020	2.25	10/24/2030	10/26/2020	111.40918	104.8381388	98.70099424	92.96680683	87.60699856	82.59516044	77.90687725	73.51956718	69.41233519
201028A00003	10/30/2020	1.42	2/27/2026	10/30/2020	101.1018	99.22826961	97.39850145	95.61121283	93.86516936	92.15918052	90.49209784	88.86281313	87.27025674
201028A00005	10/30/2020	1.85	10/31/2025	10/30/2020	101.33496	99.78027536	98.25688372	96.76391136	95.3005133	93.86587554	92.45921366	91.07977143	89.72681954
201028A00011	10/28/2020	0.91	4/28/2026	10/28/2020	100.23381	98.21122325	96.23912689	94.31593094	92.44010456	90.61017629	88.82473125	87.08240853	85.38189864
201028A00013	10/28/2020	0.68	10/28/2024	10/28/2020	99.534709	98.96127704	98.39442162	97.83403002	97.27999226	96.73220085	96.19055071	95.6549391	95.12526557
201029A00002	10/29/2020	0.59	10/29/2025	10/29/2020	99.575806	98.03660631	96.52843477	95.05042248	93.60173242	92.18155825	90.78912287	89.4236771	88.08449841

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
201029A00004	10/29/2020	1.49	10/29/2038	10/29/2020	108.01848	97.37113998	88.02977133	79.81984701	72.59143559	66.2155926	60.58129913	55.59286269	51.16770847
201030A00001	11/2/2020	2.54	10/29/2040	11/2/2020	125.21125	109.0213494	95.21438747	83.42108404	73.33141384	64.68481839	57.26208037	50.87856766	45.37861083
201030A00002	11/2/2020	2.8	10/29/2040	11/2/2020	129.3123	112.8068401	98.71780581	86.67183326	76.35535156	67.50472431	59.89805805	53.34839038	47.69801949
201030A00003	11/2/2020	2.58	10/29/2040	11/2/2020	125.84218	109.6037326	95.75337491	83.9211993	73.79663502	65.11865007	57.66761539	51.25854039	45.73544293
201030A00004	11/2/2020	2.56	10/29/2040	11/2/2020	125.52671	109.312541	95.48388119	83.67114167	73.56402443	64.90173423	57.46484788	51.06855403	45.55702688
201030A00005	11/2/2020	2.49	10/29/2040	11/2/2020	124.42258	108.2933705	94.54065317	82.79593995	72.74988735	64.14252879	56.75516158	50.40360176	44.9325707
201030A00012	10/30/2020	0.63	10/30/2025	10/30/2020	99.640476	98.09813158	96.58690678	95.10592843	93.65435591	92.23137947	90.83621876	89.46812153	88.12636229
201030A00016	10/30/2020	1.14	10/8/2027	10/30/2020	102.07264	98.64349709	95.34718308	92.17785334	89.12995091	86.19819277	83.37755473	80.66325731	78.05075234
201030A00017	10/30/2020	1.14	10/15/2027	10/30/2020	102.09321	98.64565489	95.33218022	92.14685663	89.08405294	86.13841695	83.30485992	80.5785421	77.95485906
201030A00018	10/30/2020	1.15	10/22/2027	10/30/2020	102.14936	98.68276728	95.35151924	92.14961246	89.07134031	86.11128024	83.26427788	80.52543221	77.89008158
201030A00019	10/30/2020	1.15	10/29/2027	10/30/2020	102.17012	98.6850998	95.33668978	92.11880004	89.02564855	86.05174241	83.1918617	80.44104418	77.79457111
201103A00005	11/3/2020	0.89	11/4/2030	11/3/2020	101.13505	97.84021536	94.70251529	91.71295369	88.8631156	86.14512897	83.55162585	81.07570675	78.71090756
201105A00003	11/6/2020	2.24	11/4/2030	11/6/2020	111.38442	104.7855033	98.62402534	92.86867552	87.49054432	82.46292482	77.76113383	73.36234852	69.24545709
201105A00016	11/9/2020	2.18	11/8/2027	11/9/2020	105.91573	102.3368376	98.89836689	95.5940377	92.41788515	89.3642444	86.42773372	83.60323857	80.88589673
201109A00012	11/9/2020	1.39	11/8/2030	11/9/2020	105.20643	99.38040009	93.93401157	88.84018881	84.07393571	79.6121652	75.43354323	71.51834641	67.84833186
201110A00003	11/10/2020	1.12	11/10/2027	11/10/2020	102.00778	98.62265868	95.37122727	92.2474209	89.24548732	86.35996933	83.58568762	80.91772479	78.35141041
201116A00011	11/16/2020	0.71	11/15/2024	11/16/2020	99.522284	98.90082373	98.28709584	97.68095705	97.0822672	96.49088958	95.90669081	95.32954073	94.75931232
201116A00021	11/16/2020	0.53	11/15/2024	11/16/2020	99.537066	98.91392436	98.29855853	97.69082348	97.09057785	96.49768374	95.91200664	95.33341528	94.7617816
201116A00024	11/18/2020	2.36	11/15/2034	11/18/2020	117.54876	106.937256	97.39416976	88.80562301	81.07044423	74.09868913	67.81034243	62.13417557	57.00674111
201116A00025	11/18/2020	1.96	11/15/2032	11/18/2020	111.81421	103.2973028	95.49781544	88.35146121	81.80002714	75.79077241	70.27588801	65.21201233	60.55979661
201117A00016	11/17/2020	0.52	11/18/2024	11/17/2020	99.525954	98.89482159	98.27166453	97.65633259	97.048679	96.44856064	95.85583793	95.27037474	94.69203824
201118A00009	11/18/2020	0.61	11/18/2025	11/18/2020	99.637082	98.04372957	96.48320311	94.95455416	93.45687118	91.98927729	90.55092862	89.14101271	87.75874704
201119A00021	11/23/2020	2.22	11/21/2030	11/23/2020	111.31753	104.6757502	98.47700018	92.68938088	87.28345173	82.232029	77.51000131	73.09416128	68.96305166
201119A00023	11/23/2020	2.23	11/21/2030	11/23/2020	111.38365	104.7397259	98.53893105	92.74936316	87.34157625	82.28838147	77.56466266	73.14720798	69.01455596
201123A00009	11/25/2020	1.02	11/25/2024	11/25/2020	99.710536	99.06170554	98.42128317	97.78910637	97.16501677	96.54886	95.94048561	95.33974696	94.74650102
201123A00010	11/25/2020	1.48	11/24/2025	11/25/2020	100.84523	99.22961474	97.64740957	96.09764166	94.57937729	93.09171852	91.63380149	90.20479478	88.80389781
201123A00011	11/25/2020	1.41	11/24/2025	11/25/2020	100.7292	99.11457774	97.53334754	95.98453733	94.46721384	92.98047962	91.52347124	90.09535766	88.69533875
201203A00005	12/3/2020	0.78	12/3/2026	12/3/2020	100.61806	98.01142723	95.48470289	93.03493402	90.65930161	88.35511015	86.11978123	83.95084755	81.84594721
201204A00015	12/8/2020	1.07	12/8/2025	12/8/2020	100.19653	98.54961867	96.93732911	95.3586319	93.81254095	92.29810889	90.81442516	89.36061416	87.93583355
201207A00009	12/7/2020	1.01	12/7/2027	12/7/2020	101.68502	98.24512341	94.9434268	91.77357675	88.72954898	85.80563132	82.99640542	80.29672973	77.70172358
201207A00021	12/7/2020	1.85	12/7/2050	12/7/2020	113.24877	99.77543002	88.47584512	78.9506503	70.87970725	64.00553102	58.1203251	53.05581486	48.6752542
201208A00029	12/10/2020	1.52	12/9/2025	12/10/2020	100.96297	99.30676054	97.6853872	96.0978146	94.54304942	93.02013741	91.52816144	90.06623966	88.63352374
201208A00031	12/10/2020	1.43	12/9/2024	12/10/2020	99.996148	99.30880532	98.63088202	97.96218521	97.30252745	96.65172634	96.00960437	95.37598877	94.75071129

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
201210A00021	12/10/2020	0.89	12/10/2027	12/10/2020	101.82025	98.21850754	94.76199704	91.44405728	88.25837253	85.19895341	82.26011785	79.43647326	76.72289991
201211A00001	12/11/2020	0.95	12/11/2030	12/11/2020	103.03877	97.70425542	92.71054202	88.03347139	83.6507413	79.54175065	75.68746042	72.07026665	68.67388452
201215A00001	12/15/2020	0.76	12/15/2025	12/15/2020	99.679523	98.01904888	96.39377871	94.80265796	93.2446745	91.71885645	90.22427008	88.76001792	87.32523697
201216A00003	12/16/2020	0.59	7/1/2024	12/16/2020	99.778344	99.52537767	99.27369022	99.02327218	98.77411399	98.52620618	98.27953938	98.0341043	97.78989176
201216A00004	12/16/2020	0.74	9/8/2025	12/16/2020	99.517128	98.11649284	96.74222349	95.39364222	94.070094	92.77094561	91.49558467	90.24341886	89.01387503
201216A00013	12/16/2020	0.59	12/16/2025	12/16/2020	99.640635	97.97348347	96.34179045	94.74449094	93.18056261	91.6490239	90.14893194	88.67938062	87.23949873
201218A00014	12/18/2020	0.57	12/18/2025	12/18/2020	99.608481	97.93642951	96.30002411	94.69819133	93.12990081	91.59416338	90.09002901	88.61658478	87.17295308
201221A00014	12/21/2020	0.76	12/19/2025	12/21/2020	99.684495	98.01364323	96.37838011	94.77763353	93.21037509	91.67561751	90.17241252	88.69984891	87.25705068
201221A00015	12/21/2020	0.88	12/4/2026	12/21/2020	100.5438	97.94322535	95.42228537	92.97804738	90.60770377	88.30856988	86.07807758	83.91376932	81.81329252
201221A00022	12/21/2020	0.51	12/19/2025	12/21/2020	99.534927	97.86622294	96.23423368	94.63789276	93.07617302	91.54808517	90.05267605	88.58902699	87.15625225
201223A00012	12/23/2020	0.91	12/18/2026	12/23/2020	100.64798	98.01006838	95.45384093	92.97624755	90.57437487	88.24543898	85.98677859	83.79584864	81.67021427
201223A00013	12/23/2020	0.9	12/11/2026	12/23/2020	100.60911	97.98968972	95.4509308	92.98984088	90.60355962	88.28935285	86.04460597	83.86681777	81.7535946
201228A00013	12/28/2020	0.84	12/30/2030	12/28/2020	100.97943	97.64935265	94.47986585	91.46167383	88.58609329	85.84500663	83.23082119	80.7364317	78.35518568
210104A00006	11/22/2021	0.88	11/20/2026	11/22/2021	100.51772	97.95434644	95.46860701	93.05767491	90.71884504	88.44952896	86.24724897	84.10963253	82.03440699
210104A00007	11/23/2021	0.88	11/23/2026	11/23/2021	100.52361	97.95217897	95.45881038	93.04065402	90.69498303	88.41918853	86.21077362	84.06734771	81.98662114
210104A00009	12/20/2021	0.89	12/18/2026	12/20/2021	100.59358	97.95641554	95.4009171	92.92403581	90.52285883	88.19460276	85.9366068	83.74632636	81.62132704
210104A00010	11/22/2021	0.88	11/20/2026	11/22/2021	100.51772	97.95434644	95.46860701	93.05767491	90.71884504	88.44952896	86.24724897	84.10963253	82.03440699
210104A00011	11/23/2021	0.88	11/23/2026	11/23/2021	100.52361	97.95217897	95.45881038	93.04065402	90.69498303	88.41918853	86.21077362	84.06734771	81.98662114
210104A00012	12/20/2021	0.89	12/18/2026	12/20/2021	100.59358	97.95641554	95.4009171	92.92403581	90.52285883	88.19460276	85.9366068	83.74632636	81.62132704
210107A00007	1/7/2021	0.84	1/7/2026	1/7/2021	99.890574	98.13940784	96.4278311	94.754717	93.11897796	91.51956405	89.95546143	88.42569092	86.92930652
210114A00009	1/19/2021	2.66	1/17/2030	1/19/2021	112.72436	106.8535339	101.328759	96.12780383	91.22997785	86.61601786	82.26798225	78.1691536	74.30394895
210121A00012	1/22/2021	0.64	10/15/2024	1/22/2021	99.552812	99.01395471	98.4809163	97.95360312	97.43192321	96.91578657	96.40510512	95.89979261	95.39976464
210121A00014	1/22/2021	0.64	10/25/2024	1/22/2021	99.522835	98.95740785	98.39838053	97.84564478	97.29909487	96.75862743	96.22414138	95.69553787	95.17272021
210122A00005	1/26/2021	0.6	7/15/2024	1/26/2021	99.747249	99.45622762	99.16691435	98.87929415	98.59335208	98.30907341	98.02644354	97.74544807	97.46607276
210122A00006	1/25/2021	0.61	8/15/2024	1/25/2021	99.683307	99.30822324	98.93596696	98.56650597	98.19980875	97.83584427	97.47458195	97.11599167	96.76004377
210125A00006	1/27/2021	2.16	1/26/2027	1/27/2021	104.24587	101.4567076	98.75642064	96.14170176	93.60938244	91.15642961	88.779939	86.47712892	84.24533436
210125A00007	1/27/2021	2.98	1/27/2031	1/27/2021	116.71247	109.7191126	103.2000508	97.12055061	91.44859462	86.15465499	81.21148806	76.59394678	72.27880945
210127A00008	1/27/2021	0.93	1/27/2027	1/27/2021	100.77125	98.02899159	95.37458494	92.80474938	90.31634848	87.90637969	85.57196785	83.31035905	81.11891478
210127A00009	1/27/2021	1.3	7/27/2029	1/27/2021	104.59069	99.39575298	94.48800323	89.85015358	85.46603835	81.32053839	77.39950826	73.68970875	70.17874451
210127A00010	1/27/2021	1.41	7/26/2030	1/27/2021	105.79819	99.6344393	93.86709555	88.4687015	83.41383563	78.67894915	74.24221909	70.08341373	66.18376905
210128A00008	1/28/2021	0.54	4/9/2024	1/28/2021	99.976948	99.95202555	99.92713001	99.90226095	99.87741833	99.85260211	99.82781224	99.80304867	99.77831137
210128A00010	1/28/2021	0.57	7/9/2024	1/28/2021	99.754987	99.4802618	99.20705781	98.93536219	98.66516238	98.39644599	98.12920074	97.8634145	97.59907527
210129A00002	2/3/2021	0.59	7/25/2024	2/3/2021	99.721782	99.40358972	99.08742949	98.77328225	98.46112876	98.15095006	97.84272743	97.53644238	97.23207664

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210129A00008	1/29/2021	0.62	10/8/2024	1/29/2021	99.565679	99.04542905	98.53060032	98.02110859	97.51687114	97.01780696	96.52383668	96.03488256	95.55086845
210129A00013	1/29/2021	0.65	1/9/2025	1/29/2021	99.42786	98.66012536	97.90418259	97.15976204	96.42660192	95.7044483	94.99305485	94.29218253	93.60159935
210201A00001	2/1/2021	0.77	12/16/2025	2/1/2021	99.697943	98.03472241	96.40680461	94.81313048	93.25268379	91.72448873	90.22760789	88.7611403	87.32421966
210201A00002	2/1/2021	1.19	2/1/2036	2/1/2021	103.51098	97.64505642	92.2445619	87.26653451	82.67238341	78.4274102	74.50038617	70.86317834	67.49041833
210201A00003	2/2/2021	0.74	10/15/2025	2/2/2021	99.551912	98.05353123	96.58490448	95.14521693	93.73368314	92.34954567	90.99207383	89.66056249	88.35433094
210201A00004	2/3/2021	1.15	2/3/2025	2/3/2021	99.85151	99.01522705	98.19287687	97.38411384	96.58860364	95.80602282	95.03605837	94.27840733	93.53277634
210201A00007	2/3/2021	0.57	8/15/2024	2/3/2021	99.668136	99.29308684	98.920865	98.55143827	98.18477512	97.82084453	97.45961591	97.10105916	96.7451446
210201A00012	2/3/2021	0.75	11/17/2025	2/3/2021	99.624784	98.0383672	96.48453262	94.96234202	93.47089328	92.00931845	90.57678213	89.17247988	87.79563683
210208A00004	2/11/2021	0.76	10/15/2025	2/11/2021	99.582874	98.08424525	96.61537448	95.17544713	93.76367765	92.37930851	91.02160889	89.68987356	88.38342173
210208A00008	2/11/2021	0.78	11/17/2025	2/11/2021	99.673937	98.08710444	96.53286138	95.01026951	93.5184265	92.05646423	90.62354711	89.21887053	87.84165944
210209A00029	2/12/2021	0.8	12/15/2025	2/12/2021	99.748121	98.0870411	96.46117599	94.86947095	93.31091359	91.78453173	90.28939136	88.82459476	87.3892787
210212A00004	2/12/2021	1.1	2/12/2036	2/12/2021	103.75128	97.84938933	92.41697884	87.41062184	82.79131692	78.52400417	74.57713636	70.92229956	67.53387744
210212A00006	2/12/2021	0.77	2/12/2026	2/12/2021	99.840261	98.00456214	96.21224064	94.46200604	92.75261523	91.0828702	89.45161609	87.8577393	86.30016574
210212A00007	2/12/2021	0.76	2/12/2026	2/12/2021	99.818314	97.99776886	96.22016477	94.48422514	92.78871991	91.13246362	89.51431353	87.93316773	86.38796341
210212A00008	2/12/2021	0.95	10/13/2026	2/12/2021	100.62596	98.16089311	95.76835602	93.44579082	91.19074884	89.00088278	86.87394177	84.80776679	82.80028628
210212A00014	2/17/2021	1.38	2/17/2026	2/17/2021	100.98497	99.14129194	97.34009609	95.58015737	93.8602925	92.17935965	90.53625681	88.92992007	87.35932206
210212A00016	2/17/2021	1.32	2/18/2025	2/17/2021	100.01686	99.13993524	98.27831097	97.43159413	96.59940053	95.78135907	94.97711118	94.18631035	93.40862157
210216A00006	2/16/2021	1.44	2/15/2030	2/16/2021	106.50422	100.7049357	95.25586842	90.13413503	85.31845941	80.78904988	76.52748863	72.51662982	68.74050578
210216A00007	2/16/2021	1.3	2/16/2029	2/16/2021	104.87272	100.0683991	95.51062211	91.18551866	87.08006845	83.18204325	79.47995488	75.96300675	72.62104894
210216A00008	2/16/2021	0.71	2/17/2026	2/16/2021	99.95969	98.12149174	96.32576765	94.57128906	92.85687092	91.18136981	89.5436822	87.94274281	86.37752303
210216A00009	2/16/2021	0.92	2/16/2027	2/16/2021	101.16484	98.35266654	95.63239174	93.00053335	90.45376287	87.98889526	85.6028819	83.292804	81.0558663
210216A00011	2/17/2021	0.83	12/15/2025	2/17/2021	99.79957	98.13803526	96.51172394	94.91958069	93.3605929	91.83378818	90.33823232	88.8730274	87.43730999
210217A00005	2/17/2021	0.83	2/14/2031	2/17/2021	101.43064	97.99727498	94.73331871	91.62876108	88.67426172	85.86110039	83.18113153	80.62674241	78.19081463
210217A00008	2/18/2021	0.63	8/15/2024	2/18/2021	99.690892	99.31579145	98.94351794	98.57403982	98.20732556	97.84334414	97.48206496	97.12345793	96.76749335
210217A00009	2/18/2021	0.68	11/15/2024	2/18/2021	99.503304	98.88191047	98.26824922	97.66217648	97.06355211	96.4722394	95.88810498	95.3110187	94.74085355
210218A00009	2/19/2021	0.62	7/15/2024	2/19/2021	99.753122	99.4620895	99.17276541	98.88513444	98.59918165	98.3148923	98.03225179	97.75124573	97.47185988
210218A00010	2/18/2021	1.72	2/18/2031	2/18/2021	108.21838	101.448169	95.14660409	89.2788808	83.81294428	78.71925988	73.97060332	69.54186923	65.4098965
210218A00011	2/22/2021	0.85	10/24/2025	2/22/2021	99.733972	98.21069828	96.71792223	95.25479728	93.82050784	92.41426786	91.0353195	89.68293184	88.3563997
210219A00004	2/19/2021	0.91	2/19/2026	2/19/2021	100.10206	98.26121352	96.46293993	94.70600496	92.98921965	91.31143687	89.67154955	88.06848898	86.50122329
210219A00008	2/22/2021	0.86	12/1/2025	2/22/2021	99.829788	98.20418467	96.61248268	95.05368633	93.52683892	92.03102087	90.56534787	89.12896924	87.72106622
210224A00002	2/25/2021	0.88	11/3/2025	2/25/2021	99.796328	98.2462725	96.72755644	95.23929635	93.78064212	92.35077498	90.94890607	89.57427505	88.22614882
210224A00003	2/26/2021	0.9	12/3/2025	2/26/2021	99.900108	98.26872281	96.67143807	95.10724916	93.57519115	92.07433672	90.60379422	89.162706	87.75024673
210224A00004	2/26/2021	0.91	12/18/2025	2/26/2021	99.941724	98.27117383	96.63615696	95.03560511	93.46849284	91.93383566	90.43068793	88.95814088	87.51532082

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210224A00006	2/26/2021	0.88	10/21/2025	2/26/2021	99.776986	98.26117387	96.77562537	95.31950374	93.89200311	92.49234664	91.11978524	89.77359627	88.45308241
210224A00007	2/26/2021	0.68	10/21/2024	2/26/2021	99.558599	99.00370608	98.45497969	97.91231773	97.37562004	96.84478865	96.31972773	95.80034354	95.28654434
210225A00003	3/1/2021	0.93	9/24/2025	3/1/2021	99.814676	98.36922613	96.95178401	95.56160844	94.19798402	92.86021989	91.54764863	90.25962532	88.99552652
210225A00006	2/25/2021	0.98	2/25/2026	2/25/2021	100.25227	98.39280438	96.57668977	94.8026596	93.06949394	91.37601609	89.7210908	88.1036225	86.52255367
210225A00007	2/25/2021	1.79	8/23/2030	2/25/2021	108.2538	101.9430189	96.0410851	90.51945026	85.35169514	80.51336203	75.98179981	71.73602208	67.75657705
210225A00012	3/1/2021	0.91	8/25/2025	3/1/2021	99.746681	98.38110571	97.04060524	95.72455059	94.4323331	93.16336384	91.91707278	90.69290813	89.4903355
210225A00013	3/1/2021	0.93	10/6/2025	3/1/2021	99.832317	98.35513363	96.90703646	95.48723998	94.09498677	92.72954595	91.39021201	90.07630372	88.78716307
210225A00015	3/1/2021	0.7	8/26/2024	3/1/2021	99.696918	99.29201286	98.89039075	98.49201217	98.09683792	97.70482944	97.3159488	96.93015864	96.54742223
210225A00016	3/1/2021	0.88	7/15/2025	3/1/2021	99.649945	98.38994399	97.15634612	95.94832552	94.76509106	93.60588441	92.46997831	91.35667501	90.26530471
210226A00002	2/26/2021	0.86	2/26/2025	2/26/2021	99.606484	98.71031675	97.83016947	96.96561598	96.11624518	95.28166028	94.46147823	93.65532907	92.86285543
210226A00004	3/1/2021	1.04	12/5/2025	3/1/2021	100.13963	98.50098493	96.89666865	95.32566474	93.78699935	92.27973665	90.80297701	89.35585515	87.93753853
210226A00012	2/26/2021	2.31	2/26/2036	2/26/2021	117.57484	105.8213611	95.37743993	86.08922132	77.8216857	70.45625577	63.88871989	58.02742681	52.79171499
210302A00005	3/5/2021	0.92	9/10/2025	3/5/2021	99.780357	98.37241835	96.99107755	95.63564873	94.30546868	92.99989634	91.71831189	90.46011582	89.22472814
210303A00006	3/4/2021	0.97	10/10/2025	3/4/2021	99.899801	98.41165988	96.95292705	95.52280353	94.1205188	92.74532954	91.39651845	90.0733931	88.7752848
210304A00002	3/5/2021	0.93	7/10/2025	3/5/2021	99.703662	98.45588445	97.23561985	96.04195868	94.8740318	93.73100797	92.61209173	91.51652149	90.44356773
210304A00006	3/4/2021	1.02	3/4/2026	3/4/2021	100.34529	98.46605197	96.63103873	94.83894512	93.08851518	91.3785379	89.70784537	88.07531094	86.47984742
210305A00006	3/8/2021	1.02	8/11/2025	3/8/2021	99.884458	98.55408243	97.24757497	95.96434941	94.70383832	93.46549223	92.24877899	91.05318302	89.87820473
210305A00013	3/5/2021	2.41	3/5/2036	3/5/2021	118.74697	106.9078575	96.3879066	87.03201225	78.70407565	71.28458995	64.66854212	58.76358926	53.4884722
210309A00002	3/11/2021	0.77	7/25/2024	3/11/2021	99.779611	99.46130243	99.14502704	98.83076518	98.51849761	98.20820537	97.89986973	97.59347219	97.28899449
210309A00004	3/11/2021	0.87	11/25/2024	3/11/2021	99.611509	98.96304354	98.32298253	97.6911638	97.06742902	96.45162387	95.84359796	95.24320468	94.65030106
210310A00003	3/15/2021	0.79	8/26/2024	3/15/2021	99.733785	99.32878976	98.92707802	98.52861035	98.13334753	97.741251	97.35228281	96.96640562	96.58358268
210311A00007	3/11/2021	1.06	3/11/2026	3/11/2021	100.43634	98.53821051	96.68516477	94.87585946	93.10900224	91.38334756	89.69769464	88.05088553	86.44180332
210312A00008	3/12/2021	1.13	3/12/2026	3/12/2021	100.57502	98.67293663	96.81608256	95.00311011	93.23272105	91.50366422	89.81473351	88.16476589	86.55263959
210315A00003	3/15/2021	1.13	3/13/2026	3/15/2021	100.57718	98.67250614	96.81317988	94.99785116	93.22521657	91.49402001	89.80305068	88.15114109	86.53716524
210319A00003	3/19/2021	0.95	3/19/2025	3/19/2021	99.696077	98.74389577	97.80979397	96.89326036	95.99380316	95.1109488	94.24424107	93.39324034	92.55752283
210319A00009	3/19/2021	1.1	3/19/2026	3/19/2021	100.55863	98.63544685	96.75945325	94.92918093	93.14321734	91.40020398	89.69883393	88.03784943	86.41603968
210324A00002	3/24/2021	2.06	3/24/2031	3/24/2021	110.65891	103.7182198	97.26240652	91.25506838	85.66271144	80.45450589	75.60206152	71.07922311	66.86188391
210324A00003	3/24/2021	1.18	3/24/2026	3/24/2021	100.70026	98.76604564	96.87854267	95.03633943	93.23807418	91.48243542	89.76815968	88.0940294	86.45887092
210330A00021	3/30/2021	2.16	3/28/2031	3/30/2021	111.36604	104.3911724	97.90378598	91.86724878	86.24785859	81.0145971	76.13890329	71.59446706	67.35704119
210330A00022	3/30/2021	1.27	3/30/2026	3/30/2021	100.89425	98.94260853	97.03845574	95.18034407	93.36687875	91.59671689	89.8685652	88.18117774	86.5333539
210331A00007	3/31/2021	1.25	3/31/2031	3/31/2021	102.50343	99.00277449	95.67633146	92.51372132	89.50526701	86.64193868	83.91530589	81.31749376	78.84114251
210407A00012	4/7/2021	0.94	4/7/2025	4/7/2021	99.690082	98.68777529	97.70548958	96.74263018	95.79862567	94.87292685	93.96500567	93.0743542	92.2004837
210407A00013	4/7/2021	1.23	4/7/2026	4/7/2021	100.83742	98.86493927	96.9408087	95.06353504	93.23168542	91.44388091	89.69879409	87.99514672	86.33170755

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210408A00007	4/8/2021	1.05	4/8/2031	4/8/2021	102.27434	98.73249451	95.36902924	92.17320365	89.13500844	86.24511037	83.49480196	80.87595523	78.38097913
210409A00010	4/9/2021	1.05	4/9/2031	4/9/2021	102.23795	98.73933161	95.41595257	92.25730013	89.2535711	86.39562299	83.67492494	81.08351256	78.61394641
210412A00007	4/12/2021	0.66	4/12/2024	4/12/2021	99.905563	99.78983229	99.67438507	99.55922073	99.44433818	99.32973634	99.21541415	99.10137053	98.98760443
210412A00008	4/12/2021	0.66	4/12/2024	4/12/2021	99.905563	99.78983229	99.67438507	99.55922073	99.44433818	99.32973634	99.21541415	99.10137053	98.98760443
210414A00001	4/14/2021	0.7	5/16/2024	4/14/2021	99.901002	99.77398603	99.64730955	99.52097069	99.39496807	99.2693003	99.143966	99.01896381	98.89429235
210420A00009	4/20/2021	1.08	12/5/2025	4/20/2021	100.20713	98.56790259	96.96300944	95.39143894	93.85221695	92.3444074	90.86711037	89.41946034	88.00062454
210420A00010	4/20/2021	1.08	12/12/2025	4/20/2021	100.22196	98.56446231	96.94197256	95.35344259	93.79787011	92.27429248	90.78178466	89.31945737	87.88645533
210420A00035	4/20/2021	1.92	4/20/2034	4/20/2021	108.02294	101.9602148	96.37388293	91.22106751	86.46310648	82.0651083	77.99555845	74.22596946	70.73056921
210423A00001	4/23/2021	1.72	4/23/2036	4/23/2021	107.69305	101.4861448	95.77912053	90.5251839	85.68236915	81.21299967	77.08321631	73.26256064	69.7236066
210423A00003	4/23/2021	1.31	4/23/2031	4/23/2021	103.23126	99.65581658	96.26048414	93.03441529	89.96750093	87.05031499	84.2740636	81.6305383	79.1120731
210428A00006	4/28/2021	1.23	4/28/2026	4/28/2021	100.89986	98.87019393	96.89116489	94.96117269	93.07868265	91.24221958	89.45036502	87.70175459	85.99507551
210428A00007	4/28/2021	1.74	10/27/2028	4/28/2021	105.92274	101.4092815	97.1137395	93.02445973	89.13047045	85.42144163	81.88764389	78.51991027	75.3096007
210428A00008	4/28/2021	1.93	4/26/2030	4/28/2021	108.81501	102.7926392	97.14254999	91.83980496	86.86125924	82.18542599	77.79234931	73.66348751	69.78160582
210428A00015	4/28/2021	2.02	4/28/2031	4/28/2021	110.49795	103.4715378	96.94196393	90.87149374	85.22544381	79.97192159	75.08158723	70.52743695	66.28460576
210429A00005	4/29/2021	2.08	4/29/2031	4/29/2021	110.92369	103.879953	97.33414572	91.24844837	85.58810168	80.32114374	75.41817114	70.85212187	66.59807753
210507A00008	5/7/2021	1.94	5/7/2031	5/7/2021	109.96204	102.9311717	96.39931225	90.32843676	84.68360688	79.43270453	74.54619035	69.99688418	65.75976521
210507A00009	5/7/2021	2.02	5/7/2032	5/7/2021	111.72196	103.6926449	96.30295436	89.49851911	83.2298594	77.45192053	72.12365596	67.2076517	62.66978769
210512A00008	5/12/2021	0.66	5/10/2024	5/12/2021	99.841543	99.64642873	99.45208922	99.25851964	99.06571536	98.87367179	98.68238437	98.49184858	98.30205993
210512A00009	5/12/2021	0.66	5/10/2024	5/12/2021	99.841543	99.64642873	99.45208922	99.25851964	99.06571536	98.87367179	98.68238437	98.49184858	98.30205993
210512A00011	5/12/2021	1.16	5/12/2026	5/12/2021	100.80275	98.74561277	96.74141022	94.78839724	92.88489962	91.02931199	89.2200944	87.45576898	85.73491693
210512A00012	5/12/2021	1.16	5/12/2026	5/12/2021	100.80275	98.74561277	96.74141022	94.78839724	92.88489962	91.02931199	89.2200944	87.45576898	85.73491693
210514A00007	5/14/2021	0.95	5/15/2028	5/14/2021	100.7837	98.70593621	96.69504964	94.74832844	92.8631936	91.03718886	89.26797403	87.5533186	85.89109588
210514A00010	5/14/2021	1.34	5/14/2031	5/14/2021	103.31873	99.7548842	96.37109846	93.15647285	90.10085495	87.1947822	84.42943019	81.79656525	79.28850073
210514A00033	5/18/2021	2.8	5/18/2028	5/18/2021	109.59735	105.433042	101.4516497	97.64413213	94.00195101	90.51703562	87.18175457	83.98888923	80.93160896
210518A00023	5/18/2021	1.17	5/18/2026	5/18/2021	100.82396	98.7430365	96.71496761	94.73804447	92.81063115	90.93115697	89.0981133	87.31005063	85.56557567
210525A00004	5/25/2021	1.02	12/19/2025	5/25/2021	100.13322	98.45838513	96.81920689	95.21461553	93.64358075	92.1051134	90.59826342	89.12211787	87.67579911
210526A00014	5/26/2021	1.01	12/19/2025	5/26/2021	100.11597	98.44127967	96.80225201	95.19780853	93.626919	92.08859432	90.58188454	89.10587676	87.6596934
210526A00017	5/26/2021	2.13	5/26/2033	5/26/2021	113.89718	104.8045005	96.51716874	88.959403	82.06292319	75.76617521	70.01363663	64.75519715	59.94560565
210526A00018	5/26/2021	1.11	5/26/2026	5/26/2021	100.71375	98.61329868	96.56657922	94.57184579	92.62742147	90.73169693	88.88312711	87.08022808	85.32157408
210527A00009	5/27/2021	0.5	5/28/2024	5/27/2021	99.862282	99.70209829	99.54243327	99.38328466	99.22464994	99.06652662	98.90891221	98.75180424	98.59520026
210527A00019	5/27/2021	1	5/27/2026	5/27/2021	100.75554	98.64657027	96.59169781	94.58915644	92.63725372	90.73436562	88.8789332	87.06945934	85.30450581
210527A00026	6/1/2021	2.78	6/1/2028	6/1/2021	109.61709	105.4151491	101.3991556	97.55985037	93.88849207	90.37682212	87.01703519	83.80175151	80.72399117
210528A00003	5/28/2021	0.63	5/28/2024	5/28/2021	99.86445	99.70445967	99.54498506	99.38602407	99.22757422	99.06963307	98.91219817	98.75526709	98.59883741

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210601A00002	6/1/2021	0.9	6/2/2025	6/1/2021	99.641693	98.49270685	97.37000543	96.27269643	95.19992709	94.15088242	93.12478314	92.12088377	91.13847075
210603A00008	6/3/2021	1.74	6/3/2036	6/3/2021	107.63606	101.5529798	95.95790732	90.80507974	86.05347741	81.66629064	77.61045405	73.85623566	70.37687387
210603A00015	6/7/2021	2.71	6/7/2028	6/7/2021	109.36931	105.1561682	101.1301613	97.28194087	93.60267946	90.0840392	86.71814154	83.49753917	80.41518978
210608A00005	6/8/2021	0.51	6/7/2024	6/8/2021	99.841299	99.6536785	99.46677379	99.28058033	99.09509399	98.9103107	98.72622638	98.54283701	98.36013861
210608A00017	6/10/2021	2.67	6/8/2029	6/10/2021	111.59128	106.3432466	101.3760103	96.67302634	92.21881379	87.99888277	83.99966521	80.20845111	76.61332955
210609A00007	6/11/2021	2.6	6/11/2029	6/11/2021	111.24596	105.9986325	101.0325913	96.33123217	91.87902397	87.66143131	83.66484502	79.87651799	76.28450576
210609A00011	6/11/2021	1.32	6/11/2024	6/11/2021	99.970737	99.77221787	99.57449861	99.37757479	99.18144156	98.98609409	98.79152762	98.59773739	98.40471871
210609A00013	6/11/2021	1.64	6/11/2025	6/11/2021	100.53297	99.35479014	98.20408133	97.07989128	95.98131172	94.90747545	93.85755402	92.83075559	91.82632294
210610A00012	6/11/2021	1.9	6/10/2026	6/11/2021	102.48713	100.3271858	98.22318512	96.1732781	94.17569266	92.22872954	90.33075866	88.4802157	86.67559881
210610A00014	6/11/2021	2.03	6/10/2026	6/11/2021	102.77298	100.6098337	98.5027	96.44972356	94.4491304	92.4992195	90.5983591	88.74498322	86.93758846
210611A00006	6/11/2021	1.85	6/11/2031	6/11/2021	109.42323	102.3220146	95.73106426	89.61103855	83.92583001	78.64228003	73.72992326	69.16075544	64.90902244
210611A00007	6/11/2021	0.61	6/11/2024	6/11/2021	99.762711	99.48371204	99.20628605	98.93041998	98.65610061	98.38331485	98.11204977	97.84229257	97.57403062
210611A00008	6/11/2021	0.61	6/11/2024	6/11/2021	99.762518	99.48328593	99.20562916	98.92953422	98.65498785	98.38197696	98.11048859	97.84050994	97.57202834
210611A00009	6/11/2021	0.61	6/11/2024	6/11/2021	99.762711	99.48371204	99.20628605	98.93041998	98.65610061	98.38331485	98.11204977	97.84229257	97.57403062
210611A00010	6/11/2021	1.02	6/11/2026	6/11/2021	100.56244	98.43934205	96.37246947	94.35995772	92.40001544	90.49092413	88.63103455	86.81876331	85.0525897
210611A00011	6/11/2021	1.02	6/11/2026	6/11/2021	100.56244	98.43934205	96.37246947	94.35995772	92.40001544	90.49092413	88.63103455	86.81876331	85.0525897
210611A00012	6/11/2021	1.02	6/11/2026	6/11/2021	100.56244	98.43934205	96.37246947	94.35995772	92.40001544	90.49092413	88.63103455	86.81876331	85.0525897
210616A00006	2/11/2022	0.86	2/11/2025	2/11/2022	99.605027	98.74865806	97.90693099	97.07947292	96.26592357	95.46593469	94.67916957	93.90530259	93.14401872
210616A00007	3/18/2022	0.9	3/18/2025	3/18/2022	99.647204	98.6979222	97.76661687	96.85278111	95.95592719	95.07558539	94.21130314	93.36264432	92.52918844
210616A00008	5/2/2022	0.95	5/2/2025	5/2/2022	99.70085	98.63272525	97.58731822	96.56391105	95.56181578	94.58037284	93.61894961	92.67693908	91.75375852
210616A00009	2/11/2022	0.86	2/11/2025	2/11/2022	99.605027	98.74865806	97.90693099	97.07947292	96.26592357	95.46593469	94.67916957	93.90530259	93.14401872
210616A00011	5/2/2022	0.95	5/2/2025	5/2/2022	99.70085	98.63272525	97.58731822	96.56391105	95.56181578	94.58037284	93.61894961	92.67693908	91.75375852
210616A00012	3/18/2022	0.9	3/18/2025	3/18/2022	99.647204	98.6979222	97.76661687	96.85278111	95.95592719	95.07558539	94.21130314	93.36264432	92.52918844
210621A00008	6/21/2021	1.04	6/23/2025	6/21/2021	99.816348	98.61131787	97.43516043	96.286849	95.16540475	94.06989426	92.99942688	91.9531523	90.93025832
210623A00026	6/23/2021	0.78	6/24/2024	6/23/2021	99.839368	99.60544311	99.37261974	99.14089052	98.91024773	98.68068371	98.45219087	98.22476172	97.9983888
210623A00028	6/23/2021	1.22	6/23/2026	6/23/2021	101.02845	98.85007838	96.72893901	94.66311087	92.6507549	90.69010902	88.77948415	86.9172605	85.10188407
210624A00003	6/24/2021	0.78	6/24/2024	6/24/2021	99.839368	99.60544311	99.37261974	99.14089052	98.91024773	98.68068371	98.45219087	98.22476172	97.9983888
210624A00004	6/24/2021	1.01	6/24/2025	6/24/2021	99.779633	98.57222535	97.39381101	96.24335612	95.11987587	94.02243117	92.95012609	91.90210532	90.87755199
210624A00005	6/24/2021	1.22	6/24/2026	6/24/2021	101.03126	98.85018209	96.72646423	94.65817776	92.64347767	90.68059627	88.7678392	86.9035817	85.08626505
210624A00020	6/24/2021	0.78	6/24/2024	6/24/2021	99.839368	99.60544311	99.37261974	99.14089052	98.91024773	98.68068371	98.45219087	98.22476172	97.9983888
210624A00022	6/24/2021	0.87	6/24/2025	6/24/2021	99.799839	98.58931697	97.4079115	96.25458368	95.12834309	94.02824542	92.95338975	91.90291612	90.87600323
210624A00025	6/24/2021	1.43	6/24/2027	6/24/2021	102.71457	99.54974578	96.49828216	93.55544166	90.71671834	87.97782352	85.33467371	82.78337926	80.3202337
210624A00026	6/24/2021	1.6	6/23/2028	6/24/2021	104.79492	100.6343172	96.66135535	92.86654757	89.24093919	85.77607815	82.46398368	79.29711697	76.26835401

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210629A00005	6/29/2021	1.25	6/29/2026	6/29/2021	101.11282	98.91744708	96.78008103	94.69876477	92.67162289	90.69685912	88.77275212	86.89765172	85.06997523
210629A00009	6/29/2021	1.14	12/31/2025	6/29/2021	100.3677	98.65966843	96.9885022	95.3530735	93.75230136	92.18514883	90.65062068	89.14776122	87.67565235
210629A00012	6/29/2021	1.14	12/29/2025	6/29/2021	100.36314	98.66033309	96.99419617	95.36360914	93.76749941	92.20483792	90.67463688	89.17594769	87.70785888
210629A00014	6/29/2021	1.78	12/28/2029	6/29/2021	107.58622	101.9127094	96.57317088	91.54618208	86.81181319	82.35151085	78.14799554	74.18516709	70.44801788
210629A00015	6/29/2021	1.89	6/27/2031	6/29/2021	109.75796	102.6035136	95.96570589	89.8045047	84.0831824	78.76802677	73.82807817	69.23489088	64.96231639
210701A00007	7/1/2021	1.22	7/1/2026	7/1/2021	101.05053	98.85060616	96.70893713	94.62355342	92.59257182	90.61418844	88.68667451	86.80837258	84.9776929
210706A00006	7/6/2021	1.15	7/6/2026	7/6/2021	100.90373	98.69257152	96.54029025	94.44490966	92.4045363	90.41735513	88.48162558	86.5956778	84.75790915
210706A00014	7/6/2021	1.15	6/26/2026	7/6/2021	100.8799	98.69520396	96.56808236	94.49659692	92.47889173	90.51318887	88.59778435	86.73104437	84.9114017
210706A00015	7/6/2021	1.06	12/31/2025	7/6/2021	100.22701	98.52024854	96.85033231	95.21613095	93.61656415	92.05059555	90.51723048	89.01551383	87.54452803
210707A00002	7/7/2021	1.12	6/26/2026	7/7/2021	100.81262	98.628696	96.50232572	94.43157617	92.4145919	90.44959543	88.5348832	86.66882177	84.84984431
210707A00008	7/9/2021	2.44	7/7/2031	7/9/2021	113.75818	106.4368528	99.64303073	93.33585069	87.47781876	82.03451929	76.97434669	72.26826197	67.88957165
210709A00002	7/9/2021	1.36	7/9/2029	7/9/2021	105.57095	100.3726904	95.45967267	90.81477384	86.42199074	82.26635935	78.33388161	74.61145786	71.08682431
210709A00005	7/9/2021	1.69	7/9/2031	7/9/2021	108.34562	101.2109155	94.59458368	88.45628874	82.75903076	77.46885566	72.55458946	67.9875971	63.74156327
210709A00006	7/13/2021	2.4	7/11/2031	7/13/2021	113.48545	106.1635746	99.37016951	93.06424044	87.20818264	81.76748052	76.71043851	72.00793684	67.63320957
210712A00008	6/27/2022	1.05	6/27/2025	6/27/2022	99.830648	98.615059	97.42884068	96.2709399	95.14035326	94.03612424	92.9573405	91.90313134	90.87266536
210712A00010	6/27/2022	1.05	6/27/2025	6/27/2022	99.830648	98.615059	97.42884068	96.2709399	95.14035326	94.03612424	92.9573405	91.90313134	90.87266536
210714A00009	7/14/2021	0.75	7/12/2024	7/14/2021	99.746629	99.38166016	99.01937583	98.65974656	98.3027431	97.94833662	97.59649872	97.24720141	96.90041712
210714A00010	7/14/2021	0.75	7/12/2024	7/14/2021	99.746629	99.38166016	99.01937583	98.65974656	98.3027431	97.94833662	97.59649872	97.24720142	96.90041712
210714A00011	7/14/2021	0.75	7/12/2024	7/14/2021	99.746629	99.38166016	99.01937583	98.65974656	98.3027431	97.94833662	97.59649872	97.24720142	96.90041712
210714A00012	7/14/2021	1.12	7/14/2026	7/14/2021	100.848	98.64040228	96.49331057	94.40472716	92.37273367	90.39548589	88.47121046	86.59820171	84.77481868
210714A00013	7/14/2021	1.12	7/14/2026	7/14/2021	100.848	98.64040228	96.49331057	94.40472716	92.37273367	90.39548589	88.47121046	86.59820172	84.77481868
210714A00014	7/14/2021	1.12	7/14/2026	7/14/2021	100.848	98.64040228	96.49331057	94.40472716	92.37273367	90.39548589	88.47121046	86.59820172	84.77481868
210714A00015	7/14/2021	1.11	7/14/2026	7/14/2021	100.80228	98.62919989	96.51543655	94.45903204	92.45810838	90.51086019	88.61555143	86.77051233	84.9741364
210714A00016	7/14/2021	0.75	7/12/2024	7/14/2021	99.747084	99.3827944	99.02118284	98.6622193	98.3058746	97.95212001	97.60092721	97.2522683	96.90611579
210714A00017	7/14/2021	0.73	7/12/2024	7/14/2021	99.74258	99.38245825	99.02497081	98.67008821	98.31778186	97.96802356	97.62078551	97.27604036	96.93376112
210714A00018	7/14/2021	0.75	7/12/2024	7/14/2021	99.747084	99.3827944	99.02118284	98.6622193	98.3058746	97.95212001	97.60092721	97.2522683	96.90611579
210714A00020	7/14/2021	0.9	3/14/2025	7/14/2021	99.646389	98.70768878	97.78656859	96.8825379	95.99512473	95.12387436	94.26834852	93.42812464	92.60279522
210719A00004	7/19/2021	1	4/20/2026	7/19/2021	100.40238	98.39948359	96.44624557	94.54111124	92.68258781	90.86923976	89.09968617	87.37259821	85.6866968
210719A00009	7/19/2021	1.04	7/17/2026	7/19/2021	100.67524	98.43832208	96.26169165	94.14334664	92.08136932	90.07391861	88.11922637	86.21559395	84.36138893
210720A00035	7/22/2021	2.27	7/21/2031	7/22/2021	112.58205	105.2668316	98.48206141	92.1864663	86.34218711	80.91447953	75.87144285	71.1837738	66.82454274
210721A00009	7/21/2021	1.7	7/21/2031	7/21/2021	108.44394	101.2759449	94.63079226	88.4676818	82.74919019	77.44097887	72.51152511	67.9318779	63.67543607
210722A00001	7/22/2021	1.1	7/22/2026	7/22/2021	100.82367	98.57211062	96.3815382	94.24994531	92.17540098	90.15605009	88.1901099	86.27586665	84.41167242
210722A00008	7/21/2023	1.84	7/22/2030	7/21/2023	108.49571	102.2586074	96.4204348	90.95364692	85.8327337	81.03406163	76.53572661	72.31741903	68.36030003

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
210722A00009	7/21/2023	1.96	7/22/2032	7/21/2023	111.47104	103.2599039	95.71795091	88.78710801	82.41461889	76.55253461	71.15725318	66.18910539	61.61198198
210729A00003	7/29/2021	1.11	7/29/2026	7/29/2021	100.86162	98.59153088	96.38338244	94.23515008	92.14488496	90.11071297	88.13083149	86.20350619	84.327068
210729A00004	7/29/2021	1.74	7/29/2031	7/29/2021	108.75254	101.5536589	94.88106539	88.69361423	82.95357212	77.62631838	72.68007392	68.085655	63.81624942
210729A00006	7/29/2021	1.87	11/30/2032	7/29/2021	111.08876	102.563802	94.76071522	87.6145149	81.06638433	75.06305994	69.55628056	64.50229396	59.86141429
210802A00002	8/2/2021	0.7	8/1/2025	8/2/2021	99.652163	98.34596992	97.06286434	95.80228774	94.5636989	93.34657349	92.15040348	90.97469644	89.81897498
210803A00005	8/5/2021	2.06	8/4/2026	8/5/2021	103.10585	100.7935369	98.54454343	96.35679608	94.22830001	92.15713674	90.14146075	88.17949632	86.26953441
210804A00008	8/6/2021	2.28	8/4/2028	8/6/2021	107.91135	103.5747207	99.43757764	95.48973457	91.72157923	88.12403515	84.6885291	81.40696068	78.27167391
210809A00010	8/9/2021	1.06	8/7/2026	8/9/2021	100.75634	98.4936636	96.29450972	94.15673325	92.07827322	90.05715037	88.09146341	86.17938545	84.31916057
210809A00012	8/9/2021	1.06	8/7/2026	8/9/2021	100.75634	98.4936636	96.29450972	94.15673325	92.07827322	90.05715037	88.09146341	86.17938545	84.31916057
210809A00013	8/9/2021	1.05	8/7/2026	8/9/2021	100.71084	98.48429171	96.3199835	94.21581513	92.16977051	90.1799135	88.24438417	86.3613953	84.52922911
210809A00014	8/9/2021	1.06	8/7/2026	8/9/2021	100.75634	98.4936636	96.29450972	94.15673325	92.07827322	90.05715037	88.09146341	86.17938545	84.31916057
210809A00015	8/9/2021	1.06	8/7/2026	8/9/2021	100.75634	98.4936636	96.29450972	94.15673325	92.07827322	90.05715037	88.09146341	86.17938545	84.31916057
210809A00016	8/9/2021	0.66	8/9/2024	8/9/2021	99.66756	99.24278765	98.82171965	98.40430717	97.99050229	97.58025795	97.17352788	96.77026665	96.37042957
210816A00003	8/16/2021	0.71	8/16/2024	8/16/2021	99.719396	99.34152113	98.96651444	98.59434354	98.22497621	97.85838077	97.49452599	97.1333811	96.77491582
210817A00013	8/19/2021	2	8/19/2026	8/19/2021	103.03314	100.6826366	98.39748769	96.17551665	94.01463513	91.91283599	89.86818961	87.87884043	85.94300367
210818A00005	8/18/2021	0.6	8/19/2024	8/18/2021	99.720053	99.33348185	98.94991395	98.56931398	98.19164745	97.81688041	97.44497943	97.0759116	96.70964449
210818A00007	8/18/2021	0.81	8/18/2025	8/18/2021	99.81838	98.46689121	97.13998538	95.83705082	94.55749588	93.30074798	92.06625279	90.85347354	89.66189029
210826A00008	8/26/2021	0.89	2/26/2025	8/26/2021	99.633957	98.73765401	97.85737262	96.99268669	96.14318506	95.30847094	94.48816123	93.68188594	92.88928766
210826A00009	8/26/2021	1.18	8/26/2026	8/26/2021	101.08958	98.74459384	96.46540773	94.24982108	92.09571564	90.00105607	87.96388625	85.98232566	84.05456604
210826A00013	8/26/2021	1.97	2/28/2033	8/26/2021	112.21496	103.4132005	95.37494081	88.02985537	81.31443333	75.1712855	69.5485265	64.39922192	59.68089354
210907A00004	9/7/2021	2.01	9/7/2033	9/7/2021	113.07992	103.7647316	95.29858932	87.59946479	80.5936466	74.21486041	68.40348475	63.10585302	58.27363176
210907A00006	9/7/2021	2.1	9/7/2034	9/7/2021	114.73574	104.4365256	95.16200526	86.80441316	79.26783938	72.46687026	66.32539214	60.77553676	55.75675077
210907A00007	9/7/2021	2.35	9/4/2037	9/7/2021	118.55489	105.442107	93.95125517	83.87128626	75.01967108	67.23841753	60.39066125	54.35774462	49.036712
210907A00008	9/7/2021	2.42	9/7/2038	9/7/2021	120.1863	106.1264831	93.91515042	83.29672808	74.05228764	65.99412501	58.96116509	52.81506231	47.43688872
210907A00009	9/7/2021	2.5	9/7/2039	9/7/2021	122.58372	107.5307665	94.56849313	83.3914017	73.74024491	65.39481337	58.16787738	51.90009476	46.45572662
210907A00010	9/7/2021	2.58	9/7/2040	9/7/2021	125.56448	109.4645995	95.71590971	83.95679779	73.88324688	65.23939198	57.80966761	51.41226966	45.89370607
210907A00011	9/7/2021	2.65	9/6/2041	9/7/2021	128.72695	111.5524166	97.00518733	84.66147538	74.16825912	65.23113184	57.60428886	51.08226825	45.49313098
210907A00013	9/9/2021	2.14	9/9/2025	9/9/2021	101.54762	100.1290047	98.73712019	97.371275	96.03080358	94.71506258	93.42342992	92.15530393	90.91010249
210907A00014	9/9/2021	2.45	9/9/2026	9/9/2021	104.23203	101.8113567	99.45936462	97.17372275	94.95219099	92.79261832	90.69293877	88.65116743	86.66539685
210907A00015	9/9/2021	2.21	9/9/2026	9/9/2021	103.6447	101.2313096	98.88644026	96.60776699	94.39305424	92.24015545	90.14700888	88.11163377	86.1321266
210913A00014	9/13/2021	1.15	9/13/2028	9/13/2021	101.14668	98.85075779	96.63472119	94.49511999	92.42867447	90.43226967	88.50294602	86.63789047	84.83442826
210913A00015	9/13/2021	1.08	9/14/2026	9/13/2021	100.80681	98.56221971	96.38195201	94.26376025	92.20549541	90.20509706	88.26058908	86.37007561	84.53173724
210914A00012	9/14/2021	1.18	9/14/2027	9/14/2021	102.58883	99.20198637	95.94432199	92.81024025	89.79441732	86.89178737	84.09752861	81.40705018	78.8159798

	Parallel-Shift Sensitivity Analysis													
3/31/2024					Price									
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400	
210914A00014	9/14/2021	0.97	9/14/2026	9/14/2021	100.93613	98.53641777	96.20556429	93.9412097	91.74108901	89.60302811	87.52493953	85.50481845	83.54073885	
210914A00015	9/14/2021	0.81	9/15/2025	9/14/2021	99.855269	98.42969378	97.03135365	95.6595378	94.31355999	92.99275718	91.69648854	90.42413454	89.17509603	
210914A00017	9/14/2021	1.32	9/14/2028	9/14/2021	104.45546	100.0694892	95.89152929	91.91066497	88.11660997	84.49966704	81.05069113	77.76105508	74.62261768	
210914A00018	9/14/2021	1.43	9/14/2029	9/14/2021	106.09992	100.7146068	95.6339816	90.83927835	86.31298055	82.03873075	78.00124809	74.18625215	70.58039265	
210915A00018	9/15/2021	0.74	9/16/2024	9/15/2021	99.635819	99.09880537	98.56760113	98.04211243	97.52224711	97.007915	96.49902785	95.99549928	95.49724474	
210915A00023	9/15/2021	0.74	9/16/2024	9/15/2021	99.635819	99.09880537	98.56760113	98.04211243	97.52224711	97.007915	96.49902785	95.99549928	95.49724474	
210915A00024	9/15/2021	1.1	9/15/2026	9/15/2021	100.92943	98.5736237	96.28628444	94.06500637	91.90748734	89.81152042	87.77498932	85.79586403	83.87219671	
210915A00025	9/15/2021	1.09	9/15/2026	9/15/2021	100.87896	98.5622102	96.31247727	94.12741587	92.00477672	89.94240354	87.93822854	85.99026812	84.09661889	
210915A00026	9/15/2021	1.1	9/15/2026	9/15/2021	100.92943	98.5736237	96.28628444	94.06500637	91.90748734	89.81152042	87.77498932	85.79586403	83.87219671	
210915A00027	9/15/2021	1.1	9/15/2026	9/15/2021	100.92943	98.5736237	96.28628444	94.06500637	91.90748734	89.81152042	87.77498932	85.79586403	83.87219671	
210916A00003	9/16/2021	0.75	9/16/2024	9/16/2021	99.683453	99.22188654	98.76459081	98.31150642	97.86257528	97.41774037	96.97694573	96.54013639	96.1072584	
210916A00007	9/16/2021	0.75	9/16/2024	9/16/2021	99.683453	99.22188654	98.76459081	98.31150642	97.86257528	97.41774037	96.97694573	96.54013639	96.1072584	
210916A00008	9/16/2021	1.48	9/15/2028	9/16/2021	104.58689	100.2129576	96.04608214	92.07541739	88.29073738	84.68240088	81.24131502	77.95890124	74.82706359	
210916A00009	9/16/2021	2.25	9/16/2036	9/16/2021	116.98442	104.7874321	94.00632845	84.46805531	76.02156602	68.53492162	61.89278741	55.99426826	50.75103548	
210917A00003	9/17/2021	0.8	9/17/2024	9/17/2021	99.705387	99.24106469	98.78106252	98.32532067	97.87378004	97.42638265	96.98307157	96.54379091	96.1084858	
210917A00004	9/17/2021	1.03	9/17/2025	9/17/2021	99.951938	98.52406323	97.12350805	95.74955871	94.40152562	93.07874251	91.78056546	90.50637196	89.25556003	
210917A00008	9/17/2021	1.55	9/15/2028	9/17/2021	104.89876	100.5179232	96.34438547	92.36728331	88.57638127	84.96202912	81.51512542	78.22708348	75.08979959	
210917A00012	9/17/2021	1.2	9/11/2026	9/17/2021	101.17824	98.79012323	96.47016588	94.21604068	92.02551693	89.89645288	87.8267917	85.81455754	83.85785179	
210920A00014	9/9/2022	1.28	9/9/2026	9/9/2022	101.3688	98.98362686	96.66635839	94.41468843	92.22639935	90.0993618	88.03153058	86.02094084	84.06570438	
210920A00015	9/9/2022	1.28	9/9/2026	9/9/2022	101.3688	98.98362686	96.66635839	94.41468843	92.22639935	90.0993618	88.03153058	86.02094084	84.06570438	
210921A00006	9/21/2021	1.43	9/21/2028	9/21/2021	104.11119	99.94786412	95.98104135	92.20033877	88.59598302	85.15876724	81.88001505	78.7515471	75.76564988	
210921A00009	9/21/2021	1.28	9/21/2028	9/21/2021	104.02368	99.85150211	95.8766255	92.08860771	88.47761964	85.0344029	81.75023346	78.61688789	75.62661188	
210924A00003	9/24/2021	2.37	9/24/2036	9/24/2021	118.44889	106.1464747	95.2715564	85.6495747	77.12818329	69.57432563	62.87170474	56.91859577	51.62595361	
210924A00004	9/24/2021	2.37	9/24/2036	9/24/2021	118.44889	106.1464747	95.2715564	85.6495747	77.12818329	69.57432563	62.87170474	56.91859577	51.62595361	
210924A00005	9/24/2021	2.37	9/24/2036	9/24/2021	118.44889	106.1464747	95.2715564	85.6495747	77.12818329	69.57432563	62.87170474	56.91859577	51.62595361	
210924A00011	9/24/2021	2.19	9/25/2034	9/24/2021	115.69008	105.2986417	95.94421312	87.51733423	79.92063042	73.06742599	66.88051962	61.2911056	56.23782248	
210928A00007	9/28/2021	0.88	9/27/2024	9/28/2021	99.730777	99.23942046	98.75288876	98.27111127	97.79401862	97.32154275	96.85361693	96.39017571	95.93115489	
210928A00008	9/28/2021	1.35	9/28/2026	9/28/2021	101.59736	99.15890565	96.79128607	94.492044	92.25881919	90.08934749	87.98145628	85.93306018	83.94215696	
210928A00009	9/28/2021	2.18	9/28/2033	9/28/2021	114.72607	105.2830701	96.70367352	88.90406261	81.80896685	75.35074806	69.4685912	64.10778475	59.2190801	
210928A00010	9/28/2021	1.12	9/26/2025	9/28/2021	100.10178	98.64877558	97.22402247	95.8267685	94.45628968	93.11188693	91.792885	90.49863143	89.22849564	
210929A00011	3/16/2022	1.03	3/14/2025	3/16/2022	99.771146	98.83180329	97.91004878	97.00539196	96.11736067	95.24550003	94.38937159	93.54855264	92.7226355	
210929A00012	3/16/2022	1.03	3/14/2025	3/16/2022	99.771146	98.83180329	97.91004878	97.00539196	96.11736067	95.24550003	94.38937159	93.54855264	92.7226355	
211007A00005	10/7/2021	0.86	10/7/2024	10/7/2021	99.665682	99.07089904	98.48323522	97.90256283	97.32875742	96.76169747	96.20126432	95.64734207	95.09981753	

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
211007A00006	10/7/2021	1.28	10/7/2026	10/7/2021	101.42724	99.00792375	96.66007394	94.38113886	92.16867102	90.02032667	87.93386057	85.90712111	83.93804576
211014A00012	10/14/2021	1.46	10/14/2031	10/14/2021	104.05862	100.2105774	96.56818463	93.11835933	89.84895805	86.74870024	83.80710083	81.01440868	78.36155004
211014A00018	10/14/2021	0.8	10/11/2024	10/14/2021	99.739783	99.2099344	98.68570658	98.16701023	97.65375799	97.14586435	96.64324558	96.14581969	95.65350638
211015A00029	10/15/2021	0.98	10/15/2024	10/15/2021	99.738935	99.1994972	98.66588265	98.13799772	97.61575041	97.09905066	96.58781033	96.08194314	95.58136461
211015A00031	10/15/2021	1.22	10/15/2025	10/15/2021	100.29501	98.79066774	97.31618438	95.87074169	94.45355151	93.06385375	91.7009152	90.36402827	89.0525099
211019A00009	10/19/2021	1.48	10/9/2026	10/19/2021	101.95886	99.48707975	97.0876975	94.75817064	92.49606449	90.29904471	88.16487243	86.09139974	84.07656535
211019A00011	10/19/2021	1.48	10/16/2026	10/19/2021	101.9821	99.49179871	97.07480507	94.7285285	92.4504898	90.23831265	88.08971869	86.00252273	83.97462835
211022A00008	10/22/2021	1.12	10/22/2024	10/22/2021	99.806135	99.24776542	98.69562754	98.14961757	97.60963386	97.07557701	96.5473498	96.02485712	95.50800591
211026A00012	10/26/2021	1.52	10/26/2026	10/26/2021	102.11831	99.60020214	97.1567412	94.78526862	92.48323986	90.24821708	88.07786395	85.96994063	83.92229917
211026A00013	10/26/2021	1.52	10/26/2026	10/26/2021	102.11831	99.60020214	97.1567412	94.78526862	92.48323986	90.24821708	88.07786395	85.96994063	83.92229917
211028A00012	10/28/2021	1.64	10/15/2027	10/28/2021	103.8633	100.3844152	97.04049665	93.82558589	90.73402067	87.76041912	84.89966413	82.14688879	79.49746267
211028A00013	10/28/2021	1.65	10/22/2027	10/28/2021	103.92899	100.4307269	97.06871464	93.83691288	90.72958346	87.74127362	84.86680009	82.10123422	79.4398879
211028A00019	10/28/2021	1.1	10/28/2024	10/28/2021	99.779632	99.20539043	98.63773189	98.0765437	97.52171581	96.97314064	96.43071301	95.89433011	95.3638914
211028A00020	10/28/2021	2.05	1/28/2031	10/28/2021	110.39894	103.6134865	97.29242712	91.40158989	85.90948495	80.78707806	76.00758755	71.5462991	67.3803965
211028A00021	10/28/2021	2.28	10/28/2033	10/28/2021	115.7582	106.1929045	97.50756771	89.61624947	82.44182935	75.91505696	69.97371198	64.56185785	59.62917795
211110A00012	11/10/2021	1.44	11/10/2026	11/10/2021	101.92779	99.42045587	96.9890916	94.63089717	92.34319995	90.12344461	87.96918693	85.87808814	83.84790947
211110A00013	11/10/2021	1.44	11/10/2026	11/10/2021	101.92779	99.42045587	96.9890916	94.63089717	92.34319995	90.12344461	87.96918693	85.87808814	83.84790947
211110A00014	11/10/2021	1.44	11/10/2026	11/10/2021	101.92779	99.42045587	96.9890916	94.63089717	92.34319995	90.12344461	87.96918693	85.87808814	83.84790947
211115A00032	11/15/2021	1.75	11/12/2027	11/15/2021	104.38486	100.8228195	97.40117405	94.11362212	90.9541798	87.91716529	84.99718168	82.18910099	79.48804905
211117A00010	11/17/2021	1.18	11/18/2024	11/17/2021	99.818602	99.18807562	98.56549059	97.95069765	97.34355116	96.74390909	96.15163289	95.56658742	94.98864083
211119A00009	11/19/2021	1.68	11/19/2027	11/19/2021	104.16453	100.5877112	97.15251754	93.85256466	90.68178992	87.63443836	84.70504511	81.88841893	79.17962682
211123A00011	11/23/2021	1.69	11/23/2026	11/23/2021	102.67156	100.0713634	97.5498912	95.10427264	92.73176101	90.42972832	88.19565931	86.02714573	83.92188093
211123A00012	11/23/2021	2.27	11/23/2033	11/23/2021	115.74771	106.1164798	97.37708368	89.44187205	82.23224637	75.67767893	69.71484611	64.28685866	59.34257782
211129A00011	11/29/2021	1.53	11/20/2026	11/29/2021	102.23607	99.64974884	97.1415932	94.70875544	92.34851467	90.05826726	87.83552092	85.67788907	83.58308555
211129A00012	11/29/2021	1.53	11/25/2026	11/29/2021	102.25475	99.65476511	97.13366749	94.68857024	92.31671586	90.01546639	87.78229724	85.61479147	83.51063435
211206A00008	12/6/2021	1.24	12/6/2024	12/6/2021	99.862732	99.18390207	98.51426602	97.85363762	97.20183608	96.55868541	95.92401428	95.29765584	94.67944763
211206A00009	12/6/2021	1.43	12/5/2025	12/6/2021	100.7978	99.15343212	97.5434913	95.96696311	94.42287097	92.91027641	91.42827726	89.9760058	88.55262713
211206A00010	12/6/2021	1.54	12/4/2026	12/6/2021	102.31379	99.68924331	97.14489587	94.67778873	92.2850975	89.96412139	87.71227677	85.52709123	83.40619782
211206A00017	12/6/2021	1.56	12/4/2026	12/6/2021	102.36742	99.74215295	97.19709619	94.72929605	92.33592762	90.01428961	87.76179796	85.57597977	83.45446768
211207A00011	12/7/2021	1.62	12/1/2026	12/7/2021	102.51744	99.89790663	97.35820586	94.89540044	92.50668633	90.18938181	87.94092112	85.75884856	83.64081292
211207A00012	12/7/2021	1.62	12/4/2026	12/7/2021	102.52833	99.90088185	97.35369715	94.88381799	92.48841796	90.1647943	87.91036153	85.7226454	83.59927726
211207A00017	12/7/2021	1.3	11/15/2024	12/7/2021	99.895567	99.27278443	98.6577461	98.05030831	97.45033075	96.85767655	96.27221216	95.69380728	95.12233471
211208A00012	12/8/2021	1.62	12/8/2026	12/8/2021	102.488	99.90236743	97.39688585	94.96856109	92.61453426	90.33207262	88.11856305	85.97150585	83.88850896

Parallel-Shift Sensitivity Analysis													
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
211208A00013	12/8/2021	1.63	12/8/2026	12/8/2021	102.55087	99.93580019	97.40204666	94.94656646	92.56645506	90.25893624	88.0213554	85.85117323	83.74595988
211209A00006	12/9/2021	1.61	12/8/2026	12/9/2021	102.51593	99.87828522	97.32147964	94.84252007	92.43855033	90.10683975	87.84477664	85.64986213	83.51970445
211209A00007	12/9/2021	1.61	12/8/2026	12/9/2021	102.51593	99.87828522	97.32147964	94.84252007	92.43855033	90.10683975	87.84477664	85.64986213	83.51970445
211210A00014	12/10/2021	1.54	12/10/2025	12/10/2021	101.00031	99.34117856	97.71697875	96.12667647	94.56927423	93.04381384	91.5493744	90.08507053	88.65005057
211210A00015	12/10/2021	1.63	12/10/2026	12/10/2021	102.5771	99.93344146	97.37093055	94.88655728	92.47744987	90.14086304	87.87417132	85.67486294	83.54053392
211210A00016	12/10/2021	1.76	12/10/2027	12/10/2021	104.5549	100.9155373	97.42206537	94.06781827	90.84647369	87.75203506	84.77881261	81.92140561	79.17468582
211213A00011	12/13/2021	1.32	12/13/2024	12/13/2021	99.921056	99.22333945	98.53533576	97.8568429	97.18766461	96.52761001	95.87649338	95.23413405	94.60035616
211214A00014	12/14/2021	1.31	12/13/2024	12/14/2021	99.913959	99.21627041	98.52829427	97.8498287	97.18067745	96.52064961	95.8695595	95.22722642	94.59347455
211214A00015	12/14/2021	1.49	12/12/2025	12/14/2021	100.92173	99.25807909	97.62954731	96.03508342	94.47368219	92.94437813	91.44624346	89.97838625	88.53994869
211217A00021	12/21/2021	2.44	12/18/2026	12/21/2021	104.80953	102.1145111	99.50251399	96.97044553	94.51535167	92.13440946	89.82492013	87.58430256	85.41008725
211220A00006	12/20/2021	1.21	12/20/2024	12/20/2021	99.851027	99.13483942	98.4288878	97.73295424	97.04682659	96.37029869	95.70317011	95.04524595	94.39633669
211221A00010	12/21/2021	1.31	12/20/2024	12/21/2021	99.923922	99.20744161	98.50120006	97.80497945	97.11856761	96.44175831	95.77435108	95.11615099	94.46696846
211221A00023	12/21/2021	1.53	6/19/2026	12/21/2021	101.70647	99.53111943	97.41266056	95.34918942	93.33888617	91.38000672	89.47087884	87.60989856	85.7955267
211221A00025	12/21/2021	1.59	12/21/2026	12/21/2021	102.5082	99.83699226	97.24850178	94.73963714	92.30744397	89.94909947	87.66190551	85.44328202	83.29076092
211222A00003	12/22/2021	1.33	1/15/2025	12/22/2021	99.97511	99.18894587	98.41509922	97.65328224	96.90321603	96.16463027	95.43726286	94.72085962	94.01517404
211222A00004	12/22/2021	1.26	10/15/2024	12/22/2021	99.892213	99.35229691	98.81820787	98.2898521	97.76713752	97.24997403	96.73827345	96.23194946	95.73091753
211222A00005	12/22/2021	1.2	7/15/2024	12/22/2021	99.923431	99.63208409	99.34244627	99.05450291	98.76823909	98.48364003	98.20069115	97.91937802	97.63968641
211222A00008	12/22/2021	1.13	4/15/2024	12/22/2021	99.986061	99.94451648	99.90302343	99.86158141	99.82019032	99.77885005	99.73756052	99.69632161	99.65513325
211222A00023	12/22/2021	1.13	4/15/2024	12/22/2021	99.986061	99.94451648	99.90302343	99.86158141	99.82019032	99.77885005	99.73756052	99.69632161	99.65513325
211222A00024	12/22/2021	1.13	4/15/2024	12/22/2021	99.986061	99.94451648	99.90302343	99.86158141	99.82019032	99.77885005	99.73756052	99.69632161	99.65513325
211222A00025	12/22/2021	1.2	7/15/2024	12/22/2021	99.923431	99.63208409	99.34244627	99.05450291	98.76823909	98.48364003	98.20069115	97.91937802	97.63968641
211222A00026	12/22/2021	1.2	7/15/2024	12/22/2021	99.923431	99.63208409	99.34244627	99.05450291	98.76823909	98.48364003	98.20069115	97.91937802	97.63968641
211222A00027	12/22/2021	1.26	10/15/2024	12/22/2021	99.892213	99.35229691	98.81820787	98.2898521	97.76713752	97.24997403	96.73827345	96.23194946	95.73091753
211222A00029	12/22/2021	1.26	10/15/2024	12/22/2021	99.892213	99.35229691	98.81820787	98.2898521	97.76713752	97.24997403	96.73827345	96.23194946	95.73091753
211222A00030	12/22/2021	1.33	1/15/2025	12/22/2021	99.97511	99.18894587	98.41509922	97.65328224	96.90321603	96.16463027	95.43726286	94.72085962	94.01517404
211222A00031	12/22/2021	1.33	1/15/2025	12/22/2021	99.97511	99.18894587	98.41509922	97.65328224	96.90321603	96.16463027	95.43726286	94.72085962	94.01517404
211222A00035	12/22/2021	2.15	12/22/2033	12/22/2021	114.68149	105.0278183	96.27581377	88.33617535	81.12888777	74.58221347	68.63179694	63.21987009	58.29454696
211227A00005	12/27/2021	1.61	12/18/2026	12/27/2021	102.55196	99.88791798	97.30617501	94.80365839	92.37743615	90.02470652	87.74279106	85.52912821	83.38126726
211227A00009	12/27/2021	1.6	12/23/2026	12/27/2021	102.54263	99.86576851	97.2719257	94.75799555	92.32100806	89.95812578	87.66663681	85.44394815	83.28757958
220104A00006	1/4/2022	1.76	1/4/2029	1/4/2022	106.11545	101.8582179	97.80877068	93.95574966	90.28847549	86.796906	83.4715949	80.3036534	77.28471445
220106A00007	1/6/2022	2.42	1/6/2034	1/6/2022	117.32031	107.5059399	98.60828737	90.53642015	83.20888345	76.55266468	70.50227826	64.99895403	59.98991686
220106A00008	1/6/2022	2.5	1/5/2035	1/6/2022	119.12085	108.3031383	98.58473858	89.84731577	81.98587337	74.90718331	68.52841131	62.77590918	57.58415298
220106A00009	1/6/2022	2.57	1/4/2036	1/6/2022	120.52129	108.7313914	98.23525768	88.88280638	80.54213166	73.09721515	66.44593781	60.49834954	55.17516203

Parallel-Shift Sensitivity Analysis													
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220106A00010	1/6/2022	2.64	1/6/2037	1/6/2022	121.89951	109.1449256	97.8923523	87.95507701	79.17055541	71.39717313	64.51145281	58.40564645	52.98565799
220106A00011	1/6/2022	2.7	1/6/2038	1/6/2022	123.39337	109.6836739	97.69547528	87.20077323	78.00295572	69.93233407	62.84233003	56.60621983	51.11435129
220106A00013	1/6/2022	2.75	1/6/2039	1/6/2022	125.2113	110.5312227	97.80597704	86.76104809	77.16194426	68.8081712	61.5281426	55.17487517	49.62234378
220106A00018	1/10/2022	3.11	1/8/2032	1/10/2022	119.73172	111.7079031	104.2929552	97.43719667	91.09525922	85.22568758	79.79058267	74.75527888	70.08805227
220106A00019	1/10/2022	3.17	1/7/2033	1/10/2022	122.46993	113.3689946	105.0347369	97.3980172	90.39629015	83.97294032	78.07669079	72.66107376	67.68395609
220111A00002	1/11/2022	1.75	1/16/2026	1/11/2022	101.50349	99.74346461	98.0222295	96.33865139	94.6916375	93.08013591	91.50313364	89.95965481	88.44875902
220111A00005	1/11/2022	1.54	1/10/2025	1/11/2022	100.18514	99.34092304	98.51100074	97.69501399	96.89261318	96.10346032	95.32722855	94.56360172	93.81227392
220112A00004	1/12/2022	1.55	1/12/2026	1/12/2022	101.39448	99.64113969	97.9263164	96.24886958	94.60770192	93.00175817	91.43002304	89.89151933	88.38530612
220112A00005	1/12/2022	1.55	1/12/2026	1/12/2022	101.39448	99.64113969	97.9263164	96.24886958	94.60770192	93.00175817	91.43002304	89.89151933	88.38530612
220112A00008	1/12/2022	1.47	11/20/2024	1/12/2022	100.00537	99.36882696	98.7403634	98.11982784	97.50707093	96.90194703	96.30431415	95.71403378	95.13097082
220114A00007	1/14/2022	1.7	1/27/2026	1/14/2022	101.47325	99.68449399	97.93575473	96.22589222	94.55380715	92.91843874	91.31876315	89.75379188	88.2225703
220114A00009	1/14/2022	1.74	4/21/2026	1/14/2022	101.9308	99.90913527	97.93755267	96.01448592	94.13842865	92.30793235	90.52160369	88.77810197	87.07613669
220114A00010	1/14/2022	1.86	1/13/2027	1/14/2022	103.34282	100.6003127	97.94430892	95.37156739	92.87899001	90.46361448	88.12260741	85.85325775	83.65297062
220118A00009	1/18/2022	1.65	1/17/2025	1/18/2022	100.2352	99.44256506	98.66242784	97.89449364	97.13847773	96.39410419	95.66110558	94.93922257	94.22820369
220121A00013	1/21/2022	1.78	11/3/2025	1/21/2022	101.23636	99.6743895	98.14396443	96.64420034	95.17424156	93.73326399	92.32047361	90.93510514	89.57642069
220121A00014	1/21/2022	1.78	11/3/2025	1/21/2022	101.23636	99.6743895	98.14396443	96.64420034	95.17424156	93.73326399	92.32047361	90.93510514	89.57642069
220124A00007	1/24/2022	1.88	1/22/2027	1/24/2022	103.43732	100.6700746	97.99079139	95.39618865	92.88312537	90.44859591	88.08972321	85.80375254	83.58804546
220124A00008	1/24/2022	1.88	1/22/2027	1/24/2022	103.43732	100.6700746	97.99079139	95.39618865	92.88312537	90.44859591	88.08972321	85.80375254	83.58804546
220125A00010	1/25/2022	1.89	1/25/2027	1/25/2022	103.47845	100.7028144	98.01563457	95.41361353	92.89359562	90.45256036	88.08761585	85.79599245	83.57503691
220126A00002	1/26/2022	1.9	12/18/2026	1/26/2022	103.34075	100.6658842	98.07357056	95.5607286	93.12441868	90.76183164	88.47028194	86.24720118	84.09013208
220126A00003	1/26/2022	1.9	12/18/2026	1/26/2022	103.34075	100.6658842	98.07357056	95.5607286	93.12441868	90.76183164	88.47028194	86.24720118	84.09013208
220131A00003	1/31/2022	1.98	2/1/2027	1/31/2022	103.76562	100.9673873	98.25884874	95.63666432	93.09763741	90.63870689	88.25694059	85.94952918	83.71378033
220131A00006	1/31/2022	1.83	2/1/2027	1/31/2022	103.70956	100.9037061	98.18797252	95.55899596	93.01355922	90.54858167	88.16111269	85.84832552	83.60751134
220201A00011	2/1/2022	1.86	4/20/2026	2/1/2022	102.17358	100.1520678	98.18058102	96.25755498	94.3814868	92.55093124	90.76449805	89.0208494	87.31869752
220203A00009	2/3/2022	1.99	2/2/2027	2/3/2022	103.7997	100.9981059	98.28639309	95.66121263	93.11935845	90.65776044	88.273478	85.96369381	83.725708
220204A00004	2/4/2022	2.08	1/8/2027	2/4/2022	103.93259	101.1948209	98.54296532	95.97379549	93.48422998	91.07132384	88.7322614	86.46434963	84.26501186
220204A00005	2/4/2022	1.83	1/10/2025	2/4/2022	100.36298	99.5884623	98.82586614	98.07491729	97.33535036	96.60690797	95.88934045	95.18240555	94.48586819
220209A00010	2/9/2022	2.14	1/11/2027	2/9/2022	104.11424	101.3661051	98.70441159	96.12592291	93.62754211	91.20630857	88.85939095	86.58408056	84.37778513
220209A00011	2/9/2022	2.14	1/11/2027	2/9/2022	104.11424	101.3661051	98.70441159	96.12592291	93.62754211	91.20630857	88.85939095	86.58408056	84.37778513
220209A00012	2/9/2022	1.98	7/29/2025	2/9/2022	101.14747	99.84175894	98.55956147	97.30028262	96.06335005	94.84821027	93.65432784	92.48118464	91.32827917
220209A00013	2/9/2022	1.98	7/29/2025	2/9/2022	101.14747	99.84175894	98.55956147	97.30028262	96.06335005	94.84821027	93.65432784	92.48118464	91.32827917
220211A00010	2/11/2022	1.99	2/11/2025	2/11/2022	100.56553	99.76347041	98.97537119	98.20085733	97.43956943	96.69116086	95.95529714	95.23165545	94.51992411
220214A00010	2/14/2022	2.46	12/21/2029	2/14/2022	111.45057	105.6862146	100.2583699	95.14557984	90.32786787	85.78663064	81.50453607	77.46542952	73.65424745

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220214A00012	2/14/2022	2.47	12/28/2029	2/14/2022	111.53894	105.7538452	100.3074068	95.17796649	90.34536907	85.79084896	81.49692662	77.4473134	73.62682386
220216A00002	2/16/2022	2.09	2/14/2025	2/16/2022	100.69121	99.82169557	98.96715622	98.1272098	97.30148483	96.48962233	95.69127532	94.90610834	94.13379692
220216A00003	2/16/2022	2.49	12/14/2029	2/16/2022	111.59021	105.8401665	100.4247777	95.32276026	90.51430251	85.98095033	81.70550695	77.67194035	73.86529817
220217A00011	2/17/2022	2.08	2/14/2025	2/17/2022	100.68238	99.81290934	98.95841165	98.1185064	97.29282211	96.48099981	95.68269253	94.89756481	94.12529222
220217A00012	2/17/2022	2.28	2/16/2027	2/17/2022	104.71509	101.8599593	99.09751808	96.42427405	93.83688173	91.33213937	88.90698203	86.55847489	84.28380709
220217A00013	2/17/2022	2.08	2/14/2025	2/17/2022	100.68238	99.81290934	98.95841165	98.1185064	97.29282211	96.48099981	95.68269253	94.89756481	94.12529222
220217A00015	2/17/2022	2.28	2/16/2027	2/17/2022	104.71509	101.8599593	99.09751808	96.42427405	93.83688173	91.33213937	88.90698203	86.55847489	84.28380709
220217A00016	2/17/2022	2.24	9/15/2026	2/17/2022	103.75077	101.3199629	98.95861323	96.66434717	94.43488412	92.26803496	90.16169767	88.11385338	86.12256249
220217A00017	2/17/2022	2.27	1/29/2027	2/17/2022	104.57285	101.7711741	99.0589747	96.43291966	93.88982258	91.42663242	89.04042705	86.72840698	84.48788961
220217A00018	2/17/2022	2.28	2/17/2027	2/17/2022	104.72154	101.8634234	99.09818219	96.42231004	93.83245194	91.32539726	88.89807262	86.54753533	84.270967
220217A00020	2/17/2022	2.08	2/13/2025	2/17/2022	100.67894	99.81214702	98.96024148	98.12284016	97.29957493	96.49009002	95.69404154	94.91109695	94.14093459
220217A00027	2/16/2024	2.56	2/17/2032	2/16/2024	115.67962	107.703617	100.344109	93.55008873	87.27501694	81.47641015	76.11546848	71.1567392	66.56781255
220218A00003	2/18/2022	2.16	9/4/2026	2/18/2022	103.49622	101.0980674	98.7676464	96.50267023	94.30094099	92.16034771	90.07886235	88.05453602	86.08549539
220222A00018	2/22/2022	2.5	12/19/2031	2/22/2022	114.93733	107.1456024	99.94528062	93.2882137	87.13041884	81.43169726	76.15528967	71.26756491	66.73773825
220224A00010	2/24/2022	2.04	3/10/2025	2/24/2022	100.72709	99.79345623	98.87708112	97.97748696	97.09421589	96.2268266	95.37489356	94.53800631	93.71576883
220224A00018	2/24/2022	2.15	3/16/2026	2/24/2022	102.58688	100.6542996	98.76782403	96.92607081	95.12771033	93.37146155	91.65608982	89.98040485	88.3432588
220224A00023	2/24/2022	2.15	3/16/2026	2/24/2022	102.58688	100.6542996	98.76782403	96.92607081	95.12771033	93.37146155	91.65608982	89.98040485	88.3432588
220225A00014	2/25/2022	2.42	2/23/2029	2/25/2022	109.73513	104.813737	100.1435694	95.71051946	91.50133904	87.5035858	83.70557038	80.09630708	76.66546806
220225A00015	2/25/2022	2.26	2/25/2027	2/25/2022	104.71495	101.8338163	99.04700221	96.35091703	93.7421303	91.21736021	88.77346635	86.40744273	84.11641135
220301A00013	3/1/2022	2.01	2/16/2027	3/1/2022	103.93654	101.0927066	98.34129138	95.6788069	93.10191625	90.60742591	88.19227887	85.85354794	83.58842953
220301A00014	3/1/2022	1.85	1/10/2025	3/1/2022	100.37871	99.60412863	98.84146548	98.09045036	97.35081787	96.62231061	95.9046789	95.19768049	94.50108027
220301A00015	3/1/2022	2	1/4/2027	3/1/2022	103.6919	100.9679233	98.3291442	95.77236173	93.29451499	90.89267966	88.56406078	86.30598599	84.11589917
220302A00010	3/2/2022	2.14	1/13/2027	3/2/2022	104.12426	101.3707596	98.70402567	96.12080749	93.61799885	91.19262972	88.84185928	86.56296933	84.35335813
220302A00011	3/2/2022	2.14	1/13/2027	3/2/2022	104.12426	101.3707596	98.70402567	96.12080749	93.61799885	91.19262972	88.84185928	86.56296933	84.35335813
220304A00004	3/4/2022	2.12	12/29/2028	3/4/2022	107.98298	103.2557923	98.76338862	94.49282842	90.43195921	86.5693632	82.89430832	79.39670299	76.06705408
220308A00011	3/8/2022	2.07	1/10/2025	3/8/2022	100.55179	99.77645827	99.01305826	98.26131419	97.5209605	96.79173968	96.07340189	95.36570476	94.66841305
220308A00012	3/8/2022	2.51	3/8/2032	3/8/2022	112.66471	106.0793093	99.97429469	94.31089649	89.05370723	84.17037284	79.63131293	75.40946801	71.48007111
220309A00010	3/9/2022	2.27	3/8/2027	3/9/2022	104.80606	101.8941514	99.07849436	96.35538766	93.7212974	91.17284446	88.7067968	86.32006219	84.00968139
220310A00008	3/10/2022	2.22	3/10/2025	3/10/2022	100.99486	99.99328288	99.01170793	98.04954168	97.10621105	96.18116537	95.27387528	94.38383172	93.51054494
220310A00009	3/10/2022	2.31	3/10/2027	3/10/2022	104.81927	101.9647059	99.20559481	96.53819545	93.9589331	91.46439395	89.05131674	86.71658503	84.45721986
220310A00010	3/10/2022	2.31	3/10/2027	3/10/2022	104.81927	101.9647059	99.20559481	96.53819545	93.9589331	91.46439395	89.05131674	86.71658503	84.45721986
220311A00013	3/15/2022	2.35	3/15/2027	3/15/2022	105.08005	102.145891	99.30927567	96.56643164	93.91375651	91.3478067	88.86528955	86.46305575	84.13809228
220314A00004	3/14/2022	2.44	3/12/2027	3/14/2022	105.32876	102.3987184	99.56579397	96.82624666	94.17649929	91.61313194	89.13287408	86.73259719	84.40930776

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220314A00005	3/14/2022	2.36	3/14/2025	3/14/2022	101.04751	100.1015903	99.17334613	98.2622835	97.3679284	96.48982419	95.62753073	94.78062368	93.94869374
220314A00006	3/14/2022	2.36	3/14/2025	3/14/2022	101.04751	100.1015903	99.17334613	98.2622835	97.3679284	96.48982419	95.62753073	94.78062368	93.94869374
220314A00007	3/14/2022	2.44	3/12/2027	3/14/2022	105.32876	102.3987184	99.56579397	96.82624666	94.17649929	91.61313194	89.13287408	86.73259719	84.40930776
220314A00008	3/14/2022	2.38	7/28/2025	3/14/2022	101.67522	100.3683638	99.0853024	97.82542138	96.58813045	95.37285927	94.17905656	93.00618929	91.85374195
220314A00009	3/14/2022	2.38	7/28/2025	3/14/2022	101.67522	100.3683638	99.0853024	97.82542138	96.58813045	95.37285927	94.17905656	93.00618929	91.85374195
220315A00014	3/15/2022	2.78	3/15/2032	3/15/2022	117.54463	109.4257834	101.9383707	95.02976049	88.65197073	82.76123389	77.31760685	72.28461877	67.62895295
220315A00015	3/15/2022	3.18	3/13/2037	3/15/2022	128.81578	115.4774918	103.7159335	93.3336201	84.15885123	76.04222495	68.8536367	62.47969543	56.82149703
220315A00018	3/15/2022	2.43	3/15/2027	3/15/2022	105.31662	102.3789434	99.53889673	96.79270584	94.13676553	91.56762958	89.08200278	86.6767334	84.34880607
220315A00036	3/17/2022	2.63	3/16/2027	3/17/2022	105.91437	102.9651952	100.1140384	97.35711232	94.69079534	92.11162573	89.61629354	87.20163305	84.86461564
220315A00037	3/17/2022	2.63	3/16/2027	3/17/2022	105.91437	102.9651952	100.1140384	97.35711232	94.69079534	92.11162573	89.61629354	87.20163305	84.86461564
220317A00011	3/17/2022	2.48	3/17/2025	3/17/2022	101.17628	100.221705	99.28510986	98.36599108	97.46386269	96.57825657	95.70872168	94.85482327	94.01614216
220317A00023	5/3/2022	2.52	5/2/2025	5/3/2022	101.41841	100.3402974	99.28504795	98.25194246	97.2402894	96.2494258	95.27871578	94.32754914	93.3953401
220317A00026	5/3/2022	2.59	5/3/2027	5/3/2022	106.11465	103.0334822	100.0583092	97.18488099	94.40914216	91.72722411	89.13543506	86.63025082	84.20830606
220317A00027	5/3/2022	2.59	5/3/2027	5/3/2022	106.11465	103.0334822	100.0583092	97.18488099	94.40914216	91.72722411	89.13543506	86.63025082	84.20830606
220317A00028	5/3/2022	2.59	5/3/2027	5/3/2022	106.11465	103.0334822	100.0583092	97.18488099	94.40914216	91.72722411	89.13543506	86.63025082	84.20830606
220323A00016	6/2/2022	2.78	6/2/2025	6/2/2022	101.85798	100.695184	99.55888977	98.4482014	97.36226052	96.30024675	95.26137565	94.24489673	93.25009163
220323A00017	6/2/2022	2.78	6/2/2025	6/2/2022	101.85798	100.695184	99.55888977	98.4482014	97.36226052	96.30024675	95.26137565	94.24489673	93.25009163
220324A00007	3/24/2022	2.72	3/24/2025	3/24/2022	101.44494	100.4702841	99.51433236	98.57654848	97.65641798	96.75344569	95.86715478	94.99708597	94.1427967
220324A00015	3/24/2022	2.79	3/3/2026	3/24/2022	103.75671	101.8463565	99.98075159	98.15857618	96.37856205	94.63948636	92.9401697	91.27947427	89.65630212
220325A00010	3/28/2022	2.78	3/21/2025	3/28/2022	101.48809	100.5212156	99.57274575	98.6421572	97.72894758	96.83263312	95.95274791	95.08884301	94.24048572
220325A00011	3/28/2022	2.79	4/25/2025	3/28/2022	101.67843	100.6173883	99.57846041	98.56095987	97.56422868	96.58763556	95.63057457	94.69246389	93.77274461
220325A00012	3/28/2022	2.85	3/23/2026	3/28/2022	104.00966	102.0444612	100.1265067	98.25436579	96.42666429	94.64207881	92.89933431	91.19720201	89.5344974
220325A00015	3/28/2022	2.86	3/23/2027	3/28/2022	106.64381	103.6654233	100.786533	98.00327127	95.31194158	92.7090117	90.1911052	87.75499373	85.39758959
220325A00017	3/28/2022	2.86	3/23/2027	3/28/2022	106.64381	103.6654233	100.786533	98.00327127	95.31194158	92.7090117	90.1911052	87.75499373	85.39758959
220325A00018	3/28/2022	2.85	9/10/2026	3/28/2022	105.21802	102.7824182	100.4159176	98.11616966	95.88091924	93.70800089	91.59533488	89.5409232	87.54284585
220325A00019	3/28/2022	2.86	3/23/2027	3/28/2022	106.64381	103.6654233	100.786533	98.00327127	95.31194158	92.7090117	90.1911052	87.75499373	85.39758959
220325A00020	3/28/2022	2.86	3/23/2027	3/28/2022	106.64381	103.6654233	100.786533	98.00327127	95.31194158	92.7090117	90.1911052	87.75499373	85.39758959
220329A00007	3/29/2022	2.94	3/29/2029	3/29/2022	112.51024	107.4305309	102.6137624	98.04492967	93.70995974	89.59565058	85.68961283	81.98021555	78.45653592
220329A00009	3/29/2022	2.94	3/29/2029	3/29/2022	112.51024	107.4305309	102.6137624	98.04492967	93.70995974	89.59565058	85.68961283	81.98021555	78.45653592
220331A00003	3/31/2022	2.66	5/17/2024	3/31/2022	100.1544	100.0243817	99.89471407	99.76539849	99.63643346	99.50781752	99.3795492	99.25162707	99.12404967
220331A00004	3/31/2022	2.66	5/20/2024	3/31/2022	100.16437	100.0260676	99.88816342	99.75065384	99.61353711	99.47681153	99.34047537	99.20452694	99.06896456
220331A00010	3/31/2022	2.83	2/18/2026	3/31/2022	103.73366	101.8604543	100.030359	98.24212973	96.49456459	94.78650396	93.11682872	91.4844585	89.88835011
220331A00011	3/31/2022	2.73	10/15/2024	3/31/2022	100.69692	100.1544953	99.61791532	99.08708758	98.56191983	98.04232172	97.52820484	97.01948263	96.51607034

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220331A00012	3/31/2022	2.81	3/17/2025	3/31/2022	101.49569	100.5394535	99.60122174	98.68048767	97.77676483	96.88958466	96.01849568	95.16306272	94.32286619
220401A00009	4/1/2022	2.98	4/1/2027	4/1/2022	107.06744	104.0589373	101.1516435	98.34159028	95.62499085	92.99822795	90.45784527	88.00053923	85.62315135
220404A00010	4/4/2022	2.93	4/2/2027	4/4/2022	106.92505	103.9159604	101.0081836	98.19774531	95.48085187	92.85387966	90.31336638	87.85600291	85.47862556
220404A00014	4/4/2022	2.94	4/5/2027	4/4/2022	106.97855	103.960431	101.0441263	98.22563103	95.50112514	92.86696016	90.31965048	87.85586509	85.47241976
220406A00007	4/6/2022	2.87	4/8/2024	4/6/2022	100.03353	100.0113291	99.98915567	99.96700524	99.94487773	99.9227731	99.90069131	99.87863232	99.85659609
220407A00014	4/7/2022	3.14	4/6/2029	4/7/2022	111.13659	106.8713345	102.8156012	98.95767216	95.28655627	91.79193885	88.46413606	85.29405265	82.27314286
220407A00017	4/7/2022	3.16	4/6/2029	4/7/2022	112.02018	107.468308	103.1453803	99.03842985	95.13529507	91.42456909	87.89554864	84.53818671	81.34304862
220408A00012	4/8/2022	3.12	6/29/2026	4/8/2022	105.32162	103.0780779	100.8935421	98.76602602	96.69362598	94.67451848	92.70695605	90.7892633	88.91983329
220408A00014	4/8/2022	3.12	6/29/2026	4/8/2022	105.32162	103.0780779	100.8935421	98.76602602	96.69362598	94.67451848	92.70695605	90.7892633	88.91983329
220411A00002	4/11/2022	3.18	4/9/2027	4/11/2022	107.73586	104.6952678	101.7574194	98.91826501	96.17394074	93.52075677	90.95518852	88.47386823	86.07357698
220411A00008	4/11/2022	3.02	4/12/2027	4/11/2022	107.52218	104.5267002	101.633469	98.83838356	96.13752977	93.5271747	91.00375688	88.56387733	86.20429098
220412A00010	4/12/2022	3.09	3/15/2027	4/12/2022	107.26833	104.3016255	101.4332706	98.659468	95.97658995	93.38116834	90.869887	88.43957405	86.08719482
220412A00016	4/12/2022	3.09	3/19/2027	4/12/2022	107.29865	104.3209743	101.4423493	98.65893743	95.96707266	93.36325103	90.84412259	88.40648373	86.04726988
220412A00017	4/12/2022	3.09	3/19/2027	4/12/2022	107.29865	104.3209743	101.4423493	98.65893743	95.96707266	93.36325103	90.84412259	88.40648373	86.04726988
220412A00018	4/12/2022	3.09	3/15/2027	4/12/2022	107.26833	104.3016255	101.4332706	98.659468	95.97658995	93.38116834	90.869887	88.43957405	86.08719482
220418A00015	4/22/2022	3.03	7/28/2025	4/22/2022	102.54109	101.2281937	99.93919342	98.67347332	97.43044042	96.20952175	95.01016349	93.83183017	92.67400392
220418A00016	4/22/2022	3.11	9/15/2026	4/22/2022	105.89408	103.4365307	101.0490251	98.72917176	96.47467302	94.28332336	92.15300499	90.08168383	88.06740568
220419A00013	4/19/2022	2.84	4/19/2024	4/19/2022	100.07299	100.0203053	99.96768757	99.91514033	99.86266347	99.81025683	99.75792028	99.70565368	99.65345688
220419A00014	4/19/2022	3.06	4/18/2025	4/19/2022	101.92799	100.8841579	99.86169449	98.85995232	97.87830574	96.91615409	95.97292042	95.04805039	94.14101113
220419A00015	4/19/2022	3.14	4/17/2026	4/19/2022	104.78521	102.7444856	100.7539947	98.81217631	96.91752727	95.06860194	93.26400941	91.50241099	89.78251787
220419A00016	4/19/2022	3.21	4/19/2027	4/19/2022	107.91209	104.8412873	101.8749114	99.00881906	96.23905676	93.5618505	90.97359678	88.4708537	86.05033273
220420A00032	4/20/2022	3.26	10/16/2026	4/20/2022	106.5178	103.969043	101.4949044	99.09275332	96.7600718	94.49444641	92.29356302	90.15520207	88.07723405
220420A00033	4/20/2022	3.29	4/20/2027	4/20/2022	108.16506	105.087617	102.114865	99.24264522	96.46699205	93.7841202	91.19041549	88.68242597	86.25685357
220420A00034	6/15/2022	3.3	6/15/2027	6/15/2022	108.67955	105.4427324	102.3202207	99.30729211	96.39944815	93.59240525	90.8820827	88.26459155	85.73622426
220420A00037	6/15/2022	3.3	6/15/2027	6/15/2022	108.67955	105.4427324	102.3202207	99.30729211	96.39944815	93.59240525	90.8820827	88.26459155	85.73622426
220420A00061	6/15/2022	3.3	6/15/2027	6/15/2022	108.67955	105.4427324	102.3202207	99.30729211	96.39944815	93.59240525	90.8820827	88.26459155	85.73622426
220421A00012	4/21/2022	3.31	4/21/2026	4/21/2022	105.16856	103.1128201	101.1078363	99.15202233	97.24385336	95.38186309	93.56464106	91.79083005	90.05912369
220421A00013	4/21/2022	3.33	9/15/2026	4/21/2022	106.43607	103.9717548	101.577635	99.25131132	96.99048171	94.79293652	92.65655396	90.57929613	88.55920511
220421A00014	4/21/2022	3.24	5/30/2025	4/21/2022	102.38106	101.2229557	100.091049	98.98445499	97.90233136	96.8438727	95.80830859	94.79490179	93.80294638
220421A00015	4/21/2022	3.12	9/16/2024	4/21/2022	100.7916	100.3270134	99.8667179	99.41065355	98.95876208	98.51098624	98.06726986	97.62755777	97.1917958
220421A00016	4/21/2022	3.31	4/21/2026	4/21/2022	105.16856	103.1128201	101.1078363	99.15202233	97.24385336	95.38186309	93.56464106	91.79083005	90.05912369
220422A00014	4/22/2022	3.36	9/29/2026	4/22/2022	106.62893	104.1240914	101.6916537	99.32910691	97.03404202	94.80414795	92.63720712	90.53109099	88.4837559
220425A00026	4/25/2022	3.13	2/25/2026	4/25/2022	104.36309	102.4633677	100.6077572	98.79497414	97.02377798	95.29297217	93.60140232	91.94795445	90.33155326

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220425A00027	4/29/2022	3.15	8/20/2026	4/29/2022	105.78921	103.4026684	101.0823344	98.8260075	96.63157216	94.4969953	92.42032238	90.399674	88.43324244
220425A00028	4/29/2022	3.16	4/23/2027	4/29/2022	107.79311	104.7131184	101.7381607	98.86405518	96.08681436	93.40263258	90.80787663	88.29907681	85.87291848
220426A00004	4/26/2022	3.41	4/26/2032	4/26/2022	122.81212	114.376606	106.6009054	99.42954559	92.81200125	86.70222958	81.05825058	75.84176886	71.01783243
220427A00011	4/29/2022	3.15	4/29/2027	4/29/2022	107.81277	104.7159593	101.7251648	98.83615423	96.04488643	93.3475055	90.7403311	88.2198493	85.782704
220428A00016	5/2/2022	3.09	10/15/2024	5/2/2022	100.89399	100.3509521	99.81376204	99.28232893	98.7565604	98.23636606	97.72165742	97.21234789	96.70835267
220428A00019	4/28/2022	3.27	4/28/2027	4/28/2022	108.17364	105.0739977	102.0803578	99.18848519	96.39434299	93.69407929	91.08401735	88.56064656	86.1206138
220429A00002	4/29/2022	3.63	4/29/2032	4/29/2022	124.59656	116.0828944	108.2342096	100.9946207	94.31322644	88.14364174	82.44357447	77.17444453	72.30103996
220429A00006	4/29/2022	3.06	4/29/2024	4/29/2022	100.12705	100.0466557	99.96639559	99.88626525	99.80626434	99.72639256	99.64664959	99.56703515	99.48754893
220429A00007	4/29/2022	3.14	10/29/2024	4/29/2022	100.97417	100.3932804	99.81906491	99.25141014	98.69020418	98.13533762	97.58670351	97.0441973	96.50771676
220502A00025	5/2/2022	3.21	5/2/2025	5/2/2022	102.17326	101.090759	100.031184	98.99381614	97.97796252	96.98295863	96.00816715	95.05297649	94.11679952
220502A00030	5/4/2022	3.24	6/20/2025	5/4/2022	102.51689	101.3022445	100.1163858	98.95830169	97.82702414	96.72162956	95.64123641	94.58500278	93.55212422
220506A00016	5/6/2022	3.35	5/6/2027	5/6/2022	108.48947	105.3634455	102.3448516	99.42937713	96.61290886	93.89152347	91.26147723	88.71919665	86.26126961
220509A00013	7/15/2022	3.37	7/15/2027	7/15/2022	109.17013	105.8442211	102.6382886	99.54733007	96.5665786	93.6914937	90.9177491	88.2412213	85.6579787
220509A00014	7/15/2022	3.37	7/15/2027	7/15/2022	109.17013	105.8442211	102.6382886	99.54733007	96.5665786	93.6914937	90.9177491	88.2412213	85.6579787
220509A00016	7/15/2022	3.37	7/15/2027	7/15/2022	109.17013	105.8442211	102.6382886	99.54733007	96.5665786	93.6914937	90.9177491	88.2412213	85.6579787
220510A00015	5/13/2022	3.13	11/3/2025	5/13/2022	103.39642	101.816565	100.2685764	98.75155633	97.26464072	95.8069975	94.37782492	92.97635028	91.6018285
220510A00016	5/13/2022	3.23	5/5/2027	5/13/2022	108.1093	104.99185	101.9815158	99.07400039	96.26520466	93.55121845	90.9283105	88.3929191	85.94164329
220511A00002	5/11/2022	3.18	5/12/2025	5/11/2022	102.20133	101.0921239	100.0069992	98.94517474	97.90590543	96.88847759	95.89220741	94.91643938	93.96054484
220511A00015	5/11/2022	3.29	5/11/2027	5/11/2022	108.3459	105.2087975	102.1798909	99.25481937	96.42942631	93.69974747	91.06200094	88.51257748	86.04803153
220512A00007	5/12/2022	2.91	5/13/2024	5/12/2022	100.17093	100.0519177	99.93320488	99.81478948	99.69667037	99.57884639	99.46131638	99.34407921	99.22713374
220512A00013	5/12/2022	3.18	5/12/2027	5/12/2022	108.0117	104.8771618	101.8508498	98.92839748	96.10564326	93.37861859	90.74353757	88.19678734	85.734919
220518A00008	5/18/2022	3.01	5/20/2024	5/18/2022	100.2129	100.0745519	99.93659684	99.79903648	99.6618691	99.52509297	99.38870639	99.25270765	99.11709506
220518A00009	5/18/2022	3.38	5/18/2028	5/18/2022	111.99186	107.7783636	103.7493573	99.89573711	96.20890419	92.68073032	89.30352924	86.07003002	82.97335214
220519A00010	5/19/2022	3.15	11/19/2026	5/19/2022	106.51056	103.8699075	101.3085848	98.82371298	96.41253907	94.07242859	91.80085943	89.59541617	87.45378481
220520A00006	5/20/2022	3.02	5/20/2027	5/20/2022	107.64706	104.6118395	101.6823446	98.85421824	96.12331703	93.4856954	90.93759466	88.47543272	86.09579449
220525A00020	5/25/2022	2.79	5/24/2024	5/25/2022	100.19712	100.0477535	99.89884605	99.7503921	99.60238954	99.45483629	99.30773029	99.16106948	99.01485183
220526A00010	5/26/2022	3	5/26/2026	5/26/2022	104.7921	102.6468237	100.5561865	98.51841686	96.53181262	94.59474013	92.7056309	90.86297847	89.06533534
220526A00011	5/26/2022	3.29	5/24/2029	5/26/2022	114.68886	109.4023683	104.3956466	99.65235735	95.15720376	90.89585964	86.85490267	83.02175235	79.38461261
220527A00011	5/27/2022	2.75	5/24/2024	5/27/2022	100.19113	100.0417702	99.89286951	99.74442226	99.59642639	99.4488798	99.30178045	99.15512628	99.00891525
220527A00014	5/27/2022	2.99	5/27/2026	5/27/2022	104.7779	102.6301318	100.5371162	98.49707542	96.50830197	94.56915732	92.67806835	90.83352419	89.03407323
220527A00015	5/27/2022	3.03	5/27/2027	5/27/2022	107.66085	104.4919874	101.4336826	98.48143029	95.63093511	92.87810342	90.21903241	87.64999984	85.16745445
220531A00020	5/31/2022	2.86	5/31/2024	5/31/2022	100.2347	100.0659903	99.89784628	99.73026458	99.56324238	99.39677691	99.23086542	99.06550516	98.90069341
220601A00023	6/1/2022	2.9	6/3/2024	6/1/2022	100.25364	100.0766802	99.90034607	99.72463643	99.54954796	99.37507733	99.20122128	99.02797656	98.85533992

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220601A00024	6/1/2022	3.09	6/2/2025	6/1/2022	102.22343	101.0583584	99.91982283	98.80692829	97.7188155	96.65466321	95.61368612	94.59513291	93.59828443
220601A00038	6/3/2022	3.69	5/28/2032	6/3/2022	125.2983	116.679319	108.738593	101.418684	94.66731984	88.43690217	82.68406495	77.36927734	72.45648554
220602A00039	6/2/2022	3.11	6/2/2027	6/2/2022	108.38598	105.1792748	102.0850327	99.09864038	96.21570515	93.43204199	90.74366224	88.14676295	85.63771695
220603A00024	6/3/2022	2.94	6/3/2024	6/3/2022	100.26074	100.0837686	99.90742535	99.73170663	99.55660909	99.38212943	99.20826437	99.03501065	98.86236505
220609A00034	10/3/2022	3.32	9/30/2024	10/3/2022	100.95719	100.4542071	99.95622899	99.46318014	98.97498763	98.49158005	98.01288735	97.53884084	97.06937318
220610A00068	6/10/2022	3.09	6/10/2025	6/10/2022	101.29158	100.6273467	99.97419948	99.33183112	98.69994638	98.07826133	97.46650282	96.86440796	96.27172359
220614A00011	6/14/2022	3.71	6/14/2024	6/14/2022	100.46665	100.2592129	100.0526425	99.84693664	99.64208987	99.43809675	99.23495187	99.03264988	98.83118547
220615A00010	6/15/2022	3.86	6/15/2027	6/15/2022	110.47594	107.2102185	104.0595621	101.0192238	98.08468008	95.25162325	92.51594952	89.87374782	87.3212894
220617A00027	6/17/2022	3.45	6/17/2024	6/17/2022	100.42932	100.2136977	99.99901059	99.78525623	99.57242851	99.36052135	99.14952871	98.93944463	98.73026317
220617A00030	6/17/2022	3.43	6/17/2025	6/17/2022	101.42731	100.7581979	100.1003053	99.45332133	98.81694581	98.19089004	97.57487634	96.96863754	96.37191639
220617A00061	6/17/2022	3.26	6/17/2024	6/17/2022	100.27972	100.1237391	99.96830285	99.8134113	99.65906139	99.50525008	99.3519743	99.19923105	99.04701733
220622A00006	6/22/2022	3.58	6/22/2027	6/22/2022	109.64495	106.3732979	103.2176168	100.1730933	97.23514356	94.39940362	91.66171749	89.0181256	86.46485399
220622A00010	6/22/2022	3.43	7/12/2024	6/22/2022	100.56424	100.2798763	99.99713545	99.71600111	99.43645951	99.15849704	98.88210025	98.60725584	98.33395065
220623A00005	6/23/2022	3.45	6/23/2027	6/23/2022	109.2347	105.9669322	102.8151426	99.77450976	96.84044537	94.00858146	91.27475835	88.63501314	86.08556891
220624A00003	6/24/2022	3.5	6/24/2027	6/24/2022	109.40557	106.1322743	102.9752154	99.92955325	96.99068649	94.15423521	91.41602848	88.77209278	86.21864129
220624A00016	6/24/2022	3.34	6/24/2026	6/24/2022	106.06888	103.8246197	101.6391671	99.51054503	97.43686375	95.41631278	93.44715675	91.52773156	89.65644077
220624A00033	6/24/2022	3.5	6/24/2027	6/24/2022	109.40557	106.1322743	102.9752154	99.92955325	96.99068649	94.15423521	91.41602848	88.77209278	86.21864129
220624A00044	6/24/2022	3.43	6/24/2025	6/24/2022	102.77822	101.5512528	100.3536032	99.1842293	98.04213755	96.92638058	95.83605445	94.77029616	93.72828141
220624A00049	6/24/2022	3.29	6/24/2024	6/24/2022	100.45831	100.2231111	99.98902707	99.75604539	99.52415828	99.29335798	99.06363682	98.83498718	98.60740153
220627A00055	6/27/2022	3.55	6/26/2026	6/27/2022	106.26191	104.0158401	101.828614	99.69825718	97.62287784	95.60066354	93.62987708	91.70885267	89.8359923
220628A00034	6/28/2022	3.61	6/28/2027	6/28/2022	109.79985	106.5091285	103.3355275	100.2741651	97.32039298	94.46978687	91.71813441	89.06142324	86.49583004
220628A00044	8/15/2022	3.6	8/13/2027	8/15/2022	110.19834	106.7778984	103.4833302	100.3093457	97.25090405	94.30320136	91.46165881	88.72191071	86.07979347
220628A00052	8/15/2022	3.6	8/13/2027	8/15/2022	110.19834	106.7778984	103.4833302	100.3093457	97.25090405	94.30320136	91.46165881	88.72191071	86.07979347
220628A00053	8/15/2022	3.6	8/13/2027	8/15/2022	110.19834	106.7778984	103.4833302	100.3093457	97.25090405	94.30320136	91.46165881	88.72191071	86.07979347
220629A00002	6/29/2022	3.48	6/28/2024	6/29/2022	100.498	100.2520465	100.0073005	99.7637498	99.5213856	99.28019927	99.04018223	98.80132603	98.56362225
220629A00003	6/29/2022	3.59	6/29/2027	6/29/2022	109.74462	106.4520289	103.2767231	100.213803	97.25861041	94.40671213	91.65388743	88.99611612	86.42956762
220629A00034	6/29/2022	3.51	6/29/2027	6/29/2022	104.47925	102.8057445	101.1764576	99.58985999	98.04448511	96.53892826	95.07184347	93.64194058	92.24798248
220630A00036	6/30/2022	3.42	6/30/2027	6/30/2022	109.20196	105.9154555	102.7461763	99.68922593	96.73994361	93.89389392	91.14685414	88.49480247	85.93390696
220630A00044	6/30/2022	3.34	6/30/2025	6/30/2022	102.70718	101.4647396	100.25236	99.06896306	97.91351818	96.78504313	95.68260122	94.60529872	93.5522824
220630A00045	6/30/2022	3.39	6/30/2026	6/30/2022	105.93804	103.6847029	101.490647	99.3538753	97.27247401	95.2446099	93.26852628	91.34253899	89.46503273
220630A00057	6/30/2022	3.34	6/30/2025	6/30/2022	102.70718	101.4647396	100.25236	99.06896306	97.91351818	96.78504313	95.68260122	94.60529872	93.5522824
220701A00024	7/1/2022	3.08	7/1/2025	7/1/2022	102.38886	101.1459683	99.9328838	98.74854229	97.59192914	96.46207704	95.35806324	94.27900706	93.22406745
220701A00049	7/1/2022	3.19	7/1/2025	7/1/2022	102.52727	101.2834576	100.0694723	98.88424505	97.72676078	96.59605177	95.49119491	94.41130911	93.35555297

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220701A00050	7/1/2022	3.26	7/1/2027	7/1/2022	108.69058	105.4097465	102.2461061	99.19475665	96.25103788	93.41051448	90.66896367	88.02236344	85.46688145
220705A00011	7/5/2022	3.14	7/7/2025	7/5/2022	102.51397	101.2549307	100.0243855	98.8213691	97.64495766	96.49426836	95.36845739	94.26671775	93.18827726
220706A00032	7/6/2022	3.15	7/6/2027	7/6/2022	108.81104	105.5042446	102.3162347	99.2420373	96.27692239	93.41638742	90.65614477	87.99210996	85.42039053
220707A00041	7/7/2022	3.41	7/7/2025	7/7/2022	102.85813	101.5967818	100.3639713	99.15872773	97.98012615	96.82728273	95.69935269	94.59552807	93.51503577
220711A00021	7/11/2022	3.27	7/11/2025	7/11/2022	102.9185	101.6433358	100.3959535	99.1754444	97.98093981	96.81160856	95.666655	94.54531705	93.44686445
220712A00006	7/12/2022	3.36	7/12/2024	7/12/2022	100.54426	100.259938	99.97723318	99.69613468	99.41662877	99.13870185	98.86234046	98.58753129	98.31426121
220712A00016	7/15/2022	3.35	1/15/2026	7/15/2022	104.37899	102.5949836	100.8501555	99.14335174	97.47346684	95.83943689	94.24023759	92.67488236	91.14242063
220714A00035	7/14/2022	3.62	7/15/2024	7/14/2022	100.63403	100.3413718	100.050425	99.76117826	99.47361666	99.18772539	98.90348983	98.62089551	98.33992816
220715A00001	7/15/2022	3.44	7/15/2027	7/15/2022	109.4004	106.0706952	102.8610679	99.76651293	96.7822599	93.90376506	91.12669903	88.44693529	85.86053938
220715A00027	7/15/2022	3.44	7/15/2027	7/15/2022	109.4004	106.0706952	102.8610679	99.76651293	96.7822599	93.90376506	91.12669903	88.44693529	85.86053938
220715A00047	7/15/2022	3.44	7/15/2027	7/15/2022	109.4004	106.0706952	102.8610679	99.76651293	96.7822599	93.90376506	91.12669903	88.44693529	85.86053938
220719A00004	7/19/2022	3.46	7/19/2027	7/19/2022	109.502	106.1599479	102.9387646	99.83341164	96.83908804	93.95121991	91.16544818	88.47761725	85.88376422
220722A00036	7/22/2022	3.34	7/22/2025	7/22/2022	101.45868	100.7524107	100.0582306	99.37579903	98.70478983	98.04488957	97.39579678	96.75722144	96.1288844
220722A00044	9/1/2022	3.23	9/1/2027	9/1/2022	109.11178	105.6590614	102.3353319	99.13509078	96.05310311	93.08438403	90.22418528	87.46798268	84.81146435
220722A00049	9/15/2022	3.25	9/15/2025	9/15/2022	103.20334	101.7560017	100.3362105	98.9432478	97.57642019	96.23505776	94.91851296	93.62615977	92.35739273
220722A00050	9/15/2022	3.25	9/15/2025	9/15/2022	103.20334	101.7560017	100.3362105	98.9432478	97.57642019	96.23505776	94.91851296	93.62615977	92.35739273
220722A00051	9/15/2022	3.23	9/15/2027	9/15/2022	109.23293	105.7399812	102.3789097	99.1440344	96.02994718	93.03150101	90.14379608	87.36216646	84.68216765
220727A00004	7/27/2022	3.23	7/27/2027	7/27/2022	108.80949	105.4576147	102.2277964	99.11494318	96.11420566	93.22096183	90.43080501	87.73953264	85.1431357
220727A00009	7/27/2022	3.31	7/28/2025	7/27/2022	102.91408	101.598582	100.3070234	99.038788	97.79328164	96.56993021	95.36817878	94.18749086	93.02734754
220727A00010	7/27/2022	3.38	7/24/2024	7/27/2022	100.61267	100.2954296	99.98019752	99.66695396	99.35568014	99.04635746	98.73896757	98.43349233	98.12991384
220727A00027	7/27/2022	3.23	7/27/2027	7/27/2022	108.80949	105.4576147	102.2277964	99.11494318	96.11420566	93.22096183	90.43080501	87.73953264	85.1431357
220727A00035	10/24/2022	3.33	10/24/2029	10/24/2022	116.00896	110.2738583	104.8636093	99.75804018	94.93833875	90.38695214	86.08749576	82.02466954	78.18418056
220727A00049	7/27/2022	3.31	7/25/2025	7/27/2022	102.88788	101.5802493	100.2972102	99.03809417	97.80225869	96.58908423	95.39797332	94.22834954	93.07965657
220729A00035	8/3/2022	3.14	8/3/2027	8/3/2022	108.56726	105.2008426	101.9576782	98.83261647	95.82074992	92.91740056	90.11810794	87.41861787	84.81487185
220729A00043	7/29/2022	3.04	7/29/2027	7/29/2022	108.19387	104.8469414	101.6221651	98.51444501	95.51892638	92.63098146	89.84619775	87.16036677	84.56947354
220729A00045	7/29/2022	3.03	7/29/2027	7/29/2022	108.16059	104.8142191	101.5899826	98.48278793	95.48778068	92.60033364	89.81603478	87.13067605	84.54024291
220729A00047	7/29/2022	3.06	1/29/2027	7/29/2022	106.81207	103.9784258	101.2350205	98.57850496	96.00566878	93.51343806	91.09886866	88.75913998	86.4915491
220801A00066	8/1/2022	2.93	7/30/2027	8/1/2022	108.04912	104.7773609	101.6261435	98.59035983	95.66514809	92.84587806	90.12813857	87.5077259	84.98063293
220802A00009	8/2/2022	3	8/2/2027	8/2/2022	108.0917	104.7358875	101.5029259	98.3876838	95.38527175	92.49102877	89.70051052	87.00947808	84.41388737
220804A00023	8/4/2022	3.19	8/4/2027	8/4/2022	108.74262	105.3706116	102.1221253	98.99199383	95.97529612	93.06734154	90.26365771	87.55997924	84.95223701
220804A00037	8/4/2022	3.35	8/4/2025	8/4/2022	103.0243	101.6898398	100.3790173	99.09126147	97.82601527	96.58273908	95.36091014	94.16002186	92.97958323
220808A00025	8/8/2022	3.25	8/6/2027	8/8/2022	108.96017	105.5792062	102.322237	99.18406896	96.15975626	93.24458485	90.43406031	87.72389652	85.11000488
220811A00021	8/11/2022	3.47	8/11/2025	8/11/2022	103.24197	101.887551	100.5574129	99.25095373	97.96759537	96.70677795	95.46795933	94.25061432	93.05423406

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220812A00001	8/12/2022	3.17	8/12/2027	8/12/2022	109.19338	105.7813002	102.4951101	99.329513	96.27945889	93.34013588	90.50695766	87.77555175	85.14174834
220812A00002	8/12/2022	3.17	8/12/2027	8/12/2022	109.19338	105.7813002	102.4951101	99.329513	96.27945889	93.34013588	90.50695766	87.77555175	85.14174834
220812A00014	8/12/2022	3.54	8/12/2024	8/12/2022	100.77666	100.4072479	100.0405585	99.67655802	99.315217	98.95650619	98.60039683	98.24686057	97.89586946
220815A00006	8/15/2022	3.52	8/15/2024	8/15/2022	100.787	100.4093967	100.0346345	99.66268122	99.29350526	98.92707546	98.56336111	98.20233199	97.8439583
220816A00009	8/16/2022	3.33	8/16/2027	8/16/2022	109.31484	105.9013131	102.6138238	99.44705619	96.39595034	93.45568495	90.62166501	87.88950994	85.25504244
220817A00036	10/14/2022	3.41	10/15/2027	10/14/2022	110.12943	106.5396265	103.0879368	99.76828747	96.57490643	93.50230681	90.54527104	87.69883606	84.95827941
220817A00037	10/14/2022	3.41	10/15/2027	10/14/2022	110.12943	106.5396265	103.0879368	99.76828747	96.57490643	93.50230681	90.54527104	87.69883606	84.95827941
220817A00038	10/14/2022	3.41	10/15/2027	10/14/2022	110.12943	106.5396265	103.0879368	99.76828747	96.57490643	93.50230681	90.54527104	87.69883606	84.95827941
220817A00047	8/17/2022	3.29	8/17/2027	8/17/2022	109.6429	106.2098244	102.9037974	99.71945514	96.65168532	93.69561767	90.84661099	88.10024119	85.45228995
220819A00034	8/19/2022	3.73	8/19/2032	8/19/2022	126.25911	117.3777669	109.2118641	101.6994871	94.78439322	88.41546562	82.54622168	77.13437097	72.14141746
220819A00038	8/19/2022	3.59	8/19/2024	8/19/2022	100.838	100.4493792	100.0637664	99.68112484	99.30142027	98.9246188	98.5506871	98.17959235	97.81130224
220823A00002	8/23/2022	3.38	8/23/2027	8/23/2022	110.00287	106.5475748	103.2206416	100.0166298	96.93035485	93.95687845	91.09149562	88.32972234	85.66728401
220823A00009	8/23/2022	3.52	8/23/2027	8/23/2022	110.02073	106.5765715	103.2600976	100.0659064	96.98884948	94.02402276	91.16675327	88.41258715	85.75727815
220823A00015	8/23/2022	3.78	8/30/2032	8/23/2022	126.75943	117.8281763	109.618248	102.0670468	95.11772402	88.71862701	82.82279934	77.38753156	72.37395699
220823A00034	8/23/2022	3.61	8/23/2024	8/23/2022	100.87046	100.470867	100.0744429	99.68115472	99.29096511	98.90383749	98.51973585	98.1386247	97.76046915
220823A00056	8/23/2022	3.5	8/23/2024	8/23/2022	100.87715	100.4769427	100.0799253	99.68605558	99.29529606	98.90760987	98.52296074	98.14131295	97.76263135
220823A00060	8/23/2022	3.5	8/23/2024	8/23/2022	100.87715	100.4769427	100.0799253	99.68605558	99.29529606	98.90760987	98.52296074	98.14131295	97.76263135
220824A00011	8/24/2022	3.7	8/22/2025	8/24/2022	103.65128	102.2649308	100.9038776	99.5674884	98.2551508	96.96627219	95.70027901	94.45661599	93.23474539
220825A00006	8/25/2022	3.56	8/25/2027	8/25/2022	110.17516	106.7230223	103.3990267	100.1977407	97.11399124	94.14285109	91.27962555	88.51984032	85.85922999
220825A00022	8/25/2022	3.68	8/25/2025	8/25/2022	103.64877	102.2545248	100.8858439	99.54208498	98.22262641	96.92686691	95.65422454	94.40413598	93.17605582
220826A00033	8/26/2022	3.73	8/26/2025	8/26/2022	103.72784	102.3303753	100.9585737	99.61179009	98.28939956	96.99079759	95.71539922	94.4626382	93.23196631
220829A00048	8/29/2022	3.75	2/25/2025	8/29/2022	102.24503	101.338511	100.44808	99.57331216	98.71379668	97.86913685	97.03894967	96.22286523	95.4205261
220829A00057	8/29/2022	3.67	8/31/2026	8/29/2022	107.13352	104.7014079	102.3374037	100.0392171	97.80465113	95.63159534	93.51802158	91.46198047	89.46159785
220830A00055	8/30/2022	3.7	8/30/2029	8/30/2022	117.61516	111.986629	106.668545	101.6421186	96.88978906	92.39514137	88.14282571	84.11848312	80.30867667
220830A00093	11/16/2022	3.69	11/16/2029	11/16/2022	118.19548	112.3368927	106.8123626	101.6009841	96.68327345	92.04106239	87.65740232	83.51647602	79.60351614
220831A00078	8/31/2022	3.81	8/30/2024	8/31/2022	100.99773	100.5787299	100.1632041	99.75110859	99.34240108	98.93703995	98.53498423	98.13619365	97.74062856
220831A00079	8/31/2022	3.79	8/29/2025	8/31/2022	103.83892	102.432718	101.0524593	99.69749206	98.36718192	97.06091513	95.77809792	94.51815559	93.28053182
220901A00033	9/1/2022	3.72	9/1/2027	9/1/2022	110.78774	107.3063281	103.9546935	100.7273121	97.61892186	94.62451199	91.73930935	88.95876595	86.27854712
220901A00035	9/1/2022	3.82	9/1/2028	9/1/2022	114.87234	110.3096957	105.9582908	101.8072209	97.84620443	94.06554054	90.45607292	87.00915665	83.71662697
220906A00046	9/6/2022	3.79	9/7/2027	9/6/2022	111.08824	107.5851879	104.2132738	100.9668905	97.84069756	94.82961099	91.92878905	89.13361949	86.43970742
220907A00010	9/7/2022	3.9	9/9/2032	9/7/2022	129.06644	119.9585148	111.5885499	103.8922632	96.81129909	90.29265718	84.2881752	78.7540642	73.65049048
220907A00022	4/17/2023	3.87	4/30/2024	4/17/2023	100.19857	100.1153615	100.0322918	99.94935876	99.86656193	99.78390102	99.7013757	99.61898567	99.53673058
220907A00023	9/7/2022	3.76	9/8/2026	9/7/2022	107.42828	104.9707075	102.582532	100.2614014	98.00505777	95.81133299	93.67814443	91.60349111	89.58544994

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220907A00024	5/15/2023	3.81	5/31/2024	5/15/2023	100.39537	100.2264578	100.0581112	99.89032749	99.72310382	99.55643744	99.39032559	99.22476553	99.05975454
220907A00025	7/17/2023	3.7	7/31/2024	7/17/2023	100.75894	100.4222439	100.0877923	99.75556335	99.42553507	99.09768566	98.77199365	98.44843783	98.12699728
220907A00027	8/14/2023	3.65	8/30/2024	8/14/2023	100.93042	100.5115921	100.0962342	99.68430551	99.27576385	98.87056757	98.46867571	98.070048	97.67464483
220908A00030	9/8/2022	3.85	9/9/2024	9/8/2022	101.08414	100.6377691	100.1953446	99.75681852	99.32213935	98.89125649	98.46412023	98.04068174	97.62089302
220909A00017	9/9/2022	3.85	9/9/2024	9/9/2022	101.08414	100.6377691	100.1953446	99.75681852	99.32213935	98.89125649	98.46412023	98.04068174	97.62089302
220912A00033	9/12/2022	3.9	10/7/2024	9/12/2022	101.29606	100.7732133	100.2557705	99.7436488	99.23676643	98.73504311	98.23840021	97.74676074	97.26004922
220912A00044	11/15/2022	3.85	11/14/2025	11/15/2022	104.67406	103.0531581	101.4653256	99.90961239	98.38510786	96.89093553	95.42625164	93.99024354	92.58212825
220912A00046	11/15/2022	3.85	11/14/2025	11/15/2022	104.67406	103.0531581	101.4653256	99.90961239	98.38510786	96.89093553	95.42625164	93.99024354	92.58212825
220912A00050	11/15/2022	3.76	11/15/2027	11/15/2022	111.68499	107.9826966	104.4251955	101.0060052	97.71897126	94.55824958	91.51828912	88.59381515	85.77981381
220912A00051	11/15/2022	3.76	11/15/2027	11/15/2022	111.68499	107.9826966	104.4251955	101.0060052	97.71897126	94.55824958	91.51828912	88.59381515	85.77981381
220913A00005	9/13/2022	4.09	9/13/2024	9/13/2022	101.22226	100.7646489	100.3111913	99.86182688	99.41650011	98.97515661	98.53774295	98.10420665	97.67449617
220913A00017	9/13/2022	3.98	9/14/2026	9/13/2022	108.0272	105.5457765	103.134826	100.7919481	98.51483561	96.30127378	94.14913579	92.05637878	90.02103995
220913A00018	9/13/2022	3.91	9/13/2027	9/13/2022	111.56368	108.0359089	104.6407305	101.3724485	98.22564098	95.19514702	92.27605311	89.46367966	86.75356867
220915A00035	9/15/2022	4.2	3/17/2025	9/15/2022	102.84107	101.8778486	100.9327233	100.0051854	99.09474658	98.20093632	97.32330132	96.46140465	95.61482497
220915A00036	9/15/2022	4.23	9/16/2024	9/15/2022	101.3106	100.8446045	100.382904	99.92544399	99.47216603	99.02301279	98.577928	98.13685639	97.6997437
220915A00039	9/15/2022	4.29	4/15/2024	9/15/2022	100.11986	100.0782045	100.0365986	99.99504393	99.95354031	99.91208766	99.87068588	99.82933488	99.78803454
220915A00040	9/15/2022	4.16	9/15/2025	9/15/2022	104.5375	103.0799952	101.6502078	100.2474194	98.87093196	97.5200711	96.19418504	94.89264365	93.61483752
220915A00041	9/15/2022	4.28	5/15/2024	9/15/2022	100.34997	100.2252681	100.1008964	99.97684945	99.85312602	99.72972478	99.60664442	99.48388366	99.36144119
220916A00018	9/16/2022	4.07	9/16/2027	9/16/2022	111.13425	107.8706744	104.7283875	101.7021452	98.78696031	95.97808949	93.27102013	90.66145764	88.14531359
220916A00021	9/16/2022	4.17	9/16/2027	9/16/2022	106.06002	104.2451783	102.4809027	100.7653664	99.09682679	97.47361638	95.89413951	94.35686849	92.86034026
220916A00042	9/16/2022	4.07	9/16/2030	9/16/2022	123.90667	117.0047036	110.545932	104.4993856	98.83641484	93.5305075	88.55711878	83.89351555	79.51863381
220916A00043	9/16/2022	4.07	9/16/2031	9/16/2022	127.21963	119.1824872	111.7297864	104.815587	98.39779197	92.43781121	86.90025214	81.75263931	76.96515987
220916A00045	9/16/2022	4.1	9/16/2032	9/16/2022	130.81217	121.613002	113.1591773	105.385704	98.23359309	91.64927677	85.5840838	79.9937684	74.83808652
220919A00033	9/19/2022	4	9/17/2027	9/19/2022	111.91746	108.3725235	104.9611746	101.6776547	98.51648593	95.47245552	92.54060104	89.71619718	86.994743
220919A00036	9/19/2022	4.11	9/19/2029	9/19/2022	119.15425	113.6382979	108.4271245	103.5020621	98.8456917	94.4417494	90.2750435	86.33137826	82.59748336
220920A00015	9/20/2022	4.33	10/21/2024	9/20/2022	101.61692	101.0554359	100.5001684	99.95101676	99.40788015	98.87065993	98.33925965	97.8135849	97.29354333
220920A00024	9/20/2022	4.25	9/19/2025	9/20/2022	104.71141	103.241675	101.8000869	100.3859114	98.99843487	97.63696812	96.30084507	94.98942195	93.70207634
220920A00025	9/20/2022	4.23	9/18/2026	9/20/2022	108.6859	106.1852662	103.7559049	101.3953752	99.10133473	96.87153522	94.70381821	92.5961108	90.54642169
220920A00026	9/20/2022	4.1	9/20/2027	9/20/2022	112.29692	108.7371046	105.3116768	102.0148333	98.84105254	95.7850805	92.84191623	90.00679824	87.27519166
220920A00050	9/20/2022	4.37	9/20/2024	9/20/2022	101.40966	100.932509	100.4598586	99.99164689	99.52781149	99.06829106	98.61302545	98.16195562	97.7150236
220921A00014	9/21/2022	4.08	9/21/2027	9/21/2022	112.23845	108.6768798	105.2498782	101.9516266	98.77659181	95.71950913	92.77536751	89.93939609	87.20705124
220921A00050	9/21/2022	4.51	4/29/2024	9/21/2022	100.24383	100.1633441	100.082984	100.0027539	99.92265337	99.84268212	99.76283985	99.68312626	99.60354105
220921A00069	9/21/2022	3.98	9/21/2027	9/21/2022	112.36471	108.7889861	105.3486225	102.0377558	98.85081089	95.78248394	92.82772708	89.98173473	87.23993067

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220921A00074	9/21/2022	3.98	9/21/2027	9/21/2022	112.36471	108.7889861	105.3486225	102.0377558	98.85081089	95.78248394	92.82772708	89.98173473	87.23993067
220927A00024	9/27/2022	4.7	9/27/2024	9/27/2022	101.63273	101.1358861	100.6439038	100.1567141	99.67424719	99.19643462	98.72320919	98.25450503	97.7902575
220927A00073	9/27/2022	4.72	9/26/2025	9/27/2022	105.48804	103.9931745	102.5272813	101.0895931	99.67936686	98.29588524	96.93845531	95.60640764	94.29909526
220929A00034	9/29/2022	4.67	5/31/2024	9/29/2022	100.54082	100.3717232	100.2031932	100.0352266	99.86782049	99.70097223	99.534679	99.36893808	99.20374672
220929A00041	9/29/2022	4.38	9/29/2027	9/29/2022	113.37518	109.7715777	106.3047592	102.968779	99.75798354	96.66699524	93.69069726	90.82421943	88.06292491
220929A00043	9/29/2022	4.44	9/28/2029	9/29/2022	121.91007	116.085351	110.5846041	105.3879984	100.4770184	95.83437207	91.44390341	87.29051236	83.36008028
220929A00063	9/29/2022	4.38	9/29/2027	9/29/2022	113.37518	109.7715777	106.3047592	102.968779	99.75798354	96.66699524	93.69069726	90.82421943	88.06292491
220930A00046	9/30/2022	4.55	8/30/2024	9/30/2022	101.30902	100.8892422	100.47294	100.0600728	99.65059825	99.24447471	98.84166116	98.44211727	98.04580336
220930A00049	9/30/2022	4.55	6/28/2024	9/30/2022	100.76188	100.5155025	100.2703258	100.026346	99.78355437	99.54194217	99.30150088	99.062222	98.82409713
221003A00067	10/3/2022	4.48	11/13/2024	10/3/2022	101.89004	101.2655918	100.6488187	100.0395778	99.43773139	98.84314519	98.25568813	97.6752323	97.10165284
221005A00041	10/5/2022	4.3	10/5/2027	10/5/2022	113.16475	109.5484385	106.0699327	102.7232155	99.50257055	96.40256143	93.41801659	90.54401479	87.77587158
221006A00012	10/6/2022	4.37	10/6/2027	10/6/2022	113.42239	109.798829	106.3133822	102.9600189	99.73300714	96.62689633	93.63650139	90.75688842	87.98336101
221006A00033	10/6/2022	4.56	10/7/2024	10/6/2022	101.64284	101.1189501	100.6004691	100.087317	99.57941168	99.07667292	98.57902197	98.08638174	97.59867665
221006A00095	10/6/2022	4.65	4/8/2024	10/6/2022	100.07489	100.0526641	100.0304568	100.0082725	99.98611119	99.96397276	99.94185721	99.91976449	99.89769457
221006A00097	10/6/2022	4.58	10/7/2024	10/6/2022	101.65335	101.1294269	100.6109145	100.0977311	99.58979487	99.08702534	98.58934385	98.09667328	97.60893809
221007A00003	10/7/2022	4.67	10/7/2025	10/7/2022	105.54203	104.0170368	102.5219953	101.0560958	99.61855683	98.20862471	96.82557186	95.46869584	94.13731825
221011A00036	10/11/2022	4.59	10/6/2026	10/11/2022	109.78879	107.224939	104.7353214	102.3173506	99.96854559	97.68652688	95.469012	93.31381068	91.2188206
221011A00037	10/11/2022	4.68	10/7/2024	10/11/2022	101.7059	101.1818113	100.6631416	100.1498021	99.64171082	99.13878743	98.6409532	98.14813101	97.66024528
221011A00114	10/11/2022	4.66	8/12/2024	10/11/2022	101.19217	100.8218273	100.454211	100.0892887	99.72703076	99.36740787	99.01039125	98.6559525	98.30406365
221011A00122	10/11/2022	4.64	12/11/2024	10/11/2022	102.25809	101.556598	100.8647632	100.1823825	99.50926274	98.84521589	98.19005905	97.54361423	96.90570813
221012A00051	10/12/2022	4.7	10/11/2024	10/12/2022	101.74867	101.213676	100.684326	100.1605299	99.64220031	99.12925181	98.6216007	98.11916502	97.62186447
221012A00053	10/12/2022	4.66	10/11/2024	10/12/2022	101.0582	100.7274271	100.3993043	100.0737969	99.75087059	99.43049149	99.11262647	98.79724297	98.48430903
221014A00026	10/14/2022	4.63	10/14/2027	10/14/2022	114.43601	110.7727184	107.2495148	103.8602623	100.5991243	97.46055211	94.43926854	91.53025342	88.72872936
221014A00027	10/14/2022	4.63	10/14/2027	10/14/2022	114.43601	110.7727184	107.2495148	103.8602623	100.5991243	97.46055211	94.43926854	91.53025342	88.72872936
221014A00031	10/14/2022	4.89	4/12/2024	10/14/2022	100.11759	100.0842426	100.0509325	100.0176607	99.98442693	99.95123125	99.91807356	99.8849538	99.85187188
221014A00032	10/14/2022	4.67	10/14/2027	10/14/2022	113.41018	110.0275294	106.7724943	103.6394622	100.6231045	97.71835861	94.92041274	92.22469184	89.62684446
221014A00043	10/14/2022	4.49	10/14/2027	10/14/2022	114.42788	110.7523452	107.2176648	103.8176513	100.5464265	97.39840223	94.36826461	91.45095887	88.64167517
221014A00050	10/14/2022	4.49	10/14/2027	10/14/2022	114.42788	110.7523452	107.2176648	103.8176513	100.5464265	97.39840223	94.36826461	91.45095887	88.64167517
221017A00050	9/18/2023	4.59	9/30/2024	9/18/2023	101.59999	101.0951257	100.5952761	100.1003691	99.61033169	99.12509234	98.64458084	98.16872834	97.69746735
221017A00055	10/17/2022	4.88	11/18/2024	10/17/2022	101.27342	100.8973211	100.5246827	100.1554546	99.78958507	99.42702348	99.06772024	98.7116268	98.35869565
221018A00006	10/18/2022	4.55	10/18/2027	10/18/2022	114.20192	110.5318148	107.0024255	103.6075684	100.341367	97.19823536	94.17286204	91.26019464	88.45542585
221018A00007	10/18/2022	4.68	10/18/2027	10/18/2022	107.37325	105.450879	103.5835317	101.7691898	100.0059209	98.29187744	96.62529231	95.00447493	93.42780727
221018A00030	10/18/2022	4.71	10/17/2025	10/18/2022	105.72166	104.1684216	102.6459644	101.1534443	99.69004656	98.25498552	96.84750348	95.46686936	94.1123775

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221018A00031	10/18/2022	4.71	10/17/2025	10/18/2022	105.72166	104.1684216	102.6459644	101.1534443	99.69004656	98.25498552	96.84750348	95.46686936	94.1123775
221018A00046	10/18/2022	4.9	4/30/2024	10/18/2022	100.2843	100.2010176	100.1178769	100.0348729	99.95200518	99.86927354	99.78667762	99.70421709	99.62189163
221018A00047	10/18/2022	4.78	10/20/2025	10/18/2022	105.86656	104.3040919	102.772676	101.2714512	99.79959223	98.35630357	96.94081802	95.55239547	94.19032171
221018A00048	10/18/2022	4.71	10/19/2026	10/18/2022	110.249	107.6440176	105.1151311	102.6596574	100.2750274	97.95877853	95.70854986	93.52207713	91.39718812
221018A00049	10/18/2022	4.59	10/18/2027	10/18/2022	114.34385	110.6712311	107.1393953	103.7421607	100.4736482	97.32826967	94.30071117	91.38591818	88.5790813
221019A00008	10/19/2022	4.8	10/17/2025	10/19/2022	105.86148	104.307119	102.7835562	101.2899496	99.82548408	98.38937341	96.98085943	95.59921058	94.24372078
221019A00009	10/19/2022	4.8	10/17/2025	10/19/2022	105.86148	104.307119	102.7835562	101.2899496	99.82548408	98.38937341	96.98085943	95.59921058	94.24372078
221020A00046	10/20/2022	4.95	1/21/2025	10/20/2022	102.93891	102.123568	101.3211954	100.5314819	99.75412903	98.98884756	98.23535736	97.49338686	96.76267281
221020A00052	10/20/2022	4.95	10/21/2024	10/20/2022	101.96656	101.4039489	100.8475703	100.2973163	99.75308597	99.21478054	98.68230342	98.15556014	97.63445823
221021A00022	10/21/2022	4.84	10/21/2024	10/21/2022	101.90452	101.342116	100.7859345	100.2358761	99.69183978	99.15372688	98.62144082	98.09488711	97.57397333
221024A00018	10/24/2022	4.91	10/24/2024	10/24/2022	101.96791	101.3972233	100.8329412	100.2749559	99.72316229	99.17745749	98.63774098	98.10391443	97.57588162
221025A00027	10/25/2022	4.57	10/25/2027	10/25/2022	114.35885	110.6667711	107.1167942	103.7026465	100.4183713	97.25830792	94.21707481	91.28955426	88.47087788
221027A00004	10/27/2022	4.76	10/28/2024	10/27/2022	101.91396	101.3326642	100.7580071	100.1898773	99.62816394	99.0727588	98.52355593	97.98045178	97.44334508
221027A00009	10/27/2022	4.68	10/27/2025	10/27/2022	105.79279	104.2121197	102.6630633	101.144739	99.65629829	98.19692362	96.76582693	95.36224829	93.9854547
221027A00047	10/27/2022	4.88	4/26/2024	10/27/2022	100.24603	100.1738359	100.1017482	100.0297711	99.95790428	99.88614751	99.81450055	99.74296315	99.67153505
221027A00050	10/27/2022	4.52	10/27/2027	10/27/2022	114.20476	110.5099552	106.9575415	103.5412313	100.2550485	97.09331412	94.05062982	91.12186226	88.30212845
221027A00056	4/25/2023	4.48	4/25/2030	4/25/2023	124.23243	117.7539035	111.6675469	105.9473752	100.5692605	95.51079163	90.75114263	86.27095291	82.05221648
221027A00060	12/1/2022	4.46	12/1/2027	12/1/2022	114.41806	110.621294	106.9739597	103.4693092	100.1009408	96.86277964	93.74905807	90.75429869	87.87329758
221027A00061	12/15/2022	4.45	12/15/2027	12/15/2022	114.54772	110.7104857	107.0255469	103.4859661	100.085165	96.81690411	93.67526319	90.6546224	87.74964531
221027A00062	12/15/2022	4.45	12/15/2027	12/15/2022	114.54772	110.7104857	107.0255469	103.4859661	100.085165	96.81690411	93.67526319	90.6546224	87.74964531
221027A00063	12/15/2022	4.45	12/15/2027	12/15/2022	114.54772	110.7104857	107.0255469	103.4859661	100.085165	96.81690411	93.67526319	90.6546224	87.74964531
221028A00027	10/28/2022	4.73	10/28/2024	10/28/2022	101.89647	101.3152276	100.7406278	100.1725548	99.61089797	99.05554882	98.50640148	97.96335242	97.42630038
221028A00056	10/28/2022	4.77	10/28/2024	10/28/2022	101.91979	101.3384765	100.7638002	100.1956514	99.63391926	99.07849546	98.52927408	97.98615156	97.44902665
221031A00003	10/31/2022	4.89	11/12/2024	10/31/2022	102.13732	101.5147111	100.8997132	100.2921902	99.69200624	99.09902857	98.51312771	97.93417724	97.36205374
221031A00004	10/31/2022	4.79	10/28/2025	10/31/2022	105.97876	104.3938812	102.840723	101.3184023	99.82606653	98.36289427	96.92809374	95.52090152	94.14058125
221031A00033	10/31/2022	4.74	10/31/2025	10/31/2022	105.93539	104.3427931	102.7821655	101.2526082	99.75325861	98.28328576	96.84188889	95.42829603	94.04176271
221031A00035	10/31/2022	4.67	10/30/2026	10/31/2022	110.27896	107.6437246	105.0860726	102.6032477	100.1926075	97.85162087	95.57786219	93.36900615	91.22282303
230324A00006	3/24/2023	4.06	3/24/2026	3/24/2023	106.41931	104.4270362	102.4825981	100.584552	98.73150558	96.92211791	95.15509722	93.42919866	91.74322226
221031A00036	10/31/2022	4.59	10/29/2027	10/31/2022	114.47953	110.7743287	107.2120342	103.786329	100.4912099	97.32097225	94.27019391	91.33371905	88.50664367
221031A00042	10/31/2022	4.73	10/30/2026	10/31/2022	110.43414	107.7968753	105.2372401	102.7524764	100.3399408	97.99710049	95.72152874	93.51089903	91.36298045
221031A00044	10/31/2022	4.89	10/31/2024	10/31/2022	102.01895	101.4291556	100.8461872	100.2699256	99.70025572	99.13706482	98.58024284	98.02968219	97.48527768
221031A00045	10/31/2022	4.79	10/31/2025	10/31/2022	106.01498	104.4217293	102.8604576	101.3302673	99.83029572	98.35971154	96.91771372	95.50353002	94.1164157
221031A00061	10/31/2022	4.94	4/30/2024	10/31/2022	100.28762	100.204344	100.1212006	100.0381938	99.95532336	99.87258898	99.78999032	99.70752705	99.62519886

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221102A00012	11/2/2022	4.82	11/3/2025	11/2/2022	106.10049	104.4982514	102.9282759	101.3896538	99.88151079	98.40300463	96.95332397	95.53168678	94.137339
221102A00026	11/2/2022	4.66	11/2/2027	11/2/2022	114.78068	111.0589554	107.4810689	104.040641	100.7316163	97.54824236	94.48505157	91.53684595	88.69868192
221103A00036	10/13/2023	4.87	10/31/2024	10/13/2023	102.00712	101.4173672	100.8344381	100.2582156	99.68858432	99.12543177	98.56864784	98.01812493	97.47375785
221103A00050	11/3/2022	5.14	11/4/2024	11/3/2022	102.20902	101.6077866	101.0136387	100.4264558	99.84611554	99.27249883	98.70548911	98.14497258	97.590838
221107A00010	11/7/2022	5.12	11/7/2024	11/7/2022	102.22847	101.6190576	101.0169319	100.4219627	99.83402265	99.25298757	98.67873607	98.11114966	97.55011257
221107A00029	11/7/2022	4.83	11/9/2026	11/7/2022	110.81987	108.149698	105.5587095	103.0440655	100.6030473	98.23305131	95.93158402	93.69625605	91.52477719
221107A00030	11/7/2022	4.7	11/5/2027	11/7/2022	114.96299	111.2295394	107.6406118	104.1897877	100.870973	97.6783781	94.60650144	91.65011297	88.80423923
221107A00048	11/7/2022	4.96	9/8/2025	11/7/2022	105.62337	104.1767389	102.7572662	101.3642499	99.99701407	98.65490568	97.33729313	96.04356557	94.77313204
221107A00053	11/7/2022	4.95	10/7/2025	11/7/2022	105.96938	104.4410043	102.9426384	101.4734717	100.0327215	98.61963248	97.23347563	95.87354712	94.53916723
221107A00056	11/7/2022	4.73	11/8/2027	11/7/2022	115.1099	111.3653431	107.7659792	104.3053485	100.9773177	97.77606141	94.69604403	91.73200402	88.87893843
221108A00033	11/8/2022	4.7	11/8/2027	11/8/2022	115.00173	111.2591254	107.6616544	104.2028625	100.8766185	97.67709886	94.5987698	91.63637149	88.78490265
221108A00036	11/8/2022	4.95	11/7/2025	11/8/2022	106.36025	104.7448032	103.1620187	101.6109733	100.0907766	98.60057138	97.13953177	95.70686209	94.30179534
221108A00041	11/8/2022	5.15	4/8/2024	11/8/2022	100.08651	100.0642751	100.0420583	100.0198645	99.99769362	99.9755457	99.95342066	99.93131847	99.90923908
221110A00023	11/10/2022	4.71	11/8/2024	11/10/2022	101.98746	101.376178	100.772239	100.1755135	99.58587246	99.00319011	98.42734355	97.8582128	97.29568066
221110A00024	11/10/2022	4.51	11/10/2025	11/10/2022	105.68663	104.0685224	102.4832502	100.9298831	99.40752185	97.91530095	96.45238691	95.01797672	93.61129652
221110A00025	11/10/2022	4.39	11/10/2026	11/10/2022	109.68142	107.0235033	104.4445721	101.9417907	99.51244306	97.15392873	94.86375713	92.63954192	90.47899595
221110A00026	11/10/2022	4.29	11/10/2027	11/10/2022	113.54705	109.8250497	106.2478258	102.8089243	99.50221641	96.32188164	93.26238974	90.31848468	87.48516928
221110A00038	11/10/2022	4.34	11/10/2027	11/10/2022	113.7276	110.002342	106.4219541	102.9799789	99.67028456	96.48704718	93.42473356	90.47808476	87.64210084
221110A00039	11/10/2022	4.34	11/10/2027	11/10/2022	113.7276	110.002342	106.4219541	102.9799789	99.67028456	96.48704718	93.42473356	90.47808476	87.64210084
221110A00064	1/17/2023	4.25	1/14/2028	1/17/2023	114.14557	110.2343017	106.4812974	102.8792648	99.42129096	96.10081963	92.91163063	89.84782057	86.90378476
221110A00065	1/17/2023	4.25	1/14/2028	1/17/2023	114.14557	110.2343017	106.4812974	102.8792648	99.42129096	96.10081963	92.91163063	89.84782057	86.90378476
221110A00074	11/10/2022	4.75	11/12/2024	11/10/2022	102.0499	101.427597	100.8129025	100.2056804	99.60579465	99.01311269	98.42750501	97.84884526	97.27701004
221110A00075	11/10/2022	4.56	11/10/2025	11/10/2022	105.76759	104.1488035	102.562866	101.0088451	99.48584151	97.99298935	96.52945481	95.09443462	93.68715464
221110A00076	11/10/2022	4.45	11/10/2026	11/10/2022	109.8384	107.1784081	104.5974492	102.0926858	99.66140058	97.30099183	95.0089676	92.7829403	90.62062158
221110A00084	11/10/2022	4.56	11/6/2025	11/10/2022	105.7201	104.1127396	102.5378586	100.9945376	99.48189255	97.99907198	96.54525583	95.11965381	93.72150409
221110A00086	11/10/2022	4.34	11/8/2027	11/10/2022	113.70373	109.9845128	106.4097562	102.9730304	99.66822805	96.48954822	93.43147893	90.48878107	87.65647323
221110A00108	11/10/2022	4.48	12/10/2025	11/10/2022	106.00211	104.2991236	102.6318643	100.9992723	99.40032897	97.83405587	96.29951262	94.79579502	93.3220333
221110A00110	11/10/2022	4.47	1/13/2026	11/10/2022	106.39	104.592432	102.8341684	101.1140525	99.43097021	97.78384978	96.17165978	94.59340716	93.04813552
221114A00002	11/14/2022	4.37	11/15/2027	11/14/2022	113.89601	110.153675	106.55729	103.1003299	99.77659925	96.58021497	93.50558854	90.54740945	87.70062961
221116A00026	11/16/2022	4.78	11/15/2024	11/16/2022	102.0973	101.4667221	100.8439544	100.2288547	99.62128186	99.02109799	98.42816862	97.84236249	97.26355155
221116A00027	11/16/2022	4.46	11/14/2025	11/16/2022	105.6685	104.0392292	102.4431712	100.8793775	99.34693331	97.84495848	96.37260558	94.92905847	93.51353077
221116A00028	11/16/2022	4.21	11/16/2027	11/16/2022	113.32765	109.5928077	106.0038157	102.554148	99.23760732	96.04830944	92.98066494	90.02936272	87.18935435
221117A00008	11/17/2022	4.82	11/15/2024	11/17/2022	102.12261	101.4919398	100.8690832	100.2538955	99.64623532	99.0459649	98.45294972	97.86705853	97.28816323

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221117A00012	11/17/2022	4.54	11/14/2025	11/17/2022	105.79892	104.16855	102.5714133	101.0065598	99.47307435	97.97007624	96.49671758	95.05218174	93.63568192
221117A00013	11/17/2022	4.54	11/14/2025	11/17/2022	105.79892	104.16855	102.5714133	101.0065598	99.47307435	97.97007624	96.49671758	95.05218174	93.63568192
221117A00014	11/17/2022	4.54	11/14/2025	11/17/2022	105.79892	104.16855	102.5714133	101.0065598	99.47307435	97.97007624	96.49671758	95.05218174	93.63568192
221117A00025	11/17/2022	4.28	11/17/2027	11/17/2022	113.59334	109.8508732	106.2545998	102.7979705	99.47477126	96.27910173	93.20535746	90.24821323	87.40260734
221118A00018	11/18/2022	4.55	11/18/2025	11/18/2022	105.86272	104.220761	102.6124172	101.0367207	99.49274085	97.97958206	96.4963825	95.04231229	93.61657207
221118A00019	11/18/2022	4.55	11/18/2025	11/18/2022	105.86272	104.220761	102.6124172	101.0367207	99.49274085	97.97958206	96.4963825	95.04231229	93.61657207
221118A00023	11/18/2022	4.12	11/18/2027	11/18/2022	113.52203	109.7651576	106.1554497	102.6862984	99.35143349	96.14490207	93.06105066	90.0945081	87.24016969
221118A00045	11/18/2022	4.57	11/18/2025	11/18/2022	105.89554	104.2533063	102.6446893	101.0687244	99.52448083	98.01106292	96.52760867	95.07328811	93.64730175
221118A00046	11/18/2022	4.4	11/18/2026	11/18/2022	109.8001	107.1183514	104.5167951	101.9925267	99.5427707	97.16487038	94.85628229	92.61457036	90.43740058
221118A00080	11/18/2022	4.61	11/18/2025	11/18/2022	105.96119	104.3183968	102.7092333	101.1327317	99.58796078	98.07402462	96.59006102	95.13523975	93.70876112
221121A00047	11/21/2022	4.89	11/21/2033	11/21/2022	140.67494	129.892472	120.0770378	111.1352381	102.9832096	95.54560303	88.75467582	82.54948618	76.87517616
221121A00052	11/21/2022	4.35	11/22/2027	11/21/2022	113.90725	110.1450458	106.5301943	103.0560785	99.71641753	96.50524858	93.41690903	90.44601926	87.58746678
221121A00064	11/21/2022	4.34	11/22/2027	11/21/2022	113.87081	110.1092722	106.4950646	103.0215743	99.68252097	96.47194246	93.38417677	90.4138449	87.55583491
221122A00011	11/22/2022	5.14	5/22/2024	11/22/2022	100.52865	100.3844448	100.240662	100.0973038	99.9543684	99.81185377	99.66975808	99.52807944	99.386816
221122A00015	11/22/2022	4.97	11/22/2024	11/22/2022	102.28803	101.6378291	100.9959187	100.362141	99.73634176	99.11837088	98.50808182	97.90533173	97.30998131
221122A00029	11/22/2022	4.31	11/22/2027	11/22/2022	113.7615	110.0019512	106.3896757	102.9180618	99.58083129	96.37202408	93.28597999	90.3173218	87.4609393
221122A00040	11/22/2022	4.31	11/22/2027	11/22/2022	113.7615	110.0019512	106.3896757	102.9180618	99.58083129	96.37202408	93.28597999	90.3173218	87.4609393
221122A00041	11/22/2022	4.97	11/22/2024	11/22/2022	102.28803	101.6378291	100.9959187	100.362141	99.73634176	99.11837088	98.50808182	97.90533173	97.30998131
221123A00016	11/23/2022	4.58	11/23/2029	11/23/2022	122.32479	116.5370383	111.0767136	105.9232717	101.057572	96.46177656	92.11925439	88.01449268	84.13301544
221123A00034	11/23/2022	4.43	11/23/2026	11/23/2022	109.93747	107.2399627	104.6234238	102.0849085	99.62160256	97.23081354	94.909964	92.65658594	90.46831529
221123A00039	11/23/2022	4.29	11/23/2027	11/23/2022	113.70043	109.93918	106.3253764	102.8523902	99.51393221	96.30403193	93.21701964	90.24750925	87.39038228
221128A00034	11/28/2022	4.27	11/26/2027	11/28/2022	113.66273	109.8937478	106.2727891	102.7931903	99.44862577	96.23309155	93.14088665	90.16659586	87.30507361
221129A00032	11/29/2022	5.04	5/22/2024	11/29/2022	100.51423	100.3700393	100.2262722	100.0829296	99.94000971	99.79751061	99.65543041	99.51376723	99.37251921
221129A00034	11/29/2022	4.38	12/1/2025	11/29/2022	105.9859	104.3026483	102.6544177	101.0401777	99.45894034	97.90975575	96.3917107	94.90392666	93.44555813
221129A00035	11/29/2022	4.09	11/29/2027	11/29/2022	113.54109	109.752833	106.1139654	102.6177349	99.25773502	96.02788608	92.92241647	89.93584502	87.0629645
221129A00037	11/29/2022	4.56	11/26/2025	11/29/2022	105.97434	104.3093066	102.6786586	101.0813915	99.51654293	97.98318755	96.48043527	95.00742947	93.56334543
221129A00038	11/29/2022	4.56	11/26/2025	11/29/2022	105.97434	104.3093066	102.6786586	101.0813915	99.51654293	97.98318755	96.48043527	95.00742947	93.56334543
221129A00039	11/29/2022	4.56	11/26/2025	11/29/2022	105.97434	104.3093066	102.6786586	101.0813915	99.51654293	97.98318755	96.48043527	95.00742947	93.56334543
221129A00040	11/29/2022	4.56	11/26/2025	11/29/2022	105.97434	104.3093066	102.6786586	101.0813915	99.51654293	97.98318755	96.48043527	95.00742947	93.56334543
221129A00041	11/29/2022	4.56	11/28/2025	11/29/2022	105.99814	104.3273677	102.6911738	101.0885451	99.51851131	97.98013956	96.47253265	94.99482723	93.54619219
221129A00042	11/29/2022	4.56	11/28/2025	11/29/2022	105.99814	104.3273677	102.6911738	101.0885451	99.51851131	97.98013956	96.47253265	94.99482723	93.54619219
221129A00043	11/29/2022	4.59	12/1/2025	11/29/2022	106.08387	104.4041558	102.7593198	101.1483347	99.57021792	98.0240251	96.50884806	95.02381306	93.56807917
221129A00044	11/29/2022	4.56	11/28/2025	11/29/2022	105.99814	104.3273677	102.6911738	101.0885451	99.51851131	97.98013956	96.47253265	94.99482723	93.54619219

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221129A00045	11/29/2022	4.56	11/28/2025	11/29/2022	105.99814	104.3273677	102.6911738	101.0885451	99.51851131	97.98013956	96.47253265	94.99482723	93.54619219
221129A00046	11/29/2022	4.56	12/1/2025	11/29/2022	106.03356	104.3542901	102.7098815	101.0993161	99.52161166	97.975824	96.46104511	94.97640145	93.52105225
221129A00047	11/29/2022	4.56	12/1/2025	11/29/2022	106.03356	104.3542901	102.7098815	101.0993161	99.52161166	97.975824	96.46104511	94.97640145	93.52105225
221129A00048	11/29/2022	4.56	12/1/2025	11/29/2022	106.03356	104.3542901	102.7098815	101.0993161	99.52161166	97.975824	96.46104511	94.97640145	93.52105225
221129A00049	11/29/2022	4.56	12/1/2025	11/29/2022	106.03356	104.3542901	102.7098815	101.0993161	99.52161166	97.975824	96.46104511	94.97640145	93.52105225
221129A00050	11/29/2022	4.56	12/2/2025	11/29/2022	106.04519	104.3631535	102.7160772	101.1029375	99.52274802	97.97456069	96.45746392	94.9705807	93.51306704
221129A00051	11/29/2022	4.56	12/2/2025	11/29/2022	106.04519	104.3631535	102.7160772	101.1029375	99.52274802	97.97456069	96.45746392	94.9705807	93.51306704
221129A00052	11/29/2022	4.56	12/2/2025	11/29/2022	106.04519	104.3631535	102.7160772	101.1029375	99.52274802	97.97456069	96.45746392	94.9705807	93.51306704
221129A00053	11/29/2022	4.56	12/2/2025	11/29/2022	106.04519	104.3631535	102.7160772	101.1029375	99.52274802	97.97456069	96.45746392	94.9705807	93.51306704
221129A00054	11/29/2022	4.56	12/3/2025	11/29/2022	106.05682	104.3720161	102.7222718	101.1065576	99.52388292	97.97329595	96.45388143	94.96475893	93.50508118
221129A00055	11/29/2022	4.56	12/3/2025	11/29/2022	106.05682	104.3720161	102.7222718	101.1065576	99.52388292	97.97329595	96.45388143	94.96475893	93.50508118
221129A00056	11/29/2022	4.31	11/29/2027	11/29/2022	113.84448	110.0637403	106.431731	102.9417375	99.58739395	96.36265863	93.2617954	90.27935621	87.4101648
221129A00059	11/29/2022	4.39	11/27/2026	11/29/2022	109.87754	107.1696922	104.5433838	101.9956395	99.5236158	97.12459264	94.79596674	92.53524582	90.34004292
221129A00060	11/29/2022	4.39	11/27/2026	11/29/2022	109.87754	107.1696922	104.5433838	101.9956395	99.5236158	97.12459264	94.79596674	92.53524582	90.34004292
221129A00061	11/29/2022	4.39	11/27/2026	11/29/2022	109.87754	107.1696922	104.5433838	101.9956395	99.5236158	97.12459264	94.79596674	92.53524582	90.34004292
221129A00062	11/29/2022	4.39	11/27/2026	11/29/2022	109.87754	107.1696922	104.5433838	101.9956395	99.5236158	97.12459264	94.79596674	92.53524582	90.34004292
221129A00064	11/29/2022	4.28	11/30/2027	11/29/2022	113.74636	109.9646142	106.3317389	102.8410171	99.48607234	96.26085318	93.15961448	90.17689986	87.30752534
221129A00065	11/29/2022	4.28	11/30/2027	11/29/2022	113.74636	109.9646142	106.3317389	102.8410171	99.48607234	96.26085318	93.15961448	90.17689986	87.30752534
221129A00066	11/29/2022	4.28	11/29/2027	11/29/2022	113.73459	109.955868	106.3258106	102.8377125	99.48521016	96.2622637	93.16313893	90.18238961	87.31484124
221129A00067	11/29/2022	4.28	11/29/2027	11/29/2022	113.73459	109.955868	106.3258106	102.8377125	99.48521016	96.2622637	93.16313893	90.18238961	87.31484124
221129A00068	11/29/2022	4.28	11/29/2027	11/29/2022	113.73459	109.955868	106.3258106	102.8377125	99.48521016	96.2622637	93.16313893	90.18238961	87.31484124
221129A00069	11/29/2022	4.28	11/26/2027	11/29/2022	113.69928	109.9296264	106.30802	102.8277921	99.48261648	96.26648849	93.17370651	90.19885475	87.33678705
221129A00070	11/29/2022	4.28	11/26/2027	11/29/2022	113.69928	109.9296264	106.30802	102.8277921	99.48261648	96.26648849	93.17370651	90.19885475	87.33678705
221129A00071	11/29/2022	4.28	11/26/2027	11/29/2022	113.69928	109.9296264	106.30802	102.8277921	99.48261648	96.26648849	93.17370651	90.19885475	87.33678705
221129A00072	11/29/2022	4.39	12/2/2026	11/29/2022	109.93452	107.2121699	104.572118	102.0113455	99.52697104	97.11623858	94.77651119	92.50526485	90.30008279
221129A00073	11/29/2022	4.39	12/2/2026	11/29/2022	109.93452	107.2121699	104.572118	102.0113455	99.52697104	97.11623858	94.77651119	92.50526485	90.30008279
221129A00075	11/29/2022	4.38	12/1/2026	11/29/2022	109.89659	107.1774456	104.5404322	101.9825479	99.50091887	97.09279672	94.75555145	92.48666564	90.28372872
221129A00076	11/29/2022	4.38	12/1/2026	11/29/2022	109.89659	107.1774456	104.5404322	101.9825479	99.50091887	97.09279672	94.75555145	92.48666564	90.28372872
221129A00077	11/29/2022	4.38	12/1/2026	11/29/2022	109.89659	107.1774456	104.5404322	101.9825479	99.50091887	97.09279672	94.75555145	92.48666564	90.28372872
221129A00078	11/29/2022	4.38	12/1/2026	11/29/2022	109.89659	107.1774456	104.5404322	101.9825479	99.50091887	97.09279672	94.75555145	92.48666564	90.28372872
221129A00083	11/29/2022	4.38	11/30/2026	11/29/2022	109.88543	107.1691222	104.5347939	101.9794523	99.50023137	97.0943899	94.75930463	92.4924645	90.29146489
221129A00084	11/29/2022	4.38	11/30/2026	11/29/2022	109.88543	107.1691222	104.5347939	101.9794523	99.50023137	97.0943899	94.75930463	92.4924645	90.29146489
221129A00085	11/29/2022	4.38	11/30/2026	11/29/2022	109.88543	107.1691222	104.5347939	101.9794523	99.50023137	97.0943899	94.75930463	92.4924645	90.29146489

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221129A00086	11/29/2022	4.38	11/30/2026	11/29/2022	109.88543	107.1691222	104.5347939	101.9794523	99.50023137	97.0943899	94.75930463	92.4924645	90.29146489
221130A00019	11/30/2022	4.63	11/26/2025	11/30/2022	106.09075	104.4247197	102.7930904	101.1948594	99.62906388	98.09477801	96.59111128	95.11720663	93.67223894
221130A00032	11/30/2022	4.37	11/30/2027	11/30/2022	114.07626	110.2884672	106.6497279	103.1533114	99.79283529	96.56224199	93.45578066	90.46798944	87.59367909
221130A00033	11/30/2022	4.37	11/30/2027	11/30/2022	114.07626	110.2884672	106.6497279	103.1533114	99.79283529	96.56224199	93.45578066	90.46798944	87.59367909
221130A00041	11/30/2022	4.95	12/2/2024	11/30/2022	102.37589	101.6983068	101.0297106	100.3699246	99.71877552	99.07609432	98.44171644	97.81548158	97.19723351
221130A00044	11/30/2022	5.09	5/30/2024	11/30/2022	100.60181	100.4354031	100.2695454	100.1042352	99.93946982	99.77524668	99.61156309	99.4484164	99.28580399
221130A00069	11/30/2022	4.15	11/30/2027	11/30/2022	113.77322	109.9778766	106.3322538	102.8295771	99.46342287	96.22769571	93.11660919	90.1246682	87.24665244
221130A00075	11/30/2022	4.15	11/30/2027	11/30/2022	113.77322	109.9778766	106.3322538	102.8295771	99.46342287	96.22769571	93.11660919	90.1246682	87.24665245
221130A00076	11/30/2022	4.15	11/30/2027	11/30/2022	113.77322	109.9778766	106.3322538	102.8295771	99.46342287	96.22769571	93.11660919	90.1246682	87.24665244
221130A00078	11/30/2022	4.15	11/30/2027	11/30/2022	113.77322	109.9778766	106.3322538	102.8295771	99.46342287	96.22769571	93.11660919	90.1246682	87.24665244
221130A00081	11/30/2022	4.15	11/30/2027	11/30/2022	113.77322	109.9778766	106.3322538	102.8295771	99.46342287	96.22769571	93.11660919	90.1246682	87.24665244
221130A00085	11/30/2022	4.19	11/30/2027	11/30/2022	113.41647	109.6407611	106.01375	102.5287228	99.17930939	95.95946437	92.8634483	89.88581029	87.02137159
221130A00110	11/30/2022	4.15	11/30/2027	11/30/2022	113.26985	109.4968265	105.8724216	102.3899253	99.04297031	95.82551379	92.73181889	89.75643715	86.89419215
221201A00009	12/1/2022	4.22	12/1/2025	12/1/2022	105.71728	104.0363569	102.3904126	100.7784183	99.19938684	97.65236964	96.13645446	94.65076376	93.19445298
221201A00011	12/1/2022	3.95	12/1/2027	12/1/2022	113.04926	109.264489	105.6292442	102.1367576	98.78060722	95.55469928	92.45324928	89.47076425	86.60202618
221201A00037	12/1/2022	4.26	12/1/2026	12/1/2022	109.57576	106.8609439	104.2281615	101.674411	99.19682181	96.79264824	94.45926317	92.19415185	89.99490629
221201A00043	12/1/2022	4.37	12/3/2029	12/1/2022	111.7168	108.5167268	105.4527795	102.5179269	99.70555631	97.00944356	94.42372753	91.94288651	89.5617162
221201A00048	12/1/2022	4.22	12/1/2027	12/1/2022	113.53769	109.7570555	106.1253812	102.6359378	99.28234039	96.05853003	92.95875451	89.97755103	87.10972969
221201A00068	12/1/2022	4.21	12/1/2027	12/1/2022	112.31928	108.8558567	105.5268877	102.3262914	99.24829881	96.28743811	93.43851711	90.6966071	88.05702765
221202A00013	12/2/2022	4.78	12/3/2024	12/2/2022	102.27032	101.5904411	100.919619	100.2576746	99.60443248	98.95972154	98.32337532	97.69523162	97.07513239
221202A00018	12/2/2022	4.16	12/2/2027	12/2/2022	113.32869	109.549181	105.9187186	102.4305641	99.07832435	95.85593276	92.7576301	89.77794716	86.91168813
221202A00025	12/2/2022	4.06	12/2/2026	12/2/2022	109.41032	106.6872379	104.0466835	101.485624	99.00116406	96.5905352	94.25108851	91.98028878	89.77570872
221205A00024	12/5/2022	4.13	12/3/2027	12/5/2022	113.22957	109.4491782	105.8179754	102.3292141	98.97649081	95.75372914	92.65516104	89.67530898	86.80896954
221205A00034	12/5/2022	4.89	6/5/2024	12/5/2022	100.62589	100.4429509	100.260688	100.0790931	99.89816249	99.71789258	99.53827968	99.35932018	99.18101048
221205A00048	12/5/2022	4.4	12/5/2025	12/5/2022	105.81006	104.1220684	102.4692946	100.8506969	99.26527791	97.71207919	96.19017918	94.69869155	93.23676347
221205A00065	12/5/2022	4.13	12/6/2027	12/5/2022	113.2626	109.4734924	105.8341856	102.3378921	98.97817083	95.74891038	92.64431002	89.6588619	86.78733429
221205A00088	12/5/2022	4.13	12/3/2027	12/5/2022	113.22957	109.4491782	105.8179754	102.3292141	98.97649081	95.75372914	92.65516104	89.67530898	86.80896954
221206A00011	12/6/2022	4.29	12/7/2026	12/6/2022	109.72144	106.988561	104.338641	101.7686327	99.27561875	96.85680933	94.50953593	92.23124488	90.01949153
221206A00025	12/6/2022	4.27	12/4/2026	12/6/2022	109.63507	106.9114085	104.2702393	101.7085371	99.22340793	96.81208445	94.47191891	92.20037728	89.99503339
221206A00036	12/6/2022	4.13	12/6/2027	12/6/2022	113.2626	109.4734924	105.8341856	102.3378921	98.97817083	95.74891038	92.64431002	89.6588619	86.78733429
221206A00039	12/6/2022	4.29	12/7/2026	12/6/2022	109.72144	106.988561	104.338641	101.7686327	99.27561875	96.85680933	94.50953593	92.23124488	90.01949153
221206A00040	12/6/2022	5	11/29/2024	12/6/2022	101.45353	101.0402242	100.6311095	100.2261112	99.82516071	99.42819112	99.03513704	98.64593462	98.26052142
221207A00009	12/7/2022	4.38	12/8/2025	12/7/2022	105.80971	104.1137375	102.4532677	100.8272504	99.23467614	97.67457493	96.14601438	94.64809791	93.17996294

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221207A00010	12/7/2022	4.08	12/7/2027	12/7/2022	113.08939	109.3007585	105.6620402	102.1664308	98.80747999	95.57906803	92.47538658	89.49092072	86.62043226
221207A00012	12/7/2022	4.21	12/7/2026	12/7/2022	109.50625	106.7762851	104.1292192	101.5619991	99.07170962	96.65556298	94.3108925	92.03514636	89.82588165
221207A00017	12/7/2022	3.86	12/7/2027	12/7/2022	112.78234	108.9861866	105.3406187	101.8387866	98.47419871	95.24069683	92.13243665	89.14386966	86.26972628
221207A00032	12/7/2022	4.52	12/7/2032	12/7/2022	133.89636	124.396261	115.6784183	107.673386	100.3182584	93.55602061	87.33496655	81.60817847	76.33305927
221207A00035	12/7/2022	4.31	1/7/2026	12/7/2022	106.01919	104.2413627	102.5020988	100.8002476	99.13470018	97.50439111	95.9082962	94.34543057	92.81484674
221207A00074	12/7/2022	4.66	12/6/2024	12/7/2022	102.22405	101.5361749	100.857579	100.1880758	99.52748332	98.87562413	98.23232565	97.59741978	96.97074281
221207A00101	12/7/2022	4.87	6/7/2024	12/7/2022	100.64125	100.4528027	100.2650683	100.0780447	99.891728	99.70611402	99.52119878	99.33697828	99.15344858
221208A00001	12/8/2022	4.6	12/8/2033	12/8/2022	138.07065	127.3614115	117.6196074	108.7512643	100.6720494	93.30623562	86.58578014	80.4495062	74.84237583
221208A00005	12/8/2022	4.88	12/8/2037	12/8/2022	152.2154	136.7130818	123.0821819	111.0807003	100.4994021	91.15721091	82.89727422	75.5835962	69.09815503
221208A00006	12/8/2022	4.88	12/8/2037	12/8/2022	152.2154	136.7130818	123.0821819	111.0807003	100.4994021	91.15721091	82.89727422	75.5835962	69.09815503
221208A00020	12/8/2022	4.11	12/8/2027	12/8/2022	113.21088	109.4173116	105.7739185	102.2738826	98.91073875	95.67835362	92.57090594	89.5828688	86.70899277
221208A00050	12/8/2022	4.11	12/8/2027	12/8/2022	113.21088	109.4173116	105.7739185	102.2738826	98.91073875	95.67835362	92.57090594	89.5828688	86.70899277
221208A00051	2/15/2023	4.27	2/13/2026	2/15/2023	106.39986	104.5155048	102.6741192	100.8744687	99.11536351	97.39565536	95.71423581	94.07003458	92.46201802
221208A00052	2/15/2023	4.01	2/15/2028	2/15/2023	113.58593	109.5960144	105.7711014	102.103499	98.58591336	95.21142706	91.973477	88.8658347	85.88258746
221208A00054	2/1/2023	4.02	2/1/2028	2/1/2023	113.46649	109.5191734	105.7335868	102.1022616	98.61811018	95.27440718	92.0647686	88.98313296	86.02374331
221208A00061	12/8/2022	4.11	12/8/2027	12/8/2022	113.21088	109.4173116	105.7739185	102.2738826	98.91073875	95.67835362	92.57090594	89.5828688	86.70899277
221208A00062	12/8/2022	4.24	12/8/2028	12/8/2022	117.8097	112.9090975	108.2462661	103.8083265	99.58316697	95.55939697	91.72629954	88.07378779	84.59236409
221208A00110	12/8/2022	4.07	12/8/2027	12/8/2022	113.06339	109.2725365	105.6317797	102.1343035	98.77364567	95.54367557	92.43857454	89.45281815	86.58115933
221209A00035	12/9/2022	3.91	12/9/2027	12/9/2022	112.98862	109.1832365	105.5289444	102.0188684	98.64648802	95.40561809	92.290389	89.29522868	86.41484548
221209A00037	12/9/2022	3.91	12/9/2027	12/9/2022	112.98862	109.1832365	105.5289444	102.0188684	98.64648802	95.40561809	92.290389	89.29522868	86.41484548
221209A00070	12/9/2022	4.42	12/9/2037	12/9/2022	129.08079	120.6852049	113.0475027	106.0885562	99.7382933	93.93459112	88.62230956	83.75244894	79.28141524
221212A00011	12/12/2022	3.89	12/10/2027	12/12/2022	112.92539	109.1184594	105.4627849	101.9514804	98.57801391	95.33618985	92.22012893	89.22425006	86.34325327
221212A00040	12/12/2022	4.45	12/12/2025	12/12/2022	105.97372	104.265654	102.5935016	100.9561977	99.35271574	97.78206965	96.24331185	94.73553135	93.25785193
221212A00041	12/12/2022	4.15	12/10/2027	12/12/2022	113.3805	109.5783961	105.9269574	102.419335	99.04903599	95.80990057	92.69608309	89.70203379	86.82248192
221212A00063	12/12/2022	4.45	12/12/2025	12/12/2022	105.97372	104.265654	102.5935016	100.9561977	99.35271574	97.78206965	96.24331185	94.73553135	93.25785193
221212A00071	12/12/2022	4.15	12/13/2027	12/12/2022	113.41369	109.6028563	105.9433009	102.4281371	99.05083381	95.80519599	92.68534505	89.68570062	86.80096343
221212A00117	6/12/2023	4.11	6/12/2026	6/12/2023	107.36792	105.1478484	102.9850931	100.8777576	98.82402646	96.82215927	94.87048644	92.96740579	91.11137925
221212A00131	12/12/2023	3.77	12/11/2026	12/12/2023	108.36063	105.6355607	102.9936107	100.4317139	97.94693511	95.5364687	93.19763117	90.92785517	88.72468341
221213A00004	12/13/2022	3.99	12/13/2027	12/13/2022	112.82155	109.0216559	105.3727211	101.8678687	98.50057914	95.26466829	92.15426813	89.16380832	86.28799921
221213A00017	12/13/2022	4.1	12/14/2026	12/13/2022	109.2831	106.5374184	103.8755951	101.2945292	98.79125394	96.36293333	94.00685549	91.7204261	89.50116239
221213A00047	12/13/2022	3.8	12/13/2027	12/13/2022	112.62375	108.8142552	105.156455	101.6434275	98.26860925	95.02577509	91.90901864	88.91273373	86.03159711
221213A00049	12/13/2022	4.01	12/13/2027	12/13/2022	112.89557	109.094306	105.4440436	101.9379023	98.56936098	95.33223425	92.22065274	89.22904486	86.35211974
221213A00051	12/13/2022	4.02	12/13/2027	12/13/2022	112.93258	109.130631	105.4797048	101.9729191	98.60375189	95.36601724	92.25384505	89.26166313	86.38418

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221213A00056	12/13/2022	4.02	5/13/2026	12/13/2022	107.142	105.0002701	102.9124325	100.8767601	98.89159524	96.95534569	95.06648188	93.22353375	91.42508797
221213A00061	12/13/2022	4.15	12/11/2026	12/13/2022	109.38697	106.6479059	103.9922931	101.417049	98.91922873	96.49601714	94.14472162	91.86276604	89.64768472
221213A00070	12/13/2022	4.07	12/13/2027	12/13/2022	113.11762	109.3122561	105.658011	102.1480029	98.77570648	95.53493214	92.41980659	89.42475447	86.54448132
221214A00002	12/14/2022	4.62	12/13/2024	12/14/2022	102.26302	101.5561235	100.8590253	100.1715264	99.49342917	98.82454126	98.1646756	97.51365019	96.87128785
221214A00003	12/14/2022	4.26	12/12/2025	12/14/2022	105.64944	103.9442218	102.2748694	100.6403154	99.03953454	97.47154216	95.93539192	94.43017406	92.95501354
221214A00020	12/14/2022	4.2	12/12/2025	12/14/2022	105.54704	103.8427169	102.1742487	100.540563	98.94063521	97.37348084	95.83815405	94.33374544	92.85938037
221214A00022	12/14/2022	4.17	2/13/2026	12/14/2022	106.21194	104.3293931	102.4897833	100.6918756	98.93448105	97.21645219	95.53668144	93.89409937	92.28767311
221214A00030	12/14/2022	4.02	12/14/2027	12/14/2022	112.94329	109.138442	105.484822	101.9755339	98.60404325	95.36415215	92.24997962	89.25594323	86.37674201
221214A00031	12/14/2022	3.97	12/14/2027	12/14/2022	112.75811	108.9566857	105.3063894	101.8003281	98.43197109	95.19512387	92.08390873	89.0927464	86.21633892
221214A00046	12/14/2022	4.02	12/14/2027	12/14/2022	112.94329	109.138442	105.484822	101.9755339	98.60404325	95.36415215	92.24997962	89.25594323	86.37674201
221214A00077	12/14/2022	3.84	12/14/2027	12/14/2022	112.78276	108.9676072	105.3044354	101.7863068	98.4066422	95.15920192	92.03806583	89.0376149	86.15251394
221214A00079	12/14/2022	3.84	12/14/2027	12/14/2022	112.78276	108.9676072	105.3044354	101.7863068	98.4066422	95.15920192	92.03806583	89.0376149	86.15251394
221214A00102	12/14/2022	4.33	12/15/2025	12/14/2022	105.80191	104.0873544	102.4089853	100.7657175	99.15651289	97.58037439	96.03634414	94.52350139	93.04096071
221215A00082	12/15/2022	4.27	12/15/2025	12/15/2022	105.69901	103.9853661	102.3078894	100.665498	99.05715426	97.48186149	95.93866222	94.42663612	92.94489812
221215A00115	12/15/2022	4	12/15/2027	12/15/2022	112.87987	109.0734975	105.4185147	101.9080166	98.53545766	95.29462944	92.17964131	89.1849019	86.30510192
221216A00007	12/16/2022	4.27	12/16/2025	12/16/2022	105.70984	103.9934403	102.313304	100.668348	99.05753052	97.47985096	95.93434814	94.42009818	92.93621269
221216A00008	12/16/2022	4.27	12/16/2025	12/16/2022	105.70984	103.9934403	102.313304	100.668348	99.05753052	97.47985096	95.93434814	94.42009818	92.93621269
221216A00009	12/16/2022	4.27	12/16/2025	12/16/2022	105.70984	103.9934403	102.313304	100.668348	99.05753052	97.47985096	95.93434814	94.42009818	92.93621269
221216A00010	12/16/2022	4.27	12/16/2025	12/16/2022	105.70984	103.9934403	102.313304	100.668348	99.05753052	97.47985096	95.93434814	94.42009818	92.93621269
221216A00013	12/16/2022	4.04	12/16/2027	12/16/2022	113.03889	109.2268701	105.5665281	102.0509404	98.67354567	95.42812104	92.30876218	89.30986495	86.42610813
221216A00023	12/16/2022	4.04	12/13/2027	12/16/2022	113.00659	109.203281	105.5510273	102.0429526	98.67253373	95.4335832	92.32022967	89.32689967	86.44830053
221216A00044	12/16/2022	4.43	4/16/2025	12/16/2022	103.35509	102.3085909	101.2833612	100.278757	99.29415949	98.32897415	97.38262998	96.45457818	95.5442911
221216A00045	12/16/2022	4.38	5/16/2025	12/16/2022	103.58448	102.4563616	101.3529124	100.2733267	99.21683505	98.18270077	97.17021834	96.17871164	95.20753248
221216A00047	12/16/2022	4.34	6/16/2025	12/16/2022	103.82991	102.6174479	101.4334203	100.2768297	99.14672887	98.04221368	96.96242077	95.90652529	94.87373877
221216A00048	12/16/2022	4.32	7/16/2025	12/16/2022	104.12154	102.8285554	101.5622718	100.3218682	99.10655511	97.91557524	96.74820202	95.60373796	94.48151322
221216A00049	12/16/2022	4.29	8/15/2025	12/16/2022	104.40639	103.0330511	101.6844845	100.3600742	99.05922618	97.78136577	96.52593641	95.29239917	94.08023196
221219A00009	12/19/2022	4.83	6/19/2024	12/19/2022	100.74646	100.5248717	100.3042684	100.0846457	99.8659972	99.64831623	99.43159635	99.21583113	99.00101423
221219A00043	12/19/2022	4.07	12/17/2027	12/19/2022	113.16101	109.344022	105.6789805	102.1589438	98.77733569	95.52791929	92.40477731	89.40229348	86.51513519
221220A00024	12/20/2022	4.7	12/20/2024	12/20/2022	102.39507	101.668656	100.9525856	100.2466342	99.55058804	98.86423935	98.18738608	97.51983176	96.86138535
221220A00025	12/20/2022	4.38	12/22/2025	12/20/2022	105.96559	104.2309172	102.533144	100.8711546	99.24388098	97.65029816	96.08942165	94.56030558	93.06204074
221220A00029	12/20/2022	4.7	12/20/2024	12/20/2022	102.39507	101.668656	100.9525856	100.2466342	99.55058804	98.86423935	98.18738608	97.51983176	96.86138535
221221A00038	12/21/2022	4.43	12/20/2024	12/21/2022	102.33452	101.6065695	100.8890094	100.1816148	99.48417057	98.79646726	98.11830145	97.44947531	96.78979649
221221A00043	12/21/2022	4.26	12/19/2025	12/21/2022	105.72508	104.0005534	102.3125867	100.6600836	99.04198978	97.45729295	95.90502075	94.38423879	92.89404869

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
221221A00046	12/21/2022	4.33	12/19/2025	12/21/2022	105.84589	104.1202916	102.4312708	100.7777326	99.15862208	97.57292646	96.01967292	94.49792658	93.00678865
221221A00048	12/21/2022	4.22	12/21/2026	12/21/2022	109.68323	106.9132718	104.2283519	101.6253009	99.1010937	96.65283991	94.27777626	91.97326018	89.73676343
221221A00049	12/21/2022	4.15	12/21/2027	12/21/2022	113.5022	109.668059	105.9868446	102.4515622	99.05557872	95.79260406	92.65667139	89.64211818	86.74356865
221221A00053	12/21/2022	4.15	12/21/2027	12/21/2022	113.5022	109.668059	105.9868446	102.4515622	99.05557872	95.79260406	92.65667139	89.64211818	86.74356865
221222A00012	12/22/2022	4.35	12/16/2025	12/22/2022	105.84726	104.1296396	102.4483097	100.8021816	99.19021273	97.6114021	96.06478791	94.54944578	93.06448682
221222A00013	12/22/2022	4.34	12/23/2025	12/22/2022	105.90725	104.1704306	102.4706	100.8066383	99.17747373	97.58207748	96.01946159	94.48867691	92.98881108
221222A00014	12/22/2022	4.65	12/23/2024	12/22/2022	102.39471	101.6601059	100.9360706	100.2223787	99.51880918	98.82514757	98.14118523	97.46671942	96.801553
221222A00024	12/22/2022	4.35	12/15/2025	12/22/2022	105.83621	104.1213505	102.442684	100.799124	99.18963243	97.61321203	96.06890478	94.55578981	93.07298157
221222A00026	12/22/2022	4.22	12/15/2026	12/22/2022	109.61891	106.865951	104.1971091	101.6092691	99.09945327	96.66481519	94.30263322	92.01030378	89.78533534
221222A00027	12/22/2022	4.16	12/15/2027	12/22/2022	113.47288	109.6555378	105.9899039	102.4690653	99.0864647	95.83588266	92.71141798	89.70746919	86.81871734
221222A00035	12/30/2022	4.34	12/30/2025	12/30/2022	105.9844	104.2282122	102.5097145	100.8277626	99.1812549	97.56913441	95.9903866	94.44403713	92.92914985
221222A00053	12/22/2022	4.18	12/22/2027	12/22/2022	112.9446	109.2892898	105.7795602	102.4087675	99.17060947	96.05910564	93.06857873	90.19363759	87.42916119
221223A00016	12/23/2022	4.73	12/23/2024	12/23/2022	102.45369	101.7188441	100.9945718	100.2806452	99.57684337	98.88295175	98.19876169	97.52407039	96.8586807
221223A00025	12/23/2022	4.25	12/23/2027	12/23/2022	113.89714	110.0502284	106.3568626	102.8100125	99.40301203	96.12954016	92.98360111	89.95950526	87.05185144
221223A00035	12/23/2022	4.44	12/23/2025	12/23/2022	106.08093	104.3425589	102.6412038	100.9757451	99.34511021	97.74826962	96.1842347	94.65205558	93.15081927
221228A00044	12/28/2022	4.31	12/28/2027	12/28/2022	114.17833	110.3125795	106.6015455	103.0381179	99.61556126	96.32749042	93.16784967	90.13089351	87.21116872
221228A00075	12/28/2022	4.09	12/28/2027	12/28/2022	113.8691	109.9955916	106.2774919	102.7076499	99.27928703	95.98597769	92.82162845	89.78045865	86.8569822
221228A00094	12/28/2022	4.95	6/28/2024	12/28/2022	100.86053	100.6139907	100.3686531	100.1245129	99.88156138	99.63978999	99.39919009	99.1597532	98.92147091
221228A00129	12/28/2022	4.11	12/28/2027	12/28/2022	113.55157	109.7818342	106.1640752	102.6913149	99.35693781	96.15466568	93.07853882	90.12289805	87.28236798
221229A00075	12/29/2022	5.2	12/29/2037	12/29/2022	156.631	140.7870757	126.8537605	114.5837739	103.7633749	94.2076358	85.75640639	78.27086305	71.6305547
221230A00055	12/30/2022	4.59	12/30/2024	12/30/2022	102.55086	101.7949187	101.050147	100.316297	99.59312966	98.88041268	98.17792051	97.48543404	96.80274039
221230A00059	12/30/2022	4.47	6/30/2025	12/30/2022	104.32693	103.0706944	101.8448267	100.6482378	99.47988672	98.33878096	97.22397424	96.13456364	95.0696872
221230A00072	12/30/2022	4.8	12/31/2024	12/30/2022	102.58569	101.8286655	101.0828393	100.347962	99.62379345	98.9101008	98.2066577	97.51324435	96.82964718
221230A00086	12/30/2022	4.8	1/2/2025	12/30/2022	102.6069	101.8444019	101.0932615	100.3532292	99.62405954	98.90551446	98.19736268	97.49937962	96.81134716
221230A00087	12/30/2022	4.56	1/2/2026	12/30/2022	106.42342	104.6549283	102.9245371	101.2310876	99.57347081	97.95062221	96.36151969	94.80518128	93.28066321
221230A00088	12/30/2022	4.42	12/30/2026	12/30/2022	110.33023	107.5271014	104.8105796	102.1774115	99.62449512	97.14886758	94.74769757	92.41827845	90.15802169
221230A00108	12/30/2022	4.8	12/30/2024	12/30/2022	102.57564	101.8213665	101.0782097	100.3459261	99.62427813	98.9130351	98.21197296	97.52087404	96.83952685
221230A00109	12/30/2022	4.56	12/30/2025	12/30/2022	106.37071	104.6110268	102.8891021	101.2037853	99.55397304	97.93860664	96.35667	94.80718727	93.2892208
221230A00111	12/30/2022	4.42	12/30/2026	12/30/2022	110.33023	107.5271014	104.8105796	102.1774115	99.62449512	97.14886758	94.74769757	92.41827845	90.15802169
230103A00066	1/3/2023	4.19	7/15/2026	1/3/2023	108.20454	105.8788981	103.6153897	101.4119559	99.26661922	97.17748211	95.14272254	93.16059061	91.22940503
230103A00068	1/3/2023	4.69	3/13/2025	1/3/2023	103.27294	102.3182513	101.3812849	100.4615502	99.55857397	98.67190034	97.8010898	96.94571853	96.10537772
230103A00070	1/3/2023	4.53	10/15/2025	1/3/2023	105.41929	103.8738383	102.3589687	100.8738395	99.41764379	97.98960325	96.58896716	95.21501107	93.86703567
230104A00004	1/4/2023	4.19	1/4/2028	1/4/2023	113.80725	109.9294596	106.2076254	102.6345671	99.20347881	95.9079084	92.74173653	89.69915731	86.77466015

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230104A00044	1/4/2023	4.2	1/4/2028	1/4/2023	113.84486	109.9663618	106.2438428	102.6701197	99.23838618	95.94218921	92.7754088	89.73223839	86.80716676
230105A00020	1/5/2023	4.32	1/5/2028	1/5/2023	114.30761	110.4177174	106.6842685	103.100065	99.65828099	96.35244506	93.17641922	90.12437965	87.19079857
230105A00028	1/5/2023	4.93	10/18/2024	1/5/2023	101.93103	101.3766141	100.828248	100.2858348	99.74927747	99.21848143	98.69335397	98.17380441	97.65974399
230106A00017	1/6/2023	4.23	1/6/2028	1/6/2023	113.98011	110.0936539	106.3636746	102.7829654	99.3446973	96.04239531	92.86991813	89.82143864	86.89142579
230106A00019	1/6/2023	4.23	1/6/2028	1/6/2023	113.98011	110.0936539	106.3636746	102.7829654	99.3446973	96.04239531	92.86991813	89.82143864	86.89142579
230106A00032	1/6/2023	4.28	1/6/2026	1/6/2023	106.22425	104.4424418	102.6993106	100.9936898	99.3244628	97.69055739	96.09094307	94.5246292	92.99066298
230109A00011	1/9/2023	4.61	1/6/2025	1/9/2023	102.50958	101.7366062	100.9753229	100.2254646	99.48677497	98.75900546	98.04191484	97.33526895	96.63884045
230109A00027	1/9/2023	4.64	12/17/2024	1/9/2023	102.32256	101.6045427	100.8966314	100.1986159	99.51028946	98.83145085	98.16190448	97.50146012	96.84993269
230109A00042	1/9/2023	4.07	12/20/2027	1/9/2023	113.19354	109.3678408	105.6946986	102.1671386	98.77854626	95.52264909	92.39349667	89.38544188	86.49312343
230109A00083	1/9/2023	4.79	1/11/2038	1/9/2023	151.27182	135.7410186	122.0979141	110.0968826	99.52574798	90.20105348	81.96402635	74.67712892	68.22110755
230110A00006	1/10/2023	4.06	1/10/2028	1/10/2023	113.38284	109.4968047	105.7677511	102.1884494	98.75204246	95.45202824	92.28223874	89.23682091	86.31021855
230110A00023	1/10/2023	4.3	1/12/2026	1/10/2023	106.07403	104.2820425	102.5291954	100.8143331	99.13634348	97.4941569	95.88674418	94.31311462	92.77231428
230110A00035	1/10/2023	4.08	1/10/2028	1/10/2023	113.07548	109.2943355	105.6666909	102.1854643	98.84393935	95.63574353	92.55482852	89.59545203	86.75216071
230110A00037	1/11/2023	4.66	11/15/2024	1/11/2023	102.02138	101.3910691	100.7685679	100.1537324	99.54642147	98.94649725	98.35382529	97.76827438	97.18971648
230110A00040	1/13/2023	4.07	12/13/2027	1/13/2023	113.11762	109.3122561	105.658011	102.1480029	98.77570648	95.53493214	92.41980659	89.42475447	86.54448132
230110A00043	1/10/2023	3.84	1/10/2028	1/10/2023	113.06865	109.1748171	105.438682	101.8529615	98.41075443	95.10551724	91.93104347	88.8814441	85.95112933
230110A00047	1/10/2023	3.84	1/10/2028	1/10/2023	113.06865	109.1748171	105.438682	101.8529615	98.41075443	95.10551724	91.93104347	88.8814441	85.95112933
230110A00055	1/10/2023	4.06	1/10/2028	1/10/2023	113.38284	109.4968047	105.7677511	102.1884494	98.75204246	95.45202824	92.28223874	89.23682091	86.31021855
230110A00070	1/10/2023	4.27	1/9/2026	1/10/2023	105.96973	104.1870176	102.4430874	100.736782	99.06699164	97.43264969	95.83273049	94.26624733	92.73225059
230110A00074	1/12/2023	4.65	1/10/2025	1/12/2023	102.58148	101.7974149	101.0253736	100.2650808	99.51626953	98.77868051	98.05206237	97.3361712	96.63077026
230111A00004	1/11/2023	3.83	1/11/2028	1/11/2023	113.0413	109.145271	105.4071353	101.8196018	98.37575948	95.06905572	91.89327498	88.8425195	85.91119105
230111A00013	1/11/2023	4.25	1/9/2026	1/11/2023	105.93406	104.1516794	102.4080701	100.7020797	99.03259871	97.39856059	95.79893984	94.23274991	92.6990413
230111A00019	1/11/2023	3.83	1/11/2028	1/11/2023	113.0413	109.145271	105.4071353	101.8196018	98.37575948	95.06905572	91.89327498	88.8425195	85.91119105
230111A00039	1/11/2023	4.6	1/13/2025	1/11/2023	102.57238	101.7802633	101.0004187	100.2325641	99.47642413	98.73173154	97.99822733	97.27566021	96.56378641
230111A00046	1/11/2023	4.28	1/13/2026	1/11/2023	106.04908	104.2546492	102.4994706	100.7823834	99.1022751	97.45807536	95.84875424	94.27332008	92.73081781
230111A00069	1/11/2023	4.54	1/10/2025	1/11/2023	102.49494	101.7112501	100.9395772	100.1796489	99.43119822	98.69396598	97.96770088	97.25215906	96.54710386
230111A00072	1/11/2023	4.21	1/12/2026	1/11/2023	105.91279	104.1222816	102.3708916	100.6574597	98.98087473	97.34006763	95.73400992	94.16171159	92.6222193
230112A00004	1/12/2023	4	1/12/2028	1/12/2023	113.17739	109.2898192	105.5595443	101.9793121	98.54224992	95.24183999	92.07189926	89.02656004	86.10025194
230112A00014	1/12/2023	4.09	1/12/2027	1/12/2023	109.5561	106.7288748	103.9900751	101.3363963	98.7646807	96.27190942	93.8551947	91.51177354	89.23900129
230112A00041	1/12/2023	4.2	1/12/2026	1/12/2023	105.89487	104.1045304	102.3533023	100.6400294	98.96360042	97.3229466	95.71703945	94.14488903	92.60554208
230112A00042	1/12/2023	4.09	1/12/2027	1/12/2023	109.5561	106.7288748	103.9900751	101.3363963	98.7646807	96.27190942	93.8551947	91.51177354	89.23900129
230112A00044	1/12/2023	4	1/12/2028	1/12/2023	113.17739	109.2898192	105.5595443	101.9793121	98.54224992	95.24183999	92.07189926	89.02656004	86.10025194
230112A00059	3/1/2023	4.04	3/2/2026	3/1/2023	106.1571	104.2256938	102.339362	100.4967828	98.69668069	96.93782604	95.21903275	93.53915653	91.89709313

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230112A00060	3/15/2023	4.01	3/13/2026	3/15/2023	106.20969	104.2486632	102.3340699	100.4645256	98.63869759	96.85530152	95.11309945	93.41089773	91.7475451
230112A00061	3/15/2023	4.01	3/13/2026	3/15/2023	106.20969	104.2486632	102.3340699	100.4645256	98.63869759	96.85530152	95.11309945	93.41089773	91.7475451
230112A00062	3/15/2023	3.83	3/15/2028	3/15/2023	113.18971	109.1269711	105.2355715	101.5073655	97.9346403	94.51008863	91.22678516	88.07816448	85.05800047
230112A00063	3/15/2023	3.83	3/15/2028	3/15/2023	113.18971	109.1269711	105.2355715	101.5073655	97.9346403	94.51008863	91.22678516	88.07816448	85.05800047
230112A00065	1/12/2023	4.09	1/12/2027	1/12/2023	109.5561	106.7288748	103.9900751	101.3363963	98.7646807	96.27190942	93.8551947	91.51177354	89.23900129
230112A00066	1/12/2023	4	1/12/2028	1/12/2023	113.17739	109.2898192	105.5595443	101.9793121	98.54224992	95.24183999	92.07189926	89.02656004	86.10025194
230113A00037	1/26/2024	3.43	1/30/2026	1/26/2024	104.66929	102.8425142	101.0566513	99.31054602	97.60308206	95.93318153	94.29980343	92.70194214	91.13862602
230113A00055	1/13/2023	3.88	1/13/2028	1/13/2023	112.73373	108.8518451	105.1272096	101.5525774	98.12107446	94.8261822	91.66171631	88.62180785	85.70088514
230113A00057	1/13/2023	3.99	1/13/2028	1/13/2023	111.93104	108.3841487	104.9786889	101.7081883	98.56650619	95.54781518	92.64658312	89.85755681	87.1757463
230113A00080	1/13/2023	4.18	1/13/2026	1/13/2023	105.86964	104.0768688	102.3233139	100.6078208	98.92927767	97.28661514	95.67880395	94.1048532	92.56380849
230117A00015	1/17/2023	4.52	1/17/2025	1/17/2023	102.54822	101.7454102	100.9552139	100.177331	99.41147464	98.65736705	97.91473881	97.18332874	96.46288355
230117A00040	1/17/2023	4.07	1/19/2027	1/17/2023	109.57222	106.7259897	103.9693263	101.2988888	98.71148614	96.2040655	93.77370512	91.41760793	89.1330953
230117A00048	1/17/2023	3.97	1/14/2028	1/17/2023	113.08492	109.1936957	105.4601378	101.8769751	98.43731642	95.13462641	91.96270471	88.91566691	85.98792648
230117A00087	1/17/2023	3.93	1/18/2028	1/17/2023	112.97498	109.075037	105.3335477	101.7432002	98.29706501	94.98856965	91.81147771	88.75986985	85.82812582
230118A00019	1/18/2023	3.59	1/18/2028	1/18/2023	112.20089	108.3018185	104.5616514	100.9730455	97.52903628	94.22301835	91.04872495	88.00020856	85.07182276
230118A00020	1/18/2023	3.87	1/16/2026	1/18/2023	105.597	103.7942121	102.0311059	100.3065166	98.61932539	96.96845544	95.35286993	93.77157008	92.22359346
230118A00023	1/18/2023	3.8	1/18/2028	1/18/2023	112.48111	108.5905351	104.858125	101.2765869	97.83900171	94.53880648	91.36977419	88.3259944	85.40185537
230118A00029	1/18/2023	3.81	1/18/2028	1/18/2023	112.5191	108.6278044	104.894696	101.3124803	97.87423734	94.57340364	91.40375138	88.35936944	85.43464541
230118A00033	1/18/2023	3.81	1/18/2028	1/18/2023	112.5191	108.6278044	104.894696	101.3124803	97.87423734	94.57340364	91.40375138	88.35936944	85.43464541
230118A00034	1/18/2023	3.89	1/18/2028	1/18/2023	112.82302	108.9259595	105.1872638	101.5996269	98.15612245	94.85018098	91.67556893	88.62636971	85.69696568
230118A00039	1/18/2023	3.81	1/18/2028	1/18/2023	112.5191	108.6278044	104.894696	101.3124803	97.87423734	94.57340364	91.40375138	88.35936944	85.43464541
230118A00053	1/18/2023	3.87	1/16/2026	1/18/2023	105.597	103.7942121	102.0311059	100.3065166	98.61932539	96.96845544	95.35286993	93.77157008	92.22359346
230118A00056	1/18/2023	3.87	1/16/2026	1/18/2023	105.597	103.7942121	102.0311059	100.3065166	98.61932539	96.96845544	95.35286993	93.77157008	92.22359346
230118A00058	1/23/2023	4	2/17/2026	1/23/2023	105.93716	104.0455188	102.1972668	100.3911519	98.62596646	96.90054512	95.21376329	93.56453528	91.95181273
230118A00087	1/18/2023	4.02	1/16/2026	1/18/2023	105.59488	103.7969813	102.0385701	100.3184957	98.63564661	96.98895276	95.37738374	93.79994691	92.25568567
230119A00034	1/19/2023	3.82	1/19/2028	1/19/2023	112.56719	108.672284	104.9358097	101.3504561	97.90929206	94.60574316	91.43357118	88.38685489	85.45997213
230119A00067	1/19/2023	3.84	1/20/2026	1/19/2023	105.58313	103.7697807	101.9965582	100.2622976	98.56587793	96.90621921	95.28228075	93.69305929	92.13758733
230119A00075	1/19/2023	4.44	1/21/2025	1/19/2023	102.52228	101.7087977	100.9082596	100.1203601	99.34480124	98.58129414	97.82955902	97.08932467	96.36032817
230119A00105	1/19/2023	3.9	1/19/2027	1/19/2023	109.09499	106.2555149	103.5054407	100.8414361	98.2603151	95.75902959	93.33466243	90.98442095	88.70563077
230119A00108	1/19/2023	3.81	1/19/2028	1/19/2023	112.52917	108.6349884	104.8992135	101.3145385	97.87403301	94.57112344	91.39957226	88.35345891	85.42716191
230119A00137	1/19/2023	3.9	1/19/2027	1/19/2023	109.09499	106.2555149	103.5054407	100.8414361	98.2603151	95.75902959	93.33466243	90.98442095	88.70563077
230120A00021	1/20/2023	4.13	1/20/2026	1/20/2023	105.85319	104.0419064	102.2706176	100.5381659	98.84343594	97.18535295	95.56288112	93.97502183	92.42081203
230120A00022	1/20/2023	3.9	1/20/2028	1/20/2023	112.88163	108.978068	105.2333233	101.6400732	98.19136981	94.88062276	91.70157827	88.64830014	85.71515187

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230120A00027	1/20/2023	4.13	1/20/2026	1/20/2023	105.85319	104.0419064	102.2706176	100.5381659	98.84343594	97.18535295	95.56288112	93.97502183	92.42081203
230120A00029	1/20/2023	3.9	1/20/2028	1/20/2023	112.88163	108.978068	105.2333233	101.6400732	98.19136981	94.88062276	91.70157827	88.64830014	85.71515187
230120A00049	1/20/2023	4.53	1/16/2025	1/20/2023	102.54639	101.7462918	100.9587174	100.1833749	99.41998045	98.66825888	97.9279434	97.19877532	96.48050375
230120A00063	1/20/2023	4.83	7/22/2024	1/20/2023	101.05558	100.74295	100.4322615	100.1235004	99.81664871	99.51168863	99.20860266	98.90737348	98.60798398
230120A00065	1/20/2023	4.52	1/21/2025	1/20/2023	102.58764	101.7738597	100.9730339	100.1848498	99.40900952	98.64522409	97.89321366	97.15270698	96.42344106
230120A00071	1/20/2023	4.31	1/21/2025	1/20/2023	102.55272	101.73726	100.9348015	100.1450374	99.36766783	98.6024021	97.84895862	97.10706448	96.37645514
230120A00079	1/20/2023	3.68	1/20/2028	1/20/2023	112.56387	108.6524804	104.9006347	101.3009557	97.84645042	94.53048658	91.34677118	88.28933146	85.35249672
230120A00082	1/20/2023	4.53	1/16/2025	1/20/2023	102.54639	101.7462918	100.9587174	100.1833749	99.41998045	98.66825888	97.9279434	97.19877532	96.48050375
230120A00099	1/20/2023	3.92	1/20/2026	1/20/2023	105.7284	103.9136927	102.1391402	100.4035741	98.7058726	97.04495519	95.41978054	93.82934475	92.27267975
230120A00103	1/20/2023	3.92	1/20/2026	1/20/2023	105.7284	103.9136927	102.1391402	100.4035741	98.7058726	97.04495519	95.41978054	93.82934475	92.27267975
230120A00114	1/20/2023	4.13	1/20/2026	1/20/2023	105.85319	104.0419064	102.2706176	100.5381659	98.84343594	97.18535295	95.56288112	93.97502183	92.42081203
230120A00117	1/20/2023	3.9	1/20/2028	1/20/2023	112.88163	108.978068	105.2333233	101.6400732	98.19136981	94.88062276	91.70157827	88.64830014	85.71515187
230123A00016	1/23/2023	4.64	12/2/2024	1/23/2023	102.16527	101.4884833	100.820676	100.1616716	99.51129672	98.86938257	98.23576469	97.61028287	96.992781
230123A00051	1/23/2023	3.75	1/21/2028	1/23/2023	112.84114	108.921767	105.1623072	101.5553698	98.0939461	94.77138814	91.581388	88.51795851	85.57541513
230123A00078	1/23/2023	4.41	6/23/2025	1/23/2023	103.98285	102.7506979	101.5478691	100.3733237	99.22607102	98.10516616	97.00970739	95.93883379	94.8917229
230124A00004	1/24/2023	3.99	1/24/2028	1/24/2023	113.26626	109.3445799	105.582792	101.9735194	98.50976558	95.18489267	91.99260109	88.92691046	85.98214166
230124A00014	1/24/2023	4.23	1/26/2026	1/24/2023	106.09897	104.2693719	102.4804872	100.7311537	99.02025113	97.34669854	95.70945298	94.10750775	92.53989084
230124A00015	1/24/2023	4.09	1/25/2027	1/24/2023	109.69029	106.8262846	104.0528579	101.3666441	98.76442182	96.24310756	93.79974889	91.43151802	89.13570584
230124A00022	1/24/2023	4.39	1/24/2025	1/24/2023	102.648	101.8239882	101.0132404	100.2154393	99.43027612	98.65745179	97.89667666	97.14767007	96.41016004
230124A00024	1/24/2023	4.23	1/23/2026	1/24/2023	106.06675	104.2454714	102.4645574	100.7228522	99.0192374	97.35263496	95.7220051	94.12634483	92.5646863
230124A00025	1/24/2023	4.09	1/25/2027	1/24/2023	109.69029	106.8262846	104.0528579	101.3666441	98.76442182	96.24310756	93.79974889	91.43151802	89.13570584
230124A00035	1/24/2023	4.23	1/26/2026	1/24/2023	106.09897	104.2693719	102.4804872	100.7311537	99.02025113	97.34669854	95.70945298	94.10750775	92.53989084
230124A00041	1/24/2023	4.6	1/24/2025	1/24/2023	102.69133	101.8688766	101.0596395	100.2632992	99.47954861	98.70809041	97.94863659	97.20090808	96.46463442
230124A00045	1/24/2023	3.99	1/24/2028	1/24/2023	113.26626	109.3445799	105.582792	101.9735194	98.50976558	95.18489267	91.99260109	88.92691046	85.98214166
230124A00046	1/24/2023	3.99	1/24/2028	1/24/2023	113.26626	109.3445799	105.582792	101.9735194	98.50976558	95.18489267	91.99260109	88.92691046	85.98214166
230124A00055	6/15/2023	4.13	6/15/2032	6/15/2023	129.01861	120.2024147	112.0804638	104.5938063	97.68881125	91.31666036	85.43289182	79.99698948	74.97201284
230124A00056	3/28/2023	4.19	3/28/2033	3/28/2023	132.02607	122.296116	113.3948387	105.2463706	97.7821865	90.94036003	84.66489629	78.90513478	73.61521547
230124A00058	6/15/2023	4.21	6/15/2034	6/15/2023	135.81555	124.6891697	114.6186684	105.4966473	97.22721771	89.7247097	82.91253224	76.7221658	71.09227159
230125A00010	1/25/2023	4.01	1/25/2027	1/25/2023	109.46441	106.6036129	103.8333225	101.1501703	98.55093723	96.03254221	93.59203496	91.22658982	88.9334997
230125A00021	1/25/2023	3.95	1/26/2026	1/25/2023	105.84509	104.0132368	102.2222302	100.4709052	98.75813578	97.08283583	95.44395728	93.84048858	92.27145316
230125A00022	1/25/2023	3.8	1/25/2027	1/25/2023	109.24963	106.383414	103.6080689	100.9202124	98.31660674	95.79415276	93.3498834	90.98095711	88.68465178
230125A00023	1/25/2023	3.69	1/25/2028	1/25/2023	112.65268	108.7260446	104.9600745	101.3473379	97.88078877	94.55374283	91.35985688	88.29310963	85.34778354
230125A00030	1/25/2023	3.91	1/25/2028	1/25/2023	112.97138	109.0526097	105.293778	101.6875021	98.2267812	94.90497346	91.71577524	88.65320215	85.71157121

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230125A00031	1/25/2023	3.74	1/25/2028	1/25/2023	111.61647	108.0425467	104.6124867	101.3196489	98.15773205	95.12075944	92.20306005	89.39925134	86.70422305
230125A00062	1/25/2023	4.84	7/25/2024	1/25/2023	101.08718	100.766251	100.4473717	100.1305181	99.81567108	99.5028115	99.19192053	98.8829796	98.57597035
230125A00065	1/25/2023	4.84	7/25/2024	1/25/2023	101.08718	100.766251	100.4473717	100.1305181	99.81567108	99.5028115	99.19192053	98.8829796	98.57597035
230126A00009	1/26/2023	4.84	7/26/2024	1/26/2023	101.09666	100.7729742	100.4513659	100.1318166	99.81430652	99.49881607	99.18532601	98.87381732	98.56427123
230126A00011	1/26/2023	4.84	7/26/2024	1/26/2023	101.09666	100.7729742	100.4513659	100.1318166	99.81430652	99.49881607	99.18532601	98.87381732	98.56427123
230126A00015	1/26/2023	4.08	1/26/2027	1/26/2023	109.67235	106.8059127	104.0302131	101.3418789	98.73768408	96.2145404	93.7694906	91.3997021	89.10246099
230126A00033	1/26/2023	4.84	7/26/2024	1/26/2023	101.09666	100.7729742	100.4513659	100.1318166	99.81430652	99.49881607	99.18532601	98.87381732	98.56427123
230126A00034	1/26/2023	4.56	1/24/2025	1/26/2023	102.65832	101.8360176	101.0269272	100.230732	99.44712483	98.6758085	97.91649499	97.16890526	96.43276888
230126A00036	1/26/2023	4.19	1/26/2026	1/26/2023	106.02578	104.196865	102.408655	100.6599839	98.94973154	97.27681743	95.64019892	94.0388696	92.47185777
230127A00012	1/27/2023	4	1/27/2028	1/27/2023	113.33617	109.4050413	105.6344878	102.0170974	98.54584114	95.21404972	92.01539321	88.94386183	85.99374817
230127A00028	1/27/2023	4.7	7/26/2024	1/27/2023	101.09253	100.7683866	100.4463333	100.1263472	99.80840849	99.4924974	99.17859455	98.86668074	98.55673706
230127A00029	1/27/2023	4.7	7/26/2024	1/27/2023	101.09253	100.7683866	100.4463333	100.1263472	99.80840849	99.4924974	99.17859455	98.86668074	98.55673706
230127A00044	1/27/2023	4.25	1/27/2026	1/27/2023	106.14636	104.3136445	102.5217638	100.7695551	99.05589703	97.37970769	95.73994283	94.13559431	92.56568861
230127A00045	1/27/2023	4.12	1/27/2027	1/27/2023	109.7958	106.9249218	104.1449829	101.4526089	98.84456771	96.31776479	93.8692367	91.49614473	89.19576886
230127A00046	1/27/2023	4	1/27/2028	1/27/2023	113.33617	109.4050413	105.6344878	102.0170974	98.54584114	95.21404972	92.01539321	88.94386183	85.99374817
230127A00048	1/27/2023	4	1/27/2028	1/27/2023	113.33617	109.4050413	105.6344878	102.0170974	98.54584114	95.21404972	92.01539321	88.94386183	85.99374817
230127A00053	1/27/2023	4	1/27/2028	1/27/2023	113.33617	109.4050413	105.6344878	102.0170974	98.54584114	95.21404972	92.01539321	88.94386183	85.99374817
230127A00056	1/27/2023	3.78	1/27/2028	1/27/2023	113.01792	109.0788865	105.3011519	101.6772617	98.20014124	94.86307872	91.65970442	88.58397145	85.63013766
230127A00059	1/27/2023	4.41	1/27/2025	1/27/2023	102.69455	101.8622026	101.0433763	100.2377479	99.44499969	98.66482423	97.89692373	97.14100977	96.3968029
230127A00060	1/30/2023	4.25	2/3/2026	1/30/2023	106.24372	104.3902521	102.5784718	100.8072009	99.07529976	97.38166803	95.72524295	94.10499788	92.51994081
230127A00073	1/27/2023	4.24	2/17/2026	1/27/2023	106.3908	104.494761	102.6421985	100.8318537	99.06251674	97.33302012	95.64223717	93.98908019	92.3724989
230127A00075	1/27/2023	4.23	7/28/2025	1/27/2023	104.3529	103.0240133	101.7193479	100.4382772	99.18019889	97.94453088	96.73071073	95.53819468	94.36645693
230127A00079	1/27/2023	4.23	7/28/2025	1/27/2023	104.3529	103.0240133	101.7193479	100.4382772	99.18019889	97.94453088	96.73071073	95.53819468	94.36645693
230127A00095	1/27/2023	4.59	1/27/2025	1/27/2023	102.71329	101.8826299	101.0654445	100.2614047	99.47019479	98.69150912	97.9250516	97.17053544	96.42768277
230127A00096	1/27/2023	4.21	1/27/2026	1/27/2023	106.07306	104.2410304	102.4498264	100.698282	98.98527601	97.309727	95.67059099	94.06686016	92.49756126
230130A00045	1/30/2023	4.02	1/28/2028	1/30/2023	113.42328	109.4877814	105.7131238	102.0918808	98.61701127	95.28183418	92.08000819	89.00551254	86.0526292
230130A00084	1/30/2023	4.29	1/30/2026	1/30/2023	106.25237	104.4106336	102.6100924	100.8495802	99.12797287	97.44418546	95.79717	94.18591418	92.60943988
230130A00086	1/30/2023	4.16	2/1/2027	1/30/2023	109.96258	107.0756074	104.2804708	101.5737609	98.95221452	96.41270687	93.95224452	91.56795931	89.25710241
230130A00087	1/30/2023	4.04	1/28/2028	1/30/2023	113.4998	109.5628443	105.7867703	102.1641532	98.68795029	95.351479	92.14839652	89.07268069	86.11861214
230130A00095	2/3/2023	4.25	5/26/2026	2/3/2023	107.48942	105.314499	103.1948157	101.1285829	99.1140819	97.14966287	95.23374188	93.36479751	91.54136792
230130A00096	1/30/2023	4.67	1/30/2025	1/30/2023	102.81083	101.9716125	101.1461341	100.3340556	99.53505217	98.74880969	97.97502387	97.21340007	96.46365286
230130A00127	1/30/2023	4.02	2/1/2028	1/30/2023	113.46649	109.5191734	105.7335868	102.1022616	98.61811018	95.27440718	92.0647686	88.98313296	86.02374331
230131A00004	1/31/2023	3.76	1/31/2028	1/31/2023	112.98257	109.0333358	105.24625	101.6138078	98.12889374	94.7847561	91.57498658	88.49350099	85.5345212

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230131A00006	1/31/2023	4.23	2/2/2026	1/31/2023	106.1762	104.3266389	102.5186232	100.7509737	99.02255649	97.33227658	95.67907643	94.06193434	92.47986305
230131A00009	1/31/2023	3.98	1/31/2028	1/31/2023	113.30182	109.3605266	105.5806429	101.9547173	98.47568019	95.1368228	91.93177687	88.8544956	85.89923582
230131A00032	2/3/2023	4.17	7/30/2026	2/3/2023	108.00981	105.6523826	103.3588291	101.1270688	98.95509897	96.84099333	94.78289886	92.77903249	90.82767805
230131A00034	2/3/2023	3.99	12/23/2027	2/3/2023	112.92783	109.0989553	105.4230963	101.8932404	98.50274051	95.24529416	92.11492302	89.10595418	86.21300247
230131A00057	1/31/2023	4.1	1/29/2027	1/31/2023	109.75992	106.8841748	104.0996885	101.4030729	98.79108656	96.26062523	93.80871585	91.43251001	89.12927805
230131A00067	1/31/2023	4.02	2/2/2026	1/31/2023	106.04943	104.1963562	102.3849862	100.6141383	98.88267213	97.1894868	95.53351894	93.91374139	92.32916164
230131A00071	1/31/2023	4.22	1/30/2026	1/31/2023	106.12351	104.2829959	102.4836496	100.7243099	99.00385385	97.32119677	95.67529133	94.06512576	92.48972247
230131A00072	1/31/2023	4.99	4/30/2024	1/31/2023	100.29179	100.2085021	100.1253552	100.042345	99.95947109	99.87673328	99.79413119	99.7116645	99.62933289
230131A00087	2/3/2023	4.26	1/5/2026	2/3/2023	105.90871	104.1372201	102.4040554	100.7080662	99.04814461	97.42322709	95.83229158	94.27435564	92.74847451
230131A00095	1/31/2023	4.22	1/30/2026	1/31/2023	106.12351	104.2829959	102.4836496	100.7243099	99.00385385	97.32119677	95.67529133	94.06512576	92.48972247
230201A00003	2/1/2023	3.93	1/31/2028	2/1/2023	113.1101	109.1724763	105.3961485	101.7736724	98.29798231	94.96237347	91.76048126	88.68626241	85.73397713
230201A00011	2/1/2023	3.93	2/1/2028	2/1/2023	113.12116	109.1804469	105.4012697	101.7761618	98.29804321	94.96019529	91.75624078	88.68012459	85.72609584
230201A00012	2/1/2023	4.08	2/1/2027	2/1/2023	109.73517	106.8514525	104.0594939	101.3558858	98.73736765	96.20081696	93.74324254	91.36177839	89.05367775
230201A00047	2/1/2023	4.42	2/3/2025	2/1/2023	102.77412	101.9224574	101.0849438	100.2612281	99.45097089	98.653844	97.86952971	97.09772052	96.33811874
230201A00048	2/1/2023	4.42	2/3/2025	2/1/2023	102.77412	101.9224574	101.0849438	100.2612281	99.45097089	98.653844	97.86952971	97.09772052	96.33811874
230202A00006	2/2/2023	3.92	2/2/2027	2/2/2023	109.29126	106.4109573	103.6224362	100.9222868	98.30724402	95.77418125	93.32010346	90.94214112	88.63754416
230202A00008	2/2/2023	3.81	2/2/2028	2/2/2023	112.67144	108.7364672	104.9629977	101.343559	97.87106612	94.53879627	91.34036833	88.26972382	85.32110892
230202A00011	2/2/2023	3.92	2/2/2027	2/2/2023	109.29126	106.4109573	103.6224362	100.9222868	98.30724402	95.77418125	93.32010346	90.94214112	88.63754416
230202A00033	2/2/2023	4.26	2/3/2025	2/2/2023	102.6376	101.7865694	100.9496822	100.1265856	99.31694045	98.52041857	97.73670242	96.96548465	96.20646766
230202A00034	2/2/2024	3.41	2/2/2026	2/2/2024	104.66003	102.8248579	101.0309578	99.27716264	97.56234565	95.88541884	94.24533136	92.64106798	91.07164764
230202A00038	2/2/2023	3.84	2/2/2028	2/2/2023	112.78663	108.8494547	105.0738458	101.4523318	97.97782536	94.64360125	91.44327615	88.37078946	85.42038533
230202A00041	2/2/2023	3.82	2/2/2028	2/2/2023	112.70983	108.7741297	104.9999471	101.3798166	97.90665253	94.57373127	91.37467094	88.30341236	85.35420106
230202A00042	2/2/2023	3.82	2/2/2028	2/2/2023	112.70983	108.7741297	104.9999471	101.3798166	97.90665253	94.57373127	91.37467094	88.30341236	85.35420106
230202A00045	2/2/2023	3.62	2/2/2028	2/2/2023	112.46566	108.5205743	104.7377905	101.1097878	97.62943278	94.28995721	91.08493763	88.0082759	85.05418116
230202A00050	2/2/2023	3.82	2/2/2028	2/2/2023	112.70983	108.7741297	104.9999471	101.3798166	97.90665254	94.57373127	91.37467094	88.30341236	85.35420106
230202A00061	2/2/2023	4.16	2/2/2026	2/2/2023	106.04677	104.198438	102.3916274	100.6251606	98.89790435	97.20876434	95.55668355	93.94064087	92.35964954
230202A00064	2/2/2023	4.11	5/15/2026	2/2/2023	107.07252	104.9316261	102.8446071	100.809734	98.82534866	96.8898587	95.00173434	93.15950541	91.36175849
230202A00065	2/2/2023	3.87	5/15/2028	2/2/2023	113.98402	109.7377361	105.6765965	101.7914957	98.07382808	94.51545753	91.10868938	87.84624361	84.72123016
230202A00071	2/2/2023	4.03	2/2/2027	2/2/2023	109.60425	106.7194618	103.926563	101.2221407	98.60292662	96.06579073	93.60773497	91.22588682	88.91749337
230202A00096	2/2/2023	3.81	2/2/2028	2/2/2023	112.67144	108.7364672	104.9629977	101.343559	97.87106612	94.53879627	91.34036833	88.26972382	85.32110892
230203A00021	2/8/2023	4.21	6/17/2026	2/8/2023	107.64321	105.4062508	103.227304	101.1044438	99.03582347	97.01967282	95.05429418	93.1380589	91.26940386
230203A00025	2/3/2023	4.63	2/3/2025	2/3/2023	102.81869	101.9686587	101.1327172	100.3105205	99.5017311	98.70602267	97.9230793	97.1525952	96.39427432
230203A00026	2/3/2023	3.98	2/3/2028	2/3/2023	113.33539	109.3848304	105.5963828	101.9625475	98.47621111	95.13062392	91.91937942	88.8363952	85.87589482

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230203A00038	2/3/2023	4.1	2/3/2027	2/3/2023	109.81483	106.9240739	104.1254575	101.4155581	98.79109604	96.24893031	93.78605255	91.39958044	89.08675181
230203A00039	2/3/2023	3.98	2/3/2028	2/3/2023	113.33539	109.3848304	105.5963828	101.9625475	98.47621111	95.13062392	91.91937942	88.8363952	85.87589482
230203A00043	2/14/2023	4.31	2/13/2026	2/14/2023	106.47503	104.5899495	102.7478535	100.9475059	99.18771649	97.46733663	95.78525756	94.14040867	92.53175598
230203A00045	2/14/2023	4.31	2/13/2026	2/14/2023	106.47503	104.5899495	102.7478535	100.9475059	99.18771649	97.46733663	95.78525756	94.14040867	92.53175598
230203A00046	2/10/2023	4.65	2/10/2025	2/10/2023	102.90928	102.0399523	101.1853647	100.3451411	99.51892079	98.70635528	97.90710748	97.12085134	96.34727139
230203A00048	2/10/2023	4.65	2/10/2025	2/10/2023	102.90928	102.0399523	101.1853647	100.3451411	99.51892079	98.70635528	97.90710748	97.12085134	96.34727139
230203A00050	2/14/2023	4.64	2/14/2025	2/14/2023	102.94245	102.0621835	101.1970201	100.3465765	99.5104788	98.68836554	97.87988736	97.08470646	96.30249613
230203A00051	2/14/2023	4.64	2/14/2025	2/14/2023	102.94245	102.0621835	101.1970201	100.3465765	99.5104788	98.68836554	97.87988736	97.08470646	96.30249613
230203A00053	2/10/2023	4.32	2/10/2026	2/10/2023	106.43872	104.5631624	102.7301872	100.9385795	99.1871648	97.4748094	95.80041875	94.16293585	92.56133971
230203A00054	2/10/2023	4.32	2/10/2026	2/10/2023	106.43872	104.5631624	102.7301872	100.9385795	99.1871648	97.4748094	95.80041875	94.16293585	92.56133971
230203A00057	2/3/2023	4.34	2/3/2026	2/3/2023	106.41039	104.5553387	102.7420044	100.9692083	99.23580995	97.54070825	95.88283969	94.26117692	92.67472724
230203A00058	2/3/2023	4.34	2/3/2026	2/3/2023	106.41039	104.5553387	102.7420044	100.9692083	99.23580995	97.54070825	95.88283969	94.26117692	92.67472724
230203A00059	2/3/2023	4.67	2/3/2025	2/3/2023	102.8528	102.0026062	101.1665085	100.3441573	99.53521532	98.739356	97.95626344	97.18563185	96.4271651
230203A00065	2/3/2023	3.76	2/3/2028	2/3/2023	113.0156	109.0570759	105.2613987	101.6210232	98.12878974	94.77790533	91.56192318	88.4747232	85.51049376
230206A00008	2/6/2023	4.58	2/6/2025	2/6/2023	102.94303	102.0824716	101.2363461	100.4042912	99.58595725	98.7810065	97.98911203	97.20995755	96.44323691
230206A00009	2/6/2023	4.58	2/6/2025	2/6/2023	102.94303	102.0824716	101.2363461	100.4042912	99.58595725	98.7810065	97.98911203	97.20995755	96.44323691
230207A00025	2/7/2023	4.62	2/7/2025	2/7/2023	102.98839	102.1249199	101.2759717	100.4411845	99.62020559	98.81269387	98.01831939	97.23676289	96.46771543
230207A00045	2/7/2023	5.07	8/7/2024	2/7/2023	101.29325	100.9363326	100.5819396	100.2300446	99.88062131	99.5336436	99.18908577	98.84692247	98.50712872
230207A00046	2/7/2023	4.83	2/7/2025	2/7/2023	103.03322	102.1714023	101.3240547	100.4908136	99.67132834	98.86525963	98.07227941	97.29207022	96.52432477
230208A00024	2/8/2023	5.08	8/8/2024	2/8/2023	101.30706	100.947379	100.5902663	100.2356909	99.88362586	99.5340444	99.18692022	98.84222737	98.49994027
230208A00029	2/8/2023	4.27	2/8/2027	2/8/2023	110.35836	107.4450042	104.6248821	101.8945136	99.25056637	96.68984994	94.20930904	91.80601703	89.47716979
230208A00036	2/8/2023	4.43	2/6/2026	2/8/2023	106.59525	104.7299585	102.9067769	101.1245106	99.38200406	97.67814182	96.0118466	94.38207791	92.78783051
230208A00038	2/8/2023	4.27	2/8/2027	2/8/2023	110.35836	107.4450042	104.6248821	101.8945136	99.25056637	96.68984994	94.20930904	91.80601703	89.47716979
230208A00039	2/8/2023	4.17	2/8/2028	2/8/2023	114.124	110.1439034	106.3275145	102.6672426	99.15588486	95.78660796	92.55292713	89.44868658	86.46804117
230208A00040	2/8/2023	4.26	2/8/2029	2/8/2023	118.56737	113.4771821	108.6416814	104.0467624	99.67917106	95.52645025	91.57688804	87.81946937	84.2438312
230208A00041	2/8/2023	4.32	2/8/2030	2/8/2023	122.53597	116.323189	110.4754384	104.9692558	99.78280206	94.89574382	90.28914274	85.94535289	81.84792635
230208A00055	2/8/2023	4.22	2/6/2026	2/8/2023	106.46845	104.5995942	102.7730139	100.9875076	99.24191303	97.5351086	95.86601116	94.23357459	92.63678831
230208A00060	2/8/2023	4.06	2/8/2027	2/8/2023	110.14263	107.2236823	104.3983565	101.6631481	99.01470487	96.44981785	93.96541413	91.55855049	89.22640712
230209A00015	2/9/2023	4.8	2/5/2025	2/9/2023	102.98548	102.1292774	101.2873616	100.4593742	99.64497127	98.84381986	98.05559796	97.27999391	96.51670601
230209A00023	2/9/2023	4.79	2/10/2025	2/9/2023	103.03134	102.161436	101.3062787	100.4654921	99.63871538	98.82559994	98.02580855	97.23901504	96.46490383
230209A00024	2/9/2023	4.4	2/5/2026	2/9/2023	106.54604	104.6838116	102.86358	101.0841486	99.3443664	97.64312239	95.97934352	94.35199336	92.76007052
230209A00025	2/9/2023	4.25	2/5/2027	2/9/2023	110.26568	107.3625351	104.5520511	101.8307766	99.1954082	96.64278284	94.16987109	91.77377075	89.45170073
230209A00027	2/9/2023	4.12	2/7/2028	2/9/2023	113.91963	109.9463391	106.1364156	102.4822814	98.97675257	95.61301343	92.38459585	89.28535966	86.3094743

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230209A00028	2/9/2023	4.9	12/9/2024	2/9/2023	102.42061	101.723887	101.0366734	100.3587755	99.69000439	99.03017624	98.37911219	97.73663815	97.10258456
230209A00037	2/9/2023	4.12	2/9/2028	2/9/2023	113.94277	109.9632696	106.1476047	102.4881687	98.97774792	95.60949921	92.37692869	89.27387217	86.29447674
230209A00049	2/9/2023	4.17	2/9/2028	2/9/2023	114.13571	110.1524995	106.3332348	102.6703071	99.15649889	95.78496293	92.54920157	89.44304704	86.46064297
230210A00009	2/10/2023	4.93	12/11/2024	2/10/2023	102.4623	101.7600177	101.0673952	100.3842344	99.71034196	99.04552983	98.38961499	97.74241929	97.10376934
230210A00035	2/10/2023	4.52	2/10/2026	2/10/2023	106.81289	104.9337417	103.0972453	101.302182	99.54737538	97.83169	96.15402965	94.51333572	92.90858564
230210A00040	2/10/2023	4.29	8/10/2027	2/10/2023	112.48881	109.0378297	105.7132132	102.5096634	99.42213631	96.44582478	93.57614611	90.80873032	88.13940917
230210A00043	2/10/2023	4.34	2/10/2027	2/10/2023	110.58281	107.6602854	104.8314422	102.0927716	99.44091996	96.87267679	94.38496788	91.97484866	89.63949806
230210A00045	2/10/2023	4.43	8/10/2026	2/10/2023	108.73999	106.3444362	104.0144678	101.747924	99.54273118	97.39689558	95.30849974	93.27569913	91.29671892
230210A00049	2/10/2023	5.07	8/12/2024	2/10/2023	101.34427	100.973593	100.6056374	100.2403777	99.87778401	99.51782724	99.16047849	98.80570937	98.45349188
230210A00055	2/10/2023	4.02	2/10/2028	2/10/2023	114.09926	110.0996003	106.2650336	102.5878778	99.06084766	95.67703239	92.42987502	89.31315226	86.32095581
230210A00062	2/10/2023	4.13	2/10/2027	2/10/2023	110.36716	107.4390164	104.6049409	101.8614039	99.20503192	96.63259566	94.1410032	91.72729329	89.38862907
230210A00065	2/10/2023	4.02	2/10/2028	2/10/2023	114.09926	110.0996003	106.2650336	102.5878778	99.06084766	95.67703239	92.42987502	89.31315226	86.32095581
230213A00020	2/15/2023	4.28	1/25/2028	2/15/2023	114.38404	110.4383652	106.6534391	103.0218471	99.53655909	96.19090479	92.97855365	89.89349558	86.93002296
230214A00031	2/14/2023	4.31	2/14/2028	2/14/2023	114.7364	110.7271506	106.8833525	103.1973005	99.66169061	96.2695953	93.01444154	89.88999104	86.89032148
230214A00042	2/14/2023	4.96	2/14/2025	2/14/2023	103.22496	102.3433428	101.4768461	100.6250853	99.78768588	98.96428625	98.15453671	97.35809917	96.57464662
230214A00049	2/14/2023	4.38	2/14/2029	2/14/2023	119.2201	114.0961305	109.2291868	104.6049892	100.2101267	96.031997	92.0587541	88.27925886	84.68303342
230214A00050	2/14/2023	4.31	2/14/2028	2/14/2023	114.7364	110.7271506	106.8833525	103.1973005	99.66169061	96.2695953	93.01444154	89.88999104	86.89032148
230215A00008	2/15/2023	4.49	2/16/2027	2/15/2023	111.08771	108.1400651	105.2873737	102.5260607	99.85271032	97.26405325	94.75695969	92.32843256	89.97560114
230215A00019	2/15/2023	5.01	2/18/2025	2/15/2023	103.31505	102.422191	101.5448275	100.6825617	99.83500559	99.00178437	98.18253586	97.37691	96.58456837
230215A00035	2/15/2023	4.47	2/17/2026	2/15/2023	107.07562	105.1683875	103.3049373	101.4840012	99.70435874	97.96483278	96.26428714	94.60162511	92.97578775
230215A00045	2/15/2023	4.37	2/15/2028	2/15/2023	114.981	110.9641298	107.1130844	103.4201381	99.87796711	96.479625	93.21852117	90.08840085	87.0833262
230216A00045	2/16/2023	4.43	5/16/2028	2/16/2023	116.30317	112.0065986	107.8969076	103.9649172	100.2019489	96.5997978	93.15070383	89.84732499	86.68271243
230216A00046	2/16/2023	4.42	4/17/2028	2/16/2023	115.91559	111.707553	107.6798183	103.823665	100.1308395	96.59353087	93.20434454	89.95627786	86.8426971
230217A00036	2/17/2023	4.44	2/17/2028	2/17/2023	115.27715	111.2487519	107.3868143	103.6835741	100.1316716	96.72412663	93.45431727	90.31595922	87.30308708
230217A00052	2/17/2023	4.55	2/17/2027	2/17/2023	111.27335	108.3200413	105.4619286	102.695431	100.0171211	97.42371869	94.91208358	92.47920889	90.12221463
230221A00004	2/21/2023	4.47	2/18/2028	2/21/2023	115.40609	111.3722964	107.5052661	103.797222	100.2407868	96.82896398	93.55511613	90.4129446	87.39647047
230221A00007	2/21/2023	4.5	10/18/2027	2/21/2023	114.0245	110.3575445	106.8312133	103.439328	100.1760154	97.03569248	94.01305064	91.10304022	88.30085653
230222A00024	2/22/2023	4.74	3/2/2026	2/22/2023	107.50507	105.5603742	103.6610036	101.8056317	99.99297623	98.22180099	96.49091353	94.79916345	93.14544059
230223A00010	2/23/2023	4.68	10/3/2025	2/23/2023	105.75468	104.2346886	102.7445034	101.2833198	99.85036362	98.44488796	97.06617172	95.7135186	94.386256
230223A00012	2/23/2023	4.68	10/3/2025	2/23/2023	105.75468	104.2346886	102.7445034	101.2833198	99.85036362	98.44488796	97.06617172	95.7135186	94.386256
230223A00033	2/23/2023	4.5	2/23/2028	2/23/2023	115.58563	111.533815	107.6500317	103.9264181	100.3555188	96.9302643	93.64394924	90.49021152	87.46301301
230224A00014	2/24/2023	4.98	2/24/2025	2/24/2023	103.50167	102.589654	101.6937789	100.8136153	99.94875182	99.09879148	98.26335078	97.44205932	96.63455924
230224A00015	2/24/2023	4.86	3/17/2026	2/24/2023	107.92147	105.9326443	103.9910731	102.0953449	100.2440971	98.43601658	96.66983799	94.9443415	93.25835089

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230224A00018	2/24/2023	5.19	2/24/2025	2/24/2023	103.54781	102.6375786	101.7434205	100.8649135	100.0016486	99.15323076	98.31927875	97.4994242	96.69331115
230224A00020	2/24/2023	5.38	8/26/2024	2/24/2023	101.61401	101.2044115	100.798129	100.3951175	99.99533747	99.5987502	99.20531743	98.81500158	98.42776564
230224A00029	2/24/2023	4.87	2/24/2026	2/24/2023	107.67644	105.7472284	103.8626177	102.0213103	100.2220539	98.46364119	96.74490689	95.06472668	93.42201521
230227A00034	2/27/2023	5.42	5/28/2024	2/27/2023	100.6348	100.4738797	100.3134808	100.1535981	99.99422897	99.83537095	99.67702161	99.5191785	99.36183921
230227A00035	2/27/2023	5.41	6/28/2024	2/27/2023	100.97398	100.7272522	100.4817294	100.2374047	99.99426945	99.75231497	99.51153269	99.27191409	99.03345077
230227A00060	2/27/2023	4.86	2/27/2026	2/27/2023	107.69792	105.7596069	103.8662877	102.0166454	100.2094124	98.44336626	96.71732754	95.03015836	93.38076047
230228A00009	2/28/2023	4.69	2/27/2026	2/28/2023	107.62671	105.6844212	103.7872962	101.9340161	100.1233066	98.35393837	96.6247259	94.93452527	93.28223251
230228A00010	2/28/2023	4.5	2/26/2027	2/28/2023	111.63687	108.6424346	105.7454721	102.9422746	100.2293007	97.60316235	95.060618	92.59856484	90.21403226
230301A00029	3/1/2023	4.59	3/1/2028	3/1/2023	116.02558	111.944998	108.0343419	104.2856193	100.6912605	97.24408943	93.93730136	90.76444133	87.71938457
230301A00036	3/1/2023	4.91	3/2/2026	3/1/2023	107.83244	105.8845109	103.9819737	102.123495	100.3077909	98.53362348	96.79979887	95.10516513	93.44861069
230301A00047	3/1/2023	4.61	3/1/2028	3/1/2023	115.65809	111.6847295	107.877639	104.2288981	100.7310116	97.37688098	94.15978092	91.07333755	88.11150825
230302A00028	3/2/2023	5.02	3/2/2026	3/2/2023	108.04426	106.0942464	104.1896602	102.3291712	100.5114944	98.73539097	96.99966585	95.30316622	93.64477957
230302A00047	3/2/2023	4.76	3/2/2028	3/2/2023	115.20328	111.4616894	107.8735405	104.4315984	101.1290135	97.95929624	94.91629654	91.99418372	89.18742829
230303A00019	3/3/2023	5.26	3/3/2025	3/3/2023	103.69672	102.7668204	101.8536827	100.9568512	100.0758911	99.21038293	98.35992209	97.52411786	96.70259301
230303A00020	3/3/2023	4.96	3/3/2026	3/3/2023	107.94135	105.9896835	104.0835484	102.2216086	100.4025746	98.62520299	96.88829465	95.19069275	93.53128102
230303A00035	5/15/2023	4.65	5/15/2030	5/15/2023	125.46496	118.8938041	112.7228256	106.9253381	101.4765739	96.35353941	91.53487927	87.00075069	82.73270861
230303A00036	5/15/2023	4.53	5/15/2028	5/15/2023	116.70342	112.4013766	108.2862638	104.3489002	100.580612	96.9731979	93.51890127	90.21038298	87.04069656
230303A00037	5/15/2023	4.81	5/15/2026	5/15/2023	108.56199	106.4049494	104.3021046	102.2517209	100.2521311	98.30173422	96.39899211	94.5424266	92.73061652
230303A00038	4/14/2023	4.56	4/14/2028	4/14/2023	116.44411	112.2339433	108.2037638	104.3448791	100.6490653	97.10853859	93.71592936	90.4642578	87.3469111
230303A00041	4/14/2023	4.56	4/14/2028	4/14/2023	116.44411	112.2339433	108.2037638	104.3448791	100.6490653	97.10853859	93.71592936	90.4642578	87.3469111
230303A00057	3/3/2023	4.77	3/3/2027	3/3/2023	112.09039	109.0842729	106.1761904	103.3624126	100.6393691	98.00364445	95.45197116	92.98122206	90.58840358
230303A00059	3/3/2023	4.56	3/3/2027	3/3/2023	111.87397	108.8619524	105.9483865	103.1295128	100.4017393	97.76163043	95.20589978	92.73140225	90.33512735
230306A00019	3/6/2023	5.26	3/6/2025	3/6/2023	103.73322	102.795056	101.8739442	100.9694253	100.081053	99.20839682	98.35104148	97.50858625	96.6806443
230306A00029	3/6/2023	5.26	9/6/2024	3/6/2023	101.73962	101.2990288	100.862268	100.4292872	100.0000374	99.57447025	99.15253843	98.73419533	98.31939516
230306A00040	3/6/2023	5.05	3/6/2025	3/6/2023	103.68595	102.7459335	101.8230383	100.9168002	100.0267703	99.15251563	98.29361877	97.44967674	96.62030063
230307A00004	3/7/2023	4.67	3/7/2028	3/7/2023	115.96278	111.9666385	108.1382018	104.4694578	100.9528251	97.58112483	94.34755669	91.24567712	88.26937844
230307A00020	3/7/2023	4.98	3/9/2026	3/7/2023	108.05602	106.0872047	104.1646818	102.2870801	100.453078	98.66140215	96.91082459	95.20016116	93.52826953
230307A00021	3/7/2023	4.63	3/7/2028	3/7/2023	116.25543	112.154058	108.2240868	104.4574309	100.8464268	97.38381132	94.06269852	90.87655796	87.8191945
230307A00022	3/7/2023	4.77	3/8/2027	3/7/2023	112.1512	109.1307249	106.2091783	103.382776	100.6478996	98.00108896	95.43903418	92.95856837	90.5566605
230307A00026	3/7/2023	4.98	3/6/2026	3/7/2023	108.01797	106.0575415	104.1430277	102.2730749	100.4463777	98.66167763	96.91776103	95.2134574	93.54763739
230307A00034	3/7/2023	4.41	3/7/2028	3/7/2023	115.93626	111.8263491	107.8886381	104.1149827	100.4976691	97.02938713	93.70320682	90.5125568	87.45120371
230307A00039	3/7/2023	5.29	3/7/2025	3/7/2023	103.77361	102.8325367	101.9086251	101.0014041	100.1104234	99.23524884	98.37546154	97.53065737	96.70044626
230307A00056	3/7/2023	5.08	3/7/2025	3/7/2023	103.72622	102.7832933	101.8575915	100.9486448	100.0560004	99.1792216	98.31788733	97.47159122	96.63994109

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230307A00057	3/7/2023	5.08	3/7/2025	3/7/2023	103.72622	102.7832933	101.8575915	100.9486448	100.0560004	99.1792216	98.31788733	97.47159122	96.63994109
230307A00058	3/7/2023	5.29	3/7/2025	3/7/2023	103.77361	102.8325367	101.9086251	101.0014041	100.1104234	99.23524884	98.37546154	97.53065737	96.70044626
230307A00092	3/23/2023	5.6	9/6/2024	3/23/2023	101.8332	101.3930287	100.9566714	100.524082	100.0952115	99.67001217	99.24843681	98.83043914	98.41597364
230307A00114	3/7/2023	4.65	3/7/2028	3/7/2023	116.33408	112.2311645	108.2996996	104.5315955	100.919187	97.45520937	94.13277497	90.94535181	87.88674331
230308A00019	3/8/2023	5.05	3/9/2026	3/8/2023	108.19216	106.2219861	104.2981344	102.419229	100.5839478	98.79101668	97.03920702	95.32733404	93.65425481
230308A00021	3/8/2023	5.39	3/7/2025	3/8/2023	103.86765	102.9261074	102.0017261	101.0940413	100.2026026	99.32697576	98.46674177	97.62149639	96.79084943
230308A00029	3/8/2023	5.57	9/9/2024	3/8/2023	101.85516	101.4067539	100.9623129	100.5217832	100.085113	99.65225179	99.2231496	98.79775748	98.37602733
230308A00030	3/8/2023	5.22	9/8/2025	3/8/2023	105.99958	104.5501189	103.1278613	101.7321072	100.3621798	99.01742455	97.69720882	96.40092058	95.12796778
230309A00002	3/9/2023	5.41	3/10/2025	3/9/2023	103.9242	102.9742659	102.0417999	101.1263204	100.2273653	99.34448891	98.47726165	97.62526905	96.7881112
230309A00003	3/9/2023	5.06	3/9/2026	3/9/2023	108.2116	106.2412406	104.3171991	102.4381074	100.6026435	98.80953305	97.05754737	95.3455016	93.6722527
230309A00004	3/9/2023	4.86	3/9/2027	3/9/2023	112.42803	109.4007679	106.4727085	103.6400553	100.8991773	98.24660236	95.67900941	93.19322078	90.78619535
230309A00005	3/9/2023	5.06	3/9/2026	3/9/2023	108.2116	106.2412406	104.3171991	102.4381074	100.6026435	98.80953305	97.05754737	95.3455016	93.6722527
230309A00021	3/9/2023	5.41	3/10/2025	3/9/2023	103.9242	102.9742659	102.0417999	101.1263204	100.2273653	99.34448891	98.47726165	97.62526905	96.7881112
230309A00027	3/9/2023	4.68	3/9/2028	3/9/2023	116.47673	112.3655728	108.4264037	104.651096	101.0319516	97.56167502	94.2333502	91.04041854	87.97665864
230309A00030	3/9/2023	5.01	3/9/2026	3/9/2023	108.11436	106.1449681	104.2218758	102.3437153	100.5091651	98.71695123	96.96584563	95.25466383	93.58226322
230309A00031	3/9/2023	5.01	3/9/2026	3/9/2023	108.11436	106.1449681	104.2218758	102.3437153	100.5091651	98.71695123	96.96584563	95.25466383	93.58226322
230309A00032	3/9/2023	4.82	3/9/2027	3/9/2023	112.3104	109.2848768	106.3585147	103.5275172	100.7882546	98.13725616	95.57120197	93.08691562	90.68135711
230309A00033	3/9/2023	4.82	3/9/2027	3/9/2023	112.3104	109.2848768	106.3585147	103.5275172	100.7882546	98.13725616	95.57120197	93.08691562	90.68135711
230309A00034	3/9/2023	4.64	3/9/2028	3/9/2023	116.31922	112.2111503	108.2749768	104.502573	100.8862446	97.41869945	94.09302459	90.90266456	87.84140091
230309A00035	3/9/2023	4.64	3/9/2028	3/9/2023	116.31922	112.2111503	108.2749768	104.502573	100.8862446	97.41869945	94.09302459	90.90266456	87.84140091
230309A00036	3/9/2023	4.46	3/9/2028	3/9/2023	116.15768	112.0379488	108.0910073	104.3086709	100.6831907	97.20722391	93.87381032	90.67635016	87.60858364
230309A00038	3/9/2023	4.85	3/9/2026	3/9/2023	108.06215	106.0884825	104.1613085	102.2792437	100.4409592	98.64517421	96.89065381	95.17620725	93.5006859
230309A00041	3/9/2023	4.85	3/9/2026	3/9/2023	108.06215	106.0884825	104.1613085	102.2792437	100.4409592	98.64517421	96.89065381	95.17620725	93.5006859
230309A00057	3/9/2023	4.86	3/9/2027	3/9/2023	112.42803	109.4007679	106.4727085	103.6400553	100.8991773	98.24660236	95.67900941	93.19322078	90.78619535
230309A00068	4/10/2023	5.21	4/9/2025	4/10/2023	104.0923	103.0605012	102.0492746	101.0580071	100.0861105	99.13301981	98.19819173	97.28110375	96.38125316
230309A00080	3/9/2023	4.68	3/9/2028	3/9/2023	116.47673	112.3655728	108.4264037	104.651096	101.0319516	97.56167502	94.2333502	91.04041854	87.97665864
230309A00091	3/9/2023	4.68	3/9/2028	3/9/2023	116.47673	112.3655728	108.4264037	104.651096	101.0319516	97.56167502	94.2333502	91.04041854	87.97665864
230309A00096	3/9/2023	4.68	3/9/2028	3/9/2023	116.47673	112.3655728	108.4264037	104.651096	101.0319516	97.56167502	94.2333502	91.04041854	87.97665864
230310A00017	3/10/2023	4.43	3/9/2029	3/10/2023	119.72571	114.5226484	109.5836613	104.8939041	100.4394433	96.20719619	92.18487462	88.3609325	84.72451736
230310A00021	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00024	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00030	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00035	3/10/2023	5.21	9/10/2024	3/10/2023	101.70451	101.2537755	100.8070545	100.3642901	99.92542995	99.49042225	99.05921631	98.63176228	98.20801119

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230310A00037	3/10/2023	4.69	3/10/2026	3/10/2023	107.50392	105.5379336	103.6182603	101.7435236	99.91239969	98.1236129	96.3759332	94.66817447	92.99919255
230310A00039	3/10/2023	4.33	3/10/2028	3/10/2023	115.10987	111.0228325	107.1071775	103.3547974	99.75801028	96.30953616	93.00247416	89.83028056	86.78674845
230310A00040	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00047	6/9/2023	4.22	6/9/2028	6/9/2023	115.70838	111.3577414	107.198965	103.2224978	99.41931575	95.78089458	92.29917904	88.96655417	85.7758185
230310A00048	3/10/2023	5.03	3/10/2025	3/10/2023	103.56369	102.6155989	101.6849473	100.7712591	99.87407247	98.99294242	98.12743973	97.2771504	96.44167497
230310A00049	3/10/2023	4.7	3/10/2026	3/10/2023	107.52339	105.5572149	103.6373512	101.7624278	99.93112067	98.14215407	96.39429789	94.68636591	93.01721389
230310A00054	9/8/2023	4.09	9/11/2028	9/8/2023	116.17207	111.553066	107.1488191	102.9481885	98.94067063	95.11635805	91.46590302	87.98048274	84.6517672
230310A00062	3/10/2023	4.38	4/10/2028	3/10/2023	115.66941	111.4861262	107.4814678	103.6468275	99.97405565	96.45543825	93.08367079	89.85183437	86.75337317
230310A00065	3/10/2023	5	9/16/2024	3/10/2023	101.73022	101.2623675	100.7988385	100.3395727	99.88451123	99.4335963	98.98677122	98.5439803	98.10516887
230310A00068	3/10/2023	5.03	3/10/2025	3/10/2023	103.56369	102.6155989	101.6849473	100.7712591	99.87407247	98.99294242	98.12743973	97.2771504	96.44167497
230310A00069	3/10/2023	4.7	3/9/2026	3/10/2023	107.51148	105.5480791	103.6308716	101.7584843	99.92959871	98.142944	96.39729486	94.69146964	93.02432841
230310A00071	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00073	3/10/2023	4.7	3/6/2026	3/10/2023	107.47572	105.520667	103.6114256	101.7466454	99.92502365	98.14530467	96.40627741	94.70677382	93.04566692
230310A00088	3/10/2023	5.03	3/10/2025	3/10/2023	103.56369	102.6155989	101.6849473	100.7712591	99.87407247	98.99294242	98.12743973	97.2771504	96.44167497
230310A00089	3/10/2023	4.7	3/10/2026	3/10/2023	107.52339	105.5572149	103.6373512	101.7624278	99.93112067	98.14215407	96.39429789	94.68636591	93.01721389
230310A00091	3/10/2023	4.53	3/10/2027	3/10/2023	111.46908	108.4533188	105.5365858	102.7150837	99.98518308	97.34341347	94.78645557	92.31113368	89.91440865
230310A00092	3/10/2023	4.38	3/10/2028	3/10/2023	115.3069	111.2159916	107.2965871	103.5405722	99.94026047	96.48836775	93.17798909	90.0025769	86.9559206
230310A00114	3/10/2023	4.5	3/10/2027	3/10/2023	111.38077	108.3663211	105.4508634	102.6306052	99.9019183	97.26133311	94.70553129	92.23133804	89.83571507
230310A00120	3/10/2023	4.33	3/10/2028	3/10/2023	115.10987	111.0228325	107.1071775	103.3547974	99.75801028	96.30953616	93.00247416	89.83028056	86.78674845
230313A00030	3/13/2023	4.57	9/13/2024	3/13/2023	101.44272	100.9845204	100.530475	100.0805264	99.63461932	99.19269924	98.75471271	98.32060719	97.89033112
230313A00032	3/13/2023	4.45	3/13/2025	3/13/2023	103.04328	102.0897687	101.1539671	100.2353821	99.33354088	98.44798794	97.57828402	96.7240056	95.88474415
230313A00036	3/13/2023	4.06	3/13/2028	3/13/2023	114.07787	110.0030193	106.0995993	102.3594768	98.77494851	95.33871556	92.04385984	88.88382223	85.85238198
230313A00048	3/13/2023	4.25	3/13/2026	3/13/2023	106.67906	104.713343	102.7941441	100.9200818	99.089821	97.30207498	95.55560352	93.84921079	92.18174342
230313A00052	3/13/2023	4.17	3/15/2027	3/13/2023	110.46204	107.4478326	104.533155	101.7141697	98.98721173	96.34877722	93.79551571	91.32422239	88.93183096
230313A00053	3/13/2023	4.57	9/13/2024	3/13/2023	101.44272	100.9845204	100.530475	100.0805264	99.63461932	99.19269924	98.75471271	98.32060719	97.89033112
230313A00057	3/13/2023	4.06	3/13/2028	3/13/2023	114.07787	110.0030193	106.0995993	102.3594768	98.77494851	95.33871556	92.04385984	88.88382223	85.85238198
230313A00061	3/13/2023	4.06	3/13/2028	3/13/2023	114.07787	110.0030193	106.0995993	102.3594768	98.77494851	95.33871556	92.04385984	88.88382223	85.85238198
230313A00069	3/13/2023	4.71	9/13/2024	3/13/2023	101.50702	101.0486496	100.5944327	100.1443138	99.69823743	99.25614918	98.81799555	98.38372402	97.95328298
230313A00070	3/13/2023	4.71	9/13/2024	3/13/2023	101.50702	101.0486496	100.5944327	100.1443138	99.69823743	99.25614918	98.81799555	98.38372402	97.95328298
230313A00072	3/13/2023	4.06	3/13/2028	3/13/2023	114.07787	110.0030193	106.0995993	102.3594768	98.77494851	95.33871556	92.04385984	88.88382223	85.85238198
230313A00075	3/13/2023	4.71	9/13/2024	3/13/2023	101.50702	101.0486496	100.5944327	100.1443138	99.69823743	99.25614918	98.81799555	98.38372402	97.95328298
230313A00078	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00080	3/13/2023	4.59	3/14/2025	3/13/2023	103.18757	102.2306316	101.2915064	100.3697032	99.46474496	98.57617221	97.70354193	96.84642699	96.00441545

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230313A00090	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00091	3/13/2023	4.15	3/13/2028	3/13/2023	114.43325	110.3514126	106.4412163	102.6945252	99.10362777	95.66121753	92.36036902	89.19451612	86.15743142
230313A00093	3/16/2023	4.65	3/17/2025	3/16/2023	103.27662	102.3111419	101.3637849	100.4340444	99.52143132	98.62547463	97.74572041	96.88173117	96.03308501
230313A00095	3/16/2023	4.65	3/17/2025	3/16/2023	103.27662	102.3111419	101.3637849	100.4340444	99.52143132	98.62547463	97.74572041	96.88173117	96.03308501
230313A00096	3/13/2023	4.36	3/14/2033	3/13/2023	133.41482	123.6625478	114.7362495	106.5606645	99.0677858	92.19612595	85.89006056	80.09924079	74.77806753
230313A00097	3/13/2023	4.78	9/13/2024	3/13/2023	101.53917	101.0807143	100.6264116	100.1762075	99.73004648	99.28787415	98.84963698	98.41528243	97.98475891
230313A00098	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00099	3/13/2023	4.59	3/13/2025	3/13/2023	103.17725	102.2230503	101.2865692	100.3673135	99.46481018	98.57860351	97.70825406	96.85333814	96.01344706
230313A00102	3/13/2023	4.15	3/13/2028	3/13/2023	114.43325	110.3514126	106.4412163	102.6945252	99.10362777	95.66121753	92.36036902	89.19451612	86.15743142
230313A00104	3/13/2023	4.58	3/13/2025	3/13/2023	103.16768	102.2135301	101.2770976	100.3578898	99.45543381	98.56927382	97.69897048	96.8441001	96.004254
230313A00109	3/13/2023	4.58	3/13/2025	3/13/2023	103.16768	102.2135301	101.2770976	100.3578898	99.45543381	98.56927382	97.69897048	96.8441001	96.004254
230313A00112	3/13/2023	4.15	3/13/2028	3/13/2023	114.43325	110.3514126	106.4412163	102.6945252	99.10362777	95.66121753	92.36036902	89.19451612	86.15743142
230313A00113	3/13/2023	4.58	3/13/2025	3/13/2023	103.16768	102.2135301	101.2770976	100.3578898	99.45543381	98.56927382	97.69897048	96.8441001	96.004254
230313A00117	3/13/2023	4.59	3/13/2025	3/13/2023	103.17725	102.2230503	101.2865692	100.3673135	99.46481018	98.57860351	97.70825406	96.85333814	96.01344706
230313A00119	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00121	3/13/2023	4.29	3/15/2027	3/13/2023	110.81689	107.7974112	104.8775866	102.053581	99.32172526	96.67851154	94.12058556	91.64473887	89.24790164
230313A00123	3/13/2023	4.22	9/15/2027	3/13/2023	112.65682	109.1046147	105.6859409	102.3950553	99.22649289	96.17505228	93.23578162	90.40396515	87.67511067
230313A00128	3/13/2023	4.18	12/15/2027	3/13/2023	113.54701	109.7282928	106.0613276	102.5391964	99.15534058	95.90353931	92.77789007	89.7727901	86.88291927
230313A00134	3/13/2023	4.16	4/14/2028	3/13/2023	114.82976	110.6520358	106.6532776	102.8248348	99.15852201	95.64659212	92.28171062	89.05693116	85.96567283
230313A00135	3/13/2023	4.17	6/15/2028	3/13/2023	115.5667	111.2021806	107.0308204	103.0429681	99.2295088	95.58183404	92.09181096	88.75175284	85.55439191
230313A00149	3/13/2023	4.15	3/13/2028	3/13/2023	114.43325	110.3514126	106.4412163	102.6945252	99.10362777	95.66121753	92.36036902	89.19451612	86.15743142
230313A00152	3/13/2023	4.18	3/13/2028	3/13/2023	114.55172	110.4675437	106.5550887	102.806208	99.21318753	95.76871819	92.46587208	89.29808075	86.25911457
230313A00158	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00159	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00177	3/13/2023	4.41	3/13/2026	3/13/2023	106.99198	105.0231295	103.1008602	101.223786	99.39056995	97.59992395	95.85060623	94.14141949	92.47120897
230313A00179	3/13/2023	4.29	3/15/2027	3/13/2023	110.81689	107.7974112	104.8775866	102.053581	99.32172526	96.67851154	94.12058556	91.64473887	89.24790164
230313A00180	3/13/2023	4.15	3/13/2028	3/13/2023	114.43325	110.3514126	106.4412163	102.6945252	99.10362777	95.66121753	92.36036902	89.19451612	86.15743142
230313A00215	3/13/2023	4.13	3/13/2028	3/13/2023	114.35428	110.2739918	106.3653014	102.62007	99.03058794	95.58955043	92.29003365	89.12547303	86.08964266
230314A00003	3/14/2023	4.64	3/16/2026	3/14/2023	107.47706	105.4953611	103.5607133	101.6717063	99.8269849	98.0252434	96.26522341	94.54571175	92.86553852
230314A00006	3/14/2023	4.92	1/13/2025	3/14/2023	102.82676	102.0335403	101.2526028	100.4836672	99.72645781	98.98070723	98.24615624	97.52255336	96.8096546
230314A00011	3/14/2023	4.38	3/14/2028	3/14/2023	115.35298	111.2503362	107.3201193	103.5541536	99.94469193	96.48439403	93.16630263	89.98382156	86.93069504
230314A00014	3/14/2023	4.18	3/14/2028	3/14/2023	114.28722	110.3888973	106.6540712	103.0749111	99.64401084	96.35435902	93.19931545	90.17258952	87.26821971
230314A00015	3/14/2023	4.55	9/14/2026	3/14/2023	109.42989	106.9309762	104.5029259	102.1433197	99.84983923	97.62025911	95.45244218	93.34433564	91.29396717

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230314A00016	3/14/2023	4.38	3/14/2028	3/14/2023	115.35298	111.2503362	107.3201193	103.5541536	99.94469193	96.48439403	93.16630263	89.98382156	86.93069504
230314A00017	3/14/2023	4.39	1/18/2028	3/14/2023	114.72249	110.7894284	107.0158126	103.3942931	99.91790438	96.58003933	93.37442861	90.29512142	87.3364674
230314A00019	3/14/2023	4.39	1/18/2028	3/14/2023	114.72249	110.7894284	107.0158126	103.3942931	99.91790438	96.58003933	93.37442861	90.29512142	87.3364674
230314A00021	3/14/2023	4.41	10/13/2027	3/14/2023	113.64593	109.9993369	106.4922572	103.1185739	99.87247517	96.74843562	93.74120036	90.84577016	88.05738752
230314A00024	3/14/2023	4.41	10/13/2027	3/14/2023	113.64593	109.9993369	106.4922572	103.1185739	99.87247517	96.74843562	93.74120036	90.84577016	88.05738752
230314A00028	3/14/2023	4.43	7/14/2027	3/14/2023	112.6455	109.2649913	106.0058164	102.862919	99.83148793	96.90694069	94.0849109	91.36123676	88.73195014
230314A00030	3/14/2023	4.43	7/14/2027	3/14/2023	112.6455	109.2649913	106.0058164	102.862919	99.83148793	96.90694069	94.0849109	91.36123676	88.73195014
230314A00032	3/14/2023	4.45	4/14/2027	3/14/2023	111.63758	108.5236586	105.5147899	102.6068331	99.79583234	97.07801061	94.44976052	91.90763562	89.44834225
230314A00034	3/14/2023	4.45	4/14/2027	3/14/2023	111.63758	108.5236586	105.5147899	102.6068331	99.79583234	97.07801061	94.44976052	91.90763562	89.44834225
230314A00043	3/14/2023	4.84	3/14/2025	3/14/2023	103.42749	102.4693133	101.5289683	100.605961	99.69981408	98.81006773	97.93627861	97.07801929	96.23487753
230314A00054	3/14/2023	4.46	3/15/2027	3/14/2023	111.31961	108.2926475	105.3655314	102.5344137	99.79561943	97.14563516	94.58110119	92.09880389	89.69566844
230314A00067	3/14/2023	4.16	3/14/2028	3/14/2023	115.02987	110.9187187	106.9807971	103.2078719	99.592145	96.12622838	92.80312039	89.61618344	86.55912309
230314A00070	3/14/2023	4.25	3/12/2027	3/14/2023	111.06579	108.0414737	105.1168785	102.28817	99.55168025	96.90390231	94.34148269	91.8612135	89.46002529
230314A00073	3/14/2023	4.84	3/14/2025	3/14/2023	103.42749	102.4693133	101.5289683	100.605961	99.69981408	98.81006773	97.93627861	97.07801929	96.23487753
230314A00081	3/14/2023	4.16	3/14/2028	3/14/2023	115.02987	110.9187187	106.9807971	103.2078719	99.592145	96.12622838	92.80312039	89.61618344	86.55912309
230315A00007	3/15/2023	4.2	3/16/2026	3/15/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230315A00010	3/15/2023	4.2	3/13/2026	3/15/2023	106.58128	104.6165347	102.6982953	100.8251743	98.99583696	97.20899717	95.46341517	93.75789557	92.09128544
230315A00012	3/15/2023	4.24	9/15/2025	3/15/2023	104.65479	103.1963902	101.7657241	100.3620719	98.9847352	97.63303931	96.30633204	95.00398289	93.72538212
230315A00013	3/15/2023	4.2	3/16/2026	3/15/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230315A00016	3/15/2023	4.08	3/16/2027	3/15/2023	110.20617	107.1931059	104.2796449	101.4619489	98.73634627	96.09932705	93.54753516	91.07776052	88.68693191
230315A00023	3/15/2023	4.2	3/16/2026	3/15/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230315A00024	3/15/2023	4.03	3/15/2028	3/15/2023	113.98054	109.9022255	105.9957273	102.2528857	98.66596991	95.22765555	91.93100089	88.76942492	85.73668661
230315A00030	3/15/2023	4.03	3/15/2028	3/15/2023	113.98054	109.9022255	105.9957273	102.2528857	98.66596991	95.22765555	91.93100089	88.76942492	85.73668661
230315A00043	3/15/2023	4.43	9/16/2024	3/15/2023	101.40412	100.9378641	100.4759105	100.018199	99.56467124	99.11526983	98.66993847	98.22862191	97.79126584
230315A00045	3/15/2023	4.28	3/14/2025	3/15/2023	102.89008	101.9346662	100.9970536	100.0767435	99.17325925	98.28614177	97.41494844	96.55925254	95.71864248
230315A00049	3/15/2023	4.28	3/14/2025	3/15/2023	102.89008	101.9346662	100.9970536	100.0767435	99.17325925	98.28614177	97.41494844	96.55925254	95.71864248
230315A00052	3/15/2023	4.07	3/14/2025	3/15/2023	102.84095	101.8836498	100.9442144	100.0221484	99.11697237	98.2282247	97.35546036	96.4982503	95.65618073
230315A00055	3/15/2023	4.2	3/11/2026	3/15/2023	106.56018	104.6009461	102.6879691	100.8198712	98.99532808	97.21306386	95.47184831	93.77049516	92.10786017
230315A00063	3/15/2023	4.09	3/15/2028	3/15/2023	114.21779	110.1348019	106.2237741	102.4765418	98.88536879	95.44292562	92.14226561	88.97680305	85.94029246
230315A00068	3/15/2023	4.2	3/16/2026	3/15/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230315A00074	3/15/2023	4.43	9/16/2024	3/15/2023	101.40412	100.9378641	100.4759105	100.018199	99.56467124	99.11526983	98.66993847	98.22862191	97.79126584
230315A00076	3/15/2023	4.28	3/14/2025	3/15/2023	102.89008	101.9346662	100.9970536	100.0767435	99.17325925	98.28614177	97.41494844	96.55925254	95.71864248
230315A00079	3/15/2023	4.43	9/16/2024	3/15/2023	101.40412	100.9378641	100.4759105	100.018199	99.56467124	99.11526983	98.66993847	98.22862191	97.79126584

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230315A00084	3/15/2023	4.08	3/24/2027	3/15/2023	110.2884	107.2527402	104.3181203	101.4806111	98.73646345	96.08209446	93.51407949	91.029144	88.62415608
230315A00085	3/15/2023	4.43	9/16/2024	3/15/2023	101.40412	100.9378641	100.4759105	100.018199	99.56467124	99.11526983	98.66993847	98.22862191	97.79126584
230315A00086	3/15/2023	4.28	3/11/2025	3/15/2023	102.86165	101.9144456	100.98474	100.0720479	99.17590484	98.29586277	97.4314899	96.58236973	95.74810043
230315A00097	3/15/2023	4.08	3/15/2027	3/15/2023	110.1959	107.1856487	104.2748313	101.4596113	98.73632658	96.10147648	93.55171331	91.08383503	88.69477795
230315A00098	3/15/2023	4.08	3/15/2027	3/15/2023	110.1959	107.1856487	104.2748313	101.4596113	98.73632658	96.10147648	93.55171331	91.08383503	88.69477795
230315A00112	3/15/2023	4.5	3/14/2025	3/15/2023	103.1012	102.1447061	101.2060201	100.2846503	99.38012008	98.49196982	97.61975672	96.76305377	95.9214491
230315A00116	3/15/2023	4.36	3/16/2026	3/15/2023	106.92716	104.9509847	103.0217539	101.1380606	99.29855242	97.50192657	95.74692727	94.03234391	92.35700907
230315A00117	3/15/2023	4.17	3/15/2027	3/15/2023	110.46204	107.4478326	104.533155	101.7141697	98.98721173	96.34877722	93.79551571	91.32422239	88.93183096
230315A00125	3/15/2023	4.11	3/15/2027	3/15/2023	110.28461	107.2730434	104.3609392	101.5444641	98.81995497	96.18391006	93.63298078	91.16396415	88.77379562
230315A00128	3/15/2023	4.43	3/14/2025	3/15/2023	103.03403	102.0778752	101.1395307	100.2184982	99.31430072	98.42647908	97.55459045	96.69820792	95.85691972
230315A00130	3/15/2023	4.43	3/14/2025	3/15/2023	103.03403	102.0778752	101.1395307	100.2184982	99.31430072	98.42647908	97.55459045	96.69820792	95.85691972
230315A00131	3/15/2023	4.13	3/15/2027	3/15/2023	110.34375	107.3313065	104.4183444	101.6010326	98.87570722	96.23886578	93.68715909	91.21738356	88.82647406
230315A00133	3/15/2023	3.9	3/15/2028	3/15/2023	114.01043	109.9166811	105.9957679	102.2394623	98.63997435	95.1899244	91.88231901	88.71052879	85.66826745
230316A00001	3/16/2023	3.81	3/16/2028	3/16/2023	113.66399	109.5743784	105.6576152	101.9054654	98.31013214	94.86422926	91.56075761	88.39308269	85.35491358
230316A00017	3/16/2023	3.81	3/16/2028	3/16/2023	113.66399	109.5743784	105.6576152	101.9054654	98.31013214	94.86422926	91.56075762	88.39308269	85.35491358
230316A00021	3/16/2023	4.2	3/16/2026	3/16/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230316A00026	3/16/2023	4.56	9/16/2024	3/16/2023	101.4649	100.9984829	100.5363647	100.0784898	99.62479963	99.1752369	98.72974528	98.28826949	97.85075524
230316A00032	3/16/2023	4.39	3/16/2026	3/16/2023	106.98607	105.0093108	103.0794995	101.1952369	99.35517018	97.55799623	95.802459	94.0873476	92.41149437
230316A00038	3/16/2023	4.42	3/14/2025	3/16/2023	103.02443	102.068328	101.1300323	100.2090478	99.30489796	98.41712326	97.54528098	96.68894423	95.84770124
230316A00039	3/16/2023	4.63	3/17/2025	3/16/2023	103.25727	102.2918845	101.3446266	100.414984	99.50246756	98.60660626	97.72694623	96.86304999	96.01449568
230316A00042	3/16/2023	4.42	3/14/2025	3/16/2023	103.02443	102.068328	101.1300323	100.2090478	99.30489796	98.41712326	97.54528098	96.68894423	95.84770124
230316A00046	3/16/2023	4.18	6/16/2026	3/16/2023	107.56578	105.3324556	103.1569969	101.0374861	98.97208285	96.95902303	94.99661476	93.08323486	91.21732533
230316A00047	3/16/2023	4.07	9/16/2027	3/16/2023	112.14899	108.6028087	105.1901187	101.905173	98.74250273	95.69690282	92.76341828	89.93733058	87.21414509
230316A00048	3/16/2023	4.05	6/16/2028	3/16/2023	115.0731	110.7160995	106.5521577	102.5716176	98.76536104	95.12477766	91.64173278	88.30853841	85.11792593
230316A00050	3/16/2023	4.2	3/16/2026	3/16/2023	106.61293	104.6399125	102.7137771	100.8331201	98.996591	97.20288838	95.45075804	93.73899085	92.06642082
230316A00052	3/16/2023	4.56	9/16/2024	3/16/2023	101.4649	100.9984829	100.5363647	100.0784898	99.62479963	99.1752369	98.72974528	98.28826949	97.85075524
230316A00054	3/16/2023	4.62	3/17/2025	3/16/2023	103.24759	102.2822557	101.3350475	100.4054538	99.49298568	98.59717207	97.71755914	96.8537094	96.00520101
230316A00055	3/16/2023	4.03	3/16/2028	3/16/2023	113.99111	109.9098934	106.0007262	102.25543	98.66625892	95.22587441	91.92732175	88.76400777	85.72968017
230316A00058	3/16/2023	4.1	3/16/2027	3/16/2023	110.26537	107.2514219	104.3371016	101.5185674	98.79214697	96.15432983	93.60175918	91.13122435	88.73965351
230316A00060	3/16/2023	3.89	3/16/2027	3/16/2023	110.04267	107.022836	104.1030522	101.2794488	98.54833145	95.90616886	93.34958468	90.8753498	88.48037501
230316A00061	3/16/2023	4.31	9/16/2025	3/16/2023	104.76808	103.3060825	101.8719425	100.4649285	99.08433816	97.72949263	96.39973601	95.09443418	93.81297396
230316A00067	3/16/2023	3.89	3/16/2027	3/16/2023	110.04267	107.022836	104.1030522	101.2794488	98.54833145	95.90616886	93.34958468	90.8753498	88.48037501
230316A00072	3/16/2023	4.1	3/16/2027	3/16/2023	110.26537	107.2514219	104.3371016	101.5185674	98.79214697	96.15432983	93.60175918	91.13122435	88.73965351

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230316A00076	3/16/2023	4.45	3/16/2026	3/16/2023	107.10391	105.1259629	103.1949909	101.3095895	99.46840571	97.67013555	95.91352246	94.197355	92.52046497
230316A00078	3/16/2023	4.34	3/16/2027	3/16/2023	110.97574	107.951214	105.0265813	102.1979886	99.4617554	96.81436315	94.25244745	91.77279027	89.37231276
230316A00082	3/16/2023	4.3	3/16/2028	3/16/2023	115.05947	110.9571937	107.0276161	103.2625357	99.65418228	96.19519421	92.87859455	89.69776902	86.64644511
230316A00113	3/16/2023	4.28	3/16/2026	3/16/2023	107.03015	105.0481099	103.1132257	101.2240888	99.37933864	97.57766428	95.81780238	94.09853511	92.41868815
230317A00010	3/17/2023	4.77	9/17/2024	3/17/2023	101.5726	101.1031603	100.6380779	100.1772896	99.72073598	99.2683586	98.82010021	98.37590456	97.93571643
230317A00015	3/17/2023	4.13	3/17/2028	3/17/2023	114.39764	110.3057115	106.3863055	102.6312174	99.0326771	95.58332345	92.27618039	89.10463477	86.06241549
230317A00016	3/17/2023	4.22	3/17/2027	3/17/2023	110.63121	107.6091449	104.6870137	101.8609637	99.1273088	96.48252534	93.9232442	91.446243	89.04843886
230317A00024	3/17/2023	4.54	3/17/2025	3/17/2023	103.17015	102.2052258	101.2584143	100.3292122	99.41713061	98.5216986	97.64246241	96.77898468	95.93084367
230317A00025	3/17/2023	4.35	3/17/2026	3/17/2023	106.91848	104.9397357	103.0080578	101.1220342	99.28030743	97.48156951	95.72455997	94.00806369	92.33090897
230317A00026	3/17/2023	4.22	3/17/2027	3/17/2023	110.63121	107.6091449	104.6870137	101.8609637	99.1273088	96.48252534	93.9232442	91.446243	89.04843886
230317A00027	3/17/2023	4.77	9/17/2024	3/17/2023	101.5726	101.1031603	100.6380779	100.1772896	99.72073598	99.2683586	98.82010021	98.37590456	97.93571643
230317A00031	5/18/2023	4.3	5/19/2025	5/18/2023	103.52134	102.3855888	101.2748455	100.1882929	99.12514563	98.084652	97.0660923	96.06877704	95.09204538
230317A00032	5/18/2023	4.27	5/19/2025	5/18/2023	103.48713	102.3515788	101.241039	100.1546867	99.0917368	98.05143759	97.03306945	96.03594294	95.05939731
230317A00033	3/17/2023	4.77	9/17/2024	3/17/2023	101.5726	101.1031603	100.6380779	100.1772896	99.72073598	99.2683586	98.82010021	98.37590456	97.93571643
230317A00047	3/17/2023	4.1	3/17/2028	3/17/2023	114.27885	110.1892662	106.2721311	102.5192442	98.92283803	95.47555411	92.17041882	89.00082136	85.9604929
230317A00048	3/17/2023	4.1	3/17/2028	3/17/2023	114.27885	110.1892662	106.2721311	102.5192442	98.92283803	95.47555411	92.17041882	89.00082136	85.9604929
230317A00049	3/17/2023	4.1	3/17/2028	3/17/2023	114.27885	110.1892662	106.2721311	102.5192442	98.92283803	95.47555411	92.17041882	89.00082136	85.9604929
230317A00050	3/17/2023	4.1	3/17/2028	3/17/2023	114.27885	110.1892662	106.2721311	102.5192442	98.92283803	95.47555411	92.17041882	89.00082136	85.9604929
230317A00051	3/17/2023	4.35	3/17/2026	3/17/2023	106.91848	104.9397357	103.0080578	101.1220342	99.28030743	97.48156951	95.72455997	94.00806369	92.33090897
230320A00005	3/20/2023	4.37	3/20/2025	3/20/2023	103.03477	102.0624743	101.1085866	100.172589	99.25398051	98.35227915	97.46702042	96.59775674	95.74405669
230320A00006	3/20/2023	4.25	3/20/2026	3/20/2023	106.75387	104.768819	102.8311731	100.9395066	99.09244681	97.28867144	95.5269064	93.80592367	92.12453922
230320A00033	3/20/2023	4.35	3/20/2026	3/20/2023	106.95135	104.9643103	103.0247088	101.131124	99.28218229	97.47656035	95.71298315	93.99022169	92.30709106
230320A00092	3/20/2023	4.31	3/20/2026	3/20/2023	106.87236	104.8861138	102.9472945	101.0544771	99.2062881	97.40140479	95.63855245	93.91650248	92.23407033
230321A00001	3/21/2023	4.48	3/23/2026	3/21/2023	107.24203	105.2440614	103.2939701	101.3903084	99.53168494	97.71675973	95.94424175	94.21288685	92.52149566
230321A00002	3/21/2023	4.33	3/19/2027	3/21/2023	110.97902	107.9464077	105.0142143	102.178556	99.43572334	96.78217095	94.21450901	91.72949566	89.32402958
230321A00009	3/21/2023	4.27	3/21/2028	3/21/2023	114.99687	110.8822985	106.9415178	103.1662439	99.54863331	96.08125613	92.75707219	89.56940843	86.51193782
230321A00020	3/21/2023	4.73	11/18/2024	3/21/2023	102.09392	101.4552368	100.824572	100.2017708	99.58668649	98.97917604	98.37909988	97.78632187	97.2007092
230321A00025	3/21/2023	4.57	3/21/2025	3/21/2023	103.24027	102.264198	101.3066565	100.3671157	99.44507062	98.54003496	97.65154033	96.7791354	95.92238518
230321A00029	3/21/2023	4.57	3/21/2025	3/21/2023	103.24027	102.264198	101.3066565	100.3671157	99.44507062	98.54003496	97.65154033	96.7791354	95.92238518
230321A00038	3/21/2023	4.87	7/25/2024	3/21/2023	101.09681	100.7758698	100.4569713	100.1400986	99.82523256	99.51235405	99.20144425	98.89248457	98.58545666
230321A00052	3/21/2023	4.62	3/21/2025	3/21/2023	103.28921	102.3128847	101.3550898	100.4152989	99.49300702	98.58772775	97.69899263	96.82635028	95.96936561
230321A00053	3/21/2023	4.27	3/21/2028	3/21/2023	114.99687	110.8822985	106.9415178	103.1662439	99.54863331	96.08125613	92.75707219	89.56940843	86.51193782
230321A00074	3/21/2023	4.23	3/21/2028	3/21/2023	114.83805	110.7266195	106.7888828	103.0165593	99.40180913	95.9372058	92.6157125	89.43065933	86.37572229

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230322A00004	3/22/2023	4.3	3/22/2028	3/22/2023	115.12729	111.0074288	107.0616668	103.2816983	99.65966173	96.18811042	92.85998849	89.66860825	86.607629
230322A00005	3/22/2023	4.42	3/22/2029	3/22/2023	119.81455	114.5738133	109.6008085	104.880387	100.3983338	96.14130802	92.09678438	88.25299925	84.59890045
230322A00006	3/22/2023	4.53	3/22/2030	3/22/2023	124.19261	117.8112534	111.8110696	106.1671281	100.8562556	95.85690614	91.14903798	86.71400148	82.53443528
230322A00007	3/22/2023	4.54	3/21/2031	3/22/2023	127.84587	120.3281646	113.323269	106.7931767	100.7028949	95.0201908	89.71535991	84.76101564	80.13189695
230322A00009	3/22/2023	4.59	3/22/2032	3/22/2023	131.90019	123.2078466	115.1806856	107.7636841	100.9066555	94.56380415	88.6933196	83.2570102	78.21997239
230322A00015	3/22/2023	4.24	3/22/2028	3/22/2023	114.88889	110.7737533	106.8325634	103.0570264	99.439286	95.97190081	92.64781996	89.46036051	86.40318631
230322A00020	3/22/2023	4.2	3/22/2029	3/22/2023	119.42317	114.1700398	109.1860462	104.4559215	99.9653472	95.70088653	91.6499261	87.80062101	84.14184406
230322A00029	3/22/2023	4.67	3/21/2025	3/22/2023	103.33815	102.3615714	101.403523	100.4634821	99.54094342	98.63542054	97.74644493	96.87356515	96.01634605
230322A00030	3/22/2023	4.86	9/23/2024	3/22/2023	101.67342	101.1873568	100.705955	100.2291459	99.75686387	99.28904459	98.82562485	98.3665427	97.9117373
230323A00027	3/23/2023	4.43	3/24/2025	3/23/2023	103.13287	102.1492897	101.18453	100.238055	99.30934777	98.39791057	97.50326414	96.62494685	95.76251386
230323A00028	3/23/2023	4.1	3/23/2028	3/23/2023	113.54754	109.6583182	105.9327352	102.3629346	98.94148097	95.66133688	92.51583875	89.49867503	86.60386552
230323A00029	3/23/2023	4.39	3/24/2031	3/23/2023	126.83341	119.341963	112.3627348	105.8576922	99.79182634	94.13289365	88.85118376	83.91930807	79.31200699
230323A00030	3/23/2023	4.72	3/23/2037	3/23/2023	148.27061	133.7142946	120.8426437	109.4469376	99.34554298	90.38025965	82.41317959	75.323981	69.00759585
230323A00031	3/23/2023	4.6	9/23/2024	3/23/2023	101.54683	101.0611281	100.5800815	100.1036251	99.6316935	99.16422218	98.70114806	98.24240917	97.78794473
230323A00033	3/23/2023	4.43	3/24/2025	3/23/2023	103.13287	102.1492897	101.18453	100.238055	99.30934777	98.39791057	97.50326414	96.62494685	95.76251386
230323A00034	3/23/2023	4.23	3/23/2026	3/23/2023	106.74626	104.7533251	102.8081628	100.9093356	99.05545477	97.2451829	95.47723141	93.7503585	92.06336709
230323A00048	3/23/2023	4.07	3/23/2028	3/23/2023	114.22412	110.1194412	106.1885308	102.4230899	98.81526272	95.35760839	92.04307704	88.86498699	85.81700358
230323A00051	3/23/2023	3.85	3/23/2028	3/23/2023	113.89599	109.7828501	105.8442801	102.071931	98.45789521	94.99468342	91.67520071	88.4927234	85.44087767
230323A00054	3/23/2023	3.95	3/23/2028	3/23/2023	113.747	109.6517761	105.7300223	101.9734561	98.3742324	94.92492104	91.61848209	88.44824342	85.40787949
230323A00056	3/23/2023	4	3/23/2027	3/23/2023	110.0398	107.0105429	104.0820498	101.2504126	98.51189461	95.86292491	93.30009003	90.82012604	88.41991105
230323A00058	3/23/2023	3.96	9/23/2027	3/23/2023	111.84275	108.2825397	104.8571124	101.5606357	98.38755788	95.33259712	92.39072656	89.55716065	86.8273422
230323A00064	3/23/2023	4.25	3/21/2025	3/23/2023	102.92703	101.9526034	100.9966836	100.0587432	99.13827768	98.23480111	97.34784559	96.47696023	95.62171042
230323A00065	3/23/2023	3.85	3/23/2028	3/23/2023	113.89599	109.7828501	105.8442801	102.071931	98.45789521	94.99468342	91.67520071	88.4927234	85.44087767
230323A00081	3/23/2023	3.85	3/23/2028	3/23/2023	113.89599	109.7828501	105.8442801	102.071931	98.45789521	94.99468342	91.67520071	88.4927234	85.44087767
230324A00001	3/24/2023	4.04	6/24/2026	3/24/2023	107.33972	105.0868786	102.8928761	100.7557448	98.67359794	96.64462747	94.66710031	92.73935439	90.85979508
230324A00004	3/24/2023	4.46	9/24/2024	3/24/2023	101.48731	100.9990549	100.5155038	100.0365918	99.56225213	99.09241958	98.62702997	98.16602041	97.70932916
230324A00009	3/24/2023	4.19	3/24/2025	3/24/2023	102.89597	101.9136398	100.9501163	100.0048611	99.07735763	98.16710848	97.27363476	96.39647515	95.53518514
230324A00021	3/24/2023	3.72	3/24/2028	3/24/2023	112.17288	108.4211855	104.8262985	101.3807057	98.07729811	94.90934671	91.87048013	88.95466333	86.15617792
230324A00023	3/24/2023	3.69	3/24/2028	3/24/2023	113.26821	109.1648259	105.2358558	101.4729443	97.86818316	94.41408299	91.10354903	87.92985814	84.88663728
230324A00029	3/24/2023	4.01	3/24/2025	3/24/2023	102.87502	101.8905743	100.9250111	99.97778873	99.04838774	98.13630795	97.24106781	96.36220348	95.49926803
230324A00031	3/24/2023	4.01	3/24/2025	3/24/2023	102.87502	101.8905743	100.9250111	99.97778873	99.04838774	98.13630795	97.24106781	96.36220348	95.49926803
230324A00032	3/24/2023	3.93	3/24/2028	3/24/2023	113.67778	109.5812337	105.6583449	101.9008116	98.30077564	94.85079419	91.54381589	88.37315799	85.3324851
230324A00036	3/24/2023	3.98	3/24/2027	3/24/2023	109.99023	106.9590443	104.0287833	101.1955251	98.45552401	95.80520064	93.24113356	90.76005134	88.35882511

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230324A00037	3/24/2023	3.99	3/24/2028	3/24/2023	113.9165	109.8152232	105.8877499	102.1257736	98.5214302	95.0672719	91.75624227	88.58165378	85.53716645
230324A00050	3/24/2023	4.13	3/24/2026	3/24/2023	103.33309	102.2854126	101.258082	100.250523	99.26218144	98.29252402	97.34103692	96.40722509	95.49061135
230327A00045	3/27/2023	4.42	3/27/2025	3/27/2023	103.15256	102.1607952	101.1881575	100.2340984	99.29808877	98.37961909	97.47819903	96.59335636	95.72463618
230327A00046	3/27/2023	4.22	3/27/2026	3/27/2023	106.76885	104.7650515	102.8095405	100.900847	99.03756066	97.21832341	95.44182713	93.70681138	92.01206141
230327A00047	3/27/2023	4.08	3/27/2028	3/27/2023	114.30669	110.1895868	106.2472056	102.4711814	98.85359596	95.38695089	92.06414258	88.87843949	85.82346056
230328A00010	3/28/2023	4.68	9/30/2024	3/28/2023	101.64555	101.1405451	100.6405629	100.1455242	99.65535607	99.16998692	98.68934652	98.21336604	97.74197796
230328A00011	3/28/2023	4.53	3/28/2025	3/28/2023	103.2722	102.2771012	101.3012408	100.3440653	99.40504111	98.4836548	97.5794121	96.69183706	95.82047124
230328A00019	3/28/2023	4.12	3/27/2026	3/28/2023	106.83323	104.8238373	102.8629468	100.9490831	99.08082715	97.25681288	95.47572438	93.73629385	92.03729952
230328A00020	3/28/2023	3.98	3/28/2028	3/28/2023	114.46837	110.3302871	106.3682686	102.5738675	98.93908676	95.45635389	92.11849637	88.91871817	85.85057795
230328A00024	3/28/2023	4.2	3/28/2028	3/28/2023	114.79614	110.6666134	106.7123365	102.9249176	99.29641216	95.81929673	92.4864444	89.29110167	86.22686684
230328A00026	3/28/2023	4.34	3/28/2029	3/28/2023	119.47967	114.2307845	109.2509883	104.525001	100.0384916	95.77801316	91.73094355	87.88543072	84.23034169
230328A00027	3/28/2023	4.22	3/28/2028	3/28/2023	113.88557	110.0179039	106.3128343	102.7625421	99.35963308	96.09710928	92.96834538	89.96706664	87.08732834
230328A00028	3/28/2023	4.34	3/27/2026	3/28/2023	107.17073	105.1259345	103.1314961	101.1858326	99.28742616	97.43481736	95.62660286	93.86143265	92.1380076
230328A00037	3/28/2023	4.21	3/28/2028	3/28/2023	114.3741	110.3672878	106.5306654	102.8560122	99.3355499	95.96191856	92.72815117	89.62765062	86.65416785
230328A00045	3/28/2023	4.21	3/28/2028	3/28/2023	114.3741	110.3672878	106.5306654	102.8560122	99.3355499	95.96191856	92.72815117	89.62765062	86.65416785
230328A00047	3/28/2023	4.21	3/28/2028	3/28/2023	114.3741	110.3672878	106.5306654	102.8560122	99.3355499	95.96191856	92.72815117	89.62765062	86.65416785
230328A00051	3/28/2023	4.53	3/28/2033	3/28/2023	131.23911	122.4950975	114.4678613	107.0929584	100.3121297	94.07267368	88.3268867	83.031562	78.14754181
230328A00052	3/28/2023	4.53	3/28/2033	3/28/2023	131.23911	122.4950975	114.4678613	107.0929584	100.3121297	94.07267368	88.3268867	83.031562	78.14754181
230328A00061	3/28/2023	4.68	9/27/2024	3/28/2023	101.62277	101.125957	100.6340032	100.1468418	99.66440306	99.18661843	98.71342075	98.24474414	97.78052398
230328A00098	3/28/2023	4.24	3/29/2027	3/28/2023	110.81902	107.7620194	104.8071285	101.9503688	99.18793651	96.51619722	93.93167772	91.4310577	89.01116213
230328A00100	3/28/2023	4.19	3/28/2028	3/28/2023	114.75624	110.6275105	106.6740018	102.8873274	99.25954352	95.78312781	92.45095413	89.25626978	86.19267383
230328A00111	3/28/2023	4.36	3/27/2026	3/28/2023	107.048	105.0413627	103.0830615	101.1716315	99.30566072	97.4837898	95.70470915	93.96715702	92.26991733
230328A00122	3/28/2023	4.58	3/28/2025	3/28/2023	103.3221	102.3267375	101.3506139	100.3931788	99.45389843	98.53225932	97.62776711	96.73994581	95.86833688
230329A00019	3/29/2023	4.76	10/1/2024	3/29/2023	101.69562	101.1877612	100.6849802	100.1871987	99.69434233	99.20633828	98.72311512	98.24460284	97.77073276
230329A00020	3/29/2023	4.23	3/29/2028	3/29/2023	114.92694	110.7921058	106.832831	103.0407025	99.40775764	95.92645594	92.58965473	89.39058571	86.32283342
230329A00043	3/29/2023	4.36	3/27/2026	3/29/2023	107.048	105.0413627	103.0830615	101.1716315	99.30566072	97.4837898	95.70470915	93.96715702	92.26991733
230329A00055	3/29/2023	4.59	3/28/2025	3/29/2023	103.33209	102.3366648	101.3604885	100.4030015	99.46366989	98.54198022	97.63743811	96.74956756	95.87791001
230330A00011	3/30/2023	4.21	3/30/2028	3/30/2023	114.85815	110.7219786	106.7615505	102.9684384	99.33466593	95.85268025	92.51532698	89.31582711	86.24775522
230330A00029	3/30/2023	4.6	4/1/2025	3/30/2023	103.38314	102.376674	101.3898715	100.4221578	99.47298231	98.54181524	97.62814698	96.73148696	95.85136281
230330A00052	3/30/2023	4.79	9/30/2024	3/30/2023	101.70122	101.1960578	100.6959134	100.2007138	99.71038587	99.22485806	98.74406013	98.26792323	97.79637981
230330A00055	3/30/2023	5.06	4/1/2024	3/30/2023	100.01683	100.0140488	100.01127	100.0084936	100.0057195	100.0029478	100.0001783	99.99741124	99.99464647
230330A00061	3/30/2023	4.65	3/31/2025	3/30/2023	103.42342	102.4194124	101.4349675	100.4695128	99.52250204	98.59340967	97.68173001	96.78697623	95.90867954
230330A00062	3/30/2023	4.42	3/30/2026	3/30/2023	107.20108	105.184897	103.2174548	101.2972737	99.42292476	97.59303217	95.80627092	94.06136452	92.3570829

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230330A00080	3/30/2023	4.44	3/31/2025	3/30/2023	103.37225	102.3662385	101.3798584	100.4125419	99.46373952	98.53292296	97.61958375	96.72323248	95.84339783
230330A00083	3/30/2023	4.1	3/30/2027	3/30/2023	110.81548	107.7464465	104.7802204	101.9127795	99.1402843	96.45906729	93.86562377	91.3566038	88.92880442
230331A00013	3/31/2023	4.75	9/30/2024	3/31/2023	101.68098	101.1758714	100.6757859	100.1806448	99.69037503	99.20490492	98.72416427	98.24808425	97.77659732
230331A00014	3/31/2023	4.34	3/31/2026	3/31/2023	107.05184	105.0345189	103.0660393	101.1449123	99.26970436	97.4390352	95.65157567	93.90604534	92.20121037
230331A00033	3/31/2023	4.34	3/31/2026	3/31/2023	107.05184	105.0345189	103.0660393	101.1449123	99.26970436	97.4390352	95.65157567	93.90604534	92.20121037
230331A00048	3/31/2023	4.75	9/30/2024	3/31/2023	101.68098	101.1758714	100.6757859	100.1806448	99.69037503	99.20490492	98.72416427	98.24808425	97.77659732
230331A00055	3/31/2023	4.5	3/31/2025	3/31/2023	103.27247	102.2692831	101.2856406	100.3209775	99.37474756	98.4464257	97.53550639	96.64150304	95.76394706
230331A00057	3/31/2023	4.08	3/31/2028	3/31/2023	114.3495	110.2207512	106.2676575	102.4817868	98.85515954	95.38022015	92.04981195	88.8571541	85.79581973
230403A00031	4/3/2023	4.98	4/3/2024	4/3/2023	100.03535	100.0270129	100.0186794	100.0103533	100.0020347	99.99372356	99.98541986	99.97712358	99.96883472
230404A00002	4/4/2023	4.1	4/2/2027	4/4/2023	110.44229	107.3800444	104.4204439	101.5594731	98.79329569	96.11824728	93.53082637	91.02768621	88.605627
230404A00004	4/4/2023	4.45	4/4/2025	4/4/2023	103.26066	102.2468233	101.2529624	100.2784867	99.32283226	98.38545686	97.46583893	96.56347659	95.67788674
230404A00019	4/4/2023	4.45	4/4/2025	4/4/2023	103.26066	102.2468233	101.2529624	100.2784867	99.32283226	98.38545686	97.46583893	96.56347659	95.67788674
230404A00040	4/4/2023	4.28	4/4/2025	4/4/2023	103.08772	102.0748305	101.0818973	100.1083366	99.15358477	98.21709988	97.29836062	96.39686538	95.5121313
230405A00008	4/5/2023	4.01	10/6/2025	4/5/2023	104.52476	103.0104834	101.5259417	100.0703293	98.64287198	97.24282242	95.86945943	94.52208664	93.20003144
230405A00010	4/5/2023	3.96	4/6/2026	4/5/2023	106.35257	104.3258392	102.3484617	100.418921	98.5357585	96.69757054	94.90300577	93.15076284	91.43958813
230405A00012	4/5/2023	3.8	4/5/2028	4/5/2023	113.28253	109.1610571	105.2156438	101.4378102	97.81953253	94.35321513	91.03166466	87.84806678	84.79596406
230405A00020	4/5/2023	4.17	4/4/2025	4/5/2023	102.97582	101.963541	100.9712081	99.99823946	99.04407169	98.10816301	97.1899923	96.28905812	95.40487778
230405A00021	4/5/2023	3.96	4/6/2026	4/5/2023	106.35257	104.3258392	102.3484617	100.418921	98.5357585	96.69757054	94.90300577	93.15076284	91.43958813
230405A00022	4/5/2023	3.8	4/5/2028	4/5/2023	113.28253	109.1610571	105.2156438	101.4378102	97.81953253	94.35321513	91.03166466	87.84806678	84.79596406
230405A00026	4/5/2023	4.75	4/5/2024	4/5/2023	100.05077	100.0368774	100.0229932	100.0091222	99.9952644	99.98141981	99.96758837	99.95377008	99.93996491
230405A00028	4/5/2023	3.78	4/5/2028	4/5/2023	113.2023	109.0824326	105.138572	101.3622429	97.74542342	94.28051974	90.96034024	87.7780722	84.72725976
230405A00037	4/5/2023	3.71	4/6/2026	4/5/2023	106.1137	104.0844077	102.104628	100.1728403	98.28757893	96.44743328	94.65104558	92.89710835	91.18436215
230405A00044	4/5/2023	3.8	4/5/2028	4/5/2023	113.28253	109.1610571	105.2156438	101.4378102	97.81953253	94.35321513	91.03166466	87.84806678	84.79596406
230405A00045	4/5/2023	4.15	5/5/2025	4/5/2023	103.22786	102.131219	101.0579459	100.0072953	98.97855666	97.97104874	96.98411833	96.01713881	95.06950878
230405A00046	4/5/2023	3.82	10/5/2027	4/5/2023	111.47853	107.891851	104.4421372	101.1234065	97.92997164	94.85642395	91.89761843	89.0486593	86.30488645
230405A00049	4/5/2023	3.81	4/5/2028	4/5/2023	113.32264	109.2003693	105.2541797	101.4755938	97.85658708	94.38956282	91.06732687	87.88306407	84.83031621
230405A00050	4/5/2023	4.38	10/7/2024	4/5/2023	101.54827	101.0246582	100.5064604	99.99358927	99.48596298	98.98350115	98.48612513	97.99375783	97.50632372
230405A00051	4/5/2023	4.17	4/7/2025	4/5/2023	103.00239	101.9819381	100.9817608	100.0012559	99.03984653	98.09697786	97.17211659	96.26474968	95.37438343
230406A00006	4/6/2023	4.82	4/8/2024	4/6/2023	100.07885	100.0566119	100.0344013	100.0122138	99.99004922	99.96790756	99.94578878	99.92369284	99.9016197
230406A00016	4/6/2023	3.89	4/6/2028	4/6/2023	112.28757	108.5487677	104.966244	101.5324942	98.24041996	95.0833038	92.05478632	89.14884503	86.35977445
230406A00017	4/6/2023	3.99	4/7/2025	4/6/2023	102.98072	101.958046	100.9557266	99.97315794	99.00975976	98.06497429	97.13826524	96.22911679	95.33703257
230406A00023	4/6/2023	3.84	4/6/2028	4/6/2023	113.45357	109.325886	105.3745795	101.5911546	97.96756973	94.49621251	91.16987403	87.9817254	84.92529557
230406A00026	4/6/2023	3.92	4/6/2027	4/6/2023	109.94311	106.8772938	103.9145818	101.0509246	98.28245747	95.60548908	93.01649298	90.5120991	88.08908585

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230406A00029	4/6/2023	3.84	4/6/2028	4/6/2023	113.45357	109.325886	105.3745795	101.5911546	97.96756973	94.49621251	91.16987403	87.9817254	84.92529557
230406A00038	4/6/2023	4.24	4/7/2025	4/6/2023	103.07417	102.0533286	101.0527636	100.0718763	99.1100897	98.16684893	97.24162054	96.33389138	95.44316764
230406A00042	4/6/2023	3.99	4/7/2025	4/6/2023	102.98072	101.958046	100.9557266	99.97315794	99.00975976	98.06497429	97.13826524	96.22911679	95.33703257
230406A00050	4/6/2023	3.67	4/6/2027	4/6/2023	109.59449	106.5244977	103.5579988	100.6909204	97.91937581	95.23965322	92.64820687	90.14164854	87.71673955
230406A00052	4/6/2023	4.02	4/6/2026	4/6/2023	106.47385	104.4458645	102.4672593	100.5365146	98.65217129	96.81282496	95.01712369	93.2637655	91.55149621
230406A00088	4/6/2023	4.23	10/7/2024	4/6/2023	101.54669	101.0221466	100.5030378	99.98927707	99.48078197	98.9774716	98.47926676	97.98608986	97.49786488
230406A00091	4/6/2023	3.99	4/7/2025	4/6/2023	102.98072	101.958046	100.9557266	99.97315794	99.00975976	98.06497429	97.13826524	96.22911679	95.33703257
230406A00105	4/6/2023	3.84	4/6/2028	4/6/2023	113.45357	109.325886	105.3745795	101.5911546	97.96756973	94.49621251	91.16987403	87.9817254	84.92529557
230410A00011	4/10/2023	4.08	4/9/2027	4/10/2023	110.4586	107.3766105	104.3984077	101.5199088	98.7372165	96.04660895	93.44453083	90.92758486	88.49252381
230410A00012	4/10/2023	3.98	4/10/2028	4/10/2023	114.05942	109.9084043	105.935003	102.1306475	98.4872264	94.99706212	91.6528849	88.44780898	85.37531018
230410A00023	4/10/2023	4.75	4/10/2024	4/10/2023	100.09842	100.0705998	100.0428068	100.0150446	99.98731289	99.95961178	99.93194116	99.90430098	99.87669118
230411A00018	4/11/2023	4.96	4/11/2024	4/11/2023	100.11057	100.0799931	100.0494545	100.0189501	99.9884798	99.95804356	99.92764131	99.897273	99.86693856
230411A00028	4/11/2023	4.2	4/11/2025	4/11/2023	103.2338	102.1989942	101.1849923	100.1911723	99.21693499	98.26170489	97.3249288	96.40607488	95.50463154
230411A00030	4/11/2023	4.2	4/11/2025	4/11/2023	103.2338	102.1989942	101.1849923	100.1911723	99.21693499	98.26170489	97.3249288	96.40607488	95.50463154
230411A00045	4/11/2023	4.66	10/11/2024	4/11/2023	101.72721	101.1922844	100.6629997	100.1392684	99.62100317	99.10811853	98.6005308	98.09815803	97.60091995
230411A00054	4/11/2023	3.74	4/11/2028	4/11/2023	113.65687	109.4958377	105.5134273	101.7009935	98.05035881	94.55378392	91.20394189	87.99389369	84.91706558
230412A00001	4/12/2023	4.62	10/11/2024	4/12/2023	101.70575	101.1708928	100.6416735	100.1180069	99.59980603	99.08698524	98.5794609	98.07715105	97.57997542
230412A00002	4/12/2023	4.42	4/11/2025	4/12/2023	103.29691	102.2641337	101.2520812	100.2601336	99.28769504	98.33419315	97.3990777	96.48181962	95.58191002
230412A00005	4/12/2023	4.16	4/10/2026	4/12/2023	106.80074	104.7583037	102.765749	100.8215356	98.92418326	97.07226765	95.26441783	93.49931385	91.77568447
230412A00006	4/12/2023	4.04	4/12/2027	4/12/2023	110.37002	107.2810203	104.2962632	101.4116371	98.62321942	95.9272646	93.32019524	90.7985933	88.35919208
230412A00007	4/12/2023	3.95	4/12/2028	4/12/2023	113.96045	109.8058057	105.8291469	102.0218747	98.3758525	94.88337888	91.53716227	88.33029667	85.2562391
230412A00028	4/12/2023	3.69	4/12/2028	4/12/2023	113.46554	109.3055379	105.3242528	101.5130298	97.86368184	94.36846105	91.02003252	87.81144995	84.73613296
230412A00031	4/12/2023	3.91	4/10/2026	4/12/2023	106.56122	104.5161872	102.5212016	100.5747146	98.67523859	96.82134233	95.0116483	93.24483033	91.51961126
230412A00033	4/12/2023	4.04	4/12/2027	4/12/2023	110.37002	107.2810203	104.2962632	101.4116371	98.62321942	95.9272646	93.32019524	90.7985933	88.35919208
230412A00037	4/12/2023	4.62	10/15/2024	4/12/2023	101.73155	101.1858933	100.6461106	100.1121046	99.5837828	99.06105447	98.54383091	98.03202527	97.52555253
230412A00038	4/12/2023	3.69	4/12/2028	4/12/2023	113.46554	109.3055379	105.3242528	101.5130298	97.86368184	94.36846105	91.02003252	87.81144995	84.73613296
230412A00044	4/12/2023	3.91	4/10/2026	4/12/2023	106.56122	104.5161872	102.5212016	100.5747146	98.67523859	96.82134233	95.0116483	93.24483033	91.51961126
230412A00053	4/12/2023	4.2	4/12/2028	4/10/2026	112.13366	108.8119665	105.6232495	102.5612546	99.62006334	96.79407114	94.07796903	91.46672605	88.95557295
230412A00059	4/12/2023	4.2	4/12/2028	4/10/2026	112.13366	108.8119665	105.6232495	102.5612546	99.62006334	96.79407114	94.07796903	91.46672605	88.95557295
230413A00017	4/13/2023	3.88	4/13/2028	4/13/2023	113.68902	109.5370196	105.5630509	101.7585049	98.1152375	94.62554051	91.28211622	88.07805305	85.00680305
230413A00018	4/13/2023	3.96	4/13/2027	4/13/2023	110.13793	107.0496918	104.0657636	101.1820334	98.39457268	95.6996304	93.09362404	90.57313086	88.13487975
230413A00020	4/13/2023	3.88	4/13/2028	4/13/2023	113.68902	109.5370196	105.5630509	101.7585049	98.1152375	94.62554051	91.28211622	88.07805305	85.00680305
230413A00021	4/13/2023	4.07	4/13/2026	4/13/2023	106.65003	104.6008581	102.6018614	100.6514902	98.7482504	96.89070476	95.07747006	93.30721476	91.57865664

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230413A00024	4/13/2023	4.41	4/14/2025	4/13/2023	103.31507	102.2741568	101.2542909	100.2548406	99.2751963	98.31477235	97.37300615	96.44935685	95.54330435
230413A00030	4/13/2023	4.33	4/14/2025	4/13/2023	103.2315	102.1910485	101.1716415	100.1726437	99.19344555	98.23346166	97.29212954	96.36890847	95.46327848
230413A00031	4/13/2023	4.07	4/13/2026	4/13/2023	106.65003	104.6008581	102.6018614	100.6514902	98.7482504	96.89070476	95.07747006	93.30721476	91.57865664
230413A00045	4/13/2023	4.33	4/11/2025	4/13/2023	103.20363	102.1713692	101.1598252	100.1683791	99.1964352	98.24342117	97.308787	96.39200376	95.49256269
230413A00069	4/13/2023	4.33	4/14/2025	4/13/2023	103.2315	102.1910485	101.1716415	100.1726437	99.19344555	98.23346166	97.29212954	96.36890847	95.46327848
230413A00082	4/13/2023	4.01	4/13/2027	4/13/2023	110.28974	107.1991841	104.2129983	101.3270671	98.53746016	95.84042464	93.23237629	90.70989068	88.26969514
230414A00009	4/14/2023	5.04	4/12/2024	4/14/2023	100.12271	100.0893617	100.0560474	100.0227712	99.9895332	99.95633325	99.9231713	99.89004727	99.8569611
230417A00023	4/17/2023	3.86	4/7/2028	4/17/2023	114.09725	109.9386661	105.9581107	102.1469923	98.49717912	95.00097387	91.65108839	88.44061941	85.36302619
230417A00034	4/17/2023	4.63	4/17/2025	4/17/2023	103.57523	102.5248153	101.4957961	100.4875234	99.49937294	98.5307457	97.58106604	96.64978084	95.73635834
230417A00036	4/17/2023	4.63	4/17/2025	4/17/2023	103.57523	102.5248153	101.4957961	100.4875234	99.49937294	98.5307457	97.58106604	96.64978084	95.73635834
230417A00037	4/17/2023	4.39	4/16/2026	4/17/2023	107.33778	105.2731088	103.2590861	101.2941417	99.37676301	97.50549509	95.67893806	93.89574451	92.15461714
230417A00042	4/17/2023	4.58	4/17/2025	4/17/2023	103.52259	102.4724659	101.4437379	100.4357521	99.44788473	98.47953658	97.5301322	96.59911853	95.68596392
230417A00044	4/17/2023	4.32	4/17/2026	4/17/2023	107.20579	105.1397237	103.1243881	101.1582099	99.23967253	97.36731702	95.5397398	93.75558999	92.01356698
230417A00045	4/17/2023	4.21	4/16/2027	4/17/2023	110.93079	107.8220754	104.818467	101.9158151	99.11015463	96.39770049	93.77483778	91.23811323	88.78422689
230417A00046	4/17/2023	4.13	4/17/2028	4/17/2023	114.74282	110.5583946	106.5535301	102.7195329	99.04817766	95.53168016	92.16267148	88.9341734	85.83957544
230417A00085	4/17/2023	4.68	4/17/2026	4/17/2023	103.94303	102.8526017	101.7837522	100.735868	99.70835623	98.70064625	97.71218841	96.74245317	95.79093016
230418A00007	4/18/2023	4.61	4/18/2025	4/18/2023	103.56423	102.5111895	101.4796563	100.4689725	99.47850939	98.50766346	97.55585491	96.62252667	95.70714324
230418A00028	4/18/2023	5.13	4/18/2024	4/18/2023	100.18507	100.1350546	100.085104	100.035219	99.98539939	99.93564509	99.88595597	99.83633188	99.78677269
230418A00035	4/18/2023	4.13	4/18/2028	4/18/2023	107.39572	105.2660333	103.2032692	101.2047627	99.26797709	97.39049442	95.57000951	93.80432371	92.0913392
230418A00057	4/18/2023	4.36	4/18/2025	4/18/2023	103.46854	102.4135978	101.3802435	100.3678159	99.37568307	98.40323809	97.4498982	96.51510341	95.59831548
230418A00059	4/18/2023	4.09	4/17/2026	4/18/2023	107.00571	104.9365709	102.9183438	100.9494429	99.02834362	97.1535799	95.32374115	93.53746987	91.79345922
230419A00005	4/19/2023	5.1	4/19/2024	4/19/2023	100.19335	100.1405635	100.0878436	100.0351943	99.9826156	99.93010722	99.87766907	99.825301	99.77300286
230419A00016	4/19/2023	4.41	4/18/2025	4/19/2023	103.52137	102.4661289	101.4324812	100.4197645	99.42734645	98.45462028	97.50100307	96.56593474	95.64887696
230419A00024	4/19/2023	4.66	4/18/2025	4/19/2023	103.61701	102.5636744	101.5318486	100.5208763	99.53012886	98.55900247	97.60691731	96.67331623	95.75766363
230419A00030	4/19/2023	4.39	4/20/2026	4/19/2023	107.3842	105.307926	103.282754	101.307093	99.37941055	97.49823292	95.66214231	93.86977441	92.11981591
230419A00035	4/19/2023	4.16	4/19/2028	4/19/2023	114.88706	110.6940953	106.681215	102.839694	99.16127505	95.63814471	92.26290662	89.028557	85.92846162
230419A00072	4/19/2023	4.53	10/20/2025	4/19/2023	105.47611	103.9168039	102.3884908	100.8903148	99.42145222	97.9811089	96.56851897	95.18294365	93.82366996
230420A00003	4/20/2023	4.06	4/20/2026	4/20/2023	106.97735	104.9001562	102.8742013	100.8978859	98.96967086	97.08807616	95.25167808	93.45910668	91.70904334
230420A00024	4/20/2023	4.31	4/20/2026	4/20/2023	107.21944	105.1448949	103.1214204	101.1474238	99.22137344	97.3417965	95.50727609	93.71644872	91.96800189
230420A00030	4/20/2023	5.1	4/19/2024	4/20/2023	100.19335	100.1405635	100.0878436	100.0351943	99.9826156	99.93010722	99.87766907	99.825301	99.77300286
230420A00056	4/20/2023	4.38	4/20/2033	4/20/2023	133.92869	124.0513689	115.0184861	106.7523747	99.1829214	92.2467985	85.88677335	80.05109201	74.6929279
230420A00059	4/20/2023	4.72	4/20/2038	4/20/2023	151.08765	135.3021603	121.4693392	109.3307149	98.66359609	89.27593786	81.00196662	73.69845024	67.24151516
230420A00060	4/20/2023	4.72	4/20/2038	4/20/2023	151.08765	135.3021603	121.4693392	109.3307149	98.66359609	89.27593786	81.00196662	73.69845024	67.24151516

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230420A00063	4/20/2023	4.65	4/20/2037	4/20/2023	147.57681	132.9876553	120.0969511	108.6931268	98.59220637	89.63407282	81.67925361	74.60615387	68.30867338
230420A00067	4/20/2023	4.57	4/21/2025	4/20/2023	103.55183	102.4908118	101.4516229	100.4335948	99.43608485	98.45847613	97.50017628	96.5606163	95.63924932
230420A00071	4/20/2023	4.31	4/20/2026	4/20/2023	107.21944	105.1448949	103.1214204	101.1474238	99.22137344	97.3417965	95.50727609	93.71644872	91.96800189
230421A00003	4/21/2023	4.72	10/21/2024	4/21/2023	101.83685	101.2746619	100.7186954	100.1688504	99.62502575	99.08712289	98.55504525	98.02869836	97.5079898
230421A00006	4/21/2023	4.04	4/21/2028	4/21/2023	114.42339	110.2341465	106.2251281	102.38759	98.71325797	95.19430294	91.82331447	88.59327593	85.49754139
230421A00015	4/21/2023	4.54	4/21/2025	4/21/2023	103.51992	102.459077	101.4200662	100.4022138	99.40487702	98.42743905	97.4693076	96.5299137	95.60871055
230421A00020	4/21/2023	4.23	4/21/2026	4/21/2023	107.06585	104.9901385	102.9655821	100.9905787	99.06359268	97.18314735	95.34782219	93.55625033	91.80711607
230421A00023	4/21/2023	4.04	4/21/2028	4/21/2023	114.42339	110.2341465	106.2251281	102.38759	98.71325797	95.19430294	91.82331447	88.59327593	85.49754139
230421A00025	4/21/2023	4.04	4/21/2028	4/21/2023	114.42339	110.2341465	106.2251281	102.38759	98.71325797	95.19430294	91.82331447	88.59327593	85.49754139
230421A00036	4/21/2023	4.48	4/21/2025	4/21/2023	103.45608	102.3956073	101.3569529	100.3394518	99.34246135	98.36536489	97.40757023	96.46850849	95.54763301
230421A00041	4/21/2023	4.22	4/21/2027	4/21/2023	111.01774	107.8937107	104.8756506	101.9593535	99.14080899	96.4161893	93.78183945	91.23426855	88.77014133
230421A00043	4/21/2023	4.1	4/21/2028	4/21/2023	114.66669	110.472531	106.458756	102.6166101	98.93781323	95.41453072	92.03934678	88.80523968	85.70555863
230421A00044	4/21/2023	4.13	10/21/2027	4/21/2023	112.74485	109.0924419	105.5805648	102.2030311	98.9539572	95.82775093	92.81909555	89.92293439	87.13445666
230421A00062	4/21/2023	4.33	4/21/2028	4/21/2023	107.77343	105.5847294	103.4654255	101.4127492	99.4240584	97.4968353	95.62867947	93.81730171	92.06051808
230421A00064	4/21/2023	4.1	4/21/2028	4/21/2023	114.66669	110.472531	106.458756	102.6166101	98.93781323	95.41453072	92.03934678	88.80523968	85.70555863
230424A00003	4/24/2023	4.15	4/26/2027	4/24/2023	110.85922	107.7236599	104.694826	101.7684726	98.94054646	96.20717977	93.56468009	91.0095214	88.53833552
230424A00005	4/24/2023	4.08	4/24/2028	4/24/2023	114.61932	110.4176686	106.3970245	102.5485879	98.86403748	95.33550036	91.9555252	88.71705736	85.61341548
230424A00010	4/24/2023	4.55	4/24/2025	4/24/2023	103.56021	102.4910936	101.4441328	100.4186471	99.41397967	98.42950013	97.4646034	96.5187084	95.59125684
230424A00011	4/24/2023	4.55	4/24/2025	4/24/2023	103.56021	102.4910936	101.4441328	100.4186471	99.41397967	98.42950013	97.4646034	96.5187084	95.59125684
230424A00012	4/24/2023	4.28	4/24/2026	4/24/2023	107.20287	105.1173883	103.0834192	101.0993502	99.16363002	97.27476715	95.43132706	93.63192957	91.87524638
230424A00026	4/24/2023	4.28	4/24/2026	4/24/2023	107.20287	105.1173883	103.0834192	101.0993502	99.16363002	97.27476715	95.43132706	93.63192957	91.87524638
230424A00036	4/24/2023	5.13	4/24/2024	4/24/2023	100.24436	100.1776932	100.1111254	100.0446561	99.97828496	99.91201179	99.84583639	99.77975853	99.713778
230424A00037	4/24/2023	4.79	10/24/2024	4/24/2023	101.89925	101.3287867	100.7647257	100.2069597	99.65538371	99.10989481	98.5703925	98.03677847	97.50895654
230424A00064	4/24/2023	4.28	4/24/2026	4/24/2023	107.20287	105.1173883	103.0834192	101.0993502	99.16363002	97.27476715	95.43132706	93.63192957	91.87524638
230425A00006	4/25/2023	3.89	4/24/2026	4/25/2023	106.66924	104.5841658	102.5507134	100.5672652	98.63226395	96.7442124	94.90167068	93.10325359	91.34762807
230425A00011	4/25/2023	4.3	9/25/2025	4/25/2023	104.84902	103.3618491	101.9034635	100.4731	99.07002172	97.69351708	96.34289881	95.01750281	93.71668725
230425A00013	4/25/2023	4.67	10/25/2024	4/25/2023	101.83974	101.2667589	100.7002362	100.1400652	99.58613929	99.03835442	98.4966087	97.96080252	97.43083845
230425A00020	4/25/2023	4.62	10/25/2024	4/25/2023	101.811	101.2381069	100.6716772	100.1115984	99.55776405	99.01006997	98.46841432	97.9326975	97.40282209
230425A00024	4/25/2023	4.48	4/25/2025	4/25/2023	103.49486	102.4234311	101.3742636	100.3466708	99.33999106	98.35358974	97.38685762	96.43920967	95.5100839
230425A00028	4/25/2023	4.42	4/25/2025	4/25/2023	103.43037	102.3593113	101.3105073	100.2832728	99.27694624	98.29089314	97.32450437	96.37719503	95.44840322
230425A00029	4/25/2023	4.14	4/24/2026	4/25/2023	106.91301	104.8305861	102.7996187	100.8184925	98.88565794	96.99962503	95.15896081	93.36228659	91.6082755
230425A00030	4/25/2023	4.01	4/26/2027	4/25/2023	110.4292	107.3002718	104.2779043	101.3578536	98.53607208	95.80869702	93.17204104	90.62258296	88.1569592
230425A00031	4/25/2023	3.69	4/25/2028	4/25/2023	113.60323	109.403804	105.386019	101.5410151	97.86041762	94.33630477	90.96118004	87.72794712	84.62988618

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230425A00032	4/25/2023	3.95	4/25/2028	4/25/2023	114.102	109.908008	105.8949051	102.0538946	98.37665344	94.85530762	91.48240503	88.25089062	85.15408289
230425A00037	4/25/2023	4.65	10/25/2024	4/25/2023	101.82824	101.2552981	100.6888126	100.1286785	99.57478919	99.02704064	98.48533095	97.94956051	97.4196319
230425A00040	4/25/2023	3.89	4/24/2026	4/25/2023	106.66924	104.5841658	102.5507134	100.5672652	98.63226395	96.7442124	94.90167068	93.10325359	91.34762807
230425A00045	4/25/2023	3.95	4/25/2028	4/25/2023	114.102	109.908008	105.8949051	102.0538946	98.37665344	94.85530762	91.48240503	88.25089062	85.15408289
230425A00047	4/25/2023	4.01	4/26/2027	4/25/2023	110.4292	107.3002718	104.2779043	101.3578536	98.53607208	95.80869702	93.17204104	90.62258296	88.1569592
230425A00050	4/25/2023	4.14	4/24/2026	4/25/2023	106.91301	104.8305861	102.7996187	100.8184925	98.88565794	96.99962503	95.15896081	93.36228659	91.6082755
230425A00052	4/25/2023	4.01	4/26/2027	4/25/2023	110.4292	107.3002718	104.2779043	101.3578536	98.53607208	95.80869702	93.17204104	90.62258296	88.1569592
230425A00053	4/25/2023	4.14	4/24/2026	4/25/2023	106.91301	104.8305861	102.7996187	100.8184925	98.88565794	96.99962503	95.15896081	93.36228659	91.6082755
230425A00076	4/25/2023	4.95	4/25/2024	4/25/2023	100.24171	100.1722788	100.1029538	100.0337332	99.96461684	99.89560438	99.82669562	99.75789033	99.68918829
230425A00104	4/25/2023	3.86	7/15/2026	4/25/2023	107.44624	105.1294519	102.8746104	100.679663	98.54263757	96.46164162	94.43485804	92.46054164	90.5370157
230425A00124	4/25/2023	4.42	4/25/2025	4/25/2023	103.43037	102.3593113	101.3105073	100.2832728	99.27694624	98.29089314	97.32450437	96.37719503	95.44840322
230426A00003	4/26/2023	3.89	5/9/2028	4/26/2023	114.00453	109.774085	105.7274992	101.8557594	98.15034552	94.60320105	91.20670482	87.95364494	84.83719455
230426A00004	4/26/2023	3.89	5/9/2028	4/26/2023	114.00453	109.774085	105.7274992	101.8557594	98.15034552	94.60320105	91.20670482	87.95364494	84.83719455
230426A00005	4/26/2023	3.91	6/13/2028	4/26/2023	114.45232	110.116676	105.9729798	102.0116364	98.22359161	94.60029435	91.13366533	87.81606819	84.64028246
230426A00006	4/26/2023	3.91	6/13/2028	4/26/2023	114.45232	110.116676	105.9729798	102.0116364	98.22359161	94.60029435	91.13366533	87.81606819	84.64028246
230426A00007	4/26/2023	3.92	7/11/2028	4/26/2023	114.78651	110.3665784	106.1453721	102.112845	98.25952028	94.57645108	91.0551873	87.6877453	84.46657932
230426A00008	4/26/2023	3.92	7/11/2028	4/26/2023	114.78651	110.3665784	106.1453721	102.112845	98.25952028	94.57645108	91.0551873	87.6877453	84.46657932
230426A00009	4/26/2023	3.94	8/8/2028	4/26/2023	115.1579	110.6541459	106.3560451	102.2531212	98.33548925	94.59381494	91.0192812	87.60355696	84.33876794
230426A00010	4/26/2023	3.94	8/8/2028	4/26/2023	115.1579	110.6541459	106.3560451	102.2531212	98.33548925	94.59381494	91.0192812	87.60355696	84.33876794
230426A00011	4/26/2023	3.96	9/12/2028	4/26/2023	115.60467	110.9954055	106.6007289	102.4094976	98.41120637	94.59594719	90.95437204	87.47765833	84.15747667
230426A00012	4/26/2023	3.96	9/12/2028	4/26/2023	115.60467	110.9954055	106.6007289	102.4094976	98.41120637	94.59594719	90.95437204	87.47765833	84.15747667
230426A00013	4/26/2023	3.98	10/10/2028	4/26/2023	115.98376	111.2886867	106.8154624	102.5523905	98.48845516	94.61327705	90.91707267	87.39061716	84.02520935
230426A00014	4/26/2023	3.98	10/10/2028	4/26/2023	115.98376	111.2886867	106.8154624	102.5523905	98.48845516	94.61327705	90.91707267	87.39061716	84.02520935
230426A00024	4/26/2023	4.97	4/26/2024	4/26/2023	100.25255	100.1803425	100.1082493	100.0362666	99.96439424	99.89263193	99.82097944	99.74943651	99.6780029
230426A00025	4/26/2023	3.62	4/26/2028	4/26/2023	113.32826	109.1315939	105.1166115	101.2744439	97.59670914	94.07547846	90.70324921	87.47291949	84.37776448
230426A00026	4/26/2023	4.61	10/25/2024	4/26/2023	101.80525	101.2323765	100.6659654	100.1059051	99.552089	99.00441308	98.46277544	97.9270765	97.39721882
230426A00030	4/26/2023	3.81	4/27/2026	4/26/2023	106.53459	104.4425967	102.4025379	100.4127776	98.47174401	96.57792666	94.72987292	92.92618555	91.16552015
230426A00033	4/26/2023	3.88	4/26/2028	4/26/2023	113.82809	109.636836	105.6265133	101.788317	98.11391647	94.59543097	91.22540225	87.99676971	84.90284687
230426A00036	4/26/2023	4.06	4/27/2026	4/26/2023	106.77948	104.6901501	102.6525826	100.6651494	98.72628665	96.83449114	94.98831721	93.18637422	91.427324
230426A00037	4/26/2023	3.94	4/26/2027	4/26/2023	110.21419	107.0885778	104.0694435	101.1525441	98.33383489	95.60945564	92.97572152	90.42911374	87.96627103
230426A00040	4/26/2023	3.9	4/26/2028	4/26/2023	113.90946	109.716559	105.7046403	101.8648981	98.18899977	94.66906267	91.29762676	88.06762971	84.9723834
230426A00042	4/26/2023	4.97	4/26/2024	4/26/2023	100.25255	100.1803425	100.1082493	100.0362666	99.96439424	99.89263193	99.82097944	99.74943651	99.6780029
230426A00043	4/26/2023	4.35	4/22/2025	4/26/2023	103.32712	102.2646949	101.2241887	100.2049297	99.2062711	98.22759182	97.26829571	96.32781012	95.40558478

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230426A00045	4/26/2023	4.34	4/25/2025	4/26/2023	103.34439	102.2738181	101.2254989	100.1987421	99.19288648	98.20729768	97.24136671	96.29450884	95.3661623
230426A00046	4/26/2023	3.95	4/26/2028	4/26/2023	114.11289	109.9158663	105.8999578	102.0563508	98.37670802	94.85314194	91.47818805	88.24477972	85.14622474
230426A00049	4/26/2023	4.13	4/27/2026	4/26/2023	106.92499	104.8341128	102.7950326	100.8061166	98.86579994	96.97257858	95.12500612	93.32169115	91.5612948
230426A00051	4/26/2023	4.69	10/28/2024	4/26/2023	101.87314	101.2919787	100.7174554	100.1494583	99.58787668	99.03260217	98.48352888	97.94055328	97.40357411
230426A00057	4/26/2023	4.44	4/25/2025	4/26/2023	103.45187	102.3806845	101.3317594	100.3044054	99.29796118	98.31179201	97.34528879	96.39786657	95.46896344
230426A00062	4/26/2023	4.13	4/27/2026	4/26/2023	106.92499	104.8341128	102.7950326	100.8061166	98.86579994	96.97257858	95.12500612	93.32169115	91.5612948
230426A00063	4/26/2023	4.69	10/25/2024	4/26/2023	101.85124	101.2782197	100.7116598	100.1514519	99.59748938	99.0496682	98.50788646	97.97204453	97.44204499
230426A00064	6/15/2023	3.87	6/15/2028	6/15/2023	114.30529	109.9671428	105.8213017	101.8581466	98.06859585	94.44407271	90.97647449	87.65814321	84.48183851
230426A00065	6/15/2023	3.87	6/15/2028	6/15/2023	114.30529	109.9671428	105.8213017	101.8581466	98.06859585	94.44407271	90.97647449	87.65814321	84.48183851
230426A00090	4/26/2023	5.08	4/22/2024	4/26/2023	100.22152	100.1604089	100.099381	100.0384399	99.97758551	99.91681759	99.85613595	99.79554043	99.73503083
230426A00142	4/26/2023	4.51	4/27/2026	4/26/2023	103.76232	102.6722138	101.6037022	100.5561722	99.52902979	98.52170315	97.53364162	96.56431466	95.61321097
230427A00013	4/27/2023	4.74	10/28/2024	4/27/2023	101.9023	101.3210398	100.7464209	100.178329	99.61665329	99.06128548	98.51211963	97.96905221	97.43198195
230427A00028	4/27/2023	4.74	10/28/2024	4/27/2023	101.9023	101.3210398	100.7464209	100.178329	99.61665329	99.06128548	98.51211963	97.96905221	97.43198195
230427A00029	4/27/2023	4.87	4/26/2024	4/27/2023	100.25389	100.1815971	100.1094199	100.0373542	99.96539988	99.89355661	99.82182412	99.75020218	99.67869051
230427A00057	4/27/2023	4.74	10/28/2024	4/27/2023	101.9023	101.3210398	100.7464209	100.178329	99.61665329	99.06128548	98.51211963	97.96905221	97.43198195
230427A00066	4/27/2023	4.07	4/27/2027	4/27/2023	110.62439	107.4896545	104.4617253	101.536343	98.70944841	95.97716806	93.33580441	90.78182667	88.31186224
230427A00069	4/27/2023	4.5	4/28/2025	4/27/2023	103.5456	102.4658241	101.4086458	100.3733615	99.35929512	98.36579847	97.39224934	96.43805048	95.50262826
230427A00076	4/27/2023	5.09	4/30/2024	4/27/2023	100.30011	100.2168182	100.1336644	100.0506473	99.96776655	99.88502187	99.80241292	99.71993939	99.63760095
230427A00077	4/27/2023	4.14	10/27/2026	4/27/2023	108.87649	106.2676796	103.7356391	101.2776404	98.89107318	96.57343694	94.32233498	92.13546961	90.01063729
230427A00078	4/27/2023	4.74	10/29/2024	4/27/2023	101.91161	101.3276087	100.7503052	100.1795877	99.61534392	99.05746416	98.50584112	97.96036991	97.42094799
230428A00010	4/28/2023	4.31	4/28/2025	4/28/2023	103.51252	102.4304117	101.3709896	100.3335479	99.3174071	98.3219152	97.34644671	96.39040113	95.45320182
230428A00017	4/28/2023	4.17	4/28/2026	4/28/2023	107.01913	104.9244871	102.881764	100.8893313	98.94561887	97.04911732	95.19837527	93.39199661	91.62863799
230428A00018	4/28/2023	3.99	4/28/2028	4/28/2023	114.29763	110.0912367	106.0665154	102.2146153	98.52716588	94.99624907	91.6143718	88.37444087	85.26973925
230428A00022	4/28/2023	4.78	10/28/2024	4/28/2023	101.92563	101.3442887	100.7695933	100.2014255	99.63967458	99.08423212	98.53499223	97.99185135	97.45470822
230428A00026	4/28/2023	4.56	4/28/2025	4/28/2023	103.61058	102.5304314	101.4728841	100.4372361	99.42281137	98.42896139	97.45506391	96.50052155	95.56476058
230428A00029	4/28/2023	4.23	4/28/2026	4/28/2023	107.14402	105.0480441	103.0040211	101.0103141	99.06535226	97.16762544	95.3156816	93.508124	91.74360865
230428A00032	4/28/2023	5.11	4/29/2024	4/28/2023	100.29216	100.2116289	100.1312275	100.0509561	99.97081435	99.89080194	99.81091857	99.73116396	99.65153779
230428A00040	4/28/2023	4.78	10/28/2024	4/28/2023	101.92563	101.3442887	100.7695933	100.2014255	99.63967458	99.08423212	98.53499223	97.99185135	97.45470822
230428A00050	4/28/2023	4.31	4/28/2028	4/28/2023	107.49319	105.3677893	103.3090551	101.3143347	99.38110447	97.50695903	95.68960485	93.9268543	92.21661997
230428A00054	4/28/2023	4.62	3/13/2025	4/28/2023	103.20596	102.2516106	101.3149839	100.3955845	99.49293932	98.60659256	97.73610478	96.88105226	96.04102626
230428A00055	4/28/2023	4.61	4/28/2026	4/28/2023	103.87222	102.7810743	101.7115458	100.6630211	99.63490559	98.62662665	97.63763293	96.66739322	95.71539557
230428A00066	4/28/2023	4.78	10/28/2024	4/28/2023	101.92563	101.3442887	100.7695933	100.2014255	99.63967458	99.08423212	98.53499223	97.99185135	97.45470822
230501A00011	5/1/2023	4.09	4/26/2027	5/1/2023	110.67493	107.5422078	104.5161453	101.592493	98.7672003	96.03640145	93.39640621	90.84369064	88.37488852

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230501A00012	5/1/2023	3.98	5/1/2028	5/1/2023	114.28939	110.0748291	106.0425838	102.1837605	98.48994643	94.95318395	91.56594353	88.32109807	85.21189911
230501A00013	5/1/2023	4.54	5/1/2025	5/1/2023	103.61845	102.5302111	101.4649109	100.4218302	99.40027822	98.39959253	97.41913764	96.45830366	95.516505
230501A00022	5/1/2023	4.54	5/1/2025	5/1/2023	103.61845	102.5302111	101.4649109	100.4218302	99.40027822	98.39959253	97.41913764	96.45830366	95.516505
230501A00033	5/1/2023	5.1	5/1/2024	5/1/2023	100.31104	100.2249849	100.1390782	100.0533198	99.96770916	99.88224597	99.79692985	99.71176041	99.62673728
230501A00038	5/1/2023	4.33	5/1/2025	5/1/2023	103.56335	102.4728789	101.4054375	100.3603016	99.33677671	98.3341968	97.35192297	96.38934208	95.44586549
230501A00039	5/1/2023	4.33	5/1/2025	5/1/2023	103.56335	102.4728789	101.4054375	100.3603016	99.33677671	98.3341968	97.35192297	96.38934208	95.44586549
230501A00041	5/1/2023	4.58	4/28/2025	5/1/2023	103.63224	102.5519672	101.4942969	100.4585277	99.44398346	98.45001569	97.4760021	96.52134524	95.58547135
230502A00002	5/2/2023	5.05	5/28/2024	5/2/2023	100.57529	100.4144464	100.254119	100.0943074	99.93500929	99.7762221	99.61794339	99.46017073	99.3029017
230502A00017	5/2/2023	4.26	5/4/2026	5/2/2023	107.27236	105.1587544	103.0978088	101.0878522	99.12728264	97.21456036	95.3482054	93.52679459	91.74895892
230502A00024	5/2/2023	4.38	5/2/2025	5/2/2023	103.45323	102.3632809	101.2963711	100.2517759	99.22879955	98.22677517	97.24506295	96.28304895	95.34014376
230502A00025	5/2/2023	4.81	11/1/2024	5/2/2023	101.98129	101.3889199	100.8034425	100.224734	99.65267726	99.08715819	98.5280651	97.97528888	97.42872286
230502A00034	5/2/2023	4.92	5/2/2024	5/2/2023	100.30516	100.2163516	100.1277058	100.0392198	99.95089325	99.8627256	99.77471647	99.68686542	99.59917201
230502A00038	5/2/2023	3.86	5/2/2028	5/2/2023	113.80977	109.6022445	105.5769456	101.7249713	98.03790622	94.50779099	91.12709452	87.88868861	84.78582405
230502A00042	5/2/2023	4.64	11/4/2024	5/2/2023	101.90782	101.3076033	100.7144709	100.1282949	99.54895318	98.97632674	98.41029913	97.85075664	97.29758818
230502A00045	5/2/2023	4.38	5/2/2025	5/2/2023	103.45323	102.3632809	101.2963711	100.2517759	99.22879955	98.22677517	97.24506295	96.28304895	95.34014376
230502A00047	5/2/2023	4.1	5/1/2026	5/2/2023	106.90547	104.8038121	102.7543881	100.7555536	98.80572384	96.90337576	95.0470451	93.23532357	91.46685628
230502A00052	5/2/2023	3.96	5/3/2027	5/2/2023	110.34888	107.2019748	104.1627547	101.2269075	98.39032319	95.64908104	92.99943912	90.43782515	87.96082767
230502A00055	5/2/2023	4.08	5/4/2026	5/2/2023	106.89476	104.7851946	102.7282082	100.7221327	98.76536809	96.85637692	94.99368123	93.17585984	91.40154567
230502A00058	5/2/2023	4.39	5/2/2025	5/2/2023	103.46417	102.3741571	101.3071846	100.2625277	99.23949046	98.23740608	97.25563471	96.29356239	95.35059969
230502A00076	5/2/2023	3.95	5/3/2027	5/2/2023	110.31797	107.1715479	104.1327953	101.1974036	98.36126347	95.62045435	92.97123471	90.41003264	87.933437
230502A00079	5/2/2023	3.6	5/2/2028	5/2/2023	113.30789	109.0949441	105.0649699	101.2090144	97.51861027	93.98574964	90.60285653	87.36276101	84.25867509
230502A00081	5/2/2023	3.96	5/3/2027	5/2/2023	110.34888	107.2019748	104.1627547	101.2269075	98.39032319	95.64908104	92.99943912	90.43782515	87.96082767
230502A00086	5/2/2023	4.08	5/1/2026	5/2/2023	106.86368	104.7624659	102.7134786	100.7150722	98.76566203	96.86372548	95.00779843	93.19647283	91.42839399
230502A00120	5/2/2023	4.38	5/2/2025	5/2/2023	103.45323	102.3632809	101.2963711	100.2517759	99.22879955	98.22677517	97.24506295	96.28304895	95.34014376
230502A00122	5/2/2023	3.7	5/3/2027	5/2/2023	109.96178	106.8110316	103.7683668	100.8294477	97.99014156	95.24650584	92.59477841	90.03136799	87.55284525
230503A00004	5/3/2023	3.94	5/3/2027	5/3/2023	110.28706	107.1411209	104.1028358	101.1678998	98.33220376	95.59182765	92.9430303	90.38224013	87.90604633
230503A00012	5/3/2023	3.82	5/3/2028	5/3/2023	113.6565	109.4493875	105.4246174	101.5732763	97.88693853	94.35763502	90.97782596	87.74037509	84.63852585
230503A00014	5/3/2023	3.94	5/3/2027	5/3/2023	110.28706	107.1411209	104.1028358	101.1678998	98.33220376	95.59182765	92.9430303	90.38224013	87.90604633
230503A00017	5/3/2023	4.41	11/4/2024	5/3/2023	101.8933	101.291585	100.6969907	100.1093904	99.52866114	98.95468265	98.38733756	97.82651118	97.27209148
230503A00020	5/3/2023	3.84	5/3/2028	5/3/2023	113.73825	109.5294765	105.5030959	101.6501949	97.96234603	94.43157819	91.05034976	87.81152273	84.70833888
230503A00022	5/3/2023	4.4	5/2/2025	5/3/2023	103.47511	102.3850334	101.3179982	100.2732794	99.25018138	98.24803699	97.26620647	96.30407583	95.36105563
230503A00025	5/3/2023	3.84	5/3/2028	5/3/2023	113.73825	109.5294765	105.5030959	101.6501949	97.96234603	94.43157819	91.05034976	87.81152273	84.70833888
230503A00029	5/3/2023	4.08	5/4/2026	5/3/2023	106.89476	104.7851946	102.7282082	100.7221327	98.76536809	96.85637692	94.99368123	93.17585984	91.40154567

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230503A00030	5/3/2023	3.84	5/3/2028	5/3/2023	113.73825	109.5294765	105.5030959	101.6501949	97.96234603	94.43157819	91.05034976	87.81152273	84.70833888
230503A00031	5/3/2023	4.4	5/2/2025	5/3/2023	103.47511	102.3850334	101.3179982	100.2732794	99.25018138	98.24803699	97.26620647	96.30407583	95.36105563
230503A00032	5/3/2023	4.08	5/1/2026	5/3/2023	106.86368	104.7624659	102.7134786	100.7150722	98.76566203	96.86372548	95.00779843	93.19647283	91.42839399
230503A00034	5/3/2023	3.84	5/3/2028	5/3/2023	113.73825	109.5294765	105.5030959	101.6501949	97.96234603	94.43157819	91.05034976	87.81152273	84.70833888
230503A00036	5/3/2023	4.15	5/2/2025	5/3/2023	103.37593	102.2838724	101.2149431	100.1684129	99.14358239	98.13978109	97.15636581	96.1927194	95.24824941
230503A00038	5/3/2023	4.15	5/2/2025	5/3/2023	103.37593	102.2838724	101.2149431	100.1684129	99.14358239	98.13978109	97.15636581	96.1927194	95.24824941
230503A00045	5/3/2023	4.96	5/3/2024	5/3/2023	100.31842	100.2268439	100.1354428	100.0442133	99.95315484	99.86226705	99.7715494	99.6810014	99.59062256
230503A00046	5/3/2023	4.96	4/29/2024	5/3/2023	100.28008	100.1995577	100.1191667	100.0389056	99.9587741	99.87877198	99.79889889	99.71915454	99.63953861
230503A00070	5/3/2023	4.73	5/3/2024	5/3/2023	100.30821	100.2165336	100.1250337	100.0337068	99.94255227	99.85156971	99.76075859	99.67011839	99.57964861
230503A00072	5/3/2023	3.83	5/4/2026	5/3/2023	106.64778	104.5355217	102.4760171	100.4675904	98.50863382	96.59760222	94.73301057	92.91343092	91.13748981
230504A00006	5/4/2023	3.79	12/6/2027	5/4/2023	112.01078	108.2446899	104.6277272	101.1531299	97.81448083	94.60569157	91.52098339	88.55486942	85.70213804
230504A00007	5/4/2023	3.82	7/6/2027	5/4/2023	110.56105	107.2363268	104.030528	100.9386911	97.95609326	95.07823822	92.30084392	89.61983065	87.03131009
230504A00011	5/4/2023	3.7	5/4/2026	5/4/2023	106.37469	104.2653565	102.2087201	100.2031049	98.24690463	96.33857572	94.47663465	92.65965491	90.88626442
230504A00014	5/4/2023	4.98	4/29/2024	5/4/2023	100.28169	100.2011672	100.1207748	100.0405123	99.96037947	99.88037597	99.80050152	99.72075579	99.6411385
230504A00018	5/4/2023	4.24	5/5/2025	5/4/2023	103.32706	102.2298371	101.1559919	100.1047776	99.07548353	98.06742817	97.07995815	96.11244665	95.16429211
230504A00019	5/4/2023	3.95	5/4/2026	5/4/2023	106.62205	104.5154014	102.4612745	100.4580019	98.50398536	96.59768887	94.73763599	92.92240696	91.15063609
230504A00020	5/4/2023	3.83	5/4/2027	5/4/2023	109.95703	106.8135317	103.7777208	100.8452865	98.01211497	95.27428171	92.62804147	90.06981896	87.59619999
230504A00021	5/4/2023	3.76	5/4/2028	5/4/2023	113.4212	109.2161796	105.1935589	101.3444206	97.66033059	94.13331228	90.75581884	87.52070775	84.42121673
230504A00034	5/4/2023	3.95	5/4/2026	5/4/2023	106.62205	104.5154014	102.4612745	100.4580019	98.50398536	96.59768887	94.73763599	92.92240696	91.15063609
230504A00039	5/4/2023	4.97	5/6/2024	5/4/2023	100.34854	100.2486658	100.1490047	100.0495516	99.95030568	99.85126633	99.75243285	99.65380458	99.55538086
230504A00040	5/4/2023	4.5	11/4/2024	5/4/2023	101.82348	101.223552	100.6307039	100.0448098	99.46574772	98.89339855	98.32764593	97.76837618	97.21547823
230504A00041	5/4/2023	3.95	5/4/2026	5/4/2023	106.62205	104.5154014	102.4612745	100.4580019	98.50398536	96.59768887	94.73763599	92.92240696	91.15063609
230504A00042	5/4/2023	3.83	5/4/2027	5/4/2023	109.95703	106.8135317	103.7777208	100.8452865	98.01211497	95.27428171	92.62804147	90.06981896	87.59619999
230504A00043	5/4/2023	3.76	5/4/2028	5/4/2023	113.4212	109.2161796	105.1935589	101.3444206	97.66033059	94.13331228	90.75581884	87.52070775	84.42121673
230504A00046	5/4/2023	4.24	5/5/2025	5/4/2023	103.32706	102.2298371	101.1559919	100.1047776	99.07548353	98.06742817	97.07995815	96.11244665	95.16429211
230504A00047	5/4/2023	4.5	11/4/2024	5/4/2023	101.82348	101.223552	100.6307039	100.0448098	99.46574772	98.89339855	98.32764593	97.76837618	97.21547823
230504A00049	5/4/2023	3.95	5/4/2026	5/4/2023	106.62205	104.5154014	102.4612745	100.4580019	98.50398536	96.59768887	94.73763599	92.92240696	91.15063609
230504A00054	5/4/2023	3.95	5/4/2026	5/4/2023	106.62205	104.5154014	102.4612745	100.4580019	98.50398536	96.59768887	94.73763599	92.92240696	91.15063609
230504A00055	5/4/2023	4.24	5/5/2025	5/4/2023	103.32706	102.2298371	101.1559919	100.1047776	99.07548353	98.06742817	97.07995815	96.11244665	95.16429211
230504A00057	5/4/2023	3.86	5/4/2026	5/4/2023	106.43325	104.3286215	102.2764742	100.2751421	98.32302809	96.41859715	94.5603739	92.74693959	90.97692946
230504A00058	5/4/2023	3.69	5/4/2028	5/4/2023	113.13488	108.9356852	104.9187086	101.0750366	97.39624209	93.87435526	90.50183568	87.27154694	84.1767326
230504A00059	5/4/2023	4.34	5/4/2026	5/4/2023	103.7275	102.5988226	101.4929395	100.4091883	99.34693599	98.30557326	97.28451354	96.28319179	95.30106358
230504A00064	5/4/2023	4.35	11/4/2024	5/4/2023	101.73312	101.133497	100.5409536	99.95536153	99.37659902	98.80454692	98.23908893	97.6801114	97.12750329

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230504A00065	5/4/2023	4.11	5/5/2025	5/4/2023	103.18377	102.0873888	101.0143699	99.96396982	98.93547805	97.92821344	96.94152285	95.97477976	95.02738285
230504A00069	5/4/2023	3.82	5/4/2026	5/4/2023	106.34934	104.2456082	102.1943407	100.1938711	98.24260263	96.33900083	94.48159075	92.66895409	90.89972652
230504A00084	5/4/2023	3.5	5/4/2028	5/4/2023	112.9176	108.707182	104.6799177	100.8268303	97.13943349	93.60970214	90.23004443	86.99327601	83.89259575
230504A00085	5/4/2023	4.24	5/5/2025	5/4/2023	103.32706	102.2298371	101.1559919	100.1047776	99.07548353	98.06742817	97.07995815	96.11244665	95.16429211
230504A00091	5/4/2023	4.66	9/4/2024	5/4/2023	101.4012	100.9675806	100.5376774	100.1114405	99.68882303	99.26977896	98.85426306	98.44223085	98.03363858
230504A00092	5/4/2023	4.5	11/4/2024	5/4/2023	101.82348	101.223552	100.6307039	100.0448098	99.46574772	98.89339855	98.32764593	97.76837618	97.21547823
230505A00001	5/5/2023	4.33	5/5/2025	5/5/2023	103.42625	102.3284552	101.2540378	100.2022599	99.17241039	98.1638076	97.17579797	96.2077545	95.25907545
230505A00002	5/5/2023	4.01	5/5/2026	5/5/2023	106.75808	104.647309	102.5891992	100.58208	98.62434725	96.71445927	94.85093431	93.03234759	91.25732861
230505A00005	5/5/2023	3.99	5/5/2026	5/5/2023	106.71607	104.6057489	102.54808	100.5413932	98.58408424	96.67461184	94.81149447	92.99330754	91.21868078
230505A00012	5/5/2023	4.6	11/5/2024	5/5/2023	101.89279	101.2899268	100.6942118	100.1055162	99.52371625	98.94869127	98.38032322	97.81849684	97.26309954
230505A00013	5/5/2023	4.33	5/5/2025	5/5/2023	103.42625	102.3284552	101.2540378	100.2022599	99.17241039	98.1638076	97.17579797	96.2077545	95.25907545
230505A00014	5/5/2023	3.59	5/5/2028	5/5/2023	113.29662	109.0757505	105.0384995	101.1758628	97.47933025	93.94085443	90.55282267	87.30803106	84.19966012
230505A00016	5/5/2023	3.85	5/5/2028	5/5/2023	113.79954	109.5841092	105.5515398	101.6928877	97.99969517	94.46396341	91.07812496	87.83501784	84.72786155
230505A00017	5/5/2023	4.01	5/5/2026	5/5/2023	106.75808	104.647309	102.5891992	100.58208	98.62434725	96.71445927	94.85093431	93.03234759	91.25732861
230505A00022	5/5/2023	3.85	5/5/2028	5/5/2023	113.79954	109.5841092	105.5515398	101.6928877	97.99969517	94.46396341	91.07812496	87.83501784	84.72786155
230505A00027	5/5/2023	4.01	5/5/2026	5/5/2023	106.75808	104.647309	102.5891992	100.58208	98.62434725	96.71445927	94.85093431	93.03234759	91.25732861
230505A00035	5/5/2023	3.9	5/5/2027	5/5/2023	110.18371	107.0339971	103.9922339	101.0540895	98.21543777	95.47234303	92.82104933	90.25797132	87.77968533
230505A00046	5/5/2023	4.33	5/5/2025	5/5/2023	103.42625	102.3284552	101.2540378	100.2022599	99.17241039	98.1638076	97.17579797	96.2077545	95.25907545
230505A00048	5/5/2023	4.01	5/5/2026	5/5/2023	106.75808	104.647309	102.5891992	100.58208	98.62434725	96.71445927	94.85093431	93.03234759	91.25732861
230505A00071	5/5/2023	3.85	5/5/2028	5/5/2023	113.79954	109.5841092	105.5515398	101.6928877	97.99969517	94.46396341	91.07812496	87.83501784	84.72786155
230508A00003	5/8/2023	4.99	5/2/2024	5/8/2023	100.31137	100.2225609	100.13391	100.0454188	99.95708708	99.86891428	99.78090001	99.69304383	99.6053453
230508A00007	5/8/2023	3.92	5/8/2028	5/8/2023	114.11725	109.8872143	105.8408943	101.9692901	98.26389329	94.71665779	91.31997222	88.06663368	84.94982355
230508A00012	5/8/2023	4.43	5/8/2025	5/8/2023	103.56501	102.4583906	101.3755053	100.3155997	99.27794688	98.26185011	97.26664159	96.29168085	95.33635342
230508A00016	5/8/2023	4.14	5/8/2026	5/8/2023	107.06271	104.9406524	102.8716631	100.8540533	98.88620127	96.96654923	95.09359989	93.2659138	91.48210659
230508A00017	5/8/2023	4.01	5/10/2027	5/8/2023	110.57645	107.4071784	104.3468359	101.3910404	98.53561528	95.77657688	93.11012457	90.53263096	88.04063287
230508A00018	5/8/2023	3.92	5/8/2028	5/8/2023	114.11725	109.8872143	105.8408943	101.9692901	98.26389329	94.71665779	91.31997222	88.06663368	84.94982355
230508A00025	5/8/2023	4.69	11/8/2024	5/8/2023	101.97519	101.3639519	100.7600548	100.1633709	99.57377112	98.99112967	98.41532368	97.84623315	97.28374091
230509A00009	5/9/2023	4.45	5/9/2025	5/9/2023	103.59679	102.4873071	101.4016809	100.339147	99.2989731	98.28045743	97.28292746	96.30573826	95.34827109
230509A00010	5/9/2023	4.14	5/8/2026	5/9/2023	107.06271	104.9406524	102.8716631	100.8540533	98.88620127	96.96654923	95.09359989	93.2659138	91.48210659
230509A00019	5/9/2023	4.7	11/8/2024	5/9/2023	101.98133	101.3700649	100.7661469	100.1694422	99.57982179	98.99715989	98.42133361	97.85222298	97.28971079
230509A00035	5/9/2023	4.14	5/8/2026	5/9/2023	107.06271	104.9406524	102.8716631	100.8540533	98.88620127	96.96654923	95.09359989	93.2659138	91.48210659
230509A00036	5/9/2023	4.02	5/10/2027	5/9/2023	110.60755	107.4377903	104.3769747	101.4207182	98.56484375	95.80536729	93.13848783	90.56057763	88.06817316
230509A00037	5/9/2023	4.47	11/8/2024	5/9/2023	101.96664	101.3538397	100.7484265	100.1502656	99.55922683	98.97518331	98.39801111	97.82758923	97.26379948

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230509A00047	5/9/2023	4.43	5/9/2025	5/9/2023	103.57453	102.4651752	101.3796785	100.3172722	99.27722402	98.25883223	97.26142436	96.2843555	95.32700698
230509A00048	5/9/2023	4.43	5/9/2025	5/9/2023	103.57453	102.4651752	101.3796785	100.3172722	99.27722402	98.25883223	97.26142436	96.2843555	95.32700698
230509A00060	5/9/2023	3.92	5/9/2028	5/9/2023	114.12765	109.8946891	105.8456688	101.9715714	98.26387377	94.71451649	91.31587558	88.06073653	84.94226993
230509A00118	5/9/2023	4.12	5/8/2026	5/9/2023	107.02054	104.8989318	102.8303868	100.8132125	98.84578748	96.9265541	95.05401533	93.22673196	91.44331983
230510A00007	5/10/2023	4.39	5/9/2025	5/10/2023	103.53	102.4209114	101.3356738	100.2735227	99.23372587	98.21558184	97.21841815	96.24158999	95.28447877
230510A00009	5/10/2023	4.07	5/11/2026	5/10/2023	106.94609	104.8172652	102.741827	100.7180705	98.74435932	96.81912142	94.94084637	93.10808223	91.31943286
230510A00012	5/10/2023	5.02	5/10/2024	5/10/2023	100.39301	100.2820652	100.1713828	100.0609587	99.95079213	99.8408821	99.73122768	99.62182793	99.51268193
230510A00014	5/10/2023	4.07	5/11/2026	5/10/2023	106.94609	104.8172652	102.741827	100.7180705	98.74435932	96.81912142	94.94084637	93.10808223	91.31943286
230510A00018	11/10/2023	3.61	11/10/2026	11/10/2023	107.64068	105.0097399	102.4571708	99.98015517	97.57599528	95.24210844	92.97602098	90.7753629	88.63786274
230510A00022	5/10/2023	5.01	5/15/2024	5/10/2023	100.44108	100.3162987	100.1918389	100.0677041	99.94389301	99.82040427	99.69723659	99.57438868	99.45185924
230510A00023	5/10/2023	4.74	9/30/2024	5/10/2023	101.67591	101.1708248	100.6707541	100.1756276	99.68537232	99.19991663	98.71919031	98.2431245	97.7716517
230510A00031	5/10/2023	4.14	5/9/2025	5/10/2023	103.42907	102.3179617	101.2307909	100.1667924	99.12522986	98.1053982	97.10662143	96.12825143	95.16966644
230510A00033	5/10/2023	4.39	5/12/2025	5/10/2023	103.5582	102.4409341	101.3478644	100.2782139	99.23123438	98.20620932	97.20245216	96.21930472	95.25613578
230510A00037	5/10/2023	3.84	5/10/2028	5/10/2023	113.80951	109.5803434	105.5351228	101.6648268	97.96092606	94.41535522	91.02048526	87.76909712	84.65435735
230510A00057	5/10/2023	3.98	5/11/2026	5/10/2023	106.75557	104.6288003	102.5553767	100.5335947	98.5618192	96.6384792	94.76206532	92.93112666	91.14426805
230510A00062	8/10/2023	3.78	8/10/2026	8/10/2023	107.20251	104.8254137	102.513501	100.2646302	98.07673926	95.94784519	93.87604103	91.85949231	89.89643389
230511A00011	5/11/2023	4.54	11/5/2024	5/11/2023	101.85648	101.2537407	100.6581485	100.0695747	99.48789557	98.91299037	98.34474112	97.78303257	97.22775213
230511A00015	5/11/2023	4.25	5/12/2025	5/11/2023	103.40121	102.2848734	101.192723	100.123978	99.07789053	98.05374449	97.05085359	96.06855997	95.1062327
230511A00023	5/11/2023	3.95	5/19/2026	5/11/2023	106.77207	104.6237444	102.5296885	100.4881541	98.49746406	96.55600782	94.66223859	92.81467013	91.01187391
230511A00029	5/11/2023	4.25	5/9/2025	5/11/2023	103.37416	102.2659882	101.1816572	100.1203992	99.08148233	98.06420545	97.06789641	96.0919107	95.13563002
230511A00032	5/11/2023	3.7	5/11/2026	5/11/2023	106.44251	104.3137135	102.2384277	100.2149401	98.24160746	96.31685173	94.43915652	92.60706435	90.81917383
230511A00034	5/11/2023	4	5/12/2025	5/11/2023	103.29939	102.1810177	101.0869201	100.0163148	98.96844992	97.94260553	96.9380918	95.9542475	94.99043847
230511A00036	5/11/2023	3.79	5/19/2027	5/11/2023	109.98081	106.796677	103.7227287	100.7544998	97.8877385	95.11839088	92.44259073	89.85664943	87.35704656
230511A00038	5/11/2023	3.95	5/11/2026	5/11/2023	106.69206	104.5659787	102.4932266	100.4721028	98.5009725	96.57826512	94.70247164	92.87214147	91.08587978
230511A00039	5/11/2023	3.86	11/27/2026	5/11/2023	108.46631	105.7774375	103.1696669	100.640036	98.18571468	95.80399539	93.49228708	91.24810916	89.06908593
230511A00042	5/11/2023	3.72	5/11/2028	5/11/2023	113.32656	109.1045643	105.0664142	101.2030869	97.50605085	93.96723886	90.57902052	87.33417582	84.22587067
230511A00043	5/11/2023	3.72	5/16/2028	5/11/2023	113.37583	109.1393118	105.0877574	101.2120603	97.50361565	93.95428858	90.55638591	87.30262942	84.18613103
230511A00044	5/11/2023	3.79	5/11/2027	5/11/2023	109.90214	106.7407141	103.6881125	100.7399515	97.89205391	95.14043603	92.48129725	89.91101042	87.42611275
230511A00046	5/11/2023	3.95	5/11/2026	5/11/2023	106.69206	104.5659787	102.4932266	100.4721028	98.5009725	96.57826512	94.70247164	92.87214147	91.08587978
230511A00050	5/11/2023	3.98	5/11/2026	5/11/2023	106.75557	104.6288003	102.5553767	100.5335947	98.5618192	96.6384792	94.76206532	92.93112666	91.14426805
230511A00052	5/11/2023	4.25	5/12/2025	5/11/2023	103.40121	102.2848734	101.192723	100.123978	99.07789053	98.05374449	97.05085359	96.06855997	95.1062327
230511A00053	5/11/2023	4.53	11/12/2024	5/11/2023	101.91253	101.2907034	100.6764858	100.0697364	99.4703193	98.87810201	98.29295506	97.71475214	97.14336993
230511A00067	5/11/2023	4.58	11/13/2024	5/11/2023	101.95276	101.3280895	100.7110979	100.1016403	99.49957916	98.90478003	98.31711187	97.73644673	97.16265971

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230511A00068	5/11/2023	4.31	5/12/2025	5/11/2023	103.46849	102.3517565	101.2592122	100.1900791	99.14360933	98.11908656	97.1158244	96.13316487	95.17047688
230511A00069	5/11/2023	3.98	5/12/2026	5/11/2023	106.76565	104.6361034	102.5600161	100.5356818	98.56145975	96.63577421	94.75711106	92.92401496	91.13508655
230511A00080	5/11/2023	3.49	5/11/2028	5/11/2023	112.94393	108.7139919	104.6687385	100.7990865	97.09644808	93.55270414	90.16017585	86.91159818	83.80009519
230512A00005	5/12/2023	4.76	5/10/2024	5/12/2023	100.37724	100.2661761	100.1553762	100.0448364	99.93455584	99.82453347	99.71476836	99.60525953	99.49600606
230512A00007	5/12/2023	4.08	5/12/2025	5/12/2023	103.38919	102.2702783	101.175654	100.1045299	99.05615384	98.02980581	97.02479578	96.04046231	95.07617109
230512A00008	5/12/2023	3.75	5/12/2026	5/12/2023	106.55833	104.425602	102.3465253	100.3193809	98.34251951	96.41435745	94.53337302	92.69810374	90.90714345
230512A00009	5/12/2023	4.08	5/12/2025	5/12/2023	103.38919	102.2702783	101.175654	100.1045299	99.05615384	98.02980581	97.02479578	96.04046231	95.07617109
230512A00010	5/12/2023	3.75	5/12/2026	5/12/2023	106.55833	104.425602	102.3465253	100.3193809	98.34251951	96.41435745	94.53337302	92.69810374	90.90714345
230512A00011	5/12/2023	3.78	5/12/2028	5/12/2023	113.58314	109.3531935	105.3074753	101.4369412	97.7330387	94.18768141	90.79322075	87.54241972	84.42842838
230512A00020	5/12/2023	4.6	11/12/2024	5/12/2023	101.95624	101.3342605	100.7198911	100.1129913	99.51342509	98.92105995	98.33576641	97.75741813	97.18589178
230512A00021	5/12/2023	4.99	5/10/2024	5/12/2023	100.38968	100.2787394	100.1680599	100.0576388	99.94747519	99.83756814	99.72791668	99.6185199	99.50937685
230512A00022	5/12/2023	4.33	5/12/2025	5/12/2023	103.49092	102.3740509	101.2813753	100.2121128	99.16551559	98.14086725	97.13748134	96.15469983	95.1918916
230512A00023	5/12/2023	4.6	11/13/2024	5/12/2023	101.9653	101.340589	100.7235537	100.1140528	99.51194871	98.917107	98.32939662	97.74868961	97.17486109
230512A00026	5/12/2023	4	5/12/2026	5/12/2023	106.80804	104.678038	102.6015019	100.5767277	98.60207442	96.67596609	94.79688834	92.96338559	91.17405827
230512A00033	5/12/2023	3.75	5/12/2026	5/12/2023	106.55833	104.425602	102.3465253	100.3193809	98.34251951	96.41435745	94.53337302	92.69810374	90.90714345
230512A00037	5/12/2023	3.86	5/12/2027	5/12/2023	110.13004	106.9623645	103.9037727	100.9498657	98.09645426	95.33954322	92.67532118	90.10015081	87.61055974
230512A00042	5/12/2023	4	5/12/2026	5/12/2023	106.80804	104.678038	102.6015019	100.5767277	98.60207442	96.67596609	94.79688834	92.96338559	91.17405827
230515A00011	5/15/2023	4.11	5/15/2026	5/15/2023	107.07252	104.9316261	102.8446071	100.809734	98.82534866	96.8898587	95.00173434	93.15950541	91.36175849
230515A00024	5/15/2023	4.69	11/15/2024	5/15/2023	102.04036	101.4099824	100.7874145	100.172513	99.56513657	98.96514744	98.37241112	97.78679641	97.20817525
230515A00030	5/15/2023	5.06	5/15/2024	5/15/2023	100.44733	100.3225337	100.1980678	100.073927	99.95010993	99.82661519	99.70344153	99.58058765	99.45805226
230515A00031	5/15/2023	4.41	5/15/2025	5/15/2023	103.609	102.4834046	101.3823674	100.3050852	99.25079367	98.21876129	97.20828717	96.21869964	95.2493547
230515A00034	5/15/2023	4.69	11/15/2024	5/15/2023	102.04036	101.4099824	100.7874145	100.172513	99.56513657	98.96514744	98.37241112	97.78679641	97.20817525
230515A00045	5/15/2023	4.08	5/15/2026	5/15/2023	107.00868	104.8684837	102.7821429	100.7479346	98.76420084	96.82934975	94.94185186	93.10023736	91.30309315
230515A00072	5/15/2023	4.42	5/9/2025	5/15/2023	103.5634	102.4541092	101.3686773	100.3063348	99.26634948	98.24801963	97.25067281	96.27366412	95.31637493
230515A00074	5/15/2023	4.11	5/15/2026	5/15/2023	107.07252	104.9316261	102.8446071	100.809734	98.82534866	96.8898587	95.00173434	93.15950541	91.36175849
230515A00078	5/15/2023	3.96	5/17/2027	5/15/2023	110.49304	107.306235	104.2294862	101.2583451	98.3885713	95.61612197	92.93714084	90.34794851	87.84503308
230515A00080	5/15/2023	3.88	5/15/2028	5/15/2023	114.02522	109.7780943	105.7161369	101.8302443	98.11180965	94.55269602	91.14520774	87.8820639	84.75637359
230516A00009	5/16/2023	4.46	5/16/2025	5/16/2023	103.67507	102.5464055	101.4424212	100.3623085	99.30529766	98.27065192	97.2576655	96.26566212	95.29399341
230516A00013	5/16/2023	4.11	5/15/2026	5/16/2023	107.07252	104.9316261	102.8446071	100.809734	98.82534866	96.8898587	95.00173434	93.15950541	91.36175849
230516A00035	5/16/2023	4.11	5/15/2026	5/16/2023	107.07252	104.9316261	102.8446071	100.809734	98.82534866	96.8898587	95.00173434	93.15950541	91.36175849
230516A00036	5/16/2023	4	5/17/2027	5/16/2023	110.61819	107.4294222	104.3507584	101.3777513	98.50615912	95.7319372	93.05122785	90.46035017	87.95579089
230516A00037	5/16/2023	3.91	5/16/2028	5/16/2023	114.1592	109.9066139	105.8395018	101.9487403	98.22570483	94.66224175	91.25064	87.98360429	84.85423028
230516A00044	5/16/2023	4.72	11/15/2024	5/16/2023	102.05934	101.4288956	100.8062611	100.1912936	99.58385167	98.98379762	98.39099695	97.80531844	97.22663401

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230516A00060	5/16/2023	5.07	5/9/2024	5/16/2023	100.38855	100.2803696	100.1724371	100.0647501	99.95730789	99.85010949	99.74315406	99.63644073	99.52996864
230516A00067	5/16/2023	4.44	5/16/2025	5/16/2023	103.65242	102.5238945	101.420044	100.340063	99.28318201	98.24866413	97.23580371	96.2439245	95.27237818
230516A00069	5/16/2023	4.1	5/15/2026	5/16/2023	107.05124	104.9105786	102.8237857	100.7891342	98.80496606	96.86968905	94.98177351	93.13974939	91.34220338
230516A00123	5/16/2023	5.01	5/16/2024	5/16/2023	100.45092	100.3233628	100.1961464	100.0692688	99.94272859	99.81652433	99.69065466	99.56511822	99.43991363
230517A00014	5/17/2023	4.14	5/18/2026	5/17/2023	107.16791	105.0179514	102.9222316	100.8790077	98.88660508	96.94341604	95.04789619	93.1985616	91.39398581
230517A00019	5/17/2023	4.7	1/17/2025	5/17/2023	102.69328	101.8898395	101.0990123	100.3205054	99.55403194	98.79931385	98.05608166	97.32407408	96.60303769
230517A00020	5/17/2023	4.47	7/17/2025	5/17/2023	104.32834	103.0313664	101.7608992	100.5161333	99.29629402	98.10063835	96.9284528	95.77905221	94.65177823
230517A00028	5/19/2023	4.87	5/17/2024	5/19/2023	100.45782	100.3273378	100.1972116	100.0674402	99.93802213	99.80895587	99.68023993	99.55187283	99.4238531
230517A00046	5/17/2023	4.53	5/16/2025	5/17/2023	103.75433	102.6251938	101.5207414	100.4401675	99.38270245	98.34760917	97.33418177	96.3417438	95.36964673
230517A00048	5/17/2023	4.17	5/15/2026	5/17/2023	107.20019	105.0579109	102.9695355	100.9333329	98.9476443	97.0108766	95.12149929	93.27804151	91.47908918
230518A00015	5/18/2023	4.64	5/16/2025	5/18/2023	103.87889	102.7490042	101.643816	100.5625175	99.50433855	98.46854199	97.45442162	96.46130071	95.48853052
230518A00017	5/18/2023	4.28	5/18/2026	5/18/2023	107.46695	105.3137386	103.2148299	101.1684807	99.17301463	97.22682219	95.32835734	93.4761345	91.66872568
230518A00019	5/18/2023	3.81	5/18/2028	5/18/2023	114.33598	110.0583912	105.9679298	102.0553662	98.31197568	94.7295115	91.3001757	88.01659202	84.87178058
230519A00002	5/19/2023	4.95	11/19/2024	5/19/2023	102.24494	101.6030141	100.9691746	100.343269	99.72514859	99.11466861	98.51168769	97.91606799	97.32767504
230519A00008	5/19/2023	5.22	5/20/2024	5/19/2023	100.51937	100.3806957	100.2424193	100.1045383	99.96705108	99.82995581	99.6932508	99.55693437	99.42100482
230519A00010	5/19/2023	4.91	12/19/2024	5/19/2023	102.53782	101.813535	101.0995233	100.3955627	99.70144165	99.01695437	98.34190091	97.67608681	97.01932289
230519A00011	5/19/2023	4.73	5/19/2025	5/19/2023	104.01178	102.8730658	101.7594062	100.6699816	99.60400551	98.5607252	97.5394199	96.53939909	95.56000097
230519A00012	5/19/2023	4.53	12/19/2025	5/19/2023	106.19107	104.4624008	102.7703683	101.1138726	99.4918572	97.90330791	96.34725053	94.82274886	93.32890282
230519A00013	5/19/2023	4.39	5/19/2026	5/19/2023	107.71312	105.5545373	103.450434	101.3990529	99.39871104	97.4477924	95.54474486	93.68807707	91.87635556
230519A00025	5/19/2023	4.95	11/19/2024	5/19/2023	102.24494	101.6030141	100.9691746	100.343269	99.72514859	99.11466861	98.51168769	97.91606799	97.32767504
230519A00026	5/19/2023	4.73	5/19/2025	5/19/2023	104.01178	102.8730658	101.7594062	100.6699816	99.60400551	98.5607252	97.5394199	96.53939909	95.56000097
230519A00027	5/19/2023	4.39	5/19/2026	5/19/2023	107.71312	105.5545373	103.450434	101.3990529	99.39871104	97.4477924	95.54474486	93.68807707	91.87635556
230519A00028	5/19/2023	4.73	5/19/2025	5/19/2023	104.01178	102.8730658	101.7594062	100.6699816	99.60400551	98.5607252	97.5394199	96.53939909	95.56000097
230519A00029	5/19/2023	4.39	5/19/2026	5/19/2023	107.71312	105.5545373	103.450434	101.3990529	99.39871104	97.4477924	95.54474486	93.68807707	91.87635556
230519A00030	5/19/2023	4.27	5/19/2027	5/19/2023	111.48526	108.2774578	105.1804512	102.1897561	99.30110065	96.51041185	93.81380514	91.20757426	88.68818191
230519A00038	5/19/2023	3.92	5/19/2028	5/19/2023	114.80215	110.5122212	106.409952	102.4860799	98.73185379	95.13900199	91.69970327	88.40655951	85.25257027
230519A00041	5/19/2023	3.92	5/19/2028	5/19/2023	114.80215	110.5122212	106.409952	102.4860799	98.73185379	95.13900199	91.69970327	88.40655951	85.25257027
230522A00014	5/23/2023	5.14	5/22/2024	5/23/2023	100.52865	100.3844448	100.240662	100.0973038	99.9543684	99.81185377	99.66975808	99.52807944	99.386816
230522A00026	5/22/2023	4.35	5/22/2026	5/22/2023	107.66084	105.4947782	103.3835259	101.3253167	99.31845192	97.361301	95.45229791	93.58993822	91.77277611
230522A00029	5/22/2023	4.67	5/22/2025	5/22/2023	103.97384	102.8273112	101.706192	100.6096389	99.53684943	98.48705556	97.45952219	96.45354529	95.46845025
230522A00043	5/22/2023	4.17	5/16/2028	5/22/2023	115.23119	110.9566062	106.8682047	102.9568288	99.21382686	95.63101978	92.20067192	88.91546464	85.76847135
230522A00046	5/22/2023	4.17	5/22/2028	5/22/2023	115.29766	111.0053412	106.9005608	102.9740649	99.21711284	95.62144314	92.17924382	88.88312545	85.72609577
230522A00058	5/22/2023	4.7	5/19/2025	5/22/2023	103.97757	102.8390558	101.7255997	100.6363754	99.57059668	98.52751079	97.50639704	96.50656499	95.5273529

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230522A00093	5/22/2023	4.17	5/22/2028	5/22/2023	115.29766	111.0053412	106.9005608	102.9740649	99.21711284	95.62144314	92.17924382	88.88312545	85.72609577
230523A00008	5/23/2023	4.44	5/26/2026	5/23/2023	107.89942	105.7199857	103.5958873	101.5253282	99.50658683	97.53801113	95.61801475	93.74507401	91.91772487
230523A00014	5/23/2023	5.3	5/22/2024	5/23/2023	100.55173	100.4074936	100.2636858	100.1203026	99.97734228	99.83480282	99.69268234	99.55097898	99.40969087
230523A00024	5/23/2023	4.06	5/24/2027	5/23/2023	111.30678	108.0780951	104.9615424	101.9525643	99.04681485	96.24015183	93.5286257	90.90846932	88.37608821
230523A00027	5/23/2023	5.3	5/23/2024	5/23/2023	100.56236	100.4153491	100.2687809	100.1226522	99.97696102	99.83170538	99.68688329	99.5424928	99.39853196
230523A00030	5/23/2023	5.3	5/23/2024	5/23/2023	100.56236	100.4153491	100.2687809	100.1226522	99.97696102	99.83170538	99.68688329	99.5424928	99.39853196
230523A00031	5/23/2023	4.76	11/22/2024	5/23/2023	102.28585	101.6339421	100.9903726	100.3549797	99.72760796	99.10810592	98.49632584	97.89212368	97.29535899
230523A00045	5/23/2023	5	11/22/2024	5/23/2023	102.30759	101.6573159	101.0153349	100.3814873	99.75561882	99.13757927	98.52722216	97.92440462	97.32898733
230523A00047	5/23/2023	4.77	5/23/2025	5/23/2023	104.09915	102.9491798	101.8247469	100.7250035	99.64914126	98.59638687	97.5660001	96.55727208	95.56952363
230523A00048	5/23/2023	4.44	5/26/2026	5/23/2023	107.89942	105.7199857	103.5958873	101.5253282	99.50658683	97.53801113	95.61801475	93.74507401	91.91772487
230523A00049	5/23/2023	4.31	5/24/2027	5/23/2023	111.66688	108.442679	105.3301871	102.3248677	99.42239959	96.61866383	93.90973263	91.29185925	88.76146842
230523A00083	5/23/2023	4.21	5/23/2028	5/23/2023	115.47442	111.1757305	107.0649143	103.1326981	99.37032216	95.76950718	92.32242458	89.02166946	85.86023508
230523A00085	5/23/2023	4.39	5/23/2029	5/23/2023	120.32992	114.902922	109.7609189	104.8873307	100.2666374	95.8843011	91.72669857	87.78105855	84.03540382
230523A00086	5/23/2023	4.42	5/23/2030	5/23/2023	124.13769	117.5843079	111.4318921	105.6535959	100.2245155	95.12153798	90.32320259	85.80957405	81.56212617
230523A00088	5/23/2023	4.59	5/23/2033	5/23/2023	136.1258	126.060199	116.8602657	108.4458339	100.7445952	93.69128962	87.22698292	81.29842194	75.85745871
230523A00089	5/23/2023	4.65	5/23/2034	5/23/2023	140.04115	128.7722452	118.5616701	109.3026398	100.8997313	93.26761953	86.32995823	80.01839018	74.27167137
230523A00090	5/23/2023	4.71	5/23/2035	5/23/2023	143.556	131.0934374	119.898255	109.8321993	100.7728773	92.61185832	85.25301151	78.61104855	72.61024616
230523A00091	5/23/2023	4.77	5/23/2036	5/23/2023	146.81411	133.1674185	121.0127229	110.1752229	100.5016118	91.85732231	84.12414155	77.19814033	70.98787441
230524A00009	5/24/2023	3.9	5/24/2028	5/24/2023	114.77302	110.4699961	106.3557143	102.4208325	98.65652718	95.05445926	91.60674522	88.30592922	85.14495738
230524A00020	5/24/2023	4.44	5/23/2025	5/24/2023	103.90298	102.7514593	101.6255638	100.5244409	99.44727833	98.39329885	97.36175861	96.35194531	95.36317653
230524A00021	5/24/2023	4.44	5/23/2025	5/24/2023	103.90298	102.7514593	101.6255638	100.5244409	99.44727833	98.39329885	97.36175861	96.35194531	95.36317653
230524A00028	5/24/2023	4.36	5/26/2026	5/24/2023	107.72679	105.5492545	103.427015	101.3582775	99.34132159	97.37449608	95.45621564	93.58495759	91.75925879
230524A00036	5/24/2023	5.34	5/24/2024	5/24/2023	100.57898	100.4291864	100.2798507	100.1309695	99.98254077	99.83456238	99.68703228	99.53994842	99.39330875
230524A00037	5/24/2023	4.69	5/23/2025	5/24/2023	104.00703	102.8576207	101.7337405	100.6345413	99.55921502	98.50698853	97.4771218	96.46890616	95.48166263
230524A00038	5/24/2023	4.36	5/26/2026	5/24/2023	107.72679	105.5492545	103.427015	101.3582775	99.34132159	97.37449608	95.45621564	93.58495759	91.75925879
230524A00055	5/24/2023	4.7	11/22/2024	5/24/2023	102.2467	101.5949396	100.9515116	100.3162589	99.68902612	99.06966179	98.4580182	97.85395133	97.25732075
230525A00004	5/25/2023	4.87	5/27/2025	5/25/2023	104.25713	103.0954599	101.9598162	100.8493255	99.76315724	98.70051722	97.66064539	96.64281419	95.64632682
230525A00014	5/25/2023	5.22	8/23/2024	5/25/2023	101.51665	101.1155015	100.7175362	100.3227156	99.93100238	99.5423599	99.15675202	98.7741432	98.39449844
230525A00024	5/25/2023	5.06	11/25/2024	5/25/2023	102.37766	101.719002	101.068847	100.4270263	99.7933802	99.16775303	98.54999306	97.93995234	97.33748664
230525A00094	5/25/2023	4.31	5/25/2028	5/25/2023	115.91154	111.5983733	107.4738023	103.5285167	99.75371639	96.14108427	92.68275659	89.37129552	86.19966359
230526A00009	5/26/2023	5.33	8/23/2024	5/26/2023	101.5608	101.1595449	100.7614743	100.3665489	99.97473164	99.58598565	99.20027486	98.81756372	98.43781721
230526A00013	5/26/2023	4.39	5/26/2026	5/26/2023	108.07889	105.8918928	103.7605138	101.682945	99.65745359	97.68237671	95.75611784	93.87714362	92.0439808
230526A00016	5/26/2023	4.46	5/26/2027	5/26/2023	112.16238	108.9249194	105.7997077	102.7821822	99.86799638	97.05300719	94.33326427	91.7049996	89.16461783

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230526A00026	5/26/2023	4.49	5/26/2027	5/26/2023	112.25698	109.0180225	105.8913524	102.8724062	99.95683596	97.14049748	94.41943923	91.78989206	89.24825953
230526A00027	5/26/2023	4.49	5/26/2027	5/26/2023	112.25698	109.0180225	105.8913524	102.8724062	99.95683596	97.14049748	94.41943923	91.78989206	89.24825953
230526A00028	5/26/2023	4.38	5/26/2028	5/26/2023	116.21352	111.8913766	107.7582531	103.8048113	100.0222291	96.40216815	92.93674528	89.61850429	86.44039054
230526A00029	5/26/2023	4.53	5/25/2029	5/26/2023	121.07049	115.6191676	110.4540953	105.5586204	100.9171488	96.51507401	92.33870886	88.37522268	84.612583
230526A00031	5/26/2023	4.54	5/24/2030	5/26/2023	124.88225	118.3036705	112.1273776	106.326437	100.8758667	95.7524807	90.93475081	86.40267908	82.13768118
230526A00033	5/26/2023	4.63	5/27/2031	5/26/2023	129.15429	121.403585	114.1927023	107.4807965	101.2303275	95.40677938	89.97840125	84.91597165	80.19258408
230526A00034	5/26/2023	4.66	5/26/2032	5/26/2023	133.12483	124.2018399	115.9738701	108.3824016	101.3741564	94.90060146	88.9175026	83.38452156	78.26485357
230530A00018	5/30/2023	5.13	11/25/2024	5/30/2023	102.42387	101.7650443	101.1147206	100.4727328	99.83892115	99.21312989	98.5952073	97.9850054	97.38237995
230530A00027	5/30/2023	4.22	5/30/2028	5/30/2023	115.59434	111.2740398	107.1432343	103.1925332	99.41307109	95.79647062	92.33481239	89.02060725	85.84677032
230530A00041	5/30/2023	4.93	5/27/2025	5/30/2023	104.32687	103.1647782	102.0287123	100.9178058	99.83122829	98.76818515	97.72791625	96.70969388	95.7128211
230530A00045	5/30/2023	4.56	5/29/2026	5/30/2023	108.39613	106.1572065	103.9767186	101.8527037	99.78328311	97.76665749	95.80110206	93.88496312	92.01665434
230530A00048	5/30/2023	4.45	5/29/2026	5/30/2023	107.95509	105.7669723	103.6345543	101.5560229	99.52964014	97.55373834	95.62671652	93.7470372	91.91322325
230530A00054	5/30/2023	4.56	5/29/2026	5/30/2023	108.39613	106.1572065	103.9767186	101.8527037	99.78328311	97.76665749	95.80110206	93.88496312	92.01665434
230530A00055	5/30/2023	4.56	5/29/2026	5/30/2023	108.39613	106.1572065	103.9767186	101.8527037	99.78328311	97.76665749	95.80110206	93.88496312	92.01665434
230530A00058	5/30/2023	5.5	5/30/2024	5/30/2023	100.67002	100.5035257	100.3375834	100.1721888	100.0073393	99.84303227	99.679265	99.51603487	99.35333924
230530A00118	5/30/2023	4.4	5/28/2027	5/30/2023	111.99617	108.7559104	105.6281712	102.6083699	99.6921431	96.8753324	94.15397293	91.52428318	88.9826552
230530A00161	5/30/2023	5.08	11/29/2024	5/30/2023	102.43233	101.7626396	101.1017196	100.4494028	99.8055219	99.16991386	98.5424199	97.92288523	97.31115901
230530A00166	5/30/2023	4.81	5/30/2025	5/30/2023	104.219	103.0495166	101.9064075	100.788786	99.69580496	98.62665479	97.58056083	96.55678173	95.55460767
230530A00171	5/30/2023	4.43	5/29/2026	5/30/2023	107.91177	105.7241292	103.5921795	101.5141069	99.48817377	97.51271274	95.58612305	93.70686746	91.87346908
230530A00184	5/30/2023	5.5	5/30/2024	5/30/2023	100.67002	100.5035257	100.3375834	100.1721888	100.0073393	99.84303227	99.679265	99.51603487	99.35333924
230531A00006	5/31/2023	5.05	11/25/2024	5/31/2023	102.37105	101.7124245	101.0622936	100.4204968	99.78687435	99.16127063	98.54353388	97.93351619	97.33107331
230531A00036	5/31/2023	4.79	5/30/2025	5/31/2023	104.19559	103.0262484	101.8832819	100.7658008	99.67295816	98.60394419	97.55798436	96.5343374	95.53229351
230531A00037	5/31/2023	4.41	5/29/2026	5/31/2023	107.86845	105.6812862	103.5498047	101.4721909	99.44670741	97.47168714	95.54552958	93.66669772	91.8337149
230531A00038	5/31/2023	4.01	5/28/2027	5/31/2023	111.19234	107.9545966	104.8296201	101.8128097	98.89978294	96.08636377	93.36857085	90.74260734	88.204851
230531A00042	5/31/2023	4.01	5/28/2027	5/31/2023	111.19234	107.9545966	104.8296201	101.8128097	98.89978294	96.08636377	93.36857085	90.74260734	88.204851
230531A00060	5/31/2023	4.44	2/27/2026	5/31/2023	106.89258	104.9621762	103.0766161	101.2345868	99.43482462	97.67611102	95.95727042	94.27716854	92.63471059
230531A00061	5/31/2023	4.42	4/1/2026	5/31/2023	107.22392	105.2020633	103.2291898	101.3038055	99.42447121	97.58980116	95.79846107	94.04916562	92.34067634
230531A00062	5/31/2023	4.39	4/30/2026	5/31/2023	107.50025	105.3949239	103.3418513	101.3393829	99.38593561	97.47998783	95.62007665	93.80479497	92.032789
230531A00063	5/31/2023	4.37	5/29/2026	5/31/2023	107.7818	105.5956001	103.465055	101.3883588	99.36377467	97.38963594	95.46434263	93.58635823	91.75420655
230531A00085	5/31/2023	5.05	12/2/2024	5/31/2023	102.44383	101.7659918	101.097141	100.437103	99.78570417	99.14277553	98.50815249	97.88167471	97.26318593
230531A00088	5/31/2023	4.79	5/30/2025	5/31/2023	104.19559	103.0262484	101.8832819	100.7658008	99.67295816	98.60394419	97.55798436	96.5343374	95.53229351
230531A00090	5/31/2023	4.41	6/1/2026	5/31/2023	107.90248	105.7067986	103.5671681	101.481756	99.44880814	97.46664157	95.53364085	93.64825486	91.8089936
230531A00091	5/31/2023	4.26	6/1/2027	5/31/2023	111.59873	108.3538662	105.2220432	102.1986436	99.27927072	96.4597354	93.73604407	91.10438846	88.56113566

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230531A00099	5/31/2023	4.41	5/29/2026	5/31/2023	107.86845	105.6812862	103.5498047	101.4721909	99.44670741	97.47168714	95.54552958	93.66669772	91.8337149
230601A00006	6/1/2023	4.77	6/2/2025	6/1/2023	104.20395	103.0265294	101.8758471	100.7509966	99.65111345	98.57537176	97.52298155	96.49318705	95.48526479
230601A00007	6/1/2023	5.04	12/2/2024	6/1/2023	102.43704	101.7592233	101.090398	100.4303852	99.77901131	99.13610741	98.50150889	97.8750554	97.25659069
230601A00012	6/1/2023	4.72	6/2/2025	6/1/2023	104.145	102.9679529	101.8176321	100.6931374	99.59360459	98.51820782	97.46615729	96.43669734	95.42910466
230601A00018	6/1/2023	4.1	6/1/2026	6/1/2023	107.51718	105.3201278	103.1792797	101.092801	99.05892979	97.07597542	95.14231542	93.25639198	91.41670878
230601A00022	6/1/2023	5.04	12/2/2024	6/1/2023	102.43704	101.7592233	101.090398	100.4303852	99.77901131	99.13610741	98.50150889	97.8750554	97.25659069
230601A00025	6/1/2023	4.12	6/1/2028	6/1/2023	115.20032	110.88265	106.7546613	102.8069422	99.03060741	95.41726097	91.95896679	88.64822049	85.4779233
230601A00040	6/1/2023	4.35	6/1/2026	6/1/2023	107.77202	105.5777886	103.4395732	101.3555476	99.32395864	97.34312399	95.41142903	93.52732337	91.68931773
230602A00012	6/2/2023	4.39	6/2/2026	6/2/2023	107.87046	105.6723739	103.5304555	101.4428677	99.40785091	97.42371678	95.48884493	93.60167952	91.76072615
230602A00020	6/2/2023	3.94	6/2/2028	6/2/2023	115.03739	110.7040724	106.5616821	102.6007276	98.81224301	95.18775819	91.71926771	88.39920275	85.22040458
230602A00027	6/2/2023	4.2	6/2/2026	6/2/2023	107.74626	105.5438895	103.3979082	101.3064666	99.26779528	97.28019676	95.34204203	93.45176708	91.60786973
230602A00030	6/2/2023	4.2	6/2/2026	6/2/2023	107.74626	105.5438895	103.3979082	101.3064666	99.26779528	97.28019676	95.34204203	93.45176708	91.60786973
230602A00051	6/2/2023	4.33	6/2/2038	6/2/2023	126.69192	118.8377895	111.6854508	105.1613171	99.20032353	93.74486516	88.74387676	84.15203271	79.92905081
230605A00022	6/5/2023	4.39	6/4/2027	6/5/2023	112.04621	108.7858768	105.6393006	102.6018299	99.66903192	96.83668314	94.10075782	91.4574175	88.90300086
230605A00027	6/5/2023	5.51	6/5/2024	6/5/2023	100.73933	100.5562494	100.3738387	100.1920964	100.0110188	99.83060235	99.65084332	99.47173811	99.29328313
230606A00008	6/6/2023	3.98	6/6/2028	6/6/2023	115.24937	110.9003769	106.7433828	102.7688225	98.96766186	95.33136685	91.85187313	88.52155718	85.33320951
230606A00014	6/6/2023	4.35	6/7/2027	6/6/2023	111.9542	108.6869724	105.5340073	102.4906146	99.55233238	96.71490968	93.97429534	91.32662703	88.7682212
230606A00015	6/6/2023	4.24	6/6/2028	6/6/2023	115.75771	111.4144604	107.2624157	103.2920683	99.49444015	95.86104928	92.38387962	89.05535242	85.86829968
230606A00029	6/6/2023	4.45	6/5/2026	6/6/2023	108.03597	105.8277574	103.6761289	101.5792265	99.53527167	97.54255874	95.59945073	93.70437622	91.85582602
230607A00001	6/7/2023	4.9	6/6/2025	6/7/2023	104.40131	103.2119587	102.049856	100.9140713	99.803716	98.71794121	97.65593551	96.61692287	95.60016075
230607A00007	6/7/2023	4.24	6/7/2028	6/7/2023	115.76919	111.4228955	107.2680444	103.2951125	99.49510566	95.85952719	92.38034728	89.04997448	85.86122907
230607A00012	6/7/2023	4.24	6/7/2028	6/7/2023	115.76919	111.4228955	107.2680444	103.2951125	99.49510566	95.85952719	92.38034728	89.04997448	85.86122907
230607A00020	6/7/2023	4.28	6/7/2028	6/7/2023	115.38344	111.1774681	107.1568198	103.3122222	99.63492157	96.11665154	92.74960288	89.52639537	86.44005167
230607A00037	6/7/2023	4.96	6/6/2025	6/7/2023	104.4727	103.2828999	102.1203559	100.9841368	99.87335393	98.78715819	97.72473799	96.68531715	95.66815296
230607A00038	6/7/2023	4.58	6/5/2026	6/7/2023	108.32004	106.1086686	103.9539446	101.8540091	99.8070821	97.81145597	95.86549214	93.96761755	92.1163215
230608A00003	6/8/2023	4.23	6/8/2028	6/8/2023	115.73881	111.3903448	107.2335302	103.2588298	99.45723436	95.82023357	92.33978488	89.00828506	85.81854354
230608A00015	6/8/2023	4.81	6/9/2025	6/8/2023	104.32656	103.1296528	101.9603567	100.8177231	99.70084544	98.60885826	97.5409344	96.49628303	95.47414771
230608A00049	6/8/2023	4.47	6/8/2026	6/8/2023	108.11472	105.8973418	103.7369387	101.6316394	99.57964741	97.57923983	95.62876364	93.72663217	91.87132189
230609A00016	6/9/2023	4.91	6/9/2025	6/9/2023	104.44636	103.2486996	102.0786584	100.9352914	99.81769205	98.72499438	97.65637097	96.61103074	95.58821695
230609A00026	6/9/2023	4.11	6/9/2027	6/9/2023	111.64518	108.3669167	105.203736	102.1509016	99.2039045	96.3584497	93.61044487	90.95598912	88.3913627
230609A00027	6/9/2023	3.99	6/9/2028	6/9/2023	115.32494	110.965907	106.7996307	102.8164851	99.0073862	95.36375437	91.8774828	88.54090863	85.34678595
230609A00034	6/9/2023	3.99	6/9/2028	6/9/2023	115.32494	110.965907	106.7996307	102.8164851	99.0073862	95.36375437	91.8774828	88.54090863	85.34678595
230609A00035	6/9/2023	5.47	6/7/2024	6/9/2023	100.75436	100.5657632	100.377879	100.1907062	100.0042406	99.81847822	99.63341501	99.44904697	99.26537016

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230609A00036	6/9/2023	4.91	6/6/2025	6/9/2023	104.41321	103.2237822	102.061606	100.9257489	99.81532232	98.72947737	97.66740259	96.62832191	95.61149279
230609A00038	6/9/2023	4.91	6/10/2025	6/9/2023	104.45742	103.2570031	102.0843396	100.9384689	99.81847848	98.72349664	97.65269064	96.60526436	95.58045632
230609A00039	6/9/2023	4.73	12/10/2025	6/9/2023	106.42743	104.7207175	103.0497968	101.4136087	99.81113294	98.24138938	96.70343594	95.19636683	93.71931074
230609A00040	6/9/2023	4.38	5/12/2027	6/9/2023	111.74994	108.5569313	105.4736549	102.4956943	99.61883913	96.83907382	94.15256747	91.55566405	89.04487324
230609A00041	6/9/2023	4.53	7/13/2026	6/9/2023	108.65586	106.3364687	104.0787753	101.8807288	99.74036587	97.65580234	95.62522963	93.64691099	91.71917805
230609A00042	6/9/2023	4.46	11/25/2026	6/9/2023	110.04047	107.3360143	104.7128468	102.1680127	99.69868195	97.30214714	94.97581679	92.71720966	90.52394921
230609A00043	6/9/2023	4.32	9/29/2027	6/9/2023	113.16538	109.5654513	106.1021995	102.7696865	99.56226245	96.47455313	93.50144496	90.6380709	87.87979712
230609A00076	7/10/2023	4.19	7/10/2028	7/10/2023	115.92999	111.4884846	107.2462619	103.1932622	99.3199904	95.61748234	92.07727154	88.69135878	85.45218351
230612A00023	6/12/2023	4.32	6/12/2026	6/12/2023	108.1245	105.8901642	103.7135746	101.5928164	99.52605868	97.51154601	95.54759457	93.63258862	91.76497712
230612A00024	6/12/2023	4.69	6/12/2025	6/12/2023	104.40724	103.1988651	102.0185949	100.8654596	99.73852941	98.63691662	97.5597733	96.50628902	95.47568885
230612A00058	6/12/2023	5.16	12/12/2024	6/12/2023	102.63526	101.9296019	101.2336852	100.5473092	99.87027832	99.20240208	98.54349533	97.89337782	97.25187414
230613A00010	6/13/2023	4.9	6/13/2025	6/13/2023	104.47848	103.2698944	102.0894375	100.9361291	99.80903829	98.70727643	97.62999465	96.57638169	95.54566182
230613A00015	6/13/2023	4.73	6/13/2033	6/13/2028	119.37554	114.3686355	109.6700883	105.2572853	101.1094727	97.20758874	93.53411279	90.07292923	86.80920441
230613A00019	6/13/2023	4.49	6/15/2026	6/13/2023	108.24076	106.0025932	103.8223259	101.6980367	99.62788693	97.61011376	95.6430266	93.72500331	91.85448686
230613A00021	6/13/2023	4.35	6/14/2027	6/13/2023	112.03609	108.7480463	105.5755544	102.5138495	99.55839669	96.70487702	93.94917562	91.28737062	88.71572271
230613A00034	6/13/2023	4.56	6/12/2026	6/13/2023	108.35984	106.1286488	103.9549964	101.8369851	99.77279308	97.76067381	95.79895176	93.88601906	92.02033212
230613A00055	6/13/2023	5.14	2/13/2025	6/13/2023	103.37203	102.4924092	101.6278295	100.7779049	99.9422645	99.12054951	98.31241322	97.51752033	96.73554652
230613A00061	6/13/2023	4.56	6/15/2026	6/13/2023	108.39563	106.1557229	103.9737483	101.8477865	99.77599786	97.75661861	95.78795721	93.86839063	91.99636098
230613A00062	6/13/2023	4.97	6/13/2025	6/13/2023	104.5631	103.3539842	102.1729967	101.0191661	99.89156144	98.78929379	97.71151408	96.65741084	95.62620817
230613A00080	6/13/2023	5.22	12/13/2024	6/13/2023	102.68884	101.9802661	101.2815143	100.592378	99.91265909	99.24216512	98.58070874	97.92810767	97.28418453
230613A00091	6/13/2023	4.58	6/15/2026	6/13/2023	108.43988	106.1994743	104.0170118	101.8905722	99.81831528	97.79847714	95.82936595	93.90935843	92.03689644
230613A00093	6/13/2023	5.46	4/12/2024	6/13/2023	100.13706	100.1036952	100.0703689	100.0370807	100.0038308	99.97061884	99.93744495	99.90430899	99.87121091
230614A00001	6/14/2023	4.55	6/12/2026	6/14/2023	108.3378	106.1068533	103.933443	101.8156689	99.75170937	97.73981793	95.7783192	93.86560543	92.00013317
230614A00029	6/14/2023	4.55	6/15/2026	6/14/2023	108.37351	106.1338473	103.9521165	101.8263937	99.75483916	97.73568935	95.76725284	93.84790673	91.97609325
230614A00031	6/14/2023	4.94	6/16/2025	6/14/2023	104.56023	103.3430832	102.1544478	100.9933239	99.85876216	98.74985659	97.66574195	96.60559162	95.56861539
230614A00038	6/14/2023	4.3	6/15/2026	6/14/2023	108.11517	105.8726072	103.6881706	101.5599288	99.48603305	97.4647109	95.49426269	93.57305771	91.6995308
230614A00047	6/14/2023	4.94	6/16/2025	6/14/2023	104.56023	103.3430832	102.1544478	100.9933239	99.85876216	98.74985659	97.66574195	96.60559162	95.56861539
230614A00048	6/14/2023	4.55	6/15/2026	6/14/2023	108.37351	106.1338473	103.9521165	101.8263937	99.75483916	97.73568935	95.76725284	93.84790673	91.97609325
230615A00023	6/15/2023	4.58	6/15/2026	6/15/2023	108.43988	106.1994743	104.0170118	101.8905722	99.81831528	97.79847714	95.82936595	93.90935843	92.03689644
230615A00026	6/15/2023	4.84	6/15/2038	6/15/2023	153.16692	137.0941036	123.0236192	110.6883407	99.85842212	90.33590382	81.95012251	74.55380427	68.01973495
230615A00033	6/15/2023	4.58	6/15/2026	6/15/2023	108.43988	106.1994743	104.0170118	101.8905722	99.81831528	97.79847714	95.82936595	93.90935843	92.03689644
230615A00039	6/15/2023	4.16	6/15/2027	6/15/2023	111.8746	108.5758517	105.3933738	102.3223557	99.35822287	96.49661958	93.7333963	91.06459868	88.48645686
230615A00044	6/15/2023	4.33	6/15/2026	6/15/2023	108.18164	105.9383295	103.7531589	101.624198	99.54959771	97.52758512	95.55646019	93.63459182	91.76041446

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230615A00103	6/15/2023	4.99	6/16/2025	6/15/2023	104.62109	103.4035528	102.2145334	101.0530317	99.91809826	98.80882683	97.72435205	96.66384715	95.62652178
230615A00105	6/15/2023	5.55	6/10/2024	6/15/2023	100.80363	100.6067108	100.410578	100.2152221	100.0206383	99.82682215	99.63376893	99.4414741	99.24993313
230616A00012	6/16/2023	4.41	6/16/2026	6/16/2023	108.37081	106.1225815	103.9326686	101.7991303	99.72011003	97.69382823	95.71857832	93.79272307	91.91469113
230616A00037	6/16/2023	4.48	6/16/2027	6/16/2023	112.47686	109.176143	105.9915242	102.9182119	99.95164433	97.08747737	94.32157247	91.6499855	89.06895618
230616A00038	6/16/2023	4.32	6/16/2028	6/16/2023	116.20911	111.8283385	107.6414006	103.6386054	99.8108048	96.1493598	92.64610851	89.29333703	86.08375198
230616A00039	6/16/2023	5.07	6/16/2025	6/16/2023	104.71846	103.5003041	102.3106704	101.1485643	100.013036	98.90317921	97.81812821	96.75705599	95.719172
230616A00040	6/16/2023	4.66	6/16/2026	6/16/2023	108.62908	106.3837701	104.1965756	102.0655681	99.98890022	97.96480122	95.99157283	94.06758568	92.19127584
230616A00106	6/16/2023	4.61	6/16/2026	6/16/2023	108.51832	106.2742582	104.0882862	101.9584762	99.88298174	97.86003266	95.88793137	93.96504913	92.08982266
230620A00007	6/20/2023	5.21	12/20/2024	6/20/2023	102.76683	102.0389272	101.3213781	100.6139628	99.91646722	99.2286834	98.55040904	97.88144745	97.22160736
230620A00015	6/20/2023	5.46	6/20/2024	6/20/2023	100.89729	100.6727186	100.4491616	100.2266094	100.0050553	99.78449253	99.5649143	99.34631403	99.12868513
230620A00035	6/20/2023	4.36	6/20/2030	6/20/2023	124.03598	117.4071125	111.188303	105.3518016	99.87188789	94.7247115	89.88814562	85.34165331	81.06616474
230620A00042	6/20/2023	5.15	12/20/2024	6/20/2023	102.72309	101.9953659	101.2779907	100.5707476	99.87342261	99.18580763	98.50770046	97.83890443	97.1792283
230620A00065	6/20/2023	4.56	6/18/2026	6/20/2023	108.43142	106.1827908	103.9924904	101.858576	99.77918978	97.75255089	95.77695161	93.85075368	91.97238484
230620A00089	6/20/2023	4.98	6/20/2025	6/20/2023	104.65386	103.4253922	102.2259389	101.0544819	99.91004683	98.7917045	97.69856778	96.62978939	95.58455974
230620A00091	6/20/2023	4.56	6/22/2026	6/20/2023	108.47913	106.2188716	104.0174645	101.8729433	99.78342565	97.74710779	95.76226031	93.82722454	91.94040891
230621A00016	6/21/2023	4.55	6/22/2026	6/21/2023	108.45681	106.196809	103.9956499	101.8513717	99.76209213	97.72600753	95.74138867	93.80657699	91.91998106
230621A00022	6/21/2023	4.24	6/21/2028	6/21/2023	115.92992	111.5409286	107.3467514	103.3376161	99.5043025	95.83810489	92.33080009	88.97461761	85.76221192
230621A00031	6/21/2023	5.19	12/20/2024	6/21/2023	102.75225	102.0244068	101.3069156	100.5995577	99.90211901	99.21439148	98.53617284	97.86726644	97.20748101
230621A00041	6/21/2023	4.24	6/21/2028	6/21/2023	115.92992	111.5409286	107.3467514	103.3376161	99.5043025	95.83810489	92.33080009	88.97461761	85.76221192
230621A00045	6/21/2023	4.95	6/23/2025	6/21/2023	104.65048	103.4139814	102.2068787	101.0281297	99.87674157	98.75176759	97.65230427	96.57748899	95.52649764
230621A00047	6/21/2023	4.44	6/21/2028	6/21/2023	108.40711	106.1788876	104.0228647	101.9360879	99.91574968	97.95917756	96.06382639	94.22727145	92.4472019
230621A00048	6/21/2023	4.55	6/22/2026	6/21/2023	108.45681	106.196809	103.9956499	101.8513717	99.76209213	97.72600753	95.74138867	93.80657699	91.91998106
230622A00004	6/22/2023	4.23	6/22/2027	6/22/2023	112.18205	108.8587116	105.6530444	102.560161	99.57540971	96.69436218	93.91280113	91.22670875	88.63225577
230622A00005	6/22/2023	4.05	6/22/2028	6/22/2023	115.72487	111.3207497	107.1127035	103.0908735	99.24595738	95.56917293	92.05222609	88.68728046	85.46692924
230622A00019	6/22/2023	4.33	6/22/2028	6/22/2023	115.12362	111.0325384	107.1211593	103.3805155	99.8021402	96.37803393	93.10063597	89.9627979	86.95775884
230622A00027	6/22/2023	4.49	6/22/2026	6/22/2023	108.32292	106.0644336	103.8647628	101.7219424	99.63409106	97.599406	95.61615879	93.68269166	91.79741394
230622A00028	6/22/2023	4.35	6/22/2027	6/22/2023	112.12968	108.8178099	105.6229791	102.540333	99.56525223	96.6933393	93.92040582	91.24246118	88.65570171
230622A00030	6/22/2023	4.17	6/22/2028	6/22/2023	115.64573	111.2599008	107.0689191	103.0630093	99.23294288	95.57000657	92.0659704	88.7130578	85.50391781
230622A00039	6/26/2023	4.49	6/26/2026	6/26/2023	108.36987	106.099756	103.8889889	101.7355741	99.63760573	97.59325778	95.60078007	93.65849426	91.76479028
230622A00045	6/22/2023	4.91	6/23/2025	6/22/2023	104.60102	103.3648493	102.1580632	100.9796256	99.82854376	98.70387118	97.6047045	96.53018119	95.47947729
230622A00047	6/22/2023	4.49	6/22/2026	6/22/2023	108.32292	106.0644336	103.8647628	101.7219424	99.63409106	97.599406	95.61615879	93.68269166	91.79741394
230622A00049	6/22/2023	4.71	12/17/2025	6/22/2023	106.47766	104.7517913	103.0624101	101.4084226	99.7887796	98.20247342	96.64853614	95.12603747	93.63408291
230622A00056	6/26/2023	4.49	6/26/2026	6/26/2023	108.36987	106.099756	103.8889889	101.7355741	99.63760573	97.59325778	95.60078007	93.65849426	91.76479028

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230622A00083	6/22/2023	4.55	6/22/2026	6/22/2023	108.45681	106.196809	103.9956499	101.8513717	99.76209213	97.72600753	95.74138867	93.80657699	91.91998106
230622A00093	6/22/2023	4.55	6/22/2026	6/22/2023	108.45681	106.196809	103.9956499	101.8513717	99.76209213	97.72600753	95.74138867	93.80657699	91.91998106
230622A00095	6/22/2023	4.38	6/22/2027	6/22/2023	112.22649	108.9130506	105.7166945	102.6325631	99.65603568	96.78271341	94.00840666	91.32912361	88.74105942
230622A00096	6/22/2023	4.21	6/22/2028	6/22/2023	115.81468	111.4253034	107.2308891	103.2216576	99.38837599	95.72232663	92.21527547	88.85944208	85.64747177
230623A00002	6/23/2023	4.45	6/23/2026	6/23/2023	108.24528	105.9849082	103.7834585	101.638964	99.54953796	97.51337234	95.52873382	93.59396004	91.70745599
230623A00003	6/23/2023	4.29	6/23/2027	6/23/2023	111.9476	108.635888	105.4413189	102.3590296	99.384393	96.51300435	93.74066855	91.06338874	88.4773555
230623A00004	6/23/2023	4.13	6/23/2028	6/23/2023	115.48796	111.1026374	106.9122881	102.9071238	99.0779039	95.41590449	91.91288575	88.56106213	85.35307444
230623A00025	6/23/2023	4.45	6/23/2026	6/23/2023	108.24528	105.9849082	103.7834585	101.638964	99.54953796	97.51337234	95.52873382	93.59396004	91.70745599
230623A00026	6/23/2023	4.29	6/23/2027	6/23/2023	111.9476	108.635888	105.4413189	102.3590296	99.384393	96.51300435	93.74066855	91.06338874	88.4773555
230623A00027	6/23/2023	4.13	6/23/2028	6/23/2023	115.48796	111.1026374	106.9122881	102.9071238	99.0779039	95.41590449	91.91288575	88.56106213	85.35307444
230623A00031	6/23/2023	4.87	6/23/2025	6/23/2023	104.55157	103.3157171	102.1092477	100.9311214	99.78034594	98.65597478	97.55710473	96.4828734	95.43245694
230623A00036	6/23/2023	4.45	6/23/2026	6/23/2023	108.24528	105.9849082	103.7834585	101.638964	99.54953796	97.51337234	95.52873382	93.59396004	91.70745599
230623A00037	6/23/2023	4.13	6/23/2028	6/23/2023	115.48796	111.1026374	106.9122881	102.9071238	99.0779039	95.41590449	91.91288575	88.56106213	85.35307444
230623A00040	6/23/2023	5.48	6/24/2024	6/23/2023	100.94652	100.7108575	100.4763031	100.2428492	100.0104878	99.77921138	99.54901227	99.31988291	99.09181584
230623A00051	6/23/2023	4.18	6/23/2028	6/23/2023	115.69929	111.3095212	107.1148757	103.1055541	99.27231031	95.60641489	92.09962294	88.74414405	85.53261437
230623A00053	6/23/2023	4.4	6/23/2026	6/23/2023	108.43179	106.1633899	103.9542215	101.8023012	99.70572981	97.66268733	95.67142924	93.73028251	91.83764199
230623A00056	6/23/2023	4.18	6/23/2028	6/23/2023	115.69929	111.3095212	107.1148757	103.1055541	99.27231031	95.60641489	92.09962294	88.74414405	85.53261437
230623A00057	6/23/2023	4.52	6/23/2026	6/23/2023	108.40169	106.139533	103.9363428	101.7901435	99.69904719	97.66124492	95.67500239	93.73865632	91.8506108
230623A00058	6/23/2023	4.38	6/23/2027	6/23/2023	112.23827	108.9218475	105.7226949	102.6359424	99.65695882	96.78133538	94.00487321	91.32357184	88.73361835
230626A00019	6/26/2023	4.91	6/20/2025	6/26/2023	104.56789	103.3399782	102.1410719	100.9701528	99.82624706	98.70842563	97.61580157	96.54752786	95.50279509
230626A00020	6/26/2023	4.49	6/26/2026	6/26/2023	108.36987	106.099756	103.8889889	101.7355741	99.63760573	97.59325778	95.60078007	93.65849426	91.76479028
230626A00021	6/26/2023	4.49	6/26/2026	6/26/2023	108.36987	106.099756	103.8889889	101.7355741	99.63760573	97.59325778	95.60078007	93.65849426	91.76479028
230626A00022	6/26/2023	4.34	6/25/2027	6/26/2023	112.13242	108.8121355	105.6094325	102.5194273	99.53746947	96.65913202	93.88019929	91.1966551	88.60467186
230626A00023	6/26/2023	4.18	6/26/2028	6/26/2023	115.73324	111.334327	107.131263	103.114196	99.27383109	95.60139358	92.08859665	88.72761113	85.51103729
230626A00026	6/26/2023	4.84	6/26/2025	6/26/2023	104.54703	103.3031622	102.0890545	100.9036483	99.74593265	98.61494344	97.50976104	96.42950759	95.37334468
230627A00004	6/27/2023	4.47	6/29/2026	6/27/2023	108.36006	106.0817419	103.863153	101.7022841	99.59721109	97.54609075	95.54715674	93.59871551	91.69914258
230627A00005	6/27/2023	4.3	6/28/2027	6/27/2023	112.03771	108.7105823	105.5015493	102.405688	99.41831784	96.53498387	93.75144422	91.06365827	88.46777562
230627A00006	6/27/2023	4.12	6/27/2028	6/27/2023	115.49031	111.0937077	106.8930182	102.8783826	99.04049627	95.37057602	91.86032722	88.50191363	85.28792919
230627A00029	6/27/2023	5.5	6/27/2024	6/27/2023	100.98494	100.7409518	100.4981426	100.2565071	100.0160366	99.77672289	99.53855751	99.30153223	99.06563888
230627A00030	6/27/2023	4.17	6/27/2028	6/27/2023	115.70218	111.3011134	107.096106	103.0772925	99.23536254	95.56152746	92.04748747	88.68540144	85.46785861
230627A00035	6/27/2023	4.21	6/27/2028	6/27/2023	115.87168	111.4670379	107.2585763	103.2364204	99.39125556	95.7142886	92.19721567	88.83219169	85.61180215
230627A00036	6/27/2023	4.38	6/28/2027	6/27/2023	112.29717	108.9658233	105.7526822	102.6528211	99.6615555	96.774427	93.98719028	91.29580146	88.69640699
230627A00037	6/27/2023	4.56	6/26/2026	6/27/2023	108.52684	106.2549412	104.0424211	101.8872892	99.78763866	97.74164246	95.74754944	93.80368034	91.90842417

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230627A00038	6/27/2023	5.38	6/27/2024	6/27/2023	100.98444	100.7401377	100.4970242	100.2550894	100.0143246	99.77472127	99.5362711	99.29896571	99.06279684
230627A00039	6/27/2023	5.2	12/27/2024	6/27/2023	102.84478	102.0975131	101.3611426	100.6354318	99.92015013	99.21507353	98.5199844	97.83467129	97.15892869
230627A00042	6/27/2023	5.16	1/27/2025	6/27/2023	103.18834	102.3555236	101.5362064	100.7300592	99.9367656	99.1560195	98.38752439	97.63099308	96.88614726
230627A00043	6/27/2023	5.12	2/27/2025	6/27/2023	103.51944	102.6012245	101.6993623	100.8134213	99.94298201	99.08763945	98.24700279	97.42069456	96.60835011
230627A00044	6/27/2023	5.08	3/27/2025	6/27/2023	103.80947	102.8142041	101.8381113	100.8806434	99.94127011	99.01948102	98.1147848	97.22670829	96.35479567
230627A00046	6/27/2023	5.03	4/28/2025	6/27/2023	104.11961	103.0365221	101.9760843	100.9375878	99.92035534	98.92373761	97.94711135	96.98987827	96.05146375
230627A00048	6/27/2023	4.99	5/27/2025	6/27/2023	104.39662	103.2340965	102.0976083	100.9862862	99.89929934	98.83585308	97.79518711	96.77657358	95.77931538
230627A00049	6/27/2023	4.95	6/27/2025	6/27/2023	104.69508	103.4475593	102.2299401	101.0411581	99.88019549	98.74608211	97.63789233	96.55474274	95.49578967
230627A00060	6/27/2023	4.89	6/27/2025	6/27/2023	104.62025	103.3732132	102.156077	100.9677701	99.80727484	98.67362122	97.56588384	96.48317949	95.42466468
230627A00065	6/27/2023	4.95	6/27/2025	6/27/2023	104.69508	103.4475593	102.2299401	101.0411581	99.88019549	98.74608211	97.63789233	96.55474274	95.49578967
230627A00078	6/27/2023	4.95	6/27/2025	6/27/2023	104.69508	103.4475593	102.2299401	101.0411581	99.88019549	98.74608211	97.63789233	96.55474274	95.49578967
230627A00086	6/27/2023	5.35	9/30/2024	6/27/2023	101.98466	101.4786676	100.9776979	100.481679	99.99053758	99.50420206	99.02260215	98.5456689	98.07333472
230627A00087	6/27/2023	4.95	6/30/2025	6/27/2023	104.72853	103.4727311	102.2472207	101.0509117	99.88276744	98.74179988	97.62706673	96.53766886	95.47274785
230627A00089	6/27/2023	4.56	6/30/2026	6/27/2023	108.57455	106.2909997	104.0673603	101.9016139	99.79182883	97.73615494	95.73281902	93.7801211	91.87643067
230627A00090	6/27/2023	4.21	6/27/2028	6/27/2023	115.87168	111.4670379	107.2585763	103.2364204	99.39125556	95.7142886	92.19721567	88.83219169	85.61180215
230627A00102	6/27/2023	4.95	6/27/2025	6/27/2023	104.69508	103.4475593	102.2299401	101.0411581	99.88019549	98.74608211	97.63789233	96.55474274	95.49578967
230628A00015	6/28/2023	4.98	6/27/2025	6/28/2023	104.7325	103.4847324	102.2668716	101.077852	99.91665581	98.78231255	97.67389658	96.59052437	95.53135217
230628A00016	6/28/2023	4.58	6/26/2026	6/28/2023	108.57169	106.2992798	104.0862589	101.9306364	99.83050521	97.78403808	95.78948355	93.84516207	91.94946243
230628A00017	6/28/2023	4.41	6/28/2027	6/28/2023	112.39447	109.0615387	105.8468571	102.745496	99.75276963	96.86421818	94.07559506	91.38285516	88.78214376
230628A00018	6/28/2023	4.23	6/28/2028	6/28/2023	115.96788	111.5583977	107.3453962	103.3189817	99.46982056	95.78910248	92.26850747	88.9001755	85.67667818
230628A00028	6/28/2023	4.58	6/24/2026	6/28/2023	108.54773	106.2811397	104.0736784	101.9233641	99.82830182	97.78667599	95.79674605	93.85684278	91.96536466
230628A00038	6/28/2023	4.58	6/24/2026	6/28/2023	108.54773	106.2811397	104.0736784	101.9233641	99.82830182	97.78667599	95.79674605	93.85684278	91.96536466
230628A00045	6/28/2023	4.18	6/28/2028	6/28/2023	115.75587	111.3508615	107.1421833	103.1199519	99.27483939	95.59804087	92.08124154	88.71658631	85.49665149
230628A00053	6/28/2023	5.47	6/28/2024	6/28/2023	100.98878	100.7420254	100.4964784	100.2521297	100.0089705	99.76699215	99.52618607	99.28654377	99.04805684
230628A00055	6/28/2023	5.19	12/27/2024	6/28/2023	102.8373	102.0900618	101.3537218	100.6280413	99.91278943	99.2077424	98.51268255	97.82739843	97.15168452
230628A00059	6/28/2023	4.87	6/27/2025	6/28/2023	104.5953	103.3484311	102.131456	100.9433074	99.78296795	98.64946759	97.54188101	96.45932507	95.40095635
230628A00061	6/28/2023	4.47	6/26/2026	6/28/2023	108.32502	106.0554173	103.8451512	101.692227	99.59473918	97.55086216	95.55884596	93.61701252	91.72375203
230628A00063	6/28/2023	4.47	6/29/2026	6/28/2023	108.36006	106.0817419	103.863153	101.7022841	99.59721109	97.54609075	95.54715674	93.59871551	91.69914258
230628A00068	6/28/2023	4.29	6/28/2027	6/28/2023	112.00527	108.6786772	105.4701577	102.3747964	99.38791313	96.50505348	93.72197596	91.03464037	88.4391967
230629A00008	6/29/2023	4.34	6/29/2028	6/29/2023	116.44604	112.0236611	107.7983235	103.760107	99.89964922	96.20811262	92.67715174	89.29888273	86.0658548
230629A00019	6/29/2023	4.51	6/24/2027	6/29/2023	112.67025	109.3440394	106.1354582	103.039627	100.051898	97.16784672	94.38325954	91.69412208	89.09660827
230629A00025	6/29/2023	4.7	6/24/2026	6/29/2023	108.81617	106.546531	104.3360789	102.182835	100.0849027	98.04046455	96.04777844	94.10517353	92.21104679
230629A00034	6/29/2023	5.59	7/1/2024	6/29/2023	101.05295	100.7978367	100.5440116	100.2914641	100.0401848	99.79016411	99.54139257	99.29386086	99.04755975

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230629A00037	6/29/2023	4.69	6/29/2026	6/29/2023	108.85521	106.5712278	104.3470896	102.1807855	100.0703879	98.01405067	96.01000426	94.05655216	92.15206706
230629A00041	6/29/2023	5.09	6/30/2025	6/29/2023	104.9043	103.6473391	102.4206869	101.2232551	100.0540065	98.91195264	97.79615068	96.70570104	95.63974484
230629A00042	6/29/2023	4.69	6/29/2026	6/29/2023	108.85521	106.5712278	104.3470896	102.1807855	100.0703879	98.01405067	96.01000426	94.05655216	92.15206706
230629A00045	6/29/2023	4.69	6/29/2026	6/29/2023	108.85521	106.5712278	104.3470896	102.1807855	100.0703879	98.01405067	96.01000426	94.05655216	92.15206706
230629A00046	6/29/2023	4.51	6/29/2027	6/29/2023	112.73093	109.3897261	106.1670996	103.0581056	100.0580431	97.16243769	94.36702932	91.66775997	89.06076285
230629A00068	6/29/2023	5.34	12/30/2024	6/29/2023	102.98412	102.2281472	101.4833076	100.7493586	100.0260625	99.31318809	98.6105112	97.91781383	97.23488421
230629A00070	6/29/2023	5.09	6/30/2025	6/29/2023	104.9043	103.6473391	102.4206869	101.2232551	100.0540065	98.91195264	97.79615068	96.70570104	95.63974484
230629A00071	6/29/2023	4.41	6/29/2028	6/29/2023	116.40791	112.0629951	107.9126458	103.9470691	100.1570166	96.53375123	93.06901645	89.75500716	86.58434276
230629A00072	6/29/2023	4.69	6/29/2026	6/29/2023	108.85521	106.5712278	104.3470896	102.1807855	100.0703879	98.01405067	96.01000426	94.05655216	92.15206706
230629A00076	6/29/2023	4.51	6/29/2027	6/29/2023	112.73093	109.3897261	106.1670996	103.0581056	100.0580431	97.16243769	94.36702932	91.66775997	89.06076285
230629A00094	6/29/2023	4.41	6/29/2028	6/29/2023	116.40791	112.0629951	107.9126458	103.9470691	100.1570166	96.53375123	93.06901645	89.75500716	86.58434276
230629A00097	6/29/2023	4.41	6/29/2028	6/29/2023	116.40791	112.0629951	107.9126458	103.9470691	100.1570166	96.53375123	93.06901645	89.75500716	86.58434276
230629A00108	6/29/2023	5.52	6/28/2024	6/29/2023	101.00111	100.7543365	100.5087693	100.2644006	100.0212214	99.77922312	99.53839722	99.29873517	99.06022856
230629A00109	6/29/2023	5.3	12/27/2024	6/29/2023	102.9196	102.1720257	101.4353503	100.7093377	99.99375718	99.28838481	98.59300289	97.90739991	97.2313703
230629A00120	6/29/2023	5.03	6/27/2025	6/29/2023	104.79487	103.5466875	102.3284242	101.1390087	99.97742302	98.84269663	97.73390365	96.65016041	95.59062299
230630A00003	6/30/2023	4.54	6/30/2027	6/30/2023	112.84052	109.4947352	106.2677528	103.1546206	100.1506256	97.25128204	94.4523191	91.74966884	89.1394551
230630A00009	6/30/2023	5.59	6/27/2024	6/30/2023	101.00689	100.7628636	100.520019	100.2783481	100.0378425	99.79849375	99.56029345	99.32323339	99.08730538
230630A00011	6/30/2023	5.37	12/27/2024	6/30/2023	102.97198	102.2241846	101.4872957	100.7610717	100.0452821	99.3397027	98.64411583	97.95830994	97.28207944
230630A00028	6/30/2023	4.42	6/30/2027	6/30/2023	112.89484	109.5374074	106.2994234	103.1759002	100.1620911	97.25347912	94.44576383	91.73484951	89.1168338
230630A00030	6/30/2023	4.23	6/30/2028	6/30/2023	116.58225	112.1373655	107.8910382	103.8332485	99.95454118	96.24599221	92.69917573	89.30613294	86.05934324
230630A00043	6/30/2023	4.6	6/30/2026	6/30/2023	108.96632	106.6722824	104.4385206	102.2629978	100.143768	98.0789677	96.06681079	94.10558516	92.19364872
230630A00045	6/30/2023	5.7	4/30/2024	6/30/2023	100.35088	100.2675466	100.1843507	100.1012916	100.0183689	99.9355823	99.85293153	99.77041626	99.68803614
230630A00046	6/30/2023	4.6	6/30/2026	6/30/2023	108.96632	106.6722824	104.4385206	102.2629978	100.143768	98.0789677	96.06681079	94.10558516	92.19364872
230630A00055	6/30/2023	4.35	6/30/2028	6/30/2023	116.50025	112.0739039	107.844874	103.8032195	99.93956029	96.24504244	92.71130544	89.33045141	86.09501657
230630A00061	6/30/2023	5	7/11/2025	6/30/2023	104.93826	103.6526402	102.3949169	101.1641785	99.95955509	98.78021407	97.62535836	96.49422445	95.38608063
230630A00062	6/30/2023	4.6	6/30/2026	6/30/2023	108.96632	106.6722824	104.4385206	102.2629978	100.143768	98.0789677	96.06681079	94.10558516	92.19364872
230630A00066	6/30/2023	5.26	2/7/2025	6/30/2023	103.40458	102.5410202	101.6919534	100.8570131	100.0358484	99.22811969	98.43349843	97.65166682	96.88231725
230630A00079	6/30/2023	4.65	6/30/2026	6/30/2023	108.77736	106.4914841	104.265569	102.0975937	99.98562536	97.92781225	95.92238	93.96762742	92.06192282
230630A00080	6/30/2023	5.02	6/30/2025	6/30/2023	104.81642	103.5600351	102.3339538	101.1370834	99.96838697	98.82687626	97.71160871	96.62168495	95.55624634
230630A00081	6/30/2023	5.53	6/28/2024	6/30/2023	101.00358	100.7567987	100.5112275	100.2668547	100.0236716	99.78166932	99.54083945	99.30117345	99.0626629
230630A00086	6/30/2023	4.72	6/30/2026	6/30/2023	108.9351	106.6474164	104.4197313	102.2500225	100.136356	98.07687905	96.06981632	94.11346567	92.20619449
230630A00088	6/30/2023	4.54	6/30/2027	6/30/2023	112.84052	109.4947352	106.2677528	103.1546206	100.1506256	97.25128204	94.4523191	91.74966884	89.1394551
230630A00094	6/30/2023	4.42	6/30/2027	6/30/2023	112.89484	109.5374074	106.2994234	103.1759002	100.1620911	97.25347912	94.44576383	91.73484951	89.1168338

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230703A00013	7/3/2023	4.34	7/3/2028	7/3/2023	116.49173	112.057385	107.8210584	103.772769	99.90309797	96.20315428	92.66454173	89.27932835	86.04001781
230703A00015	7/3/2023	4.34	7/3/2028	7/3/2023	116.49173	112.057385	107.8210584	103.772769	99.90309797	96.20315428	92.66454173	89.27932835	86.04001781
230703A00018	7/3/2023	4.61	7/3/2026	7/3/2023	109.02504	106.7222335	104.4801204	102.2966609	100.1699015	98.0979705	96.07907364	94.1114901	92.19356891
230703A00019	7/3/2023	4.61	7/3/2026	7/3/2023	109.02504	106.7222335	104.4801204	102.2966609	100.1699015	98.0979705	96.07907364	94.1114901	92.19356891
230703A00021	7/3/2023	4.99	7/3/2025	7/3/2023	105.02183	103.7532069	102.514373	101.3042798	100.1219291	98.96636883	97.83669003	96.73202472	95.65154346
230703A00025	7/3/2023	4.73	7/3/2026	7/3/2023	108.99364	106.6972204	104.461219	102.2836062	100.1624405	98.09586135	96.0820851	94.11940105	92.20616779
230703A00027	7/3/2023	5.45	11/4/2024	7/3/2023	102.39577	101.7939002	101.1991228	100.6113155	100.0303562	99.45612553	98.88850691	98.32738646	97.77265289
230703A00028	7/3/2023	5.11	7/3/2025	7/3/2023	104.97039	103.7052422	102.469748	101.2628692	100.0836134	98.93103393	97.80422702	96.70232947	95.62451641
230703A00029	7/3/2023	4.89	2/3/2026	7/3/2023	107.42893	105.5642009	103.7413701	101.9592534	100.2167056	98.51262074	96.84593091	95.21560438	93.62064429
230703A00043	7/3/2023	4.53	7/6/2027	7/3/2023	112.87924	109.5165723	106.273838	103.1460429	100.1284305	97.21647207	94.40585468	91.69246887	89.07239785
230705A00006	7/5/2023	4.26	7/5/2028	7/5/2023	116.76747	112.3049306	108.0422671	103.9693872	100.0767649	96.3554083	92.79682656	89.3929987	86.13634479
230705A00008	7/5/2023	4.63	7/6/2026	7/5/2023	109.10666	106.7948085	104.5440798	102.3524261	100.2178859	98.13857942	96.11270371	94.13852908	92.21439542
230705A00019	7/5/2023	4.44	7/6/2027	7/5/2023	113.03205	109.6560273	106.400636	103.2608434	100.2318575	97.30911661	94.48827635	91.76519791	89.13593673
230705A00033	7/5/2023	5.12	7/7/2025	7/5/2023	105.03778	103.7618387	102.5146813	101.2953323	100.1028599	98.9363738	97.79502295	96.67799343	95.58450636
230705A00034	7/5/2023	4.75	7/6/2026	7/5/2023	109.07504	106.7696137	104.5250326	102.3392591	100.2103439	98.13641847	96.11569055	94.14644064	92.22701827
230705A00035	7/5/2023	5.03	8/8/2025	7/5/2023	105.34322	103.9817313	102.6445142	101.3309707	100.0405246	98.77261824	97.52671118	96.30228004	95.09881763
230705A00036	7/5/2023	5.39	12/13/2024	7/5/2023	102.80948	102.1004398	101.4012195	100.7116192	100.0314409	99.36049188	98.69858479	98.04553729	97.40117192
230705A00040	7/5/2023	4.38	7/5/2028	7/5/2023	116.68472	112.2408353	107.9955758	103.9389279	100.0614412	96.35419486	92.80876381	89.41718866	86.17194684
230705A00042	7/5/2023	4.42	7/5/2028	7/5/2023	116.85509	112.407595	108.1588468	104.0988236	100.2180706	96.50766231	92.95916967	89.56462919	86.31651451
230705A00103	7/5/2023	4.56	7/6/2027	7/5/2023	112.9772	109.6129207	106.3686257	103.2393113	100.2202193	97.30681997	94.49479879	91.78004514	89.15864099
230705A00111	7/5/2023	4.9	1/6/2026	7/5/2023	107.05555	105.2709219	103.5249287	101.8164071	100.1442441	98.50737025	96.90475795	95.33541917	93.79840358
230706A00006	7/6/2023	4.59	7/6/2028	7/6/2023	117.59114	113.1253209	108.8589958	104.7821101	100.8851758	97.15923582	93.5958308	90.18696847	86.92509497
230706A00014	7/6/2023	4.99	7/6/2038	7/6/2023	155.40107	139.1224789	124.8742182	112.3848618	101.4209576	91.78151693	83.29333009	75.80698033	69.19344846
230706A00029	7/6/2023	5.53	1/6/2025	7/6/2023	103.22323	102.4472269	101.6829412	100.9301122	100.1884831	99.45780486	98.7378357	98.02834092	97.32909266
230706A00031	7/6/2023	5.72	7/8/2024	7/6/2023	101.16985	100.8953576	100.6223679	100.3508663	100.0808405	99.81227848	99.54516824	99.27949796	99.01525594
230706A00032	7/6/2023	5.53	1/6/2025	7/6/2023	103.22323	102.4472269	101.6829412	100.9301122	100.1884831	99.45780486	98.7378357	98.02834092	97.32909266
230706A00034	7/6/2023	5.18	7/7/2025	7/6/2023	105.11426	103.8378056	102.5901449	101.3703009	100.1773418	99.01037699	97.86855524	96.75106239	95.65711937
230707A00021	9/1/2023	4.61	8/30/2030	9/1/2023	126.28761	119.3927764	112.9351941	106.8846236	101.2130734	95.89462027	90.90524562	86.22268658	81.82629908
230707A00022	9/1/2023	4.61	8/30/2030	9/1/2023	126.28761	119.3927764	112.9351941	106.8846236	101.2130734	95.89462027	90.90524562	86.22268658	81.82629908
230707A00023	9/1/2023	4.61	8/30/2030	9/1/2023	126.28761	119.3927764	112.9351941	106.8846236	101.2130734	95.89462027	90.90524562	86.22268658	81.82629908
230707A00031	7/7/2023	4.84	7/7/2026	7/7/2023	109.29162	106.9810054	104.7314205	102.5408275	100.4072732	98.32888499	96.30386667	94.33049457	92.4071141
230707A00035	7/7/2023	5.07	7/7/2025	7/7/2023	104.97405	103.698533	102.4517951	101.2328585	100.0407917	98.87470447	97.73374604	96.61710263	95.52399553
230707A00038	7/7/2023	5.35	1/7/2025	7/7/2023	103.09575	102.3175803	101.5512108	100.7963723	100.0528055	99.32025882	98.59848798	97.887256	97.1863328

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230707A00041	7/7/2023	4.44	7/7/2028	7/7/2023	117.56026	113.0753786	108.7914076	104.6982019	100.7861872	97.04632547	93.47008193	90.04939358	86.77664043
230710A00008	7/10/2023	5.56	8/1/2024	7/10/2023	101.39889	101.0581163	100.7196369	100.383425	100.0494579	99.71771316	99.38816868	99.06080262	98.73559345
230710A00013	7/10/2023	4.55	7/10/2029	7/10/2023	121.67427	116.0780582	110.7817769	105.7676479	101.0190467	96.52041897	92.25720573	88.21577406	84.38335325
230710A00053	7/10/2023	4.98	7/10/2025	7/10/2023	105.10547	103.8181194	102.559022	101.3272468	100.1219029	98.94213794	97.78713634	96.65611726	95.5483327
230710A00066	7/10/2023	5	7/10/2025	7/10/2023	104.9249	103.6419574	102.3871281	101.1594851	99.95814303	98.78225501	97.63101048	96.50363336	95.39938018
230711A00012	7/11/2023	5.07	7/11/2025	7/11/2023	105.02825	103.7420246	102.4837044	101.2523792	100.0471788	98.86727025	97.71185629	96.58017313	95.47148885
230711A00013	7/11/2023	4.78	7/13/2026	7/11/2023	109.22809	106.9020444	104.6378365	102.4334109	100.2868	98.19611604	96.15954669	94.17535167	92.2418592
230711A00027	7/11/2023	5.07	7/11/2025	7/11/2023	105.02825	103.7420246	102.4837044	101.2523792	100.0471788	98.86727025	97.71185629	96.58017313	95.47148885
230711A00029	7/11/2023	5.55	7/5/2024	7/11/2023	101.08874	100.8226116	100.5578917	100.2945686	100.0326312	99.77206855	99.51286981	99.25502424	98.9985212
230711A00037	7/11/2023	5.48	7/19/2024	7/11/2023	101.22525	100.9205157	100.617633	100.3165822	100.0173468	99.71991008	99.42425592	99.13036817	98.83823095
230711A00038	7/11/2023	4.89	10/10/2025	7/11/2023	105.91486	104.3788616	102.8731081	101.3967765	99.94907444	98.52923755	97.1365282	95.77023437	94.42966853
230711A00087	7/11/2023	5.04	6/16/2025	7/11/2023	104.68195	103.4640224	102.274619	101.1127396	99.97743437	98.86779707	97.78296215	96.72210268	95.68442817
230711A00089	7/11/2023	5.32	12/16/2024	7/11/2023	102.80119	102.0839678	101.3768023	100.6794779	99.99178976	99.31353866	98.64453082	97.98457774	97.33349606
230712A00002	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00005	7/12/2023	5.2	12/16/2024	7/12/2023	102.71503	101.9981541	101.2913265	100.5943368	99.90698009	99.22905719	98.56037438	97.90074323	97.2499804
230712A00009	7/12/2023	4.89	6/16/2025	7/12/2023	104.49937	103.2826136	102.0943621	100.933616	99.79942605	98.69088634	97.60713185	96.54733609	95.51070901
230712A00014	7/12/2023	4.62	7/13/2026	7/12/2023	108.86186	106.540076	104.2800373	102.0796944	99.93708216	97.85031527	95.81758377	93.83714964	91.90734326
230712A00015	7/12/2023	4.62	7/13/2026	7/12/2023	108.86186	106.540076	104.2800373	102.0796944	99.93708216	97.85031527	95.81758377	93.83714964	91.90734326
230712A00016	7/12/2023	4.45	7/12/2027	7/12/2023	112.68794	109.3121488	106.0573362	102.9184591	99.89072033	96.96955118	94.15059887	91.42971499	88.80294451
230712A00017	7/12/2023	4.45	7/12/2027	7/12/2023	112.68794	109.3121488	106.0573362	102.9184591	99.89072033	96.96955118	94.15059887	91.42971499	88.80294451
230712A00018	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00019	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00020	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00021	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00027	7/12/2023	4.29	1/12/2028	7/12/2023	114.27434	110.3660688	106.6157091	103.0159869	99.560007	96.2412302	93.05345295	89.99078799	87.04764623
230712A00032	10/12/2023	5.23	10/11/2024	10/12/2023	102.03298	101.4971147	100.9668994	100.4422444	99.92306243	99.40926784	98.9007769	98.39750755	97.89937944
230712A00034	1/12/2024	4.88	1/13/2025	1/12/2024	102.79497	102.0018807	101.2210798	100.4522793	99.6952036	98.94958527	98.21516513	97.49169171	96.77892107
230712A00035	1/12/2024	4.36	1/12/2026	1/12/2024	106.18153	104.3885497	102.6347313	100.9189154	99.23998932	97.59688309	95.98856701	94.41404998	92.8723776
230712A00039	7/12/2023	4.62	7/13/2026	7/12/2023	108.86186	106.540076	104.2800373	102.0796944	99.93708216	97.85031527	95.81758377	93.83714964	91.90734326
230712A00040	7/12/2023	4.45	7/12/2027	7/12/2023	112.68794	109.3121488	106.0573362	102.9184591	99.89072033	96.96955118	94.15059887	91.42971499	88.80294451
230712A00041	7/12/2023	4.31	7/12/2028	7/12/2023	116.46518	112.0068549	107.7486589	103.6804919	99.79281799	96.07663366	92.52343496	89.12518684	85.87429462
230712A00046	7/12/2023	4.52	7/13/2026	7/12/2023	108.63297	106.3138457	104.0564128	101.8586215	99.71850851	97.63418979	95.60385695	93.62577337	91.6982708
230712A00048	7/12/2023	4.95	7/14/2025	7/12/2023	104.91364	103.6204332	102.3544564	101.114854	99.90080248	98.71151303	97.54622932	96.40422603	95.28480716

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230712A00051	7/12/2023	4.62	7/13/2026	7/12/2023	108.86186	106.540076	104.2800373	102.0796944	99.93708216	97.85031527	95.81758377	93.83714964	91.90734326
230712A00056	7/12/2023	4.22	7/12/2028	7/12/2023	116.08014	111.6300015	107.3797233	103.3192156	99.43895298	95.72994204	92.18368843	88.79216624	85.54778949
230713A00014	7/13/2023	4.2	7/13/2028	7/13/2023	116.00551	111.554231	107.3030026	103.2417183	99.36084139	95.65136785	92.10479305	88.71308129	85.46863722
230713A00015	7/13/2023	5.44	7/12/2024	7/13/2023	101.13779	100.8523893	100.5686149	100.2864513	100.0058848	99.72690172	99.44948856	99.17363201	98.89931888
230713A00017	7/13/2023	5.11	1/14/2025	7/13/2023	102.98928	102.1926488	101.4083935	100.6362287	99.8758758	99.12706453	98.38953295	97.66302702	96.94730023
230713A00019	7/13/2023	4.51	7/13/2026	7/13/2023	108.61008	106.2912227	104.0340504	101.8365143	99.69665114	97.61257724	95.58248427	93.60463574	91.67736356
230713A00021	7/13/2023	4.44	7/13/2026	7/13/2023	108.44985	106.1328615	103.8775133	101.6817633	99.54364958	97.46128941	95.43287549	93.45667235	91.53101283
230713A00023	7/13/2023	4.2	7/13/2028	7/13/2023	116.00551	111.554231	107.3030026	103.2417183	99.36084139	95.65136785	92.10479305	88.71308129	85.46863722
230713A00025	7/13/2023	4.82	7/14/2025	7/13/2023	104.74545	103.4533802	102.1885255	100.9500262	99.73705944	98.54883678	97.38460242	96.24363151	95.12522853
230713A00026	7/13/2023	4.49	7/13/2026	7/13/2023	108.5643	106.2459766	103.9893255	101.7922997	99.65293641	97.56935215	95.5397389	93.56236049	91.63554906
230713A00031	7/13/2023	4.49	7/13/2026	7/13/2023	108.5643	106.2459766	103.9893255	101.7922997	99.65293641	97.56935215	95.5397389	93.56236049	91.63554906
230713A00054	7/13/2023	5.64	4/12/2024	7/13/2023	100.14321	100.1098382	100.0765067	100.0432134	100.0099583	99.97674124	99.94356223	99.91042116	99.87731797
230713A00058	7/13/2023	4.08	7/13/2028	7/13/2023	116.08672	111.6167038	107.3479992	103.2704223	99.37435954	95.65073529	92.09097815	88.68699016	85.43111787
230714A00018	7/14/2023	4.24	7/14/2027	7/14/2023	112.46938	109.0808293	105.814169	102.6643146	99.62642398	96.69588557	93.86830572	91.13949701	88.50546722
230714A00019	7/14/2023	4.85	7/14/2025	7/14/2023	104.78426	103.4919309	102.2268173	100.9880634	99.7748463	98.58637745	97.42190094	96.28069179	95.16205437
230714A00020	7/14/2023	4.52	7/14/2026	7/14/2023	108.64439	106.3224521	104.0623394	101.8620054	99.71948417	97.63288915	95.60040899	93.62030414	91.69090334
230714A00022	7/14/2023	4.36	7/14/2027	7/14/2023	112.41542	109.0387017	105.7832156	102.643909	99.61597395	96.69483133	93.87611785	91.1556747	88.52953662
230714A00023	7/14/2023	4.18	7/14/2028	7/14/2023	115.93076	111.4783555	107.2261811	103.164124	99.28263678	95.57270447	92.02581224	88.6339146	85.38940681
230714A00026	7/14/2023	4.18	7/14/2028	7/14/2023	115.93076	111.4783555	107.2261811	103.164124	99.28263678	95.57270447	92.02581224	88.6339146	85.38940681
230714A00030	7/14/2023	4.52	7/17/2026	7/14/2023	108.67867	106.3482667	104.0801123	101.8721489	99.72240275	97.62897904	95.59005784	93.60389067	91.66879715
230714A00034	7/14/2023	4.37	7/16/2027	7/14/2023	112.47115	109.0881012	105.826684	102.6818304	99.64871709	96.72274958	93.89954962	91.17494373	88.54495225
230714A00036	7/14/2023	4.37	7/12/2030	7/14/2023	124.30366	117.6055107	111.3251545	105.4341303	99.90606431	94.7165088	89.84279119	85.26387605	80.96023847
230714A00042	7/14/2023	4.58	7/14/2026	7/14/2023	108.78189	106.4583503	104.1966705	101.994802	99.85077786	97.76271059	95.72878799	93.74726965	91.81648349
230717A00022	7/17/2023	4.59	7/17/2026	7/17/2023	108.83966	106.5073747	104.2373794	102.0276133	99.8761017	97.78094865	95.74033318	93.75250584	91.81578525
230717A00061	7/17/2023	4.93	7/17/2025	7/17/2023	104.92727	103.6262034	102.351717	101.1029999	99.87927545	98.67979883	97.50385481	96.35075653	95.21984402
230717A00088	7/17/2023	4.43	7/19/2027	7/17/2023	112.70347	109.3084582	106.0357449	102.8802363	99.83708384	96.9016678	94.0695853	91.33663875	88.69882497
230717A00106	7/17/2023	5.49	7/11/2024	7/17/2023	101.14073	100.8580712	100.5770019	100.2975125	100.0195896	99.74321993	99.46839044	99.19508816	98.92330029
230718A00012	7/18/2023	5.2	12/16/2024	7/18/2023	102.71503	101.9981541	101.2913265	100.5943368	99.90698009	99.22905719	98.56037438	97.90074323	97.2499804
230718A00013	7/18/2023	4.54	7/17/2026	7/18/2023	108.72467	106.3937261	104.1250457	101.9165673	99.76631673	97.67239893	95.63299365	93.64635215	91.71079375
230718A00014	7/18/2023	4.37	7/19/2027	7/18/2023	112.50544	109.113705	105.8441791	102.6917729	99.6516408	96.71916587	93.88994795	91.15979205	88.5246975
230718A00015	7/18/2023	4.19	7/18/2028	7/18/2023	116.01721	111.5520664	107.2881713	103.2153481	99.32399387	95.60504061	92.04992267	88.65054595	85.39925938
230718A00016	7/18/2023	4.54	7/17/2026	7/18/2023	108.72467	106.3937261	104.1250457	101.9165673	99.76631673	97.67239893	95.63299365	93.64635215	91.71079375
230718A00023	7/18/2023	4.54	7/20/2026	7/18/2023	108.7591	106.419694	104.1429651	101.9268517	99.76937201	97.66862251	95.62277425	93.63006947	91.68881824

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230718A00038	7/18/2023	4.46	11/13/2026	7/18/2023	109.89975	107.2305952	104.6409311	102.1278933	99.68874213	97.3208546	95.02171892	92.78892877	90.62017815
230718A00065	7/18/2023	4.3	7/18/2033	7/18/2023	118.20103	113.1624371	108.438033	104.0045242	99.84055419	95.92652462	92.24443717	88.77775106	85.51125413
230718A00070	7/18/2023	4.06	7/18/2028	7/18/2023	116.05562	111.5725587	107.2919889	103.2036546	99.29787634	95.56551521	91.99793921	88.58699246	85.32496624
230718A00093	7/18/2023	4.06	7/18/2028	7/18/2023	116.05562	111.5725587	107.2919889	103.2036546	99.29787634	95.56551521	91.99793921	88.58699246	85.32496624
230719A00006	7/19/2023	4.54	7/20/2026	7/19/2023	108.7591	106.419694	104.1429651	101.9268517	99.76937201	97.66862251	95.62277425	93.63006947	91.68881824
230719A00010	7/19/2023	4.92	7/18/2025	7/19/2023	104.92739	103.623734	102.3464403	101.0947138	99.86779392	98.66495039	97.48548184	96.32871433	95.194
230719A00011	7/19/2023	4.92	7/18/2025	7/19/2023	104.92739	103.623734	102.3464403	101.0947138	99.86779392	98.66495039	97.48548184	96.32871433	95.194
230719A00012	7/19/2023	4.92	7/18/2025	7/19/2023	104.92739	103.623734	102.3464403	101.0947138	99.86779392	98.66495039	97.48548184	96.32871433	95.194
230719A00013	7/19/2023	4.54	7/17/2026	7/19/2023	108.72467	106.3937261	104.1250457	101.9165673	99.76631673	97.67239893	95.63299365	93.64635215	91.71079375
230719A00015	7/19/2023	4.37	7/19/2027	7/19/2023	112.50544	109.113705	105.8441791	102.6917729	99.6516408	96.71916587	93.88994795	91.15979205	88.5246975
230719A00027	7/19/2023	4.92	7/18/2025	7/19/2023	104.92739	103.623734	102.3464403	101.0947138	99.86779392	98.66495039	97.48548184	96.32871433	95.194
230719A00034	7/19/2023	4.19	7/19/2028	7/19/2023	116.02811	111.5600114	107.2934059	103.218104	99.32448928	95.6034807	92.04650011	88.6454415	85.39264239
230719A00035	7/19/2023	4.92	7/18/2025	7/19/2023	104.92739	103.623734	102.3464403	101.0947138	99.86779392	98.66495039	97.48548184	96.32871433	95.194
230719A00061	7/19/2023	5.18	1/21/2025	7/19/2023	103.1268	102.3106212	101.5074214	100.7168898	99.93872784	99.17264617	98.41836445	97.67561098	96.94412235
230719A00091	11/13/2023	4.56	11/14/2025	11/13/2023	105.83153	104.2008802	102.6034738	101.0383554	99.50460961	98.00135568	96.52774557	95.08296255	93.66621971
230719A00096	12/18/2023	4.46	12/19/2025	12/18/2023	106.07026	104.3426626	102.6516842	100.9962236	99.37522491	97.78767441	96.23259837	94.70906106	93.21616286
230719A00100	2/12/2024	4.29	2/13/2026	2/12/2024	106.43744	104.5527271	102.7109863	100.9109873	99.15154	97.431496	95.74974669	94.10522162	92.496887
230719A00101	10/16/2023	4.65	10/17/2025	10/16/2023	105.62845	104.0759567	102.5542366	101.0624408	99.59975489	98.16539359	96.75859952	95.37864187	94.02481531
230720A00025	7/20/2023	5.18	1/21/2025	7/20/2023	103.26397	102.4453309	101.6397349	100.8468685	100.0664308	99.29813058	98.5416857	97.79682263	97.06327622
230720A00037	7/20/2023	4.55	7/20/2026	7/20/2023	109.0912	106.7416873	104.455215	102.2297076	100.0631689	97.95368148	95.89940346	93.89856462	91.94946319
230720A00038	7/20/2023	4.55	7/20/2026	7/20/2023	109.0912	106.7416873	104.455215	102.2297076	100.0631689	97.95368148	95.89940346	93.89856462	91.94946319
230720A00039	7/20/2023	4.68	7/20/2026	7/20/2023	109.08223	106.7390302	104.4585936	102.23885	100.0778152	97.97358338	95.92432364	93.92827616	91.98374906
230720A00100	7/20/2023	5.05	7/21/2025	7/20/2023	105.13749	103.8246254	102.53749	101.2753408	100.037464	98.8231734	97.63180857	96.46273405	95.31533801
230721A00003	7/21/2023	4.67	7/21/2026	7/21/2023	109.07098	106.7252216	104.4423583	102.2203208	100.0571225	97.95085495	95.89968439	93.90184813	91.95565132
230721A00006	7/21/2023	4.32	7/21/2028	7/21/2023	116.60927	112.1232953	107.8397033	103.7482585	99.8393014	96.10371007	92.53286722	89.11862944	85.85329864
230721A00028	7/21/2023	5.03	7/21/2025	7/21/2023	105.11123	103.798547	102.5115891	101.2496145	100.0119095	98.79778771	97.60658897	96.43767786	95.29044262
230721A00029	7/21/2023	4.67	7/21/2026	7/21/2023	109.07098	106.7252216	104.4423583	102.2203208	100.0571225	97.95085495	95.89968439	93.90184813	91.95565132
230721A00031	7/21/2023	5.03	7/21/2025	7/21/2023	105.11123	103.798547	102.5115891	101.2496145	100.0119095	98.79778771	97.60658897	96.43767786	95.29044262
230721A00032	7/21/2023	5.03	7/21/2025	7/21/2023	105.11123	103.798547	102.5115891	101.2496145	100.0119095	98.79778771	97.60658897	96.43767786	95.29044262
230721A00038	7/21/2023	4.67	7/21/2026	7/21/2023	109.07098	106.7252216	104.4423583	102.2203208	100.0571225	97.95085495	95.89968439	93.90184813	91.95565132
230721A00043	7/21/2023	4.98	7/21/2025	7/21/2023	105.04558	103.7333508	102.446837	101.1852989	99.94802312	98.73432348	97.54353998	96.3750374	95.22820415
230724A00037	7/24/2023	4.29	7/24/2028	7/24/2023	116.5137	112.0215833	107.732492	103.6361589	99.7228872	95.98351892	92.40940231	88.99236102	85.72466555
230724A00063	7/24/2023	5.08	7/24/2025	7/24/2023	105.21761	103.896414	102.6003029	101.3285836	100.08059	98.85568039	97.6532364	96.47266176	95.31338138

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230724A00064	7/24/2023	4.53	7/19/2027	7/24/2023	113.03352	109.6330469	106.3550212	103.1943419	100.1461556	97.20583768	94.36898088	91.63138323	88.98903742
230724A00065	7/24/2023	4.37	7/18/2028	7/24/2023	116.79023	112.3085906	108.0287421	103.9404882	100.0342044	96.30080225	92.7316967	89.31877513	86.05436882
230724A00066	7/24/2023	4.71	8/18/2026	7/24/2023	109.49783	107.0716742	104.7124125	102.4178295	100.1857948	98.01426076	95.90125867	93.84489528	91.84334946
230724A00105	7/24/2023	5.56	7/18/2024	7/24/2023	101.23814	100.9361294	100.6359342	100.3375391	100.0409277	99.74608409	99.45299232	99.16163673	98.87200182
230725A00004	7/25/2023	5.06	7/25/2025	7/25/2023	105.20471	103.8810085	102.5821738	101.3075284	100.0564225	98.82822938	97.62234486	96.43818593	95.27518998
230725A00014	7/25/2023	5.32	1/27/2025	7/25/2023	103.32168	102.4882656	101.6683502	100.8616114	100.0677329	99.28640838	98.51734132	97.76024434	97.01483905
230725A00016	7/25/2023	4.75	7/31/2026	7/25/2023	109.37635	107.0000139	104.6880407	102.4383313	100.2488703	98.11771925	96.04301295	94.02295652	92.05582221
230725A00018	7/25/2023	4.4	7/25/2028	7/25/2023	116.99938	112.4941135	108.1924651	104.0841314	100.1593886	96.40905279	92.82444759	89.39737311	86.12007741
230725A00023	7/25/2023	4.57	4/9/2027	7/25/2023	111.94098	108.8364526	105.8362791	102.9363593	100.1327778	97.42179514	94.79983942	92.26349725	89.80950597
230725A00028	7/25/2023	4.46	7/25/2030	7/25/2023	124.98908	118.2341427	111.9023371	105.9647499	100.3945939	95.16703876	90.25905878	85.64929262	81.31791493
230725A00071	7/25/2023	4.4	7/25/2028	7/25/2023	116.99938	112.4941135	108.1924651	104.0841314	100.1593886	96.40905279	92.82444759	89.39737311	86.12007741
230725A00089	7/25/2023	5.65	6/26/2024	7/25/2023	101.00987	100.7685961	100.5284787	100.2895106	100.0516835	99.81498926	99.57941976	99.34496698	99.111623
230725A00090	7/25/2023	5.6	7/18/2024	7/25/2023	101.25022	100.9481837	100.6479658	100.3495479	100.052914	99.75804795	99.46493382	99.17355597	98.88389888
230726A00011	7/26/2023	4.24	7/26/2028	7/26/2023	116.92238	112.3987512	108.0801564	103.9562037	100.0170814	96.25352356	92.65677709	89.21857029	85.93108406
230726A00012	7/26/2023	4.24	7/26/2028	7/26/2023	116.92238	112.3987512	108.0801564	103.9562037	100.0170814	96.25352356	92.65677709	89.21857029	85.93108406
230726A00023	7/26/2023	4.24	7/26/2028	7/26/2023	116.92238	112.3987512	108.0801564	103.9562037	100.0170814	96.25352356	92.65677709	89.21857029	85.93108406
230726A00058	7/26/2023	4.99	7/28/2025	7/26/2023	105.36643	104.0304562	102.7188262	101.4309082	100.1660967	98.92380643	97.70347204	96.50454689	95.3265024
230726A00060	7/26/2023	4.99	7/28/2025	7/26/2023	105.36643	104.0304562	102.7188262	101.4309082	100.1660967	98.92380643	97.70347204	96.50454689	95.3265024
230727A00016	7/27/2023	4.51	7/27/2033	7/27/2023	136.00175	125.7607657	116.4159033	107.8828581	100.0856993	92.9560024	86.43206995	80.45823822	74.98425782
230727A00020	7/27/2023	4.39	7/27/2028	7/27/2023	116.97913	112.4688256	108.1626014	104.0501305	100.1216625	96.3679883	92.7804073	89.35069648	86.07108181
230727A00033	7/27/2023	4.82	7/27/2026	7/27/2023	109.67627	107.2671679	104.9247443	102.646777	100.4311288	98.27574582	96.17865438	94.13795692	92.15182878
230727A00037	7/27/2023	4.82	7/27/2026	7/27/2023	109.67627	107.2671679	104.9247443	102.646777	100.4311288	98.27574582	96.17865438	94.13795692	92.15182878
230727A00063	7/27/2023	4.38	7/27/2028	7/27/2023	117.54022	113.0005423	108.666588	104.5279273	100.5747173	96.79766258	93.18798149	89.73737541	86.4379995
230727A00070	7/27/2023	4.75	7/27/2026	7/27/2023	109.32815	106.9631829	104.6620089	102.4225395	100.2427704	98.12077484	96.05469981	94.04276299	92.0832495
230727A00073	7/27/2023	4.81	7/27/2026	7/27/2023	109.46777	107.1011609	104.7983721	102.5573216	100.3760044	98.25249258	96.1849323	94.17154036	92.21060099
230727A00075	7/27/2023	4.5	7/27/2028	7/27/2023	117.45423	112.9337271	108.617645	104.4956405	100.55795	96.79535172	93.19913283	89.76105881	86.47334465
230728A00004	7/28/2023	4.77	7/28/2026	7/28/2023	109.38679	107.0184378	104.7140251	102.4714678	100.2887587	98.16396765	96.09523842	94.08078524	92.11888974
230728A00005	7/28/2023	4.59	7/28/2027	7/28/2023	113.33981	109.9097941	106.604065	103.4174506	100.3450254	97.38209431	94.52418032	91.7670134	89.10651972
230728A00006	7/28/2023	4.46	7/28/2028	7/28/2023	117.2931	112.7733154	108.4580748	104.3370285	100.4004038	96.63897014	93.04400652	89.60727047	86.32096939
230728A00008	7/28/2023	5.67	5/28/2024	7/28/2023	100.675	100.5140373	100.3535902	100.1936594	100.0342423	99.8753364	99.71693933	99.55904862	99.40166185
230728A00017	7/28/2023	5.15	7/22/2025	7/28/2023	105.28255	103.9660977	102.6751691	101.409042	100.1670181	98.94842553	97.75261752	96.57897129	95.42688691
230731A00012	7/31/2023	4.5	7/31/2029	7/31/2023	121.62881	115.9759427	110.6290329	105.5698566	100.7813642	96.24760214	91.95363674	87.88548429	84.03004589
230731A00036	7/31/2023	5.1	7/31/2025	7/31/2023	105.33945	103.9992392	102.6826031	101.3889692	100.1177847	98.86851382	97.64063769	96.43365334	95.2470732

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230731A00037	7/31/2023	4.74	7/31/2026	7/31/2023	109.35297	106.9769109	104.6652094	102.4157659	100.2265654	98.09566928	96.02121275	94.00140101	92.03450646
230801A00001	8/1/2023	5.14	8/1/2025	8/1/2023	105.40556	104.062233	102.7425709	101.4460022	100.1719707	98.91993786	97.68938197	96.47979732	95.29069372
230801A00021	8/1/2023	4.49	8/1/2028	8/1/2023	117.46959	112.9350375	108.6061222	104.4724248	100.5241106	96.75188985	93.14698553	89.701102	86.40639641
230801A00022	8/1/2023	4.65	8/2/2027	8/1/2023	113.60042	110.1524591	106.8298516	103.627376	100.5400585	97.56315723	94.69215058	91.92272547	89.25076678
230801A00024	8/1/2023	4.82	8/3/2026	8/1/2023	109.57675	107.1899774	104.8680288	102.6087875	100.410218	98.2703625	96.1873377	94.15933134	92.18459917
230801A00028	8/1/2023	5.14	8/1/2025	8/1/2023	105.40556	104.062233	102.7425709	101.4460022	100.1719707	98.91993786	97.68938197	96.47979732	95.29069372
230801A00042	8/1/2023	5.53	8/1/2024	8/1/2023	101.38867	101.0479198	100.7094619	100.3732713	100.0393255	99.7076019	99.37807846	99.05073334	98.725545
230802A00007	8/2/2023	5.46	8/2/2024	8/2/2023	101.37612	101.0326655	100.6915441	100.3527282	100.0161945	99.68192	99.34988197	99.02005802	98.69242604
230802A00017	8/2/2023	4.79	8/3/2026	8/2/2023	109.50636	107.1204285	104.7993003	102.5408622	100.343079	98.20399358	96.12172299	94.09445547	92.12044721
230802A00022	9/8/2023	4.41	9/8/2028	9/8/2023	117.55949	112.9182918	108.4921141	104.2698367	100.2409694	96.39561654	92.72443964	89.21862359	85.86984447
230802A00023	10/16/2023	4.37	10/16/2028	10/16/2023	117.81582	113.0631071	108.5350727	104.2198555	100.1062828	96.1838287	92.44257315	88.87316362	85.46677966
230803A00029	8/3/2023	5.24	2/3/2025	8/3/2023	103.47379	102.6188836	101.7781596	100.9512707	100.1378769	99.33764934	98.55026954	97.77542938	97.0128305
230804A00030	8/4/2023	4.88	8/4/2027	8/4/2023	107.14059	105.355473	103.6190898	101.9297141	100.2856914	98.68543794	97.12743733	95.61023698	94.13244505
230807A00010	8/7/2023	4.4	8/7/2028	8/7/2023	117.14826	112.6042189	108.2670215	104.1261556	100.1716955	96.39426818	92.78501921	89.33558161	86.03804654
230807A00018	8/7/2023	4.65	8/7/2026	8/7/2023	109.22502	106.8317002	104.5036715	102.2387911	100.0350008	97.89032146	95.80284939	93.77075311	91.79227016
230807A00023	8/7/2023	5.26	2/7/2025	8/7/2023	103.40458	102.5410202	101.6919534	100.8570131	100.0358484	99.22811969	98.43349843	97.65166682	96.88231725
230807A00024	8/7/2023	5.03	8/7/2025	8/7/2023	105.33102	103.9722777	102.6377156	101.3267413	100.0387817	98.77328173	97.52970385	96.30752725	95.10624726
230807A00025	8/7/2023	4.69	8/7/2026	8/7/2023	109.3193	106.9248586	104.5957262	102.3297655	100.1249174	97.97920234	95.89071587	93.85762593	91.87816945
230807A00033	8/7/2023	4.57	8/7/2026	8/7/2023	109.35236	106.9511033	104.6154609	102.3432814	100.132493	97.98110349	95.88719688	93.84892994	91.86452902
230807A00087	11/7/2023	4.75	11/7/2025	11/7/2023	106.03806	104.4252922	102.8451435	101.2966878	99.77903578	98.29133143	96.83275008	95.40249715	93.99980672
230807A00093	2/7/2024	4.49	2/6/2026	2/7/2024	106.70685	104.8404887	103.0162625	101.2329711	99.48945827	97.78460807	96.11734273	94.48662127	92.89143799
230808A00008	8/8/2023	4.67	4/24/2026	8/8/2023	108.01035	105.9163374	103.8740063	101.8817394	99.9379808	98.04123448	96.19006161	94.38307787	92.61895097
230808A00010	8/8/2023	4.95	8/8/2025	8/8/2023	105.23424	103.8735309	102.5370766	101.2242831	99.93457467	98.66739372	97.42220031	96.19847132	94.99569987
230808A00014	8/8/2023	4.6	8/7/2026	8/8/2023	109.10716	106.7152522	104.3886031	102.1250732	99.92260504	97.77922036	95.69301628	93.66216209	91.68489605
230808A00029	8/8/2023	4.6	8/7/2026	8/8/2023	109.10716	106.7152522	104.3886031	102.1250732	99.92260504	97.77922036	95.69301628	93.66216209	91.68489605
230808A00054	8/8/2023	4.19	8/8/2028	8/8/2023	116.85264	112.2947491	107.9449865	103.7927498	99.82802688	96.04136429	92.42383303	88.96699683	85.66288249
230808A00057	8/8/2023	4.19	8/8/2028	8/8/2023	116.85264	112.2947491	107.9449865	103.7927498	99.82802688	96.04136429	92.42383303	88.96699683	85.66288249
230808A00060	8/8/2023	4.19	8/8/2028	8/8/2023	116.85264	112.2947491	107.9449865	103.7927498	99.82802688	96.04136429	92.42383303	88.96699683	85.66288249
230809A00020	8/9/2023	4.51	11/9/2026	8/9/2023	109.98352	107.3243889	104.7441939	102.2400993	99.80939402	97.44948175	95.15787582	92.93219357	90.77015121
230809A00026	8/9/2023	4.59	8/7/2026	8/9/2023	109.08359	106.6919626	104.3655895	102.1023296	99.90012589	97.75700014	95.67104966	93.64044389	91.66342123
230809A00034	8/9/2023	4.59	8/10/2026	8/9/2023	109.11844	106.7183494	104.3839366	102.1130425	99.90359073	97.7535849	95.66110496	93.62430389	91.64140447
230810A00001	8/10/2023	4.22	8/10/2028	8/10/2023	117.00627	112.4395465	108.081548	103.9216315	99.94974659	96.15640451	92.53264331	89.06999612	85.76046132
230810A00010	8/10/2023	4.62	8/10/2026	8/10/2023	109.1894	106.7884581	104.453212	102.1815022	99.9712519	97.82046415	95.72721844	93.68966728	91.70603301

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230810A00013	8/10/2023	4.34	8/10/2028	8/10/2023	116.92114	112.3738018	108.0338706	103.8907821	99.93456727	96.15581288	92.54562741	89.0956097	85.7978194
230810A00024	8/10/2023	4.34	8/7/2028	8/10/2023	116.88732	112.3489155	108.0171677	103.8815709	99.93220717	96.15971041	92.55523297	89.11041432	85.81735174
230810A00025	8/10/2023	4.37	5/8/2028	8/10/2023	115.96281	111.6950993	107.6123087	103.7053854	99.96577518	96.38538834	92.95657183	89.67208307	86.52506555
230810A00026	8/10/2023	4.4	1/10/2028	8/10/2023	114.66707	110.7568311	107.0042955	103.4022064	99.94368044	96.62219053	93.43154477	90.36586729	87.41958005
230810A00046	8/10/2023	4.88	11/18/2025	8/10/2023	106.40431	104.7577576	103.144906	101.5647812	100.0164505	98.49901615	97.01161437	95.55341333	94.12361182
230810A00053	8/10/2023	4.82	1/20/2026	8/10/2023	107.10449	105.2815489	103.4988238	101.7551456	100.0493931	98.3804859	96.74738283	95.1490801	93.58460965
230810A00057	8/10/2023	4.62	8/10/2026	8/10/2023	109.1894	106.7884581	104.453212	102.1815022	99.9712519	97.82046415	95.72721844	93.68966728	91.70603301
230811A00017	8/11/2023	4.78	8/11/2026	8/11/2023	109.57999	107.1716719	104.8292888	102.5506721	100.3337356	98.17647346	96.07695691	94.03333044	92.04380874
230811A00018	8/11/2023	5.1	8/11/2025	8/11/2023	105.47574	104.105328	102.7594683	101.4375517	100.1389929	98.86322519	97.60969971	96.37788493	95.16726582
230814A00028	8/14/2023	4.86	8/14/2026	8/14/2023	109.8065	107.3873782	105.0346733	102.7461906	100.5198231	98.35354528	96.24540944	94.19354225	92.19614144
230814A00029	8/14/2023	4.71	2/12/2027	8/14/2023	111.6698	108.7256308	105.875883	103.1170212	100.445661	97.85856287	95.35262475	92.92487576	90.57246977
230815A00031	8/15/2023	5.14	8/13/2025	8/15/2023	105.55555	104.1792438	102.8276764	101.5002317	100.1963181	98.9153629	97.65681167	96.42012738	95.20478977
230815A00035	8/15/2023	5.67	4/16/2024	8/15/2023	100.18965	100.1451632	100.1007348	100.0563622	100.0120454	99.96778419	99.92357855	99.87942833	99.83533343
230815A00036	8/15/2023	5.68	5/15/2024	8/15/2023	100.52471	100.3998473	100.2753067	100.1510913	100.0271997	99.90363064	99.78038282	99.65745493	99.53484568
230815A00037	8/15/2023	4.53	8/15/2028	8/15/2023	117.80795	113.2276891	108.8566876	104.6842636	100.7003387	96.89539756	93.26045352	89.78701674	86.46706414
230815A00038	8/15/2023	4.57	8/16/2027	8/15/2023	113.96584	110.462199	107.0874236	103.8360909	100.7030315	97.68332002	94.77226253	91.96538407	89.25841746
230815A00084	8/15/2023	5.14	8/15/2025	8/15/2023	105.58054	104.1987315	102.8418407	101.509246	100.20035	98.91457417	97.65135851	96.41016067	95.1904553
230816A00025	8/16/2023	4.62	4/16/2027	8/16/2023	112.5944	109.4505396	106.4129742	103.4774969	100.6400954	97.89693892	95.24436977	92.67889373	90.19717197
230817A00036	8/17/2023	4.91	8/17/2026	8/17/2023	109.96278	107.5336879	105.171474	102.8739223	100.6389054	98.46437824	96.34837485	94.28900435	92.28444785
230817A00055	11/17/2023	5.28	11/15/2024	11/17/2023	102.41364	101.7819431	101.1580648	100.5418642	99.93320012	99.33193441	98.73793247	98.15106296	97.57119764
230818A00005	8/18/2023	5.01	8/18/2025	8/18/2023	105.66126	104.2673158	102.8986789	101.5547175	100.2348208	98.938398	97.66487695	96.41370387	95.18434241
230818A00007	8/18/2023	4.73	8/18/2026	8/18/2023	109.86627	107.4291029	105.0592287	102.7544177	100.5125236	98.33148337	96.20931397	94.14410832	92.13403217
230818A00024	8/18/2023	4.81	8/18/2026	8/18/2023	109.73655	107.3075017	104.9454122	102.6480617	100.413318	98.23913159	96.12353227	94.06462515	92.06058757
230818A00025	8/18/2023	4.68	8/18/2027	8/18/2023	113.89815	110.4016777	107.0337427	103.7889353	100.6621011	97.64832937	94.74293942	91.94146921	89.23966368
230818A00064	8/18/2023	5.09	8/18/2025	8/18/2023	105.54854	104.1589818	102.7945977	101.454763	100.1388711	98.84633515	97.57658687	96.32907611	95.10327001
230818A00065	8/18/2023	4.82	8/18/2026	8/18/2023	109.76042	107.3310844	104.9687122	102.6710849	100.4360703	98.26161868	96.14575963	94.08659814	92.08231138
230821A00004	8/21/2023	5.38	2/21/2025	8/21/2023	103.68327	102.7804996	101.8935319	101.0219527	100.1653631	99.32337812	98.49562568	97.68174636	96.88139275
230821A00006	8/21/2023	4.66	8/21/2028	8/21/2023	118.449	113.8382964	109.4387735	105.2396265	101.2306566	97.4022368	93.7452766	90.2511895	86.91186245
230821A00035	8/21/2023	5.36	2/21/2025	8/21/2023	103.66523	102.7625465	101.8756656	101.0041722	100.1476673	99.30576604	98.4780963	97.66429872	96.86402589
230821A00067	8/21/2023	5.66	5/22/2024	8/21/2023	100.60364	100.4593533	100.3154892	100.1720499	100.0290335	99.88643817	99.74426193	99.60250294	99.46115933
230821A00074	8/21/2023	5.18	8/21/2025	8/21/2023	105.71141	104.3126735	102.939401	101.5909557	100.2667216	98.9661024	97.68852114	96.43341916	95.2002555
230821A00085	8/21/2023	5.04	2/23/2026	8/21/2023	107.987	106.0577195	104.1729669	102.3314504	100.5319216	98.77317635	97.05405276	95.37342953	93.73022424
230821A00087	8/21/2023	5.37	3/3/2025	8/21/2023	103.79896	102.8685521	101.9549087	101.0575779	100.1761246	99.31012949	98.4591876	97.62290816	96.80091381

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230823A00010	8/23/2023	5.44	8/23/2024	8/23/2023	101.60495	101.2035882	100.8054123	100.4103823	100.0184609	99.62961141	99.24379771	98.86098423	98.48113599
230823A00019	8/23/2023	5.44	8/23/2024	8/23/2023	101.60495	101.2035882	100.8054123	100.4103823	100.0184609	99.62961141	99.24379771	98.86098423	98.48113599
230823A00036	8/23/2023	4.87	8/24/2026	8/23/2023	109.95405	107.5061898	105.1261899	102.8117901	100.5608175	98.37118431	96.24088364	94.16798597	92.15063568
230823A00066	8/23/2023	4.68	8/23/2027	8/23/2023	113.95989	110.4487475	107.0671363	103.809583	100.6708767	97.64605325	94.73038216	91.91935458	89.20867155
230824A00008	8/24/2023	4.69	8/24/2028	8/24/2023	115.01208	111.2548293	107.6601844	104.2199934	100.9265643	97.77263412	94.75134255	91.8562075	89.08110195
230824A00018	2/20/2024	4.78	2/20/2026	2/20/2024	107.43203	105.5173932	103.6467871	101.8189363	100.0326108	98.28662441	96.57983224	94.91112927	93.2794486
230824A00019	2/20/2024	4.6	2/19/2027	2/20/2024	111.44321	108.4814717	105.6153624	102.8412734	100.1557563	97.55551096	95.03737864	92.59833473	90.23548249
230824A00031	8/24/2023	4.49	8/24/2028	8/24/2023	118.35536	113.7205663	109.2989131	105.0794556	101.0518658	97.2063964	93.53384553	90.02552309	86.6732198
230824A00043	8/24/2023	4.89	8/24/2026	8/24/2023	110.00212	107.5536749	105.1731019	102.8581411	100.6066195	98.4164489	96.285622	94.21220899	92.19435393
230824A00061	8/24/2023	4.61	8/24/2028	8/24/2023	118.26566	113.6506889	109.247497	105.0452293	101.0336415	97.20306432	93.54436851	90.04893165	86.7086076
230825A00005	8/25/2023	5.14	11/21/2025	8/25/2023	106.85474	105.1963292	103.5719542	101.9806309	100.4214135	98.89339189	97.39569055	95.92746652	94.48790801
230825A00009	8/25/2023	4.91	8/25/2026	8/25/2023	110.06268	107.6107957	105.2269432	102.9088533	100.654346	98.46132634	96.32778084	94.25177366	92.23144318
230825A00010	8/25/2023	4.62	8/25/2028	8/25/2023	118.32165	113.702697	109.2958135	105.0901197	101.0753524	97.24182525	93.58039269	90.08241743	86.73973945
230825A00019	8/25/2023	5.41	2/25/2025	8/25/2023	103.76065	102.846663	101.9488547	101.0668007	100.2000882	99.34831885	98.51110776	97.68808333	96.87888648
230825A00037	8/25/2023	4.91	8/25/2026	8/25/2023	110.06268	107.6107957	105.2269432	102.9088533	100.654346	98.46132634	96.32778084	94.25177366	92.23144318
230825A00043	8/25/2023	4.89	8/25/2026	8/25/2023	110.01455	107.5632573	105.1799792	102.8624515	100.6084944	98.41601339	96.28299526	94.20750453	92.1876799
230825A00044	8/25/2023	5.2	8/25/2025	8/25/2023	105.78999	104.3800111	102.9958666	101.6369053	100.3024986	98.99203827	97.70493597	96.44062203	95.19854495
230825A00045	8/25/2023	5.57	8/26/2024	8/25/2023	101.69184	101.2820516	100.8755799	100.4723803	100.0724133	99.67564014	99.28202257	98.89152298	98.50410437
230825A00062	8/25/2023	5.21	8/25/2025	8/25/2023	105.80408	104.3939946	103.0097483	101.650687	100.3161819	99.00562492	97.71842749	96.45401996	95.2118508
230828A00036	8/28/2023	4.8	8/28/2026	8/28/2023	110.15934	107.6914989	105.2924577	102.9599087	100.6916376	98.48551725	96.33950334	94.25163093	92.22001072
230828A00047	8/28/2023	4.92	8/28/2026	8/28/2023	110.12428	107.6635467	105.2712837	102.9452048	100.6831096	98.48288415	96.34249682	94.25999458	92.23349948
230828A00055	8/28/2023	5.24	8/28/2025	8/28/2023	105.88463	104.4659474	103.073383	101.7062747	100.3639844	99.04589465	97.75140831	96.47994733	95.23095212
230828A00056	8/28/2023	4.92	8/28/2026	8/28/2023	110.12428	107.6635467	105.2712837	102.9452048	100.6831096	98.48288415	96.34249682	94.25999458	92.23349948
230828A00060	8/28/2023	5.53	8/30/2024	8/28/2023	101.77481	101.3532345	100.9351587	100.5205378	100.1093289	99.70149014	99.29698007	98.89575803	98.49778403
230829A00006	8/29/2023	5.21	8/29/2025	8/29/2023	105.8548	104.4336724	103.0387461	101.6693596	100.3248717	99.00466228	97.70813136	96.43469824	95.18380083
230829A00010	8/29/2023	5.21	8/25/2025	8/29/2023	105.80408	104.3939946	103.0097483	101.650687	100.3161819	99.00562492	97.71842749	96.45401996	95.2118508
230830A00023	8/30/2023	5.68	6/28/2024	8/30/2023	101.04057	100.7937318	100.5481002	100.3036673	100.0604242	99.81836225	99.57747291	99.33774765	99.09917807
230830A00028	8/30/2023	4.45	8/30/2027	8/30/2023	113.72937	110.1914252	106.7849533	103.5043655	100.3443382	97.29980178	94.36592702	91.5381123	88.81197169
230830A00029	8/30/2023	4.45	8/30/2027	8/30/2023	113.72937	110.1914252	106.7849533	103.5043655	100.3443382	97.29980178	94.36592702	91.5381123	88.81197169
230830A00030	8/30/2023	5.03	8/29/2025	8/30/2023	105.59927	104.1800303	102.7869632	101.4194045	100.0767138	98.75827179	97.46347923	96.19175621	94.94254138
230830A00034	8/30/2023	4.44	8/30/2028	8/30/2023	117.58771	112.9710633	108.5671614	104.3650609	100.354435	96.52553882	92.86917326	89.37665193	86.03976983
230830A00047	8/30/2023	5.5	8/30/2024	8/30/2023	101.70866	101.2878729	100.8705739	100.456716	100.0462568	99.63915448	99.23536803	98.83485705	98.43758181
230830A00051	8/30/2023	4.45	8/30/2027	8/30/2023	113.72937	110.1914252	106.7849533	103.5043655	100.3443382	97.29980178	94.36592702	91.5381123	88.81197169

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230830A00055	8/30/2023	4.47	8/30/2028	8/30/2023	116.63088	112.2823833	108.1329218	104.1721926	100.3904863	96.77864698	93.32803731	90.03050661	86.8783606
230830A00101	8/30/2023	5.06	8/31/2026	8/30/2023	105.12696	103.860207	102.6207696	101.4078282	100.220595	99.05831198	97.92025003	96.80570733	95.71400818
230831A00001	8/31/2023	4.77	8/31/2026	8/31/2023	109.79843	107.3335876	104.937564	102.608047	100.342819	98.13974982	95.99679224	93.91197864	91.88341722
230831A00006	8/31/2023	4.61	8/31/2027	8/31/2023	113.81943	110.2888851	106.8893518	103.6152639	100.4613227	97.42248184	94.49393397	91.67109805	88.94960755
230831A00007	8/31/2023	4.48	8/31/2028	8/31/2023	117.77583	113.1523085	108.7419203	104.5336933	100.5172779	96.68290799	93.02136485	89.52394368	86.18242234
230831A00016	8/31/2023	4.65	8/31/2026	8/31/2023	109.83306	107.3610992	104.9582765	102.6222704	100.3508493	98.14186957	95.99327135	93.90307494	91.86937712
230831A00041	8/31/2023	4.48	8/31/2028	8/31/2023	117.77583	113.1523085	108.7419203	104.5336933	100.5172779	96.68290799	93.02136485	89.52394368	86.18242234
230831A00066	8/31/2023	4.77	8/31/2026	8/31/2023	109.79843	107.3335876	104.937564	102.608047	100.342819	98.13974982	95.99679224	93.91197864	91.88341722
230831A00069	8/31/2023	4.61	8/31/2027	8/31/2023	113.81943	110.2888851	106.8893518	103.6152639	100.4613227	97.42248184	94.49393397	91.67109805	88.94960755
230831A00070	8/31/2023	4.48	8/31/2028	8/31/2023	117.77583	113.1523085	108.7419203	104.5336933	100.5172779	96.68290799	93.02136485	89.52394368	86.18242234
230901A00007	9/1/2023	4.55	9/1/2027	9/1/2023	113.62662	110.0965961	106.6976937	103.42434	100.2712271	97.23330017	94.30574399	91.48397026	88.76360569
230901A00016	9/1/2023	4.6	8/3/2026	9/1/2023	109.37509	106.9843435	104.6586637	102.3959218	100.1940712	98.05114377	95.96524605	93.93455636	91.95732149
230901A00029	9/1/2023	5.04	3/3/2025	9/1/2023	103.64055	102.7088723	101.7940168	100.8955299	100.0129744	99.14592857	98.29398544	97.45675223	96.63384966
230901A00037	9/1/2023	4.3	9/1/2028	9/1/2023	117.61053	112.9698607	108.5437628	104.3211655	100.2916234	96.44528183	92.77283954	89.26551525	85.91501573
230901A00044	9/1/2023	4.55	9/1/2027	9/1/2023	113.62662	110.0965961	106.6976937	103.42434	100.2712271	97.23330017	94.30574399	91.48397026	88.76360569
230905A00030	9/5/2023	4.55	9/5/2028	9/5/2023	118.14466	113.4990016	109.0680344	104.8406741	100.8064684	96.95555583	93.27862942	89.76690253	86.41207711
230905A00033	9/5/2023	4.71	9/4/2026	9/5/2023	110.02896	107.543488	105.1278197	102.7796009	100.4965691	98.27655118	96.11745939	94.01728769	91.97410784
230905A00037	9/5/2023	5.16	3/5/2025	9/5/2023	103.77685	102.8390763	101.9183336	101.0141583	100.1261053	99.25374535	98.3966643	97.55446248	96.72675406
230905A00038	9/5/2023	5.16	3/5/2025	9/5/2023	103.77685	102.8390763	101.9183336	101.0141583	100.1261053	99.25374535	98.3966643	97.55446248	96.72675406
230906A00020	9/6/2023	5.19	9/8/2025	9/6/2023	105.95617	104.5070366	103.0851003	101.6896621	100.3200453	98.97559545	97.65568008	96.35968731	95.0870252
230907A00012	9/7/2023	5.17	9/8/2025	9/7/2023	105.92723	104.4783151	103.056593	101.6613654	100.2919556	98.94770938	97.62799426	96.33219847	95.05973014
230907A00047	9/7/2023	5.08	9/5/2025	9/7/2023	105.75872	104.3192816	102.9067177	101.5203371	100.1594748	98.82348759	97.51175347	96.2236708	94.95865739
230907A00050	9/7/2023	5.05	9/5/2025	9/7/2023	105.9477	104.5030968	103.0855191	101.6942696	100.3286784	98.98809755	97.67190073	96.37948202	95.11025516
230907A00051	9/7/2023	4.79	9/8/2026	9/7/2023	110.27514	107.7755098	105.3463642	102.9853176	100.6900753	98.45843447	96.28827886	94.17757551	92.12437063
230908A00009	9/8/2023	4.55	9/8/2028	9/8/2023	117.51226	113.0198075	108.73531	104.6479268	100.7474394	97.02421565	93.46917251	90.07374179	86.82983816
230908A00010	9/8/2023	4.73	9/9/2030	9/8/2023	114.45102	110.8111315	107.3411761	104.0316086	100.873492	97.85845595	94.97865678	92.22674082	89.59581049
230911A00001	9/11/2023	4.49	9/11/2028	9/11/2023	118.57447	113.8842554	109.4119291	105.1461859	101.0763655	97.19241333	93.48484338	89.9447027	86.56353884
230911A00010	9/11/2023	4.9	9/11/2026	9/11/2023	110.25308	107.7522201	105.3219789	102.9599608	100.6638633	98.4314759	96.26067549	94.14942247	92.09575688
230911A00014	9/11/2023	4.61	9/11/2028	9/11/2023	118.4831	113.813109	109.3596051	105.1113767	101.0578502	97.18905213	93.49557156	89.96852573	86.59952751
230911A00026	9/11/2023	5.08	9/11/2025	9/11/2023	105.83529	104.3788464	102.9498902	101.5477083	100.1716131	98.82094017	97.49504723	96.19331312	94.915137
230911A00030	9/11/2023	5.09	9/11/2025	9/11/2023	105.84984	104.393288	102.9642236	101.5619352	100.1857353	98.83495953	97.50896539	96.20713173	94.92885769
230912A00026	9/12/2023	4.84	9/14/2026	9/12/2023	110.14353	107.6357269	105.1989767	102.8308596	100.5290516	98.29132183	96.11552789	93.99961194	91.9415968
230912A00036	9/12/2023	4.57	9/12/2028	9/12/2023	118.31735	113.6481982	109.1956709	104.9485383	100.8962134	97.02871002	93.33660618	89.81100871	86.44352109

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230912A00053	9/12/2023	4.74	9/7/2027	9/12/2023	114.35309	110.7938752	107.3673597	104.0678766	100.8900324	97.82869186	94.87896429	92.03619064	89.29593114
230912A00085	9/12/2023	5.56	9/12/2024	9/12/2023	101.88574	101.4290773	100.976527	100.5280329	100.0835404	99.64299598	99.20634697	98.77354172	98.34452943
230913A00013	9/13/2023	4.87	9/14/2026	9/13/2023	110.21736	107.7086321	105.2709819	102.9019844	100.599315	98.36074211	96.18412296	94.06739915	92.00859297
230913A00014	9/13/2023	5.34	3/13/2025	9/13/2023	103.89494	102.9370583	101.9969375	101.0740889	100.1680386	99.27832977	98.40452213	97.54619105	96.70292696
230913A00020	9/13/2023	5.37	3/17/2025	9/13/2023	103.97351	103.0044113	102.0534836	101.1202188	100.2041269	99.30473592	98.42159096	97.5542536	96.70230107
230913A00030	9/13/2023	5.16	9/15/2025	9/13/2023	106.00362	104.534933	103.0941609	101.6805751	100.2934724	98.93217367	97.59602249	96.28438418	94.99664498
230913A00031	9/13/2023	4.91	9/15/2026	9/13/2023	110.32852	107.8156366	105.3740153	103.0012227	100.6949259	98.45288557	96.27295115	94.15305718	92.09121919
230913A00032	9/13/2023	4.74	9/15/2027	9/13/2023	114.45523	110.8718969	107.4229674	104.1026622	100.9054866	97.82621052	94.85985483	92.00167759	89.24716155
230913A00043	9/13/2023	5.59	9/12/2024	9/13/2023	101.89944	101.4427369	100.9901503	100.5416201	100.0970917	99.65651162	99.2198272	98.78698675	98.35793949
230913A00046	9/13/2023	4.91	9/14/2026	9/13/2023	110.31579	107.8058391	105.3669889	102.9968175	100.6929994	98.45330248	96.27558306	94.15778208	92.0979212
230913A00049	9/13/2023	4.74	9/13/2027	9/13/2023	114.42969	110.8523953	107.4090718	104.0939738	100.9016317	97.82683945	94.86464009	92.01031246	89.25935876
230913A00050	9/13/2023	4.6	9/13/2028	9/13/2023	118.46286	113.7876795	109.3294909	105.0770402	101.0197171	97.14751429	93.45098987	89.92123226	86.54982784
230914A00021	9/14/2023	5.49	9/13/2024	9/14/2023	101.86527	101.405941	100.9507686	100.4997005	100.0526812	99.60965596	99.17057141	98.7353749	98.30401478
230914A00027	9/14/2023	4.76	1/8/2027	9/14/2023	111.37554	108.5335674	105.7799785	103.1114704	100.5248858	98.01720667	95.58554733	93.22714739	90.93936544
230914A00031	9/14/2023	5.08	9/15/2025	9/14/2023	105.88633	104.418538	102.9786447	101.5659226	100.1796691	98.81920547	97.4838755	96.17304493	94.88610038
230914A00050	9/14/2023	4.67	9/14/2027	9/14/2023	114.20056	110.6244272	107.1823676	103.8686205	100.6777077	97.60441505	94.64377819	91.79106908	89.04178356
230914A00051	9/14/2023	4.84	9/14/2026	9/14/2023	110.14353	107.6357269	105.1989767	102.8308596	100.5290516	98.29132183	96.11552789	93.99961194	91.9415968
230914A00060	9/14/2023	5.28	3/14/2025	9/14/2023	103.84975	102.8893932	101.9469012	101.0217747	100.1135357	99.22172384	98.34589517	97.48562174	96.64049078
230914A00076	9/14/2023	5.48	9/16/2024	9/14/2023	101.89507	101.4274773	100.9641947	100.5051629	100.0503236	99.59961926	99.15299347	98.71039087	98.2717571
230915A00018	9/15/2023	4.88	9/15/2026	9/15/2023	110.25461	107.7426515	105.3019321	102.9300218	100.6245884	98.38339286	96.20428539	94.08520096	92.02415563
230915A00023	9/15/2023	4.7	9/15/2027	9/15/2023	114.31689	110.7359521	107.2893499	103.9713079	100.7763332	97.69919835	94.73492612	91.87877664	89.12623456
230915A00026	9/15/2023	4.57	9/15/2028	9/15/2023	118.3534	113.6750102	109.2140435	104.9592131	100.8998748	97.02599018	93.32808843	89.79723156	86.42498159
230915A00028	9/15/2023	4.57	9/15/2028	9/15/2023	118.3534	113.6750102	109.2140435	104.9592131	100.8998748	97.02599018	93.32808843	89.79723156	86.42498159
230915A00030	9/15/2023	4.7	9/8/2027	9/15/2023	114.22828	110.6684222	107.241409	103.9415632	100.7634811	97.70201764	94.75227336	91.9095808	89.16949246
230915A00054	9/15/2023	4.88	9/15/2026	9/15/2023	110.25461	107.7426515	105.3019321	102.9300218	100.6245884	98.38339286	96.20428539	94.08520096	92.02415563
230915A00055	9/15/2023	4.7	9/15/2027	9/15/2023	114.31689	110.7359521	107.2893499	103.9713079	100.7763332	97.69919835	94.73492612	91.87877664	89.12623456
230915A00057	9/15/2023	4.75	6/15/2027	9/15/2023	113.33093	110.0192589	106.8238725	103.7399724	100.7629951	97.88859471	95.11263071	92.4311569	89.84041079
230918A00008	9/18/2023	4.91	9/18/2026	9/18/2023	110.3667	107.8450244	105.3950869	103.0144293	100.7006958	98.45162514	96.26504647	94.13887485	92.07110746
230918A00010	9/18/2023	4.72	9/18/2029	9/18/2023	123.33539	117.500481	111.9879928	106.7782967	101.8530646	97.19517295	92.78861697	88.61843226	84.67062178
230918A00011	9/18/2023	4.91	9/18/2026	9/18/2023	110.3667	107.8450244	105.3950869	103.0144293	100.7006958	98.45162514	96.26504647	94.13887485	92.07110746
230918A00013	9/18/2023	4.74	9/18/2030	9/18/2023	127.31474	120.33388	113.7985568	107.6777433	101.9427339	96.56695903	91.52581602	86.79651353	82.35792938
230918A00018	9/18/2023	5.01	3/18/2026	9/18/2023	108.22923	106.234636	104.2874794	102.386343	100.529857	98.71670167	96.94560548	95.21534253	93.52473084
230918A00023	9/18/2023	4.91	9/18/2026	9/18/2023	110.3667	107.8450244	105.3950869	103.0144293	100.7006958	98.45162514	96.26504647	94.13887485	92.07110746

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230918A00027	9/18/2023	5.11	9/30/2025	9/18/2023	106.12291	104.6121106	103.1307917	101.6781606	100.2534565	98.85594505	97.48491712	96.13968779	94.81959528
230918A00030	9/18/2023	5.01	9/17/2027	9/18/2023	107.56895	105.7359066	103.9538536	102.2209532	100.5354492	98.89566119	97.29998112	95.74686942	94.23485163
230918A00045	9/18/2023	5.52	9/12/2024	9/18/2023	101.86748	101.4108644	100.9583626	100.5099167	100.065472	99.62497512	99.18837334	98.75561501	98.32664935
230918A00059	9/18/2023	5.68	4/19/2024	9/18/2023	100.22424	100.1714262	100.1186801	100.0660047	100.0133998	99.96086529	99.90840106	99.85600694	99.8036828
230918A00061	9/18/2023	5.55	8/19/2024	9/18/2023	101.60302	101.212613	100.8252204	100.4408091	100.0593446	99.68079295	99.30512081	98.93229524	98.56228383
230918A00062	9/18/2023	5.52	9/18/2024	9/18/2023	101.93692	101.4637524	100.9950011	100.5305995	100.0704873	99.61460497	99.16289419	98.71529773	98.27175936
230918A00088	9/18/2023	5.53	9/18/2024	9/18/2023	101.94165	101.4684703	100.999706	100.5352916	100.0751666	99.61927158	99.16754821	98.71993923	98.27638843
230919A00010	9/19/2023	4.76	9/20/2027	9/19/2023	114.5885	110.9888752	107.5247506	104.1902831	100.9799127	97.88834856	94.91055471	92.04173597	89.27732523
230919A00029	9/19/2023	4.63	9/19/2028	9/19/2023	118.66944	113.9727741	109.4948121	105.2241713	101.1501233	97.26255123	93.551912	90.00920052	86.62591658
230919A00043	9/19/2023	4.62	9/19/2028	9/19/2023	118.62478	113.9291034	109.4520978	105.1823809	101.1092258	97.22251704	93.51271266	89.97080874	86.58830621
230919A00044	9/19/2023	4.93	9/21/2026	9/19/2023	110.45447	107.9233812	105.4645146	103.0753938	100.7536394	98.49696808	96.30318796	94.17019426	92.09596536
230919A00045	9/19/2023	5.52	9/13/2024	9/19/2023	101.87905	101.4196829	100.9644738	100.5133693	100.0663136	99.62325238	99.18413202	98.74889993	98.31750446
230919A00047	9/19/2023	4.98	8/19/2026	9/19/2023	110.15505	107.7182355	105.3486306	103.0440043	100.802215	98.6212041	96.4989925	94.43367709	92.42342726
230919A00055	9/19/2023	4.65	9/19/2028	9/19/2023	118.75876	114.0601154	109.5802408	105.3077522	101.2319182	97.3426196	93.63031069	90.08598408	86.70113731
230919A00082	9/19/2023	5.17	9/19/2025	9/19/2023	106.0703	104.5901289	103.1382884	101.7140357	100.3166524	98.94544481	97.59974246	96.27889736	94.98228303
230920A00002	9/20/2023	4.47	10/2/2028	9/20/2023	118.7406	113.9871647	109.4572005	105.1389699	101.0214141	97.09411108	93.3472353	89.7715204	86.3582244
230920A00025	9/20/2023	5.14	9/16/2025	9/20/2023	105.98722	104.5159165	103.0726263	101.6566183	100.2671857	98.90364578	97.56533872	96.25162665	94.96189273
230920A00026	9/20/2023	4.9	9/16/2026	9/20/2023	110.31658	107.8010783	105.3569867	102.9818674	100.6733802	98.42927867	96.24740561	94.12568927	92.06213926
230921A00021	9/21/2023	4.62	9/21/2028	9/21/2023	119.27973	114.5454483	110.0322064	105.7284709	101.6233713	97.70665852	93.96866613	90.40027431	86.99287594
230921A00028	9/21/2023	5.07	9/21/2026	9/21/2023	110.80167	108.2662137	105.8030834	103.4097919	101.0839572	98.8232932	96.6256054	94.48878656	92.41081264
230922A00019	9/22/2023	5.53	9/16/2024	9/22/2023	101.91845	101.4507922	100.9874463	100.5283517	100.0734499	99.62268352	99.17599609	98.73333225	98.29463763
230922A00020	9/22/2023	5.35	3/24/2025	9/22/2023	104.041	103.0526143	102.0831158	101.1319649	100.1986433	99.28265191	98.38351012	97.50075505	96.63394064
230922A00022	9/22/2023	4.99	9/22/2026	9/22/2023	110.61621	108.0803143	105.6168409	103.2233046	100.8973169	98.63658624	96.43891258	94.30218357	92.2243704
230922A00025	9/22/2023	5.18	9/22/2025	9/22/2023	106.12417	104.6353419	103.1751649	101.7428791	100.3377545	98.95908628	97.60619334	96.27841765	94.97512305
230922A00029	9/22/2023	5.67	5/22/2024	9/22/2023	100.60509	100.4607939	100.3169282	100.1734873	100.0304694	99.88787249	99.7456947	99.60393416	99.46258901
230922A00032	9/22/2023	5.18	9/22/2025	9/22/2023	106.12417	104.6353419	103.1751649	101.7428791	100.3377545	98.95908628	97.60619334	96.27841765	94.97512305
230925A00003	9/25/2023	4.99	9/25/2026	9/25/2023	110.65504	108.1103241	105.6385098	103.2370873	100.9036453	98.63586988	96.43154038	94.28852481	92.20477572
230925A00004	9/25/2023	4.74	9/25/2028	9/25/2023	119.23559	114.5093957	110.0039013	105.7075805	101.6095747	97.69964642	93.96814055	90.40594834	87.0044734
230925A00028	12/22/2023	5.5	12/23/2024	12/22/2023	103.02135	102.2841995	101.5576455	100.8414602	100.1354224	99.43931705	98.75293515	98.07607356	97.40853476
230925A00034	9/25/2023	5.53	9/25/2024	9/25/2023	102.02281	101.530295	101.0425539	100.5595125	100.081103	99.60725886	99.1379149	98.67300711	98.21247269
230925A00056	9/25/2023	5.19	9/25/2025	9/25/2023	106.17819	104.6807079	103.212188	101.771864	100.3589943	98.97286284	97.61277796	96.27807142	94.96809733
230925A00057	9/25/2023	5.19	9/30/2025	9/25/2023	106.24347	104.7317361	103.2494898	101.7959472	100.3703471	98.97195479	97.60006071	96.25397956	94.93304917
230925A00080	9/25/2023	5.07	9/30/2025	9/25/2023	106.3065	104.7902518	103.303647	101.8458887	100.4162107	99.01387328	97.63816232	96.28838806	94.96388411

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230925A00114	9/25/2023	5.09	3/25/2026	9/25/2023	108.47765	106.4617946	104.4943115	102.5737336	100.6986523	98.86771085	97.07960246	95.33306781	93.62689303
230925A00121	9/25/2023	5.2	9/25/2025	9/25/2023	106.19313	104.6955265	103.2268928	101.7864569	100.3734772	98.98723751	97.62704627	96.29223511	94.98215812
230926A00010	9/26/2023	4.74	9/26/2028	9/26/2023	119.24807	114.5187674	110.010436	105.7115284	101.6111664	97.69909486	93.96564224	90.40168456	86.99861141
230926A00019	9/26/2023	5.52	9/26/2024	9/26/2023	102.02944	101.5341838	101.0437443	100.5580549	100.0770468	99.60065246	99.12880567	98.661444142	98.19849595
230926A00020	9/26/2023	5.2	9/26/2025	9/26/2023	106.20621	104.705761	103.2343825	101.791303	100.3757772	98.98708501	97.62453135	96.28744447	94.97517521
230926A00021	9/26/2023	4.73	9/26/2028	9/26/2023	119.20321	114.4749147	109.9675475	105.6695714	101.5701096	97.65890815	93.92629691	90.36315302	86.96086722
230926A00048	9/26/2023	5.2	9/26/2025	9/26/2023	106.20621	104.705761	103.2343825	101.791303	100.3757772	98.98708501	97.62453135	96.28744447	94.97517521
230926A00076	9/26/2023	4.73	9/26/2028	9/26/2023	119.20321	114.4749147	109.9675475	105.6695714	101.5701096	97.65890815	93.92629691	90.36315302	86.96086722
230927A00006	9/27/2023	5.36	3/27/2025	9/27/2023	104.08816	103.0914079	102.1138493	101.1549352	100.2141349	99.2909376	98.38485149	97.49540305	96.62213606
230927A00007	9/27/2023	5.19	9/29/2025	9/27/2023	106.23042	104.7215323	103.2420322	101.791134	100.3680803	98.97214019	97.60260775	96.25880109	94.94006131
230927A00008	9/27/2023	4.98	9/28/2026	9/27/2023	110.66888	108.1156526	105.6358025	103.2267938	100.8861919	98.61166108	96.40095997	94.25193699	92.16252618
230927A00020	9/27/2023	5.01	10/16/2026	9/27/2023	110.97705	108.3708281	105.8405077	103.3834238	100.9970204	98.67884757	96.42655604	94.23789244	92.11069471
230927A00021	9/27/2023	4.96	1/29/2027	9/27/2023	112.19756	109.2870057	106.4685485	103.7387734	101.0944128	98.5323377	96.04955103	93.64318138	91.31047699
230927A00031	9/27/2023	5.4	3/28/2025	9/27/2023	104.14052	103.1407729	102.1603333	101.1986401	100.2551584	99.32937337	98.42078938	97.52892928	96.65333342
230927A00032	9/27/2023	5.02	9/23/2026	9/27/2023	110.70372	108.1639421	105.6967713	103.2997089	100.9703586	98.70642047	96.50568723	94.36603941	92.28544147
230927A00033	9/27/2023	4.78	9/25/2028	9/27/2023	119.41488	114.6847028	110.175356	105.8753135	101.7737112	97.86030618	94.12543856	90.55999473	87.1553738
230927A00034	9/27/2023	4.82	9/27/2028	9/27/2023	119.61957	114.8791689	110.3602771	106.0513215	101.9413936	98.02020979	94.27807203	90.70583159	87.29485495
230928A00001	9/28/2023	4.91	9/28/2026	9/28/2023	110.83142	108.269077	105.7805016	103.3631366	101.0145306	98.73233217	96.51428497	94.35822317	92.26206735
230928A00014	9/28/2023	4.9	9/28/2027	9/28/2023	115.18021	111.5478449	108.0529386	104.6895301	101.4519476	98.33479628	95.33294215	92.44149856	89.65581261
230928A00016	9/28/2023	4.83	9/28/2028	9/28/2023	119.67717	114.9326521	110.4099469	106.0974616	101.9842669	98.06005985	94.31512484	90.74029665	87.32692654
230928A00017	9/28/2023	4.83	9/28/2028	9/28/2023	119.67717	114.9326521	110.4099469	106.0974616	101.9842669	98.06005985	94.31512484	90.74029665	87.32692654
230928A00030	9/28/2023	5.67	6/28/2024	9/28/2023	101.0381	100.7912696	100.5456421	100.3012131	100.057974	99.81591605	99.57503068	99.33530937	99.09674373
230928A00033	9/28/2023	5.03	9/28/2026	9/28/2023	110.79383	108.2390238	105.7576278	103.3471072	101.0050262	98.72904832	96.5169311	94.36652207	92.27575441
230928A00047	9/28/2023	5.21	9/29/2025	9/28/2023	106.26051	104.7513849	103.2716538	101.8205285	100.3972516	99.00109203	97.63134382	96.28732495	94.96837645
230928A00051	9/28/2023	5.04	9/28/2026	9/28/2023	110.89322	108.3225182	105.8267916	103.4033853	101.0497586	98.76347738	96.54220862	94.38371545	92.28585257
230928A00058	9/28/2023	5.04	9/28/2026	9/28/2023	110.89322	108.3225182	105.8267916	103.4033853	101.0497586	98.76347738	96.54220862	94.38371545	92.28585257
230928A00059	9/28/2023	4.84	9/28/2028	9/28/2023	119.0203	114.4360982	110.0658008	105.8981573	101.9225744	98.12907206	94.50824439	91.05122365	87.74964632
230928A00060	9/28/2023	4.84	9/28/2028	9/28/2023	119.0203	114.4360982	110.0658008	105.8981573	101.9225744	98.12907206	94.50824439	91.05122365	87.74964632
230928A00061	9/28/2023	4.84	9/28/2028	9/28/2023	119.0203	114.4360982	110.0658008	105.8981573	101.9225744	98.12907206	94.50824439	91.05122365	87.74964632
230928A00064	9/28/2023	4.78	9/30/2027	9/28/2023	115.27055	111.6187875	108.1056954	104.7252407	101.471684	98.33956651	95.3236948	92.41912619	89.62115529
230929A00018	9/29/2023	5.14	9/29/2025	9/29/2023	106.1552	104.6469009	103.1679784	101.7176478	100.2951521	98.89976057	97.53076756	96.18749142	94.86927347
230929A00027	9/29/2023	5.52	9/23/2024	9/29/2023	101.99475	101.5077836	101.02548	100.5477754	100.074604	99.60590146	99.14160442	98.68165089	98.22597998
230929A00031	9/29/2023	5.14	9/29/2025	9/29/2023	106.1552	104.6469009	103.1679784	101.7176478	100.2951521	98.89976057	97.53076756	96.18749142	94.86927347

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
230929A00033	9/29/2023	4.92	9/29/2026	9/29/2023	110.53169	107.9774203	105.4966474	103.0868275	100.7455193	98.47038097	96.25916527	94.10971511	92.01995935
230929A00037	9/29/2023	5.66	6/28/2024	9/29/2023	101.03564	100.7888073	100.5431839	100.298759	100.0555238	99.81346986	99.57258845	99.33287109	99.09430938
230929A00039	9/29/2023	5.52	9/30/2024	9/29/2023	102.07071	101.5644598	101.0632397	100.566972	100.0755836	99.58900292	99.10715954	98.62998455	98.15741032
230929A00046	9/29/2023	4.66	9/29/2027	9/29/2023	114.8367	111.1953657	107.6922783	104.3214243	101.0770846	97.95381965	94.94645399	92.05006199	89.25995431
230929A00049	9/29/2023	4.87	9/30/2030	9/29/2023	114.17305	110.7057179	107.3968292	104.2375923	101.2197764	98.33566781	95.578034	92.94009037	90.41546923
230929A00059	9/29/2023	5.14	9/29/2025	9/29/2023	106.1552	104.6469009	103.1679784	101.7176478	100.2951521	98.89976057	97.53076756	96.18749142	94.86927347
230929A00061	9/29/2023	4.92	9/29/2026	9/29/2023	110.53169	107.9774203	105.4966474	103.0868275	100.7455193	98.47038097	96.25916527	94.10971511	92.01995935
230929A00062	9/29/2023	4.78	9/29/2027	9/29/2023	114.77382	111.1457542	107.6551577	104.2960623	101.0627908	97.94994267	94.95237931	92.06520964	89.28377686
231002A00018	10/2/2023	4.87	10/1/2027	10/2/2023	115.11474	111.4751497	107.973597	104.6040752	101.3608776	98.23857606	95.23200618	92.33625256	89.54663554
231002A00042	10/2/2023	4.73	10/2/2028	10/2/2023	119.91445	115.1347302	110.5793888	106.2366463	102.0954073	98.14521469	94.37620981	90.77909469	87.3450973
231003A00005	10/3/2023	4.84	10/3/2028	10/3/2023	119.78543	115.0244853	110.4866743	106.1602999	102.0343424	98.09841493	94.34272451	90.75803436	87.33562955
231003A00011	10/3/2023	4.89	10/15/2027	10/3/2023	115.36891	111.6863569	108.1445535	104.7373261	101.4588109	98.30343324	95.2658915	92.34114225	89.52438608
231003A00036	10/3/2023	4.84	10/3/2028	10/3/2023	119.78543	115.0244853	110.4866743	106.1602999	102.0343424	98.09841493	94.34272451	90.75803436	87.33562955
231003A00064	10/3/2023	5.56	10/3/2024	10/3/2023	102.12631	101.6117562	101.1024004	100.5981633	100.098968	99.60473903	99.11540248	98.63088585	98.15111807
231004A00006	10/4/2023	4.88	10/4/2028	10/4/2023	119.97832	115.2102842	110.6657658	106.3330442	102.2010772	98.25945703	94.49837121	90.90856482	87.48130603
231004A00011	10/5/2023	5.51	10/4/2024	10/5/2023	102.11223	101.5950082	101.0830358	100.5762371	100.074534	99.57784974	99.08610915	98.59923856	98.11716578
231004A00012	10/5/2023	5.51	10/4/2024	10/5/2023	102.11223	101.5950082	101.0830358	100.5762371	100.074534	99.57784974	99.08610915	98.59923856	98.11716578
231004A00016	10/4/2023	5.36	4/4/2025	10/4/2023	104.18636	103.1674905	102.1686638	101.1892902	100.2288041	99.28666188	98.36234048	97.45533663	96.56516587
231005A00003	10/5/2023	5.14	10/6/2025	10/5/2023	106.24633	104.7184526	103.22054	101.7517874	100.3114143	98.89866736	97.51281968	96.15316933	94.81903834
231005A00007	10/5/2023	5.51	10/4/2024	10/5/2023	102.11223	101.5950082	101.0830358	100.5762371	100.074534	99.57784974	99.08610915	98.59923856	98.11716578
231005A00035	10/5/2023	4.98	10/5/2026	10/5/2023	110.75906	108.1855477	105.6864132	103.2590673	100.9010273	98.60991207	96.38343728	94.21941088	92.11572868
231005A00037	10/5/2023	4.88	10/5/2027	10/5/2023	115.20226	111.5501484	108.0368522	104.656318	101.4027942	98.27081089	95.25516436	92.35090267	89.55331195
231005A00039	10/5/2023	5.16	10/6/2025	10/5/2023	106.2768	104.7486821	103.2505329	101.7815478	100.340946	98.92797435	97.54190571	96.18203805	94.84769333
231005A00040	10/5/2023	4.98	10/5/2026	10/5/2023	110.75906	108.1855477	105.6864132	103.2590673	100.9010273	98.60991207	96.38343728	94.21941088	92.11572868
231005A00054	10/5/2023	4.98	10/5/2026	10/5/2023	110.75906	108.1855477	105.6864132	103.2590673	100.9010273	98.60991207	96.38343728	94.21941088	92.11572868
231006A00009	10/6/2023	4.98	10/15/2027	10/6/2023	115.68752	111.9993338	108.4520504	105.0394974	101.7558051	98.59539363	95.55295626	92.62344466	89.80205472
231006A00010	10/6/2023	4.93	10/16/2028	10/6/2023	120.35797	115.5480036	110.964696	106.5960999	102.4309618	98.45867901	94.66925842	91.05327812	87.60185169
231006A00015	10/6/2023	5.38	4/7/2025	10/6/2023	104.24322	103.2159743	102.2090946	101.2219795	100.25405	99.30474929	98.37354204	97.45991332	96.56336754
231006A00032	10/6/2023	5.08	10/6/2026	10/6/2023	111.02402	108.4444062	105.9393822	103.5063452	101.1428037	98.84636844	96.61474741	94.44574119	92.3372386
231006A00033	10/6/2023	4.98	10/6/2027	10/6/2023	115.56695	111.9056801	108.3835887	104.9946065	101.7329646	98.59317704	95.57002486	92.65854177	89.85400034
231010A00007	10/10/2023	4.83	10/12/2027	10/10/2023	115.11753	111.4476769	107.9178872	104.5220305	101.2542804	98.10909712	95.08121176	92.16561152	89.35752571
231010A00025	10/10/2023	4.66	10/10/2028	10/10/2023	119.69873	114.9014798	110.3303428	105.9734082	101.8194539	97.85790639	94.07879937	90.47273584	87.03085238
231010A00026	10/10/2023	4.66	10/10/2028	10/10/2023	119.69873	114.9014798	110.3303428	105.9734082	101.8194539	97.85790639	94.07879937	90.47273584	87.03085238

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231010A00030	10/10/2023	4.88	10/15/2026	10/10/2023	110.6332	108.0341245	105.5107206	103.0603301	100.6804067	98.36850923	96.12229695	93.93952456	91.81803768
231010A00031	10/10/2023	5.08	10/10/2025	10/10/2023	106.20641	104.6680883	103.1600556	101.6814844	100.231581	98.80958003	97.41474296	96.04635678	94.70373304
231010A00057	10/10/2023	4.66	10/10/2028	10/10/2023	119.69873	114.9014798	110.3303428	105.9734082	101.8194539	97.85790639	94.07879937	90.47273584	87.03085238
231010A00068	10/10/2023	4.83	10/8/2027	10/10/2023	115.06558	111.4076295	107.8889811	104.5035476	101.2455473	98.1094819	95.09012159	92.18248986	89.38184999
231010A00075	10/10/2023	4.78	10/10/2028	10/10/2023	119.60234	114.8260533	110.2744165	105.9356116	101.7985088	97.85262021	94.0880594	90.49550357	87.06615837
231010A00076	10/10/2023	4.66	10/10/2028	10/10/2023	119.69873	114.9014798	110.3303428	105.9734082	101.8194539	97.85790639	94.07879937	90.47273584	87.03085238
231010A00101	10/10/2023	4.78	10/10/2028	10/10/2023	119.60234	114.8260533	110.2744165	105.9356116	101.7985088	97.85262021	94.0880594	90.49550357	87.06615837
231010A00129	10/10/2023	4.93	10/13/2026	10/10/2023	110.73501	108.1400608	105.6205465	103.173821	100.79735	98.48870397	96.24555286	94.06566149	91.94688502
231010A00131	10/10/2023	5.44	10/4/2024	10/10/2023	102.07603	101.5589139	101.0470485	100.5403562	100.0387586	99.54217908	99.0505425	98.56377518	98.08180494
231010A00135	10/10/2023	5.44	10/10/2024	10/10/2023	102.13424	101.6007794	101.0729142	100.5505554	100.0336168	99.52201422	99.01566509	98.51448857	98.01840548
231011A00004	10/11/2023	4.81	10/8/2027	10/11/2023	114.99515	111.3384472	107.8210038	104.4367417	101.1798801	98.04492207	95.02663884	92.12005499	89.32043483
231011A00016	10/11/2023	4.75	10/11/2028	10/11/2023	119.47901	114.7027179	110.1512151	105.8126718	101.6759456	97.73053696	93.9665489	90.37464889	86.94603372
231011A00020	10/11/2023	5.65	4/12/2024	10/11/2023	100.14355	100.1101794	100.0768477	100.0435541	100.0102987	99.97708138	99.94390208	99.91076073	99.87765725
231011A00028	10/11/2023	4.92	10/9/2026	10/11/2023	110.65879	108.0756924	105.5674722	103.1315152	100.7653137	98.46646318	96.23265715	94.06168275	91.95141615
231011A00029	10/11/2023	4.81	10/8/2027	10/11/2023	114.99515	111.3384472	107.8210038	104.4367417	101.1798801	98.04492207	95.02663884	92.12005499	89.32043483
231011A00030	10/11/2023	4.75	10/11/2028	10/11/2023	119.47901	114.7027179	110.1512151	105.8126718	101.6759456	97.73053696	93.9665489	90.37464889	86.94603372
231012A00013	10/12/2023	5.07	3/16/2026	10/12/2023	108.32155	106.3313678	104.388401	102.4912337	100.6385062	98.82890854	97.06117821	95.33409808	93.64649445
231012A00014	10/12/2023	5.55	10/11/2024	10/12/2023	102.20464	101.6682476	101.1375098	100.6123362	100.0926396	99.57833413	99.06933611	98.56556341	98.06693565
231012A00015	10/12/2023	5.33	4/11/2025	10/12/2023	104.24008	103.2020862	102.1848915	101.1878731	100.2104335	99.25199873	98.31201702	97.38995781	96.48531074
231012A00016	10/12/2023	5.14	10/14/2025	10/12/2023	106.35061	104.8003791	103.2807797	101.7909702	100.3301436	98.89752138	97.49235268	96.1139128	94.76150213
231012A00017	10/12/2023	5.24	7/15/2025	10/12/2023	105.30286	104.0044179	102.7330335	101.4878651	100.2681036	99.07297362	97.90173133	96.75366311	95.6280839
231012A00019	10/12/2023	5.39	2/18/2025	10/12/2023	103.65471	102.7602011	101.8812167	101.0173497	100.1682115	99.33342709	98.51263379	97.70548124	96.91163064
231012A00020	10/12/2023	5.08	2/9/2026	10/12/2023	107.84647	105.960366	104.1169758	102.315079	100.5534992	98.83110099	97.14678798	95.4995014	93.88821851
231012A00021	10/12/2023	4.85	12/30/2027	10/12/2023	116.22481	112.3153409	108.562128	104.9579912	101.4961286	98.1700921	94.97376659	91.90135037	88.94733696
231012A00027	10/12/2023	4.78	10/16/2028	10/12/2023	119.67704	114.8824063	110.3139041	105.9596059	101.8082799	97.84934411	94.07282487	90.46931888	87.0299574
231012A00039	10/12/2023	5.33	4/11/2025	10/12/2023	104.24008	103.2020862	102.1848915	101.1878731	100.2104335	99.25199873	98.31201702	97.38995781	96.48531074
231013A00017	10/13/2023	5.13	10/14/2025	10/13/2023	106.33515	104.785049	103.2655712	101.7758812	100.315172	98.88266525	97.47761007	96.0992818	94.7469809
231013A00020	10/13/2023	4.98	10/13/2026	10/13/2023	110.86201	108.2654272	105.7443177	103.2960324	100.918036	98.6078977	96.36328666	94.1819667	92.06179204
231016A00004	10/16/2023	5.55	10/16/2024	10/16/2023	102.25229	101.7022886	101.1582344	100.6200263	100.0875701	99.56077375	99.03954705	98.52380176	98.01345148
231016A00016	10/16/2023	5.01	10/16/2026	10/16/2023	110.97705	108.3708281	105.8405077	103.3834238	100.9970204	98.67884757	96.42655604	94.23789244	92.11069471
231016A00047	10/16/2023	4.98	2/10/2027	10/16/2023	112.4178	109.4687873	106.6140959	103.8501992	101.1737238	98.58143973	96.07025451	93.63720579	91.27945548
231016A00049	10/16/2023	4.95	7/19/2027	10/16/2023	114.41972	110.9963194	107.6959817	104.5135856	101.4442569	98.48335121	95.62644232	92.86931006	90.20792971
231017A00008	10/17/2023	5.26	10/17/2025	10/17/2023	106.57613	105.0160167	103.4868029	101.9876434	100.5177203	99.07624484	97.66245649	96.27562129	94.91503086

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231017A00009	10/17/2023	5.42	4/17/2025	10/17/2023	104.40702	103.3519351	102.3183163	101.3055086	100.3128867	99.3398497	98.38582074	97.45024527	96.5325902
231017A00017	10/17/2023	5.11	10/16/2026	10/17/2023	111.23187	108.6223587	106.0888279	103.6286049	101.2391317	98.91795621	96.66272707	94.47118903	92.34117818
231017A00029	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00032	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00033	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00034	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00035	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00036	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00037	10/17/2023	4.99	10/17/2028	10/17/2023	119.93484	115.2732002	110.8310345	106.5966931	102.5592123	98.70826946	95.03414196	91.52766894	88.18021554
231017A00039	10/17/2023	5.12	10/16/2026	10/17/2023	111.34174	108.7139058	106.1638104	103.6886558	101.2857666	98.95258162	96.68664847	94.48561772	92.34723794
231017A00040	10/17/2023	5.12	10/16/2026	10/17/2023	111.34174	108.7139058	106.1638104	103.6886558	101.2857666	98.95258162	96.68664847	94.48561772	92.34723794
231017A00041	10/17/2023	5.12	10/16/2026	10/17/2023	111.34174	108.7139058	106.1638104	103.6886558	101.2857666	98.95258162	96.68664847	94.48561772	92.34723794
231017A00046	10/17/2023	5.26	10/17/2025	10/17/2023	106.57613	105.0160167	103.4868029	101.9876434	100.5177203	99.07624484	97.66245649	96.27562129	94.91503086
231017A00082	10/17/2023	5.69	5/17/2024	10/17/2023	100.5494	100.4189829	100.2889212	100.1592123	100.0298549	99.90084734	99.77218828	99.64387623	99.51590975
231018A00003	10/18/2023	5.68	4/23/2024	10/18/2023	100.26977	100.2058498	100.1420204	100.0782835	100.0146391	99.95108681	99.88762655	99.82425809	99.76098123
231018A00026	10/18/2023	5.28	1/7/2026	10/18/2023	107.74365	105.950058	104.1953228	102.4782817	100.797818	99.15285862	97.54237229	95.96536717	94.4208891
231018A00041	10/18/2023	5.65	7/18/2024	10/18/2023	101.26531	100.9632516	100.6630052	100.3645591	100.0678969	99.77300277	99.4798607	99.18845501	98.89877022
231018A00049	10/18/2023	5.65	7/18/2024	10/18/2023	101.26531	100.9632516	100.6630052	100.3645591	100.0678969	99.77300277	99.4798607	99.18845501	98.89877022
231019A00006	10/19/2023	5.29	10/20/2025	10/19/2023	106.66307	105.0941593	103.5564138	102.0489694	100.5709978	99.12170071	97.70030808	96.30607719	94.93829127
231019A00007	10/19/2023	5.19	10/19/2026	10/19/2023	111.47604	108.8551927	106.3107996	103.840165	101.4407089	99.10995868	96.84554378	94.64519055	92.50671774
231019A00009	10/19/2023	5.14	10/19/2027	10/19/2023	116.30928	112.5990259	109.030734	105.5981733	102.2954194	99.11684039	96.05708115	93.1110478	90.2738935
231019A00031	1/22/2024	5.12	1/30/2026	1/22/2024	107.78022	105.9240511	104.1093438	102.3349271	100.5996698	98.90247996	97.24230286	95.61811975	94.02894628
231019A00035	10/19/2023	5.54	10/18/2024	10/19/2023	102.27	101.7145088	101.1650797	100.6216116	100.0840075	99.55217278	99.02601454	98.50544203	97.99036638
231019A00036	10/19/2023	5.27	10/20/2025	10/19/2023	106.63183	105.0631763	103.525679	102.0184785	100.5407466	99.09168514	97.67052416	96.27652104	94.90895913
231019A00041	10/19/2023	5.08	10/19/2028	10/19/2023	121.0787	116.2441082	111.6374538	107.2467116	103.060555	99.06831289	95.25992876	91.62592144	88.15734923
231019A00043	10/19/2023	5.19	10/19/2026	10/19/2023	111.47604	108.8551927	106.3107996	103.840165	101.4407089	99.10995868	96.84554378	94.64519055	92.50671774
231019A00044	10/19/2023	5.14	10/19/2027	10/19/2023	116.30928	112.5990259	109.030734	105.5981733	102.2954194	99.11684039	96.05708115	93.1110478	90.2738935
231020A00041	10/20/2023	5.19	10/20/2025	10/20/2023	106.50689	104.9392441	103.4027397	101.8965148	100.4197418	98.97162284	97.55138846	96.15829646	94.79163057
231020A00048	10/20/2023	5.08	10/20/2026	10/20/2023	111.20798	108.5878742	106.0442765	103.5744893	101.1759285	98.84611743	96.58268175	94.38334437	92.24592086
231020A00049	10/20/2023	5.03	10/20/2027	10/20/2023	115.9322	112.2258734	108.6615116	105.2328727	101.9340278	98.75934115	95.70345391	92.76126908	89.92793698
231020A00051	10/20/2023	5.02	10/20/2028	10/20/2023	120.81894	115.9874128	111.3838602	106.9962468	102.8132376	98.82415405	95.01893261	91.3880861	87.92266738
231020A00060	10/20/2023	5.5	10/21/2024	10/20/2023	102.27671	101.7131137	101.1557495	100.6045176	100.059317	99.52004881	98.98661645	98.45892528	97.93688273
231020A00061	10/20/2023	5.32	4/21/2025	10/20/2023	104.34972	103.2841829	102.2405393	101.2181199	100.2162807	99.23440307	98.27189342	97.32818133	96.40271863

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231020A00067	10/20/2023	5.32	4/15/2025	10/20/2023	104.27773	103.2287557	102.2010201	101.1938778	100.2067128	99.23893345	98.28997132	97.35928005	96.44633429
231020A00069	10/20/2023	5.08	10/15/2026	10/20/2023	111.14228	108.5366539	106.0068426	103.550187	101.1641365	98.84624586	96.59417022	94.40566047	92.27855853
231020A00070	10/20/2023	5.19	10/15/2025	10/20/2023	106.44104	104.887401	103.3644785	101.8714361	100.4074628	98.97177686	97.56362404	96.18227652	94.82703174
231023A00028	10/23/2023	5.33	4/23/2025	10/23/2023	104.38441	103.313281	102.2642715	101.2366987	100.2299087	99.24327424	98.27619297	97.32808642	96.39839874
231023A00029	10/23/2023	5.19	10/23/2025	10/23/2023	106.54639	104.9703392	103.42568	101.9115419	100.427087	98.97150775	97.54402557	96.14388953	94.77037507
231023A00048	10/23/2023	5.04	10/25/2027	10/23/2023	116.03554	112.3135582	108.7345329	105.292159	101.9804501	98.79371665	95.7265499	92.77380591	89.93059122
231024A00007	10/30/2023	5.5	10/30/2024	10/30/2023	102.3683	101.7800589	101.1985901	100.6237786	100.0555105	99.49367457	98.93816189	98.38886611	97.84568322
231024A00008	10/30/2023	5.5	10/30/2024	10/30/2023	102.3683	101.7800589	101.1985901	100.6237786	100.0555105	99.49367457	98.93816189	98.38886611	97.84568322
231024A00010	12/18/2023	5.43	12/18/2024	12/18/2023	102.90368	102.1806441	101.4678137	100.7649752	100.071919	99.38844159	98.71434472	98.04943581	97.39352745
231024A00011	12/18/2023	5.43	12/18/2024	12/18/2023	102.90368	102.1806441	101.4678137	100.7649752	100.071919	99.38844159	98.71434472	98.04943581	97.39352745
231024A00017	10/24/2023	4.97	10/25/2027	10/24/2023	115.78582	112.068292	108.4935931	105.0554231	101.7478	98.56503876	95.50173446	92.55274715	89.71318711
231024A00029	10/24/2023	4.97	10/25/2027	10/24/2023	115.78582	112.068292	108.4935931	105.0554231	101.7478	98.56503876	95.50173446	92.55274715	89.71318711
231024A00030	10/24/2023	4.96	10/24/2028	10/24/2023	120.59767	115.7599648	111.1510211	106.758737	102.5717172	98.5792276	94.77115397	91.13796222	87.6706621
231024A00039	10/24/2023	5.06	10/26/2026	10/24/2023	111.2353	108.5984742	106.0389738	103.5540597	101.1411082	98.79760492	96.52114013	94.30940335	92.16017866
231024A00046	10/24/2023	4.96	10/24/2028	10/24/2023	120.59767	115.7599648	111.1510211	106.758737	102.5717172	98.5792276	94.77115397	91.13796222	87.6706621
231024A00076	10/24/2023	5.31	4/24/2025	10/24/2023	104.37499	103.30122	102.2496772	101.2196753	100.2105558	99.22168689	98.25246195	97.3022985	96.37063687
231024A00079	10/24/2023	5.18	10/24/2025	10/24/2023	106.54383	104.9651033	103.4178508	101.9011979	100.4143035	98.95635686	97.52657633	96.12420814	94.74852503
231024A00082	10/24/2023	5.05	10/23/2026	10/24/2023	111.17038	108.5425793	105.9916817	103.5149674	101.1098328	98.77378303	96.50442639	94.29946958	92.15671281
231025A00003	10/25/2023	5.07	10/24/2025	10/25/2023	106.62563	105.0419709	103.4899461	101.9686781	100.4773197	99.01505496	97.58109691	96.17468683	94.79509272
231025A00004	10/25/2023	5.07	10/24/2025	10/25/2023	106.62563	105.0419709	103.4899461	101.9686781	100.4773197	99.01505496	97.58109691	96.17468683	94.79509272
231025A00009	10/25/2023	5.49	10/21/2024	10/25/2023	102.27107	101.7074925	101.1501462	100.5989321	100.0537491	99.51449848	98.98108349	98.45340955	97.93138411
231025A00013	10/25/2023	5.08	10/26/2026	10/25/2023	111.28681	108.6493119	106.0891559	103.6036009	101.1900227	98.84590655	96.56884225	94.35651896	92.20672036
231025A00018	10/25/2023	5.19	10/27/2025	10/25/2023	106.59905	105.0117867	103.456248	101.9315545	100.4368546	98.97132786	97.53418329	96.12465828	94.74201718
231025A00024	10/25/2023	5	10/25/2028	10/25/2023	120.79317	115.9482452	111.3324757	106.9337347	102.7406036	98.74232702	94.92877047	91.29038124	87.81815174
231025A00036	10/25/2023	5.08	10/21/2026	10/25/2023	111.22112	108.5981159	106.0517596	103.5793451	101.1782818	98.84608658	96.5803792	94.37887696	92.23939011
231025A00068	10/25/2023	5.33	4/25/2025	10/25/2023	104.40845	103.3317959	102.2774783	101.2448094	100.233126	99.24179155	98.27019524	97.31775045	96.3838936
231027A00004	10/27/2023	5.61	7/26/2024	10/27/2023	101.34617	101.0219747	100.6998656	100.3798178	100.0618116	99.74582737	99.43184586	99.11984805	98.80981513
231027A00015	10/27/2023	5.08	2/23/2026	10/27/2023	108.06326	106.1332366	104.2477532	102.4055198	100.6052874	98.84585151	97.12604992	95.44476097	93.80090191
231027A00019	10/27/2023	4.99	10/27/2026	10/27/2023	111.06791	108.43054	105.8705789	103.3852851	100.9720293	98.62829245	96.35166029	94.13981805	91.99054583
231027A00021	10/27/2023	5.13	10/30/2025	10/27/2023	106.5432	104.9483005	103.3853678	101.8535115	100.3518699	98.87961328	97.43594164	96.02008387	94.63129625
231027A00024	10/27/2023	5.46	10/28/2024	10/27/2023	102.32217	101.7395199	101.1635242	100.5940667	100.0310365	99.47432512	98.92382644	98.3794368	97.8410548
231027A00028	10/27/2023	4.92	10/23/2028	10/27/2023	120.40239	115.5718915	110.969764	106.5839278	102.4030107	98.41630021	94.61370205	90.98570076	87.52332347
231027A00035	10/27/2023	4.99	10/30/2026	10/27/2023	111.10659	108.4605282	105.8922991	103.3991345	100.9783849	98.62751217	96.34408383	94.12576818	91.97032925

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231027A00036	10/27/2023	5.13	11/3/2025	10/27/2023	106.5965	104.9901583	103.4161498	101.8735652	100.3615284	98.87919529	97.42575279	96.00041714	94.60243265
231027A00043	10/27/2023	4.99	10/27/2026	10/27/2023	111.06791	108.43054	105.8705789	103.3852851	100.9720293	98.62829245	96.35166029	94.13981805	91.99054583
231030A00007	10/30/2023	5.32	4/30/2025	10/30/2023	104.45767	103.3672389	102.2997062	101.254354	100.2304951	99.22747021	98.24464687	97.281418	96.33720063
231030A00035	10/30/2023	4.85	10/30/2028	10/30/2023	120.8219	115.9431003	111.2961238	106.8686476	102.6490749	98.62648525	94.79059161	91.13169967	87.64067068
231030A00057	10/30/2023	5.52	10/30/2024	10/30/2023	102.38007	101.7917926	101.2102849	100.6354347	100.0671284	99.50525439	98.94970401	98.40037083	97.85715084
231030A00061	10/30/2023	5.32	4/30/2025	10/30/2023	104.45767	103.3672389	102.2997062	101.254354	100.2304951	99.22747021	98.24464687	97.281418	96.33720063
231031A00021	10/31/2023	5.18	10/30/2025	10/31/2023	106.62266	105.0271024	103.4635277	101.9310405	100.4287791	98.95591316	97.51164259	96.09519595	94.70582928
231031A00022	10/31/2023	5.04	10/30/2026	10/31/2023	111.23591	108.5881538	106.018272	103.5234918	101.1011627	98.74874519	96.46380596	94.24401225	92.0871271
231031A00033	10/31/2023	5.05	10/30/2026	10/31/2023	111.26177	108.6136789	106.0434666	103.5483633	101.1257182	98.77299179	96.48775039	94.26766106	92.11048667
231031A00041	10/31/2023	5.51	10/25/2024	10/31/2023	102.32267	101.7481125	101.1800274	100.6183066	100.0628433	99.51353325	98.97027435	98.43296687	97.90151322
231101A00016	11/1/2023	4.99	11/3/2025	11/1/2023	106.63174	105.0207302	103.4422152	101.8952798	100.3790417	98.89265155	97.43529083	96.00617079	94.60453098
231101A00017	11/1/2023	5.25	5/1/2025	11/1/2023	104.39324	103.3005005	102.2307698	101.1833234	100.1574688	99.15254205	98.16790629	97.20295016	96.25708669
231102A00012	11/2/2023	5.65	6/5/2024	11/2/2023	100.76495	100.581833	100.3993888	100.2176132	100.0365025	99.85605294	99.67626092	99.49712281	99.31863501
231102A00022	11/2/2023	4.91	11/10/2026	11/2/2023	111.04192	108.3660122	105.7695064	103.2495478	100.8034082	98.42847559	96.12224789	93.88232793	91.70641808
231102A00024	11/2/2023	4.78	11/2/2028	11/2/2023	119.88898	115.0421099	110.4256294	106.0272903	101.835566	97.83960218	94.0291741	90.39464629	86.92693549
231102A00025	11/2/2023	4.9	12/8/2026	11/2/2023	111.3749	108.6168632	105.9424579	103.3486101	100.8323791	98.39095266	96.02164103	93.72187016	91.489176
231102A00026	11/2/2023	4.9	1/12/2027	11/2/2023	111.81448	108.9555201	106.1857385	103.5018091	100.9005511	98.37892312	95.93401604	93.56304626	91.26334933
231102A00027	11/2/2023	4.89	2/9/2027	11/2/2023	112.14619	109.2040863	106.3560231	103.5984901	100.9281261	98.34171315	95.83616973	93.40854409	91.05600809
231102A00028	11/2/2023	4.88	3/9/2027	11/2/2023	112.48685	109.4587134	106.5298054	103.6963243	100.9546386	98.30127547	95.73291312	93.24637336	90.83861447
231102A00029	11/2/2023	4.88	4/13/2027	11/2/2023	112.93121	109.8003498	106.7748815	103.8506534	101.0237024	98.2902445	95.64666531	93.08951158	90.61548293
231102A00030	11/2/2023	4.87	5/11/2027	11/2/2023	113.26361	110.0496538	106.9458713	103.9478369	101.0513295	98.25232331	95.5469773	92.93162559	90.40276818
231102A00031	11/2/2023	5.1	11/3/2025	11/2/2023	106.5485	104.9425544	103.3689362	101.8267351	100.3150751	98.83311232	97.38003387	95.95505614	94.55742359
231102A00032	11/2/2023	4.91	11/2/2026	11/2/2023	110.93827	108.2860958	105.7121292	103.213581	100.787782	98.43217556	96.14431203	93.92184339	91.76251836
231102A00033	11/2/2023	4.83	11/2/2027	11/2/2023	115.39084	111.658175	108.0696561	104.6188979	101.2998345	98.10670255	95.03402449	92.07659261	89.22945412
231102A00039	11/2/2023	4.91	10/28/2026	11/2/2023	110.87434	108.236761	105.6766776	103.1913347	100.7780982	98.43444424	96.15795426	93.94630946	91.79728613
231102A00041	11/2/2023	5.46	11/1/2024	11/2/2023	102.36749	101.7738219	101.1870562	100.60707	100.0337462	99.46697045	98.90663092	98.35261837	97.804826
231102A00064	1/22/2024	5.01	1/22/2026	1/22/2024	107.47478	105.6430218	103.85176	102.099832	100.3861134	98.70952068	97.06900901	95.46357072	93.89223365
231102A00070	2/15/2024	4.86	2/16/2027	2/15/2024	112.15461	109.1914855	106.3236843	103.5476268	100.8598852	98.25717911	95.73636772	93.29444358	90.92852594
231103A00002	11/3/2023	4.67	11/29/2027	11/3/2023	115.16307	111.3582075	107.702776	104.1900369	100.8135994	97.56739782	94.4456731	91.44295537	88.55404745
231103A00005	11/3/2023	5.12	5/5/2025	11/3/2023	104.297	103.194103	102.1146638	101.0579381	100.0232129	99.00980481	98.01705859	97.04434561	96.09106252
231103A00007	11/3/2023	5.05	8/4/2025	11/3/2023	105.32145	103.9707454	102.643958	101.3405051	100.0598222	98.80136289	97.56459752	96.34901305	95.15411219
231103A00008	11/3/2023	4.97	11/3/2025	11/3/2023	106.34049	104.7362709	103.1643439	101.6238045	100.1137774	98.63341946	97.18191856	95.75849179	94.36238432
231103A00028	11/3/2023	5.53	9/3/2024	11/3/2023	101.76757	101.3357347	100.9075696	100.4830294	100.0620683	99.64464096	99.2307031	98.82021101	98.41312173

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231103A00029	11/3/2023	4.75	11/3/2026	11/3/2023	110.53567	107.885985	105.3145343	102.8185225	100.3952768	98.04223708	95.7569507	93.53706677	91.3803314
231103A00034	11/3/2023	4.49	11/3/2028	11/3/2023	119.21777	114.3640977	109.7419696	105.3390455	101.1437098	97.14502628	93.33269443	89.69700914	86.22882287
231106A00007	11/6/2023	4.78	11/5/2027	11/6/2023	115.25078	111.5121559	107.9182028	104.4624964	101.1389372	97.94173079	94.86537078	91.90462253	89.05450818
231106A00016	11/6/2023	5.39	11/6/2024	11/6/2023	102.38211	101.7748758	101.1748659	100.5819531	99.99601171	99.41691912	98.84455555	98.27880397	97.7195501
231106A00020	11/6/2023	5.02	11/6/2025	11/6/2023	106.45989	104.8463779	103.2654539	101.7161959	100.1977169	98.70916277	97.24971069	95.81856785	94.41496993
231107A00005	11/7/2023	5.39	11/15/2024	11/7/2023	102.48324	101.8512917	101.227169	100.6107263	100.0018221	99.40031842	98.80608052	98.21897706	97.63887978
231107A00008	11/7/2023	5.17	5/7/2025	11/7/2023	104.37519	103.2664753	102.1814533	101.1193708	100.0795044	99.06116058	98.06367467	97.08640906	96.12875195
231107A00009	11/7/2023	5.03	11/7/2025	11/7/2023	106.48913	104.8726077	103.2887687	101.7366875	100.215473	98.72426736	97.26224445	95.82860807	94.42259078
231107A00011	11/7/2023	4.84	11/9/2026	11/7/2023	110.84601	108.1754889	105.5841631	103.0691895	100.6278489	98.25753786	95.9557624	93.720133	91.54835925
231107A00028	11/7/2023	5.4	11/7/2024	11/7/2023	102.39946	101.789458	101.1867497	100.5912027	100.0026898	99.42108661	98.84627176	98.27812665	97.71653547
231108A00011	11/8/2023	5.06	5/8/2025	11/8/2023	104.44247	103.3280514	102.2375501	101.1701984	100.1252632	99.10204204	98.09986182	97.11807685	96.1560677
231108A00015	11/8/2023	4.83	11/9/2026	11/8/2023	110.81987	108.149698	105.5587095	103.0440655	100.6030473	98.23305131	95.93158402	93.69625605	91.52477719
231108A00026	11/8/2023	5.04	11/7/2025	11/8/2023	106.50524	104.8885832	103.3046125	101.7524017	100.23106	98.73972936	97.27758353	95.84382631	94.43769021
231108A00028	11/8/2023	4.83	11/9/2026	11/8/2023	110.81987	108.149698	105.5587095	103.0440655	100.6030473	98.23305131	95.93158402	93.69625605	91.52477719
231109A00025	11/9/2023	4.75	11/9/2028	11/9/2023	118.5979	114.0245534	109.6672266	105.5143798	101.5551541	97.77933156	94.1772936	90.73998204	87.45886325
231109A00026	11/9/2023	5.19	5/9/2025	11/9/2023	104.42053	103.3061867	102.2157687	101.1485141	100.103689	99.08058977	98.07854236	97.09690021	96.13504306
231113A00007	11/13/2023	4.86	11/13/2028	11/13/2023	120.39687	115.5069972	110.8506873	106.4154642	102.1895859	98.16199941	94.32229639	90.66067173	87.16788533
231113A00034	11/13/2023	5.16	11/13/2025	11/13/2023	106.77963	105.1440566	103.5417596	101.9717903	100.4332339	98.92520995	97.44687071	95.99739966	94.57601004
231113A00036	11/13/2023	5.3	5/15/2025	11/13/2023	104.61434	103.4827336	102.375771	101.2926525	100.2326117	99.1949149	98.17885909	97.18377059	96.20900347
231113A00038	11/13/2023	4.97	11/13/2026	11/13/2023	111.23825	108.5513518	105.9443462	103.4143601	100.9586416	98.57455593	96.25958024	94.01129741	91.82739108
231114A00023	11/14/2023	5.46	9/13/2024	11/14/2023	101.8515	101.392199	100.9370634	100.4860318	100.0390487	99.59605955	99.1570108	98.72184987	98.29052509
231114A00025	11/14/2023	5.13	5/14/2025	11/14/2023	104.41088	103.283177	102.1799807	101.1004995	100.0439729	99.00967255	97.99690066	97.00498845	96.0332946
231114A00026	11/14/2023	4.97	11/14/2025	11/14/2023	106.49992	104.8636493	103.2607144	101.6901647	100.1510825	98.64258422	97.16381953	95.71396931	94.29224435
231114A00027	11/14/2023	4.76	11/13/2026	11/14/2023	110.6871	108.0075108	105.4076459	102.8846385	100.4357418	98.05832597	95.74987264	93.50796915	91.3303034
231114A00028	11/14/2023	4.68	11/15/2027	11/14/2023	115.01964	111.2569592	107.6408134	104.1646588	100.8222791	97.60777115	94.51552759	91.54021967	88.6767819
231114A00032	11/14/2023	5.35	11/14/2024	11/14/2023	102.44681	101.8176985	101.1963447	100.5826047	99.97633887	99.37741096	98.78568799	98.20104021	97.62334096
231114A00046	11/14/2023	4.62	11/14/2028	11/14/2023	119.30126	114.4336147	109.7989074	105.3846789	101.1792056	97.17145224	93.35102773	89.70814396	86.23357732
231114A00072	11/14/2023	4.67	11/15/2027	11/14/2023	114.9834	111.2213694	107.6058611	104.1303256	100.7885475	97.57462418	94.48294891	91.50819353	88.64529312
231114A00074	11/14/2023	4.6	11/14/2028	11/14/2023	119.20889	114.3433607	109.7106945	105.2984363	101.0948653	97.08894926	93.2702999	89.6291317	86.15622354
231115A00001	11/15/2023	5.58	6/18/2024	11/15/2023	100.9013	100.682229	100.4641261	100.2469814	100.0307885	99.81554101	99.60123281	99.38785763	99.17540933
231115A00002	11/15/2023	5.56	7/18/2024	11/15/2023	101.23814	100.9361294	100.6359342	100.3375391	100.0409277	99.74608409	99.45299232	99.16163673	98.87200182
231115A00039	11/15/2023	4.85	11/16/2026	11/15/2023	110.96168	108.2700572	105.6586808	103.1246584	100.6652185	98.27770822	95.95958726	93.70842242	91.52188218
231117A00001	11/17/2023	4.99	11/12/2025	11/17/2023	106.48993	104.8595609	103.262333	101.6973024	100.1635591	98.66022755	97.18646436	95.74145731	94.32442371

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231117A00002	11/17/2023	4.76	11/12/2026	11/17/2023	110.67456	107.9979246	105.4008697	102.8805305	100.4341675	98.05915809	95.75299035	93.51325785	91.33765433
231117A00003	11/17/2023	4.59	11/17/2028	11/17/2023	119.19896	114.3251213	109.6848943	105.2657665	101.055963	97.0444016	93.22064823	89.57487503	86.09782191
231117A00024	11/17/2023	5.55	6/3/2024	11/17/2023	100.72385	100.546287	100.3693489	100.193037	100.017348	99.84227858	99.66782541	99.49398523	99.32075483
231120A00025	11/20/2023	5.49	8/14/2024	11/20/2023	101.52281	101.1462647	100.772525	100.4015631	100.033348	99.66784916	99.30503645	98.94488018	98.5873511
231120A00026	11/20/2023	5.43	9/18/2024	11/20/2023	101.89434	101.4212918	100.9526569	100.488371	100.0283737	99.57260544	99.12100803	98.67352419	98.23009772
231120A00027	11/20/2023	5.4	10/16/2024	11/20/2023	102.16976	101.620021	101.0762233	100.5382698	100.0060663	99.47952066	98.9585428	98.44304449	97.93293934
231120A00028	11/20/2023	5.38	11/13/2024	11/20/2023	102.4545	101.8280709	101.2093311	100.5981405	99.99436127	99.39785879	98.80850178	98.22616211	97.65071468
231121A00015	11/21/2023	4.75	11/30/2026	11/21/2023	110.87366	108.1440196	105.4966713	102.9286083	100.4369554	98.0189624	95.67199742	93.39354118	91.18118114
231122A00029	11/22/2023	5.05	11/24/2025	11/22/2023	106.76274	105.0965016	103.4645732	101.8659628	100.2997128	98.7649021	97.26064469	95.78608771	94.34040995
231122A00032	11/22/2023	5.2	5/22/2025	11/22/2023	104.58268	103.4324566	102.3076927	101.2075507	100.1312267	99.0779512	98.04698793	97.03763151	96.0492061
231122A00033	11/22/2023	5.53	7/22/2024	11/22/2023	101.27467	100.9616093	100.6504948	100.3413097	100.0340359	99.7286556	99.42515137	99.12350582	98.82370186
231122A00034	11/22/2023	5.42	9/23/2024	11/22/2023	101.94607	101.459234	100.9770671	100.4994982	100.0264616	99.55789284	99.09372873	98.63390722	98.17836745
231122A00035	11/22/2023	5.2	5/22/2025	11/22/2023	104.58268	103.4324566	102.3076927	101.2075507	100.1312267	99.0779512	98.04698793	97.03763151	96.0492061
231122A00044	11/22/2023	5.38	11/22/2024	11/22/2023	102.55532	101.9041482	101.2612738	100.6265408	99.99979485	99.38088562	98.76966652	98.16599457	97.56973033
231127A00024	11/27/2023	4.78	11/27/2026	11/27/2023	110.91599	108.1941815	105.5542322	102.993159	100.5081091	98.09635287	95.75527819	93.48238412	91.27527542
231127A00025	11/27/2023	4.68	11/29/2027	11/27/2023	115.1997	111.3941649	107.7380828	104.2247119	100.8476607	97.60086279	94.47855859	91.47527757	88.58582197
231127A00026	11/27/2023	4.61	11/27/2028	11/27/2023	119.41289	114.5056331	109.8347055	105.3873825	101.1516991	97.11639807	93.27088361	89.60517893	86.10988638
231127A00065	11/27/2023	5.03	11/26/2025	11/27/2023	106.75596	105.0842231	103.4469865	101.8432475	100.2720407	98.73243778	97.22354558	95.74450467	94.2944876
231128A00002	11/28/2023	4.41	11/30/2028	11/28/2023	119.17417	114.2441176	109.552462	105.086322	100.8335876	96.78286798	92.9234437	89.24522377	85.73870497
231128A00003	11/28/2023	4.41	11/30/2028	11/28/2023	119.17417	114.2441176	109.552462	105.086322	100.8335876	96.78286798	92.9234437	89.24522377	85.73870497
231128A00009	11/28/2023	4.73	12/14/2026	11/28/2023	110.98981	108.2207965	105.5361881	102.9328647	100.4078428	97.95827066	95.58142109	93.27468513	91.03556591
231129A00006	11/29/2023	4.25	11/29/2028	11/29/2023	118.41437	113.5047823	108.8327054	104.3853121	100.150537	96.11703074	92.27411328	88.61173023	85.12041283
231129A00013	11/29/2023	5.25	11/29/2024	11/29/2023	102.54643	101.8763116	101.2149686	100.5622327	99.9179366	99.28191716	98.65401554	98.03407691	97.42195035
231129A00039	11/29/2023	4.97	5/30/2025	11/29/2023	104.40631	103.235663	102.0914122	100.9726668	99.87857934	98.80833959	97.76117252	96.73633637	95.73312092
231129A00073	11/29/2023	4.81	5/29/2025	11/29/2023	104.39535	103.2246585	102.0803483	100.9615339	99.86736855	98.79704291	97.74978261	96.72484656	95.72152515
231130A00031	11/30/2023	5.41	8/30/2024	11/30/2023	101.6708	101.2501079	100.8329033	100.4191393	100.0087734	99.60176376	99.19806948	98.79765012	98.40046595
231130A00057	11/30/2023	5.27	12/2/2024	11/30/2023	102.59331	101.9148987	101.2454881	100.5848955	99.93294719	99.28947419	98.6543118	98.0272996	97.40828126
231130A00063	11/30/2023	5.52	7/1/2024	11/30/2023	101.0351	100.7800223	100.5262271	100.2737094	100.0224598	99.7724687	99.52372662	99.27622427	99.0299524
231130A00064	11/30/2023	5.41	8/30/2024	11/30/2023	101.6708	101.2501079	100.8329033	100.4191393	100.0087734	99.60176376	99.19806948	98.79765013	98.40046595
231130A00065	11/30/2023	5.33	10/30/2024	11/30/2023	102.26823	101.680322	101.0991843	100.5247013	99.95675894	99.39524608	98.84005388	98.29107599	97.74820846
231130A00072	11/30/2023	4.83	12/1/2025	11/30/2023	106.48627	104.8030816	103.1548268	101.5404837	99.95906805	98.40963396	96.89127167	95.40310596	93.94429448
231130A00073	11/30/2023	4.61	11/30/2026	11/30/2023	110.49974	107.7751395	105.1327177	102.5694682	100.0825193	97.66912415	95.3266542	93.05259325	90.84453175
231130A00074	11/30/2023	4.45	11/30/2028	11/30/2023	118.70338	113.80397	109.1410696	104.7019246	100.4745391	96.44762756	92.61056931	88.95336498	85.4665968

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231201A00009	12/1/2023	5.27	11/25/2024	12/1/2023	102.51629	101.8571288	101.2064679	100.5641459	99.93000305	99.30388361	98.68563577	98.07511153	97.47216658
231201A00024	12/1/2023	4.36	12/1/2028	12/1/2023	118.2948	113.4020914	108.7458127	104.3131996	100.0922517	96.07168004	92.24086101	88.58979295	85.10905634
231201A00026	12/1/2023	4.51	12/1/2026	12/1/2023	110.24416	107.5203224	104.8787255	102.3163628	99.83035736	97.41795757	95.07653041	92.80355558	90.59661968
231201A00027	12/1/2023	5.19	12/2/2024	12/1/2023	102.53895	101.8607507	101.1915437	100.5311528	99.87940427	99.23612922	98.60116296	97.97434509	97.35551932
231201A00034	12/1/2023	4.62	3/2/2026	12/1/2023	107.27399	105.3315718	103.4344365	101.5812576	99.77075414	98.001691	96.27287683	94.58316226	92.93143817
231204A00006	12/4/2023	4.86	8/4/2025	12/4/2023	105.06471	103.7158206	102.3908175	101.089119	99.81016145	98.55339905	97.31830305	96.10436109	94.9110766
231205A00025	12/5/2023	4.61	12/15/2025	12/5/2023	106.54271	104.8170729	103.1279057	101.4741172	99.85465953	98.2685266	96.7147518	95.19240607	93.70059605
231205A00026	12/5/2023	5.02	12/16/2024	12/5/2023	102.72032	102.0016744	101.2931245	100.5944604	99.90547551	99.22596934	98.55574672	97.89461785	97.24239807
231205A00036	12/5/2023	5.31	10/4/2024	12/5/2023	102.0088	101.4918816	100.9802151	100.4737201	99.97231853	99.47593358	98.98449016	98.49791462	98.01613479
231205A00037	12/5/2023	5.38	9/5/2024	12/5/2023	101.72521	101.2880383	100.8546334	100.4249472	99.99893182	99.57654031	99.15772647	98.74244487	98.3306509
231206A00003	12/6/2023	5.18	12/6/2024	12/6/2023	102.58308	101.8938304	101.2138722	100.5430197	99.8810905	99.22790721	98.58329697	97.94709149	97.31912687
231206A00012	12/6/2023	4.31	12/6/2028	12/6/2023	118.11585	113.2136101	108.5488951	104.1088531	99.88139854	95.85516441	92.01945532	88.36420386	84.87993008
231206A00016	12/6/2023	4.74	6/6/2025	12/6/2023	104.40137	103.2091383	102.0442735	100.905835	99.7929294	98.70470303	97.64034003	96.59906015	95.5801169
231206A00044	12/8/2023	4.71	12/8/2025	12/8/2023	106.36933	104.6684684	103.0031951	101.3724601	99.77525155	98.21059722	96.67756255	95.17524885	93.70279155
231206A00046	12/6/2023	4.39	12/6/2027	12/6/2023	114.21988	110.4131649	106.7567713	103.2438867	99.86805142	96.62313653	93.50332451	90.50309144	87.61719025
231206A00047	12/6/2023	4.31	12/6/2028	12/6/2023	118.11585	113.2136101	108.5488951	104.1088531	99.88139854	95.85516441	92.01945532	88.36420386	84.87993008
231206A00065	12/6/2023	4.58	12/8/2025	12/6/2023	106.40644	104.7007788	103.0308847	101.3956932	99.79418582	98.22538434	96.68834843	95.18217393	93.70599106
231206A00070	12/6/2023	4.58	12/8/2025	12/6/2023	106.40644	104.7007788	103.0308847	101.3956932	99.79418582	98.22538434	96.68834843	95.18217393	93.70599106
231207A00010	12/7/2023	4.38	12/7/2027	12/7/2023	114.19475	110.3857837	106.7273218	103.2125417	99.83497177	96.58847205	93.46721473	90.46566631	87.57857083
231207A00011	12/7/2023	4.28	12/7/2028	12/7/2023	117.98628	113.0843072	108.4200063	103.9805062	99.75370772	95.72823113	91.8933696	88.23904527	84.75576872
231207A00014	12/7/2023	4.7	12/8/2025	12/7/2023	106.35238	104.6516584	102.9865306	101.3559386	99.75887048	98.19435412	96.66145503	95.15927458	93.68694826
231207A00016	12/7/2023	4.47	12/7/2026	12/7/2023	110.20564	107.4661816	104.8098401	102.2335584	99.73441428	97.30961363	94.95648364	92.67246655	90.45511377
231207A00018	12/7/2023	4.7	12/8/2025	12/7/2023	106.35238	104.6516584	102.9865306	101.3559386	99.75887048	98.19435412	96.66145503	95.15927458	93.68694826
231207A00027	12/7/2023	4.15	12/7/2028	12/7/2023	118.03414	113.1112253	108.4275326	103.9700805	99.72666912	95.685826	91.83675786	88.16930672	84.67390867
231207A00034	12/7/2023	4.7	12/5/2025	12/7/2023	106.31635	104.6239509	102.9668504	101.3440033	99.75440993	98.19710977	96.67117937	95.17573052	93.70990855
231207A00035	12/7/2023	4.47	12/7/2026	12/7/2023	110.20564	107.4661816	104.8098401	102.2335584	99.73441428	97.30961363	94.95648364	92.67246655	90.45511377
231208A00015	12/8/2023	5.51	6/14/2024	12/8/2023	100.84087	100.632899	100.4258009	100.219569	100.0141978	99.80968198	99.60601603	99.40319461	99.20121242
231211A00013	12/11/2023	5.42	9/11/2024	12/11/2023	101.81052	101.3567868	100.9071117	100.4614432	100.0197278	99.58191278	99.14794654	98.71777831	98.29135822
231211A00032	12/11/2023	4.5	12/11/2028	12/11/2023	119.06161	114.1236909	109.4253356	104.9535508	100.6961264	96.6415802	92.77910998	89.09854903	85.59032522
231211A00057	12/11/2023	4.58	12/11/2029	12/11/2023	123.45328	117.3787872	111.651938	106.2508325	101.1550704	96.34564023	91.80481769	87.51607119	83.46397513
231211A00071	12/11/2023	5.22	12/16/2024	12/11/2023	102.72939	102.0124564	101.3055725	100.608527	99.92111504	99.24313744	98.57440045	97.91471565	97.26389967
231212A00007	12/12/2023	5.16	2/5/2025	12/12/2023	103.2944	102.4367651	101.5934267	100.7640333	99.94824057	99.14571534	98.35613526	97.57918837	96.81457268
231212A00008	12/12/2023	5.26	12/12/2024	12/12/2023	102.70595	102.0000195	101.3038292	100.6171823	99.93988302	99.271741	98.612571	97.96219274	97.32043075

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231212A00009	12/12/2023	5.01	6/12/2025	12/12/2023	104.60014	103.393465	102.2148008	101.0631794	99.93767552	98.83740593	97.76152682	96.70923166	95.6797492
231212A00016	12/12/2023	4.59	12/7/2026	12/12/2023	110.52844	107.7845953	105.1239729	102.5435089	100.040278	97.61148316	95.25444878	92.96661433	90.74552859
231212A00018	12/12/2023	4.5	12/6/2027	12/12/2023	114.62488	110.8107186	107.1470961	103.6271921	100.2445394	96.99300143	93.86675371	90.86026548	87.96828316
231212A00067	12/12/2023	4.82	12/12/2025	12/12/2023	106.60522	104.8916008	103.2139958	101.571337	99.96259494	98.3867811	96.8429454	95.33017449	93.84758983
231213A00015	12/13/2023	5.47	8/13/2024	12/13/2023	101.50398	101.1302051	100.7592006	100.3909337	100.0253741	99.66249171	99.3022572	98.94464146	98.58961587
231213A00018	12/13/2023	4.99	6/16/2025	12/13/2023	104.62109	103.4035528	102.2145334	101.0530317	99.91809826	98.80882683	97.72435205	96.66384715	95.62652178
231213A00019	12/13/2023	4.97	6/13/2025	12/13/2023	104.5631	103.3539842	102.1729967	101.0191661	99.89156144	98.78929379	97.71151408	96.65741084	95.62620817
231213A00044	12/13/2023	5.07	12/13/2024	12/13/2023	102.58238	101.8742304	101.1758921	100.4871651	99.80785161	99.13775915	98.47670045	97.8244933	97.18096036
231213A00049	12/13/2023	4.14	12/13/2028	12/13/2023	117.3933	112.4887248	107.8228315	103.3826512	99.15599492	95.13140118	91.29808848	87.64591085	84.16531667
231214A00003	12/14/2023	4.7	6/16/2025	12/14/2023	104.2681	103.0528291	101.8660368	100.7067262	99.57394884	98.46679942	97.38441348	96.32596509	95.29066474
231214A00029	12/14/2023	4.49	12/15/2025	12/14/2023	106.0763	104.3593233	102.6785744	101.0329695	99.42146923	97.84307548	96.29682925	94.78180877	93.2971276
231214A00036	12/14/2023	4.19	12/14/2026	12/14/2023	109.52692	106.777901	104.1128227	101.5285771	99.02219521	96.59083867	94.23179343	91.9424631	89.72036289
231214A00058	12/14/2023	4.69	6/13/2025	12/14/2023	104.22459	103.0176249	101.83876	100.6870181	99.56146884	98.46122436	97.38543637	96.33329422	95.30402279
231214A00074	12/14/2023	4.69	6/13/2025	12/14/2023	104.22459	103.0176249	101.83876	100.6870181	99.56146884	98.46122436	97.38543637	96.33329422	95.30402279
231214A00075	12/14/2023	4.49	12/15/2025	12/14/2023	106.0763	104.3593233	102.6785744	101.0329695	99.42146923	97.84307548	96.29682925	94.78180877	93.2971276
231215A00004	12/15/2023	4.07	12/15/2028	12/15/2023	117.08489	112.1820481	107.5181322	103.0801453	98.85587233	94.83382813	91.00320972	87.35385167	83.87618472
231215A00018	12/15/2023	4.19	12/15/2027	12/15/2023	113.58407	109.7646703	106.0970394	102.574262	99.18977852	95.93736764	92.81112611	89.80545056	86.91502024
231218A00019	12/18/2023	5.39	7/18/2024	12/18/2023	101.18681	100.8848987	100.5848002	100.2865013	99.98998584	99.69523767	99.40224095	99.11097998	98.82143927
231218A00020	12/18/2023	5.32	8/19/2024	12/18/2023	101.51325	101.1230499	100.7358661	100.3516624	99.97040447	99.59205823	99.21659033	98.84396786	98.47415844
231218A00023	12/18/2023	4.76	6/18/2025	12/18/2023	104.3624	103.1411725	101.9486794	100.7839148	99.64591743	98.53377047	97.44659835	96.38356477	95.34387043
231218A00027	12/18/2023	4.96	2/19/2025	12/18/2023	103.28171	102.3863065	101.5064919	100.6418627	99.7920274	98.95660798	98.13523918	97.32756798	96.53325315
231218A00046	12/18/2023	4.76	6/18/2025	12/18/2023	104.3624	103.1411725	101.9486794	100.7839148	99.64591743	98.53377047	97.44659835	96.38356477	95.34387043
231218A00047	12/18/2023	5.24	9/18/2024	12/18/2023	101.80445	101.3316527	100.8632635	100.3992218	99.93946704	99.48393975	99.03258169	98.58533562	98.14214535
231218A00048	12/18/2023	5.32	8/19/2024	12/18/2023	101.51325	101.1230499	100.7358661	100.3516624	99.97040447	99.59205823	99.21659033	98.84396786	98.47415844
231218A00052	12/18/2023	4.54	12/18/2025	12/18/2023	106.19676	104.4707092	102.7811993	101.1271332	99.50745841	97.92116475	96.36728167	94.84487643	93.35305226
231218A00070	12/18/2023	4.6	6/18/2025	12/18/2023	104.3625	103.1382906	101.9429329	100.7754183	99.63478031	98.5200969	97.43048777	96.36511207	95.32316622
231219A00006	12/19/2023	5.39	7/19/2024	12/19/2023	101.19782	100.8931457	100.590315	100.2893161	99.99013228	99.692747	99.397144	99.10330719	98.81122068
231219A00007	12/19/2023	5.05	12/19/2024	12/19/2023	102.63948	101.9147964	101.2003817	100.4960222	99.80150603	99.11662758	98.44118677	97.77498906	97.11784524
231219A00008	12/19/2023	5.05	12/19/2024	12/19/2023	102.63948	101.9147964	101.2003817	100.4960222	99.80150603	99.11662758	98.44118677	97.77498906	97.11784524
231219A00009	12/19/2023	4.75	6/19/2025	12/19/2023	104.36078	103.1368859	101.9418501	100.7746613	99.63435224	98.52000021	97.43072427	96.36568302	95.32407236
231219A00011	12/19/2023	4.75	6/19/2025	12/19/2023	104.36078	103.1368859	101.9418501	100.7746613	99.63435224	98.52000021	97.43072427	96.36568302	95.32407236
231219A00012	12/19/2023	4.54	12/19/2025	12/19/2023	106.20833	104.4795063	102.7873232	101.1306796	99.50851896	97.91982699	96.36362941	94.83898998	93.34500853
231219A00013	12/19/2023	4.27	12/18/2026	12/19/2023	109.78707	107.0237465	104.3450445	101.7478196	99.22906901	96.78592318	94.41563845	92.1155906	89.88326865

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231219A00015	12/19/2023	4.17	12/20/2027	12/19/2023	113.56554	109.732928	106.0530812	102.5190126	99.12410034	95.8620649	92.7269492	89.71309972	86.81514908
231219A00016	12/19/2023	4.27	12/18/2026	12/19/2023	109.78707	107.0237465	104.3450445	101.7478196	99.22906901	96.78592318	94.41563845	92.1155906	89.88326865
231219A00017	12/19/2023	4.26	1/15/2027	12/19/2023	110.06244	107.2200363	104.4667108	101.7991415	99.2141513	96.70870186	94.27988617	91.92492211	89.64114615
231219A00018	12/19/2023	4.25	2/16/2027	12/19/2023	110.39566	107.4580627	104.6151721	101.8634232	99.19940767	96.61986351	94.121668	91.70183083	89.35748776
231219A00019	12/19/2023	4.17	12/15/2027	12/19/2023	113.50995	109.6919153	106.0256158	102.5041309	99.12090264	95.86971099	92.74465402	89.74012965	86.85081831
231219A00020	12/19/2023	4.16	2/1/2028	12/19/2023	114.00368	110.0460812	106.2505245	102.6095278	99.11599214	95.76318123	92.54470075	89.4544793	86.48675048
231219A00021	12/19/2023	4.14	3/15/2028	12/19/2023	114.4155	110.3286155	106.413813	102.6629218	99.0682012	95.62231735	92.31831954	89.14961817	86.10996399
231219A00022	12/19/2023	4.13	4/14/2028	12/19/2023	114.70869	110.5333928	106.5369912	102.7108315	99.04673126	95.53694613	92.17414422	88.95138166	85.86207996
231219A00023	12/19/2023	4.12	6/15/2028	12/19/2023	115.35647	110.996341	106.8292339	102.8454979	99.03602331	95.39220715	91.90592155	88.56948457	85.37563301
231219A00025	12/19/2023	4.06	12/15/2028	12/19/2023	117.03786	112.136116	107.4732571	103.03629	98.81300111	94.79190689	90.96220582	87.31373388	83.83692311
231219A00060	12/19/2023	4.22	6/21/2027	12/19/2023	111.69884	108.3967245	105.2112862	102.1376842	99.17131597	96.30779935	93.5429607	90.87282327	88.29359646
231220A00008	12/20/2023	4.99	12/18/2024	12/20/2023	102.58536	101.8635937	101.1520207	100.4504272	99.75860377	99.07634697	98.40345891	97.73974713	97.08502444
231220A00014	12/20/2023	4.99	12/20/2024	12/20/2023	102.60646	101.8792024	101.1622911	100.4555073	99.75863698	99.07147224	98.3938109	97.72545637	97.06621747
231220A00015	12/20/2023	4.48	12/19/2025	12/20/2023	106.10478	104.3768735	102.685594	101.0298376	99.40854842	97.82071255	96.26535613	94.74154329	93.24837428
231220A00027	12/20/2023	4.99	12/16/2024	12/20/2023	102.56426	101.8479799	101.1417439	100.4453399	99.75856317	99.08121462	98.41310062	97.75403283	97.10382799
231220A00028	12/20/2023	4.13	12/20/2027	12/20/2023	113.41674	109.5868931	105.9097282	102.378263	98.98587871	95.72629858	92.59356818	89.58203659	86.68633882
231220A00030	12/20/2023	4.48	12/22/2025	12/20/2023	106.139	104.4027771	102.7034841	101.0400022	99.41126282	97.81624006	96.2539488	94.72344251	93.22381131
231220A00031	12/20/2023	4.23	12/21/2026	12/20/2023	109.71051	106.9401778	104.2548913	101.6514821	99.12692507	96.67832942	94.30293167	91.99808899	89.76127294
231220A00032	12/20/2023	4.57	12/19/2025	12/20/2023	106.26011	104.5308226	102.8381879	101.1811006	99.55850423	97.96938421	96.41276606	94.88771332	93.39332565
231220A00034	12/20/2023	4.99	12/20/2024	12/20/2023	102.60646	101.8792024	101.1622911	100.4555073	99.75863698	99.07147224	98.3938109	97.72545637	97.06621747
231220A00036	12/20/2023	4.87	2/27/2025	12/20/2023	103.28981	102.3727348	101.4719968	100.587166	99.71782312	98.86356364	98.02399694	97.1987458	96.38744583
231221A00003	12/21/2023	4.39	12/22/2025	12/21/2023	105.98293	104.2481032	102.550178	100.8880393	99.26061917	97.66689235	96.10587436	94.57661927	93.07821779
231221A00006	12/21/2023	4.14	12/21/2026	12/21/2023	109.46498	106.6980237	104.0160371	101.415851	98.89444276	96.44892385	94.07653305	91.77462966	89.5406873
231221A00008	12/21/2023	3.99	12/21/2028	12/21/2023	116.76857	111.8567838	107.185159	102.7405941	98.51077434	94.48412322	90.64975417	86.99742514	83.51749665
231221A00014	12/21/2023	4.14	6/21/2027	12/21/2023	111.4409	108.1429603	104.9615827	101.8919351	98.92941832	96.06965391	93.30847152	90.6418976	88.06614465
231221A00022	12/21/2023	4.01	12/21/2028	12/21/2023	114.89808	110.5299067	106.3694769	102.4056026	98.62776204	95.02605619	91.59116873	88.31432841	85.1872742
231221A00039	12/21/2023	3.99	12/21/2028	12/21/2023	116.76857	111.8567838	107.185159	102.7405941	98.51077434	94.48412322	90.64975417	86.99742514	83.51749665
231221A00086	12/21/2023	4.48	6/23/2025	12/21/2023	104.26725	103.0302219	101.8226669	100.6435425	99.49185154	98.36664312	97.26700986	96.19208542	95.14104226
231221A00103	12/21/2023	4.3	12/30/2025	12/21/2023	106.18047	104.4178152	102.6930635	101.0050589	99.3526921	97.73489877	96.15065741	94.59898708	93.07894532
231221A00104	12/21/2023	4.3	12/30/2025	12/21/2023	106.18047	104.4178152	102.6930635	101.0050589	99.3526921	97.73489877	96.15065741	94.59898708	93.07894532
231222A00004	12/22/2023	4	12/22/2028	12/22/2023	116.82578	111.9099274	107.2345421	102.7864932	98.55344526	94.52380297	90.68666229	87.03176509	83.54945703
231222A00014	12/22/2023	4.92	12/20/2024	12/22/2023	102.55543	101.8283809	101.1116725	100.4050896	99.70841827	99.02145051	98.34398422	97.67582284	97.01677524
231222A00019	12/22/2023	4.92	12/23/2024	12/22/2023	102.59376	101.8583474	101.133512	100.4190281	99.71467456	99.0202367	98.33550579	97.66027897	96.99435897

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231222A00027	12/22/2023	4.84	2/21/2025	12/22/2023	103.19616	102.2957657	101.4111422	100.5418786	99.68757664	98.84785179	98.02233259	97.21066015	96.41248757
231222A00032	12/22/2023	4.94	12/16/2024	12/22/2023	102.52836	101.8122242	101.106129	100.4098645	99.72322581	99.04601401	98.37803544	97.71910178	97.0690298
231222A00039	12/22/2023	4.44	12/22/2025	12/22/2023	106.06963	104.3340332	102.6353481	100.9724632	99.34431009	97.7498633	96.18813794	94.65818774	93.15910308
231226A00016	12/26/2023	3.92	12/26/2028	12/26/2023	116.34879	111.6112211	107.1054858	102.8189043	98.739556	94.85623269	91.15839157	87.63611248	84.28005792
231226A00024	12/26/2023	4.03	12/26/2028	12/26/2023	117.0078	112.076797	107.3874133	102.9264365	98.6814503	94.64078522	90.79346871	87.12917948	83.63820496
231226A00027	12/26/2023	4.22	12/28/2026	12/26/2023	109.75825	106.9684492	104.264757	101.6439516	99.10295257	96.63881729	94.24873363	91.93001305	89.68008415
231226A00043	12/26/2023	4.46	12/26/2025	12/26/2023	106.14972	104.4027184	102.6930434	101.0195598	99.38118226	97.77686904	96.20561999	94.66647438	93.1585089
231226A00095	12/26/2023	4.22	12/28/2026	12/26/2023	109.75825	106.9684492	104.264757	101.6439516	99.10295257	96.63881729	94.24873363	91.93001305	89.68008415
231226A00098	12/26/2023	4.67	6/26/2025	12/26/2023	104.33546	103.0929736	101.8802289	100.6961631	99.53976591	98.41007392	97.30616801	96.22717089	95.17224467
231227A00005	12/27/2023	4.17	12/28/2026	12/27/2023	109.62089	106.8329911	104.1311573	101.512167	98.97294096	96.51053793	94.12214702	91.80508093	89.55676941
231227A00013	12/27/2023	4.44	6/27/2025	12/27/2023	104.2586	103.0108736	101.7931323	100.604301	99.4433574	98.30932727	97.2012811	96.11833183	95.05963243
231227A00014	12/27/2023	4.29	12/26/2025	12/27/2023	106.11764	104.3662801	102.6524135	100.974901	99.33265044	97.72461393	96.14978538	94.60719845	93.09592449
231227A00023	12/27/2023	3.98	12/27/2028	12/27/2023	116.78112	111.8527105	107.1659823	102.7077106	98.46546853	94.42757709	90.58305523	86.92157404	83.43341417
231227A00026	12/27/2023	4.6	6/27/2025	12/27/2023	104.25853	103.0138734	101.7990722	100.6130616	99.45482503	98.32339358	97.21784281	96.13729043	95.0808939
231227A00027	12/27/2023	4.42	12/26/2025	12/27/2023	106.07992	104.3335451	102.6244855	100.9516062	99.31382224	97.71009205	96.13941581	94.60083305	93.09342073
231227A00028	12/27/2023	4.85	2/4/2025	12/27/2023	103.01733	102.1636775	101.3242206	100.4986064	99.68649403	98.88755373	98.10146645	97.32792335	96.56662544
231227A00030	12/27/2023	4.44	6/27/2025	12/27/2023	104.2586	103.0108736	101.7931323	100.604301	99.4433574	98.30932727	97.2012811	96.11833183	95.05963243
231227A00039	12/27/2023	4.6	6/27/2025	12/27/2023	104.25853	103.0138734	101.7990722	100.6130616	99.45482503	98.32339358	97.21784281	96.13729043	95.0808939
231228A00008	12/28/2023	5.18	9/30/2024	12/28/2023	101.89862	101.3928753	100.8921562	100.396386	99.90549152	99.41940121	98.93804475	98.46135325	97.98925912
231228A00020	12/28/2023	4.93	12/27/2024	12/28/2023	102.64276	101.8963288	101.1607818	100.4358861	99.72141112	99.01713307	98.32283448	97.63830403	96.96333631
231228A00022	12/28/2023	4.61	6/27/2025	12/28/2023	104.271	103.0262644	101.8113827	100.6252929	99.46697847	98.3354704	97.22984423	96.14921764	95.09274807
231228A00023	12/28/2023	4.4	12/26/2025	12/28/2023	106.04502	104.2989584	102.5902065	100.9176295	99.28014223	97.67670356	96.10631372	94.56801238	93.06087665
231228A00024	12/28/2023	4.15	12/28/2026	12/28/2023	109.56595	106.7788078	104.0777175	101.4594532	98.92093632	96.45922618	94.07151238	91.75510809	89.50744352
231228A00025	12/28/2023	4.05	12/28/2027	12/28/2023	113.20547	109.3578967	105.6644948	102.1181815	98.71224084	95.44030612	92.29633937	89.27461206	86.36968713
231228A00026	12/28/2023	3.96	12/28/2028	12/28/2023	116.69632	111.7671721	107.0798935	102.6212347	98.37875337	94.34075615	90.49624899	86.83489108	83.34695221
231228A00038	12/28/2023	5.18	9/30/2024	12/28/2023	101.89862	101.3928753	100.8921562	100.396386	99.90549152	99.41940121	98.93804475	98.46135325	97.98925912
231229A00002	12/29/2023	4.95	12/23/2024	12/29/2023	102.61588	101.8803742	101.15545	100.440878	99.73643738	99.04191327	98.35709697	97.68178558	97.01578186
231229A00017	12/29/2023	4.42	12/29/2025	12/29/2023	106.11364	104.3589505	102.6418782	100.9612771	99.31604919	97.70514096	96.12754111	94.58227837	93.06841946
231229A00058	12/29/2023	4.9	1/29/2025	12/29/2023	102.99349	102.1561444	101.3324596	100.5221009	99.72474628	98.94008426	98.16781308	97.40764053	96.65928352
231229A00059	12/29/2023	4.9	1/29/2025	12/29/2023	102.99349	102.1561444	101.3324596	100.5221009	99.72474628	98.94008426	98.16781308	97.40764053	96.65928352
231229A00060	12/29/2023	4.9	1/29/2025	12/29/2023	102.99349	102.1561444	101.3324596	100.5221009	99.72474628	98.94008426	98.16781308	97.40764053	96.65928352
231229A00061	12/29/2023	4.74	4/29/2025	12/29/2023	103.81593	102.7319077	101.6706156	100.6313452	99.61341514	98.61617208	97.63898904	96.68126421	95.74241963
231229A00062	12/29/2023	4.74	4/29/2025	12/29/2023	103.81593	102.7319077	101.6706156	100.6313452	99.61341514	98.61617208	97.63898904	96.68126421	95.74241963

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
231229A00063	12/29/2023	4.74	4/29/2025	12/29/2023	103.81593	102.7319077	101.6706156	100.6313452	99.61341514	98.61617208	97.63898904	96.68126421	95.74241963
231229A00065	12/29/2023	4.6	7/29/2025	12/29/2023	104.64476	103.3146046	102.0083711	100.72546	99.46528779	98.22729044	97.01092223	95.81565518	94.64097831
231229A00066	12/29/2023	4.6	7/29/2025	12/29/2023	104.64476	103.3146046	102.0083711	100.72546	99.46528779	98.22729044	97.01092223	95.81565518	94.64097831
231229A00067	12/29/2023	4.6	7/29/2025	12/29/2023	104.64476	103.3146046	102.0083711	100.72546	99.46528779	98.22729044	97.01092223	95.81565518	94.64097831
231229A00068	12/29/2023	4.42	12/29/2025	12/29/2023	106.11364	104.3589505	102.6418782	100.9612771	99.31604919	97.70514096	96.12754111	94.58227837	93.06841946
231229A00070	12/29/2023	4.42	12/29/2025	12/29/2023	106.11364	104.3589505	102.6418782	100.9612771	99.31604919	97.70514096	96.12754111	94.58227837	93.06841946
231229A00071	12/29/2023	4.42	12/29/2025	12/29/2023	106.11364	104.3589505	102.6418782	100.9612771	99.31604919	97.70514096	96.12754111	94.58227837	93.06841946
240102A00029	1/2/2024	4.66	7/2/2025	1/2/2024	104.3893	103.1305843	101.9016835	100.7015386	99.52914412	98.38354086	97.26381361	96.1690885	95.09853072
240102A00055	1/2/2024	4.23	1/4/2027	1/2/2024	109.86079	107.0507584	104.3279678	101.6891467	99.13117167	96.6510583	94.24595405	91.91313117	89.64998033
240103A00003	1/3/2024	4.71	7/3/2025	1/3/2024	104.46491	103.2031193	101.9709272	100.7672952	99.59123247	98.44179382	97.31807688	96.21921983	95.1443991
240103A00004	1/3/2024	4.48	1/5/2026	1/3/2024	106.29863	104.5235781	102.7869252	101.0875109	99.42422589	97.79600489	96.2018242	94.64069982	93.11168548
240103A00005	1/3/2024	4.28	1/4/2027	1/3/2024	109.9991	107.1871448	104.4624706	101.8218101	99.26203841	96.78016993	94.37335076	92.03885192	89.77406287
240103A00010	1/3/2024	4.84	1/18/2039	1/3/2024	154.9941	138.221994	123.6104396	110.8613992	99.71980743	89.96715562	81.41606172	73.90567232	67.29776535
240103A00011	1/3/2024	4.84	1/18/2039	1/3/2024	154.9941	138.221994	123.6104396	110.8613992	99.71980743	89.96715562	81.41606172	73.90567232	67.29776535
240103A00018	1/3/2024	4.28	1/4/2027	1/3/2024	109.9991	107.1871448	104.4624706	101.8218101	99.26203841	96.78016993	94.37335076	92.03885192	89.77406287
240103A00025	1/3/2024	4.48	1/2/2026	1/3/2024	106.28227	104.5150663	102.7859327	101.093718	99.43731386	97.81565634	96.22772391	94.67253517	93.14914689
240103A00026	1/3/2024	4.28	1/4/2027	1/3/2024	109.9991	107.1871448	104.4624706	101.8218101	99.26203841	96.78016993	94.37335076	92.03885192	89.77406287
240104A00014	1/4/2024	4.72	7/3/2025	1/4/2024	104.47755	103.2156723	101.9833977	100.7796845	99.60354199	98.45402482	97.33023063	96.23129757	95.15640203
240104A00064	1/4/2024	5.04	1/3/2025	1/4/2024	102.80169	102.035677	101.2811109	100.5377408	99.80531849	99.08360301	98.37236053	97.67136395	96.98039273
240104A00068	1/4/2024	4.76	7/3/2025	1/4/2024	104.5281	103.2658846	102.0332798	100.8292419	99.65278008	98.50294883	97.37884564	96.27960853	95.20441377
240105A00011	1/5/2024	5.06	12/5/2024	1/5/2024	102.4895	101.8033084	101.1263298	100.458382	99.79928472	99.14886269	98.50694514	97.87336582	97.24796275
240105A00015	1/5/2024	4.99	1/6/2025	1/5/2024	102.80435	102.0301234	101.2676001	100.5165147	99.77661094	99.04763999	98.32936041	97.62153781	96.92394462
240105A00017	1/5/2024	4.29	1/5/2027	1/5/2024	110.03764	107.2224547	104.4947301	101.8511873	99.28869666	96.80426732	94.39504037	92.05828176	89.79137593
240105A00019	1/5/2024	5.02	12/5/2024	1/5/2024	102.46199	101.7759056	101.0990311	100.4311864	99.77219116	99.12187025	98.4800529	97.84657284	97.22126813
240105A00028	1/5/2024	4.76	7/7/2025	1/5/2024	104.57891	103.3060373	102.0619003	100.8455209	99.6559686	98.49235463	97.35382921	96.23957967	95.14882834
240108A00018	1/8/2024	4.94	1/8/2025	1/8/2024	102.7799	102.0004809	101.232927	100.4769673	99.73233988	98.99879088	98.2760739	97.56394985	96.86218659
240108A00020	1/8/2024	4.68	7/8/2025	1/8/2024	104.48942	103.2145684	101.9682211	100.749418	99.55724435	98.39082573	97.24932607	96.13194539	95.03791796
240108A00022	1/8/2024	4.46	1/8/2026	1/8/2024	106.2972	104.5141625	102.7698452	101.0630962	99.39280457	97.75790311	96.15736559	94.590205	93.05547164
240108A00023	1/8/2024	4.27	1/8/2027	1/8/2024	110.0147	107.1917816	104.4567932	101.8064477	99.23760169	96.74725048	94.33252117	91.99066571	89.71905452
240108A00030	1/8/2024	5.29	9/3/2024	1/8/2024	101.66396	101.2323904	100.8044888	100.3802105	99.95950968	99.54234109	99.12866035	98.7184238	98.31158851
240108A00031	1/8/2024	5.2	9/30/2024	1/8/2024	101.90874	101.4029685	100.9022199	100.4064204	99.91549694	99.42937778	98.94799268	98.47127273	97.99915037
240108A00032	1/8/2024	5.14	10/16/2024	1/8/2024	102.02671	101.4774237	100.9340708	100.3965586	99.86479297	99.33868197	98.81813545	98.30306522	97.79338495
240108A00033	1/8/2024	4.96	1/2/2025	1/8/2024	102.72925	101.9662379	101.2145888	100.4740531	99.74438529	99.02534717	98.31670742	97.61824136	96.92973077

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240108A00034	1/8/2024	5.07	11/4/2024	1/8/2024	102.16686	101.5657609	100.9717552	100.3847132	99.80451281	99.23103474	98.66416252	98.10378235	97.54978303
240108A00035	1/8/2024	5.04	12/2/2024	1/8/2024	102.43704	101.7592233	101.090398	100.4303852	99.77901131	99.13610741	98.50150889	97.8750554	97.25659069
240108A00037	1/8/2024	4.69	7/8/2025	1/8/2024	104.50219	103.2272566	101.980825	100.7619391	99.56968401	98.40318529	97.26160683	96.14414863	95.0500449
240108A00038	1/8/2024	4.13	1/8/2029	1/8/2024	117.61425	112.6335832	107.8983915	103.3952017	99.11135232	95.03494382	91.15478804	87.46036173	83.94176317
240108A00040	1/8/2024	4.13	1/8/2029	1/8/2024	117.61425	112.6335832	107.8983915	103.3952017	99.11135232	95.03494382	91.15478804	87.46036173	83.94176317
240108A00041	1/9/2024	4.13	1/9/2029	1/9/2024	117.62442	112.6407888	107.9029036	103.3972726	99.11121756	95.03282289	91.15088542	87.4548676	83.93485422
240108A00047	1/11/2024	4.95	1/10/2025	1/11/2024	102.81749	102.0324099	101.2593637	100.498077	99.74828221	99.00972014	98.28213917	97.5652952	96.85895133
240108A00049	1/11/2024	4.95	1/10/2025	1/11/2024	102.81749	102.0324099	101.2593637	100.498077	99.74828221	99.00972014	98.28213917	97.5652952	96.85895133
240109A00006	1/9/2024	4.71	7/9/2025	1/9/2024	104.5403	103.2625337	102.0130507	100.7909142	99.59522471	98.42512203	97.27978329	96.15842091	95.06028071
240109A00025	1/9/2024	4.47	1/9/2026	1/9/2024	106.32638	104.5403995	102.7932605	101.0838048	99.41092087	97.77354064	96.17063691	94.60122153	93.0643435
240109A00030	1/9/2024	4.99	1/9/2025	1/9/2024	102.83008	102.0477502	101.2773673	100.5186611	99.77136695	99.03522825	98.30999606	97.59542881	96.89129201
240109A00031	1/9/2024	4.73	7/9/2025	1/9/2024	104.56591	103.2879641	102.0383119	100.8160091	99.62015606	98.44989253	97.30439556	96.18287751	95.08458411
240109A00042	1/9/2024	3.99	1/9/2029	1/9/2024	117.62397	112.619911	107.863182	103.3401713	99.03809649	94.94494524	91.04942475	87.34091439	83.80942186
240109A00048	1/9/2024	4.12	1/9/2029	1/9/2024	117.57671	112.5942082	107.8574099	103.352827	99.06778289	94.99036377	91.10936794	87.41425932	83.89512409
240110A00001	1/10/2024	4.42	1/9/2026	1/10/2024	106.23722	104.452054	102.7057173	100.9970491	99.32493856	97.6883179	96.0861603	94.51747798	92.98132027
240110A00003	1/10/2024	4.78	1/10/2025	1/10/2024	102.81557	102.0287426	101.2539986	100.4910646	99.73967136	98.99955798	98.27047128	97.55216564	96.8444027
240110A00010	1/10/2024	4.42	1/12/2026	1/10/2024	106.28902	104.495057	102.7402672	101.0234976	99.34363515	97.69960927	96.09038985	94.51498534	92.97244092
240110A00017	1/10/2024	4.94	1/6/2025	1/10/2024	102.76556	101.9915027	101.2291425	100.4782186	99.73847463	99.00966177	98.29153862	97.58387085	96.88643091
240110A00021	1/10/2024	4.13	1/10/2028	1/10/2024	113.64724	109.7562219	106.0223338	102.4383405	98.99737969	95.692944	92.51886057	89.46927163	86.53861651
240110A00029	1/10/2024	4.5	7/10/2025	1/10/2024	104.48904	103.2058468	101.9508377	100.7230818	99.52169001	98.34581188	97.19463362	96.0673761	94.96329299
240111A00016	1/11/2024	4.63	7/11/2025	1/11/2024	104.46259	103.1801796	101.9256113	100.6979747	99.49640132	98.32005999	97.16815503	96.03992424	94.93463721
240111A00020	1/11/2024	4.93	1/13/2025	1/11/2024	102.83471	102.0414552	101.2604836	100.4915142	99.73427136	98.98848773	98.25390402	97.53026877	96.81733798
240111A00021	1/11/2024	4.47	7/11/2025	1/11/2024	104.46287	103.1772653	101.9196206	100.6890226	99.48459776	98.30551023	97.15095987	96.02018028	94.91243704
240111A00025	1/11/2024	4.19	1/11/2027	1/11/2024	109.82432	106.9960066	104.2560507	101.6011458	99.02813631	96.53400527	94.11586725	91.7709616	89.4966461
240111A00028	1/11/2024	4.09	1/11/2029	1/11/2024	117.45371	112.4686679	107.7297522	103.2234398	98.93702598	94.85856973	90.97684382	87.28128798	83.76196556
240111A00031	1/11/2024	4.19	1/11/2027	1/11/2024	109.82432	106.9960066	104.2560507	101.6011458	99.02813631	96.53400527	94.11586725	91.7709616	89.4966461
240111A00053	1/11/2024	4.93	1/10/2025	1/11/2024	102.80176	102.0167435	101.2437644	100.4825439	99.7328147	98.9943175	98.26680072	97.55002027	96.84373926
240112A00014	1/12/2024	4.8	1/10/2025	1/12/2024	102.69949	101.9149124	101.1423686	100.3815789	99.63227587	98.89420032	98.16710077	97.4507332	96.74486079
240112A00015	1/12/2024	4.78	1/17/2025	1/12/2024	102.75776	101.9540303	101.1629227	100.3841385	99.61739074	98.86240132	98.11890071	97.38662756	96.66532842
240112A00021	1/12/2024	4.8	1/13/2025	1/12/2024	102.73137	101.9385614	101.1580338	100.3895036	99.63269518	98.88734135	98.1531829	97.42996843	96.71745403
240112A00022	1/12/2024	4.24	1/12/2026	1/12/2024	105.96653	104.1755353	102.4236595	100.7097509	99.03269765	97.39143072	95.78492134	94.21217927	92.67225096
240112A00027	1/12/2024	4.79	1/15/2025	1/12/2024	102.74462	101.9463525	101.1605352	100.3868779	99.6250995	98.8749273	98.13609698	97.40835216	96.69144419
240112A00033	1/12/2024	4.46	7/11/2025	1/12/2024	104.24404	102.9631031	101.7099844	100.483773	99.28360093	98.10863785	96.95808864	95.83119172	94.72721726

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240112A00034	1/12/2024	4.46	7/11/2025	1/12/2024	104.24404	102.9631031	101.7099844	100.483773	99.28360093	98.10863785	96.95808864	95.83119172	94.72721726
240112A00036	1/12/2024	4.07	1/12/2027	1/12/2024	109.50034	106.6738959	103.9358612	101.2829293	98.71194316	96.21988439	93.80386578	91.46112483	89.18901739
240112A00040	1/12/2024	4.24	1/12/2026	1/12/2024	105.96653	104.1755353	102.4236595	100.7097509	99.03269765	97.39143072	95.78492134	94.21217927	92.67225096
240112A00044	1/12/2024	4.24	1/12/2026	1/12/2024	105.96653	104.1755353	102.4236595	100.7097509	99.03269765	97.39143072	95.78492134	94.21217927	92.67225096
240112A00047	1/12/2024	4.46	7/14/2025	1/12/2024	104.27968	102.9907719	101.7290246	100.4935802	99.28361718	98.09834868	96.93702023	95.79890825	94.68331849
240112A00050	1/12/2024	4.3	7/11/2025	1/12/2024	104.24408	102.9599586	101.7037678	100.474599	99.27157955	98.09387416	96.94068335	95.81124132	94.70481426
240112A00052	1/12/2024	4.07	1/12/2027	1/12/2024	109.50034	106.6738959	103.9358612	101.2829293	98.71194316	96.21988439	93.80386578	91.46112483	89.18901739
240116A00006	1/16/2024	4.5	7/16/2025	1/16/2024	104.35541	103.0608317	101.7929817	100.5510383	99.33421104	98.14174208	96.97290411	95.82699898	94.70335623
240116A00008	1/16/2024	4.81	1/17/2025	1/16/2024	102.78194	101.9781018	101.1868891	100.4080009	99.64115029	98.88605912	98.14245785	97.41008512	96.68868744
240116A00052	1/16/2024	4.65	1/16/2025	1/16/2024	102.7773	101.9743839	101.1840577	100.406027	99.64000595	98.8857174	98.14289273	97.41127146	96.69060097
240116A00083	1/16/2024	4.53	7/16/2025	1/16/2024	104.39439	103.0995444	101.8314334	100.5892333	99.3721537	98.17943656	97.01035446	95.86420915	94.74033006
240117A00021	1/17/2024	4.06	1/17/2029	1/17/2024	118.04204	113.0060929	108.2199468	103.6698358	99.34282888	95.22677272	91.31024088	87.58248627	84.03339712
240117A00023	1/17/2024	4.13	1/19/2027	1/17/2024	110.11827	107.2558917	104.4836996	101.7983292	99.1965626	96.67532178	94.23166099	91.8627604	89.56591981
240117A00024	1/17/2024	4.78	1/17/2025	1/17/2024	102.89283	102.0866906	101.2932366	100.5121653	99.74318802	98.98602471	98.24040405	97.50606297	96.78274634
240117A00054	1/17/2024	4.22	1/18/2028	1/17/2024	114.07667	110.1558489	106.394106	102.7841066	99.31889852	95.99188749	92.79681632	89.72774584	86.77903682
240118A00004	1/18/2024	4.74	1/17/2025	1/18/2024	102.86056	102.0545718	101.2612584	100.4803261	99.71148631	98.95445901	98.20897289	97.47476491	96.75157998
240118A00020	1/18/2024	4.25	2/18/2027	1/18/2024	110.41929	107.4754243	104.6266365	101.8693439	99.200119	96.6156816	94.11289181	91.68874314	89.34035607
240119A00003	1/19/2024	4.68	7/21/2025	1/19/2024	104.6517	103.342174	102.0583243	100.7994053	99.5647049	98.3535381	97.16524604	95.99919462	94.85477333
240119A00007	1/19/2024	4.23	1/19/2029	1/19/2024	118.2059	113.1812062	108.4053829	103.8647383	99.54640778	95.43829897	91.52904103	87.80793778	84.26492406
240119A00008	1/19/2024	4.89	1/24/2025	1/19/2024	102.93063	102.1071044	101.2968037	100.4994116	99.71462097	98.94213424	98.18166319	97.43292853	96.69565959
240119A00013	1/19/2024	4.88	1/31/2025	1/19/2024	102.99844	102.1556562	101.3267067	100.5112502	99.70895894	98.91951553	98.14261286	97.37795351	96.6252494
240119A00022	1/19/2024	4.9	1/30/2025	1/19/2024	103.00441	102.164306	101.3379507	100.5250053	99.72514486	98.93805504	98.16343137	97.40097903	96.65041243
240119A00024	1/19/2024	4.49	1/20/2026	1/19/2024	106.50604	104.6886764	102.9114208	101.1731118	99.47263098	97.80890058	96.18088201	94.58757398	93.02801079
240119A00028	1/19/2024	4.48	1/13/2026	1/19/2024	106.40795	104.61021	102.8517841	101.1315088	99.44826996	97.8009958	96.18865481	94.61025385	93.06483645
240119A00029	1/19/2024	4.3	1/13/2027	1/19/2024	110.1525	107.3142069	104.5646978	101.9006597	99.31892422	96.81646159	94.39037367	92.03788717	89.75634743
240119A00044	1/23/2024	4.23	1/23/2029	1/23/2024	118.24765	113.2110314	108.4243724	103.8739108	99.5467139	95.43062438	91.51421003	87.78671664	84.23802423
240122A00002	1/22/2024	4.66	7/22/2025	1/22/2024	104.63786	103.3258528	102.0392933	100.7774616	99.53966136	98.32522267	97.13350069	95.96387445	94.81574577
240122A00005	1/22/2024	4.45	1/22/2026	1/22/2024	106.45618	104.6339315	102.8520059	101.1092427	99.40452213	97.73676528	96.10493174	94.50801805	92.94505614
240122A00006	1/22/2024	4.25	1/22/2027	1/22/2024	110.10979	107.2478867	104.4762185	101.7914264	99.19029932	96.6697643	94.22687968	91.85882865	89.56291311
240122A00014	1/22/2024	4.93	1/16/2025	1/22/2024	102.86766	102.0661565	101.2771892	100.5004691	99.73571189	98.98264228	98.24099317	97.51050563	96.79092851
240122A00015	1/22/2024	4.93	1/16/2025	1/22/2024	102.86766	102.0661565	101.2771892	100.5004691	99.73571189	98.98264228	98.24099317	97.51050563	96.79092851
240122A00016	1/22/2024	4.66	7/22/2025	1/22/2024	104.63786	103.3258528	102.0392933	100.7774616	99.53966136	98.32522267	97.13350069	95.96387445	94.81574577
240122A00050	1/22/2024	4.25	1/22/2027	1/22/2024	110.10979	107.2478867	104.4762185	101.7914264	99.19029932	96.6697643	94.22687968	91.85882865	89.56291311

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240122A00081	1/22/2024	4.93	1/22/2025	1/22/2024	102.93355	102.1155282	101.3105599	100.5183325	99.73854461	98.97090442	98.2151291	97.47094455	96.73808509
240122A00086	1/22/2024	4.25	1/22/2027	1/22/2024	110.10979	107.2478867	104.4762185	101.7914264	99.19029932	96.6697643	94.22687968	91.85882865	89.56291311
240123A00017	1/23/2024	5.08	11/22/2024	1/23/2024	102.35974	101.7092806	101.0671115	100.4330775	99.8070243	99.18880166	98.57826308	97.97526566	97.37967007
240123A00037	1/23/2024	4.2	1/17/2029	1/23/2024	118.04125	113.0259254	108.2588077	103.7262423	99.41540393	95.31423739	91.41140714	87.69625038	84.15873353
240123A00057	1/23/2024	4.48	1/23/2026	1/23/2024	106.52217	104.6966285	102.9115343	101.1657257	99.45808228	97.78752381	96.15300861	94.55353178	92.98812367
240125A00007	1/25/2024	4.27	1/25/2027	1/25/2024	110.19853	107.3272957	104.5468126	101.8537103	99.24476215	96.7168796	94.26710523	91.89260648	89.59066967
240125A00019	1/25/2024	4.98	12/18/2024	1/25/2024	102.57813	101.856388	101.1448436	100.4432784	99.75148296	99.06925391	98.39639332	97.73270875	97.078013
240125A00035	1/25/2024	4.89	1/24/2025	1/25/2024	102.93063	102.1071044	101.2968037	100.4994116	99.71462097	98.94213424	98.18166319	97.43292853	96.69565959
240125A00040	1/25/2024	4.24	12/15/2026	1/25/2024	109.67315	106.9194446	104.249878	101.6613301	99.1508225	96.71550849	94.35266585	92.05969055	89.8340906
240125A00046	1/25/2024	5.29	8/26/2024	1/25/2024	101.57714	101.1676346	100.7614417	100.3585193	99.95882786	99.56232864	99.16898342	98.7787546	98.39160519
240125A00061	1/25/2024	4.64	7/25/2025	1/25/2024	104.64867	103.3288263	102.0337825	100.7628642	99.51542316	98.29083454	97.08849569	95.9078252	94.74826196
240125A00068	1/25/2024	4.11	1/25/2028	1/25/2024	114.26028	110.3029617	106.5072363	102.8656336	99.37107382	96.01684022	92.79655883	89.70417889	86.73395474
240125A00069	1/25/2024	4.11	1/25/2028	1/25/2024	114.26028	110.3029617	106.5072363	102.8656336	99.37107382	96.01684022	92.79655883	89.70417889	86.73395474
240126A00004	1/26/2024	4.9	1/21/2025	1/26/2024	102.89806	102.0829042	101.2807115	100.4911759	99.71399886	98.94889135	98.19557321	97.45377292	96.72322725
240126A00006	1/26/2024	4.89	1/31/2025	1/26/2024	103.00688	102.1640613	101.3350735	100.5195791	99.7172503	98.92776982	98.15083049	97.3861349	96.63339494
240126A00007	1/26/2024	4.9	1/24/2025	1/26/2024	102.93888	102.1153192	101.3049818	100.5075534	99.72272692	98.95020472	98.18969859	97.44092923	96.70362598
240126A00031	1/26/2024	4.31	1/26/2026	1/26/2024	106.50471	104.6666477	102.8695497	101.1122458	99.39360681	97.71254351	96.068005	94.45897696	92.88448014
240126A00032	1/26/2024	4.31	1/26/2026	1/26/2024	106.50471	104.6666477	102.8695497	101.1122458	99.39360681	97.71254351	96.068005	94.45897696	92.88448014
240129A00009	1/29/2024	4.72	1/29/2025	1/29/2024	102.97483	102.135772	101.3104303	100.4984676	99.69955996	98.91339407	98.13966645	97.37808322	96.62835969
240129A00030	1/29/2024	5.03	12/2/2024	1/29/2024	102.43024	101.7524548	101.0836549	100.4236673	99.77231844	99.12943929	98.49486528	97.86843608	97.24999544
240129A00049	1/29/2024	4.48	7/29/2025	1/29/2024	104.69868	103.3647829	102.0549267	100.7685043	99.50492843	98.26363146	97.04406425	95.84569556	94.66801126
240129A00054	1/29/2024	4.72	1/29/2025	1/29/2024	102.97483	102.135772	101.3104303	100.4984676	99.69955996	98.91339407	98.13966645	97.37808322	96.62835969
240129A00056	1/29/2024	4.72	1/29/2025	1/29/2024	102.97483	102.135772	101.3104303	100.4984676	99.69955996	98.91339407	98.13966645	97.37808322	96.62835969
240129A00066	1/29/2024	4.88	1/23/2025	1/29/2024	102.91151	102.0907757	101.2831795	100.4884087	99.70615889	98.93613531	98.17805242	97.43163351	96.69661037
240130A00003	1/30/2024	4.62	7/30/2025	1/30/2024	104.68378	103.350759	102.0414525	100.7552725	99.49165182	98.25004156	97.02991025	95.83074325	94.6520421
240130A00005	1/30/2024	4.62	7/30/2025	1/30/2024	104.68378	103.350759	102.0414525	100.7552725	99.49165182	98.25004156	97.02991025	95.83074325	94.6520421
240130A00034	1/30/2024	4.43	10/30/2025	1/30/2024	105.68703	104.0948549	102.5346773	101.0056031	99.50676848	98.03734138	96.59651991	95.18353105	93.79762935
240130A00036	1/30/2024	4.94	1/30/2025	1/30/2024	103.03807	102.1978179	101.3713101	100.5582139	99.75820445	98.97096727	98.19619789	97.43360146	96.68289236
240130A00037	1/30/2024	5.03	11/29/2024	1/30/2024	102.39878	101.7292067	101.0684111	100.4162176	99.77245875	99.13697171	98.50959765	97.8901818	97.27857332
240130A00044	1/30/2024	4.14	1/30/2029	1/30/2024	117.88619	112.839075	108.0434532	103.4854565	99.1520479	95.03097127	91.11070076	87.38039361	83.82984637
240130A00047	1/30/2024	4.01	1/30/2029	1/30/2024	117.93484	112.8657054	108.0497388	103.472946	99.12218024	94.98508359	91.05003578	87.30610648	83.74301095
240130A00051	1/30/2024	4.94	1/24/2025	1/30/2024	102.97189	102.1481782	101.3376941	100.5401206	99.75515069	98.98248663	98.22184019	97.47293205	96.73549152
240130A00057	1/30/2024	4.15	1/29/2027	1/30/2024	110.2832	107.3914209	104.591533	101.8801167	99.25390304	96.70976246	94.24469753	91.85583677	89.54042862

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240130A00059	1/30/2024	4.33	1/30/2026	1/30/2024	106.587	104.7374068	102.9292512	101.161358	99.43259479	97.74186847	96.08812333	94.4703397	92.8875324
240130A00068	1/30/2024	4.17	1/30/2029	1/30/2024	118.03103	112.9804496	108.1814909	103.6202777	99.28376749	95.15969907	91.23654178	87.50344829	83.95021079
240130A00070	1/30/2024	4.33	1/30/2026	1/30/2024	106.587	104.7374068	102.9292512	101.161358	99.43259479	97.74186847	96.08812333	94.4703397	92.8875324
240130A00076	1/30/2024	4.94	1/30/2025	1/30/2024	103.03807	102.1978179	101.3713101	100.5582139	99.75820445	98.97096727	98.19619789	97.43360146	96.68289236
240130A00089	1/30/2024	4.17	1/30/2029	1/30/2024	118.03103	112.9804496	108.1814909	103.6202777	99.28376749	95.15969907	91.23654178	87.50344829	83.95021079
240131A00013	1/31/2024	4.13	2/1/2027	1/31/2024	109.8773	106.9915493	104.1976045	101.4920577	98.87164695	96.33324815	93.87386878	91.49064147	89.18081816
240131A00014	1/31/2024	4.04	1/31/2029	1/31/2024	117.41332	112.3747841	107.5875967	103.0378884	98.71262271	94.5995443	90.68712786	86.96453131	83.42155184
240131A00015	1/31/2024	4.02	1/31/2029	1/31/2024	110.05343	107.0755837	104.2126356	101.4591899	98.81014377	96.26066798	93.80619031	91.44238044	89.16513557
240131A00021	1/31/2024	4.8	1/27/2025	1/31/2024	102.88831	102.0568539	101.2388831	100.4340669	99.6420893	98.86264452	98.09543631	97.34017773	96.59659074
240131A00026	1/31/2024	4.31	1/30/2026	1/31/2024	106.28918	104.4471015	102.646219	100.8853717	99.16343545	97.47932509	95.83199248	94.22042516	92.64364485
240131A00028	1/31/2024	4.8	1/27/2025	1/31/2024	102.88831	102.0568539	101.2388831	100.4340669	99.6420893	98.86264452	98.09543631	97.34017773	96.59659074
240131A00033	1/31/2024	4.18	1/30/2026	1/31/2024	106.31051	104.4635397	102.6579521	100.8925794	99.16629047	97.47799348	95.82663395	94.21119338	92.63068772
240131A00034	1/31/2024	4	1/29/2027	1/31/2024	109.85723	106.9715475	104.1776067	101.4719951	98.8514486	96.31284178	93.85318148	91.46960026	89.15935043
240131A00036	1/31/2024	4.51	7/31/2025	1/31/2024	104.54866	103.2140025	101.9028233	100.6145548	99.34864673	98.10456578	96.8817953	95.67983457	94.49819815
240131A00039	1/31/2024	4.22	7/31/2026	1/31/2024	108.13718	105.7755585	103.4779826	101.2423676	99.06670703	96.9490709	94.88760239	92.88051453	90.92608723
240131A00044	1/31/2024	4.8	1/27/2025	1/31/2024	102.88831	102.0568539	101.2388831	100.4340669	99.6420893	98.86264452	98.09543631	97.34017773	96.59659074
240131A00054	1/31/2024	4.8	1/31/2025	1/31/2024	102.93089	102.0884148	101.2597723	100.4446193	99.64262799	98.85348118	98.07687177	97.31250242	96.56008509
240131A00059	1/31/2024	4.57	7/31/2025	1/31/2024	104.62908	103.293857	101.9821229	100.6933088	99.42686415	98.18225541	96.95896571	95.75649411	94.57435493
240131A00076	1/31/2024	4.35	1/30/2026	1/31/2024	106.36282	104.5200372	102.718472	100.9569546	99.2343606	97.54960434	95.90163744	94.28944711	92.7120548
240131A00080	1/31/2024	4.16	1/29/2027	1/31/2024	109.92999	107.0518142	104.2649578	101.5660288	98.95178374	96.4191168	93.96505319	91.5867429	89.28145472
240201A00003	2/1/2024	4.17	2/2/2026	2/1/2024	106.32715	104.4714332	102.6574731	100.8840832	99.15012171	97.45448645	95.79611286	94.17397257	92.58707194
240201A00009	2/1/2024	3.96	2/1/2029	2/1/2024	117.03747	112.0049377	107.2237186	102.6799322	98.36053447	94.25326308	90.34658694	86.62965891	83.0922719
240201A00021	2/1/2024	4.81	2/3/2025	2/1/2024	102.97217	102.1214224	101.2847779	100.4618863	99.65241011	98.85602266	98.07240796	97.30126009	96.54228283
240201A00023	2/1/2024	4.5	8/1/2025	2/1/2024	104.54601	103.2087226	101.8950025	100.6042761	99.33599005	98.08960843	96.86461196	95.66049738	94.47677684
240201A00027	2/1/2024	3.83	2/1/2029	2/1/2024	117.08349	112.0290148	107.2275171	102.6650003	98.32831025	94.20508289	90.28369257	86.5532045	83.00333024
240201A00029	2/1/2024	4.52	8/1/2025	2/1/2024	104.57287	103.2353948	101.9214891	100.63058	99.36211445	98.11555623	96.89038602	95.6861005	94.50221174
240201A00030	2/1/2024	4.35	2/2/2026	2/1/2024	106.39807	104.5464117	102.7363303	100.9666534	99.23624588	97.54401186	95.88889278	94.269866	92.68594335
240201A00038	2/1/2024	4.3	2/2/2026	2/1/2024	106.30562	104.4548397	102.645619	100.8767869	99.14720864	97.45578883	95.8014693	94.18322781	92.60007656
240201A00040	2/1/2024	4.08	2/1/2030	2/1/2024	121.06658	114.9170034	109.1282488	103.6771718	98.54222872	93.70335767	89.14186965	84.84034782	80.78255493
240201A00042	2/1/2024	4.24	2/1/2033	2/1/2024	131.9757	122.4037745	113.6341954	105.5946535	98.21973328	91.45022044	85.23248412	79.51792401	74.26247457
240201A00043	2/1/2024	4.27	2/1/2034	2/1/2024	135.35382	124.6221142	114.8763363	106.0193542	97.9641178	90.63256513	83.95465139	77.86748709	72.31457289
240201A00051	2/1/2024	4.83	2/3/2025	2/1/2024	102.98922	102.1383961	101.3016736	100.4787048	99.66915222	98.87268933	98.08900004	97.31777842	96.55872822
240201A00052	2/1/2024	4.5	8/1/2025	2/1/2024	104.54601	103.2087226	101.8950025	100.6042761	99.33599005	98.08960843	96.86461196	95.66049738	94.47677684

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240201A00054	2/1/2024	4.83	2/3/2025	2/1/2024	102.98922	102.1383961	101.3016736	100.4787048	99.66915222	98.87268933	98.08900004	97.31777842	96.55872822
240201A00056	2/1/2024	4.3	2/2/2026	2/1/2024	106.30562	104.4548397	102.645619	100.8767869	99.14720864	97.45578883	95.8014693	94.18322781	92.60007656
240201A00057	2/1/2024	4.83	2/3/2025	2/1/2024	102.98922	102.1383961	101.3016736	100.4787048	99.66915222	98.87268933	98.08900004	97.31777842	96.55872822
240201A00061	2/1/2024	4.5	8/1/2025	2/1/2024	104.54601	103.2087226	101.8950025	100.6042761	99.33599005	98.08960843	96.86461196	95.66049738	94.47677684
240201A00063	2/1/2024	4.81	2/3/2025	2/1/2024	102.97217	102.1214224	101.2847779	100.4618863	99.65241011	98.85602266	98.07240796	97.30126009	96.54228283
240201A00064	2/1/2024	4.51	8/1/2025	2/1/2024	104.55944	103.2220587	101.9082458	100.6174281	99.34905225	98.10258233	96.87749899	95.67329894	94.48949429
240201A00065	2/1/2024	4.33	2/2/2026	2/1/2024	106.36109	104.5097829	102.7000458	100.9307068	99.20063099	97.50872265	95.85392338	94.23521072	92.65159664
240202A00014	2/2/2024	4.51	8/1/2025	2/2/2024	104.77493	103.4326447	102.1140603	100.8186008	99.54570858	98.29484371	97.06548309	95.85711981	94.66926252
240202A00016	2/2/2024	4.25	2/2/2027	2/2/2024	110.23023	107.3364708	104.5348166	101.8218487	99.19429181	96.64900968	94.18299797	91.79337822	89.4773918
240202A00017	2/2/2024	4.23	8/3/2026	2/2/2024	108.50563	106.1252556	103.8097274	101.5569229	99.36480159	97.23140143	95.15483492	93.13328597	91.1650068
240202A00022	2/2/2024	4.96	2/3/2025	2/2/2024	103.10006	102.2487255	101.4114952	100.5880246	99.77797594	98.98102265	98.19684852	97.4251475	96.66562326
240202A00023	2/2/2024	4.96	2/3/2025	2/2/2024	103.10006	102.2487255	101.4114952	100.5880246	99.77797594	98.98102265	98.19684852	97.4251475	96.66562326
240202A00025	2/2/2024	4.82	2/3/2025	2/2/2024	103.11542	102.2621775	101.4230978	100.5978342	99.78604701	98.98740758	98.20159792	97.42831021	96.66724643
240202A00029	2/2/2024	4.15	2/2/2029	2/2/2024	117.96692	112.9091461	108.1037847	103.5368965	99.1953811	95.06692341	91.13994286	87.40354587	83.84748178
240202A00030	2/2/2024	4.32	2/3/2031	2/2/2024	125.87981	118.5609677	111.7339231	105.36281	99.41455516	93.85865133	88.66694556	83.81344643	79.27414775
240205A00004	2/5/2024	5.19	11/6/2024	2/5/2024	102.26053	101.6537082	101.0541111	100.4616077	99.87607223	99.29738217	98.72541778	98.1600621	97.60120087
240205A00020	2/5/2024	4.99	2/5/2025	2/5/2024	103.14852	102.2915625	101.4488959	100.6201665	99.80503007	99.00315359	98.21421487	97.4379021	96.67391342
240205A00044	2/5/2024	4.99	2/5/2025	2/5/2024	103.14852	102.2915625	101.4488959	100.6201665	99.80503007	99.00315359	98.21421487	97.4379021	96.67391342
240206A00017	2/6/2024	4.33	8/6/2027	2/6/2024	112.57764	109.135983	105.8199664	102.6243437	99.54411327	96.57450765	93.71098126	90.94919895	88.28502513
240206A00026	2/6/2024	4.59	8/6/2025	2/6/2024	104.9397	103.5829527	102.2503598	100.9413316	99.65529551	98.39169714	97.14999949	95.92968236	94.73024163
240207A00002	2/7/2024	4.81	2/7/2025	2/7/2024	103.1526	102.2883588	101.438649	100.6031091	99.78138635	98.97313936	98.17803804	97.39576298	96.62600507
240207A00006	2/7/2024	4.06	2/7/2029	2/7/2024	118.26662	113.1656163	108.3203916	103.7167562	99.34137938	95.18173314	91.22604004	87.46322434	83.88286682
240207A00022	2/7/2024	4.25	2/7/2028	2/7/2024	114.42057	110.4376554	106.6183978	102.9552099	99.44089712	96.06863357	92.83194135	89.72467095	86.74098293
240207A00025	2/8/2024	4.2	1/8/2029	2/8/2024	117.94802	112.959466	108.2166746	103.7061561	99.41523734	95.33200715	91.44526669	87.74448244	84.21974299
240207A00039	2/7/2024	4.55	8/7/2025	2/7/2024	104.8967	103.5375979	102.2027322	100.8915108	99.60335817	98.33771727	97.09404855	95.87182932	94.67055311
240207A00040	2/7/2024	4.55	8/7/2025	2/7/2024	104.8967	103.5375979	102.2027322	100.8915108	99.60335817	98.33771727	97.09404855	95.87182932	94.67055311
240208A00053	2/8/2024	4.58	2/9/2026	2/8/2024	106.91242	105.0352585	103.2006464	101.4073645	99.654241	97.94014464	96.26398331	94.62470226	93.02128265
240208A00055	2/8/2024	4.37	2/8/2027	2/8/2024	110.64453	107.7270528	104.9029067	102.168611	99.52083023	96.95637088	94.47217483	92.0653127	89.73297772
240209A00007	2/9/2024	4.5	12/9/2025	2/9/2024	106.28248	104.57523	102.9038195	101.2671856	99.66430637	98.09420007	96.55592326	95.04856878	93.57126401
240209A00019	2/9/2024	4.39	2/9/2027	2/9/2024	110.71397	107.7925188	104.9646123	102.2267512	99.57558978	97.0079251	94.52068996	92.11094643	89.77587967
240209A00020	2/9/2024	4.58	2/9/2026	2/9/2024	106.91242	105.0352585	103.2006464	101.4073645	99.654241	97.94014464	96.26398331	94.62470226	93.02128265
240212A00029	2/12/2024	4.58	2/12/2026	2/12/2024	106.95059	105.0642276	103.2207923	101.4190552	99.65782926	97.93596897	96.2523684	94.60595967	92.99571139
240213A00017	2/13/2024	4.26	2/13/2029	2/13/2024	119.31086	114.1664852	109.2805896	104.6387918	100.2275879	96.03428991	92.04697178	88.25442015	84.64608816

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240213A00022	2/13/2024	4.6	8/13/2026	2/13/2024	109.17703	106.768179	104.4254435	102.1466394	99.92967086	97.7725229	95.67325788	93.6300121	91.64099247
240214A00001	2/14/2024	4.79	11/10/2025	2/14/2024	106.14	104.5180967	102.9290982	101.3720703	99.84611194	98.35035594	96.88396714	95.44614096	94.03610199
240214A00007	2/14/2024	4.7	2/17/2026	2/14/2024	107.26026	105.3558084	103.4949842	101.6765322	99.89923812	98.16193055	96.46347876	94.80279126	93.17881406
240214A00012	2/14/2024	5.1	2/14/2025	2/14/2024	103.34856	102.46635	101.59927	100.7469328	99.90896398	99.08500157	98.2746958	97.47770847	96.69371246
240214A00019	2/15/2024	4.41	1/26/2029	2/15/2024	119.14603	114.0797756	109.2650538	104.6880122	100.3356347	96.19568492	92.25665572	88.50772191	84.93869639
240215A00013	2/15/2024	4.82	8/15/2025	2/15/2024	105.1385	103.7598871	102.4061301	101.0766166	99.77075044	98.48795453	97.22767019	95.98935634	94.77248886
240215A00026	2/15/2024	4.48	2/10/2027	2/15/2024	110.98421	108.0558952	105.2213977	102.4772089	99.81997079	97.24646869	94.75362433	92.33848928	89.99823875
240215A00033	2/15/2024	4.35	2/16/2027	2/15/2024	111.07423	108.1179448	105.2570745	102.4880243	99.80735579	97.21177842	94.69814222	92.26343108	89.90475624
240216A00012	2/16/2024	4.53	8/16/2027	2/16/2024	113.36694	109.8848971	106.5307607	103.2991547	100.1849554	97.18328057	94.28947689	91.49910788	88.80794267
240220A00031	2/20/2024	4.68	2/20/2026	2/20/2024	107.24221	105.3294228	103.4606277	101.6345537	99.84997223	98.10569771	96.4005862	94.7335335	93.10347356
240220A00073	2/20/2024	5.08	2/20/2025	2/20/2024	103.40098	102.5022885	101.6192913	100.7515761	99.89874788	99.06042523	98.23623957	97.42583478	96.62886662
240221A00012	2/21/2024	5.23	12/20/2024	2/21/2024	102.78141	102.0534477	101.3358405	100.6283678	99.93081542	99.24297533	98.56464523	97.89562846	97.23573371
240221A00013	2/21/2024	5.23	12/23/2024	2/21/2024	102.8223	102.085958	101.3602041	100.6448108	99.93955703	99.24422792	98.55861459	97.88251401	97.21572879
240221A00014	2/21/2024	4.53	2/22/2027	2/21/2024	111.27853	108.3102591	105.4381104	102.6584467	99.9677927	97.36282302	94.84035487	92.3973412	90.03086407
240221A00015	2/21/2024	4.48	2/22/2028	2/21/2024	115.49514	111.4479882	107.5685848	103.8490828	100.2820438	96.86041399	93.57750272	90.42696167	87.40276559
240221A00022	2/21/2024	4.97	2/21/2025	2/21/2024	103.45698	102.5533286	101.665532	100.7931727	99.93584984	99.09317638	98.26477844	97.45029482	96.64937639
240222A00007	2/22/2024	5.26	12/23/2024	2/22/2024	102.84442	102.1079848	101.382142	100.6666607	99.96131985	99.26590449	98.58020576	97.90402063	97.23715168
240222A00022	2/22/2024	4.94	9/5/2025	2/22/2024	105.55729	104.1193628	102.7082825	101.3233603	99.96393186	98.62935463	97.31900731	96.03228882	94.76861756
240222A00030	2/22/2024	4.99	2/21/2025	2/22/2024	103.47503	102.5712954	101.6834117	100.8109664	99.95355864	99.11080126	98.28232042	97.46775486	96.66675546
240222A00035	2/22/2024	5.17	2/24/2025	2/22/2024	103.52961	102.6194624	101.7253927	100.846973	99.98379426	99.13546161	98.30159375	97.48182234	96.67579145
240222A00036	2/22/2024	5.17	2/24/2025	2/22/2024	103.52961	102.6194624	101.7253927	100.846973	99.98379426	99.13546161	98.30159375	97.48182234	96.67579145
240222A00037	2/22/2024	5.17	2/24/2025	2/22/2024	103.52961	102.6194624	101.7253927	100.846973	99.98379426	99.13546161	98.30159375	97.48182234	96.67579145
240223A00004	2/23/2024	5	2/24/2025	2/23/2024	103.51989	102.6077841	101.7118203	100.8315692	99.96661938	99.11657366	98.28104861	97.45967381	96.65209138
240223A00007	2/23/2024	4.81	8/22/2025	2/23/2024	105.43119	104.0282306	102.6509116	101.2985867	99.97063353	98.66645027	97.38545437	96.12708196	94.89078703
240223A00008	2/23/2024	5.44	9/23/2024	2/23/2024	101.9558	101.4689439	100.9867497	100.5091537	100.0360901	99.56749456	99.10330387	98.64345595	98.18788996
240223A00020	2/23/2024	5.16	2/24/2025	2/23/2024	103.5205	102.6104043	101.7163788	100.8380027	99.9748671	99.12657703	98.29275125	97.4730214	96.6670316
240223A00022	2/23/2024	5.22	1/23/2025	2/23/2024	103.19114	102.369152	101.5603168	100.7643208	99.9808594	99.20963759	98.45036958	97.70277842	96.96659568
240226A00010	2/26/2024	4.53	7/15/2027	2/26/2024	112.98605	109.5972204	106.3300603	103.1795032	100.1407258	97.20913341	94.38034789	91.65019604	89.01469866
240226A00025	2/26/2024	4.43	2/26/2027	2/26/2024	111.43272	108.4412828	105.5472432	102.7468972	100.0367059	97.41328344	94.8733904	92.41392599	90.03192161
240226A00037	2/26/2024	5.17	2/26/2025	2/26/2024	103.55345	102.6377703	101.7383561	100.8547744	99.98660921	99.13345887	98.2949357	97.47066523	96.6602857
240227A00009	2/27/2024	5.24	1/27/2025	2/27/2024	103.25501	102.4218946	101.6022783	100.7958353	100.0022492	99.22121394	98.45243286	97.69561871	96.95049315
240227A00015	2/27/2024	5.18	2/27/2025	2/27/2024	103.57455	102.656062	101.7539301	100.8677226	99.99702014	99.14141764	98.3005242	97.47396227	96.66136713
240227A00020	2/27/2024	5.18	2/27/2025	2/27/2024	103.57455	102.656062	101.7539301	100.8677226	99.99702014	99.14141764	98.3005242	97.47396227	96.66136714

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240227A00021	2/27/2024	4.97	8/27/2025	2/27/2024	105.49004	104.0769391	102.689814	101.3280093	99.99089128	98.67784691	97.38828296	96.12162528	94.87731803
240227A00025	2/27/2024	5.02	2/27/2025	2/27/2024	103.57409	102.6535735	101.7494793	100.861374	99.98883555	99.13145666	98.28884417	97.46061842	96.64641268
240228A00007	2/28/2024	5.17	2/27/2025	2/28/2024	103.56537	102.6469224	101.7448355	100.8586724	99.98801378	99.13245461	98.29160396	97.46508432	96.65253096
240228A00021	2/28/2024	4.77	2/27/2026	2/28/2024	107.52534	105.5887289	103.6970723	101.8490614	100.0434293	98.27895442	96.55445815	94.8688034	93.22089264
240229A00015	2/29/2024	5.25	12/30/2024	2/29/2024	102.91604	102.1603504	101.4157913	100.6821199	99.95909839	99.24649593	98.54408816	97.8516572	97.16899131
240229A00026	2/29/2024	4.74	2/27/2026	2/29/2024	107.46782	105.5317695	103.6406672	101.7932001	99.98810164	98.22415047	96.50016836	94.81501841	93.16760336
240229A00027	2/29/2024	4.54	2/26/2027	2/29/2024	111.35796	108.3766138	105.4921577	102.7009118	99.99936132	97.38414354	94.85204059	92.39997228	90.02498941
970806A00017	8/1/1997	7.02	7/23/2026	8/1/1997	107.344	106.0984619	104.8791838	103.6853836	102.5163113	101.3712455	100.2494925	99.15038412	98.07327745
970806A00018	8/1/1997	6.7	10/23/2026	8/1/1997	107.74959	106.3736252	105.0285923	103.7135422	102.4275583	101.1697598	99.93929984	98.7353638	97.55716789
970806A00059	8/1/1997	8.25	9/22/2025	8/1/1997	105.47558	104.6657999	103.8699845	103.0877535	102.318742	101.5625988	100.8189855	100.0875761	99.36805613
230406A00039	3/29/2024	3.43	3/31/2026	3/29/2024	105.22738	103.2287564	101.2786098	99.37546211	97.51788967	95.70452182	93.93403858	92.20516837	90.51668589
231208A00019	3/15/2024	4.95	3/14/2025	3/15/2024	103.53306	102.5743333	101.6334515	100.7099144	99.80324449	98.91298176	98.03868275	97.17991991	96.33628084
231208A00020	3/15/2024	4.85	6/16/2025	3/15/2024	104.45068	103.2342379	102.0462936	100.8858497	99.75195716	98.64371015	97.56024378	96.50073167	95.4643839
231208A00021	3/15/2024	4.75	9/15/2025	3/15/2024	105.40251	103.9384085	102.5021402	101.0929812	99.7102308	98.35321162	97.02126914	95.71377056	94.43010392
231208A00022	3/15/2024	4.69	12/15/2025	3/15/2024	106.41929	104.6992844	103.0155608	101.3670345	99.75266466	98.17145183	96.62243564	95.104693	93.61733621
231208A00023	3/15/2024	4.61	3/16/2026	3/15/2024	107.41814	105.4370351	103.5029677	101.61453	99.77036713	97.96917374	96.20969168	94.49070805	92.81105322
240103A00023	3/29/2024	4.45	7/29/2025	3/29/2024	104.44454	103.1157776	101.8109202	100.529362	99.27052036	98.03383165	96.81875079	95.62475038	94.45131996
240103A00032	3/29/2024	4.45	7/29/2025	3/29/2024	104.44454	103.1157776	101.8109202	100.529362	99.27052036	98.03383165	96.81875079	95.62475038	94.45131996
240103A00033	3/29/2024	4.45	7/29/2025	3/29/2024	104.44454	103.1157776	101.8109202	100.529362	99.27052036	98.03383165	96.81875079	95.62475038	94.45131996
240103A00034	3/29/2024	4.45	7/29/2025	3/29/2024	104.44454	103.1157776	101.8109202	100.529362	99.27052036	98.03383165	96.81875079	95.62475038	94.45131996
240103A00035	3/29/2024	4.45	7/29/2025	3/29/2024	104.44454	103.1157776	101.8109202	100.529362	99.27052036	98.03383165	96.81875079	95.62475038	94.45131996
240131A00022	3/1/2024	4.13	3/1/2027	3/1/2024	110.19793	107.2249859	104.3490553	101.5664419	98.87361537	96.26719857	93.74396027	91.30080792	88.93478086
240306A00030	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757
240308A00031	3/8/2024	4.46	9/16/2026	3/8/2024	109.23141	106.7294591	104.2986243	101.9364734	99.64067485	97.40899045	95.23927112	93.12945279	91.07755246
240312A00009	3/12/2024	4.68	3/12/2026	3/12/2024	107.50817	105.5368144	103.6120201	101.732399	99.89661695	98.10338814	96.35147308	94.6396766	92.96684595
240328A00016	3/29/2024	4.98	3/28/2025	3/29/2024	103.88062	102.8800031	101.8987451	100.936291	99.99210325	99.0656645	98.1564768	97.26406072	96.38795445
240312A00020	3/12/2024	4.82	11/3/2025	3/12/2024	106.10049	104.4982514	102.9282759	101.3896538	99.88151079	98.40300463	96.95332397	95.53168678	94.137339
240328A00050	3/28/2024	5.39	11/26/2024	3/28/2024	102.60674	101.944527	101.2908922	100.6456659	100.0086865	99.37979634	98.75884178	98.14567311	97.54014435
240301A00003	3/1/2024	5.19	2/3/2025	3/1/2024	103.29617	102.4439235	101.605795	100.7814365	99.97051023	99.17268931	98.38765738	97.6151082	96.85474525
240308A00023	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240306A00010	3/6/2024	4.22	3/6/2029	3/6/2024	118.65989	113.4909842	108.5843694	103.9253155	99.49999418	95.29542029	91.29939642	87.50046095	83.88784004
240328A00024	3/28/2024	5.14	3/24/2025	3/28/2024	103.83371	102.8464206	101.8780038	100.9279203	99.99565195	99.08070008	98.1825844	97.30084231	96.43502801
240306A00026	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240326A00027	3/26/2024	4.95	3/26/2025	3/26/2024	103.82716	102.8322501	101.8564922	100.8993376	99.96025713	99.03874136	98.13429993	97.24646058	96.37476835
240314A00009	3/14/2024	4.75	3/10/2026	3/14/2024	107.62077	105.6536213	103.7328059	101.8569488	100.0247256	98.23485993	96.48612134	94.77732312	93.10732057
240320A00015	3/20/2024	5.35	12/11/2024	3/20/2024	102.75806	102.0546256	101.3608622	100.6765715	100.0015601	99.33563969	98.67862703	98.03034385	97.3906166
240301A00022	3/1/2024	4.94	3/3/2025	3/1/2024	103.54753	102.6163166	101.701922	100.8038902	99.92178408	99.05518206	98.20367733	97.36687717	96.54440243
240306A00029	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757
240327A00028	3/27/2024	4.4	3/27/2028	3/27/2024	115.58248	111.4400423	107.4731125	103.6732975	100.0326497	96.54364218	93.19914456	89.99239957	86.91700163
240325A00060	3/25/2024	4.57	3/25/2026	3/25/2024	107.70784	105.6948816	103.7303402	101.812753	99.94070715	98.11284227	96.32784794	94.58446152	92.88146601
240320A00010	3/20/2024	4.77	3/20/2036	3/20/2024	146.36913	132.9230228	120.9292625	110.2197242	100.6467059	92.08034857	84.40639138	77.52421991	71.34516767
240322A00012	3/22/2024	4.92	3/21/2025	3/22/2024	103.73902	102.7581304	101.7958724	100.8517223	99.92517127	99.0157296	98.12292553	97.24630458	96.38542867
240328A00052	3/28/2024	4.34	3/28/2029	3/28/2024	119.47967	114.2307845	109.2509883	104.525001	100.0384916	95.77801316	91.73094355	87.88543072	84.23034169
240321A00025	3/21/2024	5.06	4/17/2025	3/21/2024	104.02798	102.9750198	101.943497	100.9327559	99.94217155	98.97114408	98.01909708	97.08547667	96.16975036
240306A00025	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757
240328A00063	3/28/2024	4.47	3/28/2030	3/28/2024	123.89244	117.5034574	111.4972232	105.8486283	100.5343451	95.53268801	90.82348998	86.38798827	82.20871979
240327A00014	3/27/2024	4.88	9/24/2025	3/27/2024	105.70301	104.2119561	102.7496974	101.3154731	99.90854735	98.52820922	97.17377215	95.84457272	94.53996968
240322A00008	3/22/2024	4.65	4/22/2026	3/22/2024	107.94431	105.8565727	103.8202779	101.8338201	99.89565382	98.0042928	96.15830744	94.35632221	92.5970131
240328A00051	3/28/2024	5.39	11/26/2024	3/28/2024	102.60674	101.944527	101.2908922	100.6456659	100.0086865	99.37979634	98.75884178	98.14567311	97.54014435
240327A00025	3/27/2024	4.35	3/26/2027	3/27/2024	111.52087	108.4519918	105.485475	102.6173329	99.84375655	97.16110709	94.56590654	92.05482996	89.6246977
240313A00023	3/13/2024	4.68	3/13/2026	3/13/2024	107.52003	105.5458942	103.6184437	101.7362867	99.89808379	98.10254409	96.3484233	94.63452167	92.95968208
240322A00015	3/22/2024	4.65	11/21/2025	3/22/2024	106.3136	104.6552238	103.0309667	101.4398411	99.88089704	98.35322082	96.85593328	95.38818814	93.94917043
240328A00058	3/28/2024	5.1	4/28/2025	3/28/2024	104.19542	103.1118973	102.051029	101.0121082	99.99445763	98.99742768	98.02039501	97.06276118	96.12395145
240301A00025	3/1/2024	4.45	3/1/2027	3/1/2024	111.132	108.1453363	105.2560212	102.4603497	99.75478086	97.1359274	94.60054832	92.14554169	89.76793784
240326A00042	3/26/2024	4.71	3/26/2026	3/26/2024	107.73395	105.7229913	103.7603779	101.8446474	99.97438962	98.14824671	96.36491057	94.62312082	92.92166261
240305A00010	3/5/2024	4.66	3/5/2026	3/5/2024	107.38645	105.434939	103.5291033	101.6675952	99.84911767	98.07242031	96.33629722	94.6395852	92.98116192
240313A00007	3/13/2024	4.88	9/12/2025	3/13/2024	105.55647	104.0993995	102.6698831	101.2672029	99.89066872	98.53961347	97.21339231	95.91138172	94.63297859
240321A00031	3/21/2024	5.41	10/21/2024	3/21/2024	102.22596	101.6625231	101.1053201	100.5542483	100.0092064	99.47009582	98.93681978	98.40928371	97.88739509
240306A00015	3/6/2024	4.93	3/6/2025	3/6/2024	103.57333	102.6338865	101.7115534	100.8058703	99.91638837	99.04267494	98.18431258	97.3408985	96.51204393
240322A00020	3/22/2024	4.92	3/21/2025	3/22/2024	103.73902	102.7581304	101.7958724	100.8517223	99.92517127	99.0157296	98.12292553	97.24630458	96.38542867
240319A00011	3/19/2024	5.12	5/1/2025	3/19/2024	104.25138	103.1594616	102.0905421	101.043895	100.0188282	99.01467805	98.03080781	97.06660643	96.12148723
240328A00022	3/28/2024	4.3	3/28/2028	3/28/2024	115.74839	111.584817	107.5981019	103.7797683	100.1217894	96.61656419	93.2568929	90.03595356	86.94728003
240306A00006	3/6/2024	4.65	9/5/2025	3/6/2024	105.3715	103.931226	102.5179	101.1308301	99.76934795	98.43280777	97.12058493	95.83207529	94.56669426
240318A00020	3/18/2024	4.48	3/19/2029	3/18/2024	117.7501	113.0980512	108.6764348	104.4723444	100.4736719	96.66905256	93.04781564	89.59993801	86.31600124
240301A00024	3/1/2024	4.17	3/1/2029	3/1/2024	119.0562	113.86966	108.9461106	104.2707949	99.82985978	95.61029595	91.59988255	87.7871352	84.16125794
240322A00013	3/22/2024	4.18	3/22/2029	3/22/2024	119.32351	114.0728381	109.0912074	104.3633584	99.87497627	95.61262821	91.56370435	87.71636318	84.05948074

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240305A00011	3/5/2024	4.55	9/4/2026	3/5/2024	109.31243	106.8425444	104.4419521	102.1083185	99.8394005	97.63304358	95.48717792	93.39981436	91.36904082
240315A00015	3/15/2024	4.8	3/16/2026	3/15/2024	107.79128	105.8064334	103.8686902	101.9766467	100.1289463	98.3242816	96.56139264	94.8390648	93.15612677
240322A00022	3/22/2024	5.08	3/17/2025	3/22/2024	103.69282	102.7251778	101.7756883	100.843843	99.9291523	99.03114457	98.14936533	97.28337651	96.43275572
240306A00027	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757
240322A00021	3/22/2024	4.93	3/21/2025	3/22/2024	103.74882	102.7678757	101.8055669	100.8613667	99.93476615	99.02527563	98.13242335	97.25575479	96.39483188
240311A00014	3/11/2024	5.07	3/11/2025	3/11/2024	103.61329	102.6622418	101.7287436	100.8123076	99.91246811	99.02877617	98.16079899	97.30811913	96.47033385
240308A00021	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240328A00031	3/28/2024	4.92	9/24/2025	3/28/2024	105.76264	104.271123	102.8084104	101.3737401	99.96637584	98.58560658	97.23074556	95.90112915	94.59611594
240311A00009	3/11/2024	4.38	3/11/2027	3/11/2024	111.03865	108.0265846	105.113563	102.2957834	99.56961199	96.93157426	94.37834708	91.90675127	89.51374451
240319A00004	3/19/2024	4.47	3/19/2027	3/19/2024	111.79793	108.7438154	105.790923	102.9353391	100.1733196	97.50128621	94.91581808	92.41364381	89.99163408
240308A00020	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240308A00011	3/8/2024	4.54	3/9/2026	3/8/2024	107.20031	105.2400073	103.3258371	101.4564296	99.63046768	97.8466822	96.1038493	94.40078877	92.73636206
240319A00014	3/19/2024	4.44	3/19/2029	3/19/2024	119.88184	114.6476511	109.6804257	104.9650841	100.487473	96.23430824	92.19311626	88.35218095	84.70049359
240301A00001	3/1/2024	5.03	6/2/2025	3/1/2024	104.51046	103.3311273	102.1785652	101.0518643	99.95015957	98.87262428	97.81846775	96.78693352	95.77729747
240308A00008	3/8/2024	4.99	4/1/2025	3/8/2024	103.77666	102.7680691	101.77917	100.8093882	99.85817235	98.92499214	98.00933731	97.11071673	96.22865745
240319A00021	3/19/2024	4.83	9/19/2025	3/19/2024	105.80639	104.3243521	102.8707447	101.4448196	100.0458548	98.67315278	97.32603997	96.00386519	94.70599894
240308A00018	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240322A00029	3/22/2024	4.36	3/22/2027	3/22/2024	111.50509	108.4472529	105.4910613	102.6325714	99.86801364	97.19378582	94.60644456	92.10269738	89.67939522
240312A00015	3/12/2024	4.13	3/12/2029	3/12/2024	118.97191	113.7573044	108.8086412	104.1109148	99.65004016	95.41279577	91.38676585	87.5602873	83.92240024
240322A00018	3/22/2024	4.34	3/22/2027	3/22/2024	111.44545	108.3885058	105.4331861	102.5755466	99.81181836	97.13839984	94.5518483	92.04887193	89.62632225
240312A00019	3/12/2024	4.87	9/12/2025	3/12/2024	105.54189	104.0849309	102.6555232	101.2529498	99.87652067	98.52556868	97.19944909	95.89753839	94.61923355
240301A00023	3/1/2024	4.17	3/1/2029	3/1/2024	119.0562	113.86966	108.9461106	104.2707949	99.82985978	95.61029595	91.59988255	87.7871352	84.16125794
240308A00027	3/8/2024	4.23	3/8/2027	3/8/2024	110.96241	107.950385	105.0373508	102.2195081	99.4932281	96.85504093	94.30162782	91.82981361	89.43655969
240314A00012	3/14/2024	4.62	3/13/2026	3/14/2024	107.66255	105.6821698	103.7486992	101.8607379	100.0169381	98.21600057	96.45667346	94.73774964	93.05806498
240326A00013	3/26/2024	4.91	9/26/2025	3/26/2024	105.77232	104.2752399	102.8071755	101.3673533	99.95502927	98.56948515	97.21002708	95.87598472	94.56671024
240319A00003	3/19/2024	4.65	3/19/2026	3/19/2024	107.79422	105.7964533	103.8463706	101.9425378	100.0835742	98.26814965	96.49498266	94.76283797	93.07052469
240328A00057	3/28/2024	5.2	2/27/2025	3/28/2024	103.59292	102.6743412	101.7721193	100.8858231	100.0150329	99.15934371	98.31836467	97.49171817	96.67903948
240325A00040	3/25/2024	4.46	4/30/2027	3/25/2024	111.85923	108.6970019	105.64256	102.6916058	99.84003748	97.083941	94.41958056	91.84338919	89.35196
240312A00013	3/12/2024	4.68	3/12/2026	3/12/2024	107.50817	105.5368144	103.6120201	101.732399	99.89661695	98.10338814	96.35147308	94.6396766	92.96684595
240311A00012	3/11/2024	4.8	9/11/2025	3/11/2024	105.42784	103.9744812	102.5485568	101.149355	99.77618985	98.42839809	97.10533871	95.80639183	94.53095782
240319A00012	3/19/2024	4.77	4/14/2026	3/19/2024	108.09097	106.0239938	104.0076047	102.0402331	100.1203719	98.24657145	96.41743667	94.63162469	92.8878424
240328A00018	3/28/2024	4.39	3/29/2027	3/28/2024	111.67512	108.595807	105.6194497	102.7420252	99.95969354	97.26878639	94.66579815	92.14737786	89.7103214
240319A00007	3/19/2024	5.16	3/19/2025	3/19/2024	103.79403	102.8204565	101.8652483	100.9278846	100.0078676	99.1047178	98.21797337	97.3471892	96.49193617

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240322A00014	3/22/2024	4.51	5/22/2026	3/22/2024	108.29058	106.1120748	103.9887615	101.9188564	99.90064677	97.93248874	96.01280371	94.1400752	92.31284591
240327A00016	3/27/2024	4.56	3/27/2026	3/27/2024	107.71174	105.6933836	103.7236978	101.8012082	99.92449104	98.09217562	96.30294163	94.55551707	92.84867603
240328A00059	3/28/2024	5.1	4/28/2025	3/28/2024	104.19542	103.1118973	102.051029	101.0121082	99.99445763	98.99742768	98.02039501	97.06276118	96.12395145
240325A00024	3/25/2024	4.71	9/25/2025	3/25/2024	105.7022	104.2044572	102.7357509	101.2953098	99.88238932	98.4962704	97.13625864	95.80168319	94.4918957
240328A00061	3/28/2024	4.35	3/28/2029	3/28/2024	119.5295	114.2793849	109.2984062	104.5712801	100.0836738	95.8221382	91.77404956	87.92755408	84.27151717
240306A00028	3/19/2024	5.07	3/19/2025	3/19/2024	103.70642	102.7333091	101.7785522	100.8416338	99.92205624	99.01934031	98.13302423	97.26266298	96.40782757
240307A00022	3/7/2024	4.09	3/7/2029	3/7/2024	118.72301	113.5281733	108.5976809	103.9166467	99.47110266	95.24793467	91.23482585	87.42020413	83.79319337
240328A00023	3/28/2024	4.22	3/28/2029	3/28/2024	119.58576	114.3121319	109.309458	104.5623271	100.0562832	95.7777638	91.71403969	87.85315972	84.18389908
240318A00014	3/18/2024	4.67	3/18/2026	3/18/2024	107.82151	105.8261428	103.8783434	101.9766794	100.1197753	98.30630597	96.5349946	94.80461041	93.11396676
240314A00026	3/14/2024	5.25	1/14/2025	3/14/2024	103.10096	102.3038388	101.5191023	100.7464615	99.98563773	99.23636062	98.49836816	97.7714062	97.05522817
240308A00022	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240305A00035	3/5/2024	5.11	2/28/2025	3/5/2024	103.52201	102.601073	101.6965841	100.8081075	99.93521997	99.0775134	98.23459366	97.40608021	96.59160546
240312A00028	3/12/2024	4.87	9/12/2025	3/12/2024	105.54189	104.0849309	102.6555232	101.2529498	99.87652067	98.52556868	97.19944909	95.89753839	94.61923355
240328A00027	3/28/2024	4.39	3/29/2027	3/28/2024	111.67512	108.595807	105.6194497	102.7420252	99.95969354	97.26878639	94.66579815	92.14737786	89.7103214
240308A00009	3/8/2024	4.74	9/8/2025	3/8/2024	105.30503	103.8608019	102.4436858	101.052986	99.68802771	98.34815895	97.03274909	95.74118826	94.47288642
240321A00019	3/21/2024	4.88	9/22/2025	3/21/2024	105.67859	104.1932054	102.7364079	101.3074437	99.90558437	98.53012662	97.18039086	95.85572039	94.55548042
240328A00064	3/28/2024	4.48	3/28/2031	3/28/2024	127.49594	119.9710018	112.9608882	106.4273358	100.3351254	94.6518232	89.34754642	84.39475029	79.76803358
240320A00014	3/20/2024	5.45	9/27/2024	3/20/2024	102.00615	101.5082289	101.0151764	100.5269241	100.043402	99.56454166	99.09027573	98.62053827	98.15526456
240301A00031	3/1/2024	5.1	3/3/2025	3/1/2024	103.548	102.6188471	101.7064449	100.8103397	99.93009675	99.06529701	98.21553589	97.38042289	96.55958092
240308A00005	3/8/2024	4.03	3/8/2029	3/8/2024	118.43647	113.2459104	108.3197033	103.6429588	99.20169877	94.98280017	90.9739382	87.16353384	83.54070489
240314A00027	3/14/2024	5.15	3/14/2025	3/14/2024	103.72499	102.7652787	101.823421	100.8989206	99.99129979	99.10009817	98.22487209	97.36519375	96.5206505
240328A00054	3/28/2024	5.2	2/27/2025	3/28/2024	103.59292	102.6743412	101.7721193	100.8858231	100.0150329	99.15934371	98.31836467	97.49171817	96.67903948
240328A00049	3/28/2024	5.39	11/26/2024	3/28/2024	102.60674	101.944527	101.2908922	100.6456659	100.0086865	99.37979634	98.75884178	98.14567311	97.54014435
240301A00002	3/1/2024	5.24	1/2/2025	3/1/2024	102.94337	102.1794511	101.4269117	100.685495	99.95495534	99.23505442	98.5255607	97.82624939	97.13690209
240321A00006	3/21/2024	4.88	9/22/2025	3/21/2024	105.67859	104.1932054	102.7364079	101.3074437	99.90558437	98.53012662	97.18039086	95.85572039	94.55548042
240328A00055	3/28/2024	5.2	2/27/2025	3/28/2024	103.59292	102.6743412	101.7721193	100.8858231	100.0150329	99.15934371	98.31836467	97.49171817	96.67903948
240306A00014	3/6/2024	5.09	3/6/2025	3/6/2024	103.57381	102.6364478	101.7161302	100.8123956	99.92479775	99.05290636	98.19630637	97.35459726	96.52739238
240311A00006	3/11/2024	4.6	3/11/2026	3/11/2024	107.34028	105.3732691	103.4526576	101.5770701	99.7451785	97.95570288	96.20740929	94.49910785	92.82965085
240314A00008	3/14/2024	4.55	3/10/2027	3/14/2024	111.52795	108.5113172	105.5937341	102.7714027	100.0406929	97.39813371	94.84040509	92.36433077	89.96687103
240328A00026	3/28/2024	4.6	3/27/2026	3/28/2024	107.79161	105.7724333	103.8019479	101.8786741	100.0011878	98.16811768	96.3781432	94.62999191	92.92243754
240322A00032	3/22/2024	4.67	3/23/2026	3/22/2024	107.61881	105.6170209	103.6631836	101.7558477	99.89361986	98.07515812	96.29916961	94.56440839	92.86967337
240328A00039	3/28/2024	5.14	3/28/2025	3/28/2024	103.88102	102.8826641	101.903593	100.94325	100.0011004	99.07662989	98.16934329	97.27876379	96.40443208
240321A00026	3/21/2024	5.03	5/19/2025	3/21/2024	104.35395	103.213166	102.0974718	101.0060435	99.93809381	98.8928693	97.86964845	96.86774005	95.88648161

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
240314A00013	3/14/2024	4.62	3/13/2026	3/14/2024	107.66255	105.6821698	103.7486992	101.8607379	100.0169381	98.21600057	96.45667346	94.73774964	93.05806498
240311A00011	3/11/2024	4.89	7/11/2025	3/11/2024	104.79684	103.5121789	102.2553936	101.0255774	99.82186073	98.64341151	97.48943305	96.35916222	95.25186772
240325A00023	3/25/2024	4.71	9/25/2025	3/25/2024	105.7022	104.2044572	102.7357509	101.2953098	99.88238932	98.4962704	97.13625864	95.80168319	94.4918957
240321A00007	3/21/2024	4.7	3/23/2026	3/21/2024	107.6783	105.6759092	103.7214805	101.8135644	99.95076748	98.13174734	96.35521085	94.61991179	92.9246488
240308A00019	3/8/2024	5.06	3/10/2025	3/8/2024	103.59215	102.6439147	101.7131199	100.7992902	99.90196401	99.02069609	98.15505725	97.30463345	96.4690252
240311A00010	3/11/2024	5.07	3/11/2025	3/11/2024	103.61329	102.6622418	101.7287436	100.8123076	99.91246811	99.02877617	98.16079899	97.30811913	96.47033385
240318A00015	3/18/2024	4.47	2/20/2029	3/18/2024	119.73019	114.5757797	109.6806173	105.0302568	100.6111342	96.41050634	92.41639679	88.61754607	85.00336506
240322A00007	3/22/2024	4.67	3/23/2026	3/22/2024	107.61881	105.6170209	103.6631836	101.7558477	99.89361986	98.07515812	96.29916961	94.56440839	92.86967337
240328A00017	3/28/2024	4.6	3/30/2026	3/28/2024	107.82765	105.8000662	103.8215565	101.8906285	100.0058413	98.16580794	96.36919282	94.61470921	92.90111728
240327A00008	3/27/2024	4.72	10/1/2025	3/27/2024	105.79069	104.2757964	102.7905555	101.3341687	99.90586807	98.50491285	97.13058765	95.7822016	94.45908727
240305A00008	3/5/2024	4.84	9/5/2025	3/5/2024	105.41341	103.9765637	102.566543	101.1826626	99.82425831	98.49068823	97.18133147	95.8955874	94.63287482
090429A00044	4/29/2009	4.1	4/29/2024	4/29/2014	100.21044	100.1299759	100.0496442	99.96944226	99.8893699	99.80942675	99.72961255	99.649927	99.57036979
130416A00025	4/16/2013	2.27	4/18/2028	4/16/2018	100.01003	99.62248625	98.69267404	97.24706099	95.49908217	93.6735232	91.87710331	90.13308529	88.44168007
140508A00011	5/8/2014	2.32	5/8/2024	5/8/2019	100.07943	99.99414558	99.90191935	99.80803127	99.71432832	99.62080986	99.52747571	99.4343253	99.34135788
140723A00038	7/23/2014	2.3	7/23/2024	7/23/2019	100.0772	99.96881635	99.7877063	99.5855508	99.38387107	99.1831552	98.983396	98.78458604	98.58671766
141119A00005	11/19/2014	2.53	11/19/2024	11/19/2019	100.07311	99.93429752	99.63746887	99.27719914	98.91401606	98.55401935	98.19726765	97.8437129	97.49330696
150202A00006	2/2/2015	1.92	2/3/2025	2/3/2020	100.01858	99.77423702	99.34624118	98.86848112	98.39108063	97.91929709	97.45316883	96.99258435	96.53743447
151223A00007	12/23/2015	3.76	12/23/2030	12/23/2022	100.17049	100.0254129	99.41808023	97.79717983	94.97165946	91.18717137	86.94651881	82.69899179	78.67139996
161012A00020	10/11/2016	2.96	10/14/2031	10/11/2023	100.02635	99.53968556	98.10375544	95.35098982	91.41042521	86.8268039	82.15741476	77.70672311	73.55073742
170515A00052	5/15/2017	3.78	5/15/2042	5/15/2024	100.22139	99.90064287	98.78361109	96.06768322	91.652763	86.14649554	80.37297474	74.90887579	69.95204741
170519A00006	5/19/2017	3	5/19/2032	5/19/2022	100.09162	99.83924015	98.95252865	97.13104716	94.45491211	91.30258673	88.05853229	84.92932565	81.96221932
170705A00037	7/5/2017	2.85	7/6/2032	7/6/2027	105.98445	103.0905684	100.0979607	96.94117963	93.58509044	90.10684872	86.66500905	83.37546575	80.26576317
170802A00074	8/2/2017	2.92	8/2/2027	8/2/2022	99.967545	99.82043374	99.06063843	97.56350392	95.48010723	93.11636755	90.72111792	88.39097118	86.13913411
170809A00042	8/9/2017	2.35	8/9/2027	8/9/2022	100.03334	99.71929082	98.92490877	97.68321429	96.18803882	94.62923128	93.09330309	91.59683262	90.13970678
171004A00022	10/4/2017	2.74	10/4/2027	10/4/2022	100.07173	99.81908907	99.00481485	97.47107438	95.34945631	92.94910599	90.51931769	88.15787442	85.87863479
171005A00047	10/5/2017	3.29	10/5/2032	10/5/2022	100.10971	99.84755915	98.86535164	96.69897337	93.34864755	89.24343021	84.91911187	80.73870236	76.8254702
180105A00005	1/5/2018	3.07	1/5/2028	1/5/2023	100.13388	100.0052421	99.53881727	98.54260056	97.10520362	95.43899092	93.72824184	92.05150425	90.4221849
180105A00006	1/5/2018	3.07	1/5/2028	1/5/2023	100.13388	100.0052421	99.53881727	98.54260056	97.10520362	95.43899092	93.72824184	92.05150425	90.4221849
180130A00087	1/30/2018	2.92	1/31/2028	1/30/2023	100.11418	99.95216605	99.41845339	98.34178184	96.85095002	95.16420116	93.45241167	91.7793009	90.15386521
180302A00003	3/2/2018	3.89	3/2/2033	3/2/2023	100.19809	100.0555827	99.49045696	97.83069401	94.80780844	90.65397619	85.91386415	81.12321848	76.60367727
180315A00030	3/15/2018	3.76	3/15/2033	3/17/2025	102.56252	101.3043919	99.67378548	97.28857768	93.76938105	89.23562731	84.22499992	79.25958112	74.60818583
180504A00024	5/4/2018	3.62	5/4/2028	5/4/2023	100.00287	99.97262412	99.67951119	98.60089086	96.66778294	94.05983542	91.12414376	88.157967	85.29524478
180627A00005	6/27/2018	3.63	6/30/2033	6/30/2023	100.18204	100.049492	99.56833014	98.20898616	95.82389243	92.65273961	89.13421492	85.63045251	82.30433099

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180703A00033	7/3/2018	3.4	7/3/2028	7/3/2023	100.15863	100.0356614	99.64918031	98.70158328	97.22354273	95.42455656	93.52977652	91.6605041	89.84764787
190111A00040	1/11/2019	3.74	1/11/2034	1/11/2024	100.00337	99.9091474	99.21792319	97.24803336	93.88661587	89.49744737	84.68697498	79.9478867	75.51798434
190116A00015	1/16/2019	3.61	1/17/2034	1/16/2024	100.15797	100.0108038	99.36982158	97.7665647	95.09914582	91.67660184	87.96972776	84.32972302	80.89294287
190204A00054	2/4/2019	3.98	2/6/2034	2/2/2024	100.18713	100.0333269	99.35213171	97.47361315	94.1473028	89.67188417	84.64205254	79.61825443	74.91525279
190222A00023	2/22/2019	3.66	2/22/2034	2/22/2026	105.02355	102.7488209	100.050801	96.64226143	92.28489656	87.09403595	81.54219914	76.13701323	71.12956336
190301A00015	3/1/2019	3.86	3/1/2034	3/2/2026	105.11423	102.9892001	100.4627589	97.2891012	93.19842807	88.25781995	82.89998894	77.62189509	72.71223582
190409A00016	4/9/2019	2.91	4/9/2029	4/9/2024	100.08307	99.83101066	98.96866782	97.22987571	94.68639649	91.68436488	88.57821091	85.56015019	82.67724702
190409A00017	4/9/2019	3.01	4/9/2029	4/9/2024	100.09295	99.85343296	99.00574043	97.22198867	94.53022178	91.27863701	87.86980463	84.54559786	81.37525894
190430A00020	4/30/2019	3.41	4/28/2034	4/28/2026	104.4166	102.0897312	99.2838497	95.71131638	91.20450729	85.98913011	80.58587738	75.42391183	70.67143987
190520A00018	5/20/2019	3.7	5/20/2044	5/20/2024	100.34035	99.71118082	98.04633603	94.64305232	89.5857458	83.63884253	77.64327749	72.08885238	67.10453582
190530A00044	5/30/2019	2.85	5/30/2034	5/30/2024	100.19764	99.6404398	98.33415254	95.92264323	92.55325489	88.73246299	84.89641855	81.25190635	77.83618346
190807A00041	8/7/2019	2.27	8/7/2034	7/7/2024	99.946988	98.9190574	96.91178378	93.78223719	89.95125509	85.95972602	82.12047682	78.51913144	75.15211746
190807A00044	8/7/2019	2.27	8/7/2034	8/7/2024	100.01422	98.93359343	96.9125018	93.78223719	89.95125509	85.95972602	82.12047682	78.51913144	75.15211746
190827A00044	8/27/2019	1.9	8/27/2029	8/27/2024	100.02539	99.18926189	97.791415	95.80359638	93.50754054	91.16749217	88.8928107	86.70325425	84.59665598
190930A00079	9/30/2019	2.04	10/1/2029	9/30/2024	100.12402	99.33429897	98.01013518	96.07416199	93.7781867	91.40854024	89.09664012	86.87119107	84.73110725
190930A00083	9/30/2019	2.04	10/1/2029	9/30/2024	100.12402	99.33429897	98.01013518	96.07416199	93.7781867	91.40854024	89.09664012	86.87119107	84.73110725
191007A00012	10/7/2019	2	10/5/2029	10/7/2024	100.12086	99.16846372	97.69822767	95.65089673	93.29558368	90.8996442	88.57344596	86.33642105	84.18609757
191007A00013	10/7/2019	2	10/5/2029	10/7/2024	100.12086	99.16846372	97.69822767	95.65089673	93.29558368	90.8996442	88.57344595	86.33642105	84.18609757
191028A00015	10/28/2019	2.49	10/27/2034	10/28/2024	100.39547	99.30763667	97.44117128	94.50000112	90.7415661	86.72045832	82.8058259	79.12608559	75.68821251
191031A00036	10/31/2019	2.9	10/31/2039	10/31/2024	100.29685	99.0523948	96.66719041	92.78119493	87.79371863	82.48640204	77.40539191	72.74267191	68.49776337
191031A00037	10/31/2019	2.59	10/30/2034	10/31/2024	100.27594	99.23966329	97.38321451	94.42699294	90.66466637	86.65267117	82.75286209	79.0880529	75.6636757
191220A00029	12/20/2019	2.57	12/19/2031	12/20/2024	100.73469	99.68877719	98.15647379	95.88266306	92.98326608	89.85284844	86.77066107	83.83062817	81.03960291
200108A00009	1/8/2020	2.4	1/8/2035	1/8/2025	100.55687	99.10621349	96.8233516	93.44412974	89.28279123	84.91681359	80.71532945	76.78821518	73.1335654
200108A00040	1/8/2020	2.52	1/8/2030	1/8/2025	100.72908	99.51693804	97.69983861	94.98529086	91.5053483	87.730255	84.00732978	80.46348921	77.10991857
200110A00012	1/10/2020	2.57	1/10/2035	1/10/2025	100.66019	99.33599312	97.28048954	94.20971201	90.35983461	86.27238795	82.31029505	78.59342262	75.12524284
200115A00023	1/15/2020	2.16	1/15/2030	1/15/2025	100.51119	99.42723078	97.92686355	95.88004685	93.47072504	90.98416591	88.56142192	86.23359301	83.99926956
200115A00025	1/15/2020	2.1	1/15/2025	1/15/2023	99.931077	99.59632537	98.91621076	98.10434186	97.28122054	96.4703275	95.67279375	94.88830758	94.11654901
200306A00021	3/6/2020	1.16	3/6/2030	3/6/2025	99.405054	97.83585214	95.69017306	93.16568778	90.57593778	88.0641361	85.65503173	83.3459265	81.13179892
200309A00013	3/9/2020	1.1	3/8/2030	3/9/2025	99.319851	97.72028938	95.54045027	93.00059867	90.410743	87.9029396	85.49818624	83.19327138	80.98316647
200316A00030	3/16/2020	1.35	3/15/2030	3/16/2025	99.836197	98.40621	96.43943934	94.01012651	91.42596307	88.88891714	86.45117195	84.11460329	81.87434221
200316A00032	3/16/2020	1.35	3/15/2030	3/16/2025	99.836197	98.40621	96.43943934	94.01012651	91.42596307	88.88891714	86.45117195	84.11460329	81.87434221
200318A00015	3/18/2020	1.69	3/18/2030	3/18/2023	99.643996	98.74010957	96.98748118	94.56569405	91.85439311	89.13955515	86.52255155	84.01656324	81.61699453
200326A00035	3/26/2020	1.68	3/26/2030	3/26/2025	100.101	98.75180529	96.90647354	94.56288685	92.00386365	89.46286558	87.01546062	84.66910037	82.41928348

	Parallel-Shift Sensitivity Analysis												
3/31/2024					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200423A00008	4/23/2020	1.59	4/23/2030	4/23/2025	99.740876	97.87230954	95.08313727	91.40004525	87.31993244	83.2813583	79.44582098	75.83128465	72.42557364
200423A00009	4/23/2020	1.59	4/23/2030	4/23/2025	99.740876	97.87230954	95.08313727	91.40004525	87.31993244	83.2813583	79.44582098	75.83128465	72.42557364
200423A00010	4/23/2020	1.59	4/23/2030	4/23/2025	99.740876	97.87230954	95.08313727	91.40004525	87.31993244	83.2813583	79.44582098	75.83128465	72.42557364
200430A00021	4/30/2020	1.2	4/30/2030	4/30/2025	99.448747	97.88510576	95.73798382	93.19344536	90.57250711	88.02840445	85.58918571	83.25241589	81.01290551
200505A00010	5/5/2020	0.89	5/6/2030	5/5/2025	99.245233	97.50668144	95.21110212	92.58319631	89.92618903	87.36102323	84.90451789	82.55255294	80.2997323
200512A00023	5/12/2020	1.78	5/11/2035	5/12/2025	99.411416	96.92270917	93.16682717	88.31218151	83.04949683	77.95186225	73.23398979	68.91326287	64.95650254
200609A00003	6/9/2020	1.66	6/8/2035	6/9/2025	98.863154	95.884607	91.47890789	85.94884929	80.09789437	74.50870793	69.38091763	64.71805081	60.47724888
200612A00001	6/12/2020	0.75	6/12/2030	6/12/2025	99.054069	97.18781117	94.7811916	92.09364891	89.40917912	86.82609141	84.35435551	81.98901447	79.72450314
201022A00008	10/22/2020	1.02	10/22/2035	10/22/2025	98.566666	95.6233478	91.71618765	87.27721095	82.85339824	78.69213442	74.82906106	71.24494161	67.91610657
201029A00008	10/29/2020	0.92	10/29/2030	10/29/2025	99.24864	97.20015423	94.67187174	91.87038798	89.06925843	86.37658457	83.80477481	81.34838727	79.00114223
201030A00025	10/30/2020	2.02	10/28/2050	10/30/2025	98.697667	94.5494735	88.53918431	81.17766035	73.60113727	66.63555837	60.54868912	55.29406107	50.74605399
201116A00019	11/16/2020	1.32	11/15/2030	11/16/2025	99.398954	96.79516662	93.33512211	89.22066506	84.95336847	80.84868463	76.98360635	73.35303243	69.94146447
201118A00015	11/18/2020	1.66	11/18/2036	11/18/2027	100.53026	95.47672749	89.55330542	83.03155583	76.46188467	70.32041762	64.77116315	59.79272268	55.32359409
201118A00017	11/18/2020	1.66	11/18/2036	11/18/2027	100.53026	95.47672749	89.55330542	83.03155583	76.46188467	70.32041762	64.77116315	59.79272268	55.32359409
201118A00018	11/18/2020	1.85	11/18/2036	11/18/2027	100.8634	95.88010617	90.04288415	83.58547631	77.04324611	70.90248607	65.34455453	60.35549278	55.87495461
201202A00016	12/2/2020	1.32	12/3/2035	12/2/2025	99.104899	96.20263843	92.39444811	87.98348998	83.51549797	79.28954242	75.36487807	71.7260254	68.34873503
201202A00017	12/2/2020	1.32	12/3/2035	12/2/2025	99.104899	96.20263843	92.39444811	87.98348998	83.51549797	79.28954242	75.36487807	71.7260254	68.34873503
201229A00003	12/29/2020	1.28	12/30/2030	12/30/2025	99.328767	96.61624749	93.05367466	88.86266058	84.54380045	80.40195243	76.50705863	72.85222205	69.42128026
201230A00018	12/30/2020	1.52	12/28/2035	12/28/2027	100.36574	95.33595065	89.51578833	83.16093191	76.78828747	70.82759656	65.41894749	60.54064002	56.13800433
210108A00007	1/8/2021	1.65	1/8/2036	1/8/2026	99.173351	95.66482652	90.87727625	85.09427934	79.06408351	73.34757278	68.13052346	63.40618693	59.12614419
210225A00010	2/25/2021	2.02	2/25/2041	2/25/2026	100.13455	96.8263511	92.37159027	86.9235238	81.15878129	75.66528695	70.65691947	66.13378326	62.04578106
210405A00013	4/5/2021	1.82	4/7/2036	4/5/2026	100.69662	97.88615815	94.33446319	90.07766787	85.54326958	81.14090983	77.03172576	73.22623322	69.7005971
210622A00004	6/22/2021	2.42	6/20/2036	6/22/2026	101.69102	98.3881183	94.10250647	88.77491585	82.81310485	76.87828692	71.36411336	66.36331273	61.841788
210910A00009	9/10/2021	1.77	9/10/2036	9/10/2026	101.32498	98.20778657	94.44283472	90.04328737	85.37763422	80.84404405	76.61719446	72.71186626	69.10257217
210924A00016	9/24/2021	1.91	9/24/2036	9/24/2026	101.74808	98.70189408	95.03579412	90.73096912	86.09113869	81.53699488	77.27584777	73.33676684	69.69623353
211019A00005	10/19/2021	2.49	10/20/2036	10/19/2026	102.79697	99.30656176	94.94527566	89.60385501	83.60253511	77.54583038	71.88214425	66.74668473	62.1134309
211110A00017	11/10/2021	2.01	11/10/2036	11/10/2026	102.25158	99.11637947	95.40586748	91.08409031	86.41527026	81.80735152	77.48685878	73.49470209	69.80832643
211116A00012	11/16/2021	2.22	12/18/2034	11/16/2026	102.7859	99.93878632	96.6895116	92.96146619	88.89704777	84.81565084	80.93097603	77.29924663	73.90983138
211124A00008	11/24/2021	2.62	11/22/2041	11/24/2026	103.508	100.0657559	95.8660202	90.766117	85.03117387	79.22809675	73.80075312	68.886593	64.46139736
211215A00020	12/15/2021	1.85	12/15/2031	12/15/2026	102.18391	99.60549864	96.80588128	93.75508102	90.5626408	87.4116294	84.39870344	81.53892259	78.82464727
211227A00012	12/27/2021	2.39	12/29/2036	12/27/2028	105.84561	100.4140213	94.46562945	88.05285616	81.42521069	74.99052791	69.05691804	63.71362075	58.91984756
220217A00024	2/17/2022	2.43	2/17/2027	2/17/2025	101.02279	99.90142829	98.51542742	96.70973825	94.55581147	92.29809454	90.07772857	87.92370287	85.83565271
220617A00069	6/17/2022	4.06	6/17/2027	6/17/2025	103.65007	102.3990672	101.112998	99.72687371	98.10875416	96.16422851	93.97013875	91.71662684	89.51836887

Parallel-Shift Sensitivity Analysis													
3/31/2024	Price												
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
220831A00108	8/31/2022	4.07	8/31/2027	9/2/2025	104.36966	102.8795955	101.3568092	99.74119224	97.91555163	95.79977985	93.46051228	91.07105832	88.74449993
221212A00004	12/12/2022	4.36	12/10/2032	12/10/2027	111.97241	108.7218143	105.5108128	102.3130319	99.075753	95.76708771	92.38329816	88.98160066	85.69232109
221214A00057	12/14/2022	4.65	12/14/2027	12/12/2025	106.65026	104.8044839	102.9420779	101.0227525	98.9447059	96.58504284	93.89786519	90.99858295	88.11229286
221222A00137	12/22/2022	5.4	12/22/2037	12/22/2027	116.13252	112.3660874	108.5672013	104.688653	100.630048	96.30699483	91.67938637	86.81732102	82.02948153
230804A00039	8/4/2023	5.02	8/4/2028	8/4/2026	109.50996	107.233672	104.9792019	102.7359501	100.4598073	98.08896697	95.56650939	92.87105547	90.12247549