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												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191223A00049	12/23/2019	1.85	10/23/2020	12/23/2019	100.3522	100.2880628	100.224025	100.1600815	100.0962321	100.0324766	99.9688147	99.90524632	99.84177123
200121A00001	1/21/2020	1.88	1/15/2021	1/21/2020	101.65608	101.3526244	101.0509909	100.7511626	100.4531235	100.1568573	99.86234815	99.56958048	99.27853874
200219A00005	2/19/2020	1.81	1/20/2021	2/19/2020	101.71226	101.3943438	101.0784273	100.7644871	100.4525046	100.1424615	99.83433974	99.52812137	99.22378876
200220A00022	2/20/2020	1.75	2/16/2021	2/20/2020	102.10551	101.7088215	101.3152144	100.9246555	100.5371095	100.1525416	99.77091731	99.39220303	99.01636546
200316A00058	3/16/2020	0.81	11/16/2020	3/16/2020	100.58337	100.4518629	100.3207161	100.1899257	100.0594902	99.92940799	99.79967771	99.67029789	99.54126709
200318A00033	3/18/2020	0.58	2/18/2021	3/18/2020	101.67374	101.2723029	100.8740302	100.4788875	100.0868378	99.69784484	99.311873	98.92888713	98.54885262
200326A00008	3/26/2020	0.56	11/25/2020	3/26/2020	100.656	100.4991302	100.342757	100.1868758	100.0314844	99.87658046	99.72216165	99.56822574	99.41477046
200327A00082	3/27/2020	0.36	10/8/2020	3/27/2020	100.089	100.0667573	100.0445332	100.0223325	100.0001552	99.97800136	99.95587084	99.93376361	99.91167966
200402A00051	4/2/2020	0.56	12/15/2020	4/2/2020	100.89119	100.6774741	100.4646726	100.2527832	100.0418	99.831717	99.62252851	99.41422872	99.20681194
200413A00025	4/13/2020	0.63	1/13/2021	4/13/2020	101.2577	100.9607453	100.6655428	100.3720751	100.0803269	99.79028294	99.50192833	99.21524822	98.930228
191219A00046	12/19/2019	1.77	12/18/2020	12/19/2019	101.22523	101.0021386	100.7800498	100.5589522	100.3388392	100.119704	99.90154017	99.68434112	99.46810038
200129A00006	1/29/2020	1.84	1/25/2021	1/29/2020	101.79924	101.4667935	101.1365245	100.8084071	100.4824203	100.1585435	99.83675623	99.51703824	99.19936962
200220A00023	2/20/2020	1.81	11/20/2020	2/20/2020	100.77528	100.6323182	100.4897728	100.347643	100.2059269	100.0646227	99.92372858	99.78324277	99.64316346
200312A00035	3/12/2020	0.72	12/11/2020	3/12/2020	100.87625	100.6738855	100.472346	100.2716247	100.0717168	99.87261715	99.67432083	99.47682294	99.28011861
200319A00033	3/19/2020	0.63	2/19/2021	3/19/2020	101.70561	101.3011986	100.9000015	100.5019787	100.1070927	99.71530631	99.32658327	98.94088767	98.55818422
200326A00044	3/26/2020	0.38	10/9/2020	3/26/2020	100.10064	100.0756055	100.0506014	100.0256245	100.0006745	99.9757516	99.95085562	99.92598655	99.90114433
200327A00011	3/27/2020	0.46	12/24/2020	3/27/2020	100.97594	100.7365411	100.4982834	100.2611588	100.0251589	99.79027598	99.55650197	99.32382905	99.09224942
200403A00033	4/3/2020	0.73	3/29/2021	4/3/2020	102.21904	101.7025586	101.1912757	100.6851103	100.1839862	99.68782829	99.19656322	98.71011895	98.22842489
200406A00043	4/6/2020	0.5	11/6/2020	4/6/2020	100.42738	100.3240982	100.2210347	100.1181914	100.0155676	99.91316253	99.81097554	99.7090059	99.60725288
200413A00001	4/13/2020	0.56	4/13/2021	4/13/2020	102.38646	101.8244152	101.2685299	100.7187004	100.1748278	99.6368156	99.10456942	98.57799678	98.05700721
200417A00003	4/17/2020	0.65	4/16/2021	4/17/2020	102.39834	101.8283438	101.2646758	100.7072307	100.1559058	99.61060083	99.07121736	98.53765931	98.00983261
200417A00022	4/17/2020	0.52	12/30/2020	4/17/2020	101.06045	100.8038805	100.5486072	100.2946213	100.041913	99.79047273	99.54029108	99.29135864	99.04366613
200424A00019	4/24/2020	0.53	3/24/2021	4/24/2020	102.0583	101.5569013	101.0604166	100.5687724	100.0818982	99.59972488	99.12218457	98.64921073	98.18073807
200511A00013	5/11/2020	0.44	2/1/2021	5/11/2020	101.42185	101.0700956	100.7207728	100.3738532	100.0293122	99.68712558	99.34726921	99.00971947	98.67445299
200218A00022	2/18/2020	1.82	12/18/2020	2/18/2020	101.20688	100.9841359	100.7623887	100.5416276	100.3218459	100.1030372	99.88519478	99.66831236	99.4523835
200302A00055	3/2/2020	1.24	2/2/2021	3/2/2020	101.71339	101.3581209	101.005321	100.6549689	100.3070393	99.96150714	99.61834777	99.27753686	98.93905039
200311A00011	3/11/2020	0.71	12/11/2020	3/11/2020	100.87424	100.6718777	100.4703411	100.2696229	100.0697178	99.8706211	99.67232769	99.47483269	99.27813124
200318A00046	3/18/2020	0.63	2/18/2021	3/18/2020	101.6935	101.2920116	100.8936913	100.4985013	100.1064045	99.71736475	99.33134639	98.94831426	98.56823376
200319A00010	3/19/2020	0.65	3/19/2021	3/19/2020	102.12035	101.6326027	101.1495083	100.6710032	100.1970221	99.72750092	99.26237686	98.8015882	98.34507442
200323A00004	3/23/2020	0.67	12/23/2020	3/23/2020	101.01369	100.7770693	100.5415625	100.3071638	100.0738654	99.84165946	99.61053838	99.38049451	99.15152031
200403A00004	4/3/2020	0.47	10/5/2020	4/3/2020	100.05715	100.0432504	100.0293615	100.0154862	100.0016243	99.98777586	99.97394088	99.96011933	99.94631117
200403A00027	4/3/2020	0.62	3/3/2021	4/3/2020	101.84687	101.4073231	100.9715529	100.5395145	100.1111601	99.68644288	99.26531661	98.84773596	98.43365631
200709A00013	7/13/2020	0.45	3/19/2021	7/13/2020	101.9605	101.4739767	100.9920925	100.5147773	100.0419663	99.573596	99.10960388	98.64992872	98.19451039

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191219A00050	12/19/2019	1.84	11/19/2020	12/19/2019	100.76426	100.6241211	100.4843835	100.3450465	100.2061084	100.0675674	99.92942183	99.79166997	99.65431012
200309A00017	3/9/2020	0.55	3/9/2021	3/9/2020	101.9491	101.4910592	101.0371356	100.5872694	100.1414061	99.69949248	99.26147601	98.82730524	98.39692956
200313A00021	3/13/2020	0.74	3/12/2021	3/13/2020	102.07306	101.605916	101.1430495	100.6843994	100.2299082	99.77951932	99.33317734	98.89082771	98.4524169
200318A00001	3/18/2020	0.68	11/18/2020	3/18/2020	100.59041	100.453284	100.3165437	100.1801888	100.0442176	99.90862851	99.77341983	99.63858997	99.50413731
200319A00017	3/19/2020	0.6	12/15/2020	3/19/2020	100.89968	100.6859525	100.4731381	100.2612359	100.0502398	99.8401441	99.63094289	99.42263043	99.21520102
200319A00021	3/19/2020	0.6	12/18/2020	3/19/2020	100.93762	100.7153053	100.4939773	100.273634	100.0542686	99.83587467	99.61844569	99.40197522	99.18645687
200320A00028	3/20/2020	0.62	12/18/2020	3/20/2020	100.94204	100.7197124	100.4983775	100.2780273	100.0586551	99.84025439	99.62281863	99.4063414	99.19081633
200320A00032	3/20/2020	0.67	2/19/2021	3/20/2020	101.72153	101.317078	100.9158423	100.5177811	100.122857	99.73103271	99.34227198	98.95653892	98.57379822
200323A00006	3/23/2020	0.85	3/23/2021	3/23/2020	102.20266	101.7037676	101.2097356	100.7204928	100.2359698	99.75609855	99.28081219	98.81004524	98.34373342
200323A00012	3/23/2020	0.69	2/23/2021	3/23/2020	101.77861	101.3624456	100.9496768	100.540261	100.1341576	99.73132643	99.33172816	98.93532399	98.54207573
200323A00019	3/23/2020	0.69	3/23/2021	3/23/2020	102.19047	101.6908146	101.1960336	100.7060595	100.2208223	99.74025358	99.2642861	98.79285392	98.32589239
200331A00025	3/31/2020	0.56	12/31/2020	3/31/2020	101.08246	100.8230062	100.5648809	100.3080692	100.0525613	99.79834723	99.54541728	99.2937618	99.04337125
200406A00047	4/6/2020	0.63	3/5/2021	4/6/2020	101.87557	101.4301198	100.9885504	100.5508153	100.1168648	99.68665007	99.26012289	98.83723602	98.41794301
200408A00023	4/8/2020	0.71	4/8/2021	4/8/2020	102.3272	101.7810643	101.2407401	100.706135	100.1771586	99.65372224	99.13573922	98.62312462	98.11579527
200422A00029	4/22/2020	0.47	4/22/2021	4/22/2020	102.44593	101.85711	101.2750397	100.6995996	100.1306769	99.56816141	99.01194519	98.46192288	97.9179914
200520A00003	5/20/2020	0.33	5/20/2021	5/20/2020	102.69314	102.0202485	101.3561377	100.7006368	100.0535791	99.41480228	98.78414802	98.16146212	97.54659425
200630A00001	6/30/2020	0.47	6/25/2021	6/30/2020	103.11226	102.331187	101.5618714	100.8040524	100.057474	99.32188786	98.59705276	97.88273454	97.17870579
200316A00014	3/16/2020	1.04	3/16/2021	3/16/2020	102.20188	101.7234444	101.2494841	100.7799376	100.3147434	99.85384095	99.39717106	98.94467549	98.49629708
200318A00045	3/18/2020	0.62	1/15/2021	3/18/2020	101.27891	100.9761921	100.6752908	100.3761915	100.0788779	99.78333408	99.48954406	99.19749223	98.90716312
200325A00002	3/25/2020	0.87	3/25/2021	3/25/2020	102.23821	101.7333708	101.2335021	100.738532	100.2483889	99.76300229	99.28230328	98.80622418	98.33469863
200406A00045	4/6/2020	0.53	12/4/2020	4/6/2020	100.75622	100.5738492	100.3921419	100.2110945	100.0307035	99.85096513	99.67187598	99.4934325	99.3156312
200413A00014	4/13/2020	0.56	4/13/2021	4/13/2020	102.38646	101.8244152	101.2685299	100.7187004	100.1748278	99.6368156	99.10456942	98.57799678	98.05700721
200414A00005	4/14/2020	0.63	10/15/2020	4/14/2020	100.17864	100.1368886	100.0951872	100.0535379	100.0119407	99.97039546	99.92890206	99.88746041	99.84607044
200428A00008	4/28/2020	0.45	4/28/2021	4/28/2020	102.5067	101.8999436	101.3003359	100.7077497	100.1220622	99.54315359	98.97090686	98.40520762	97.84594409
200605A00001	6/5/2020	0.52	6/4/2021	6/5/2020	102.90001	102.1828364	101.4756035	100.7781048	100.0901406	99.41151668	98.74204387	98.08153822	97.42982066
200720A00022	7/22/2020	1.94	7/22/2021	7/22/2020	104.64961	103.7799273	102.9246566	102.0834402	101.2559336	100.4418038	99.64072827	98.85239494	98.07650151
200729A00012	7/30/2020	0.42	4/30/2021	7/30/2020	102.42601	101.8147249	101.2106883	100.6137745	100.0238583	99.44081746	98.86453255	98.29488689	97.73176647
200908A00006	9/8/2020	0.42	9/8/2021	9/8/2020	103.95194	102.9383694	101.9444052	100.969487	100.013072	99.07463791	98.15368185	97.24971956	96.36228451
191216A00011	12/16/2019	1.84	10/16/2020	12/16/2019	100.2445	100.1999156	100.1553866	100.1109145	100.0664992	100.0221407	99.97783869	99.93359321	99.88940411
200117A00005	1/17/2020	1.84	10/19/2020	1/17/2020	100.29038	100.2374153	100.1845276	100.1317119	100.0789681	100.026296	99.97369546	99.92116636	99.86870853
200214A00008	2/18/2020	1.81	1/12/2021	2/18/2020	101.58886	101.2941388	101.001136	100.7098376	100.4202286	100.1322943	99.84602012	99.5613916	99.27839454
200214A00011	2/18/2020	1.81	1/21/2021	2/18/2020	101.72768	101.4068719	101.0880896	100.7713184	100.4565391	100.1437331	99.83288159	99.52396641	99.2169694
200214A00023	2/19/2020	1.81	12/15/2020	2/19/2020	101.15655	100.9424245	100.7292202	100.5169292	100.3055458	100.095064	99.88547803	99.67678212	99.46897054

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200306A00026	3/6/2020	0.72	2/5/2021	3/6/2020	101.56844	101.2048182	100.843795	100.4853428	100.1294342	99.77604226	99.42514026	99.07670198	98.73070155
200309A00025	3/9/2020	0.57	2/9/2021	3/9/2020	101.56238	101.1872191	100.8148262	100.445173	100.0782291	99.71396478	99.35235081	98.99335824	98.6369586
200309A00053	3/9/2020	0.68	12/9/2020	3/9/2020	100.84398	100.6473303	100.4514567	100.2563554	100.0620217	99.86845116	99.67563912	99.48358114	99.29227273
200313A00012	3/16/2020	0.77	1/5/2021	3/16/2020	101.19888	100.924932	100.6524661	100.3814731	100.1119408	99.84385756	99.57721167	99.31199156	99.04818579
200316A00039	3/16/2020	0.83	2/16/2021	3/16/2020	101.74718	101.3513502	100.9585971	100.5688873	100.1821855	99.79845698	99.41766739	99.03978304	98.66477072
200318A00003	3/18/2020	0.71	2/18/2021	3/18/2020	101.72511	101.3235455	100.9251491	100.5298833	100.1377112	99.74859661	99.36250381	98.97939767	98.59924359
200318A00021	3/18/2020	0.71	2/18/2021	3/18/2020	101.72511	101.3235455	100.9251491	100.5298833	100.1377112	99.74859661	99.36250381	98.97939767	98.59924359
200318A00042	3/18/2020	0.6	12/18/2020	3/18/2020	100.93762	100.7153053	100.4939773	100.273634	100.0542686	99.83587467	99.61844569	99.40197522	99.18645687
200319A00032	3/19/2020	0.6	12/18/2020	3/19/2020	100.93762	100.7153053	100.4939773	100.273634	100.0542686	99.83587467	99.61844569	99.40197522	99.18645687
200324A00048	3/24/2020	0.64	11/2/2020	3/24/2020	100.39415	100.3021096	100.2102399	100.1185403	100.0270105	99.93564997	99.84445826	99.7534349	99.66257943
200325A00022	3/25/2020	0.62	10/26/2020	3/25/2020	100.30907	100.2366276	100.1642981	100.0920812	100.0199765	99.94798386	99.87610295	99.80433354	99.73267539
200325A00056	3/25/2020	0.63	11/25/2020	3/25/2020	100.66694	100.5100547	100.353668	100.1977734	100.0423686	99.88745124	99.7330191	99.57906989	99.42560135
200330A00063	3/30/2020	0.64	3/30/2021	3/30/2020	102.1858	101.6664956	101.1524429	100.6435624	100.1397764	99.64100887	99.14718525	98.65823241	98.17407869
200401A00018	4/1/2020	0.7	3/30/2021	4/1/2020	102.21629	101.696898	101.1827556	100.673786	100.1699116	99.67105625	99.17714546	98.68810608	98.20386643
200403A00020	4/3/2020	0.63	3/5/2021	4/3/2020	101.87557	101.4301198	100.9885504	100.5508153	100.1168648	99.68665007	99.26012289	98.83723602	98.41794301
200406A00003	4/6/2020	0.47	10/7/2020	4/6/2020	100.08002	100.0605543	100.0411076	100.0216809	100.0022741	99.98288718	99.9635202	99.94417308	99.92484579
200406A00023	4/6/2020	0.53	12/4/2020	4/6/2020	100.75622	100.5738492	100.3921419	100.2110945	100.0307035	99.85096513	99.67187598	99.4934325	99.3156312
200406A00058	4/6/2020	0.53	12/4/2020	4/6/2020	100.75622	100.5738492	100.3921419	100.2110945	100.0307035	99.85096513	99.67187598	99.4934325	99.3156312
191112A00020	11/12/2019	1.85	10/13/2020	11/12/2019	100.199	100.1627827	100.1266091	100.0904787	100.0543915	100.0183473	99.98234613	99.94638788	99.91047248
191210A00005	12/10/2019	1.85	11/10/2020	12/10/2019	100.62786	100.5131434	100.3987052	100.28454	100.1706469	100.0570249	99.94367294	99.83059009	99.71777535
191220A00012	12/20/2019	1.85	11/20/2020	12/20/2019	100.78097	100.6380027	100.4954506	100.353314	100.2115912	100.0702803	99.92937949	99.78888701	99.64880104
200108A00011	1/8/2020	1.88	1/4/2021	1/8/2020	101.48432	101.2127239	100.9425797	100.6738784	100.4066084	100.1407583	99.87631683	99.61327277	99.35161508
200304A00003	3/4/2020	0.98	12/4/2020	3/4/2020	100.83787	100.6553894	100.4735721	100.292415	100.1119146	99.93206725	99.75286939	99.57431753	99.39640816
200311A00018	3/11/2020	0.71	12/11/2020	3/11/2020	100.87424	100.6718777	100.4703411	100.2696229	100.0697178	99.8706211	99.67232769	99.47483269	99.27813124
200316A00047	3/16/2020	1.04	3/16/2021	3/16/2020	102.20188	101.7234444	101.2494841	100.7799376	100.3147434	99.85384095	99.39717106	98.94467549	98.49629708
200320A00030	3/20/2020	0.64	1/20/2021	3/20/2020	101.34558	101.0284028	100.713222	100.4000141	100.0887604	99.77944275	99.47204296	99.16654321	98.86292586
200325A00027	3/25/2020	0.71	3/25/2021	3/25/2020	102.22588	101.7202623	101.2196341	100.7239225	100.2330554	99.7469619	99.26557262	98.78881947	98.31663566
200327A00052	3/27/2020	0.73	3/26/2021	3/27/2020	102.18154	101.6739407	101.1713684	100.6737483	100.1810073	99.69307406	99.20987847	98.73135179	98.25742662
200403A00019	4/3/2020	0.47	10/5/2020	4/3/2020	100.05715	100.0432504	100.0293615	100.0154862	100.0016243	99.98777586	99.97394088	99.96011933	99.94631117
200408A00016	4/8/2020	0.71	4/5/2021	4/8/2020	102.29564	101.7583678	101.2267163	100.7005998	100.1799323	99.66462934	99.15460846	98.64978875	98.15009096
200720A00010	7/20/2020	0.28	7/20/2021	7/20/2020	103.37326	102.5137235	101.6683865	100.8369015	100.0189305	99.21414609	98.42223166	97.6428805	96.87579564
200729A00013	7/30/2020	0.43	6/15/2021	7/30/2020	102.96547	102.2150386	101.4754867	100.746581	100.0280929	99.31980017	98.62148717	97.93294409	97.25396703
200824A00005	8/24/2020	0.25	8/24/2021	8/24/2020	103.76114	102.7926021	101.8420047	100.9088517	99.9926669	99.09299119	98.20938196	97.34141229	96.48867024

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200914A00001	9/14/2020	0.25	9/14/2021	9/14/2020	104.00991	102.9751875	101.9608852	100.9664012	99.9911596	99.03460681	98.0962101	97.17545686	96.27185363
200309A00024	3/11/2020	0.57	1/7/2021	3/11/2020	101.16849	100.8888756	100.610809	100.3342793	100.0592738	99.78577991	99.51378512	99.24327709	98.97424361
200320A00017	3/20/2020	0.62	12/18/2020	3/20/2020	100.94204	100.7197124	100.4983775	100.2780273	100.0586551	99.84025439	99.62281863	99.4063414	99.19081633
200325A00012	3/25/2020	0.71	2/25/2021	3/25/2020	101.81147	101.3894396	100.9708911	100.5557859	100.1440818	99.73573718	99.33071102	98.92896309	98.53045374
200325A00057	3/25/2020	0.71	2/25/2021	3/25/2020	101.81147	101.3894396	100.9708911	100.5557859	100.1440818	99.73573718	99.33071102	98.92896309	98.53045374
200326A00041	3/26/2020	0.36	10/2/2020	3/26/2020	100.02225	100.0166861	100.011132	100.0055829	100.0000388	99.9944995	99.98896516	99.98343574	99.97791121
200327A00015	3/27/2020	0.73	3/26/2021	3/27/2020	102.18154	101.6739407	101.1713684	100.6737483	100.1810073	99.69307406	99.20987847	98.73135179	98.25742662
200330A00025	3/30/2020	0.5	2/26/2021	3/30/2020	101.7361	101.3113591	100.8901505	100.4724293	100.0581523	99.6472772	99.23976228	98.83556651	98.43464954
200330A00035	3/30/2020	0.39	10/30/2020	3/30/2020	100.33746	100.2538554	100.1703943	100.0870724	100.0038892	99.92084442	99.83793773	99.7551688	99.67253732
200406A00010	4/6/2020	0.74	4/1/2021	4/6/2020	102.2616	101.7362067	101.2161804	100.701444	100.1919171	99.68752128	99.18817931	98.69381567	98.20435631
200414A00018	4/16/2020	0.61	12/21/2020	4/16/2020	100.97569	100.7448074	100.5149854	100.2862216	100.0585087	99.83183928	99.60620629	99.38160254	99.15802096
200422A00025	4/22/2020	0.47	4/22/2021	4/22/2020	102.44593	101.85711	101.2750397	100.6995996	100.1306769	99.56816141	99.01194519	98.46192288	97.9179914
200527A00020	5/27/2020	0.49	5/27/2021	5/27/2020	102.78485	102.0920273	101.4084901	100.7340554	100.0685424	99.41177516	98.76358228	98.12379685	97.49225627
200622A00009	6/22/2020	0.33	6/22/2021	6/22/2020	103.08132	102.3079084	101.5460395	100.7954528	100.0558995	99.3271375	98.60893221	97.90105559	97.20328615
200825A00005	8/25/2020	0.43	8/25/2021	8/25/2020	103.79502	102.8253602	101.8736755	100.9394745	100.0222794	99.12162974	98.23708136	97.36820596	96.51459029
160609A00075	6/9/2016	1.94	6/9/2026	6/9/2016	117.06649	113.5624108	110.2114809	107.0056089	103.9371963	100.9991009	98.18460556	95.48739036	92.90150614
160707A00017	7/7/2016	1.22	7/7/2021	7/7/2016	103.8845	103.0784173	102.2849394	101.5037737	100.7346343	99.97724409	99.2313345	98.49664507	97.77292319
161222A00035	12/22/2016	2.29	12/22/2023	12/22/2016	110.17369	108.3133474	106.5041649	104.7443027	103.0320013	101.3655778	99.7434228	98.16399601	96.62582297
170921A00056	9/21/2017	2.82	9/21/2027	9/21/2017	140.9207	132.8091902	125.2524999	118.2090627	111.6406608	105.5121338	99.7911184	94.44781145	89.45475394
170925A00048	9/25/2017	2.75	9/25/2030	9/25/2017	134.55493	127.5701983	121.0833028	115.0530995	109.4421981	104.2165923	99.34532974	94.80021476	90.55554312
180323A00008	3/23/2018	3.35	3/24/2031	3/23/2018	140.46254	132.8092438	125.7259847	119.1636647	113.0778459	107.428272	102.1784439	97.29524104	92.74858403
171130A00037	11/10/2017	2.85	11/12/2030	11/10/2017	135.79082	128.625669	121.9788278	115.8068652	110.0703627	104.7335164	99.76377928	95.13154097	90.80984124
180119A00025	1/19/2018	3.08	1/21/2031	1/19/2018	137.94964	130.5517679	123.6969918	117.3391643	111.4364625	105.950949	100.8481825	96.09687015	91.66855595
180302A00012	3/2/2018	3.3	3/4/2031	3/2/2018	139.78914	132.2323855	125.2344683	118.7475747	112.728402	107.1376968	101.9398462	97.10251345	92.59631267
180321A00015	3/21/2018	3.02	3/21/2025	3/21/2018	117.75875	114.7329706	111.8223451	109.0215173	106.3254211	103.7292612	101.2284963	98.81882417	96.49616768
161222A00037	12/22/2016	3.08	12/22/2031	12/22/2016	139.11818	131.3696717	124.221725	117.6202459	111.5165113	105.8665972	100.6308694	95.77353102	91.26222151
170505A00007	5/5/2017	2.92	5/6/2030	5/5/2017	134.48048	127.7322096	121.4503533	115.5974557	110.1393895	105.0450341	100.2859888	95.83631569	91.67230816
170512A00030	5/12/2017	2.94	5/12/2027	5/12/2017	137.82602	130.5842888	123.8069919	117.4611179	111.5161949	105.9440832	100.7187847	95.81626716	91.21430498
170519A00021	5/19/2017	2.79	5/20/2030	5/19/2017	133.63366	126.9324171	120.6942321	114.8819199	109.4616007	104.4023795	99.67606184	95.25689827	91.12135427
170705A00021	7/5/2017	2.59	7/6/2027	7/5/2017	133.65534	127.10209	120.9600071	115.2000093	109.7952649	104.7210023	99.95433913	95.47412692	91.26080906
171013A00004	10/13/2017	2.77	10/15/2030	10/13/2017	134.97054	127.9065479	121.3497844	115.258036	109.5929684	104.3197394	99.40665585	94.82486558	90.54808219
150601A00433	6/1/2015	1.91	3/17/2021	6/1/2015	101.31589	101.0743274	100.8344018	100.5960959	100.3593915	100.1242708	99.89071631	99.65871066	99.42823682
150601A00443	6/1/2015	1.91	4/9/2021	6/1/2015	101.50908	101.2312835	100.9556332	100.6820978	100.4106504	100.1412644	99.8739139	99.60857334	99.34521764

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00450	6/1/2015	3.28	4/27/2029	6/1/2015	130.63376	125.0720789	119.8495994	114.9419314	110.3266406	105.9830812	101.8922397	98.03659458	94.39998833
150601A00589	6/1/2015	2.52	7/14/2025	6/1/2015	115.18242	112.3939778	109.7093111	107.1236444	104.6324599	102.2314803	99.91665459	97.68414428	95.53031075
150601A00684	6/1/2015	2.25	2/7/2025	6/1/2015	113.19522	110.6934894	108.2780833	105.9452804	103.6915485	101.5135333	99.40804817	97.37206464	95.40270331
160608A00026	6/8/2016	2.36	6/8/2026	6/8/2016	131.46295	125.0992275	119.1021557	113.4483002	108.1158617	103.0845527	98.33548415	93.8510606	89.61488436
171215A00022	12/15/2017	2.91	12/16/2030	12/15/2017	136.48851	129.2277325	122.4960831	116.2489144	110.4457315	105.0497774	100.0276604	95.3490217	90.98623725
180112A00013	1/12/2018	3.05	1/14/2031	1/12/2018	137.7425	130.3559679	123.5116719	117.1635389	111.2698147	105.7926239	100.6975815	95.95344537	91.53180566
180302A00014	3/2/2018	2.69	3/2/2023	3/2/2018	108.21786	106.8291525	105.4718119	104.1448577	102.8473451	101.578367	100.3370524	99.12256428	97.9340984
180612A00012	6/12/2018	2.94	6/12/2023	6/12/2018	109.71732	108.1249728	106.5716769	105.0561348	103.5771064	102.1334032	100.7238854	99.34745969	98.00307674
150601A00320	6/1/2015	2.63	6/28/2023	6/1/2015	108.81691	107.2953917	105.8110709	104.362719	102.9491549	101.5692467	100.2219089	98.9061005	97.62082223
150601A00342	6/1/2015	3.97	8/26/2033	6/1/2015	150.54055	141.136862	132.5513279	124.7015267	117.5141542	110.9239444	104.8727225	99.30857731	94.18513525
170602A00010	6/2/2017	2.7	6/3/2030	6/2/2017	133.37852	126.6280004	120.3476686	114.4994937	109.0488459	103.9641673	99.21667704	94.78010664	90.63046262
170714A00014	7/14/2017	2.78	7/15/2030	7/14/2017	134.14909	127.3059202	120.9429626	115.0210944	109.5047187	104.3614181	99.56164684	95.07845591	90.8872458
170804A00009	8/4/2017	2.71	8/5/2030	8/4/2017	134.00774	127.1099036	120.6999137	114.7377474	109.1870065	104.0145649	99.19025022	94.68655941	90.47840273
170811A00006	8/11/2017	2.67	8/12/2030	8/11/2017	133.75044	126.8654925	120.4675178	114.5165566	108.9762736	103.8135998	98.99841573	94.50326628	90.30310598
171103A00011	11/3/2017	2.83	11/4/2030	11/3/2017	135.65581	128.4980897	121.8581128	115.6924931	109.9618591	104.6304489	99.66575351	95.03819673	90.72084922
171117A00017	11/17/2017	2.9	11/18/2030	11/17/2017	136.12656	128.9434982	122.2800716	116.092731	110.3419551	104.9918469	100.0097751	95.3660526	91.03364989
150601A00440	6/1/2015	3.27	3/16/2029	6/1/2015	130.19236	124.7197042	119.5769786	114.740716	110.1893113	105.9028642	101.8630324	98.05289829	94.45684793
150601A00460	6/1/2015	3.05	5/16/2029	6/1/2015	129.706	124.1399933	118.9155489	114.0079689	109.3945521	105.0544155	100.9683353	97.11860356	93.48889715
150601A00528	6/1/2015	3.08	7/27/2029	6/1/2015	130.5195	124.7949622	119.4287552	114.394485	109.6679264	105.2268282	101.0507387	97.12084635	93.4198369
150601A00559	6/1/2015	3.06	8/31/2029	6/1/2015	130.74672	124.9497798	119.5192396	114.4278701	109.6506951	105.1647906	100.9491019	96.98427716	93.25251742
160608A00032	6/8/2016	2.36	6/8/2026	6/8/2016	131.46295	125.0992275	119.1021557	113.4483002	108.1158617	103.0845527	98.33548415	93.8510606	89.61488436
160628A00006	6/28/2016	1.44	6/28/2023	6/28/2016	107.41668	105.856015	104.3336764	102.8483924	101.3989437	99.98416157	98.60292564	97.2541611	95.93683661
170630A00051	6/30/2017	1.75	6/30/2021	6/30/2017	102.30462	101.8661727	101.432455	101.0033795	100.5788633	100.1588255	99.74318708	99.33187118	98.92480274
170720A00017	7/20/2017	2.74	7/19/2030	7/20/2017	133.91931	127.0831434	120.7268656	114.8113732	109.3010856	104.1636002	99.36938582	94.89150692	90.70537677
180126A00015	1/26/2018	3.08	1/27/2031	1/26/2018	137.95053	130.5524036	123.6974137	117.3394118	111.4365694	105.9509442	100.8480907	96.09671228	91.66834976
180209A00010	2/9/2018	3.25	2/10/2031	2/9/2018	139.43704	131.9000249	124.9202872	118.450165	112.4464843	106.8701072	101.6855245	96.86049305	92.36571112
180322A00030	3/22/2018	2.79	3/24/2025	3/22/2018	116.09596	113.3595829	110.7208794	108.1755253	105.7194199	103.3486735	101.0595955	98.84868212	96.71260626
180329A00011	3/29/2018	2.77	3/29/2023	3/29/2018	108.60895	107.1693839	105.763034	104.3888452	103.0458051	101.732942	100.449323	99.19405196	97.96626779
150601A00434	6/1/2015	1.91	3/17/2021	6/1/2015	101.31589	101.0743272	100.8344016	100.5960957	100.3593914	100.1242708	99.89071634	99.65871074	99.42823696
150601A00435	6/1/2015	1.91	3/17/2021	6/1/2015	101.31589	101.0743256	100.8344004	100.5960948	100.3593909	100.1242706	99.8907165	99.65871123	99.42823778
150601A00439	6/1/2015	2.57	3/18/2024	6/1/2015	111.05053	109.0972655	107.2003328	105.3576352	103.567169	101.8270198	100.1353586	98.49043692	96.89058268
150601A00549	6/1/2015	1.94	8/13/2021	6/1/2015	102.48985	102.0268591	101.5696361	101.1180581	100.6720087	100.2313749	99.79604709	99.36591859	98.94088582
170417A00059	4/17/2017	2.14	4/18/2022	4/17/2017	108.81522	107.1997139	105.6174253	104.0674022	102.548725	101.0605088	99.60190149	98.17208264	96.77026172

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170526A00022	5/26/2017	2.77	5/28/2030	5/26/2017	133.5395	126.837416	120.5986572	114.7860046	109.3655487	104.3063683	99.58024572	95.16141093	91.02631129
171006A00020	10/6/2017	2.88	10/7/2030	10/6/2017	135.69743	128.5958354	122.0041296	115.879883	110.1845632	104.8831478	99.94377927	95.33745557	91.03775347
171020A00012	10/20/2017	2.85	10/21/2030	10/20/2017	135.5006	128.4087582	121.8261605	115.7104298	110.0230765	104.729118	99.7967333	95.19695443	90.90338941
171208A00017	12/8/2017	2.9	12/9/2030	12/8/2017	136.41978	129.162918	122.4348707	116.1910182	110.3908924	104.9977604	99.97825241	95.30202879	90.94148295
171222A00017	12/22/2017	3.04	12/23/2030	12/22/2017	137.37139	130.0635067	123.2882115	117.000562	111.1597958	105.7289133	100.6743032	95.96540676	91.57441858
180508A00038	5/8/2018	3.57	5/9/2033	5/8/2018	150.87887	140.9746842	131.94499	123.701385	116.1652265	109.2664809	102.9427155	97.13821429	91.8032032
180607A00028	6/7/2018	2.76	6/7/2021	6/7/2018	102.46117	102.0668563	101.6763399	101.2895581	100.9064513	100.5269612	100.1510308	99.77860426	99.40962716
160603A00015	6/3/2016	1.95	6/5/2023	6/3/2016	114.83201	111.9295583	109.11761	106.3927222	103.7516109	101.1911412	98.70831965	96.30028649	93.96430845
160608A00031	6/8/2016	2.36	6/8/2026	6/8/2016	131.46295	125.0992275	119.1021557	113.4483002	108.1158617	103.0845527	98.33548415	93.8510606	89.61488436
160620A00018	6/20/2016	1.25	6/21/2021	6/20/2016	102.08001	101.6446827	101.2140003	100.7878786	100.3662371	99.94899761	99.53608359	99.1274205	98.72293556
170406A00031	4/6/2017	3.01	4/6/2027	4/6/2017	139.92018	132.3368935	125.2430122	118.6038131	112.3872276	106.5636275	101.1056265	95.98789825	91.18701126
170518A00028	5/18/2017	2.45	5/20/2024	5/18/2017	121.5095	117.5064877	113.6628062	109.9711329	106.4245302	103.0164216	99.7405703	96.59105941	93.56227342
170623A00020	6/23/2017	2.67	6/24/2030	6/23/2017	133.19203	126.4500234	120.1777095	114.3370862	108.8935519	103.8155754	99.07440107	94.64378423	90.49975382
170915A00019	9/15/2017	2.67	9/16/2030	9/15/2017	134.03116	127.0738603	120.6124034	114.6058133	109.0168531	103.8116558	98.95939515	94.43199015	90.20384073
170929A00028	9/29/2017	2.8	9/30/2030	9/29/2017	134.88283	127.8809626	121.3781758	115.3332195	109.7086076	104.4702477	99.5871087	95.03092372	90.77592366
171127A00023	11/27/2017	2.85	11/27/2030	11/27/2017	135.79311	128.6272584	121.9798399	115.807402	110.0705111	104.7333503	99.76336143	95.13092451	90.80907114
180202A00020	2/2/2018	3.41	2/3/2031	2/2/2018	140.55414	132.9572808	125.9220787	119.4005024	113.3490423	107.7282557	102.5023568	97.63885049	93.10820606
180316A00003	3/16/2018	2.43	3/16/2021	3/16/2018	101.81712	101.5191532	101.2232966	100.9295256	100.6378158	100.3481436	100.0604853	99.774818	99.49111891
150601A00506	6/1/2015	3.14	7/6/2029	6/1/2015	130.62996	124.9381585	119.6006201	114.5913845	109.886615	105.4644082	101.3046235	97.38872809	93.6996573
170630A00023	6/30/2017	2.77	7/1/2030	6/30/2017	133.82668	127.0524631	120.7502011	114.881711	109.4122221	104.3100491	99.54629635	95.09459156	90.93084722
170817A00008	8/17/2017	2.71	8/16/2030	8/17/2017	134.00948	127.111096	120.7006472	114.7380975	109.1870379	104.0143326	99.18980144	94.68593407	90.47763482
170825A00015	8/25/2017	2.68	8/26/2030	8/25/2017	133.81709	126.9281902	120.5266062	114.5723435	109.0290355	103.8635858	99.04585018	94.54835176	90.34602554
170830A00040	8/30/2017	1.84	8/30/2022	8/30/2017	105.60857	104.5268448	103.4666309	102.4272954	101.4082303	100.4088512	99.42859623	98.46692518	97.52331821
170901A00005	9/1/2017	2.58	9/3/2030	9/1/2017	133.44274	126.5164501	120.0837366	114.1038162	108.5396275	103.3574626	98.52663951	94.01920812	89.8096872
170908A00007	9/8/2017	2.52	9/9/2030	9/8/2017	133.05371	126.14729	119.7330554	113.77034	108.2221839	103.0549717	98.23810575	93.7437132	89.54638343
180402A00025	4/2/2018	3.27	4/2/2031	4/2/2018	140.21364	132.5144116	125.392662	118.7983293	112.6861312	107.0150719	101.7480053	96.85124448	92.29421444
150601A00542	6/1/2015	1.97	8/4/2021	6/1/2015	102.42877	101.9798746	101.5364166	101.0982842	100.6653706	100.2375718	99.81478703	99.39691809	98.98386956
160531A00012	5/31/2016	1.43	6/1/2021	5/31/2016	101.95287	101.5594904	101.1698988	100.7840388	100.4018508	100.0232765	99.64825892	99.27674221	98.90867189
161222A00036	12/22/2016	2.69	12/22/2026	12/22/2016	120.78275	116.9504671	113.2962088	109.8100155	106.4825595	103.3051036	100.2694597	97.36794999	94.59337188
170609A00011	6/9/2017	2.74	6/10/2030	6/9/2017	133.63324	126.8695595	120.5770117	114.7174876	109.2562851	104.1617806	99.40513351	94.96002134	90.8024013
170616A00012	6/16/2017	2.69	6/17/2030	6/16/2017	133.31741	126.5693795	120.2914292	114.4455279	108.9970482	103.9144352	99.1689114	94.73421191	90.5863469
150601A00571	6/1/2015	2.5	9/23/2022	6/1/2015	104.69516	103.8721992	103.0684621	102.2833504	101.51629	100.7667288	100.034136	99.31800102	98.61783253
200207A00013	2/12/2020	1.73	2/10/2023	2/12/2020	113.04167	110.4141049	107.860962	105.3797198	102.9679547	100.623339	98.34363691	96.12669995	93.97046327

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200218A00026	2/21/2020	1.73	3/25/2024	2/21/2020	119.30067	115.2639237	111.3857156	107.6589524	104.0769027	100.6331724	97.32168548	94.13666702	91.0726259
200218A00030	2/21/2020	1.71	2/24/2023	2/21/2020	113.2201	110.5423667	107.9417084	105.4154661	102.9610896	100.5761321	98.25824465	96.00517213	93.81474847
200225A00029	2/25/2020	1.89	12/28/2029	2/25/2020	150.37639	137.6536149	126.1026193	115.6093009	106.0712301	97.39639982	89.50211515	82.31400531	75.76514598
200228A00047	5/18/2020	1.35	5/18/2023	5/18/2020	113.47935	110.5377527	107.6876229	104.9255236	102.2481707	99.65242682	97.1352937	94.69390463	92.32551782
200302A00014	3/2/2020	1.2	3/2/2022	3/2/2020	107.00717	105.4867361	103.9955621	102.5328744	101.0979257	99.68999447	98.30838354	96.95241924	95.62145039
200916A00023	9/16/2020	0.42	9/16/2024	9/16/2020	117.16302	112.5718599	108.1834389	103.9877611	99.97537454	96.13734132	92.46520685	88.95097099	85.58706115
200916A00015	9/16/2020	0.72	9/16/2025	9/16/2020	121.88913	115.991706	110.4099566	105.1254093	100.1207666	95.37982504	90.88740032	86.62925788	82.59204878
200916A00017	9/16/2020	0.54	9/15/2023	9/16/2020	112.60081	109.2959294	106.1046063	103.0223156	100.0447382	97.16775177	94.38741987	91.69998285	89.10184871
200916A00019	9/16/2020	0.42	9/16/2024	9/16/2020	117.16302	112.5718599	108.1834389	103.9877611	99.97537454	96.13734132	92.46520685	88.95097099	85.58706115
200923A00001	9/23/2020	2.27	9/22/2025	9/23/2020	130.51264	124.3701926	118.554283	113.0458399	107.8270013	102.8810356	98.19226367	93.74598758	89.5284239
200916A00016	9/16/2020	0.6	9/16/2024	9/16/2020	117.08386	112.518578	108.1542982	103.9811317	99.98973089	96.17125562	92.5173422	89.02007541	85.6719619
200928A00009	9/28/2020	1.51	9/28/2032	9/28/2020	157.69721	140.5164487	125.3430836	111.932425	100.0707163	89.57108967	80.27006649	72.02452906	64.70909663
200909A00001	9/9/2020	0.98	9/8/2028	9/9/2020	137.68069	127.264865	117.6963886	108.9022683	100.8161413	93.3776394	86.53182025	80.22865455	74.42256447
200730A00013	7/30/2020	0.74	1/30/2025	7/30/2020	119.26095	114.2051244	109.3890077	104.8000503	100.4264243	96.25697635	92.28118619	88.48912736	84.87143076
200824A00020	8/26/2020	1.57	8/26/2025	8/26/2020	126.25399	120.3178603	114.6941389	109.3648072	104.312975	99.5228057	94.97944519	90.66895625	86.57825716
200826A00028	8/28/2020	1.08	8/28/2024	8/28/2020	118.90227	114.3635783	110.0216345	105.8669036	101.890361	98.08346433	94.43812523	90.94668263	87.601878
200826A00029	8/28/2020	1.16	11/27/2024	8/28/2020	120.468	115.5928813	110.9408266	106.5003921	102.2607898	98.21184586	94.34396126	90.64807604	87.11563556
200923A00002	9/23/2020	2.17	9/22/2025	9/23/2020	129.96093	123.8328041	118.0306691	112.5354723	107.3293765	102.3956735	97.71870663	93.28379886	89.07718674
200922A00015	9/24/2020	1.09	9/24/2025	9/24/2020	124.02877	118.0476388	112.3872701	107.0288321	101.954696	97.14835274	92.59433521	88.27814768	84.18619956
200423A00006	4/23/2020	0.82	4/23/2025	4/23/2020	121.75485	116.3202785	111.1565386	106.2487142	101.5827933	97.14560715	92.92477491	88.90865175	85.08628122
200423A00027	4/28/2020	0.88	4/15/2024	4/28/2020	116.36532	112.313976	108.4245695	104.6897336	101.1024842	97.65619364	94.34456991	91.16163801	88.10172183
200504A00006	5/4/2020	0.94	5/5/2025	5/4/2020	121.49267	116.055402	110.889982	105.9813797	101.3154832	96.87903379	92.65956894	88.64537037	84.82541522
200521A00013	5/21/2020	2.09	5/21/2035	5/21/2020	178.78034	156.0332488	136.4278556	119.5121501	104.9012923	92.2673351	81.33056479	71.85219517	63.62819953
200521A00016	5/21/2020	2.18	5/21/2037	5/21/2020	190.00267	163.0704921	140.2921773	121.0016916	104.6429749	90.75130804	78.93791189	68.87720732	60.29626475
200527A00016	5/27/2020	0.92	5/27/2025	5/27/2020	121.66121	116.1470467	110.9116349	105.9393888	101.2156849	96.72679487	92.45982543	88.40266237	84.54391904
200413A00026	4/13/2020	0.82	4/13/2023	4/13/2020	111.55851	108.751666	106.0298246	103.389891	100.8289066	98.3440392	95.93257748	93.59192435	91.31959157
200415A00021	4/15/2020	1.37	4/15/2027	4/15/2020	132.98642	124.7234378	117.0227653	109.8432963	103.147137	96.89933608	91.06764131	85.62227774	80.53574534
200415A00038	4/15/2020	1.37	4/15/2027	4/15/2020	132.98642	124.7234378	117.0227653	109.8432963	103.147137	96.89933608	91.06764131	85.62227774	80.53574534
200417A00004	4/17/2020	0.86	4/17/2024	4/17/2020	116.31395	112.2570477	108.3625138	104.6229575	101.0313667	97.58108772	94.2658046	91.07951993	88.0165368
200417A00006	4/17/2020	0.74	4/17/2023	4/17/2020	111.39267	108.57556	105.844054	103.1950245	100.6254805	98.13255974	95.71352239	93.36574478	91.08671368
200417A00013	4/17/2020	0.74	4/17/2023	4/17/2020	111.39267	108.57556	105.844054	103.1950245	100.6254805	98.13255974	95.71352239	93.36574478	91.08671368
200402A00023	4/2/2020	1.11	4/2/2025	4/2/2020	121.86206	116.5294009	111.4587002	106.635733	102.0471211	97.68027925	93.52336394	89.56522585	85.79536525
200402A00048	4/2/2020	0.71	4/2/2024	4/2/2020	116.30622	112.2786858	108.411294	104.6968134	101.1283766	97.69946368	94.40388305	91.2357524	88.18948171

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200407A00016	4/7/2020	0.8	4/7/2022	4/7/2020	106.8483	105.2224684	103.6298709	102.0695666	100.5406526	99.04225916	97.57354815	96.13371169	94.72197068
200407A00019	4/7/2020	1.06	4/8/2024	4/7/2020	116.96219	112.9226362	109.0437139	105.3181599	101.7390792	98.29992644	94.99448625	91.81685437	88.76142038
200409A00019	4/9/2020	0.58	4/8/2022	4/9/2020	106.7971	105.1638714	103.5641357	101.9969481	100.4613946	98.95659524	97.48170234	96.0358988	94.61839692
200413A00004	4/13/2020	0.89	4/11/2025	4/13/2020	121.94895	116.5509582	111.4202521	106.542207	101.9030755	97.48993224	93.29061946	89.29369765	85.48839897
200330A00028	3/30/2020	1.09	3/28/2025	3/30/2020	121.69779	116.3858812	111.33423	106.5287376	101.956147	97.60398488	93.4605111	89.51467132	85.75605357
200331A00008	3/31/2020	0.64	3/31/2023	3/31/2020	111.43185	108.6561768	105.9639131	103.352056	100.8177301	98.35818187	95.97077331	93.65297633	91.40236747
200331A00015	3/31/2020	0.64	3/31/2023	3/31/2020	111.43185	108.6561768	105.9639131	103.352056	100.8177301	98.35818187	95.97077331	93.65297633	91.40236747
200401A00012	4/2/2020	1	4/2/2025	4/2/2020	121.31719	115.9973522	110.9390154	106.1279755	101.5508732	97.19514149	93.04895419	89.10117829	85.34132962
200402A00003	4/2/2020	0.8	4/3/2023	4/2/2020	111.37875	108.6055535	105.9156745	103.3061131	100.773996	98.3165715	95.93120354	93.61536596	91.36663721
200402A00014	4/2/2020	0.84	4/2/2025	4/2/2020	121.58093	116.2225302	111.1283385	106.2839658	101.6758798	97.29135288	93.1184096	89.14577852	85.36284681
200327A00040	3/27/2020	0.72	3/27/2023	3/27/2020	111.59348	108.8281457	106.1455392	103.5426956	101.0167752	98.56505802	96.18493762	93.87391575	91.62959702
200327A00043	3/27/2020	1.48	3/27/2028	3/27/2020	140.14932	130.2596513	121.1300886	112.6983907	104.9077158	97.70612462	91.04613494	84.88431745	79.18093094
200327A00055	3/27/2020	1.01	3/27/2024	3/27/2020	116.61525	112.6211562	108.7846625	105.0987024	101.5565646	98.15187444	94.87857591	91.73091319	88.7034143
200327A00068	6/25/2020	0.93	6/26/2023	6/25/2020	112.80651	109.7514509	106.794729	103.9325043	101.1611146	98.4770693	95.87703945	93.35784919	90.91646716
200327A00073	3/27/2020	0.99	3/27/2025	3/27/2020	122.24671	116.8930981	111.802344	106.9601834	102.353202	97.96878024	93.79504145	89.82080444	86.03553888
200330A00021	3/30/2020	0.8	3/30/2022	3/30/2020	106.74723	105.1461124	103.5774186	102.040243	100.5337172	99.05700402	97.60929622	96.18981517	94.79780957
200318A00037	3/18/2020	1.35	3/18/2024	3/18/2020	117.77182	113.7858097	109.9557721	106.2747682	102.7362045	99.3338161	96.0616483	92.91403961	89.88560553
200318A00049	3/18/2020	0.84	3/18/2021	3/18/2020	102.13376	101.6496717	101.1701675	100.6951822	100.2246521	99.75851464	99.29670844	98.83917324	98.38584988
200318A00054	3/18/2020	1.56	3/18/2025	3/18/2020	123.87331	118.5443472	113.4742236	108.6490286	104.0556682	99.68181699	95.51586881	91.54689091	87.76458136
200323A00011	3/23/2020	1.37	3/23/2023	3/23/2020	112.74048	109.9835475	107.3084085	104.7121582	102.1920087	99.74528884	97.36943819	95.06200162	92.82062438
200325A00046	3/25/2020	1.76	3/25/2025	3/25/2020	124.96027	119.5820654	114.4658636	109.5975277	104.9637591	100.5520429	96.35059737	92.34832718	88.53477969
200327A00027	3/27/2020	0.9	3/27/2023	3/27/2020	111.55544	108.8016732	106.1300698	103.5376925	101.0217281	98.57948125	96.20836907	93.90591539	91.66974577
200312A00006	3/12/2020	1.23	3/12/2025	3/12/2020	122.17418	116.9050726	111.8914938	107.1197412	102.5769208	98.25089301	94.13022432	90.20414251	86.46249502
200312A00019	3/17/2020	1.06	5/16/2022	3/17/2020	107.76255	106.0135366	104.3018558	102.6263843	100.9860425	99.37979359	97.80664168	96.26562945	94.75583646
200312A00037	3/12/2020	1.3	3/12/2025	3/12/2020	122.51616	117.2391098	112.2178651	107.4387146	102.8887526	98.55582846	94.42849816	90.49597953	86.74811054
200316A00041	3/16/2020	1.16	3/16/2023	3/16/2020	112.09358	109.366894	106.720556	104.1517254	101.6576839	99.23582562	96.88365205	94.59876653	92.37886961
200317A00023	3/17/2020	1.1	3/17/2025	3/17/2020	122.65454	117.3254823	112.2563696	107.4331891	102.8427537	98.47265219	94.31119957	90.3473906	86.57085671
200317A00064	3/19/2020	1.12	5/16/2022	3/19/2020	107.86451	106.1145973	104.4020323	102.725693	101.0844993	99.47741393	97.90344054	96.36162144	94.85103578
200310A00024	3/10/2020	0.91	3/10/2025	3/10/2020	121.62715	116.345902	111.3214962	106.540133	101.9888277	97.65535661	93.52820838	89.59653859	85.85012772
200310A00028	3/10/2020	1.1	3/10/2025	3/10/2020	121.51307	116.2660519	111.2733832	106.5214377	101.9973909	97.68916769	93.5853947	89.67535563	85.94895002
200311A00012	3/11/2020	0.87	3/11/2022	3/11/2020	106.63271	105.0885524	103.5746157	102.0900895	100.6341895	99.2061589	97.8052669	96.4308078	95.08209983
200311A00023	3/11/2020	1.41	3/10/2028	3/11/2020	139.32038	129.5277089	120.4837639	112.1275845	104.4034617	97.26046393	90.6520045	84.53545077	78.87177007
200311A00024	3/11/2020	1.54	3/11/2030	3/11/2020	150.05053	136.9162386	125.023158	114.2477759	104.4794456	95.61898697	87.57744636	80.27499611	73.63995744

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200311A00032	3/11/2020	1.11	3/11/2025	3/11/2020	122.62119	117.3133827	112.2635598	107.4578581	102.8832349	98.52741258	94.37882867	90.4265911	86.66043548
200306A00022	3/6/2020	1.2	3/8/2027	3/6/2020	131.2727	123.20509	115.679272	108.6561971	102.099817	95.97684111	90.25651266	84.91040373	79.91222775
200309A00007	3/9/2020	1.11	3/9/2027	3/9/2020	130.62746	122.5778779	115.0695137	108.0633289	101.5232863	95.41610738	89.71104836	84.37969474	79.39577384
200309A00030	3/9/2020	1.11	3/9/2027	3/9/2020	130.62746	122.5778779	115.0695137	108.0633289	101.5232863	95.41610738	89.71104836	84.37969474	79.39577384
200309A00038	3/9/2020	1.26	3/11/2030	3/9/2020	144.32434	131.6030984	120.085566	109.6519998	100.1951176	91.61874411	83.8366113	76.77129397	70.35326403
200309A00044	3/9/2020	0.94	9/9/2024	3/9/2020	118.4611	113.8910443	109.5208704	105.3408037	101.3415998	97.51451325	93.85126726	90.34402633	86.98537029
200310A00016	3/10/2020	1.02	3/10/2026	3/10/2020	127.04386	120.3524026	114.049521	108.1107169	102.5131569	97.23555314	92.25805066	87.56212381	83.13048066
200304A00033	3/4/2020	1.17	3/4/2025	3/4/2020	121.77527	116.5423702	111.5621269	106.8210591	102.3064739	98.00641687	93.90962551	90.00548562	86.28399058
200305A00001	3/5/2020	1.14	3/5/2025	3/5/2020	121.64261	116.4094067	111.4290752	106.6881079	102.1737928	97.87415837	93.7779263	89.874468	86.15376368
200305A00017	3/5/2020	1.19	3/5/2025	3/5/2020	121.88575	116.6469241	111.661165	106.9149591	102.3955864	98.09106726	93.99011626	90.08209771	86.35698516
200305A00039	3/5/2020	1.58	3/5/2030	3/5/2020	147.82535	134.9557989	123.2973083	112.7298473	103.1458382	94.44880762	86.55219093	79.37826979	72.85722885
200305A00045	3/5/2020	0.99	3/6/2023	3/5/2020	111.52014	108.8319257	106.2221031	103.6879356	101.2267992	98.83617714	96.51365488	94.2569153	92.06373411
200306A00007	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200227A00055	2/27/2020	1.41	2/27/2023	2/27/2020	112.502	109.8231923	107.2218132	104.6951824	102.2407291	99.85598654	97.53858745	95.28625913	93.09681916
200228A00045	2/28/2020	1.45	2/28/2025	2/28/2020	123.07948	117.829961	112.832891	108.0748401	103.5431643	99.22595373	95.11198547	91.19068074	87.45206449
200228A00091	2/28/2020	1.72	12/7/2029	2/28/2020	148.26437	135.7241732	124.3348267	113.984762	104.5737723	96.01179718	88.21784672	81.11904471	74.64977761
200303A00009	3/3/2020	1.3	3/3/2025	3/3/2020	122.39338	117.1495661	112.158591	107.4069796	102.8820412	98.57182328	94.46506435	90.55115067	86.8200755
200304A00019	3/4/2020	1.04	3/6/2023	3/4/2020	111.64905	108.9591728	106.3477243	103.8119676	101.3492773	98.95713566	96.63312707	94.3749334	92.1803294
200304A00030	3/4/2020	1.6	12/22/2028	3/4/2020	142.64502	131.717329	121.699569	112.5112876	104.0795436	96.33817157	89.22711799	82.69184685	76.68280554
200730A00011	7/30/2020	1.15	7/28/2028	7/30/2020	136.72036	126.5936462	117.2765956	108.7005839	100.803119	93.52726714	86.82113297	80.637391	74.93286243
200826A00019	8/26/2020	0.98	8/26/2026	8/26/2020	127.44951	120.2020692	113.4058045	107.0304343	101.0478524	95.43196458	90.15853487	85.20504426	80.55056088
200826A00036	8/28/2020	0.88	7/28/2023	8/28/2020	113.05959	109.9025163	106.8492503	103.8958142	101.0384096	98.27340421	95.59732384	93.00684435	90.49878441
200218A00025	2/21/2020	1.71	2/24/2023	2/21/2020	113.2201	110.5423667	107.9417084	105.4154661	102.9610896	100.5761321	98.25824465	96.00517213	93.81474847
200221A00011	2/21/2020	1.69	8/21/2024	2/21/2020	121.39485	116.8282581	112.4581367	108.2750147	104.2699313	100.4344022	96.76039137	93.24028497	89.86686712
200224A00006	2/24/2020	1.58	11/15/2024	2/24/2020	122.19968	117.3276446	112.6765229	108.2350756	103.9927006	99.93939412	96.06571305	92.36273985	88.8220503
200508A00017	5/12/2020	1.18	5/8/2024	5/12/2020	117.82577	113.6724825	109.6873384	105.8625753	102.1908416	98.66516718	95.27894133	92.025892	88.90006618
200518A00019	5/19/2020	0.9	5/19/2025	5/19/2020	121.46092	115.9781059	110.7713926	105.82541	101.1257272	96.65879275	92.41187571	88.37301125	84.53095004
200527A00014	5/27/2020	1.06	5/27/2026	5/27/2020	126.90556	119.9921578	113.4930544	107.3812871	101.6317877	96.22124287	91.12796148	86.33175311	81.81381594
200528A00021	5/28/2020	0.63	5/26/2023	5/28/2020	111.55707	108.6178464	105.7708193	103.0124901	100.339522	97.74872909	95.23706764	92.80162892	90.43963207
200611A00021	6/11/2020	0.72	6/11/2024	6/11/2020	116.43726	112.2007172	108.1397863	104.2461646	100.5119974	96.92984916	93.49267861	90.19381468	87.02693463
200701A00007	7/1/2020	0.47	7/1/2021	7/1/2020	103.18307	102.3836368	101.5965027	100.8213884	100.0580207	99.30613444	98.56547253	97.83578543	97.11683096
200421A00028	4/21/2020	0.56	4/21/2023	4/21/2020	111.48121	108.6388501	105.8833656	103.2115643	100.6203921	98.10692742	95.66837474	93.30205786	91.00541411
200421A00029	4/24/2020	0.72	12/15/2022	4/24/2020	109.81089	107.3982256	105.0507739	102.7662665	100.5425387	98.37752021	96.26922944	94.21576923	92.21532224

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200421A00032	4/21/2020	1.31	4/21/2027	4/21/2020	132.61499	124.3427793	116.6350161	109.4503388	102.7506265	96.50072492	90.66820123	85.22311943	80.13783601
200427A00017	4/27/2020	1.02	4/25/2025	4/27/2020	121.76987	116.3595065	111.2181695	106.3310656	101.6842989	97.26480874	93.06031421	89.05926371	85.25078734
200427A00018	4/27/2020	1.51	4/27/2028	4/27/2020	138.8435	128.9720901	119.8650914	111.459448	103.6976116	96.5270358	89.89971703	83.77177958	78.10310113
200429A00049	4/29/2020	1.25	4/29/2026	4/29/2020	127.76068	120.9185992	114.4812363	108.4225716	102.718396	97.34617381	92.28491704	87.51507168	83.01841193
200415A00003	4/15/2020	0.77	4/14/2023	4/15/2020	111.43633	108.6280053	105.9048064	103.2636329	100.7015186	98.21562497	95.80323399	93.4617427	91.18865729
200415A00020	4/15/2020	0.86	4/15/2024	4/15/2020	116.28868	112.2387685	108.3507443	104.6172504	101.0313042	97.58627924	94.27588515	91.09414815	88.03539342
200415A00024	4/15/2020	2.2	4/16/2035	4/15/2020	180.33101	157.619824	138.0221202	121.092864	106.452747	93.77819474	82.7929329	73.26086528	64.98005418
200415A00033	4/15/2020	0.82	10/13/2023	4/15/2020	113.8365	110.4231483	107.1296307	103.9510578	100.8827673	97.92031502	95.05946288	92.29616826	89.62657357
200417A00012	4/22/2020	0.71	12/15/2022	4/22/2020	109.78755	107.375164	105.0279813	102.7437372	100.5202672	98.35550104	96.24745744	94.19423934	92.19402954
200417A00014	4/17/2020	0.96	4/17/2025	4/17/2020	121.30988	115.9393648	110.8348948	105.9819051	101.3667049	96.97642209	92.79894998	88.82289757	85.03754318
200402A00028	4/2/2020	0.71	4/4/2022	4/2/2020	106.66847	105.0530905	103.4706248	101.9201472	100.4007682	98.91163071	97.45190875	96.02080579	94.61755357
200403A00018	4/3/2020	0.91	4/3/2024	4/3/2020	116.32685	112.315328	108.4629461	104.7625243	101.2072516	97.79066075	94.50660946	91.34926174	88.31307102
200406A00049	4/6/2020	0.92	4/6/2023	4/6/2020	111.73718	108.9498382	106.2464079	103.6238616	101.0792974	98.60993705	96.21311927	93.88629423	91.62701803
200406A00060	4/6/2020	1.03	4/5/2024	4/6/2020	116.80843	112.7815086	108.9144483	105.2000287	101.6314007	98.20206191	94.90583662	91.73685783	88.68954979
200408A00004	4/8/2020	0.76	4/8/2022	4/8/2020	106.79746	105.1690621	103.5739883	102.0112934	100.4800704	98.97944584	97.50857799	96.06665553	94.65289616
200414A00015	4/14/2020	0.64	4/14/2023	4/14/2020	111.61003	108.7879462	106.0516247	103.3979303	100.8238677	98.32657061	95.90329528	93.55141414	91.26841015
200331A00022	4/1/2020	1.07	4/1/2025	4/1/2020	121.65086	116.3265589	111.2637427	106.4482125	101.8666194	97.50640536	93.35575227	89.4035342	85.6392732
200401A00023	4/1/2020	0.82	4/1/2025	4/1/2020	121.4684	116.1160746	111.0275649	106.1885021	101.58538	97.20549507	93.03689457	89.06832772	85.28920086
200402A00002	4/2/2020	0.71	4/4/2022	4/2/2020	106.66847	105.0530905	103.4706248	101.9201472	100.4007682	98.91163071	97.45190875	96.02080579	94.61755357
200402A00017	4/2/2020	0.76	4/1/2022	4/2/2020	106.70963	105.102872	103.528741	101.9863271	100.4747531	98.99317376	97.54077412	96.11676822	94.72039777
200402A00022	4/2/2020	0.96	4/2/2024	4/2/2020	116.5036	112.4920912	108.6395796	104.938905	101.383267	97.96620841	94.68159615	91.52360269	88.48668926
200402A00026	4/2/2020	1.28	4/2/2026	4/2/2020	127.5976	120.8556283	114.507881	108.5293026	102.8965584	97.58790667	92.58308128	87.86318453	83.41058757
200629A00023	6/29/2020	0.95	6/29/2026	6/29/2020	126.59632	119.5749653	112.9808396	106.7857098	100.963363	95.48945137	90.34134842	85.49801774	80.93989212
200826A00039	8/28/2020	1.03	7/29/2024	8/28/2020	118.30272	113.8740875	109.6338341	105.5729892	101.6830576	97.95599052	94.38415952	90.96033249	87.67765092
200826A00040	8/28/2020	0.92	10/27/2023	8/28/2020	114.33639	110.871687	107.52972	104.3054291	101.1939919	98.19081425	95.29151801	92.49192934	89.7880678
200331A00007	3/31/2020	0.72	3/29/2024	3/31/2020	116.29323	112.2790175	108.4239738	104.720931	101.1630822	97.74396432	94.45743812	91.29767035	88.25911664
200331A00016	3/31/2020	1.11	3/31/2026	3/31/2020	127.86797	121.0785761	114.6871721	108.6684142	102.9987009	97.65604445	92.61995276	87.87131957	83.39232387
200331A00018	3/31/2020	0.82	3/31/2023	3/31/2020	111.39409	108.630051	105.9488553	103.3475242	100.8232091	98.37318147	95.9948271	93.68564031	91.44321883
200429A00064	4/29/2020	0.69	4/29/2022	4/29/2020	106.94578	105.2533165	103.5962919	101.9736634	100.3844325	98.82763892	97.30235919	95.80770444	94.34281898
200504A00007	5/4/2020	1.47	5/4/2028	5/4/2020	138.58015	128.6931537	119.5737546	111.1584836	103.3894295	96.2137261	89.58308815	83.45339215	77.78429759
200515A00019	5/15/2020	0.59	5/15/2023	5/15/2020	111.31635	108.4140013	105.6018996	102.8766543	100.2350307	97.67393817	95.19042261	92.7816593	90.44494623
200515A00020	5/15/2020	0.82	5/15/2025	5/15/2020	121.00461	115.5460394	110.3619477	105.4370749	100.7570994	96.30857006	92.07884879	88.05605636	84.22902254
200529A00022	6/1/2020	0.98	6/1/2026	6/1/2020	126.45678	119.5393298	113.0375479	106.9243109	101.1744119	95.76441274	90.67251016	85.87841294	81.36322873

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200605A00005	6/5/2020	0.99	6/5/2025	6/5/2020	122.13493	116.5787204	111.3045682	106.2966288	101.5400422	97.02086279	92.72599761	88.64314886	84.76076098
200413A00027	4/13/2020	0.94	4/12/2024	4/13/2020	116.55656	112.5114554	108.62769	104.8979458	101.3152782	97.87309599	94.56514136	91.38547073	88.32843724
200415A00026	4/15/2020	0.77	4/14/2023	4/15/2020	111.43633	108.6280053	105.9048064	103.2636329	100.7015186	98.21562497	95.80323399	93.4617427	91.18865729
200417A00018	4/21/2020	0.67	7/25/2022	4/21/2020	107.97492	106.0151367	104.1004957	102.2296629	100.401351	98.61431987	96.8673749	95.15936448	93.4891784
200421A00022	4/21/2020	0.74	4/21/2023	4/21/2020	111.44234	108.6120547	105.868051	103.2071606	100.6263579	98.12274816	95.69356114	93.33614453	91.04795818
200421A00031	4/21/2020	0.84	4/19/2024	4/21/2020	116.26234	112.1998785	108.3002247	104.5559558	100.9600318	97.50577282	94.18683896	90.99721033	87.93116922
200429A00004	5/1/2020	0.74	5/1/2023	5/1/2020	111.56619	108.7030324	105.9278518	103.2373884	100.6285293	98.09829768	95.64384624	93.26245034	90.95150186
200402A00013	4/2/2020	0.89	4/2/2024	4/2/2020	116.23825	112.2316229	108.3838515	104.6877798	101.1366123	97.72389682	94.4435049	91.2896135	88.25668813
200402A00030	4/2/2020	0.8	4/3/2023	4/2/2020	111.37875	108.6055535	105.9156745	103.3061131	100.773996	98.3165715	95.93120354	93.61536596	91.36663721
200402A00035	4/2/2020	0.62	4/3/2023	4/2/2020	111.41662	108.6317213	105.9307175	103.3105773	100.7684002	98.30140927	95.90694449	93.58245706	91.32550406
200402A00036	4/2/2020	0.71	4/2/2024	4/2/2020	116.30622	112.2786858	108.411294	104.6968134	101.1283766	97.69946368	94.40388305	91.2357524	88.18948171
200407A00004	4/7/2020	0.99	4/7/2025	4/7/2020	122.39524	117.0004119	111.8720206	106.9955193	102.3572346	97.94430844	93.74464497	89.74686086	85.94023966
200413A00011	4/13/2020	0.94	4/12/2024	4/13/2020	116.55656	112.5114554	108.62769	104.8979458	101.3152782	97.87309599	94.56514136	91.38547073	88.32843724
200327A00047	3/27/2020	0.99	3/27/2025	3/27/2020	122.24671	116.8930981	111.802344	106.9601834	102.353202	97.96878024	93.79504145	89.82080444	86.03553888
200327A00088	3/27/2020	1.22	3/27/2025	3/27/2020	122.32622	117.0029492	111.9401334	107.1236815	102.5403386	98.17763265	94.02382388	90.06785792	86.29932216
200330A00013	3/30/2020	0.68	3/30/2021	3/30/2020	102.20613	101.6867638	101.1726513	100.6637114	100.1598665	99.66104046	99.16715872	98.67814819	98.19393718
200330A00020	3/30/2020	0.68	3/30/2021	3/30/2020	102.20613	101.6867638	101.1726513	100.6637114	100.1598665	99.66104046	99.16715872	98.67814819	98.19393718
200330A00037	3/30/2020	1.09	3/28/2025	3/30/2020	121.69779	116.3858812	111.33423	106.5287376	101.956147	97.60398488	93.4605111	89.51467132	85.75605357
200401A00001	4/1/2020	1.01	4/1/2025	4/1/2020	121.35385	116.0365361	110.9804554	106.171423	101.5961003	97.24193914	93.09713082	89.15055832	85.39175215
200325A00013	3/25/2020	1.03	8/16/2021	3/25/2020	104.23089	103.2866289	102.3593876	101.4487052	100.5541412	99.67527066	98.81168356	97.96298396	97.12878953
200325A00032	3/25/2020	1.29	9/26/2022	3/25/2020	110.02561	107.8531239	105.734879	103.6691673	101.6543495	99.68884968	97.7711517	95.89979686	94.07338113
200326A00011	3/30/2020	1.54	3/31/2025	3/30/2020	123.96282	118.5875819	113.4754575	108.6121902	103.984372	99.57938826	95.38536644	91.39112841	87.58614618
200326A00016	3/26/2020	1.54	3/25/2025	3/26/2020	123.87622	118.5234036	113.4316871	108.5869751	103.9760065	99.58630225	95.40611446	91.42438001	87.63067685
200326A00025	3/26/2020	0.99	3/28/2022	3/26/2020	107.01791	105.4205158	103.8553494	102.3215166	100.818157	99.3444408	97.89956808	96.48276699	95.09329273
200327A00031	3/27/2020	1.18	3/27/2025	3/27/2020	122.12886	116.8102182	111.7518653	106.9397191	102.3605316	98.00183722	93.85190247	89.89967883	86.13475925
200316A00055	3/16/2020	1.06	3/14/2025	3/16/2020	122.41676	117.1034904	112.0490009	107.2393626	102.6614685	98.30298141	94.15228455	90.19843587	86.43112516
200316A00072	3/16/2020	1.18	3/16/2023	3/16/2020	112.14575	109.4183844	106.7713813	104.2019007	101.7072238	99.28474422	96.93196304	94.6464832	92.42600483
200317A00025	3/17/2020	1.66	3/15/2030	3/17/2020	151.45548	138.2357868	126.2649538	115.418664	105.5855591	96.66582832	88.5699586	81.21762539	74.53670821
200317A00033	3/19/2020	1.1	2/15/2022	3/19/2020	106.64586	105.1764104	103.7344463	102.3192654	100.9301849	99.56654448	98.22770557	96.91305047	95.62198149
200318A00026	3/20/2020	1.08	3/16/2022	3/20/2020	106.99909	105.4374571	103.9066616	102.4058665	100.9342648	99.49107773	98.0755538	96.6869674	95.32461784
200318A00047	3/18/2020	1.29	3/18/2025	3/18/2020	123.6045	118.2497967	113.1561562	108.3094996	103.6965829	99.30494148	95.12284032	91.13922732	87.34368987
200306A00054	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200309A00040	3/9/2020	0.91	3/8/2024	3/9/2020	115.99861	112.0771193	108.3082082	104.6851311	101.2014809	97.8511674	94.62839944	91.52766881	88.54373475

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200310A00041	3/10/2020	1.39	3/12/2029	3/10/2020	141.59338	130.3998531	120.1631344	110.7967203	102.2223311	94.36909253	87.17280121	80.57526639	74.52371956
200311A00055	3/11/2020	1.66	12/17/2027	3/11/2020	138.41067	129.0520538	120.3860575	112.3578144	104.9170881	98.01785515	91.61793036	85.67862649	80.16444656
200312A00009	3/12/2020	1.46	3/12/2027	3/12/2020	133.22067	125.0733254	117.4728054	110.3796759	103.7575381	97.57278051	91.79435249	86.39355652	81.34385875
200316A00046	3/16/2020	1.18	3/18/2024	3/16/2020	117.13539	113.1609601	109.3421657	105.672082	102.1441274	98.75204831	95.48990114	92.35203478	89.33307471
200304A00022	3/4/2020	0.86	3/6/2023	3/4/2020	111.68669	108.9856618	106.3635936	103.817725	101.3454064	98.94409701	96.61135934	94.34485472	92.14233837
200304A00032	3/4/2020	1.6	12/15/2028	3/4/2020	142.55873	131.6610551	121.6689327	112.5024645	104.0891949	96.36338423	89.26535291	82.74089297	76.74073971
200305A00038	3/5/2020	1.51	3/5/2029	3/5/2020	142.69233	131.4772658	121.2175581	111.8270741	103.227854	95.34929363	88.12741705	81.50422405	75.42710489
200306A00013	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200306A00031	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200306A00049	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200225A00023	2/25/2020	1.62	2/25/2025	2/25/2020	123.85573	118.5994625	113.5952481	108.8297076	104.2902453	99.96499475	95.84277263	91.91303606	88.16584254
200225A00028	2/25/2020	1.89	12/21/2029	2/25/2020	150.28568	137.594506	126.070054	115.598923	106.0792904	97.41967535	89.53783861	82.35980418	75.81898966
200302A00017	3/2/2020	1.3	3/4/2024	3/2/2020	117.39116	113.4575182	109.6761898	106.0404735	102.5439975	99.18070356	95.94483023	92.83089621	89.83368541
200302A00018	3/2/2020	1.25	3/2/2023	3/2/2020	112.13535	109.4516266	106.8457629	104.3150571	101.8569149	99.46884767	97.1484673	94.89348149	92.70168936
200304A00015	3/4/2020	0.83	3/4/2022	3/4/2020	106.73633	105.207944	103.7091447	102.2391485	100.7971956	99.38255209	97.9945095	96.63238322	95.29551173
200304A00020	3/4/2020	0.98	3/4/2025	3/4/2020	121.89023	116.6232662	111.6114339	106.841077	102.2993441	97.97413409	93.85404804	89.92834502	86.18690063
200330A00036	3/30/2020	0.86	3/30/2023	3/30/2020	111.48762	108.7254477	106.0459621	103.446197	100.9233121	98.47458687	96.09741438	93.78929594	91.54783582
200330A00044	3/30/2020	1.09	3/28/2025	3/30/2020	121.69779	116.3858812	111.33423	106.5287376	101.956147	97.60398488	93.4605111	89.51467132	85.75605357
200207A00007	2/7/2020	1.74	2/7/2023	2/7/2020	113.01751	110.4005066	107.8573662	105.3855966	102.9828007	100.6466758	98.37500985	96.16567673	94.01663286
200214A00018	2/18/2020	1.77	1/12/2022	2/18/2020	107.176	105.7709535	104.3979745	103.0559652	101.7438776	100.4607112	99.20551009	97.97736081	96.77538964
200220A00014	2/20/2020	2.09	12/21/2029	2/20/2020	152.46044	139.6650171	128.043233	117.4811472	107.8764489	99.13721083	91.18078452	83.93281922	77.32638883
200220A00034	2/25/2020	1.71	3/27/2023	2/25/2020	113.6954	110.9133871	108.2141926	105.5948534	103.0525366	100.5845279	98.18822604	95.86113748	93.6008709
200327A00059	3/27/2020	1.01	3/27/2024	3/27/2020	116.61525	112.6211562	108.7846625	105.0987024	101.5565646	98.15187444	94.87857591	91.73091319	88.7034143
200327A00061	3/31/2020	1.18	3/31/2025	3/31/2020	122.18194	116.848558	111.7767968	106.9524683	102.362227	97.99351722	93.83452279	89.87411892	86.10182828
200327A00066	6/25/2020	0.93	6/26/2023	6/25/2020	112.80651	109.7514509	106.794729	103.9325043	101.1611146	98.4770693	95.87703945	93.35784919	90.91646716
200327A00077	3/27/2020	0.83	3/27/2024	3/27/2020	116.68423	112.6693508	108.8133457	105.1090737	101.5497523	98.12894052	94.84051969	91.67867564	88.63788156
200330A00007	3/30/2020	0.93	4/1/2024	3/30/2020	116.37704	112.3711161	108.5238941	104.828229	101.2773369	97.8647763	94.58442848	91.43047956	88.39740345
200330A00011	3/30/2020	0.93	4/1/2024	3/30/2020	116.37704	112.3711161	108.5238941	104.828229	101.2773369	97.8647763	94.58442848	91.43047956	88.39740345
200327A00025	3/30/2020	0.86	3/30/2022	3/30/2020	106.8409	105.2390193	103.6695727	102.131658	100.6244063	99.14697997	97.69857158	96.2784021	94.88571988
200327A00035	3/27/2020	0.83	3/27/2024	3/27/2020	116.68423	112.6693508	108.8133457	105.1090737	101.5497523	98.12894052	94.84051969	91.67867564	88.63788156
200327A00037	3/27/2020	1.18	3/27/2026	3/27/2020	128.24738	121.4612814	115.0720213	109.0543826	103.3848801	98.04163126	93.00423831	88.25368036	83.77221325
200327A00041	3/27/2020	0.9	3/27/2023	3/27/2020	111.55544	108.8016732	106.1300698	103.5376925	101.0217281	98.57948125	96.20836907	93.90591539	91.66974577
200327A00046	3/27/2020	1.23	3/27/2025	3/27/2020	122.37556	117.051132	111.9872004	107.1696721	102.5852904	98.2215815	94.06680423	90.1099027	86.34046288

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200327A00058	3/27/2020	0.9	3/27/2023	3/27/2020	111.55544	108.8016732	106.1300698	103.5376925	101.0217281	98.57948125	96.20836907	93.90591539	91.66974577
200319A00038	3/19/2020	1.18	9/17/2021	3/19/2020	104.80614	103.7602659	102.7351478	101.7301695	100.7447424	99.77830029	98.83029892	97.90021453	96.98754308
200320A00025	3/20/2020	0.78	3/19/2021	3/20/2020	102.11794	101.6309713	101.1486453	100.6708914	100.1976448	99.72884169	99.26441977	98.80431769	98.34847531
200320A00049	3/25/2020	1.47	3/25/2025	3/25/2020	123.5313	118.1865567	113.102631	108.2654356	103.6617216	99.27902113	95.10559716	91.13039681	87.34300777
200324A00029	3/24/2020	1.86	3/24/2025	3/24/2020	125.43755	120.051591	114.9277042	110.0517645	105.4104809	100.9913446	96.78257945	92.77309464	88.95244133
200324A00031	3/24/2020	1.64	3/22/2024	3/24/2020	118.91707	114.8971474	111.0348048	107.3230097	103.7550848	100.3246864	97.02578635	93.85265379	90.7998392
200326A00012	3/26/2020	0.99	3/25/2022	3/26/2020	106.97899	105.3908136	103.8345129	102.3092054	100.8140444	99.34821314	97.91092406	96.50141714	95.11895881
200310A00038	3/10/2020	1.41	3/11/2030	3/10/2020	145.99877	133.1953679	121.6012408	111.0962047	101.5725773	92.93381799	85.0933247	77.97336665	71.50413604
200311A00044	3/11/2020	1.73	3/11/2030	3/11/2020	149.57088	136.5922095	124.8346804	114.1771751	104.511158	95.73930891	87.77431327	80.53778839	73.95932966
200316A00019	3/16/2020	1.11	3/16/2023	3/16/2020	111.96315	109.2381682	106.5934928	104.0262871	101.5338341	99.11352912	96.76287455	94.47947486	92.26103158
200316A00043	3/16/2020	1.3	3/14/2025	3/16/2020	122.54345	117.2590122	112.231038	107.4457668	102.8902449	98.5522773	94.4203792	90.4837308	86.73213539
200317A00011	3/17/2020	1.04	3/17/2022	3/17/2020	106.95139	105.3871756	103.8539035	102.3507351	100.8768591	99.43149287	98.01388103	96.62329439	95.25902877
200318A00044	3/18/2020	1.17	3/18/2024	3/18/2020	117.84435	113.8376689	109.9882165	106.2889816	102.7333009	99.31484425	96.02759579	92.86583665	89.82412851
200302A00006	3/2/2020	1.2	3/2/2023	3/2/2020	112.00705	109.3249711	106.7207185	104.1915876	101.7349855	99.34842435	97.02951722	94.77597278	92.58559112
200305A00015	3/5/2020	0.99	3/6/2023	3/5/2020	111.52014	108.8319257	106.2221031	103.6879356	101.2267992	98.83617714	96.51365488	94.2569153	92.06373411
200305A00030	3/5/2020	1.58	3/5/2030	3/5/2020	147.82535	134.9557989	123.2973083	112.7298473	103.1458382	94.44880762	86.55219093	79.37826979	72.85722885
200306A00006	3/6/2020	0.88	3/6/2023	3/6/2020	111.23654	108.5519823	105.9457365	103.4150653	100.9573474	98.57006842	96.25081606	93.99727547	91.80722447
200306A00028	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200306A00038	3/6/2020	1.2	3/8/2027	3/6/2020	131.2727	123.20509	115.679272	108.6561971	102.099817	95.97684111	90.25651266	84.91040373	79.91222775
200611A00023	6/11/2020	0.64	6/12/2023	6/11/2020	111.7898	108.79394	105.8934314	103.084599	100.3639365	97.728099	95.17389447	92.69827507	90.29832955
200729A00016	7/30/2020	0.5	4/1/2022	7/30/2020	106.30218	104.6987711	103.1279261	101.5887385	100.0803331	98.60186625	97.15252448	95.73152335	94.33810603
200806A00006	8/6/2020	0.76	8/6/2025	8/6/2020	121.62253	115.872283	110.4231307	105.2578362	100.3602376	95.71517185	91.30840846	87.12658735	83.15716145
200826A00038	8/28/2020	1.11	8/28/2024	8/28/2020	119.03002	114.4887115	110.1442345	105.9870502	102.008131	98.19893149	94.55136028	91.05775361	87.71085031
200221A00023	2/21/2020	2.05	12/7/2029	2/21/2020	151.83605	139.1253643	127.5767856	117.0778832	107.5276574	98.83532202	90.91922244	83.7058731	77.12910153
200228A00071	2/28/2020	1.74	12/14/2029	2/28/2020	148.56771	135.9859621	124.5607389	114.1797359	104.7420986	96.15720295	88.34356822	81.22789102	74.74418583
200429A00065	4/29/2020	0.74	10/28/2022	4/29/2020	109.2637	107.0039067	104.8023417	102.6570997	100.5663522	98.52834472	96.54139298	94.60387945	92.71425018
200430A00030	4/30/2020	0.96	4/30/2025	4/30/2020	121.53199	116.1103225	110.9590119	106.063152	101.4087426	96.98262756	92.77243855	88.76654372	84.95399962
200508A00016	5/12/2020	1.2	5/8/2024	5/12/2020	117.90384	113.7490849	109.7625085	105.9363556	102.2632728	98.73628855	95.3487907	92.09450578	88.96747944
200515A00021	5/15/2020	1.12	5/17/2027	5/15/2020	131.49775	123.1709044	115.4184906	108.1979932	101.470258	95.19920901	89.35159104	83.89673453	78.80634164
200521A00015	5/21/2020	2.14	5/21/2036	5/21/2020	184.46997	159.6516878	138.4623642	120.3498424	104.8486041	91.56579506	80.16956551	70.37933098	61.957628
200527A00013	5/27/2020	1.13	11/25/2026	5/27/2020	129.5343	121.8976073	114.7538057	108.0685717	101.8101459	95.94913248	90.45831003	85.31245974	80.48820739
200417A00008	4/17/2020	0.96	4/17/2025	4/17/2020	121.30988	115.9393648	110.8348948	105.9819051	101.3667049	96.97642209	92.79894998	88.82289757	85.03754318
200417A00011	4/22/2020	0.68	7/15/2022	4/22/2020	107.85305	105.9240095	104.0390579	102.1968433	100.3960685	98.63548734	96.91390242	95.23016248	93.58316023

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200417A00019	4/17/2020	0.77	4/17/2025	4/17/2020	121.42541	116.0192808	110.8818434	105.9983421	101.3549133	96.93852469	92.73692135	88.73857455	84.93263489
200422A00015	4/27/2020	0.73	12/22/2022	4/27/2020	109.91927	107.4842154	105.1154441	102.810632	100.5675617	98.38411317	96.25825831	94.18805622	92.17164847
200423A00026	4/28/2020	0.85	12/15/2023	4/28/2020	114.71851	111.0912031	107.5970607	104.2303668	100.9856912	97.85787312	94.84200604	91.9334231	89.12768351
200428A00002	4/28/2020	1.47	4/26/2030	4/28/2020	149.83625	136.5270477	124.491789	113.6021423	103.7433074	94.81252597	86.71776324	79.37653957	72.71489502
200402A00038	4/2/2020	0.84	4/2/2025	4/2/2020	121.58093	116.2225302	111.1283385	106.2839658	101.6758798	97.29135288	93.1184096	89.14577852	85.36284681
200403A00017	4/3/2020	0.81	4/3/2023	4/3/2020	111.40538	108.6318313	105.9416064	103.3317071	100.7992597	98.34151236	95.95582877	93.63968255	91.39065194
200408A00013	4/13/2020	0.87	4/14/2023	4/13/2020	111.70599	108.8940431	106.1673016	103.5226673	100.9571715	98.46797291	96.05235139	93.70770161	91.43152755
200409A00011	4/9/2020	0.7	4/7/2023	4/9/2020	111.68183	108.880812	106.1644239	103.5295967	100.9733939	98.49300451	96.08573641	93.74901071	91.48035609
200415A00027	4/15/2020	0.86	4/15/2024	4/15/2020	116.28868	112.2387685	108.3507443	104.6172504	101.0313042	97.58627924	94.27588515	91.09414815	88.03539342
200415A00031	4/15/2020	0.97	4/15/2025	4/15/2020	121.33438	115.9700657	110.8712075	106.023289	101.4126627	97.02649673	92.85272138	88.87997946	85.09758049
200327A00056	3/27/2020	1.18	3/27/2025	3/27/2020	122.12886	116.8102182	111.7518653	106.9397191	102.3605316	98.00183722	93.85190247	89.89967883	86.13475925
200327A00076	3/27/2020	1.18	3/27/2026	3/27/2020	128.24738	121.4612814	115.0720213	109.0543826	103.3848801	98.04163126	93.00423831	88.25368036	83.77221325
200330A00008	3/30/2020	1.09	3/28/2025	3/30/2020	121.69779	116.3858812	111.33423	106.5287376	101.956147	97.60398488	93.4605111	89.51467132	85.75605357
200330A00066	3/30/2020	1.08	3/31/2025	3/30/2020	121.68725	116.3654958	111.3049466	106.4914345	101.9116311	97.55299749	93.40373289	89.45272739	85.68951775
200331A00017	3/31/2020	0.9	3/31/2025	3/31/2020	121.85297	116.4950103	111.4008764	106.5562174	101.9475358	97.56213576	93.38807103	89.41409653	85.62962355
200402A00001	4/2/2020	0.72	4/2/2021	4/2/2020	102.26372	101.73537	101.2124569	100.6948945	100.1826012	99.67549686	99.17350314	98.67654312	98.18454147
200325A00047	3/25/2020	1.68	9/25/2024	3/25/2020	121.88663	117.1906485	112.701532	108.4090666	104.3035999	100.3760055	96.61765198	93.02037278	89.57643882
200327A00019	3/30/2020	0.85	3/15/2022	3/30/2020	106.65293	105.0967585	103.5712722	102.0756368	100.6090505	99.17073997	97.7599585	96.37598526	95.01812404
200327A00030	3/27/2020	1.01	3/27/2024	3/27/2020	116.61525	112.6211562	108.7846625	105.0987024	101.5565646	98.15187444	94.87857591	91.73091319	88.7034143
200327A00042	3/27/2020	0.83	3/27/2024	3/27/2020	116.68423	112.6693508	108.8133457	105.1090737	101.5497523	98.12894052	94.84051969	91.67867564	88.63788156
200327A00048	3/27/2020	1.18	3/24/2025	3/27/2020	122.08906	116.7814634	111.7331651	106.9301558	102.3592606	98.00808089	93.86494513	89.91886182	86.15947645
200327A00054	3/27/2020	0.9	3/27/2023	3/27/2020	111.55544	108.8016732	106.1300698	103.5376925	101.0217281	98.57948125	96.20836907	93.90591539	91.66974577
200317A00039	3/19/2020	1.11	4/15/2022	3/19/2020	107.44822	105.7934328	104.1727521	102.585205	101.029852	99.50578844	98.0121434	96.54807772	95.11278275
200318A00039	3/18/2020	1.08	3/18/2022	3/18/2020	107.02555	105.4577688	103.9210611	102.4145777	100.9375028	99.48904905	98.06845694	96.67499317	95.30794968
200323A00018	3/23/2020	1.37	3/23/2023	3/23/2020	112.74048	109.9835475	107.3084085	104.7121582	102.1920087	99.74528884	97.36943819	95.06200162	92.82062438
200324A00013	3/25/2020	1.78	3/25/2025	3/25/2020	125.05882	119.6783074	114.5598796	109.6893961	105.0535548	100.6398375	96.43645946	92.43232238	88.61697086
200324A00051	3/24/2020	1.73	11/1/2024	3/24/2020	122.66108	117.8267164	113.2096539	108.7989301	104.5842019	100.5557038	96.70421256	93.02101335	89.49786905
200325A00043	3/25/2020	1.62	6/25/2024	3/25/2020	120.25877	115.9010564	111.7248547	107.7215174	103.8828671	100.2011671	96.66909521	93.27971792	90.02646721
200312A00014	3/12/2020	1.04	3/12/2025	3/12/2020	122.2914	116.9878696	111.9423732	107.141035	102.5708	98.21937906	94.07519995	90.12736154	86.3655915
200316A00009	3/16/2020	1.25	3/14/2025	3/16/2020	122.29886	117.0201055	111.9976206	107.2176467	102.6672383	98.3342085	94.20707993	90.27503996	86.52789867
200316A00037	3/16/2020	1.06	3/14/2025	3/16/2020	122.41676	117.1034904	112.0490009	107.2393626	102.6614685	98.30298141	94.15228455	90.19843587	86.43112516
200316A00067	3/18/2020	1.1	9/15/2022	3/18/2020	109.47636	107.3442498	105.2645814	103.2357351	101.2561495	99.32432224	97.43880712	95.59821181	93.80119537
200316A00070	3/16/2020	1.05	3/16/2022	3/16/2020	106.95348	105.3922159	103.8617785	102.3613352	100.8900791	99.44723145	98.03204106	96.64378247	95.28175512

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200316A00071	3/16/2020	1.18	3/16/2023	3/16/2020	112.14575	109.4183844	106.7713813	104.2019007	101.7072238	99.28474422	96.93196304	94.6464832	92.42600483
200306A00055	3/6/2020	0.82	3/6/2025	3/6/2020	121.13476	115.8785453	110.8774801	106.1178894	101.5869003	97.27239241	93.1629499	89.24781685	85.51685566
200309A00054	3/9/2020	0.98	3/9/2028	3/9/2020	135.59758	125.9533617	117.0493676	108.8252181	101.2257421	94.20050437	87.7033766	81.69214987	76.12818344
200310A00033	3/10/2020	0.91	3/10/2025	3/10/2020	121.62715	116.345902	111.3214962	106.540133	101.9888277	97.65535661	93.52820838	89.59653859	85.85012772
200310A00051	3/10/2020	1.41	3/8/2030	3/10/2020	145.96506	133.1749727	121.5919128	111.0960232	101.5798992	92.94723986	85.11165002	77.99557732	71.5293678
200310A00054	3/10/2020	1.1	3/10/2025	3/10/2020	121.51307	116.2660519	111.2733832	106.5214377	101.9973909	97.68916769	93.5853947	89.67535563	85.94895002
200310A00062	3/10/2020	1.05	3/8/2024	3/10/2020	116.51834	112.587466	108.8094428	105.1775139	101.6852626	98.32658935	95.09569444	91.98706122	88.99544092
200304A00018	3/4/2020	0.98	3/4/2025	3/4/2020	121.89023	116.6232662	111.6114339	106.841077	102.2993441	97.97413409	93.85404804	89.92834502	86.18690063
200304A00025	3/4/2020	1.04	3/6/2023	3/4/2020	111.64905	108.9591728	106.3477243	103.8119676	101.3492773	98.95713566	96.63312707	94.3749334	92.1803294
200304A00035	3/4/2020	1.17	3/4/2025	3/4/2020	121.77527	116.5423702	111.5621269	106.8210591	102.3064739	98.00641687	93.90962551	90.00548562	86.28399058
200305A00014	3/10/2020	1	2/15/2023	3/10/2020	111.28347	108.661025	106.1134351	103.6381405	101.232688	98.89472276	96.62198305	94.41229633	92.26357508
200305A00037	3/5/2020	1.43	3/6/2028	3/5/2020	137.50575	127.8811797	118.9897809	110.7720749	103.1736903	96.14490055	89.64020611	83.61795492	78.03999949
200306A00010	3/6/2020	0.88	3/6/2023	3/6/2020	111.23654	108.5519823	105.9457365	103.4150653	100.9573474	98.57006842	96.25081606	93.99727547	91.80722447
200826A00021	8/26/2020	0.83	8/26/2025	8/26/2020	122.23678	116.4034499	110.8786013	105.6443967	100.6841203	95.98210043	91.5236394	87.29494773	83.28308375
200211A00014	2/11/2020	1.75	8/11/2023	2/11/2020	115.89712	112.6536054	109.5176508	106.4851122	103.5520293	100.7146156	97.96924941	95.3124664	92.74095133
200226A00004	2/26/2020	1.58	2/26/2025	2/26/2020	123.67802	118.4221317	113.4184865	108.6536933	104.1151375	99.79093565	95.6698888	91.74143975	87.99563292
200302A00013	3/2/2020	1.25	3/4/2024	3/2/2020	117.20617	113.2758565	109.4977614	105.8651863	102.3717628	99.01143585	95.77844708	92.66731818	89.67283588
200304A00005	3/4/2020	0.98	3/4/2025	3/4/2020	121.89023	116.6232662	111.6114339	106.841077	102.2993441	97.97413409	93.85404804	89.92834502	86.18690063
200304A00013	3/4/2020	1.01	3/4/2022	3/4/2020	106.75219	105.2278186	103.7328989	102.2666463	100.8283062	99.41714968	98.03247296	96.67359587	95.33986105
200504A00005	5/4/2020	0.6	5/4/2022	5/4/2020	106.85676	105.1504132	103.4800075	101.8444764	100.242799	98.67399442	97.13711916	95.63126579	94.15556096
200511A00006	5/11/2020	1.65	5/13/2030	5/11/2020	149.44429	136.2237978	124.2686551	113.4512806	103.6575663	94.78538876	86.74329495	79.44933787	72.83004482
200521A00017	5/21/2020	2.22	5/21/2038	5/21/2020	195.57604	166.4726017	142.0877698	121.6267922	104.432602	89.96137317	77.76251369	67.46227577	58.75031393
200527A00012	5/27/2020	1.2	5/27/2027	5/27/2020	132.21655	123.8294584	116.0226006	108.752897	101.9806842	95.66942783	89.78545988	84.29773884	79.17763155
200527A00015	5/27/2020	0.99	11/26/2025	5/27/2020	124.25798	118.0552179	112.1951486	106.6570452	101.4215453	96.47055657	91.78716556	87.35555458	83.16092446
200729A00015	7/30/2020	0.47	9/21/2021	7/30/2020	104.14632	103.091669	102.0582067	101.0453009	100.0523437	99.07875089	98.12396087	97.18743359	96.26864951
200414A00019	4/16/2020	0.69	4/20/2021	4/16/2020	102.46989	101.8878689	101.3124395	100.7434892	100.1809088	99.62459197	99.07443435	98.53033409	97.99219153
200415A00037	4/15/2020	0.97	4/15/2025	4/15/2020	121.33438	115.9700657	110.8712075	106.023289	101.4126627	97.02649673	92.85272138	88.87997946	85.09758049
200421A00020	4/24/2020	0.83	3/15/2024	4/24/2020	115.78805	111.8477973	108.0617364	104.423011	100.9251112	97.56185057	94.32734865	91.21601386	88.22252772
200423A00022	4/28/2020	0.76	2/15/2023	4/28/2020	110.6785	108.063707	105.5235938	103.05561	100.6573078	98.32633699	96.06044079	93.85745113	91.71528487
200429A00057	4/29/2020	1.4	4/29/2027	4/29/2020	133.3866	125.0588199	117.3004679	110.0697179	103.328028	97.03986403	91.17244951	85.695538	80.58120516
200429A00066	4/29/2020	0.8	4/28/2023	4/29/2020	111.69364	108.8380503	106.069974	103.3861831	100.7835894	98.25923929	95.81030736	93.43408935	91.12799627
200403A00010	4/6/2020	0.8	4/6/2023	4/6/2020	111.41651	108.6334379	105.9341856	103.3157212	100.7751461	98.30968479	95.91667885	93.59358109	91.33795021
200403A00012	4/3/2020	0.55	4/15/2022	4/3/2020	106.83682	105.1822419	103.5618584	101.97469	100.4197926	98.89625752	97.40320992	95.93980706	94.50523693

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200406A00018	4/6/2020	0.65	4/18/2022	4/6/2020	107.03625	105.3709669	103.7402152	102.1429947	100.5783474	99.04535142	97.54311952	96.07079716	94.62756112
200406A00059	4/6/2020	0.92	4/6/2023	4/6/2020	111.73718	108.9498382	106.2464079	103.6238616	101.0792974	98.60993705	96.21311927	93.88629423	91.62701803
200413A00003	4/13/2020	0.64	4/13/2023	4/13/2020	111.59729	108.7785306	106.0453583	103.3946534	100.8234291	98.32882748	95.90811219	93.55866292	91.27796938
200414A00013	4/14/2020	0.55	4/14/2022	4/14/2020	106.82433	105.1728584	103.5554815	101.9712228	100.4191426	98.89833646	97.40793342	95.94709447	94.51501111
200331A00011	3/31/2020	1.09	3/31/2025	3/31/2020	121.73672	116.413802	111.3521316	106.5375379	101.9566907	97.59704946	93.44681188	89.49486654	85.7307488
200331A00014	3/31/2020	0.72	3/29/2024	3/31/2020	116.29323	112.2790175	108.4239738	104.720931	101.1630822	97.74396432	94.45743812	91.29767035	88.25911664
200402A00010	4/2/2020	0.89	4/2/2024	4/2/2020	116.23825	112.2316229	108.3838515	104.6877798	101.1366123	97.72389682	94.4435049	91.2896135	88.25668813
200402A00018	4/2/2020	0.85	4/3/2023	4/2/2020	111.51191	108.7369424	106.045334	103.4340829	100.9003145	98.44127579	96.05432969	93.73694892	91.48671084
200402A00041	4/2/2020	1.03	4/2/2025	4/2/2020	121.46579	116.1424564	111.0807476	106.2664548	101.6862135	97.32745179	93.17833867	89.22773671	85.46515752
200402A00044	4/2/2020	1.65	4/2/2030	4/2/2020	148.9446	135.9102062	124.1106327	113.4226151	103.7357745	94.95120988	86.98025222	79.74335945	73.16913577
200327A00060	3/27/2020	1.18	3/27/2025	3/27/2020	122.12886	116.8102182	111.7518653	106.9397191	102.3605316	98.00183722	93.85190247	89.89967883	86.13475925
200327A00079	3/27/2020	0.99	3/27/2025	3/27/2020	122.24671	116.8930981	111.802344	106.9601834	102.353202	97.96878024	93.79504145	89.82080444	86.03553888
200330A00006	3/30/2020	0.9	3/28/2025	3/30/2020	121.81369	116.4668627	111.3828542	106.5473911	101.9470504	97.56920435	93.4019697	89.4341593	85.6552378
200330A00017	3/30/2020	0.86	3/30/2023	3/30/2020	111.48762	108.7254477	106.0459621	103.446197	100.9233121	98.47458687	96.09741438	93.78929594	91.54783582
200330A00043	3/30/2020	0.86	3/30/2023	3/30/2020	111.48762	108.7254477	106.0459621	103.446197	100.9233121	98.47458687	96.09741438	93.78929594	91.54783582
200330A00046	3/30/2020	0.86	3/30/2023	3/30/2020	111.48762	108.7254477	106.0459621	103.446197	100.9233121	98.47458687	96.09741438	93.78929594	91.54783582
200325A00048	3/25/2020	1.34	12/27/2022	3/25/2020	111.42559	108.9574599	106.5567502	104.2210875	101.9482053	99.7359373	97.58221186	95.48504685	93.44254487
200326A00009	3/27/2020	1.54	3/27/2025	3/27/2020	123.90509	118.5447971	113.4462783	108.5953809	103.9787949	99.58399606	95.39919513	91.41329068	87.61582541
200327A00013	3/27/2020	0.72	3/27/2023	3/27/2020	111.59348	108.8281457	106.1455392	103.5426956	101.0167752	98.56505802	96.18493762	93.87391575	91.62959702
200327A00032	3/27/2020	0.66	3/28/2022	3/27/2020	106.78424	105.1840474	103.6162207	102.0798562	100.5740879	99.09808093	97.65103039	96.23215989	94.84072029
200327A00045	3/27/2020	2.24	3/27/2034	3/27/2020	180.05354	158.7954177	140.2698116	124.1098104	109.9995148	97.66672201	86.87668786	77.42680666	69.14206883
200327A00053	3/27/2020	0.84	3/25/2022	3/27/2020	106.747	105.1607109	103.6062597	102.0827684	100.5893911	99.12531212	97.68974469	96.28192964	94.90113422
200319A00039	3/19/2020	1.12	3/18/2022	3/19/2020	107.08659	105.5183214	103.9811326	102.4741768	100.9966378	99.54772821	98.12668818	96.73278421	95.36530803
200320A00013	3/20/2020	1.25	3/20/2024	3/20/2020	118.17352	114.1542616	110.2929147	106.5824227	103.0160846	99.58753491	96.29072497	93.11990498	90.0696077
200320A00052	3/25/2020	1.47	3/25/2025	3/25/2020	123.5313	118.1865567	113.102631	108.2654356	103.6617216	99.27902113	95.10559716	91.13039681	87.34300777
200325A00009	3/27/2020	1.67	3/27/2025	3/27/2020	124.5465	119.1711728	114.0581497	109.1932587	104.5631677	100.1553312	95.9579397	91.95987274	88.15065486
200325A00016	3/30/2020	1.67	3/31/2025	3/30/2020	124.60591	119.2155628	114.0888627	109.2115342	104.5701466	100.1520639	95.94539331	91.93893739	88.12214987
200325A00038	3/25/2020	1.48	9/25/2023	3/25/2020	115.72662	112.3400122	109.0704385	105.9131971	102.8638028	99.91797638	97.07163357	94.32087528	91.66197781
200311A00031	3/11/2020	1.41	12/24/2027	3/11/2020	136.42745	127.1177309	118.5002538	110.5199895	103.1265625	96.27383641	89.91953428	84.02489645	78.55436965
200316A00040	3/16/2020	1.04	3/16/2022	3/16/2020	106.93828	105.3771354	103.8468175	102.3464915	100.8753505	99.43261602	98.01753681	96.62938749	95.26746754
200317A00027	3/17/2020	1.29	3/17/2025	3/17/2020	122.53538	117.2409944	112.204026	107.4106365	102.8478017	98.50326168	94.36547162	90.42355664	86.66726925
200318A00038	3/18/2020	1.48	3/18/2025	3/18/2020	123.48093	118.1611084	113.0998117	108.283134	103.697995	99.33208207	95.1738011	91.21223091	87.43708054
200319A00009	3/19/2020	0.94	3/18/2022	3/19/2020	107.08676	105.5139059	103.9722971	102.4610773	100.9794243	99.52654468	98.10167325	96.70407135	95.33302581

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200319A00025	3/19/2020	1.39	3/21/2024	3/19/2020	117.9639	113.9646269	110.1221791	106.4295596	102.8801246	99.46756251	96.18587484	93.02935923	89.99259296
200310A00005	3/10/2020	1.41	3/8/2030	3/10/2020	145.96506	133.1749727	121.5919128	111.0960232	101.5798992	92.94723986	85.11165002	77.99557732	71.5293678
200310A00014	3/10/2020	0.91	3/10/2025	3/10/2020	121.62715	116.345902	111.3214962	106.540133	101.9888277	97.65535661	93.52820838	89.59653859	85.85012772
200310A00015	3/10/2020	1.37	3/11/2030	3/10/2020	145.55225	132.7707627	121.1970609	110.7110834	101.2052548	92.58313162	84.75820113	77.65281394	71.19723684
200310A00023	3/10/2020	1.02	3/10/2026	3/10/2020	127.04386	120.3524026	114.049521	108.1107169	102.5131569	97.23555314	92.25805066	87.56212381	83.13048066
200310A00034	3/10/2020	1.41	3/11/2030	3/10/2020	145.99877	133.1953679	121.6012408	111.0962047	101.5725773	92.93381799	85.0933247	77.97336665	71.50413604
200310A00040	3/10/2020	1.36	3/10/2028	3/10/2020	136.95498	127.3368614	118.4529464	110.2435655	102.6541831	95.63493078	89.14018552	83.12818894	77.56070184
200306A00077	3/6/2020	1.06	3/6/2025	3/6/2020	121.26644	116.0385866	111.0636094	106.3279953	101.8190218	97.52470775	93.4337666	89.53556235	85.82006871
200309A00009	3/9/2020	0.92	3/9/2027	3/9/2020	130.84565	122.7261795	115.154662	108.0914494	101.4999552	95.34640174	89.59959111	84.23069559	79.21306642
200309A00029	3/9/2020	1.02	3/7/2025	3/9/2020	121.08453	115.8575336	110.8835794	106.1491381	101.64147	97.34857833	93.25916228	89.36257287	85.64877199
200309A00043	3/9/2020	0.92	6/7/2024	3/9/2020	117.18796	112.9501378	108.8873474	104.9913401	101.2543115	97.66887284	94.22802523	90.92513664	87.75392014
200309A00045	3/9/2020	0.97	3/7/2025	3/9/2020	120.84107	115.6197075	110.6511946	105.9220049	101.4194069	97.13141169	93.04672581	89.15470736	85.44532492
200310A00003	3/10/2020	1.1	3/10/2025	3/10/2020	121.51307	116.2660519	111.2733832	106.5214377	101.9973909	97.68916769	93.5853947	89.67535563	85.94895002
200304A00012	3/4/2020	0.98	3/4/2025	3/4/2020	121.89023	116.6232662	111.6114339	106.841077	102.2993441	97.97413409	93.85404804	89.92834502	86.18690063
200305A00019	3/5/2020	0.81	3/6/2023	3/5/2020	111.55748	108.8581155	106.237681	103.6934094	101.2226521	98.82286946	96.49162508	94.22658126	92.02549425
200305A00032	3/5/2020	1.58	3/5/2030	3/5/2020	147.82535	134.9557989	123.2973083	112.7298473	103.1458382	94.44880762	86.55219093	79.37826979	72.85722885
200306A00003	3/6/2020	0.7	3/6/2023	3/6/2020	111.2732	108.5775137	105.9606734	103.4199151	100.9525927	98.55616887	96.2282097	93.96637967	91.76843716
200306A00040	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200306A00066	3/6/2020	1.2	3/8/2027	3/6/2020	131.2727	123.20509	115.679272	108.6561971	102.099817	95.97684111	90.25651266	84.91040373	79.91222775
200302A00003	3/2/2020	1.2	3/2/2023	3/2/2020	112.00705	109.3249711	106.7207185	104.1915876	101.7349855	99.34842435	97.02951722	94.77597278	92.58559112
200302A00005	3/2/2020	1.31	3/3/2025	3/2/2020	122.44195	117.1970078	112.20495	107.4522935	102.926346	98.61515351	94.50745305	90.59262946	86.86067468
200302A00016	3/2/2020	1.36	3/3/2025	3/2/2020	122.68477	117.4342165	112.4367447	107.6788627	103.14787	98.83180464	94.71939651	90.80002339	87.06367059
200302A00025	3/2/2020	1.02	3/2/2022	3/2/2020	106.99172	105.4672837	103.972244	102.5058256	101.0672762	99.65586911	98.27090262	96.91169867	95.57760192
200302A00056	3/2/2020	1.2	3/2/2023	3/2/2020	112.00705	109.3249711	106.7207185	104.1915876	101.7349855	99.34842435	97.02951722	94.77597278	92.58559112
200304A00002	3/4/2020	0.98	3/4/2025	3/4/2020	121.89023	116.6232662	111.6114339	106.841077	102.2993441	97.97413409	93.85404804	89.92834502	86.18690063
200211A00017	2/11/2020	1.77	8/12/2024	2/11/2020	121.5965	117.0556028	112.7088547	108.5469618	104.5611194	100.7429875	97.08466447	93.57866106	90.21787721
200220A00013	2/20/2020	2.09	12/14/2029	2/20/2020	152.3647	139.601321	128.0064911	117.4669736	107.8810665	99.15736998	91.21369305	83.97608119	77.37795176
200221A00024	2/21/2020	2.05	12/28/2029	2/21/2020	152.12024	139.3136975	127.6845047	117.1181224	107.5117271	98.77295194	90.81877206	83.5745147	76.97297857
200225A00008	2/25/2020	1.52	6/3/2024	2/25/2020	119.52797	115.2583282	111.1640579	107.2369354	103.4691731	99.85339555	96.38261528	93.05020942	89.84989833
200228A00070	5/18/2020	1.35	5/18/2023	5/18/2020	113.47935	110.5377527	107.6876229	104.9255236	102.2481707	99.65242682	97.1352937	94.69390463	92.32551782
200302A00002	3/2/2020	1.12	3/3/2025	3/2/2020	122.55989	117.2808067	112.2570765	107.4750492	102.9218743	98.585451	94.45437991	90.51791919	86.76594298
200611A00019	6/11/2020	0.88	12/11/2025	6/11/2020	123.80504	117.5632696	111.6690374	106.101156	100.8398516	95.86665746	91.16432019	86.71671295	82.50875537
200611A00020	6/11/2020	0.81	6/11/2025	6/11/2020	121.27951	115.7235715	110.4508942	105.4455039	100.6924228	96.17759856	91.88784126	87.81076543	83.93473598

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200629A00020	6/29/2020	1.4	6/28/2030	6/29/2020	147.11475	133.8302153	121.83605	111.0004277	101.2056165	92.34640895	84.32872985	77.06840626	70.4900789
200629A00021	6/29/2020	1.21	6/29/2028	6/29/2020	136.9422	126.9116863	117.676009	109.1681757	101.3271745	94.09741224	87.42820519	81.27332094	75.59056513
200708A00011	7/10/2020	2.87	7/10/2031	7/10/2020	170.31779	154.2538265	139.8655009	126.9682394	115.3987206	105.0123309	95.68093281	87.29091002	79.74145372
200826A00035	8/28/2020	0.78	8/28/2023	8/28/2020	113.13587	109.8808947	106.7358237	103.6963535	100.7583739	97.91795778	95.17135251	92.51497056	89.94538156
200424A00014	4/28/2020	1.01	4/23/2025	4/28/2020	121.6937	116.2919592	111.158558	106.2787628	101.6387257	97.22542967	93.02663461	89.03082614	85.22716878
200428A00003	4/29/2020	1.01	4/29/2025	4/29/2020	121.77132	116.3473276	111.1935873	106.2952125	101.6382168	97.20945637	92.99657424	88.98794858	85.17264495
200429A00021	5/4/2020	0.97	4/29/2025	5/4/2020	121.56964	116.1504673	111.0013762	106.107484	101.4548118	97.03022295	92.8213669	88.81662819	85.00507836
200429A00054	4/29/2020	1.04	4/29/2025	4/29/2020	121.92258	116.4949729	111.3377457	106.4360089	101.7757705	97.34388143	93.12797974	89.11643887	85.29831989
200429A00061	4/29/2020	1.66	10/29/2029	4/29/2020	147.1302	134.7970559	123.5848112	113.3858747	104.1034971	95.6506265	87.94889108	80.9276933	74.5234028
200429A00062	4/29/2020	0.65	10/29/2021	4/29/2020	104.80505	103.6282005	102.4775446	101.3522201	100.251399	99.17428885	98.1201312	97.08819953	96.07779767
200415A00036	4/15/2020	0.91	10/15/2024	4/15/2020	118.78891	114.0922772	109.6057581	105.3188368	101.2215797	97.30460312	93.55903914	89.97650448	86.5490712
200417A00002	4/17/2020	0.96	4/17/2025	4/17/2020	121.30988	115.9393648	110.8348948	105.9819051	101.3667049	96.97642209	92.79894998	88.82289757	85.03754318
200421A00021	4/21/2020	0.56	4/21/2023	4/21/2020	111.48121	108.6388501	105.8833656	103.2115643	100.6203921	98.10692742	95.66837474	93.30205786	91.00541411
200421A00024	4/24/2020	0.8	10/16/2023	4/24/2020	113.80765	110.3854904	107.0837285	103.8974379	100.8219242	97.85271304	94.98553844	92.21633152	89.54121017
200423A00017	4/23/2020	1.82	4/23/2035	4/23/2020	178.05481	155.1689573	135.4512848	118.4459016	103.7646109	91.07656733	80.09955715	70.59264101	62.34993999
200423A00020	4/28/2020	0.68	4/15/2022	4/28/2020	106.75667	105.107699	103.4927285	101.9107877	100.3609398	98.84228331	97.35394984	95.89510293	94.46493643
200403A00025	4/3/2020	0.91	4/3/2024	4/3/2020	116.32685	112.315328	108.4629461	104.7625243	101.2072516	97.79066075	94.50660946	91.34926174	88.31307102
200406A00053	4/6/2020	1.13	4/7/2025	4/6/2020	122.02747	116.6739187	111.5839813	106.7433056	102.138397	97.75656347	93.58586295	89.61505528	85.833557
200408A00011	4/8/2020	0.82	9/26/2022	4/8/2020	109.04147	106.8794877	104.7715309	102.7159003	100.710963	98.75514862	96.84694676	94.98490409	93.16762179
200413A00012	4/13/2020	0.64	4/13/2023	4/13/2020	111.59729	108.7785306	106.0453583	103.3946534	100.8234291	98.32882748	95.90811219	93.55866292	91.27796938
200414A00014	4/14/2020	0.76	4/12/2024	4/14/2020	116.62622	112.5598836	108.6562047	104.9077825	101.3075983	97.84899176	94.52564032	91.33153975	88.26098634
200415A00023	4/15/2020	1.71	4/15/2030	4/15/2020	149.78207	136.6546591	124.7740531	114.0154478	104.267119	95.42899398	87.41138356	80.13385665	73.52424275
200330A00038	3/30/2020	1.79	3/29/2030	3/30/2020	150.46771	137.3739666	125.5173115	114.7744891	105.0351089	96.2002409	88.18117386	80.89831292	74.28020167
200330A00064	3/30/2020	0.83	3/30/2023	3/30/2020	111.40809	108.64697	105.9685129	103.3697527	100.8478501	98.40008498	96.02385127	93.71665088	91.47608873
200331A00024	3/31/2020	0.64	3/31/2023	3/31/2020	111.43185	108.6561768	105.9639131	103.352056	100.8177301	98.35818187	95.97077331	93.65297633	91.40236747
200401A00013	4/1/2020	1.01	4/1/2025	4/1/2020	121.35385	116.0365361	110.9804554	106.171423	101.5961003	97.24193914	93.09713082	89.15055832	85.39175215
200402A00009	4/2/2020	1.03	4/2/2025	4/2/2020	121.46579	116.1424564	111.0807476	106.2664548	101.6862135	97.32745179	93.17833867	89.22773671	85.46515752
200403A00015	4/3/2020	0.73	4/4/2022	4/3/2020	106.69999	105.0843487	103.5016275	101.950899	100.4312736	98.94189417	97.48193445	96.05059787	94.64711604
200324A00066	3/26/2020	1.81	3/26/2025	3/26/2020	125.22195	119.8342006	114.7089958	109.832163	105.1903703	100.7710722	96.56245829	92.55340684	88.73344053
200325A00042	3/25/2020	1.58	3/25/2024	3/25/2020	118.73582	114.7094092	110.841232	107.1242102	103.5516232	100.1170871	96.81453584	93.63820379	90.58260884
200325A00044	3/25/2020	1.7	12/23/2024	3/25/2020	123.31347	118.2896036	113.4983316	108.9275464	104.5658504	100.4025059	96.42739217	92.63096612	89.00422538
200327A00022	3/27/2020	0.9	3/27/2023	3/27/2020	111.55544	108.8016732	106.1300698	103.5376925	101.0217281	98.57948125	96.20836907	93.90591539	91.66974577
200327A00039	3/27/2020	0.84	3/28/2022	3/27/2020	106.7846	105.1891141	103.6258168	102.0938193	100.5922621	99.12031657	97.67718346	96.26209185	94.87429775

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200327A00051	3/27/2020	0.99	3/27/2025	3/27/2020	122.24671	116.8930981	111.802344	106.9601834	102.353202	97.96878024	93.79504145	89.82080444	86.03553888
200316A00068	3/16/2020	1.05	3/16/2022	3/16/2020	106.95348	105.3922159	103.8617785	102.3613352	100.8900791	99.44723145	98.03204106	96.64378247	95.28175512
200317A00045	3/19/2020	1.43	3/19/2025	3/19/2020	123.24975	117.9319386	112.8727746	108.0583426	103.4755463	99.11205889	94.95627322	90.99725639	87.22470684
200318A00013	3/18/2020	1.5	3/18/2025	3/18/2020	123.57902	118.2569181	113.1934146	108.3746076	103.7874133	99.4195158	95.25931803	91.29589591	87.51895574
200319A00037	3/19/2020	0.99	6/18/2021	3/19/2020	103.4125	102.6512208	101.9010994	101.1618943	100.4333686	99.7152922	99.00744141	98.30959902	97.6215539
200320A00026	3/20/2020	2.11	3/20/2029	3/20/2020	148.80316	137.2618253	126.7018342	117.0346043	108.1799763	100.0653735	92.62504914	85.79941187	79.53442092
200324A00012	3/25/2020	1.78	3/25/2025	3/25/2020	125.05882	119.6783074	114.5598796	109.6893961	105.0535548	100.6398375	96.43645946	92.43232238	88.61697086
200313A00019	3/13/2020	1.55	3/13/2026	3/13/2020	128.98327	122.2720362	115.9487903	109.98913	104.3703143	99.0711383	94.07182152	89.35390518	84.90015726
200316A00015	3/16/2020	0.99	3/14/2022	3/16/2020	106.85237	105.2975718	103.7733722	102.2789418	100.8134826	99.37622445	97.9664239	96.5833632	95.22634909
200316A00042	3/16/2020	1.23	3/15/2024	3/16/2020	117.28176	113.3144013	109.5020118	105.8377131	102.3149671	98.92756085	95.66958836	92.53543367	89.51975499
200316A00048	3/16/2020	1.11	3/16/2023	3/16/2020	111.96315	109.2381682	106.5934928	104.0262871	101.5338341	99.11352912	96.76287455	94.47947486	92.26103158
200316A00049	3/16/2020	1.25	3/14/2025	3/16/2020	122.29886	117.0201055	111.9976206	107.2176467	102.6672383	98.3342085	94.20707993	90.27503996	86.52789867
200316A00050	3/16/2020	1.54	3/16/2027	3/16/2020	133.85737	125.6741358	118.0406548	110.9172256	104.2672118	98.0567869	92.25470524	86.83209241	81.76225408
200309A00048	3/9/2020	1.11	3/9/2027	3/9/2020	130.62746	122.5778779	115.0695137	108.0633289	101.5232863	95.41610738	89.71104836	84.37969474	79.39577384
200310A00020	3/10/2020	1.1	3/10/2025	3/10/2020	121.51307	116.2660519	111.2733832	106.5214377	101.9973909	97.68916769	93.5853947	89.67535563	85.94895002
200310A00021	3/10/2020	1.1	3/10/2025	3/10/2020	121.51307	116.2660519	111.2733832	106.5214377	101.9973909	97.68916769	93.5853947	89.67535563	85.94895002
200311A00043	3/11/2020	1.3	3/11/2025	3/11/2020	122.50252	117.2291591	112.2112788	107.4351885	102.8880066	98.55760448	94.43255857	90.50210546	86.75610044
200312A00015	3/12/2020	1.23	3/10/2025	3/12/2020	122.14734	116.8856039	111.8787343	107.1130837	102.5758062	98.25480621	94.13869089	90.21672556	86.47879224
200312A00036	3/12/2020	1.04	3/11/2022	3/12/2020	106.88868	105.342486	103.8265559	102.340072	100.882249	99.45232919	98.04958074	96.67329707	95.32279555
200304A00011	3/4/2020	0.83	3/4/2022	3/4/2020	106.73633	105.207944	103.7091447	102.2391485	100.7971956	99.38255209	97.9945095	96.63238322	95.29551173
200304A00029	3/4/2020	1.17	3/4/2025	3/4/2020	121.77527	116.5423702	111.5621269	106.8210591	102.3064739	98.00641687	93.90962551	90.00548562	86.28399058
200305A00006	3/5/2020	0.99	3/6/2023	3/5/2020	111.52014	108.8319257	106.2221031	103.6879356	101.2267992	98.83617714	96.51365488	94.2569153	92.06373411
200305A00016	3/5/2020	0.99	3/6/2023	3/5/2020	111.52014	108.8319257	106.2221031	103.6879356	101.2267992	98.83617714	96.51365488	94.2569153	92.06373411
200306A00036	3/6/2020	1.01	3/6/2025	3/6/2020	121.02314	115.8009148	110.8313721	106.1010031	101.5970935	97.30766999	93.22145339	89.32781474	85.61673443
200306A00064	3/6/2020	1.2	3/8/2027	3/6/2020	131.2727	123.20509	115.679272	108.6561971	102.099817	95.97684111	90.25651266	84.91040373	79.91222775
200605A00017	6/5/2020	1.02	6/5/2025	6/5/2020	120.79354	115.6249132	110.7133692	106.0446182	101.6052505	97.38267627	93.36507025	89.54132065	85.90098177
200605A00014	6/5/2020	1.02	6/5/2025	6/5/2020	120.79354	115.6249132	110.7133692	106.0446182	101.6052505	97.38267627	93.36507025	89.54132065	85.90098177
200813A00019	8/13/2020	1.44	8/13/2030	8/13/2020	141.77779	130.2697695	119.8406482	110.3819714	101.7967718	93.99829835	86.90888936	80.45897596	74.58619894
200813A00020	8/13/2020	1.44	8/13/2030	8/13/2020	141.77779	130.2697695	119.8406482	110.3819714	101.7967718	93.99829835	86.90888936	80.45897596	74.58619894
200813A00021	8/13/2020	0.84	8/13/2025	8/13/2020	120.56183	115.2073082	110.1280208	105.308334	100.733579	96.389991	92.26464955	88.34542201	84.6209117
200605A00016	6/5/2020	1.02	6/5/2025	6/5/2020	120.79354	115.6249132	110.7133692	106.0446182	101.6052505	97.38267627	93.36507025	89.54132065	85.90098177
200911A00013	9/11/2020	0.69	9/11/2025	9/11/2020	120.07324	114.6531921	109.5160788	104.6455767	100.026388	95.64417329	91.48548622	87.53771339	83.78901834
200709A00021	7/9/2020	0.83	7/9/2025	7/9/2020	111.25443	108.4502984	105.7520005	103.1546223	100.6535126	98.2442703	95.9227285	93.68494071	91.5271675

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200709A00025	7/9/2020	1.37	7/9/2030	7/9/2020	125.319	118.920698	112.9715585	107.4349881	102.2776844	97.46931971	92.98225344	88.79127461	84.87337049
200813A00023	8/13/2020	0.86	10/14/2025	8/13/2020	121.30988	115.7533227	110.4913543	105.5066934	100.7831713	96.30564972	92.05994976	88.03278559	84.21170354
200709A00024	7/9/2020	0.83	7/9/2025	7/9/2020	111.25443	108.4502984	105.7520005	103.1546223	100.6535126	98.2442703	95.9227285	93.68494071	91.5271675
200911A00012	9/11/2020	1.18	9/11/2030	9/11/2020	139.20426	127.7898664	117.454756	108.0895649	99.59660238	91.88855059	84.88731143	78.52298777	72.73298174
200911A00011	9/11/2020	1.18	9/11/2030	9/11/2020	139.21207	127.7950882	117.4577046	108.090519	99.59580929	91.8862295	84.88365678	78.51817197	72.72715769
001003A00016	10/3/2000	7.13	10/5/2020	10/3/2000	100.14993	100.1359541	100.1219882	100.1080359	100.0940971	100.0801718	100.0662601	100.0523619	100.0384771
011107A00022	11/7/2001	5.56	11/5/2021	11/7/2001	110.48336	109.2495645	108.0434965	106.8642297	105.7108757	104.5825853	103.4785461	102.3979803	101.3401432
020916A00006	9/16/2002	5.38	9/16/2022	9/16/2002	118.3244	116.0959427	113.9219625	111.8007719	109.7307493	107.7103347	105.7380267	103.8123798	101.9320019
051107A00075	11/7/2005	5.29	11/17/2025	11/7/2005	150.02331	143.1190007	136.5852116	130.3998873	124.5424086	118.9934941	113.7351049	108.750358	104.0234451
060908A00017	9/8/2006	5.27	9/15/2021	9/8/2006	109.00176	107.9368785	106.8929044	105.8692294	104.8652643	103.8804424	102.9142188	101.9660691	101.0354882
071231A00068	12/31/2007	4.93	12/30/2022	12/31/2007	120.48895	117.893421	115.3685673	112.9118996	110.5210386	108.1937102	105.9277405	103.7210495	101.5716468
101130A00010	11/30/2010	3.25	11/30/2020	11/30/2010	101.19702	101.0251545	100.8538665	100.6831571	100.5130232	100.343462	100.1744706	100.0060462	99.83818588
110113A00008	1/13/2011	4.15	1/15/2021	1/13/2011	102.33558	102.0308001	101.7278473	101.4267059	101.1273594	100.8297919	100.5339873	100.23993	99.94760435
110302A00006	3/2/2011	4.26	3/15/2021	3/2/2011	103.6883	103.2086676	102.7334845	102.2626897	101.7962224	101.3340231	100.876033	100.4221948	99.97245196
110818A00006	8/18/2011	3.09	8/30/2021	8/18/2011	106.3685	105.3702017	104.3906188	103.4292252	102.4855179	101.5590121	100.6492407	99.75575322	98.87811543
110824A00004	8/24/2011	3.11	8/30/2023	8/24/2011	121.05965	117.6619294	114.3784421	111.2047116	108.1364632	105.1696134	102.3002607	99.52467565	96.83929282
111024A00022	10/24/2011	3.11	10/30/2023	10/24/2011	122.29045	118.6712548	115.1797412	111.8106405	108.5589332	105.419838	102.3887993	99.46147464	96.63372344
111201A00005	12/1/2011	3.16	12/15/2021	12/1/2011	108.54704	107.1965526	105.8796499	104.5950882	103.341686	102.1183189	100.9239162	99.75745726	98.61796917
120126A00006	1/26/2012	2.93	1/31/2022	1/26/2012	108.96239	107.5247502	106.1132122	104.7271281	103.3658667	102.0288174	100.7153891	99.42500918	98.15712325
120202A00020	2/2/2012	2.7	2/15/2022	2/2/2012	108.94257	107.455654	105.996537	104.5645082	103.1588758	101.7789712	100.4241477	99.09378	97.78726281
120209A00012	2/9/2012	2.27	2/16/2021	2/9/2012	102.36055	101.9626372	101.5678228	101.1760724	100.7873501	100.401621	100.0188504	99.63900428	99.26204909
120306A00004	3/6/2012	2.95	3/15/2023	3/6/2012	116.74393	113.9597511	111.2571237	108.633173	106.0851478	103.6104104	101.2064319	98.87078584	96.60114447
120307A00002	3/7/2012	2.21	3/15/2021	3/7/2012	102.79666	102.3187402	101.8452678	101.3761837	100.911427	100.4509377	99.99465709	99.54252754	99.09449238
120312A00009	3/12/2012	2.72	3/15/2024	3/12/2012	123.60985	119.5080525	115.5657762	111.7759453	108.1318351	104.627055	101.255531	98.01148727	94.88943043
120320A00005	3/20/2012	3.18	3/30/2022	3/20/2012	110.46295	108.8314197	107.2328659	105.6663702	104.1310489	102.6260501	101.1505523	99.7037633	98.2849186
120411A00013	4/11/2012	3.59	4/15/2027	4/11/2012	149.47354	140.6494418	132.4150748	124.7277333	117.5480288	110.8396134	104.5689289	98.70497923	93.21912133
120517A00007	5/17/2012	2.42	5/31/2023	5/17/2012	117.26563	114.2180901	111.2661926	108.4062963	105.6349259	102.9487641	100.3446428	97.81953518	95.37054838
120726A00001	7/26/2012	2.36	8/1/2022	7/26/2012	111.31677	109.3033954	107.3365624	105.4149195	103.5371618	101.7020307	99.90831131	98.15483134	96.44045882
051230A00040	12/30/2005	5.16	12/30/2020	12/30/2005	102.24059	101.9820245	101.7247619	101.4687944	101.2141122	100.9607059	100.7085658	100.4576825	100.2080467
061221A00005	12/21/2006	5.28	12/30/2021	12/21/2006	111.59922	110.1790251	108.7952012	107.4463576	106.1311775	104.8484093	103.5968633	102.3754069	101.1829622
081215A00091	12/15/2008	4.19	12/15/2023	12/15/2008	126.95903	123.1077186	119.396262	115.8186807	112.3692948	109.0427063	105.8337822	102.73764	99.74963358
100809A00029	8/9/2010	4.23	8/15/2025	8/9/2010	140.44048	134.1812721	128.244406	122.6115404	117.2654727	112.1900619	107.3701582	102.7915369	98.44083734
110524A00009	5/24/2011	3.64	6/1/2021	5/24/2011	105.10998	104.3919144	103.6836527	102.9849986	102.2957573	101.6157396	100.9447613	100.2826428	99.6292096

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
110601A00013	6/1/2011	3.49	6/15/2021	6/1/2011	105.29828	104.5368869	103.7865127	103.0469208	102.3178797	101.5991644	100.8905563	100.191843	99.50281803
110802A00008	8/2/2011	3.34	8/16/2021	8/2/2011	106.46466	105.5072264	104.5670171	103.6435702	102.73644	101.8451964	100.9694241	100.1087225	99.2627045
111031A00013	10/31/2011	2.82	11/1/2021	10/31/2011	107.47966	106.2741278	105.0955771	103.9431095	102.8158662	101.7130261	100.6338031	99.57744462	98.54322989
111223A00006	12/23/2011	2.98	12/30/2021	12/23/2011	108.61301	107.2136077	105.8501962	104.5214049	103.2259277	101.9625233	100.7300113	99.52726892	98.35322691
120709A00016	7/9/2012	3.2	7/15/2027	7/9/2012	148.27195	139.1401451	130.6403655	122.7253854	115.3517504	108.4794598	102.0716739	96.09444872	90.51649302
120907A00024	9/7/2012	2.31	9/16/2024	9/7/2012	125.35717	120.5954687	116.0420079	111.6865646	107.5194738	103.531595	99.71428075	96.05934698	92.55904589
130117A00010	1/17/2013	1.98	1/31/2022	1/17/2013	107.89112	106.4574005	105.0497748	103.667592	102.3102204	100.9770487	99.66748532	98.38095728	97.1169098
130211A00017	2/11/2013	3.27	2/15/2028	2/11/2013	152.85552	142.7194467	133.3372268	124.648672	116.5986956	109.1368579	102.2169521	95.79662866	89.83705529
130213A00039	2/13/2013	1.92	2/16/2021	2/13/2013	102.17173	101.774876	101.3811111	100.9903953	100.6026933	100.2179702	99.83619176	99.45732412	99.08133405
130314A00027	3/14/2013	2.38	3/15/2023	3/14/2013	115.77551	112.9929829	110.2922545	107.670439	105.1247687	102.6525909	100.2513619	97.9186421	95.65209102
130509A00004	5/9/2013	2.4	5/15/2023	5/9/2013	116.36821	113.3957264	110.515157	107.7230592	105.0161463	102.391278	99.84545217	97.3757984	94.97957053
130523A00042	5/28/2013	2.38	5/23/2022	5/28/2013	110.12515	108.3345364	106.5824006	104.867571	103.1889243	101.5453819	99.93590856	98.35950953	96.81522884
130712A00004	7/12/2013	2.82	7/15/2021	7/12/2013	105.38077	104.5273581	103.6877603	102.8616422	102.0486808	101.2485632	100.4609866	99.68565742	98.92229142
130821A00018	8/21/2013	3.37	8/30/2022	8/21/2013	114.22346	112.0851273	109.9981383	107.9609378	105.9720286	104.0299687	102.133369	100.2808912	98.47124514
131106A00003	11/6/2013	3.57	11/15/2023	11/6/2013	123.47529	119.7994878	116.2543637	112.834465	109.5346075	106.3498564	103.2755124	100.3070988	97.44034933
131113A00040	11/13/2013	2.8	11/16/2020	11/13/2013	100.84426	100.7124566	100.5810116	100.4499237	100.3191912	100.1888129	100.0587872	99.92911258	99.79978771
131217A00024	12/17/2013	4.34	1/2/2029	12/17/2013	169.11679	157.0113643	145.8906083	135.6684351	126.2667463	117.6146522	109.6477684	102.3075853	95.54090176
140204A00007	2/4/2014	2.68	2/16/2021	2/4/2014	102.46774	102.0701784	101.675708	101.2842908	100.8958914	100.5104749	100.1280069	99.74845368	99.37178188
050923A00096	9/23/2005	4.86	9/22/2025	9/23/2005	146.10167	139.5135705	133.2710501	127.35403	121.7437109	116.4224798	111.3738296	106.5822831	102.0333237
051107A00074	11/7/2005	5.24	11/16/2020	11/7/2005	101.18295	101.0505638	100.9185399	100.7868766	100.6555725	100.5246259	100.3940354	100.2637995	100.1339167
100930A00008	9/30/2010	3.82	9/30/2025	9/30/2010	139.24147	132.842304	126.7815339	121.039404	115.5974143	110.4382372	105.5456371	100.9043958	96.50024308
101208A00006	12/8/2010	4.12	12/15/2020	12/8/2010	101.64692	101.432053	101.218104	101.005071	100.7929481	100.5817293	100.3714088	100.1619808	99.95343963
110805A00013	8/5/2011	3.43	8/16/2021	8/5/2011	106.40256	105.447501	104.50959	103.5883713	102.6834015	101.7942533	100.9205137	100.0617843	99.21768033
110805A00014	8/5/2011	4.06	8/17/2026	8/5/2011	147.70602	139.8697562	132.5085722	125.5910672	119.0880741	112.972491	107.2191247	101.804547	96.70696229
111006A00023	10/6/2011	3.81	10/15/2026	10/6/2011	147.29562	139.2457495	131.6969745	124.6153005	117.9692212	111.7295208	105.8690955	100.36279	95.18724708
120112A00013	1/12/2012	2.76	1/16/2024	1/12/2012	122.61463	118.7324124	114.9948626	111.3957473	107.9291389	104.5894013	101.3711729	98.26935198	95.27908207
120228A00010	2/28/2012	2.34	3/2/2022	2/28/2012	108.94685	107.4071195	105.8970673	104.4159053	102.9628731	101.537237	100.1382879	98.76534109	97.41773461
120330A00009	3/30/2012	2.98	3/30/2022	3/30/2012	110.1507	108.52173	106.9256854	105.3616536	103.8287521	102.3261303	100.8529678	99.40847355	97.99188423
120824A00023	8/24/2012	2.4	8/30/2022	8/24/2012	111.87407	109.7673239	107.7111265	105.7039551	103.7443386	101.8308601	99.96215459	98.13690646	96.35384757
121116A00006	11/16/2012	2.64	11/13/2025	11/16/2012	133.48051	127.0767182	121.0207651	115.2918524	109.8705428	104.7386608	99.87920346	95.27625853	90.91492805
130424A00004	4/24/2013	2.46	4/24/2025	4/24/2013	130.04712	124.4107531	119.0526934	113.9576812	109.111378	104.5003058	100.1117912	95.93391241	91.95545063
130424A00005	4/24/2013	3.07	4/24/2030	4/24/2013	168.10716	153.8938236	141.0156719	129.3395759	118.746353	109.1292379	100.392529	92.45038915	85.22578202
130513A00007	5/13/2013	2.54	5/15/2023	5/13/2013	116.75896	113.7810532	110.895188	108.0979192	105.3859564	102.7561551	100.2055097	97.73114617	95.33031495

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
130517A00013	5/17/2013	2.07	5/17/2022	5/17/2013	109.82388	108.0479743	106.3100632	104.6090012	102.9436857	101.3130582	99.71610217	98.15184062	96.61933442
130926A00009	9/26/2013	4	10/2/2028	9/26/2013	166.23789	154.5345704	143.7633012	133.8443891	124.7053694	116.2803119	108.5092	101.3373708	94.71501148
131210A00003	12/10/2013	2.67	12/15/2020	12/10/2013	101.3696	101.1548217	100.9409706	100.7280391	100.5160214	100.3049113	100.0947031	99.88539089	99.6769688
140113A00012	1/13/2014	3.48	1/17/2023	1/13/2014	116.92459	114.326016	111.7991866	109.3416449	106.9510369	104.6251062	102.3616895	100.1587113	98.0141803
140423A00035	4/23/2014	2.71	4/23/2021	4/23/2014	103.66503	103.0702702	102.4823305	101.9010926	101.3264422	100.7582678	100.1964603	99.64091308	99.09152179
140820A00025	8/20/2014	2.59	8/19/2022	8/20/2014	112.44707	110.3607955	108.3239845	106.3351578	104.3928924	102.4958172	100.6426104	98.831998	97.06275102
140911A00027	9/11/2014	3.18	9/16/2024	9/11/2014	128.22636	123.429872	118.8418212	114.4520166	110.2508237	106.2291287	102.3783077	98.69019715	95.15706731
141024A00009	10/24/2014	2.05	10/26/2020	10/24/2014	100.42289	100.3502446	100.2777178	100.205305	100.1330059	100.0608202	99.98874764	99.91678798	99.84494095
001003A00018	10/3/2000	7.13	10/5/2020	10/3/2000	100.14993	100.1359541	100.1219882	100.1080359	100.0940971	100.0801718	100.0662601	100.0523619	100.0384771
020920A00012	9/20/2002	5.4	9/20/2022	9/20/2002	118.47202	116.2289716	114.041048	111.9065377	109.823791	107.791221	105.8073008	103.8705608	101.9795861
060308A00014	3/8/2006	5.44	3/16/2026	3/8/2006	152.73508	145.3377084	138.3577627	131.7693002	125.5481275	119.6716747	114.118878	108.8700716	103.9068871
060808A00022	8/8/2006	5.57	6/15/2026	8/8/2006	155.99385	148.1483731	140.7623915	133.8062297	127.2523011	121.0749478	115.2502947	109.7561152	104.5717077
081219A00069	12/19/2008	4.26	12/22/2023	12/19/2008	126.6442	122.7924266	119.0808907	115.5035782	112.0547767	108.7290582	105.5212626	102.4264825	99.44004865
091210A00005	12/10/2009	5.08	12/16/2024	12/10/2009	138.78971	133.4482323	128.3488338	123.4790824	118.8272618	114.3823271	110.1338616	106.072037	102.1875761
101006A00011	10/6/2010	2.9	10/15/2020	10/6/2010	100.27941	100.2375135	100.1956709	100.1538812	100.1121444	100.0704604	100.028829	99.98725011	99.94572369
110103A00009	1/3/2011	3.99	1/3/2022	1/3/2011	110.22106	108.8002622	107.4150064	106.0639624	104.7458673	103.4595198	102.2037768	100.9775494	99.7798001
110104A00019	1/4/2011	3.78	1/15/2021	1/4/2011	102.2648	101.9597041	101.6564462	101.355007	101.0553701	100.7575192	100.4614383	100.1671114	99.87452298
111006A00021	10/6/2011	2.93	10/15/2020	10/6/2011	100.27477	100.2329339	100.1911526	100.1494235	100.1077466	100.0661218	100.0245489	99.98302787	99.94155861
121116A00022	11/16/2012	2.78	11/16/2029	11/16/2012	162.01217	148.7758701	136.7360924	125.7779544	115.7981853	106.7038932	98.41147131	90.84562514	83.93850609
130211A00015	2/11/2013	1.88	2/16/2021	2/11/2013	102.15615	101.7593338	101.365606	100.9749271	100.5872618	100.2025753	99.82083306	99.44200151	99.06604732
130212A00017	2/12/2013	2.29	2/15/2023	2/12/2013	114.53516	111.8716088	109.2838321	106.7692417	104.3253569	101.9497963	99.64027272	97.39458929	95.21063496
131003A00005	10/3/2013	2.65	10/15/2020	10/3/2013	100.26896	100.2270726	100.1852387	100.1434577	100.1017296	100.0600542	100.0184314	99.9768612	99.93534341
131024A00019	10/24/2013	3.23	10/30/2023	10/24/2013	122.68854	119.0628659	115.5650464	112.1898065	108.9321208	105.7872025	102.7504908	99.81763798	96.98449867
140307A00010	3/7/2014	2.63	3/15/2021	3/7/2014	102.99236	102.5138928	102.0398811	101.5702615	101.1049727	100.643955	100.1871495	99.73449849	99.28594531
140827A00037	8/27/2014	2.55	8/30/2021	8/27/2014	105.85814	104.8624877	103.8855082	102.9266842	101.9855132	101.0615113	100.154212	99.26316559	98.38793842
140908A00062	9/8/2014	2.45	5/28/2021	9/8/2014	104.12136	103.4204668	102.7289833	102.0467253	101.3735092	100.7091561	100.0534919	99.40634698	98.76755618
140908A00065	9/8/2014	2.63	2/28/2022	9/8/2014	109.08698	107.5563079	106.0549615	104.5821696	103.1371853	101.7192872	100.3277783	98.96198522	97.62125676
150105A00027	1/5/2015	2.23	1/5/2022	1/5/2015	107.93617	106.529338	105.1571085	103.8182047	102.5114158	101.235589	99.98962641	98.77248194	97.58315794
150112A00014	1/12/2015	1.86	1/15/2021	1/12/2015	101.68992	101.3859473	101.083807	100.7834803	100.4849509	100.1882024	99.89321895	99.59998459	99.30848372
150407A00008	4/7/2015	1.78	4/7/2021	4/7/2015	102.96042	102.414315	101.8739917	101.3393628	100.8103384	100.2868308	99.76875388	99.2560233	98.74855655
150408A00004	4/8/2015	2.17	4/10/2023	4/8/2015	115.67653	112.8124283	110.0346971	107.3402015	104.7259415	102.1890452	99.72676282	97.33646055	95.01561469
010824A00028	8/24/2001	6.24	8/24/2021	8/24/2001	109.17396	108.1799915	107.2042446	106.2462208	105.3054392	104.3814362	103.4737646	102.581993	101.7057051
011107A00031	11/7/2001	5.56	11/5/2021	11/7/2001	110.48336	109.2495645	108.0434965	106.8642297	105.7108757	104.5825853	103.4785461	102.3979803	101.3401432

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
050902A00032	9/2/2005	4.69	8/22/2025	9/2/2005	144.36036	137.9362504	131.8440109	126.0646697	120.5804416	115.3746453	110.431629	105.7367016	101.276069
051003A00009	10/3/2005	5.15	10/15/2025	10/3/2005	147.00245	140.3457392	134.040584	128.0664076	122.4039468	117.0351652	111.9431682	107.1121247	102.5271938
081205A00033	12/5/2008	4.77	12/7/2023	12/5/2008	128.04733	124.2217648	120.5337365	116.977425	113.5472953	110.2380836	107.0447824	103.9626259	100.9870762
100923A00051	9/23/2010	3.4	9/30/2021	9/23/2010	107.2852	106.1850545	105.1074587	104.0517227	103.0171863	102.0032154	101.0092013	100.0345588	99.07872575
110222A00011	2/22/2011	4.35	3/2/2021	2/22/2011	103.43484	102.9941198	102.5571534	102.1238931	101.694292	101.2683039	100.8458833	100.4269856	100.0115669
110818A00012	8/18/2011	2.86	8/31/2022	8/18/2011	113.21399	111.0829845	109.0032593	106.9732539	104.991471	103.0564685	101.1668577	99.32130019	97.51850635
110825A00016	8/25/2011	3.06	8/31/2022	8/25/2011	113.61802	111.4828464	109.3990297	107.3650138	105.379299	103.440441	101.5470488	99.69778201	97.8913489
120113A00013	1/13/2012	3.87	1/15/2032	1/13/2012	187.0288	169.1842939	153.2556601	139.024868	126.2998387	114.9112319	104.7096447	95.56316893	87.355258
120119A00010	1/18/2012	2.43	1/31/2022	1/18/2012	108.51809	107.0797201	105.6675328	104.2808693	102.9190957	101.5815984	100.2677836	98.97707629	97.7089197
120127A00018	1/27/2012	3.64	2/1/2027	1/27/2012	148.33866	139.8431088	131.8988152	124.4670285	117.5119123	111.0003144	104.9015524	99.18721784	93.83099695
121101A00011	11/1/2012	2.03	11/1/2022	11/1/2012	112.58236	110.2651353	108.0078112	105.8084124	103.6650471	101.5759006	99.5392314	97.55336782	95.61670431
130107A00002	1/7/2013	3.22	1/18/2028	1/7/2013	151.90412	141.9163702	132.6649314	124.091447	116.1424857	108.7690988	101.926422	95.57331457	89.67203127
130211A00025	2/11/2013	1.88	2/16/2021	2/11/2013	102.15615	101.7593338	101.365606	100.9749271	100.5872618	100.2025753	99.82083306	99.44200151	99.06604732
130212A00015	2/12/2013	1.91	2/16/2021	2/12/2013	102.16783	101.7709904	101.3772348	100.9865283	100.5988355	100.2141215	99.83235208	99.45349347	99.07751237
130405A00007	4/5/2013	2.91	4/17/2028	4/5/2013	152.9652	142.4898213	132.8142514	123.8730292	115.60638	107.9596967	100.8830681	94.33085132	88.26128635
130508A00013	5/8/2013	2.23	5/15/2023	5/8/2013	116.44858	113.462777	110.5695413	107.7654005	105.0470365	102.4112792	99.85509901	97.37559892	94.97000808
130531A00020	5/31/2013	2.5	5/30/2023	5/31/2013	117.47531	114.4279587	111.4761465	108.6162381	105.8447654	103.1584177	100.554033	98.02859025	95.57920204
130702A00018	7/2/2013	3.17	7/17/2023	7/2/2013	120.35934	117.1144448	113.9749408	110.9367557	107.9960057	105.1489824	102.3921435	99.72210369	97.13562709
140411A00009	4/11/2014	3.1	4/11/2024	4/11/2014	125.58059	121.351136	117.2890122	113.3866457	109.6368553	106.0328249	102.5680828	99.2364823	96.03218301
140701A00002	7/1/2014	2.84	7/1/2022	7/1/2014	111.64835	109.7242102	107.8434507	106.0046751	104.2065499	102.4477985	100.7271986	99.04357868	97.39581596
140702A00034	7/2/2014	2.7	7/1/2022	7/2/2014	111.74923	109.8177085	107.9298388	106.084214	104.2794891	102.514377	100.7876454	99.09811355	97.44464973
121227A00024	12/27/2012	2.2	12/30/2021	12/27/2012	107.6003	106.2079444	104.8514553	103.5294644	102.2406691	100.9838315	99.75777458	98.56137864	97.39357755
130523A00038	5/28/2013	2.58	5/23/2023	5/28/2013	117.01206	114.0056465	111.092742	108.2698198	105.5335134	102.8806076	100.3080301	97.81284437	95.39224209
130821A00019	8/21/2013	3.81	8/29/2025	8/21/2013	139.72831	133.3972695	127.3961015	121.7058353	116.3086907	111.1879969	106.328117	101.7143793	97.33301201
131217A00023	12/17/2013	3.74	1/2/2024	12/17/2013	125.07308	121.2118314	117.4925066	113.9089734	110.4554112	107.1262908	103.9163578	100.8206162	97.83431393
140423A00036	4/23/2014	4.03	4/23/2029	4/23/2014	168.49965	155.9482178	144.4540562	133.9217916	124.2651495	115.4060417	107.273749	99.80418962	92.9392639
140710A00026	7/10/2014	2.36	7/15/2021	7/10/2014	105.00651	104.1547907	103.3168653	102.4924007	101.6810741	100.8825732	100.0965954	99.32284746	98.56104546
140710A00027	7/10/2014	2.8	7/17/2023	7/10/2014	119.2523	116.023796	112.9002718	109.877672	106.9521263	104.1199387	101.3775788	98.72167296	96.14899633
140820A00026	8/20/2014	2.94	8/19/2024	8/20/2014	127.53031	122.8213854	118.3139807	113.9984039	109.8654812	105.9065265	102.1133121	98.47804278	94.99333035
140827A00038	8/27/2014	3.07	8/30/2024	8/27/2014	127.41509	122.6952626	118.1782913	113.8543752	109.7142404	105.7491079	101.9506647	98.31103649	94.82276198
140908A00061	9/8/2014	2.39	2/26/2021	9/8/2014	102.52556	102.0988244	101.6756343	101.2559437	100.8397093	100.4268887	100.0174399	99.61132187	99.20849415
140908A00064	9/8/2014	2.57	11/30/2021	9/8/2014	107.53309	106.2376787	104.9733787	103.7390795	102.5337233	101.3563013	100.2058512	99.08145426	97.98223318
141009A00026	10/9/2014	2.23	10/9/2020	10/9/2014	100.14703	100.1219574	100.0969148	100.0718993	100.0469109	100.0219496	99.99701524	99.97210784	99.94722734

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
141017A00029	10/17/2014	2.02	10/19/2020	10/17/2014	100.30737	100.2543208	100.2013454	100.148443	100.0956133	100.0428563	99.99017176	99.93755953	99.88501947
150121A00004	1/21/2015	1.97	1/24/2022	1/21/2015	107.80082	106.375079	104.9777067	103.6078848	102.2648239	100.947765	99.65597819	98.38876079	97.14543648
150601A00485	6/1/2015	3.09	6/21/2024	6/1/2015	126.80122	122.3068596	117.9983593	113.8669015	109.9041444	106.1021949	102.4535809	98.95122639	95.58842684
150601A00494	6/1/2015	2.37	6/25/2021	6/1/2015	104.63334	103.8443325	103.0671979	102.3016702	101.5474907	100.8044086	100.07218	99.3505686	98.63934452
150601A00606	6/1/2015	2.39	3/31/2021	6/1/2015	103.07399	102.5491097	102.0295579	101.5152528	101.0061156	100.5020685	100.0030358	99.50894296	99.01971705
150601A00613	6/1/2015	2.63	3/31/2022	6/1/2015	109.56389	107.936697	106.3424661	104.7802761	103.2492423	101.748512	100.2772632	98.83470278	97.42006579
150601A00665	6/1/2015	3.82	1/14/2033	6/1/2015	192.733	172.8810179	155.3262244	139.7876241	126.020067	113.8095062	102.9689035	93.33469214	84.76371915
150601A00666	6/1/2015	3.88	1/16/2035	6/1/2015	208.05714	183.6998948	162.5525423	144.169195	128.1683018	114.2230601	102.0532993	91.41860364	82.11247954
150601A01053	6/1/2015	5.28	2/26/2027	6/1/2015	162.04247	152.919083	144.3886593	136.4092197	128.9419772	121.9510771	115.4033608	109.2681495	103.5170465
150610A00037	6/10/2015	2.48	6/10/2022	6/10/2015	110.95833	109.0994751	107.2815456	105.5032614	103.7633927	102.0607612	100.3942371	98.76273687	97.16522041
150626A00039	6/26/2015	3.23	6/26/2025	6/26/2015	134.12258	128.1973659	122.5721814	117.2300938	112.1552318	107.3327092	102.7485572	98.38966248	94.24370907
020619A00062	6/19/2002	5.86	6/20/2022	6/19/2002	117.24605	115.2973708	113.391973	111.5284807	109.7055768	107.9220004	106.1765432	104.4680472	102.7954017
020627A00001	6/27/2002	6.07	6/27/2022	6/27/2002	117.46283	115.49624	113.5736011	111.6935063	109.854608	108.0556165	106.2952967	104.5724648	102.8859863
060613A00029	6/13/2006	5.47	6/15/2021	6/13/2006	106.73913	105.9718451	105.2156407	104.4702781	103.7355247	103.0111545	102.2969481	101.5926919	100.8981786
081217A00076	12/17/2008	3.86	12/22/2023	12/17/2008	125.97351	122.1155674	118.3986008	114.8165413	111.3636305	108.0343974	104.8236419	101.7264193	98.73802548
090226A00006	2/26/2009	4.55	3/1/2024	2/26/2009	130.12052	125.9485378	121.9359004	118.0756422	114.3611377	110.7860864	107.3444957	104.0306632	100.8391619
100824A00009	8/24/2010	3.91	9/2/2025	8/24/2010	139.11205	132.8213049	126.8581029	121.2036185	115.8402046	110.7513146	105.9214279	101.3359812	96.98130428
110201A00004	2/1/2011	4.25	2/16/2021	2/1/2011	103.07924	102.6802109	102.2842832	101.891417	101.5015769	101.1147279	100.7308356	100.3498661	99.97178593
110302A00007	3/2/2011	4.86	3/16/2026	3/2/2011	149.19983	141.9030114	135.0194143	128.5233083	122.3907012	116.5992126	111.1279573	105.9574377	101.0694443
110505A00021	5/5/2011	4.08	5/17/2021	5/5/2011	104.98135	104.3102368	103.6477172	102.9936291	102.3478121	101.7101097	101.0803693	100.4584422	99.8441834
110505A00022	5/5/2011	4.59	5/15/2026	5/5/2011	148.98598	141.4669774	134.3854418	127.7134011	121.4248246	115.49548	109.9027988	104.6257528	99.64474067
110822A00010	8/22/2011	2.8	8/30/2021	8/22/2011	106.24404	105.2442005	104.2631429	103.3003388	102.3552823	101.4274863	100.5164812	99.62181409	98.74304862
110919A00026	9/19/2011	2.66	9/30/2021	9/19/2011	106.69498	105.5955138	104.5186458	103.4636843	102.4299661	101.4168546	100.4237384	99.45003006	98.49516494
111024A00027	10/24/2011	3.11	10/30/2023	10/24/2011	122.29045	118.6712548	115.1797412	111.8106405	108.5589332	105.419838	102.3887993	99.46147464	96.63372344
120112A00014	1/12/2012	3.43	1/15/2032	1/12/2012	184.57103	166.6747855	150.7145963	136.4690085	123.7430382	112.3648776	102.1830301	93.06381302	84.88917806
120127A00019	1/27/2012	3.87	1/30/2032	1/27/2012	187.32428	169.3965496	153.3993144	139.1123488	126.3416837	114.9163511	104.6855492	95.51616927	87.2906367
120130A00009	1/30/2012	2.79	1/31/2022	1/30/2012	108.76758	107.3313812	105.9212577	104.5365629	103.1766665	101.8409587	100.5288488	99.23976498	97.97315345
130107A00001	1/7/2013	2.53	1/17/2023	1/7/2013	114.61318	112.0428901	109.5437271	107.1132506	104.749125	102.4491117	100.2110641	98.03292342	95.91271384
130501A00013	5/1/2013	1.82	5/3/2021	5/1/2013	103.30722	102.6839885	102.0682493	101.4598713	100.8587232	100.2646767	99.67760661	99.09739061	98.52390923
130531A00021	5/31/2013	3.22	5/30/2028	5/31/2013	156.51236	145.7247779	135.769487	126.5775661	118.0861644	110.2379331	102.9805153	96.26608605	90.05093736
130606A00013	6/6/2013	2.94	6/15/2023	6/6/2013	118.46354	115.3626039	112.3599001	109.4516457	106.6342304	103.9042103	101.258299	98.69335895	96.20639328
130904A00036	9/4/2013	3.57	9/15/2023	9/4/2013	122.84822	119.3683473	116.0070134	112.7595007	109.6213116	106.588153	103.6559259	100.8207154	98.07878096
130904A00039	9/4/2013	4.19	9/15/2028	9/4/2013	167.62535	155.9374022	145.1736813	135.2556705	126.111929	117.677419	109.8929001	102.7043844	96.06264512

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
131011A00005	10/11/2013	2.97	10/15/2020	10/11/2013	100.27644	100.2346043	100.1928216	100.1510911	100.1094128	100.0677866	100.0262123	99.98468992	99.94321927
011029A00020	10/29/2001	5.73	10/29/2021	10/29/2001	110.67881	109.463457	108.2749652	107.1124503	105.9750654	104.8620003	103.7724794	102.7057597	101.6611292
080909A00042	9/9/2008	4.74	9/11/2023	9/9/2008	126.46391	122.9413525	119.5378769	116.2487752	113.0695526	109.9959179	107.0237728	104.1492021	101.3684648
080910A00065	9/10/2008	5.03	9/15/2023	9/10/2008	126.82691	123.3000626	119.8925037	116.599514	113.4165864	110.3394182	107.3639002	104.4861074	101.7022889
081211A00029	12/11/2008	4.57	12/15/2023	12/11/2008	127.5533	123.7093899	120.0045707	116.4329172	112.9887963	109.6668529	106.4619947	103.3693771	100.3843891
091112A00011	11/12/2009	4.77	11/15/2024	11/12/2009	137.56366	132.3325361	127.335291	122.5600985	117.9957988	113.6318599	109.4583387	105.4658439	101.6455023
101101A00006	11/1/2010	3.34	11/16/2020	11/1/2010	100.91506	100.7831705	100.6516446	100.5204758	100.3896629	100.2592042	100.1290983	99.9993437	99.86993903
110810A00020	8/10/2011	2.86	8/16/2021	8/10/2011	106.03	105.0747299	104.1366597	103.2153253	102.3102813	101.4210982	100.5473612	99.68867028	98.84463879
111024A00009	10/24/2011	2.65	10/30/2020	10/24/2011	100.53817	100.454281	100.3705332	100.2869263	100.2034599	100.1201337	100.0369473	99.95390038	99.87099265
111024A00010	10/24/2011	3.11	10/30/2023	10/24/2011	122.29045	118.6712548	115.1797412	111.8106405	108.5589332	105.419838	102.3887993	99.46147464	96.63372344
111024A00021	10/24/2011	2.65	10/30/2020	10/24/2011	100.53817	100.454281	100.3705332	100.2869263	100.2034599	100.1201337	100.0369473	99.95390038	99.87099265
111024A00026	10/24/2011	2.65	10/30/2020	10/24/2011	100.53817	100.454281	100.3705332	100.2869263	100.2034599	100.1201337	100.0369473	99.95390038	99.87099265
111216A00001	12/16/2011	3.95	12/30/2031	12/16/2011	187.8004	169.9811832	154.0673177	139.8426502	127.1166989	115.7214808	105.5087438	96.34755125	88.12217478
120113A00012	1/13/2012	3.62	1/15/2027	1/13/2012	147.85507	139.439284	131.5664905	124.1986259	117.3004974	110.8395505	104.7856571	99.11092215	93.78950642
120315A00021	3/15/2012	3.12	3/15/2022	3/15/2012	110.09741	108.5137305	106.9612331	105.4390715	103.9464302	102.4825224	101.0465887	99.63789596	98.25573627
120515A00020	5/15/2012	2.28	5/16/2022	5/15/2012	110.1646	108.3886386	106.6506284	104.9494195	103.2839124	101.6530517	100.0558235	98.4912534	96.95840475
120601A00012	6/1/2012	1.93	6/15/2021	6/1/2012	104.16307	103.4063137	102.660533	101.9254878	101.2009473	100.4866873	99.7824901	99.08814394	98.40344302
120709A00015	7/9/2012	2.5	7/15/2022	7/9/2012	111.26871	109.3066644	107.389344	105.5153808	103.6834596	101.892317	100.1407389	98.42755797	96.75165164
121031A00004	10/31/2012	2.07	10/31/2022	10/31/2012	112.6535	110.3386282	108.0835277	105.886234	103.7448617	101.657602	99.62271895	97.63854604	95.70348265
121116A00021	11/16/2012	2.35	11/17/2025	11/16/2012	133.17254	126.7207907	120.621541	114.8536119	109.3972118	104.2338405	99.34619732	94.7180966	90.33438954
130405A00006	4/5/2013	2.41	4/7/2025	4/5/2013	129.48492	123.9222066	118.6319443	113.5993196	108.8104062	104.2521056	99.91209405	95.77877192	91.84121736
130530A00008	5/30/2013	2.29	6/1/2021	5/30/2013	104.08085	103.3680992	102.6650831	101.9716004	101.2874581	100.6124688	99.94644972	99.28922309	98.64061577
130712A00005	7/12/2013	3.25	7/17/2023	7/12/2013	120.5987	117.3502607	114.2073017	111.1657467	108.2217093	105.3714784	102.6115088	99.93841304	97.34895266
130926A00008	9/26/2013	2.91	9/30/2021	9/26/2013	106.95381	105.8528913	104.7745865	103.7182086	102.6830939	101.6686053	100.6741311	99.69908333	98.74289694
010824A00019	8/24/2001	6.24	8/24/2021	8/24/2001	109.17396	108.1799915	107.2042446	106.2462208	105.3054392	104.3814362	103.4737646	102.581993	101.7057051
060613A00028	6/13/2006	5.47	6/15/2021	6/13/2006	106.73913	105.9718451	105.2156407	104.4702781	103.7355247	103.0111545	102.2969481	101.5926919	100.8981786
061220A00034	12/20/2006	5.07	12/30/2021	12/20/2006	111.55149	110.12794	108.740913	107.389013	106.0709155	104.7853621	103.5311561	102.3071589	101.1122865
081209A00008	12/9/2008	4.87	12/15/2023	12/9/2008	128.58837	124.7269856	121.0051763	117.4169939	113.9567886	110.61919	107.3990906	104.2916315	101.2921879
110527A00007	5/27/2011	3.98	6/1/2021	5/27/2011	105.24238	104.5251405	103.8176728	103.1197813	102.4312725	101.7519581	101.0816549	100.4201843	99.76737255
111006A00022	10/6/2011	3.08	10/15/2021	10/6/2011	107.24798	106.1006141	104.9777845	103.8787062	102.8026309	101.7488415	100.7166505	99.70539815	98.71445173
120411A00012	4/11/2012	2.87	4/15/2022	4/11/2012	110.27876	108.6001573	106.9561045	105.3456109	103.7677249	102.2215303	100.7061449	99.22071875	97.76443284
120503A00014	5/3/2012	2.4	5/16/2022	5/3/2012	110.36885	108.5910822	106.8512967	105.1483455	103.4811281	101.8485881	100.2497108	98.68352105	97.14908125
120718A00011	7/18/2012	2.29	7/30/2021	7/18/2012	105.07824	104.1821276	103.3012503	102.4352209	101.5836665	100.7462266	99.92255277	99.11230776	98.31516535

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
120907A00022	9/7/2012	1.88	9/15/2021	9/7/2012	105.63878	104.5921268	103.5661358	102.5601983	101.5737304	100.6061712	99.65698078	98.72563986	97.81164846
120907A00023	9/7/2012	2.05	9/15/2022	9/7/2012	111.83567	109.6711305	107.5598616	105.5002088	103.4905831	101.5294555	99.61535479	97.74686445	95.92262058
121116A00007	11/16/2012	1.99	11/16/2021	11/16/2012	106.59991	105.3550674	104.139173	102.9512262	101.7902718	100.655398	99.54573349	98.46044535	97.39873709
121121A00003	11/21/2012	2.3	11/30/2022	11/21/2012	113.24515	110.8379575	108.4946105	106.2129336	103.9908472	101.8263598	99.71756377	97.66263065	95.6598073
130117A00011	1/17/2013	2.18	1/30/2023	1/17/2013	114.46164	111.8436235	109.2989331	106.8251006	104.4197576	102.0806288	99.80552798	97.59235429	95.43908788
130212A00016	2/12/2013	2.13	2/15/2022	2/12/2013	108.12437	106.6436735	105.1906672	103.7646404	102.3649047	100.9907942	99.64166522	98.31689511	97.01588134
130528A00028	5/28/2013	2.63	5/30/2023	5/28/2013	117.27771	114.2456912	111.3084885	108.462505	105.7043067	103.0306151	100.4382985	97.92436451	95.48595262
130531A00019	5/31/2013	2.09	6/1/2021	5/31/2013	104.04408	103.3301462	102.6259761	101.9313739	101.2461457	100.5701029	99.90306184	99.24484361	98.59527415
131011A00006	10/11/2013	3.28	10/15/2021	10/11/2013	107.46353	106.3149078	105.1908362	104.0905342	103.0132532	101.9582754	100.924913	99.91250605	98.92042118
131029A00011	10/29/2013	2.47	10/30/2020	10/29/2013	100.52312	100.4392461	100.3555108	100.2719164	100.1884625	100.1051487	100.0219748	99.93894034	99.85604502
140113A00011	1/13/2014	2.88	1/15/2021	1/13/2014	101.95542	101.6513802	101.3491655	101.0487588	100.7501437	100.4533042	100.1582244	99.86488862	99.5732813
140131A00024	1/31/2014	2.71	2/1/2021	1/31/2014	102.20992	101.856463	101.5054415	101.1568321	100.81061	100.4667508	100.1252304	99.78602505	99.4491114
140922A00026	9/22/2014	3.02	9/30/2024	9/22/2014	128.72095	123.8391958	119.1722013	114.7093421	110.4405755	106.3564084	102.4478646	98.70645344	95.12414073
141009A00029	10/9/2014	3.5	10/9/2029	10/9/2014	166.41218	153.2508525	141.2563066	130.3182783	120.3374818	111.2244668	102.8985961	95.28713539	88.32444082
140307A00011	3/7/2014	3.19	3/15/2023	3/7/2014	117.89106	115.0808946	112.3531593	109.7049491	107.133477	104.6360718	102.2101722	99.85332172	97.56316338
140313A00030	3/13/2014	3.27	3/15/2024	3/13/2014	125.67066	121.5313419	117.5526405	113.727432	110.0489525	106.5107747	103.1067888	99.8311854	96.67843853
140521A00019	5/21/2014	3.43	5/22/2028	5/21/2014	158.22583	147.4016815	137.4090656	128.1793609	119.6499689	111.7637535	104.4685369	97.71664385	91.46449024
140626A00036	6/26/2014	3.55	6/26/2029	6/26/2014	167.48075	154.5899236	142.8118491	132.0438924	122.1934269	113.176808	104.9184559	97.35003719	90.40973325
140815A00029	8/15/2014	2.56	10/15/2021	8/15/2014	106.68753	105.5434505	104.4238501	103.3279534	102.2550131	101.2043134	100.1751677	99.16691758	98.17893116
140815A00030	8/15/2014	2.96	10/16/2023	8/15/2014	120.8582	117.3229774	113.9111285	110.617627	107.4376796	104.3667168	101.4003818	98.53451841	95.76516116
141009A00027	10/9/2014	2.69	10/11/2022	10/9/2014	113.22835	110.975766	108.7801296	106.639617	104.5524767	102.5170259	100.5316476	98.59478731	96.70495004
141015A00025	10/15/2014	2.48	10/17/2022	10/15/2014	112.88307	110.6161794	108.4069255	106.2534511	104.1539707	102.1067697	100.1102012	98.16268239	96.26269173
141024A00008	10/24/2014	2.52	10/24/2022	10/24/2014	113.51851	111.2152179	108.9709835	106.7838767	104.6520494	102.5737283	100.5472106	98.57086087	96.6431079
141128A00003	11/28/2014	2.62	11/30/2023	11/28/2014	121.24795	117.5422339	113.9704268	110.5268538	107.2061229	104.0031063	100.912925	97.93093528	95.0527152
150316A00043	3/16/2015	2.37	3/16/2023	3/16/2015	115.76721	112.9816141	110.2779965	107.6534623	105.1052348	102.6306526	100.227164	97.89232179	95.62377826
150317A00012	3/17/2015	2.46	3/18/2024	3/17/2015	122.69008	118.5949857	114.6596902	110.8770849	107.2404147	103.7432618	100.3795265	97.14340996	94.02939719
150413A00034	4/13/2015	2.25	4/13/2022	4/13/2015	109.24777	107.5838836	105.9541908	104.3577121	102.793509	101.2606777	99.75834764	98.28568031	96.84186732
150422A00017	4/22/2015	2.16	4/22/2022	4/22/2015	109.25363	107.5624875	105.9064382	104.2844644	102.695588	101.1388685	99.61340037	98.11831181	96.65276316
150422A00019	4/22/2015	2.62	4/22/2025	4/22/2015	129.70368	124.1163225	118.803731	113.7508991	108.94372	104.3689304	100.0140558	95.86735853	91.91779065
150601A00148	6/1/2015	3.45	7/30/2021	6/1/2015	106.16407	105.2609132	104.3731134	103.500281	102.6420397	101.7980259	100.9678878	100.1512853	99.34788917
150601A00149	6/1/2015	3.45	7/30/2021	6/1/2015	106.16407	105.2609132	104.3731134	103.500281	102.6420397	101.7980259	100.9678878	100.1512853	99.34788917
150601A00222	6/1/2015	2.2	9/27/2022	6/1/2015	111.88338	109.6878896	107.5471942	105.4595698	103.4233589	101.4369679	99.49886389	97.60757221	95.7616734
150601A00531	6/1/2015	3.28	7/24/2024	6/1/2015	127.37573	122.7817276	118.3805931	114.163177	110.1208192	106.2453155	102.5288916	98.96417745	95.5441844

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00634	6/1/2015	2.39	3/31/2021	6/1/2015	103.07399	102.5491097	102.0295579	101.5152528	101.0061156	100.5020685	100.0030358	99.50894296	99.01971705
150601A00642	6/1/2015	2.6	3/31/2022	6/1/2015	109.51763	107.8908153	106.2969569	104.7351327	103.2044582	101.7040808	100.2331787	98.79095898	97.37665683
150601A00830	6/1/2015	6.743	7/31/2025	6/1/2015	154.3041	147.7104908	141.4502312	135.50458	129.8559482	124.4878226	119.3846943	114.5319929	109.9160244
150601A00930	6/1/2015	7.1	8/30/2030	6/1/2015	213.80154	196.8396895	181.4560233	167.4923001	154.8070374	143.2736534	132.7788229	123.2210217	114.5092376
140908A00060	9/8/2014	2.34	11/30/2020	9/8/2014	101.01761	100.846223	100.675418	100.5051869	100.3355272	100.1664358	99.99790997	99.82994697	99.66254399
140929A00098	9/29/2014	2.62	9/29/2021	9/29/2014	106.46015	105.367772	104.2977495	103.2494031	102.2220793	101.2151506	100.2280143	99.26009126	98.31082471
141009A00028	10/9/2014	3.02	10/9/2024	10/9/2014	127.98218	123.1111335	118.454961	114.0029959	109.7451637	105.6719433	101.7743337	98.04382209	94.47235519
150116A00039	1/16/2015	1.85	1/19/2021	1/16/2015	101.70925	101.3942149	101.081139	100.770005	100.4607948	100.1534904	99.84807429	99.54452897	99.24283722
150203A00005	2/3/2015	2.11	2/3/2022	2/3/2015	107.87315	106.4337749	105.0206912	103.6332427	102.2707906	100.9327167	99.61842269	98.32732938	97.05887579
150213A00025	2/13/2015	2.37	2/14/2022	2/13/2015	108.45081	106.9708978	105.5186124	104.0932399	102.6940948	101.3205141	99.9718566	98.64750217	97.34685066
150319A00013	3/19/2015	3.25	3/19/2030	3/19/2015	166.68163	152.8299673	140.2622873	128.8521228	118.4860989	109.0625135	100.4900794	92.68680953	85.5790254
150331A00004	3/31/2015	2.08	3/31/2022	3/31/2015	109.04612	107.4184095	105.8237517	104.261225	102.72994	101.2290401	99.75769895	98.31512013	96.90053512
150407A00010	4/7/2015	2.21	4/10/2023	4/7/2015	115.78418	112.918628	110.1394849	107.4436101	104.8280024	102.2897889	99.82621896	97.43465784	95.11258094
150506A00014	5/6/2015	2.21	5/6/2022	5/6/2015	109.87407	108.1303903	106.4235391	104.7524236	103.1159927	101.5132362	99.94318321	98.40489999	96.89748814
150512A00029	5/12/2015	3.03	5/12/2025	5/12/2015	132.20514	126.486544	121.0513198	115.8838432	110.9694431	106.294335	101.8455627	97.61094355	93.57901766
150518A00016	5/18/2015	1.84	11/18/2020	5/18/2015	100.76852	100.6309829	100.4938352	100.3570761	100.2207041	100.0847174	99.9491144	99.81389335	99.67905262
150519A00012	5/19/2015	2.44	5/19/2022	5/19/2015	110.15938	108.3803074	106.6392826	104.9351584	103.2668302	101.6332373	100.0333609	98.46622223	96.93088015
150601A00490	6/1/2015	3.19	7/2/2024	6/1/2015	126.57996	122.0746239	117.7564107	113.6164061	109.6461841	105.837773	102.1836277	98.67660366	95.30993291
150601A00512	6/1/2015	3.79	7/16/2029	6/1/2015	167.22155	154.3782391	142.6447432	131.9186208	122.1074105	113.1276128	104.903778	97.36769045	90.45763982
150601A00514	6/1/2015	3.07	11/15/2024	6/1/2015	129.66415	124.6042051	119.7724421	115.1572675	110.747748	106.5335671	102.5049866	98.65281028	94.96835062
150601A00609	6/1/2015	2.52	9/30/2021	6/1/2015	106.33745	105.2426267	104.1702756	103.1197099	102.090271	101.0813269	100.0922703	99.12251771	98.17150833
150601A00734	6/1/2015	2.92	5/1/2025	6/1/2015	131.22648	125.5694649	120.1915011	115.0772811	110.2124263	105.5834224	101.1775622	96.98289255	92.98816591
150727A00013	7/27/2015	3.04	7/28/2025	7/27/2015	133.67857	127.6548215	121.9406841	116.5186151	111.3721591	106.4858718	101.8452527	97.43668265	93.24736603
150819A00011	8/19/2015	2.53	8/19/2022	8/19/2015	111.94143	109.8674632	107.8425645	105.8652685	103.9341671	102.0479033	100.2051688	98.40470233	96.64528706
150821A00017	8/21/2015	2.22	8/23/2022	8/21/2015	111.78224	109.6904948	107.6486297	105.6551425	103.7085909	101.8075854	99.95078697	98.13690508	96.36469523
150824A00072	8/24/2015	2.14	8/24/2022	8/24/2015	111.63964	109.5463026	107.5029484	105.5080751	103.5602355	101.6580354	99.80013143	97.98522865	96.21207859
150923A00049	9/23/2015	1.97	9/23/2021	9/23/2015	105.86271	104.7898284	103.7386061	102.7083933	101.6985652	100.7085212	99.73768444	98.78550014	97.85143472
150710A00040	7/10/2015	2.63	7/11/2022	7/10/2015	111.44131	109.4894661	107.5819691	105.7174458	103.8945756	102.1120912	100.368776	98.66346151	96.99502486
150813A00008	8/13/2015	3.03	8/13/2025	8/13/2015	133.931	127.8444474	122.0732412	116.5993888	111.4060201	106.4773071	101.7983949	97.35533664	93.13503368
150817A00077	8/17/2015	2.49	8/17/2023	8/17/2015	118.88472	115.5625238	112.3510281	109.2459368	106.2431482	103.3387421	100.5289706	97.81024973	95.179151
150824A00071	8/24/2015	2.86	8/25/2025	8/24/2015	133.23838	127.1270461	121.3346019	115.8427371	110.6342851	105.6931475	101.0042216	96.55333424	92.32717959
150826A00038	8/26/2015	2.94	8/26/2026	8/26/2015	141.99585	134.2464534	126.9734077	120.1449105	113.7314396	107.7055817	102.041871	96.71664107	91.70788928
150923A00045	9/23/2015	1.97	9/23/2021	9/23/2015	105.86271	104.7898284	103.7386061	102.7083933	101.6985652	100.7085212	99.73768444	98.78550014	97.85143472

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150925A00023	9/25/2015	3.03	9/25/2025	9/25/2015	134.76439	128.5004376	122.5684442	116.9490309	111.6240534	106.5765157	101.7904915	97.25105125	92.94419429
150930A00083	9/30/2015	2.06	9/30/2021	9/30/2015	105.8991	104.8067456	103.7368301	102.6886654	101.6615938	100.654984	99.66822946	98.7007475	97.751978
151001A00028	10/1/2015	1.74	10/1/2020	10/1/2015	100.01497	100.0121846	100.0094045	100.0066268	100.0038516	100.0010787	99.99830821	99.9955401	99.99277437
151002A00048	10/2/2015	1.68	11/2/2020	10/2/2015	100.4898	100.3976736	100.3057168	100.2139304	100.1223139	100.0308668	99.93958862	99.848479	99.75753743
151002A00081	10/2/2015	2.29	10/2/2023	10/2/2015	119.08448	115.6066392	112.2495924	109.0084486	105.8785469	102.8554423	99.93489435	97.1128563	94.38546513
151109A00020	11/9/2015	2.79	11/9/2023	11/9/2015	120.74483	117.1338312	113.6510231	110.2910779	107.0489262	103.9197411	100.8989251	97.98209745	95.16508221
151211A00002	12/11/2015	2.05	12/15/2021	12/11/2015	107.3673	106.0213165	104.7089221	103.428875	102.1799906	100.9611418	99.77125496	98.60930731	97.47432364
160104A00014	1/4/2016	2.49	1/4/2023	1/4/2016	114.29007	111.7632561	109.3057423	106.9150996	104.5890062	102.3252414	100.121681	97.97629144	95.88712537
160108A00020	1/8/2016	2.04	1/8/2021	1/8/2016	101.59151	101.3082508	101.0265784	100.7464788	100.4679387	100.1909451	99.9154851	99.64154592	99.36911493
160119A00028	1/19/2016	3.34	1/21/2031	1/19/2016	173.29081	157.7995872	143.8533735	131.2888644	119.9608416	109.7400824	100.5115221	92.17263634	84.63201561
160119A00030	1/19/2016	3.44	1/18/2033	1/19/2016	187.92624	168.3627267	151.0739634	135.7808862	122.2401031	110.2391641	99.59248198	90.13780958	81.73319499
160307A00026	3/7/2016	2.2	3/7/2023	3/7/2016	114.65644	111.92461	109.2722694	106.6966422	104.1950677	101.7649942	99.40397381	97.1096573	94.87978976
160307A00028	3/7/2016	2.91	3/7/2028	3/7/2016	150.17858	140.0602785	130.702503	122.0439726	114.0286498	106.605265	99.72688765	93.35053859	87.43683842
160328A00014	3/28/2016	2.49	3/27/2026	3/28/2016	136.32565	129.3076907	122.6963399	116.4658822	110.5923621	105.0534542	99.82834347	94.89761575	90.24315605
160516A00019	5/16/2016	1.44	5/17/2021	5/16/2016	103.37388	102.7074289	102.0495562	101.400094	100.7588815	100.1257621	99.5005832	98.88319593	98.27345517
160524A00011	5/24/2016	1.78	5/19/2021	5/24/2016	103.52967	102.8578996	102.1948328	101.5402976	100.8941297	100.2561695	99.62626118	99.00425291	98.38999664
160526A00011	5/26/2016	1.58	5/26/2021	5/26/2016	103.60161	102.9073792	102.2224262	101.5465636	100.8796114	100.2213943	99.57174149	98.93048666	98.29746774
131024A00018	10/24/2013	2.8	11/1/2021	10/24/2013	107.4571	106.2517045	105.0732894	103.9209552	102.7938434	101.6911327	100.6120371	99.55580433	98.52171338
140131A00025	1/31/2014	3.28	1/30/2023	1/31/2014	116.69489	114.0591878	111.4969447	109.0057016	106.5830927	104.2268453	101.9347755	99.70478393	97.53485232
140402A00010	4/2/2014	2.62	4/2/2021	4/2/2014	103.31567	102.7832881	102.2563842	101.7348742	101.2186754	100.7077071	100.2018901	99.70114674	99.20540095
140701A00001	7/1/2014	3.22	7/1/2024	7/1/2014	126.86794	122.3602151	118.0395502	113.8970371	109.9242527	106.1132285	102.4564229	98.94669488	95.57728003
140908A00063	9/8/2014	2.5	8/31/2021	9/8/2014	105.82877	104.8301641	103.8503477	102.888793	101.9449933	101.0184605	100.1087242	99.21533085	98.33784333
141208A00008	12/8/2014	3.02	12/16/2024	12/8/2014	129.29374	124.1614492	119.2641775	114.5897896	110.126853	105.8645922	101.7928467	97.90203207	94.18310303
150115A00002	1/15/2015	1.72	1/15/2021	1/15/2015	101.648	101.3441108	101.042052	100.7418065	100.4433578	100.1466898	99.85178629	99.55863159	99.26721002
150206A00017	2/6/2015	2.05	2/7/2022	2/6/2015	108.11243	106.6541117	105.2227067	103.8175307	102.4379233	101.0832456	99.75287936	98.44622658	97.16270826
150401A00008	4/1/2015	2.62	4/1/2025	4/1/2015	129.32354	123.8188164	118.5819972	113.5986076	108.8550295	104.3384493	100.0368063	95.93874446	92.03356715
150406A00003	4/6/2015	1.9	4/6/2021	4/6/2015	102.93643	102.3942359	101.8577467	101.3268687	100.8015143	100.2815975	99.76703411	99.25774183	98.7536399
150407A00009	4/7/2015	2.03	4/7/2022	4/7/2015	109.08569	107.4364227	105.8209023	104.2381758	102.687324	101.1674617	99.67773605	98.21732492	96.78543579
150518A00026	5/18/2015	2.08	11/18/2021	5/18/2015	106.93803	105.6815326	104.4544387	103.2557252	102.0844164	100.9395807	99.82032837	98.72580921	97.65521028
150519A00013	5/19/2015	2.98	5/19/2025	5/19/2015	132.08361	126.3437394	120.8893462	115.7046383	110.7747841	106.0858524	101.6247522	97.37917707	93.33755379
150601A00147	6/1/2015	3.45	7/30/2021	6/1/2015	106.16407	105.2609132	104.3731134	103.500281	102.6420397	101.7980259	100.9678878	100.1512853	99.34788917
150601A00495	6/1/2015	2.99	6/27/2024	6/1/2015	126.52132	122.01156	117.6891125	113.5450454	109.5709174	105.7587431	102.1009656	98.5904301	95.22035941
150601A00530	6/1/2015	3.08	7/24/2024	6/1/2015	127.41938	122.8011851	118.3774501	114.1389304	110.076872	106.1829833	102.4494081	98.86870006	95.43379898

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00615	6/1/2015	2.67	6/30/2022	6/1/2015	111.24952	109.3321103	107.4579041	105.62551	103.8335952	102.0808844	100.3661564	98.68824143	97.04601838
150601A00616	6/1/2015	2.72	9/30/2022	6/1/2015	113.01393	110.7968071	108.6351857	106.5273169	104.4715155	102.4661616	100.5096973	98.60062377	96.73749895
150601A00636	6/1/2015	2.45	6/30/2021	6/1/2015	104.66842	103.8656462	103.0751432	102.2966361	101.5298535	100.7745322	100.0304169	99.29725971	98.57482012
150601A00667	6/1/2015	3.88	1/16/2036	6/1/2015	215.25588	188.5684424	165.6083827	145.8275584	128.7614265	114.015896	101.2563067	90.19818055	80.59945444
150601A00668	6/1/2015	3.89	1/16/2037	6/1/2015	222.60765	193.5047756	168.6923887	147.5050562	129.3842354	113.8605969	100.5393474	89.08803127	79.2263831
150601A00704	6/1/2015	2.3	3/25/2022	6/1/2015	108.95466	107.3504368	105.7783749	104.2375906	102.7272289	101.2464654	99.79450499	98.37058053	96.97395151
150601A00737	6/1/2015	2.68	12/31/2024	6/1/2015	128.78719	123.5868882	118.62769	113.8969968	109.3829472	105.0743706	100.9607422	97.03214133	93.27921242
150424A00035	4/24/2015	1.8	4/23/2021	4/24/2015	103.22488	102.6305212	102.0429938	101.4621822	100.8879716	100.32025	99.7589077	99.20383757	98.65493485
150515A00003	5/15/2015	2.17	5/17/2021	5/15/2015	103.75021	103.0836042	102.4255557	101.7758981	101.1344715	100.5011202	99.87569209	99.25803912	98.64801679
150518A00014	5/18/2016	2.38	5/18/2021	5/18/2016	103.9027	103.2325455	102.5710285	101.9179813	101.273242	100.6366524	100.0080588	99.3873109	98.77426239
150601A00006	6/1/2015	4.71	6/27/2025	6/1/2015	142.68743	136.5115347	130.6466811	125.07534	119.7810821	114.7484979	109.963128	105.4113983	101.08056
150601A00404	6/1/2015	4.29	1/17/2029	6/1/2015	168.36274	156.228755	145.0866575	134.8494498	125.4382165	116.7813358	108.8137687	101.4764218	94.715574
150601A00484	6/1/2015	2.45	6/23/2021	6/1/2015	104.65742	103.874381	103.1030348	102.3431247	101.5943979	100.8566086	100.1295184	99.41289568	98.70651549
150601A00632	6/1/2015	2.33	12/31/2020	6/1/2015	101.52779	101.267583	101.0086987	100.7511311	100.4948702	100.2399061	99.98622906	99.73382944	99.48269765
150601A00664	6/1/2015	3.78	1/16/2032	6/1/2015	185.08532	167.3502376	151.522865	137.3858589	124.7477674	113.4398195	103.31313	94.23626142	86.09309601
150601A00694	6/1/2015	3.56	3/6/2030	6/1/2015	169.33437	155.4071723	142.7630011	131.2761163	120.833732	111.3346222	102.6878805	94.81182024	87.63299581
150601A00731	6/1/2015	2.4	4/29/2022	6/1/2015	109.71036	107.9941135	106.3137433	104.6681977	103.0564658	101.4775758	99.93059264	98.41461679	96.92878206
150601A00733	6/1/2015	2.72	5/1/2025	6/1/2015	131.29457	125.6035627	120.1941736	115.0509155	110.1592402	105.5054764	101.0767713	96.86103716	92.84690115
150603A00017	6/3/2015	2.84	6/3/2025	6/3/2015	132.73909	126.8973746	121.3492123	116.0781893	111.0689088	106.3069191	101.7786498	97.4713524	93.37304605
150630A00008	6/30/2015	2.41	6/30/2022	6/30/2015	111.19832	109.2750012	107.3951357	105.557315	103.7601956	102.0024924	100.2829752	98.60046558	96.95383417
150902A00002	9/2/2015	2.25	9/2/2021	9/2/2015	105.62606	104.6222801	103.6375118	102.6712194	101.7228869	100.7920172	99.87813147	98.98076827	98.09948269
150904A00021	9/4/2015	2.52	9/5/2023	9/4/2015	119.3255	115.9344269	112.6582269	109.4923639	106.4325124	103.474542	100.6145069	97.84863691	95.17332859
151020A00008	10/20/2015	1.76	10/20/2020	10/20/2015	100.30121	100.245462	100.1897911	100.1341976	100.0786812	100.0232419	99.96787943	99.91259367	99.85738446
151102A00012	11/2/2015	2.4	11/2/2022	11/2/2015	112.98459	110.6681466	108.4114594	106.2125672	104.0695851	101.9807047	99.94419082	97.95837719	96.02166369
151208A00019	12/8/2015	2.1	12/8/2020	12/8/2015	101.10545	100.9112569	100.7178226	100.525139	100.3332017	100.1420063	99.95154855	99.76182407	99.5728286
151211A00004	12/11/2015	2.48	12/15/2023	12/11/2015	121.04065	117.2895	113.675454	110.1926334	106.8354527	103.5986038	100.4770403	97.46596216	94.56080224
151211A00007	12/11/2015	2.73	12/15/2025	12/11/2015	135.87839	129.2520545	122.9915547	117.0746387	111.4805385	106.1898602	101.184484	96.44747367	91.96299209
160119A00005	1/19/2016	1.89	1/19/2021	1/19/2016	101.72167	101.4066136	101.093513	100.7823543	100.4731195	100.1657907	99.86035028	99.55678075	99.25506492
160119A00027	1/19/2016	3.25	1/18/2030	1/19/2016	165.57195	152.0338604	139.7304659	128.5420284	118.3610231	109.0908365	100.6446066	92.94419243	85.9192566
160120A00010	1/20/2016	1.99	10/20/2021	1/20/2016	106.15543	104.9987312	103.8671371	102.759839	101.6760607	100.615059	99.57612156	98.55856556	97.56173607
141028A00012	10/28/2014	2.73	10/28/2022	10/28/2014	113.62096	111.3127469	109.0637674	106.8720854	104.7358436	102.6532598	100.622623	98.6422898	96.71068174
141201A00024	12/1/2014	2.19	12/1/2020	12/1/2014	101.00841	100.8342002	100.660593	100.4875812	100.315162	100.1433322	99.97208898	99.80142923	99.63135006
150202A00018	2/2/2015	1.89	2/2/2021	2/2/2015	101.94089	101.5851182	101.2318241	100.8809804	100.5325617	100.186543	99.84289961	99.50160713	99.16264157

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150220A00020	2/20/2015	2.42	2/18/2022	2/20/2015	108.59531	107.1012086	105.6352037	104.1965716	102.7846096	101.3986382	100.0380009	98.70206254	97.3902087
150220A00022	2/20/2015	2.8	2/20/2025	2/20/2015	129.46488	124.0984804	118.9869171	114.1167546	109.4753348	105.0507285	100.8316899	96.80761394	92.96849636
150303A00011	3/3/2015	2.06	3/3/2021	3/3/2015	102.5273	102.0852948	101.6470957	101.2126538	100.7819209	100.3548496	99.93139342	99.51150647	99.09514377
150319A00012	3/19/2015	3.13	3/19/2029	3/19/2015	158.86829	146.8879076	135.9154213	125.8603772	116.6408918	108.1827978	100.4188799	93.28819074	86.73543624
150601A00405	6/1/2015	4.63	1/17/2034	6/1/2015	213.02011	190.0758924	169.9459978	152.2645983	136.7154438	123.0249014	110.9560033	100.3033543	90.88876918
150601A00470	6/1/2015	2.98	5/31/2024	6/1/2015	125.94198	121.5373363	117.3124488	113.2589165	109.3687813	105.6345058	102.0489479	98.60533758	95.29725489
150601A00608	6/1/2015	2.45	6/30/2021	6/1/2015	104.66842	103.8656462	103.0751432	102.2966361	101.5298535	100.7745322	100.0304169	99.29725971	98.57482012
150601A00640	6/1/2015	2.57	12/31/2021	6/1/2015	108.05138	106.6526373	105.2899866	103.9620413	102.6674887	101.4050816	100.1736341	98.97201813	97.79915966
150601A00644	6/1/2015	2.64	6/30/2022	6/1/2015	111.19533	109.2784287	107.404725	105.572824	103.781393	102.0291569	100.3148949	98.63743748	96.99566368
150601A00650	6/1/2015	2.75	3/31/2023	6/1/2015	116.41451	113.5839241	110.8377134	108.1728545	105.586452	103.0757323	100.638038	98.27082218	95.9716426
150601A00681	6/1/2015	2.7	2/7/2025	6/1/2015	128.54379	123.2478595	118.2015633	113.3918392	108.8063784	104.4335756	100.2624847	96.28277798	92.48470838
150601A00688	6/1/2015	2.61	2/21/2025	6/1/2015	129.45011	124.0487612	118.9049454	114.0050372	109.3362016	104.8863456	100.6440714	96.59863273	92.73989417
150601A00696	6/1/2015	2.83	3/13/2025	6/1/2015	129.8092	124.359295	119.1714958	114.2317997	109.5270291	105.0447757	100.7733517	96.70174382	92.81957112
150601A00825	6/1/2015	2.87	5/29/2025	6/1/2015	131.49485	125.7348064	120.2628963	115.0630921	110.1203477	105.4205358	100.950386	96.69742775	92.64993764
150601A00839	6/1/2015	6.93	10/30/2020	6/1/2015	100.87462	100.7905732	100.7066654	100.6228974	100.5392688	100.4557795	100.3724289	100.2892169	100.206143
150601A00940	6/1/2015	6.58	2/16/2021	6/1/2015	103.94703	103.5459201	103.1479214	102.7529963	102.361109	101.9722244	101.5863081	101.2033261	100.8232448
150601A01022	6/1/2015	5.28	2/22/2021	6/1/2015	103.59869	103.1809095	102.7665071	102.3554398	101.9476674	101.5431504	101.1418499	100.7437275	100.3487456
150623A00025	6/23/2015	2.65	6/30/2022	6/23/2015	111.28176	109.3640608	107.4895698	105.6568963	103.8647073	102.1117273	100.3967351	98.71856064	97.07608278
150715A00009	7/15/2015	2.67	7/15/2022	7/15/2015	111.58776	109.6226267	107.7022829	105.8253541	103.9905236	102.1965264	100.4421467	98.72621579	97.04760963
150720A00012	7/20/2015	2.99	7/21/2025	7/20/2015	134.47449	128.4176965	122.6720532	117.2198985	112.0446676	107.1308194	102.4637676	98.02981677	93.81610312
131106A00002	11/6/2013	2.76	11/16/2020	11/6/2013	100.83902	100.7072185	100.5757795	100.4446976	100.3139711	100.1835987	100.0535789	99.92391028	99.79459131
131113A00036	11/13/2013	3.14	11/15/2021	11/13/2013	107.92612	106.6760937	105.4550044	104.2618554	103.0956953	101.9556152	100.840747	99.75026045	98.68336159
140416A00014	4/16/2014	2.66	4/30/2021	4/16/2014	103.76146	103.1456235	102.5370738	101.935685	101.3413313	100.7538898	100.1732408	99.59926688	99.03185368
140815A00032	8/15/2014	3.59	10/15/2029	8/15/2014	167.48145	154.2453934	142.1834613	131.18458	121.1487541	111.9859052	103.6148404	95.96233254	88.96230111
141017A00020	10/17/2014	2.28	10/18/2021	10/17/2014	106.62142	105.4654403	104.3344521	103.2276476	102.1442571	101.0835435	100.0448002	99.02734994	98.03054274
141024A00010	10/24/2014	2.81	10/24/2024	10/24/2014	128.26017	123.3069171	118.5745823	114.0520814	109.7289488	105.5953009	101.6418004	97.85962281	94.24042504
141202A00012	12/2/2014	2.32	12/2/2021	12/2/2014	107.47214	106.1673843	104.8941786	103.6513928	102.4379471	101.2528122	100.0950062	98.96359257	97.85767676
150123A00010	1/23/2015	2.02	1/31/2022	1/23/2015	107.94685	106.5127178	105.1046866	103.7221055	102.3643426	101.0307865	99.72084517	98.43394564	97.1695329
150130A00050	1/30/2015	1.87	1/31/2022	1/30/2015	107.73786	106.305278	104.8987673	103.5176797	102.1613842	100.8292699	99.52074574	98.2352393	96.97219627
150220A00021	2/20/2015	2.72	2/20/2024	2/20/2015	122.4008	118.4218431	114.5944885	110.9121541	107.3685761	103.957795	100.6741398	97.51221201	94.46687109
150317A00013	3/17/2015	2.58	3/17/2025	3/17/2015	129.94236	124.4428848	119.209401	114.227625	109.4841174	104.9662275	100.6620433	96.56034386	92.65055562
150518A00020	5/18/2015	1.99	5/18/2021	5/18/2015	103.74501	103.0742091	102.4120674	101.7584225	101.1131114	100.4759754	99.84685961	99.22561309	98.61208872
150601A00039	6/1/2015	5.76	6/12/2026	6/1/2015	158.17006	150.2188285	142.7334278	135.6837594	129.0418413	122.781649	116.8789675	111.3112548	106.0575169

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00522	6/1/2015	4.52	7/25/2030	6/1/2015	183.02491	167.8060732	154.0246582	141.5358082	130.2100237	119.9314571	110.5964073	102.1119883	94.39494898
150601A00523	6/1/2015	4.55	7/25/2031	6/1/2015	191.55185	174.2330208	158.6932363	144.7380408	132.1952567	120.9123286	110.753993	101.6002347	93.34449486
150601A00548	6/1/2015	2.55	8/13/2021	6/1/2015	105.51925	104.5778364	103.6531944	102.7448743	101.8524466	100.9754968	100.1136243	99.26644282	98.43357872
150601A00604	6/1/2015	2.33	12/31/2020	6/1/2015	101.52779	101.267583	101.0086987	100.7511311	100.4948702	100.2399061	99.98622906	99.73382944	99.48269765
150601A00648	6/1/2015	2.71	12/30/2022	6/1/2015	114.63628	112.1205393	109.6735069	107.2927605	104.9759864	102.7209731	100.5256062	98.38786281	96.30580699
150603A00018	6/3/2015	2.84	6/3/2025	6/3/2015	132.73909	126.8973746	121.3492123	116.0781893	111.0689088	106.3069191	101.7786498	97.4713524	93.37304605
150610A00009	6/10/2015	3.03	6/10/2025	6/10/2015	133.86536	127.9704941	122.3726074	117.0550423	112.0021748	107.1993439	102.6327861	98.28957474	94.15756434
150814A00004	8/14/2015	2.32	8/15/2022	8/14/2015	111.84073	109.772857	107.7537773	105.7820419	103.8562544	101.9750685	100.1371865	98.34135695	96.58637267
150817A00073	8/17/2015	2.06	8/17/2021	8/17/2015	105.32259	104.3677556	103.4301836	102.5094098	101.6049855	100.716478	99.84346982	98.98555785	98.1423529
150824A00039	8/24/2015	1.93	1/25/2021	8/24/2015	101.82871	101.4962041	101.1658742	100.8376962	100.5116491	100.1877124	99.86586534	99.54608792	99.22836017
160606A00003	6/6/2016	1.66	6/7/2021	6/6/2016	103.73876	103.0092627	102.2899961	101.5807423	100.8812931	100.1914464	99.51100541	98.83977872	98.17758009
160606A00005	6/6/2016	2.92	6/6/2031	6/6/2016	170.40043	154.4771582	140.2012842	127.3926946	115.8918792	105.5574729	96.2641058	87.90051683	80.36789915
160614A00025	6/14/2016	1.83	6/14/2023	6/14/2016	115.24453	112.1929059	109.2382046	106.3766915	103.604802	100.9191358	98.31644823	95.79364118	93.34775572
160614A00067	6/14/2016	1.51	2/16/2021	6/14/2016	102.01204	101.6155681	101.2221838	100.8318464	100.4445207	100.0601717	99.67876516	99.30026738	98.92464509
160616A00044	6/20/2016	2.31	6/18/2021	6/20/2016	104.38382	103.6185337	102.8644477	102.1213188	101.3889095	100.6669887	99.95533235	99.25372244	98.56194723
160624A00005	6/24/2016	1.52	6/24/2021	6/24/2016	103.89112	103.1097731	102.3401329	101.5819382	100.8349353	100.0988777	99.37352622	98.65864871	97.95401956
160628A00038	6/28/2016	1.88	6/27/2025	6/28/2016	128.16387	122.3484601	116.8306541	111.5935447	106.621287	101.899025	97.41282319	93.14960419	89.09709016
160628A00039	6/28/2016	2.01	6/29/2026	6/28/2016	134.87512	127.5546517	120.6770055	114.212971	108.1354305	102.4191952	97.0408564	91.97864963	87.21232964
160630A00034	6/30/2016	1.51	6/28/2021	6/30/2016	103.94258	103.1489467	102.3673806	101.5976049	100.8393547	100.0923727	99.35640942	98.63122258	97.91657699
160630A00049	6/30/2016	1.51	6/30/2021	6/30/2016	103.97208	103.1722862	102.3847394	101.6091567	100.8452675	100.092809	99.35152637	98.62117242	97.90150705
160701A00007	7/1/2016	1.42	7/1/2021	7/1/2016	103.91741	103.1148119	102.3245535	101.5463486	100.7799231	100.0250116	99.28135621	98.54870694	97.82682102
160701A00026	7/1/2016	1.43	7/1/2021	7/1/2016	103.92514	103.1225085	102.3322172	101.5539797	100.7875221	100.0325787	99.28889183	98.55621137	97.8342946
160714A00020	9/6/2016	2.28	9/4/2026	9/6/2016	136.22549	128.67505	121.5918101	114.9444413	108.7038743	102.8431225	97.33712281	92.16258902	87.29787721
160726A00024	7/26/2016	1.61	7/26/2021	7/26/2016	104.43541	103.5545232	102.6884351	101.8367733	100.9991798	100.1753083	99.36482387	98.56740231	97.78272988
160810A00032	8/10/2016	1.32	8/10/2021	8/10/2016	104.54606	103.6166849	102.7037543	101.8068368	100.925514	100.0593819	99.20805042	98.37114263	97.54829438
160815A00007	8/15/2016	2.23	8/17/2026	8/15/2016	135.60948	128.1436389	121.1363676	114.5571521	108.3776578	102.5715649	97.1144151	91.98347074	87.15758574
160830A00034	8/30/2016	1.9	8/30/2023	8/30/2016	116.65363	113.3383074	110.1346743	107.0383572	104.045179	101.1511489	98.35245323	95.64544671	93.02664373
160922A00049	9/22/2016	1.79	9/22/2022	9/22/2016	111.00926	108.8389146	106.7224066	104.6580534	102.6442371	100.6794016	98.76204986	96.89074103	95.06408799
161013A00037	10/13/2016	1.52	10/13/2021	10/13/2016	105.71705	104.5821593	103.4715081	102.3843244	101.3198706	100.2774397	99.25635395	98.25596298	97.27564269
161013A00038	10/13/2016	1.52	10/13/2021	10/13/2016	105.71705	104.5821593	103.4715081	102.3843244	101.3198706	100.2774397	99.25635395	98.25596298	97.27564269
161020A00002	10/20/2016	1.96	8/15/2023	10/20/2016	116.60317	113.336282	110.1780224	107.1241966	104.1707923	101.3139739	98.5500739	95.87558405	93.28714796
161208A00007	12/8/2016	2.6	12/8/2023	12/8/2016	120.6321	116.927607	113.357486	109.9160199	106.5977762	103.3975895	100.3105469	97.33197303	94.45741747
161213A00017	12/13/2016	2.24	12/13/2022	12/13/2016	113.78165	111.3191873	108.9230542	106.5909533	104.3206866	102.1101513	99.95733494	97.86031073	95.81723275

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00768	6/1/2015	2.34	5/13/2022	6/1/2015	109.84923	108.0903144	106.3687739	104.683484	103.033369	101.4173957	99.83457125	98.28394136	96.76458813
150601A00916	6/1/2015	7.27	4/5/2030	6/1/2015	211.0521	194.9366369	180.267274	166.9038686	154.7206551	143.6046982	133.4545176	124.1788676	115.6956522
150601A01024	6/1/2015	5.33	2/27/2026	6/1/2015	151.1548	143.8679574	136.9895026	130.4942499	124.3586949	118.5608977	113.0803707	107.897975	102.9958251
150610A00008	6/10/2015	3.58	6/10/2030	6/10/2015	174.88515	160.1291206	146.7677415	134.6607783	123.6828268	113.7216737	104.6768437	96.45831335	88.98537288
150717A00009	7/17/2015	2.18	7/19/2021	7/17/2015	104.9291	104.0654804	103.2160466	102.3804504	101.5583556	100.7494368	99.95337889	99.16987679	98.39863503
150720A00011	7/20/2015	2.69	7/20/2023	7/20/2015	118.97903	115.745095	112.6165488	109.5893316	106.6595656	103.8235466	101.0777351	98.41874757	95.84334882
150722A00014	7/22/2015	2.32	7/22/2021	7/22/2015	104.96619	104.0950459	103.2383324	102.3956899	101.5667737	100.7512503	99.94879684	99.15910104	98.38186028
150825A00007	8/25/2015	2.46	8/25/2022	8/25/2015	111.90755	109.8156691	107.7736642	105.7800367	103.8333442	101.9321972	100.0752566	98.26123168	96.48887771
151008A00024	10/8/2015	1.58	10/8/2020	10/8/2015	100.11956	100.0972554	100.0749737	100.052716	100.030482	100.0082719	99.98608546	99.96392276	99.94178372
151102A00009	11/2/2015	1.89	11/2/2020	11/2/2015	100.50912	100.4169702	100.3249958	100.2331918	100.1415578	100.0500932	99.95879763	99.8676706	99.77671164
151106A00011	11/6/2015	3.1	1/15/2026	11/6/2015	137.30176	130.5695357	124.2122067	118.2068472	112.5320564	107.1678502	102.0955595	97.29773658	92.75806846
151217A00014	12/17/2015	3	12/17/2025	12/17/2015	136.17197	129.5736553	123.3385417	117.4445867	111.8712142	106.5992067	101.6106071	96.88862888	92.41757293
151223A00065	12/23/2015	2.15	12/23/2021	12/23/2015	107.63323	106.2596155	104.9209021	103.6157748	102.3429821	101.1013339	99.88969795	98.7069963	97.55220203
151223A00074	12/23/2015	3.01	12/23/2027	12/23/2015	151.65494	141.6957203	132.4677647	123.91327	115.9793135	108.6174123	101.7831271	95.43570327	89.5377465
160113A00005	1/13/2016	1.95	1/13/2021	1/13/2016	101.6454	101.3477035	101.051759	100.7575527	100.4650691	100.1742931	99.88520964	99.59780395	99.31206134
160114A00015	1/14/2016	1.92	1/14/2021	1/14/2016	101.65232	101.3517415	101.0529495	100.7559291	100.4606646	100.1671403	99.87534074	99.58525073	99.29685517
160301A00009	3/1/2016	2.06	3/1/2023	3/1/2016	114.19764	111.4905548	108.8617538	106.3085223	103.828257	101.4184601	99.07673459	96.80077978	94.58838637
160328A00012	3/28/2016	1.85	3/28/2022	3/28/2016	108.63772	107.0223769	105.4396702	103.8886951	102.3685778	100.8784762	99.4175781	97.98510047	96.58028755
160330A00042	3/30/2016	1.53	3/30/2021	3/30/2016	102.70689	102.185193	101.6687819	101.1575733	100.6514889	100.1504521	99.65438767	99.16322192	98.67688263
160401A00016	4/1/2016	2.42	4/1/2025	4/1/2016	128.33352	122.8520735	117.6377063	112.675976	107.9532992	103.4568952	99.17473482	95.09549152	91.20849696
160407A00004	4/7/2016	1.41	4/7/2021	4/7/2016	102.7639	102.218403	101.6786836	101.1446541	100.6162247	100.0933074	99.57581647	99.06366751	98.55677808
160415A00010	4/15/2016	1.66	4/15/2021	4/15/2016	102.9453	102.3764916	101.8139635	101.2576089	100.7073265	100.1630173	99.62458417	99.0919323	98.56496881
160505A00007	5/5/2016	1.45	5/5/2021	5/5/2016	103.20166	102.571686	101.9493832	101.3346103	100.7272313	100.1271133	99.53412669	98.94814483	98.36904414
160122A00029	1/22/2016	2.48	1/22/2025	1/22/2016	128.43102	123.1639225	118.1437463	113.3575949	108.7933144	104.4394484	100.2851936	96.32035919	92.53532859
160329A00044	3/29/2016	1.79	3/29/2022	3/29/2016	108.56013	106.9424172	105.357451	103.804318	102.2821404	100.7900718	99.32729653	97.89302759	96.48650583
160330A00054	3/30/2016	2.9	3/31/2031	3/30/2016	172.19113	156.2868104	142.0076141	129.1780565	117.6424725	107.2626865	97.91596552	89.49322178	81.89743192
160407A00007	4/7/2016	1.6	3/25/2021	4/7/2016	102.59888	102.0929919	101.5920835	101.0960812	100.604913	100.1185086	99.63679884	99.15971605	98.68719375
160420A00005	4/20/2016	1.48	4/20/2021	4/20/2016	102.99548	102.4107727	101.8326893	101.2611221	100.6959613	100.1370995	99.58443179	99.03785542	98.49727001
160429A00007	4/29/2016	1.52	4/29/2021	4/29/2016	103.15393	102.542015	101.9373349	101.3397601	100.749166	100.1654309	99.58843596	99.01806497	98.45420449
160429A00041	4/29/2016	1.71	4/29/2021	4/29/2016	103.17989	102.5689899	101.9652974	101.3686837	100.7790248	100.1961998	99.62009065	99.05058185	98.48756059
160527A00026	5/27/2016	1.72	4/29/2021	5/27/2016	103.18582	102.5749032	101.9711908	101.3745572	100.7848786	100.2020342	99.62590571	99.05637774	98.49333747
160613A00047	6/15/2016	2.18	6/16/2025	6/15/2016	128.46253	122.7127386	117.2543843	112.071063	107.147388	102.4689238	98.0221213	93.79425774	89.77338134
160624A00010	6/24/2016	1.66	6/24/2022	6/24/2016	109.37545	107.4942053	105.6550837	103.856738	102.0978789	100.3772718	98.69373444	97.04613369	95.43338306

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160627A00025	6/27/2016	1.65	6/27/2022	6/27/2016	109.4034	107.5126698	105.6644412	103.8573456	102.0900766	100.3613838	98.67006972	97.01498721	95.39503642
160628A00030	6/28/2016	1.48	6/28/2021	6/28/2016	103.91964	103.1261122	102.3446427	101.5749627	100.816807	100.0699186	99.33404796	98.60895278	97.89439791
160629A00052	6/29/2016	1.29	6/29/2021	6/29/2016	103.90096	103.1029583	102.3171522	101.5432652	100.7810278	100.0301789	99.29046488	98.56163964	97.84346433
160630A00011	6/30/2016	1.8	6/30/2023	6/30/2016	115.40924	112.3036083	109.2980026	106.3885064	103.5713859	100.843083	98.20020506	95.63951592	93.15792722
160630A00019	6/30/2016	1.52	7/1/2021	6/30/2016	103.9947	103.1917777	102.4011905	101.6226601	100.8559129	100.1006829	99.35671239	98.6237513	97.90155682
160630A00021	6/30/2016	1.59	6/30/2023	6/30/2016	115.37335	112.2551035	109.2375782	106.3168134	103.4890405	100.7506687	98.09827474	95.52859367	93.03850995
160630A00044	6/30/2016	1.42	10/30/2020	6/30/2016	100.42355	100.3398786	100.256346	100.1729526	100.089698	100.006582	99.92360412	99.84076417	99.75806178
160630A00091	6/30/2016	1.51	6/30/2021	6/30/2016	103.97208	103.1722862	102.3847394	101.6091567	100.8452675	100.092809	99.35152637	98.62117242	97.90150705
160705A00005	7/5/2016	1.49	7/5/2023	7/5/2016	115.15389	112.0233191	108.9942148	106.062608	103.2247167	100.4769348	97.81582273	95.23809808	92.74062706
160706A00026	7/6/2016	2.19	7/6/2027	7/6/2016	140.32227	131.5040428	123.2995128	115.6626917	108.5512747	101.9263298	95.75201051	89.99529572	84.62575188
160725A00010	7/25/2016	1.61	7/26/2021	7/25/2016	104.43541	103.5545232	102.6884351	101.8367733	100.9991798	100.1753083	99.36482387	98.56740231	97.78272988
160727A00018	7/27/2016	2.27	7/27/2026	7/27/2016	135.54368	128.1553931	121.2168434	114.69834	108.5723008	102.8130913	97.3968776	92.30149102	87.50630369
160809A00002	8/9/2016	1.6	8/9/2021	8/9/2016	104.63992	103.7151517	102.8066622	101.9140237	101.0368242	100.1746657	99.32716389	98.49394749	97.67465761
141015A00020	10/15/2014	2.13	10/15/2021	10/15/2014	106.40626	105.2610327	104.1403715	103.0434911	101.9696408	100.9181007	99.88818093	98.87921985	97.89058247
150105A00026	1/5/2015	2.54	1/5/2024	1/5/2015	121.63116	117.8015662	114.1139242	110.5620858	107.14021	103.8427483	100.6644273	97.60023332	94.64539721
150116A00040	1/16/2015	2.07	1/18/2022	1/16/2015	107.6268	106.2125268	104.8284151	103.4735081	102.1468889	100.8476796	99.5750387	98.32815951	97.1062682
150123A00012	1/23/2015	2	1/29/2021	1/23/2015	101.91551	101.5713361	101.2294796	100.8899185	100.5526297	100.2175905	99.88477853	99.5541717	99.22574818
150206A00015	2/6/2015	1.87	2/8/2021	2/6/2015	102.07658	101.7025666	101.3312948	100.9627377	100.5968653	100.2336483	99.87305789	99.51506548	99.15964301
150310A00019	3/10/2015	2.24	3/10/2021	3/10/2015	102.66366	102.2015071	101.7435125	101.2896243	100.8397874	100.3939475	99.95205137	99.51404685	99.07988255
150601A00182	6/1/2015	3.85	7/18/2022	6/1/2015	113.78516	111.7894033	109.8391705	107.9330819	106.0698115	104.2480847	102.4666757	100.7244051	99.02013769
150601A00360	6/1/2015	2.82	10/2/2020	6/1/2015	100.0357	100.0301255	100.0245602	100.019	100.0134446	100.0078943	100.0023488	99.99680824	99.99127261
150601A00515	6/1/2015	2.95	1/16/2024	6/1/2015	123.14492	119.2534619	115.5069315	111.8990848	108.4239852	105.0759878	101.849723	98.74008107	95.74219811
150601A00594	6/1/2015	3.2	10/20/2026	6/1/2015	142.9239	134.993264	127.5595544	120.58892	114.0499899	107.9136816	102.1530223	96.74298504	91.66033837
150601A00611	6/1/2015	2.58	12/31/2021	6/1/2015	108.0642	106.6653752	105.3026366	103.9746049	102.6799675	101.417477	100.1859476	98.98425096	97.81131325
150601A00638	6/1/2015	2.51	9/30/2021	6/1/2015	106.32725	105.2324887	104.1601941	103.1096841	102.0803002	101.0714103	100.0824071	99.11270717	98.16174977
150601A00646	6/1/2015	2.68	9/30/2022	6/1/2015	112.93088	110.7146464	108.5538977	106.446884	104.3919207	102.3873883	100.4317293	98.52344549	96.66109518
150601A00689	6/1/2015	2.81	2/28/2025	6/1/2015	129.47369	124.0767794	118.9374833	114.0421453	109.3779083	104.9326593	100.694983	96.65411789	92.79991503
150601A00717	6/1/2015	2.13	4/1/2022	6/1/2015	108.80935	107.1853335	105.5942599	104.03521	102.507298	101.0096702	99.54150364	98.10200462	96.69040736
150610A00017	6/10/2015	2.9	6/15/2023	6/10/2015	118.34811	115.248825	112.2477337	109.3410529	106.5251735	103.7966531	101.1522062	98.58869654	96.10312824
150804A00002	8/4/2015	2.84	8/5/2024	8/4/2015	125.96806	121.3622101	116.951389	112.7263259	108.6782348	104.7987907	101.0801035	97.51469241	94.09546304
150817A00097	8/17/2015	3.1	8/17/2026	8/17/2015	141.3603	133.7183504	126.5428255	119.8027839	113.4694951	107.5162675	101.9182934	96.65250697	91.69745328
150821A00018	8/21/2015	2.6	8/21/2024	8/21/2015	126.12392	121.4369074	116.951057	112.6566771	108.5445922	104.6061151	100.8330183	97.2175073	93.7521952
150824A00048	8/24/2015	1.93	2/24/2021	8/24/2015	102.30185	101.8814809	101.4645625	101.0510499	100.6409014	100.2340762	99.83053394	99.43023506	99.03314061

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150824A00097	8/24/2015	2.67	8/25/2025	8/24/2015	133.42192	127.2673714	121.4350336	115.906354	110.6639409	105.6914877	100.9736992	96.49622423	92.24559212
150904A00015	9/4/2015	1.79	10/15/2020	9/4/2015	100.23301	100.1911559	100.1493518	100.1076007	100.0659024	100.0242569	99.98266387	99.94112337	99.89963527
150923A00041	9/23/2015	2.23	9/23/2022	9/23/2015	112.34942	110.1539188	108.0130287	105.9250371	103.888297	101.9012248	99.96229723	98.07004836	96.22306732
150721A00027	7/21/2015	3.74	7/22/2030	7/21/2015	174.62891	159.850751	146.4777685	134.3678551	123.3940009	113.4426168	104.4120523	96.21128433	88.75875503
150803A00053	8/3/2015	2.49	8/3/2022	8/3/2015	111.60245	109.5801718	107.6047531	105.6748321	103.7890915	101.9462606	100.1451134	98.3844666	96.66317791
150817A00099	8/17/2015	3.19	8/17/2027	8/17/2015	148.80198	139.5260282	130.8993631	122.8730374	115.4020321	108.4449273	101.9635961	95.92292789	90.29057508
150824A00049	8/24/2015	1.99	5/24/2021	8/24/2015	103.74634	103.0588295	102.3804093	101.7109002	101.0501276	100.3979211	99.75411505	99.11854782	98.49106197
150930A00011	9/30/2015	2.06	9/30/2021	9/30/2015	105.8991	104.8067456	103.7368301	102.6886654	101.6615938	100.654984	99.66822946	98.7007475	97.751978
151001A00048	10/1/2015	1.74	10/1/2020	10/1/2015	100.01497	100.0121846	100.0094045	100.0066268	100.0038516	100.0010787	99.99830821	99.9955401	99.99277437
151002A00041	10/2/2015	1.76	10/4/2021	10/2/2015	105.82819	104.7210115	103.6368817	102.5750911	101.5349549	100.5158164	99.51704474	98.53803441	97.57820359
151002A00075	10/2/2015	2.04	10/3/2022	10/2/2015	112.12261	109.8981423	107.7297062	105.6155197	103.5538707	101.5431143	99.58166888	97.66801362	95.80068546
151005A00053	10/5/2015	1.99	10/5/2021	10/5/2015	105.90883	104.8007201	103.7156993	102.6530545	101.6120991	100.5921743	99.59264787	98.61291265	97.65238531
151014A00030	10/14/2015	1.68	10/14/2020	10/14/2015	100.20768	100.1686826	100.1297295	100.0908241	100.0519663	100.0131559	99.97439284	99.9356771	99.89700856
151116A00015	11/16/2015	2.02	11/16/2020	11/16/2015	100.742	100.6103143	100.4789863	100.3480149	100.2173989	100.0871366	99.95722667	99.82766763	99.69845802
151116A00027	11/16/2015	2.02	11/16/2020	11/16/2015	100.742	100.6103143	100.4789863	100.3480149	100.2173989	100.0871366	99.95722667	99.82766763	99.69845802
151211A00055	12/11/2015	2.62	12/11/2024	12/11/2015	128.31638	123.1950968	118.3086478	113.6449007	109.1924293	104.9404636	100.8788484	96.99800346	93.28888791
151223A00070	12/23/2015	2.57	12/26/2023	12/23/2015	121.55389	117.7581099	114.1021194	110.5798711	107.1856241	103.9139259	100.7595951	97.7177062	94.78357474
151229A00081	12/29/2015	3.76	12/31/2035	12/29/2015	213.70677	187.2186135	164.4247942	144.7828732	127.8330271	113.1850706	100.5075741	89.51873012	79.97868225
160107A00042	1/7/2016	2.05	1/7/2021	1/7/2016	101.57822	101.2978486	101.0190346	100.7417608	100.4660144	100.1917827	99.91905319	99.64781354	99.37805151
160113A00030	1/13/2016	2.52	1/13/2025	1/13/2016	128.45721	123.220064	118.2273575	113.4663237	108.9249332	104.591851	100.4563919	96.5084798	92.73860875
160119A00019	1/19/2016	2.95	1/19/2027	1/19/2016	143.15511	134.8786418	127.139607	119.9002096	113.1255065	106.7831772	100.8433139	95.278229	90.06227911
160216A00028	2/16/2016	1.69	2/16/2022	2/16/2016	107.75322	106.2681213	104.8109111	103.3808701	101.9773019	100.5995338	99.24691516	97.91881694	96.6146305
160223A00014	2/23/2016	1.75	2/23/2021	2/23/2016	102.2124	101.7951593	101.3813174	100.970835	100.5636713	100.1597862	99.75914021	99.36169449	98.96741082
160307A00027	3/7/2016	2.71	3/6/2026	3/7/2016	135.91896	129.0360943	122.5466174	116.4259799	110.6512864	105.2011786	100.0557243	95.19631519	90.60557208
160329A00004	3/29/2016	1.78	3/25/2021	3/29/2016	102.68781	102.1816656	101.6805009	101.184244	100.692823	100.2061677	99.72420871	99.24687843	98.77411035
160329A00006	3/29/2016	2.12	3/29/2023	3/29/2016	114.81146	112.0084343	109.2889263	106.6499481	104.0886376	101.6022533	99.18816809	96.84386368	94.56692536
150817A00016	8/17/2015	2.24	8/17/2021	8/17/2015	105.34287	104.3899902	103.4543102	102.535363	101.6327025	100.7458984	99.87453562	99.01821317	98.17654401
150819A00012	8/19/2015	3.04	8/19/2025	8/19/2015	134.09989	127.9877836	122.1932936	116.6982463	111.4856014	106.5393751	101.844569	97.38710463	93.15376203
150819A00013	8/19/2015	3.51	8/19/2030	8/19/2015	172.47395	157.6872492	144.3195239	132.2261743	121.2780648	111.3597938	102.368169	94.2108585	86.80519761
150824A00047	8/24/2015	1.88	11/24/2020	8/24/2015	100.84685	100.6925596	100.538747	100.3854114	100.2325505	100.0801623	99.92824437	99.77679469	99.62581106
150824A00093	8/24/2015	1.87	8/24/2021	8/24/2015	105.26542	104.2892178	103.331052	102.3904276	101.4668664	100.5599073	99.66910565	98.79403272	97.93427469
150824A00095	8/24/2015	2.34	8/24/2023	8/24/2015	118.54516	115.2055581	111.9779598	108.8579925	105.841481	102.9244363	100.1030457	97.37366449	94.73280703
150827A00005	8/27/2015	2.07	8/27/2021	8/27/2015	105.50235	104.5156479	103.5473347	102.5969012	101.6638556	100.7477244	99.84805065	98.96439416	98.09633009

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150827A00029	8/27/2015	2.74	8/27/2024	8/27/2015	126.8335	122.1115046	117.5928123	113.2675927	109.126542	105.1608532	101.3621872	97.72264544	94.23474397
150909A00018	9/9/2015	2.28	9/9/2021	9/9/2015	105.77532	104.7489474	103.7424384	102.7552182	101.7867364	100.836463	99.90388817	98.98852075	98.08988769
150914A00018	9/14/2015	3.05	9/15/2025	9/14/2015	134.67868	128.453852	122.5571024	116.9693856	111.6728623	106.6508156	101.8875747	97.36844399	93.07963721
151001A00038	10/1/2015	1.75	10/1/2020	10/1/2015	100.01499	100.0122124	100.0094323	100.0066546	100.0038794	100.0011065	99.99833593	99.9955678	99.99280205
151001A00051	10/1/2015	1.75	10/1/2020	10/1/2015	100.01499	100.0122124	100.0094323	100.0066546	100.0038794	100.0011065	99.99833593	99.9955678	99.99280205
151008A00049	10/8/2015	1.75	10/8/2020	10/8/2015	100.11999	100.0977142	100.0754644	100.053238	100.031035	100.0088555	99.98669936	99.96456654	99.94245701
151116A00025	11/16/2015	3.04	11/14/2025	11/16/2015	135.77505	129.3063394	123.1882575	117.3998615	111.921574	106.7350877	101.8232766	97.17011237	92.76058817
151223A00066	12/23/2015	2.34	12/23/2022	12/23/2015	114.19099	111.6927802	109.2625241	106.8978423	104.5964578	102.356194	100.174969	98.05079051	95.98175132
160119A00029	1/19/2016	3.39	1/20/2032	1/19/2016	180.56884	163.0815031	147.4842415	133.561106	121.1219191	109.9990769	100.0447631	91.1285204	83.13513039
160122A00022	1/22/2016	1.9	1/22/2021	1/22/2016	101.77183	101.4480544	101.1263477	100.8066872	100.4890534	100.173427	99.85978889	99.54812038	99.23840288
160128A00058	1/28/2016	1.83	1/28/2021	1/28/2016	101.84244	101.5012882	101.1624219	100.8258143	100.4914429	100.1592856	99.82932036	99.50152563	99.17588006
160129A00066	1/29/2016	3.04	1/29/2031	1/29/2016	172.83237	157.1699143	143.0812347	130.3990899	118.9748355	108.6762691	99.38573567	90.99846009	83.42107781
160211A00033	2/11/2016	1.67	2/11/2022	2/11/2016	107.3849	105.9230992	104.4884283	103.0801939	101.697727	100.3403804	99.00752828	97.69856484	96.4129039
160212A00029	2/12/2016	1.8	2/11/2022	2/12/2016	107.56997	106.1067757	104.6707327	103.2611507	101.8773597	100.5187121	99.18458124	97.8743608	96.58746399
160212A00044	2/12/2016	1.93	2/13/2023	2/12/2016	113.59373	110.9489444	108.3792876	105.8822075	103.4552492	101.0960557	98.80236306	96.57199641	94.40286574
160329A00045	3/29/2016	2.12	3/29/2024	3/29/2016	121.60075	117.4888864	113.5390484	109.7439603	106.0967126	102.5907441	99.21982213	95.97802391	92.85971958
150824A00040	8/24/2015	2.36	8/24/2022	8/24/2015	111.69053	109.6039106	107.5669853	105.5782639	103.6363113	101.7397445	99.88723096	98.0774858	96.30927016
150826A00039	8/26/2015	3.22	8/27/2029	8/26/2015	165.24241	152.1956744	140.2975043	129.4402684	119.5269562	110.4700799	102.1906948	94.61752455	87.68618112
151005A00012	10/5/2015	1.53	10/5/2020	10/5/2015	100.07402	100.060084	100.0461612	100.0322522	100.0183569	100.0044753	99.99060743	99.9767532	99.96291261
151013A00030	10/13/2015	1.89	4/14/2021	10/13/2015	103.05116	102.4850431	101.9251389	101.3713462	100.823565	100.2816978	99.74564914	99.21532548	98.69063537
151120A00016	11/20/2015	2.11	11/20/2020	11/20/2015	100.81797	100.674952	100.5323559	100.3901756	100.2484091	100.1070546	99.96611039	99.82557457	99.68544536
160107A00039	1/7/2016	2.06	2/10/2021	1/7/2016	102.12943	101.7500661	101.3735244	100.999772	100.6287779	100.2605117	99.89494317	99.53204278	99.17178132
160328A00045	3/28/2016	2.49	3/27/2026	3/28/2016	136.32565	129.3076907	122.6963399	116.4658822	110.5923621	105.0534542	99.82834347	94.89761575	90.24315605
160330A00035	3/30/2016	2.32	4/1/2024	3/30/2016	121.64179	117.5390599	113.5978591	109.8109384	106.1714127	102.6727434	99.30871916	96.07343755	92.96128786
160330A00056	3/30/2016	2.26	3/31/2025	3/30/2016	128.61197	123.0946296	117.8468102	112.853904	108.1021749	103.5787001	99.2713184	95.16858055	91.25970395
160401A00055	4/1/2016	1.66	4/1/2021	4/1/2016	102.73438	102.2075688	101.6861358	101.170003	100.65909	100.153318	99.65260991	99.15688997	98.66608402
160419A00005	4/19/2016	1.66	4/19/2021	4/19/2016	103.0056	102.4247748	101.8504929	101.2826401	100.7211089	100.165794	99.6165926	99.073404	98.5361298
160420A00002	4/20/2016	1.96	11/16/2022	4/20/2016	112.24072	109.8888753	107.5986053	105.3678482	103.1946291	101.077055	99.01331102	97.00165613	95.04041973
160504A00004	5/4/2016	2.3	5/4/2026	5/4/2016	135.80557	128.6627715	121.9410452	115.613309	109.654369	104.0407764	98.75069627	93.76378847	89.06109695
160524A00035	5/24/2016	1.79	5/24/2021	5/24/2016	103.61344	102.9264279	102.2485028	101.5794842	100.9191974	100.2674724	99.62414333	98.98904876	98.3620313
160609A00010	6/9/2016	1.58	6/9/2022	6/9/2016	109.34408	107.5031656	105.7027732	103.9416363	102.2185388	100.532315	98.88184736	97.26606386	95.68393556
160610A00036	6/10/2016	1.42	6/10/2021	6/10/2016	103.71741	102.9775773	102.2482628	101.5292469	100.8203127	100.121249	99.43185065	98.75191823	98.08125765
160620A00026	6/20/2016	1.39	6/21/2021	6/20/2016	103.85906	103.0854219	102.3232656	101.57234	100.8323983	100.1032008	99.38451459	98.67611373	97.97777853

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160701A00020	7/1/2016	2.13	7/1/2026	7/1/2016	134.23316	126.9760621	120.1569836	113.7470908	107.7196112	102.0496721	96.71415484	91.69156106	86.96188977
160705A00006	7/5/2016	1.38	7/5/2022	7/5/2016	109.38137	107.4605057	105.5832666	103.7482611	101.9541614	100.1996956	98.48364476	96.80483985	95.16215935
160706A00010	7/6/2016	1.99	7/7/2025	7/6/2016	127.81062	122.0037342	116.4945678	111.2662173	106.302836	101.5895627	97.11245356	92.8584206	88.81517374
160706A00028	7/6/2016	2.39	7/6/2029	7/6/2016	153.20757	141.0432122	129.9417743	119.8045895	110.5426463	102.0755953	94.33086388	87.24286494	80.75229104
160706A00030	7/6/2016	2.59	7/7/2031	7/6/2016	166.64889	150.8024913	136.613679	123.899617	112.4985402	102.2672294	93.07879737	84.82074987	77.39328558
160714A00023	8/10/2016	2.49	8/10/2028	8/10/2016	149.05701	138.3781541	128.5452184	119.4867363	111.1376217	103.4385713	96.33552407	89.77917369	83.7245282
160510A00010	5/10/2016	1.6	5/3/2021	5/10/2016	103.17418	102.5514093	101.9361259	101.3281999	100.7275	100.1338979	99.5472684	98.96748937	98.39444134
160510A00012	5/10/2016	1.49	10/12/2021	5/10/2016	105.66937	104.5379095	103.4305473	102.3465215	101.2851006	100.2455834	99.2272975	98.22959764	97.25186459
160606A00004	6/6/2016	2.43	6/8/2026	6/6/2016	135.7843	128.5655392	121.7772458	115.3914019	109.3819635	103.7247145	98.39712754	93.37823722	88.64852279
160614A00009	6/14/2016	1.55	6/14/2021	6/14/2016	103.76518	103.0144924	102.274636	101.5453749	100.8264826	100.117739	99.41893029	98.72984862	98.05029187
160616A00006	6/16/2016	1.51	6/16/2021	6/16/2016	103.76567	103.0089573	102.2632465	101.5282986	100.8038818	100.0897709	99.38574703	98.69159755	98.00711574
160620A00003	6/20/2016	1.59	6/21/2021	6/20/2016	103.89892	103.1265819	102.3656919	101.6159925	100.8772382	100.1491905	99.43161799	98.72429577	98.02700537
160624A00063	6/24/2016	1.52	6/24/2022	6/24/2016	109.47127	107.5828586	105.7368323	103.9318342	102.1665639	100.4397769	98.75028129	97.09693484	95.47864258
160628A00031	6/28/2016	1.77	6/28/2023	6/28/2016	115.29007	112.1926207	109.1947715	106.2926304	103.482486	100.7608013	98.12420321	95.56947415	93.09354295
160628A00049	6/28/2016	1.88	6/27/2025	6/28/2016	128.16387	122.3484601	116.8306541	111.5935447	106.621287	101.899025	97.41282319	93.14960419	89.09709016
160628A00068	6/28/2016	1.28	6/28/2021	6/28/2016	103.87876	103.0838767	102.3010987	101.5301523	100.7707711	100.0226966	99.28567773	98.55947108	97.84384021
160630A00012	6/30/2016	2.11	6/30/2025	6/30/2016	128.33031	122.5342206	117.0341894	111.8134195	106.8561663	102.1476669	97.67407258	93.4223863	89.38040513
160701A00019	7/1/2016	1.73	7/3/2023	7/1/2016	115.24904	112.1364789	109.1243771	106.2088129	103.3860448	100.6525063	98.00479528	95.43966566	92.95401859
160701A00039	7/1/2016	1.92	7/1/2026	7/1/2016	134.3227	127.0115547	120.1433125	113.6887326	107.6206684	101.9139054	96.54501166	91.49220236	86.73521409
160706A00006	7/6/2016	1.47	7/6/2023	7/6/2016	115.10963	111.9766041	108.9451932	106.0114274	103.1715218	100.4218676	97.75902167	95.17969812	92.68075949
160706A00019	7/6/2016	1.41	7/6/2021	7/6/2016	103.98275	103.1646787	102.3594219	101.5666831	100.7861721	100.0176079	99.26071765	98.51523711	97.78090977
160708A00002	7/8/2016	1.46	7/8/2021	7/8/2016	104.05164	103.2271848	102.4157401	101.6170025	100.8306752	100.0564708	99.29411057	98.54332421	97.80384973
160712A00016	7/12/2016	1.32	7/12/2021	7/12/2016	104.11599	103.2774491	102.4523603	101.6404041	100.8412689	100.0546527	99.28026292	98.51781623	97.76703784
160714A00054	7/14/2016	2.03	7/15/2024	7/14/2016	122.24253	117.7803174	113.5056439	109.4095764	105.4836632	101.7199028	98.11071685	94.64892529	91.32772288
160718A00010	7/18/2016	1.65	7/18/2023	7/18/2016	115.82692	112.646007	109.5689801	106.5918231	103.7107026	100.9219579	98.22209168	95.60776199	93.07577383
160804A00014	8/4/2016	1.99	8/5/2024	8/4/2016	122.41058	117.8764411	113.5350807	109.3773148	105.3944427	101.5782211	97.9208374	94.41488489	91.05333981
160812A00005	8/12/2016	1.69	8/12/2022	8/12/2016	110.19253	108.1570603	106.1693788	104.2280749	102.3317892	100.4792109	98.66907622	96.90016576	95.17130304
160816A00003	8/16/2016	1.63	8/16/2023	8/16/2016	116.2138	112.9355002	109.7666599	106.7030338	103.7405648	100.8753751	98.10375741	95.42216642	92.82721061
160830A00007	8/30/2016	1.65	8/30/2021	8/30/2016	105.00756	104.0162978	103.0436573	102.0891158	101.152172	100.2323433	99.32916418	98.4421862	97.57097672
160815A00005	8/15/2016	2.23	8/17/2026	8/15/2016	135.60948	128.1436389	121.1363676	114.5571521	108.3776578	102.5715649	97.1144151	91.98347074	87.15758574
160825A00055	8/29/2016	2.32	8/30/2021	8/29/2016	105.64077	104.6462392	103.6703686	102.7126389	101.7725483	100.8496128	99.94336643	99.05335974	98.17915932
160829A00039	8/29/2016	1.61	3/26/2021	8/29/2016	102.61881	102.1099338	101.6060957	101.1072187	100.6132298	100.1240574	99.63963139	99.15988287	98.68474435
160830A00035	8/30/2016	2.06	8/30/2024	8/30/2016	123.10777	118.4762846	114.0448361	109.8037418	105.7438357	101.8564416	98.13334446	94.5667632	91.1493256

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160830A00038	8/30/2016	2.24	8/28/2026	8/30/2016	135.8477	128.334783	121.2854561	114.6687236	108.4558189	102.6200305	97.13654477	91.98230205	87.13586407
160916A00014	9/16/2016	1.66	9/16/2021	9/16/2016	105.26923	104.2239527	103.1993367	102.1947782	101.2096929	100.2435187	99.29571508	98.36576194	97.45315863
160922A00051	9/22/2016	2.5	9/22/2028	9/22/2016	149.83281	138.9520859	128.9452734	119.7375017	111.260682	103.4528607	96.25763834	89.62364455	83.50406635
160926A00046	9/26/2016	1.66	9/26/2023	9/26/2016	116.95473	113.5303656	110.2246217	107.0327148	103.9500864	100.972388	98.0954701	95.31537168	92.62831074
161123A00008	11/23/2016	2.2	11/23/2021	11/23/2016	106.96532	105.6958937	104.4564769	103.2460184	102.0635124	100.9079992	99.77856272	98.67432779	97.59445806
161212A00040	12/12/2016	2.45	12/12/2023	12/12/2016	120.88295	117.1442384	113.5419003	110.070098	106.7232881	103.4962018	100.3838295	97.38140523	94.48439382
170111A00012	1/11/2017	3.31	1/11/2030	1/11/2017	166.1047	152.569352	140.2656167	129.0742418	118.8881289	109.6110387	101.1564359	93.44646449	86.41103447
170111A00016	1/11/2017	3.51	1/11/2033	1/11/2017	188.85091	169.2593553	151.9408861	136.6170845	123.0450777	111.0128337	100.3350981	90.84988518	82.4154448
170120A00008	1/20/2017	3.63	1/20/2034	1/20/2017	197.74853	175.8434823	156.6587315	139.8381184	125.0739821	112.1003254	100.6869763	90.63459405	81.77039379
170120A00011	1/20/2017	3.75	1/20/2037	1/20/2017	220.94568	191.9628824	167.260546	146.1739824	128.1453709	112.7060721	99.46194468	88.08114568	78.28398087
170215A00009	2/15/2017	2.21	2/16/2021	2/15/2017	102.28468	101.8875571	101.4935231	101.1025397	100.7145715	100.3295839	99.94754228	99.56841303	99.19216283
170217A00014	2/17/2017	2.27	2/14/2022	2/17/2017	108.30755	106.8287332	105.3775157	103.9531922	102.5550777	101.1825096	99.83484733	98.51147121	97.21178154
170228A00014	2/28/2017	2.89	3/1/2027	2/28/2017	145.17589	136.6050923	128.6016059	121.1248586	114.1373812	107.6045566	101.4943892	95.77729307	90.42589905
170313A00035	3/13/2017	3.31	3/15/2027	3/13/2017	146.80236	138.1878808	130.1436932	122.6289328	115.6058742	109.0396714	102.8981229	97.15145882	91.77214468
170405A00013	4/5/2017	2.07	4/5/2022	4/5/2017	109.11525	107.4718004	105.8619084	104.2846261	102.7390429	101.2242814	99.73949618	98.28387248	96.85662445
170428A00030	4/28/2017	2.25	4/28/2022	4/28/2017	109.50191	107.7904937	106.1148182	104.4738372	102.8665454	101.2919759	99.74919866	98.23731858	96.75547387
170501A00008	5/1/2017	2.23	5/2/2022	5/1/2017	109.53603	107.8123634	106.1248549	104.4724405	102.8540965	101.2688391	99.71572198	98.19383474	96.70230109
170515A00041	5/15/2017	3.02	5/17/2027	5/15/2017	145.81617	136.9955221	128.7737218	121.1068129	113.954297	107.2788431	101.0460236	95.22407289	89.78366833
170518A00011	5/18/2017	1.94	5/18/2022	5/18/2017	109.61857	107.841517	106.1025339	104.4004694	102.7342173	101.1027155	99.50494409	97.93992297	96.40671007
161222A00030	12/22/2016	3.09	12/22/2026	12/22/2016	145.2864	136.9831736	129.2143983	121.9426655	115.133394	108.7545986	102.77668	97.17223354	91.91587483
170110A00020	1/10/2017	2.4	1/10/2024	1/10/2017	121.22611	117.3873578	113.6913842	110.1320101	106.7033698	103.3998886	100.2162667	97.14746297	94.18868084
170110A00023	1/10/2017	2.08	1/10/2022	1/10/2017	107.79468	106.3836147	105.0054961	103.6591695	102.3435342	101.0575403	99.80018567	98.57051363	97.36761001
170215A00033	2/15/2017	2.24	11/9/2020	2/15/2017	100.65605	100.5441143	100.43244	100.3210256	100.20987	100.0989724	99.98833172	99.87794717	99.76781779
170224A00039	5/24/2017	3.17	5/24/2027	5/24/2017	147.0749	138.1845501	129.8985344	122.1724129	114.9652498	108.2393175	101.9598289	96.09469244	90.61428926
170303A00021	3/3/2017	2.2	3/3/2022	3/3/2017	108.75653	107.2152831	105.7038036	104.221297	102.7669996	101.3401742	99.94010855	98.56611486	97.2175283
170313A00032	3/13/2017	3.69	6/14/2032	3/13/2017	187.50189	168.9445107	152.4478441	137.7697287	124.6977323	113.0453596	102.6487599	93.36386762	85.06391772
170317A00059	3/17/2017	2.47	3/17/2023	3/17/2017	116.04682	113.2543837	110.5441941	107.9133422	105.3590395	102.8786136	100.4695022	98.12924824	95.85549446
170320A00014	3/20/2017	2.22	3/21/2022	3/20/2017	109.09416	107.4961394	105.9300034	104.3948774	102.8899173	101.4143094	99.96726863	98.54803757	97.15588502
170321A00013	3/21/2017	2.18	3/21/2022	3/21/2017	109.03268	107.4351571	105.8695091	104.3348622	102.8303728	101.3552272	99.90864067	98.48985599	97.09814217
170322A00011	3/22/2017	2.48	3/22/2024	3/22/2017	122.83805	118.7268561	114.7765654	110.9799926	107.3303165	103.8210572	100.4460574	97.19946414	94.07571228
170322A00022	3/22/2017	3.89	9/23/2041	3/22/2017	257.41266	216.0076425	182.1530952	154.4033374	131.5982142	112.8053134	97.27412586	84.39963384	73.69334808
170327A00070	3/29/2017	3.05	3/29/2027	3/29/2017	146.87905	138.1429381	129.9908304	122.3805047	115.2730113	108.6323991	102.4254696	96.62155248	91.1923004
170327A00072	3/29/2017	3.09	3/29/2027	3/29/2017	147.17577	138.4295971	130.2679137	122.648474	115.5323018	108.8834211	102.6686101	96.85717659	91.42075289

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170419A00022	4/19/2017	1.75	4/19/2021	4/19/2017	103.13313	102.5509339	101.9752998	101.4061214	100.8432904	100.286701	99.73624948	99.19183474	98.65335768
170425A00069	4/25/2017	2.06	4/26/2021	4/25/2017	103.33899	102.73643	102.1408823	101.552222	100.9703301	100.3950904	99.82638931	99.26411594	98.70816176
170524A00047	5/24/2017	2.22	5/24/2023	5/24/2017	116.57557	113.5597573	110.6381224	107.807102	105.0632936	102.4034482	99.8244618	97.32336802	94.89733067
170530A00006	5/30/2017	2.15	5/31/2022	5/30/2017	109.8607	108.0487949	106.2761882	104.5416738	102.844091	101.1823267	99.55531242	97.96202244	96.4014715
170530A00058	5/30/2017	1.96	3/26/2021	5/30/2017	102.79272	102.2833402	101.7789986	101.2796217	100.7851365	100.2954713	99.81055585	99.33032136	98.85470027
170530A00064	5/30/2017	2.32	3/27/2023	5/30/2017	115.30697	112.5036902	109.7837171	107.1440733	104.5819109	102.0945012	99.67922944	97.33358869	95.05517502
170602A00015	6/2/2017	1.76	6/2/2021	6/2/2017	103.83301	103.1168754	102.4105801	101.7139268	101.0267193	100.3487664	99.67988229	99.01988593	98.36860115
170602A00023	6/2/2017	2.09	6/2/2023	6/2/2017	116.36046	113.3191953	110.3736428	107.5201481	104.7552251	102.0755467	99.47793559	96.95935694	94.51691032
170602A00033	6/2/2017	2.09	6/2/2022	6/2/2017	109.78937	107.9719485	106.1940591	104.4544772	102.7520318	101.0856	99.45410406	97.85650975	96.29182361
151013A00099	10/15/2015	2.44	10/15/2020	10/15/2015	100.26018	100.2183022	100.1764756	100.1347019	100.0929811	100.051313	100.0096975	99.96813452	99.92662398
151014A00024	10/14/2015	1.51	10/14/2020	10/14/2015	100.20655	100.1674937	100.1284882	100.0895309	100.0506219	100.011761	99.97294808	99.93418308	99.8954659
151015A00063	10/15/2015	1.68	10/15/2020	10/15/2015	100.22253	100.1807354	100.1389975	100.0973118	100.0556782	100.0140966	99.97256692	99.93108904	99.88966286
151119A00030	11/19/2015	2.1	11/19/2020	11/19/2015	100.80053	100.6603449	100.5205647	100.3811851	100.2422045	100.1036212	99.96543339	99.82763939	99.6902375
151120A00017	11/20/2015	2.11	11/20/2020	11/20/2015	100.81797	100.674952	100.5323559	100.3901756	100.2484091	100.1070546	99.96611039	99.82557457	99.68544536
151211A00012	12/11/2015	1.89	12/11/2020	12/11/2015	101.14035	100.9372935	100.7350636	100.533658	100.3330717	100.1332995	99.93433645	99.73617751	99.53881776
151223A00077	12/23/2015	3.57	12/24/2035	12/23/2015	215.28573	188.344676	165.1775123	145.2285674	128.0269859	113.1733749	100.3286168	89.20448308	79.55575184
151229A00080	12/29/2015	3.49	12/30/2030	12/29/2015	174.73277	159.256969	145.314707	132.7446507	121.4032827	111.1628459	101.9095342	93.54190084	85.96945552
160113A00006	1/13/2016	1.95	1/11/2021	1/13/2016	101.61377	101.3218718	101.0316558	100.7431111	100.4562233	100.1709782	99.88736148	99.60535924	99.32495763
160114A00007	1/14/2016	1.92	1/14/2021	1/14/2016	101.65232	101.3517415	101.0529495	100.7559291	100.4606646	100.1671403	99.87534074	99.58525073	99.29685517
160119A00025	1/19/2016	3.05	1/19/2028	1/19/2016	150.49655	140.5584524	131.3542979	122.8258654	114.9198467	107.5874082	100.7837934	94.46796214	88.60226392
160129A00067	1/29/2016	2.53	1/29/2026	1/29/2016	135.51722	128.7402043	122.3449003	116.3078328	110.6070872	105.2221994	100.134052	95.32477929	90.77767922
160204A00024	2/4/2016	1.68	2/4/2021	2/4/2016	101.8975	101.5360372	101.1771343	100.8207645	100.466901	100.1155175	99.76658801	99.42008683	99.0759887
160212A00043	2/12/2016	1.8	2/14/2022	2/12/2016	107.63427	106.1605597	104.7143615	103.2949682	101.9016971	100.5338884	99.19090374	97.87212566	96.57695668
160328A00013	3/28/2016	2.17	3/28/2024	3/28/2016	121.77308	117.6613705	113.7115309	109.9162917	106.2687562	102.762375	99.39092606	96.14849685	93.02946679
160331A00023	3/31/2016	1.68	3/31/2021	3/31/2016	102.72955	102.2056976	101.6871671	101.1738759	100.6657451	100.1626973	99.66465657	99.17154863	98.68330058
160510A00011	5/10/2016	1.59	4/5/2021	5/10/2016	102.75786	102.2191671	101.6861112	101.1586008	100.6365497	100.1198736	99.60848961	99.10231683	98.60127588
160603A00004	6/3/2016	1.65	6/3/2021	6/3/2016	103.67122	102.9540331	102.2467346	101.5491177	100.8609846	100.1821432	99.51240609	98.85159133	98.19952155
160606A00040	6/8/2016	1.98	12/15/2020	6/8/2016	101.19264	100.9784578	100.7651986	100.5528531	100.3414152	100.1308792	99.92123917	99.71248938	99.50462411
160606A00043	6/8/2016	2.23	12/15/2021	6/8/2016	107.38016	106.0375492	104.7283818	103.4514233	102.2054959	100.9894791	99.80230524	98.64295735	97.5104656
160614A00066	6/14/2016	1.35	6/14/2021	6/14/2016	103.72629	102.9743446	102.2332638	101.5028165	100.7827748	100.0729176	99.37302974	98.68290224	98.00233189
160615A00023	6/15/2016	1.38	6/15/2021	6/15/2016	103.76283	103.0077142	102.263553	101.5301107	100.807157	100.0944678	99.39182573	98.69901926	98.01584286
160616A00034	6/16/2016	1.97	6/17/2024	6/16/2016	121.54846	117.1925418	113.0168155	109.0127526	105.1722841	101.4877731	97.95198886	94.55808196	91.29956158
160330A00034	3/30/2016	1.95	3/30/2022	3/30/2016	108.54264	106.9268281	105.3437061	103.7923633	102.2719237	100.7815431	99.32040736	97.88773129	96.48275721

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160427A00019	4/27/2016	1.78	4/27/2021	4/27/2016	103.19063	102.5856124	101.987667	101.3966699	100.8125006	100.2350415	99.66417735	99.09979585	98.54178706
160610A00009	6/10/2016	1.89	6/12/2023	6/10/2016	115.38556	112.3383742	109.3877824	106.5300708	103.7616942	101.0792699	98.47956978	95.95951135	93.51615011
160615A00031	6/15/2016	2.51	6/17/2030	6/15/2016	162.57889	148.415612	135.6091173	124.0218643	113.5309416	104.0264441	95.41003284	87.59366263	80.49845459
160616A00027	6/16/2016	2.27	6/16/2026	6/16/2016	134.89389	127.6720524	120.8828724	114.4980629	108.4913469	102.8382993	97.51620583	92.50393334	87.78181102
160624A00011	6/24/2016	1.83	6/26/2023	6/24/2016	115.43401	112.3409322	109.3471232	106.4487118	103.6420062	100.9234872	98.28979898	95.73773946	93.26425229
160627A00070	6/27/2016	1.52	9/27/2021	6/27/2016	105.2954	104.2157769	103.1581656	102.1219026	101.1063472	100.1108838	99.13492104	98.17789072	97.23924638
160628A00054	6/28/2016	1.28	6/28/2021	6/28/2016	103.87876	103.0838767	102.3010987	101.5301523	100.7707711	100.0226966	99.28567773	98.55947108	97.84384021
160707A00032	7/7/2016	1.52	7/7/2023	7/7/2016	115.27253	112.1340114	109.0973328	106.1585197	103.3137821	100.5595055	97.89224153	95.30869853	92.80573336
160712A00023	7/12/2016	1.79	7/12/2023	7/12/2016	115.56226	112.4173164	109.3744361	106.4296619	103.5792197	100.8195077	98.14708668	95.55867196	93.05112481
160714A00053	7/14/2016	1.58	7/15/2021	7/14/2016	104.25258	103.4059289	102.5729768	101.7533976	100.946871	100.153087	99.37174534	98.60255516	97.84523454
160726A00005	7/26/2016	2.28	7/27/2026	7/26/2016	135.60908	128.2188059	121.2783608	114.7580449	108.6302718	102.8694029	97.45160032	92.35469184	87.55804612
160727A00002	7/27/2016	1.87	7/27/2023	7/27/2016	116.03152	112.8332176	109.7396612	106.7468407	103.8509256	101.0482534	98.33532091	95.70877699	93.16541447
160727A00017	7/27/2016	2.03	7/29/2024	7/27/2016	122.46578	117.9536369	113.6324883	109.4932583	105.5273528	101.7266287	98.0833678	94.5902523	91.24034197
160802A00003	8/2/2016	2.53	8/1/2031	8/2/2016	169.46915	153.1846879	138.6177232	125.5775263	113.8954659	103.4223451	94.0260743	85.5896329	78.00928222
160815A00006	8/15/2016	2.23	8/17/2026	8/15/2016	135.60948	128.1436389	121.1363676	114.5571521	108.3776578	102.5715649	97.1144151	91.98347074	87.15758574
160920A00004	9/20/2016	1.68	9/20/2021	9/20/2016	105.35107	104.292902	103.2558966	102.2394212	101.2428709	100.2656644	99.30724252	98.36706787	97.44462313
160922A00014	9/22/2016	2.06	9/22/2026	9/22/2016	136.55356	128.8699293	121.6674279	114.9134241	108.5776679	102.6321016	97.05068964	91.80926332	86.88537716
160923A00033	9/23/2016	2.04	9/23/2026	9/23/2016	136.4343	128.7505851	121.5482943	114.7947579	108.4596923	102.5150098	96.93464838	91.69441539	86.77184413
161109A00018	11/9/2016	2.63	11/9/2026	11/9/2016	139.68204	131.7801711	124.3791576	117.4445438	110.9444293	104.8492623	99.13165487	93.76621267	88.7293796
161117A00014	11/17/2016	1.88	11/17/2020	11/17/2016	100.73904	100.6045515	100.4704324	100.3366845	100.2033062	100.0702959	99.93765217	99.80537342	99.67345811
170111A00014	1/11/2017	3.47	1/12/2032	1/11/2017	181.51625	164.0078248	148.3869524	134.4383624	121.9724456	110.8220704	100.8398106	91.89552888	83.87426632
170207A00023	2/7/2017	2.26	2/7/2022	2/7/2017	108.15401	106.6994753	105.2717207	103.8700692	102.4938649	101.1424736	99.81528121	98.51169369	97.23113583
160502A00002	5/2/2016	1.68	5/3/2021	5/2/2016	103.22256	102.5996199	101.9841708	101.3760804	100.7752175	100.1814538	99.59466411	99.01472618	98.44152057
160523A00018	5/23/2016	1.77	5/24/2021	5/23/2016	103.60015	102.9131878	102.2353121	101.5663426	100.9061044	100.2544275	99.61114616	98.97609886	98.34912824
160526A00010	5/26/2016	1.58	5/26/2021	5/26/2016	103.60161	102.9073792	102.2224262	101.5465636	100.8796114	100.2213943	99.57174149	98.93048666	98.29746774
160601A00016	6/1/2016	1.74	6/1/2021	6/1/2016	103.70283	102.9915473	102.28998	101.597932	100.9152108	100.2416291	99.57700425	98.92115881	98.27391978
160603A00021	6/3/2016	1.66	6/3/2021	6/3/2016	103.67815	102.9609361	102.2536109	101.5559675	100.8678082	100.1889407	99.51917785	98.85833757	98.20624251
160615A00043	6/15/2016	1.59	6/15/2021	6/15/2016	103.80912	103.05524	102.3122798	101.5800005	100.8581727	100.146574	99.44498787	98.75320406	98.07101813
160616A00028	6/16/2016	1.81	6/16/2023	6/16/2016	115.21833	112.1606233	109.2002151	106.333342	103.5564191	100.866027	98.25890301	95.73193264	93.2821413
160617A00045	6/17/2016	1.55	6/17/2021	6/17/2016	103.80973	103.0498193	102.3010032	101.5630359	100.8356828	100.1187162	99.41191463	98.71506303	98.02795234
160627A00040	6/27/2016	1.28	6/28/2021	6/27/2016	103.87876	103.0838767	102.3010987	101.5301523	100.7707711	100.0226966	99.28567773	98.55947108	97.84384021
160628A00040	6/28/2016	1.56	6/28/2023	6/28/2016	115.25392	112.1439142	109.134193	106.2208274	103.4000717	100.6683563	98.02227772	95.45858964	92.97419397
160628A00050	6/28/2016	1.56	6/28/2023	6/28/2016	115.25392	112.1439142	109.134193	106.2208274	103.4000717	100.6683563	98.02227772	95.45858964	92.97419397

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160701A00034	7/1/2016	1.43	7/21/2021	7/1/2016	104.21006	103.3454548	102.4951327	101.6587463	100.8359552	100.02643	99.22985178	98.44591191	97.67431141
160705A00009	7/5/2016	1.21	7/6/2021	7/5/2016	103.94063	103.1211581	102.314546	101.5204966	100.7387182	99.96892802	99.21085204	98.46422444	97.72878743
160706A00027	7/6/2016	2.29	7/6/2028	7/6/2016	146.71577	136.2650662	126.6353603	117.7577448	109.5694469	102.0132517	95.03698189	88.59302907	82.63793053
160707A00034	7/7/2016	1.25	7/7/2021	7/7/2016	103.98673	103.164	102.3542371	101.5571322	100.7723902	99.99972541	99.23886054	98.48952688	97.75146384
160801A00001	8/1/2016	1.97	8/1/2024	8/1/2016	122.26339	117.745498	113.4192123	109.2754295	105.3055232	101.5013188	97.85506759	94.35942268	91.00741579
160811A00011	8/11/2016	2.25	8/11/2026	8/11/2016	135.64764	128.2023057	121.213052	114.649605	108.4838527	102.6896766	97.24280061	92.12065213	87.30223449
160906A00017	9/6/2016	1.65	9/7/2021	9/6/2016	105.1309	104.1141755	103.1170232	102.1388846	101.1792202	100.2375103	99.31325489	98.40597224	97.5151982
160923A00032	9/23/2016	1.67	9/25/2023	9/23/2016	116.97084	113.5495577	110.2466773	107.0574284	103.9772651	101.0018506	98.12704643	95.34890195	92.66364482
160929A00004	9/29/2016	1.74	9/29/2022	9/29/2016	111.0149	108.8223877	106.6847875	104.600369	102.5674662	100.5844778	98.64986341	96.76214135	94.91988569
161006A00010	10/6/2016	1.35	10/6/2020	10/6/2016	100.08582	100.0690957	100.0523898	100.0357008	100.0190288	100.0023737	99.98573555	99.96911421	99.9525097
161014A00006	10/14/2016	1.74	10/14/2021	10/14/2016	105.78804	104.6523591	103.5409486	102.4530384	101.3878891	100.3447922	99.3230684	98.32206591	97.34115927
161027A00013	10/28/2016	1.66	3/15/2021	10/28/2016	102.4773	102.0010172	101.5291662	101.0616811	100.5985014	100.1395677	99.6848217	99.23420611	98.78766475
160830A00032	8/30/2016	1.82	8/30/2022	8/30/2016	110.70631	108.6115824	106.5671663	104.5715436	102.62325	100.7208753	98.86306057	97.04849632	95.27592019
160907A00009	9/7/2016	1.36	9/8/2021	9/7/2016	105.0175	103.9960105	102.9942916	102.0117695	101.0478968	100.1021464	99.17401116	98.26300265	97.36865031
160926A00002	9/26/2016	1.6	9/27/2021	9/26/2016	105.37746	104.2973794	103.2393166	102.2026085	101.1866142	100.1907179	99.21432831	98.25687688	97.31781707
161006A00011	10/6/2016	1.64	10/6/2022	10/6/2016	111.32117	109.0963355	106.9277389	104.8135818	102.7521394	100.7417548	98.78083529	96.8678496	95.00132487
161006A00012	10/6/2016	1.98	10/7/2024	10/6/2016	124.28046	119.4687033	114.8705362	110.4753165	106.2729949	102.2540756	98.40958287	94.73102919	91.21038623
161031A00005	10/31/2016	1.56	11/2/2020	10/31/2016	100.47876	100.386647	100.2947002	100.2029238	100.1113173	100.0198802	99.92861204	99.83751237	99.74658074
161215A00014	12/15/2016	2.66	12/15/2022	12/15/2016	114.33818	111.8721852	109.4725435	107.1369547	104.8632208	102.649239	100.4929968	98.39256737	96.34610463
170110A00022	1/10/2017	2.27	1/10/2023	1/10/2017	114.33801	111.7827036	109.297959	106.8813248	104.530453	102.2430966	100.0171034	97.85041212	95.7410468
170120A00009	1/20/2017	3.67	1/22/2035	1/20/2017	205.41629	181.2267162	160.2346881	141.9951277	126.1272726	112.3050777	100.2490949	89.71959337	80.51072594
170130A00010	1/30/2017	2.92	1/30/2025	1/30/2017	129.62295	124.3323692	119.2896009	114.4817523	109.8966636	105.5228667	101.3495422	97.36647919	93.56403821
170130A00054	3/30/2017	2.33	4/29/2022	3/30/2017	109.65081	107.9350868	106.2552306	104.6101895	102.9989528	101.420549	99.87404353	98.35853683	96.87316305
170213A00011	2/13/2017	2.13	2/16/2021	2/13/2017	102.25352	101.8564727	101.4625129	101.0716033	100.6837086	100.2987939	99.91682489	99.53776781	99.16158937
170215A00040	2/15/2017	2.59	5/15/2023	2/15/2017	116.89851	113.9186699	111.0309133	108.2317978	105.5180314	102.8864683	100.3341017	97.85805609	95.45558082
170215A00041	2/15/2017	2.6	10/16/2023	2/15/2017	119.68311	116.1667296	112.7732285	109.4975955	106.3350537	103.2810495	100.3312412	97.48148727	94.727836
170215A00043	2/15/2017	2.7	8/28/2024	2/15/2017	125.80075	121.1207693	116.6420314	112.3548219	108.2499438	104.3186907	100.552818	96.94451545	93.48638255
170216A00045	2/16/2017	3.73	2/17/2037	2/16/2017	221.08378	191.944005	167.1272122	145.9592631	127.8748358	112.3993493	99.13396994	87.74315975	77.94432574
170224A00021	2/24/2017	3.4	2/24/2032	2/24/2017	181.35915	163.6661188	147.899809	133.8385089	121.2871343	110.073911	100.047481	91.07438185	83.03684765
170228A00015	2/28/2017	2.87	5/28/2025	2/28/2017	131.68929	125.9278807	120.4544709	115.2530443	110.3085707	105.6069375	101.1348874	96.87996176	92.83044777
170309A00024	3/9/2017	2.27	3/9/2021	3/9/2017	102.66038	102.2011546	101.7460431	101.2949858	100.8479286	100.4048183	99.96560284	99.53023084	99.09865193
170322A00023	3/22/2017	3.82	9/22/2039	3/22/2017	241.28483	205.4469605	175.6245839	150.7572813	129.9776947	112.5754528	97.96799509	85.67694403	75.30894989
170329A00015	3/29/2017	2.11	3/29/2021	3/29/2017	102.91647	102.3979291	101.8846021	101.3764076	100.8732688	100.3751108	99.88185975	99.39344362	98.90979161

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170330A00012	3/30/2017	2.11	3/30/2021	3/30/2017	102.93287	102.4113545	101.8951036	101.3840407	100.8780882	100.3771698	99.88121058	99.39013743	98.90387843
170404A00007	4/4/2017	2.22	4/4/2022	4/4/2017	109.04812	107.413087	105.8113305	104.2419116	102.703931	101.196522	99.71884941	98.27010787	96.84952061
160727A00016	7/27/2016	1.78	7/27/2022	7/27/2016	110.12196	108.1352308	106.194264	104.2977137	102.4442832	100.6327224	98.86182676	97.13043432	95.43742446
160728A00022	7/28/2016	1.37	7/28/2021	7/28/2016	104.39528	103.5066063	102.6329845	101.7740378	100.929399	100.0987132	99.28163685	98.47783796	97.68699505
160808A00011	8/8/2016	1.6	8/9/2021	8/8/2016	104.63992	103.7151517	102.8066622	101.9140237	101.0368242	100.1746657	99.32716389	98.49394749	97.67465761
160815A00074	8/15/2016	1.57	8/13/2021	8/15/2016	104.67402	103.7367846	102.8162649	101.9120161	101.0236096	100.1506319	99.29268366	98.44937926	97.62034617
160825A00054	8/29/2016	2.49	8/30/2021	8/29/2016	105.80144	104.806075	103.8293848	102.8708463	101.9299571	101.0062334	100.0992088	99.20843363	98.3334743
160830A00061	8/30/2018	1.89	8/30/2023	8/30/2018	116.62244	113.3075965	110.1044307	107.0085692	104.015835	101.1222378	98.32396446	95.61736987	92.99896883
160916A00016	9/16/2016	1.66	9/16/2021	9/16/2016	105.26923	104.2239527	103.1993367	102.1947782	101.2096929	100.2435187	99.29571508	98.36576194	97.45315863
160921A00020	9/21/2016	1.97	9/21/2023	9/21/2016	117.22919	113.8321908	110.5519524	107.3838012	104.3232819	101.3661432	98.50832662	95.74595665	93.07533156
160922A00050	9/22/2016	2.24	9/22/2025	9/22/2016	130.34713	124.208976	118.3971988	112.8927296	107.6777139	102.735427	98.05019656	93.60733097	89.39305275
160926A00023	9/26/2016	1.74	9/26/2022	9/26/2016	110.96787	108.7853287	106.6572336	104.5818696	102.5575919	100.5828188	98.65602877	96.77575802	94.94059752
160928A00014	9/28/2016	1.37	9/28/2021	9/28/2016	105.32917	104.2436358	103.1803428	102.1386105	101.117789	100.1172539	99.13640591	98.17466871	97.2314885
160930A00010	9/30/2016	1.47	9/30/2022	9/30/2016	110.87017	108.6682092	106.5216298	104.4286722	102.38765	100.3969425	98.45499129	96.56029727	94.71141822
161006A00013	10/6/2016	2.07	10/6/2025	10/6/2016	130.86663	124.625308	118.7192426	113.1286498	107.8350199	102.8210268	98.0704455	93.56807671	89.29967617
161102A00026	11/2/2016	1.54	10/30/2020	11/2/2016	100.43358	100.3499008	100.2663598	100.182958	100.0996951	100.0165708	99.93358467	99.85073644	99.7680258
161115A00010	11/15/2016	2.09	11/15/2021	11/15/2016	106.70019	105.4578927	104.2444074	103.0587413	101.899946	100.7671159	99.6593858	98.57592833	97.51595232
161115A00011	11/15/2016	2.46	11/15/2023	11/15/2016	119.74895	116.1344761	112.6490277	109.2872154	106.0439107	102.9142319	99.89353062	96.97737902	94.16155755
161117A00015	11/17/2016	2.08	11/17/2021	11/17/2016	106.72199	105.4731948	104.2535087	103.0619208	101.8974688	100.7592338	99.6463378	98.55794194	97.49324383
161206A00008	12/6/2016	2.6	12/6/2023	12/6/2016	120.5966	116.8991619	113.3356468	109.9003645	106.5879089	103.3931393	100.3111657	97.33733433	94.46721451
161213A00016	12/13/2016	2.06	12/14/2020	12/13/2016	101.19363	100.9822911	100.7718445	100.5622879	100.3536155	100.1458217	99.93890085	99.73284747	99.52765602
170109A00031	1/9/2017	2.29	1/10/2022	1/9/2017	107.84814	106.4403752	105.0654197	103.7221213	102.4093859	101.1261697	99.87147634	98.64435447	97.44389502
170215A00036	2/15/2017	2.61	7/30/2021	2/15/2017	105.35216	104.4547603	103.5726061	102.7053149	101.8525135	101.0138412	100.1889492	99.3775	98.57916711
170215A00037	2/15/2017	2.71	5/23/2022	2/15/2017	110.69275	108.8970647	107.1399544	105.4202429	103.7368038	102.0885564	100.4744627	98.89352576	97.3447873
170215A00039	2/15/2017	2.72	11/7/2022	2/15/2017	113.78219	111.4411	109.1606684	106.9388852	104.7738263	102.6636463	100.6065752	98.60091364	96.64503044
170602A00034	6/2/2017	1.76	6/2/2021	6/2/2017	103.83301	103.1168754	102.4105801	101.7139268	101.0267193	100.3487664	99.67988229	99.01988593	98.36860115
170609A00009	6/9/2017	1.82	6/9/2021	6/9/2017	103.98673	103.2488361	102.5213879	101.8041658	101.0969552	100.3995473	99.71173942	99.03333414	98.36413956
170613A00033	6/13/2017	2.3	6/13/2024	6/13/2017	123.63053	119.2257432	115.0027884	110.9530726	107.0684642	103.3412666	99.76419187	96.33033579	93.03315525
170619A00084	6/19/2017	1.95	6/20/2022	6/19/2017	110.18544	108.3027169	106.4620093	104.6619832	102.901357	101.1789039	99.49344842	97.8438641	96.22907046
170719A00006	7/19/2017	1.93	1/19/2021	7/19/2017	101.7341	101.4190123	101.1058869	100.7947036	100.4854442	100.178091	99.87262626	99.56903253	99.26729261
170731A00006	7/31/2017	2.16	8/1/2022	7/31/2017	110.9313	108.9217401	106.958647	105.0406716	103.1665111	101.3349087	99.54465178	97.79456973	96.08353244
170809A00005	8/9/2017	2.61	8/11/2025	8/9/2017	131.6333	125.6121476	119.9034247	114.4893024	109.353062	104.4790178	99.85244768	95.45952957	91.28728153
170814A00084	8/14/2017	1.91	8/15/2022	8/14/2017	111.03203	108.9723414	106.9612802	104.9974065	103.079328	101.2057032	99.37523854	97.58668655	95.83884399

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170815A00006	8/15/2017	2.5	8/15/2024	8/15/2017	124.72067	120.1064182	115.6891339	111.4593835	107.4082322	103.5272179	99.80832342	96.24395069	92.82689673
170818A00003	8/18/2017	2.23	8/20/2024	8/18/2017	124.5332	119.8820852	115.4308262	111.1697881	107.0898532	103.182389	99.43921981	95.85259985	92.41518861
170831A00006	8/31/2017	1.87	8/31/2022	8/31/2017	111.214	109.1036682	107.0441959	105.0340424	103.0717222	101.1558046	99.28491155	97.45771516	95.67293569
170907A00050	9/7/2017	1.69	9/7/2021	9/7/2017	105.32219	104.3022003	103.3018804	102.3206635	101.3580065	100.4133867	99.48630079	98.57626425	97.68281012
170920A00028	9/21/2017	2.16	9/21/2022	9/21/2017	111.76267	109.5874905	107.4661611	105.3969974	103.3783838	101.4087662	99.4866494	97.61059418	95.77921505
171003A00005	10/3/2017	1.92	10/5/2020	10/3/2017	100.07735	100.0634336	100.049528	100.0356359	100.0217572	100.0078921	99.99404041	99.98020216	99.96637733
171010A00004	10/10/2017	1.92	10/12/2021	10/10/2017	106.12951	104.9953757	103.885377	102.7987533	101.7347724	100.692732	99.67195878	98.67180674	97.69165578
171010A00038	10/10/2017	2.23	10/11/2022	10/10/2017	112.24453	110.0026521	107.8174996	105.6872581	103.6101822	101.5845952	99.60888583	97.68150518	95.8009637
171012A00020	10/12/2017	1.93	10/13/2020	10/12/2017	100.2019	100.165678	100.129502	100.0933692	100.0572795	100.021233	99.98522939	99.94926876	99.91335096
171012A00026	10/12/2017	2.09	10/12/2021	10/12/2017	106.13079	104.9993988	103.8920425	102.8079619	101.746429	100.7067458	99.68824278	98.69027769	97.71223392
171017A00023	10/17/2017	1.97	10/19/2020	10/17/2017	100.29726	100.2442916	100.1913982	100.1385768	100.0858273	100.0331495	99.98054322	99.92800844	99.87554494
171018A00003	10/18/2017	2.23	10/18/2023	10/18/2017	119.16512	115.6350233	112.2288773	108.9416053	105.7683685	102.7045555	99.74577043	96.88782097	94.12670795
171026A00009	10/26/2017	2.75	10/27/2025	10/26/2017	133.79599	127.4447361	121.4355632	115.7481865	110.3636364	105.2641637	100.4331546	95.85505158	91.51528059
171026A00010	10/26/2017	2.84	10/26/2026	10/26/2017	140.88254	132.9944922	125.6029555	118.6739878	112.1761451	106.0802843	100.3593831	94.98837422	89.94399434
171027A00049	10/27/2017	2.04	10/27/2020	10/27/2017	100.4278	100.3524716	100.2772669	100.2021813	100.1272145	100.0523662	99.9776362	99.90302415	99.82852983
171030A00023	10/30/2017	2.9	11/1/2027	10/30/2017	147.86143	138.3260753	129.4778951	121.2636118	113.6343481	106.5452454	99.95511286	93.82610902	88.12345292
171031A00007	10/31/2017	2.15	12/27/2021	10/31/2017	107.48425	106.1023434	104.7558131	103.4433111	102.1635605	100.9153473	99.69751709	98.508971	97.34866266
171031A00029	10/31/2017	2.43	10/31/2023	10/31/2017	119.38517	115.8260619	112.392649	109.0797463	105.8824138	102.795946	99.81585913	96.93787904	94.15792994
171031A00060	10/31/2017	1.98	10/30/2020	10/31/2017	100.47036	100.3866486	100.303077	100.2196447	100.1363513	100.0531965	99.97018002	99.88730146	99.80456052
171101A00022	11/1/2017	2.65	11/1/2024	11/1/2017	126.76938	121.8471187	117.145058	112.6521138	108.3578287	104.2523287	100.3262872	96.57089103	92.97780935
171115A00028	11/15/2017	2.25	8/18/2021	11/15/2017	105.36906	104.412973	103.4741882	102.5522436	101.646689	100.7570899	99.88302742	99.02409691	98.17990784
171121A00013	11/21/2017	1.98	11/23/2020	11/21/2017	100.86811	100.7163801	100.565115	100.4143147	100.2639769	100.1140995	99.96468044	99.81571749	99.66720857
171129A00010	11/29/2017	2.32	11/29/2021	11/29/2017	107.21288	105.9227378	104.6635279	103.4341441	102.2335368	101.0607048	99.91469314	98.79459	97.69952455
171206A00040	12/6/2017	2.23	12/6/2022	12/6/2017	113.63746	111.19829	108.8243578	106.5134244	104.2633449	102.0720668	99.93762452	97.85813537	95.83179497
171206A00042	12/6/2017	2.24	12/7/2020	12/6/2017	101.11594	100.9245678	100.7339326	100.5440256	100.3548426	100.1663793	99.97863171	99.79159567	99.6052671
171207A00019	12/7/2017	2.41	6/16/2022	12/7/2017	110.59551	108.7275406	106.9009317	105.1143757	103.3666215	101.6564708	99.98277476	98.34443205	96.7403859
171220A00004	12/20/2017	2.52	12/20/2021	12/20/2017	107.83458	106.4728001	105.1453131	103.8508375	102.5881532	101.3560996	100.153572	98.97951831	97.83293586
180102A00021	1/2/2018	2.82	1/2/2026	1/2/2018	135.41755	128.7829833	122.5166637	116.5960785	111.000221	105.7094812	100.7055446	95.97129873	91.49074717
180109A00025	1/9/2018	2.33	1/11/2021	1/9/2018	101.72325	101.4311387	101.1407163	100.8519662	100.5648739	100.2794251	99.99560562	99.71340151	99.4327989
180110A00027	1/10/2018	2.6	1/10/2023	1/10/2018	114.65957	112.1100334	109.6306903	107.2191091	104.87296	102.5900129	100.3681317	98.20527004	96.09946615
180110A00028	1/10/2018	2.85	1/10/2025	1/10/2018	128.92037	123.7130531	118.7474963	114.0111082	109.492027	105.1790752	101.0617152	97.13000938	93.37458167
180110A00048	1/10/2018	2.37	1/7/2021	1/10/2018	101.6668	101.3862751	101.1072996	100.8298649	100.5539583	100.2795671	100.0066787	99.73528089	99.46536133
180116A00008	1/16/2018	2.37	1/15/2021	1/16/2018	101.80276	101.4990148	101.1970965	100.8969848	100.5986634	100.3021163	100.0073275	99.71428147	99.42296259

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180117A00017	1/17/2018	2.45	6/17/2021	1/17/2018	104.46942	103.7068004	102.9553008	102.2146774	101.4846954	100.7651263	100.0557485	99.35634624	98.66671016
180118A00037	1/18/2018	2.88	1/21/2025	1/18/2018	129.32028	124.0653049	119.0555421	114.27822	109.7213062	105.373457	101.2239742	97.26276434	93.48030154
180124A00038	1/24/2018	2.51	9/1/2021	1/24/2018	105.85614	104.8542772	103.8713225	102.9067453	101.960034	101.0306957	100.1182558	99.22225652	98.3422567
180201A00033	2/1/2018	2.53	2/1/2022	2/1/2018	108.6765	107.2336698	105.8171546	104.4262915	103.060442	101.7189882	100.401332	99.10689441	97.83511488
180205A00018	2/5/2018	2.66	2/3/2023	2/5/2018	115.72921	113.0819061	110.5089669	108.0078902	105.5762695	103.2117932	100.9122403	98.67547599	96.49944827
160624A00006	6/24/2016	1.52	6/24/2021	6/24/2016	103.89112	103.1097731	102.3401329	101.5819382	100.8349353	100.0988777	99.37352622	98.65864871	97.95401956
160624A00026	6/24/2016	1.52	6/24/2021	6/24/2016	103.89112	103.1097731	102.3401329	101.5819382	100.8349353	100.0988777	99.37352622	98.65864871	97.95401956
160701A00028	7/1/2016	2.16	7/1/2026	7/1/2016	134.42673	127.1638352	120.3392117	113.924014	107.8914572	102.2166567	96.87648272	91.84942636	87.11547682
160714A00029	8/10/2016	2.27	8/10/2026	8/10/2016	135.7637	128.3184365	121.3289876	114.7651118	108.5987268	102.8037405	97.3559003	92.23265504	87.413027
160829A00037	8/31/2016	2.35	8/31/2021	8/31/2016	105.68657	104.6887044	103.7096156	102.748779	101.8056881	100.879855	99.97080948	99.07809827	98.20128432
160922A00009	9/22/2016	1.55	9/22/2022	9/22/2016	110.91315	108.7361292	106.6132525	104.5428257	102.5232178	100.5528599	98.63024316	96.75391545	94.92247902
160923A00030	9/23/2016	1.41	9/23/2021	9/23/2016	105.29424	104.2245029	103.1763835	102.1492303	101.1424193	100.1553512	99.18744993	98.23816163	97.30695362
160926A00022	9/26/2016	1.6	9/24/2021	9/26/2016	105.33167	104.2611693	103.2123196	102.1844676	101.1769878	100.1892795	99.22076509	98.27088966	97.33911927
160926A00074	9/26/2016	1.38	9/27/2021	9/26/2016	105.32432	104.2419413	103.1816715	102.1428434	101.1248121	100.1269585	99.14868769	98.1894281	97.24863007
161014A00024	10/18/2016	2.34	10/16/2020	10/18/2016	100.26679	100.222187	100.1776394	100.1331489	100.0887151	100.0443381	100.0000177	99.95575378	99.9115463
161031A00006	10/31/2016	1.76	11/1/2021	10/31/2016	106.09371	104.8995997	103.732222	102.5906877	101.4741468	100.3817859	99.31282653	98.26652349	97.24216278
161031A00007	10/31/2016	1.91	10/31/2022	10/31/2016	111.87237	109.5745971	107.3360403	105.1547609	103.0288948	100.9566535	98.93632021	96.96624674	95.04484978
161213A00013	12/13/2016	1.85	12/14/2020	12/13/2016	101.17969	100.9680471	100.7573033	100.5474544	100.3384947	100.1304184	99.92321987	99.71689343	99.51143352
161213A00014	12/13/2016	2.07	12/13/2021	12/13/2016	107.35782	106.0183493	104.7121493	103.4379954	102.1947194	100.9812094	99.79640632	98.6393007	97.50893001
170110A00021	1/10/2017	1.89	1/11/2021	1/10/2017	101.63482	101.3424479	101.0517698	100.7627709	100.4754365	100.1897521	99.90570354	99.62327657	99.34245725
170111A00011	1/11/2017	3.24	1/11/2029	1/11/2017	158.7057	147.0117185	136.2809443	126.4285612	117.3776597	109.0584584	101.4076078	94.36756545	87.88603526
170117A00046	1/17/2017	2.55	1/17/2024	1/17/2017	121.16377	117.3214721	113.6222557	110.0599691	106.6287619	103.3230702	100.1376001	97.0673135	94.10741343
170130A00011	1/30/2017	2.15	2/1/2021	1/30/2017	102.01551	101.6624693	101.3118669	100.9636743	100.6178669	100.2744203	99.93331043	99.59451354	99.25800624
170203A00012	2/3/2017	3.63	2/2/2035	2/3/2017	204.90995	180.7057713	159.7084938	141.4708904	125.610452	111.7997257	99.75813404	89.24504597	80.05390116
170206A00012	2/6/2017	2.04	2/5/2021	2/6/2017	102.0416	101.6769218	101.3148475	100.9553499	100.5984014	100.243975	99.89204401	99.54258215	99.1955635
170216A00028	2/16/2017	1.97	2/16/2021	2/16/2017	102.24367	101.8460341	101.4514986	101.0600255	100.671579	100.2861241	99.90362607	99.52405101	99.14736536
170216A00041	2/16/2017	2.37	2/16/2022	2/16/2017	108.48695	107.0002227	105.5413494	104.1096138	102.7043218	101.3248025	99.97040702	98.64050793	97.33449809
170223A00003	2/23/2017	2.05	2/23/2022	2/23/2017	108.3956	106.8825951	105.398381	103.9422015	102.5133285	101.1110587	99.73471239	98.38363263	97.05718423
170518A00034	5/18/2017	2.15	5/18/2023	5/18/2017	116.27573	113.2829255	110.3831581	107.572921	104.8488705	102.2078125	99.64669455	97.16259879	94.75273452
170530A00026	5/30/2017	1.81	6/1/2021	5/30/2017	103.85153	103.138343	102.4349119	101.7410417	101.0565385	100.3812137	99.71488388	99.0573702	98.40849872
170531A00018	5/31/2017	1.97	5/28/2021	5/31/2017	103.79694	103.0972745	102.4070161	101.7259715	101.0539574	100.3907951	99.73631056	99.09033447	98.45270174
170602A00026	6/2/2017	2.25	6/3/2024	6/2/2017	123.25098	118.8879095	114.703814	110.6902923	106.8393932	103.1435875	99.59574195	96.18909647	92.91724152
170606A00014	6/6/2017	1.9	6/6/2022	6/6/2017	109.86143	108.0250356	106.2288954	104.4717522	102.7524037	101.0696974	99.42252779	97.80983432	96.23059879

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170612A00013	6/12/2017	1.83	6/14/2021	6/12/2017	104.07422	103.3208516	102.5783679	101.8465319	101.1251156	100.4138975	99.71266228	99.02120075	98.33930947
170622A00016	6/22/2017	2.11	6/22/2022	6/22/2017	110.15855	108.2761287	106.4357277	104.6360044	102.8756767	101.1535167	99.46834839	97.81904448	96.20452388
170628A00008	6/28/2017	2.04	9/15/2021	6/28/2017	105.64088	104.5965394	103.5727775	102.5689894	101.5845949	100.6190358	99.67177548	98.74229731	97.83010403
170629A00017	6/29/2017	2	4/26/2021	6/29/2017	103.3039	102.701458	102.1060272	101.5174828	100.9357058	100.3605801	99.79199211	99.22983089	98.67398795
170629A00067	6/29/2017	2.19	6/29/2022	6/29/2017	110.42196	108.5154677	106.6519102	104.8299004	103.0481154	101.3052891	99.60020933	97.93171491	96.2986927
170630A00009	6/30/2017	2.53	6/30/2025	6/30/2017	131.63779	125.725273	120.1146146	114.788673	109.7313835	104.9276846	100.3634486	96.02541791	91.90114595
170706A00090	7/6/2017	2.48	7/6/2023	7/6/2017	117.50663	114.3518267	111.2987922	108.3435662	105.4823717	102.7116067	100.0278344	97.4277739	94.90829243
170724A00014	7/24/2017	2.14	7/25/2022	7/24/2017	110.77759	108.790335	106.8487605	104.9515136	103.0972917	101.2848405	99.51295123	97.78045896	96.08624056
170725A00047	7/25/2017	2.19	7/25/2022	7/25/2017	110.87292	108.8847295	106.9422389	105.0440935	103.1889904	101.3756745	99.60293682	97.86961183	96.17457601
170728A00040	7/28/2017	2.44	1/27/2025	7/28/2017	128.33079	123.048998	118.0154467	113.217168	108.6419411	104.2782438	100.1152091	96.14258427	92.35069295
170803A00019	8/3/2017	2.14	8/3/2022	8/3/2017	110.9258	108.9102334	106.9413985	105.0179336	103.1385252	101.3019061	99.50685373	97.75218803	96.03676994
170803A00032	8/3/2017	2.12	8/3/2023	8/3/2017	117.50473	114.2485143	111.0996287	108.0539565	105.107566	102.2566968	99.49775186	96.8272893	94.24201478
170809A00023	8/9/2017	2.86	8/9/2027	8/9/2017	146.07218	136.9243342	128.4167023	120.50109	113.1331647	106.2721304	99.88042828	93.92346528	88.36936527
170824A00038	8/24/2017	2.23	8/24/2023	8/24/2017	117.58287	114.272406	111.0727686	107.9796472	104.988919	102.0966441	99.29905669	96.59255609	93.97369854
170825A00025	8/25/2017	2.12	8/25/2022	8/25/2017	111.22805	109.1431227	107.1079294	105.1209794	103.1808344	101.2861086	99.43546653	97.62762084	95.86133023
170830A00030	8/30/2017	2	3/30/2022	8/30/2017	108.6207	107.0042506	105.4205013	103.8685424	102.3474979	100.8565231	99.3948035	97.96155373	96.5560158
170830A00033	8/30/2017	1.93	8/30/2021	8/30/2017	105.27218	104.2795569	103.3055665	102.3496926	101.4114337	100.4903067	99.58584572	98.69760201	97.82514258
170831A00050	8/31/2017	1.72	6/14/2021	8/31/2017	103.99448	103.2414437	102.4992815	101.7677638	101.0466625	100.3357563	99.63482983	98.94367401	98.26208544
170215A00017	2/15/2017	3.26	2/16/2027	2/15/2017	145.91268	137.4349112	129.5123932	122.1057835	115.1787201	108.6975846	102.6312821	96.95103942	91.6302204
170216A00044	2/16/2017	3.52	2/17/2032	2/16/2017	182.87819	165.1280384	149.3049743	135.1877672	122.5817065	111.3152977	101.2373865	92.21465181	84.12941903
170224A00020	2/24/2017	3.08	2/24/2027	2/24/2017	144.76752	136.2947022	128.3794932	120.9822144	114.0662096	107.5975995	101.5450576	95.87960534	90.57442512
170313A00033	3/13/2017	3.31	3/15/2027	3/13/2017	146.80236	138.1878808	130.1436932	122.6289328	115.6058742	109.0396714	102.8981229	97.15145882	91.77214468
170322A00026	3/22/2017	3.22	3/22/2028	3/22/2017	153.107	142.8164008	133.3011194	124.4984524	116.3510803	108.8065822	101.8169929	95.3384028	89.3305954
170417A00094	4/17/2017	1.95	4/19/2022	4/17/2017	109.15813	107.4718393	105.8205101	104.2031309	102.61873	101.0663728	99.54515947	98.05422355	96.5927305
170419A00024	4/19/2017	2.45	4/21/2025	4/19/2017	129.94156	124.3183577	118.9724231	113.8885714	109.0525373	104.4509107	100.0710806	95.90118267	91.93005097
170515A00022	5/15/2017	2.04	5/17/2021	5/15/2017	103.66641	103.0001162	102.3423719	101.6930158	101.0518881	100.4188329	99.79369835	99.17633629	98.5666023
170515A00038	5/15/2017	2.43	5/15/2023	5/15/2017	116.45194	113.4782964	110.5965922	107.8033864	105.0953913	102.4694659	99.92260736	97.45194435	95.05473005
170522A00044	5/22/2017	1.99	5/24/2021	5/22/2017	103.74634	103.0588295	102.3804093	101.7109002	101.0501276	100.3979211	99.75411505	99.11854782	98.49106197
170602A00007	6/2/2017	1.94	6/2/2021	6/2/2017	103.85624	103.1413484	102.4362641	101.7407864	101.0547201	100.3778754	99.7100673	99.05111587	98.40084591
170608A00021	6/8/2017	1.8	6/8/2021	6/8/2017	103.95653	103.2217813	102.497389	101.7831386	101.078818	100.3842211	99.69914754	99.02340232	98.3567958
170609A00043	6/9/2017	3.07	6/9/2032	6/9/2017	182.25746	163.8327366	147.4724992	132.9328262	119.9998605	108.4859584	98.22635138	89.07624919	80.90832275
170616A00017	6/16/2017	2.11	6/16/2023	6/16/2017	116.65962	113.5683893	110.5756336	107.677543	104.8704826	102.1509864	99.5157471	96.96160816	94.48555506
170619A00067	6/19/2017	1.84	9/20/2021	6/19/2017	105.68137	104.6188631	103.5776352	102.5570496	101.556497	100.575392	99.613172	98.66929561	97.74324213

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170622A00038	6/22/2017	3.32	6/22/2034	6/22/2017	195.397	172.9360347	153.3537942	136.2621409	121.3273012	108.2619912	96.81872096	86.78409352	77.97394647
170622A00039	6/22/2017	3.36	6/22/2035	6/22/2017	202.61202	177.905615	156.5625318	138.1016671	122.1132828	108.2480799	96.20799786	85.7384551	76.62179944
170629A00015	6/29/2017	1.92	10/26/2020	6/29/2017	100.40324	100.3307242	100.2583164	100.1860213	100.1138386	100.041768	99.9698092	99.89796208	99.82622634
170720A00009	7/20/2017	2.14	7/20/2022	7/20/2017	110.69542	108.7237639	106.7972503	104.9145245	103.0742792	101.275257	99.51624795	97.79608736	96.11365369
170724A00016	7/24/2017	2.5	7/24/2024	7/24/2017	124.33522	119.8019606	115.4596662	111.2992712	107.3121871	103.4902779	99.82583399	96.31154741	92.94048853
170726A00011	7/26/2017	2.2	7/26/2022	7/26/2017	110.9086	108.9170988	106.9714086	105.0701757	103.212098	101.3959208	99.6204353	97.88447579	96.18691831
170728A00031	7/28/2017	2.27	1/27/2023	7/28/2017	114.14773	111.5527624	109.0301445	106.5774408	104.1923096	101.8725025	99.61585992	97.4203071	95.2838501
170728A00033	7/28/2017	2.46	1/29/2024	7/28/2017	121.05124	117.1725053	113.439243	109.845222	106.3845164	103.0514847	99.84075452	96.74720807	93.765969
161214A00023	12/14/2016	3.3	12/15/2031	12/14/2016	182.19586	164.5770841	148.8552008	134.8143113	122.2642001	111.0371594	100.9852164	91.97771668	83.89921386
161215A00001	12/15/2016	2.5	12/15/2021	12/15/2016	107.71893	106.3740341	105.062621	103.783455	102.5353576	101.3172068	100.1279342	98.96652184	97.8319989
161223A00028	12/23/2016	2.23	12/23/2021	12/23/2016	107.73558	106.3612628	105.0218582	103.7160517	102.4425914	101.200287	99.9880059	98.8046698	97.6492515
170111A00013	1/11/2017	3.4	1/10/2031	1/11/2017	173.83071	158.3567238	144.4213215	131.8622387	120.5351588	110.3116387	101.0772863	92.73015616	85.17933477
170117A00037	1/17/2017	2	1/18/2022	1/17/2017	107.77605	106.3567541	104.9677864	103.6081835	102.2770219	100.9734173	99.69652209	98.44552402	97.21964391
170117A00045	1/17/2017	2.21	1/18/2022	1/17/2017	107.81631	106.4006637	105.0152078	103.6589802	102.3310636	101.0305792	99.75668499	98.50857365	97.28547075
170119A00006	1/19/2017	2.85	1/21/2025	1/19/2017	129.17851	123.9267381	118.92006	114.1457175	109.5916826	105.246616	101.0998233	97.14121505	93.36126897
170120A00010	1/20/2017	3.71	1/22/2036	1/20/2017	213.1626	186.6125378	163.7799626	144.1172508	127.1603999	112.5158691	99.84954644	88.87749174	79.35816202
170130A00031	1/30/2017	2.96	7/30/2025	1/30/2017	133.28943	127.2685776	121.5575924	116.1389155	110.9960708	106.113594	101.4769652	97.0725465	92.88752428
170203A00031	2/3/2017	2.09	2/3/2022	2/3/2017	108.09777	106.6526823	105.2340521	103.841215	102.4735267	101.1303636	99.8111224	98.51521916	97.24208839
170207A00013	2/7/2017	2.05	2/7/2022	2/7/2017	108.11243	106.6541117	105.2227067	103.8175307	102.4379233	101.0832456	99.75287936	98.44622658	97.16270826
170215A00034	2/15/2017	2.69	12/18/2020	2/15/2017	101.39888	101.1758429	100.9537968	100.7327378	100.5126592	100.2935547	100.0754175	99.8582413	99.64201969
170215A00035	2/15/2017	2.51	5/7/2021	2/15/2017	103.79443	103.1575524	102.5284829	101.9070762	101.2931929	100.6866968	100.087455	99.49533786	98.91021883
170224A00019	2/24/2017	2.21	2/24/2022	2/24/2017	108.3977	106.8854733	105.4020074	103.9465542	102.5183866	101.116802	99.74112135	98.39068843	97.0648685
170313A00034	3/13/2017	3.31	3/15/2027	3/13/2017	146.80236	138.1878808	130.1436932	122.6289328	115.6058742	109.0396714	102.8981229	97.15145882	91.77214468
170316A00018	3/16/2017	2.8	3/18/2024	3/16/2017	123.20018	119.1154087	115.1894732	111.415327	107.7862744	104.2959531	100.9383153	97.70761025	94.59836844
170322A00010	3/22/2017	2.11	3/22/2022	3/22/2017	108.94189	107.3420923	105.7742759	104.2375597	102.7310958	101.2540668	99.80568411	98.385187	96.99184108
170322A00015	3/22/2017	2.31	3/22/2022	3/22/2017	108.96995	107.3745896	105.8110476	104.27845	102.7759552	101.3027517	99.8580564	98.44111373	97.05119426
170323A00009	3/23/2017	2.1	3/23/2022	3/23/2017	108.94326	107.3404435	105.7697273	104.2302236	102.7210802	101.2414753	99.79061619	98.36773825	96.97210338
170331A00004	3/31/2017	2.12	3/31/2021	3/31/2017	102.95441	102.4298902	101.9106943	101.3967426	100.887956	100.3842572	99.88557016	99.39182052	98.90293535
170424A00009	4/24/2017	2.04	4/25/2022	4/24/2017	109.4055	107.6988737	106.027861	104.3914178	102.788545	101.2182817	99.67970349	98.17192054	96.69407617
170515A00039	5/15/2017	2.58	5/15/2024	5/15/2017	123.41522	119.133303	115.0243712	111.0804279	107.2938993	103.6576062	100.1647412	96.80884655	93.58379394
170530A00005	5/30/2017	1.99	5/28/2021	5/30/2017	103.81045	103.1107408	102.4204314	101.7393363	101.0672721	100.4040601	99.74952645	99.10350165	98.46582067
170417A00043	4/17/2017	2.14	4/18/2022	4/17/2017	109.15458	107.4763657	105.8328296	104.22297	102.6458269	101.1004764	99.58602916	98.10162855	96.64644923
170427A00046	4/27/2017	3.1	4/27/2028	4/27/2017	152.72802	142.3097024	132.6862106	123.7924894	115.569141	107.9619045	100.9211859	94.40163394	88.36175583

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170427A00047	4/27/2017	3.18	4/27/2029	4/27/2017	160.06691	147.8743823	136.7184603	126.5051155	117.1493284	108.5741787	100.710034	93.49382434	86.86839155
170501A00007	5/1/2017	2.04	5/3/2021	5/1/2017	103.44026	102.8165678	102.2003727	101.5915427	100.9899464	100.3954555	99.80794481	99.22729184	98.65337713
170505A00003	5/5/2017	2.09	5/5/2021	5/5/2017	103.50308	102.8731969	102.2509648	101.6362428	101.0288956	100.4287909	99.83579994	99.24979661	98.67065795
170517A00098	5/19/2017	2.32	5/19/2022	5/19/2017	109.9544	108.1771427	106.4379036	104.7355321	103.0689243	101.4370206	99.83880314	98.2732938	96.73955235
170519A00034	5/19/2017	1.97	5/19/2022	5/19/2017	109.68625	107.9056246	106.1631914	104.4577908	102.7883114	101.1536864	99.55289129	97.9849418	96.44889178
170524A00046	5/24/2017	1.84	5/24/2021	5/24/2017	103.74392	103.0551449	102.3754944	101.7047886	101.042852	100.3895132	99.7446054	99.10796621	98.47943723
170530A00002	5/30/2017	2.15	5/31/2022	5/30/2017	109.8607	108.0487949	106.2761882	104.5416738	102.844091	101.1823267	99.55531242	97.96202244	96.4014715
170530A00003	5/30/2017	1.99	5/28/2021	5/30/2017	103.81045	103.1107408	102.4204314	101.7393363	101.0672721	100.4040601	99.74952645	99.10350165	98.46582067
170531A00005	5/31/2017	1.94	5/31/2022	5/31/2017	109.83119	108.0136258	106.2355877	104.4958539	102.7932546	101.1266679	99.49501747	97.89726993	96.3324328
170606A00017	6/6/2017	1.9	6/6/2022	6/6/2017	109.86143	108.0250356	106.2288954	104.4717522	102.7524037	101.0696974	99.42252779	97.80983432	96.23059879
170614A00012	6/14/2017	1.9	6/14/2022	6/14/2017	109.99496	108.132584	106.3114585	104.5302793	102.7877994	101.0828243	99.41420906	97.7808558	96.18171119
170616A00016	6/16/2017	1.82	6/16/2021	6/16/2017	104.09907	103.3395555	102.591096	101.8534536	101.1263949	100.4096932	99.70312825	99.00648594	98.3195582
170626A00042	6/26/2017	1.92	6/27/2022	6/26/2017	110.24864	108.3436205	106.4815044	104.6609078	102.8805095	101.1390452	99.4353042	97.7681267	96.13640099
170629A00016	6/29/2017	1.94	12/21/2020	6/29/2017	101.28041	101.0490346	100.8187273	100.58948	100.3612852	100.1341357	99.9080244	99.68294402	99.45888751
170629A00020	6/29/2017	2.03	6/29/2021	6/29/2017	104.3563	103.557887	102.7716448	101.9972977	101.2345777	100.4832246	99.74298572	99.01361617	98.29487798
170630A00008	6/30/2017	2.35	7/1/2024	6/30/2017	124.15792	119.6809813	115.3909618	111.2789226	107.336413	103.5554404	99.92844142	96.44825641	93.1081044
170630A00036	6/30/2017	2.01	6/30/2022	6/30/2017	110.46414	108.5477809	106.6747377	104.8436093	103.0530561	101.3017967	99.58860419	97.9123036	96.27176884
170706A00028	7/6/2017	2.09	7/6/2022	7/6/2017	110.71191	108.7753819	106.8828163	105.0328252	103.2240751	101.4552881	99.72523954	98.03275433	96.37670496
170728A00029	7/28/2017	2.1	1/27/2022	7/28/2017	107.76435	106.3397188	104.9423416	103.5714704	102.2263885	100.9064053	99.61085448	98.33909355	97.09050228
170728A00032	7/28/2017	2.36	7/27/2023	7/28/2017	117.50862	114.2883104	111.1732923	108.159542	105.2432113	102.4206205	99.68825038	97.04273412	94.48084963
170808A00036	8/8/2017	2.04	11/15/2021	8/8/2017	106.64181	105.3998831	104.18676	103.0014502	101.8430056	100.7105207	99.6031305	98.52000776	97.4603614
170216A00010	2/16/2017	2.37	2/16/2022	2/16/2017	108.48695	107.0002227	105.5413494	104.1096138	102.7043218	101.3248025	99.97040702	98.64050793	97.33449809
170217A00035	2/17/2017	1.9	2/17/2021	2/17/2017	102.2325	101.8319887	101.43462	101.0403574	100.6491644	100.2610053	99.87584467	99.49364781	99.11438049
170224A00044	5/24/2017	3.29	5/24/2029	5/24/2017	161.65953	149.2871721	137.9732855	127.6212179	118.1436424	109.4616093	101.5037006	94.20527424	87.50778849
170228A00018	2/28/2017	2.25	2/28/2022	2/28/2017	108.52708	107.0007582	105.5036867	104.0350934	102.5942336	101.1803879	99.79286147	98.43098269	97.09410232
170303A00023	3/3/2017	2	3/3/2021	3/3/2017	102.50138	102.059444	101.6213117	101.1869361	100.7562692	100.3292634	99.90587229	99.48605005	99.06975166
170310A00032	3/10/2017	2.27	3/10/2022	3/10/2017	108.98116	107.4171162	105.8836693	104.3799941	102.9052956	101.4588069	100.0397875	98.64752264	97.28132162
170317A00060	3/17/2017	2.04	3/17/2021	3/17/2017	102.7506	102.2669372	101.7878316	101.3132203	100.8430398	100.3772284	99.91572503	99.45847002	99.00540474
170322A00025	3/22/2017	3.58	3/22/2033	3/22/2017	191.24332	171.1709596	153.4581515	137.8121144	123.9779089	111.7333717	100.8847482	91.26292608	82.72018559
170404A00049	4/6/2017	2.42	4/6/2022	4/6/2017	109.39815	107.7541845	106.1437368	104.5658654	103.0196609	101.5042474	100.0187806	98.56244668	97.13446079
170410A00007	4/10/2017	2.1	4/11/2022	4/10/2017	109.265	107.6020935	105.9733624	104.3778311	102.8145625	101.2826544	99.78123755	98.30947482	96.86655913
170417A00014	4/17/2017	1.95	4/18/2022	4/17/2017	109.14151	107.4583926	105.8101358	104.1957302	102.6142086	101.0646405	99.54612992	98.0578144	96.59886291
170509A00006	5/9/2017	2.3	5/9/2022	5/9/2017	109.77003	108.023648	106.3142012	104.6405874	103.0017498	101.3966731	99.82438135	98.2839362	96.77443485

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170515A00007	5/15/2017	2.04	5/14/2021	5/15/2017	103.61793	102.9607755	102.3119403	101.6712712	101.0386146	100.4138209	99.79674379	99.18724095	98.58517339
170515A00043	5/15/2017	3.1	5/15/2028	5/15/2017	153.04966	142.5486663	132.8532418	123.8970886	115.6197081	107.9658635	100.8850955	94.33128466	88.26225727
170531A00080	5/31/2017	2.3	5/31/2024	5/31/2017	123.39715	119.0415575	114.8642397	110.8568471	107.0114763	103.3206425	99.77725347	96.37458707	93.10626887
170608A00020	6/8/2017	2.27	6/10/2024	6/8/2017	123.45598	119.0649012	114.8547563	110.8170139	106.9435981	103.226864	99.65957144	96.23486083	92.94623041
170609A00025	6/9/2017	2.13	6/9/2022	6/9/2017	109.97668	108.1360035	106.3357301	104.5745954	102.8513899	101.164954	99.51417594	97.89798892	96.31536899
170612A00039	6/12/2017	2.29	6/12/2024	6/12/2017	123.57228	119.1720674	114.9533852	110.9076629	107.0267874	103.3030795	99.72926708	96.29846089	93.00413161
170616A00018	6/16/2017	2.4	6/16/2025	6/16/2017	130.69734	124.8587218	119.3162589	114.0532554	109.0540548	104.3039699	99.78921744	95.49685598	91.41472976
170622A00015	6/22/2017	1.99	6/22/2021	6/22/2017	104.21279	103.4361332	102.6710175	101.9171909	101.1744048	100.442418	99.72099616	99.00991178	98.3089438
170623A00028	6/23/2017	2.79	6/23/2027	6/23/2017	144.72278	135.7989114	127.4902103	119.7508653	112.5387196	105.8149628	99.54384762	93.69243124	88.23034054
170712A00019	7/12/2017	2.18	7/12/2022	7/12/2017	110.61863	108.6717276	106.7691285	104.9094582	103.0914015	101.3136959	99.57512931	97.87453712	96.21080005
170721A00017	7/21/2017	1.8	7/21/2021	7/21/2017	104.64792	103.7794666	102.925386	102.0853197	101.2589248	100.4458695	99.64583281	98.85850373	98.08358124
180205A00050	2/5/2018	2.81	2/6/2023	2/5/2018	115.66911	113.0223384	110.4499873	107.9495479	105.5186098	103.1548573	100.8560657	98.62009694	96.44489554
180226A00043	2/26/2018	2.73	9/27/2021	2/26/2018	106.53657	105.4500144	104.3855747	103.3425796	102.3203858	101.3183758	100.3359561	99.37255629	98.42762804
180306A00010	3/6/2018	2.8	2/15/2022	3/6/2018	109.08612	107.5981067	106.1379177	104.7048358	103.298169	101.9172479	100.5614254	99.2300756	97.9225929
180315A00017	3/15/2018	2.72	3/15/2021	3/15/2018	102.97101	102.493367	102.0201575	101.5513231	101.0868031	100.626538	100.1704694	99.71853995	99.27069338
180328A00006	3/28/2018	2.73	3/26/2021	3/28/2018	103.17533	102.6648341	102.1593849	101.6589083	101.1633312	100.6725817	100.1865897	99.70528606	99.22860328
180328A00010	3/28/2018	3.1	3/28/2025	3/28/2018	131.62154	126.0768198	120.800633	115.7785171	110.9968688	106.4428863	102.1045175	97.97041205	94.02987673
180329A00010	3/29/2018	2.76	3/29/2021	3/29/2018	103.24497	102.7254586	102.211169	101.7020186	101.197931	100.6988308	100.2046444	99.71529945	99.23072522
180402A00005	4/2/2018	2.94	4/3/2023	4/2/2018	117.07797	114.228999	111.4651028	108.7832206	106.1804257	103.653915	101.2010031	98.81911662	96.50578843
180416A00027	4/16/2018	2.86	4/16/2021	4/16/2018	103.62813	103.0541669	102.4865645	101.9252163	101.3700191	100.8208721	100.2776766	99.74033611	99.20875613
180425A00008	4/25/2018	2.89	4/25/2022	4/25/2018	110.79955	109.0809881	107.3982554	105.7503073	104.1361384	102.554782	101.0053079	99.48682097	97.99845917
180511A00035	5/11/2018	2.93	5/11/2023	5/11/2018	118.32981	115.3304661	112.4236227	109.6058217	106.8737622	104.22429	101.6543895	99.1611771	96.74189362
180517A00059	5/17/2018	3.13	5/17/2022	5/17/2018	111.2995	109.5162545	107.7710343	106.0626934	104.3901312	102.7522909	101.1481574	99.57675493	98.03714548
180525A00005	5/25/2018	3.32	5/25/2028	5/25/2018	157.30655	146.5071236	136.5388911	127.3331645	118.8272885	110.9640827	103.6913347	96.96134334	90.73050619
180525A00016	5/25/2018	2.72	5/25/2021	5/25/2018	104.34752	103.6534691	102.9686401	102.2928525	101.625928	100.9676928	100.3179779	99.67661855	99.04345413
180529A00056	5/29/2018	3	5/26/2023	5/29/2018	118.25147	115.2182904	112.2795566	109.4317006	106.6713153	103.9951468	101.4000868	98.88316435	96.44153872
180530A00038	5/30/2018	2.77	5/28/2021	5/30/2018	104.33765	103.6359284	102.9436282	102.2605612	101.5865437	100.9213968	100.2649461	99.61702198	98.97745915
180531A00015	5/31/2018	2.95	5/31/2023	5/31/2018	118.20434	115.1561212	112.2032062	109.3419797	106.5689886	103.8809362	101.2746736	98.74719207	96.29561553
180601A00018	6/1/2018	2.87	6/1/2023	6/1/2018	118.56654	115.4973138	112.5243602	109.6440158	106.8527811	104.1473157	101.5244298	98.98107573	96.51434104
180614A00006	6/14/2018	2.94	6/14/2021	6/14/2018	104.77213	104.0173467	103.2734363	102.5401624	101.8172976	101.1046214	100.401919	99.70898208	99.02560782
180618A00026	6/18/2018	3.05	4/13/2023	6/18/2018	117.56525	114.6777014	111.8770295	109.1600846	106.5238502	103.9654392	101.482087	99.07114559	96.73007769
180620A00038	6/20/2018	3.4	6/20/2028	6/20/2018	156.37547	145.5986784	135.655754	126.477388	118.0004005	110.1671661	102.9250967	96.2261745	90.02653205
180625A00040	6/25/2018	3	6/24/2022	6/25/2018	111.80692	109.9028879	108.0414121	106.2211354	104.4407559	102.6990276	100.9947567	99.32679916	97.69405809

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180703A00015	7/3/2018	3.06	7/3/2023	7/3/2018	119.16041	115.9908724	112.9231982	109.9534168	107.0777424	104.2925654	101.5944428	98.98008912	96.4463677
170313A00027	3/13/2017	2.27	3/14/2022	3/13/2017	109.05018	107.4735632	105.9280125	104.4126853	102.926769	101.4694797	100.0400607	98.6377816	97.26193719
170314A00005	3/14/2017	2.29	3/14/2022	3/14/2017	109.08051	107.5036491	105.9578606	104.4422998	102.956154	101.4986393	100.0689987	98.666502	97.29044362
170417A00069	4/17/2018	2.07	4/16/2021	4/17/2018	103.18852	102.6159767	102.0497808	101.4898278	100.9360148	100.3882412	99.84640838	99.31041997	98.78018166
170504A00038	5/4/2017	2.09	5/4/2022	5/4/2017	109.63981	107.9041084	106.2049831	104.5413548	102.9121826	101.3164663	99.753244	98.22159076	96.72061645
170515A00005	5/15/2017	2.04	5/16/2022	5/15/2017	109.75609	107.9837516	106.2492918	104.5515675	102.8894811	101.2619789	99.66804875	98.10671808	96.57705174
170519A00002	5/19/2017	2.15	5/19/2022	5/19/2017	109.66401	107.8893261	106.1526167	104.4527281	102.7885577	101.159047	99.5631796	97.99997851	96.46850465
170524A00011	5/24/2017	2.54	5/24/2024	5/24/2017	123.41645	119.1050222	114.9687554	110.9995089	107.1895703	103.5316318	100.0187665	96.64440597	93.40231891
170525A00028	5/25/2017	1.97	5/25/2022	5/25/2017	109.78489	107.98557	106.2251095	104.5023188	102.8160572	101.1652306	99.54878857	97.96572223	96.41506234
170531A00003	5/31/2017	1.94	5/31/2022	5/31/2017	109.83119	108.0136258	106.2355877	104.4958539	102.7932546	101.1266679	99.49501747	97.89726993	96.3324328
170601A00018	6/1/2017	1.96	6/1/2022	6/1/2017	109.88298	108.0618511	106.2803799	104.5373358	102.8315434	101.1618756	99.52725087	97.92663119	96.35901962
170608A00017	6/8/2017	1.95	6/8/2022	6/8/2017	109.98331	108.1396164	106.3364356	104.572503	102.8466048	101.1575775	99.50430566	97.88571888	96.30078992
170609A00007	6/9/2017	1.96	6/9/2022	6/9/2017	110.01788	108.1707734	106.3643075	104.5972114	102.8682655	101.176301	99.52019736	97.89887958	96.31131589
170609A00026	6/9/2017	2.3	6/9/2023	6/9/2017	116.51332	113.4597604	110.5026238	107.6382117	104.8629974	102.1736153	99.56685292	97.03964222	94.58905194
170613A00032	6/13/2017	2.45	6/13/2025	6/13/2017	130.9032	125.0703378	119.5327869	114.2739308	109.2781834	104.530922	100.0184217	95.72779481	91.64693421
170615A00034	6/15/2017	2.13	6/15/2022	6/15/2017	110.07729	108.2172043	106.3982647	104.6191733	102.8786871	101.1756154	99.50881676	97.87719655	96.27970457
170616A00019	6/16/2017	2.64	6/16/2027	6/16/2017	145.23089	136.246868	127.8826698	120.0921205	112.8327355	106.0654024	99.75409529	93.86561462	88.36935033
170629A00073	6/29/2017	2.2	6/29/2023	6/29/2017	117.1489	114.0080726	110.9684066	108.0259336	105.1768756	102.4176322	99.74477096	97.15501764	94.64524778
170724A00015	7/24/2017	2.32	7/24/2023	7/24/2017	117.33753	114.1291131	111.0254204	108.022436	105.1163241	102.3034185	99.58021406	96.94335831	94.389644
170731A00004	7/31/2017	2.16	7/29/2022	7/31/2017	110.8817	108.8815886	106.9275901	105.018361	103.1526024	101.3290619	99.54653139	97.8038453	96.09987888
170822A00020	8/22/2017	2.59	8/22/2025	8/22/2017	131.72041	125.658428	119.9128043	114.4653821	109.2991425	104.3981238	99.74735106	95.33276966	91.14118432
170824A00037	8/24/2017	1.98	8/24/2021	8/24/2017	105.2213	104.2474428	103.2915484	102.3531231	101.4316913	100.5267946	99.63799105	98.76485416	97.90697249
170828A00031	8/28/2017	2.07	8/1/2022	8/28/2017	110.75784	108.7499952	106.7885851	104.87226	102.9997182	101.1697038	99.38100499	97.63245201	95.92291557
170831A00009	8/31/2017	1.93	8/30/2021	8/31/2017	105.27218	104.2795569	103.3055665	102.3496926	101.4114337	100.4903067	99.58584572	98.69760201	97.82514258
170831A00052	8/31/2017	1.78	11/30/2021	8/31/2017	106.78146	105.4876597	104.2250269	102.9924451	101.7888521	100.6132356	99.46462954	98.3421121	97.24480288
170912A00007	9/12/2017	1.84	12/15/2020	9/12/2017	101.16292	100.9487834	100.7355693	100.5232687	100.3118757	100.1013843	99.89178882	99.6830834	99.47526235
170912A00008	9/12/2017	1.98	12/15/2021	9/12/2017	107.06649	105.7259892	104.4189012	103.1439865	101.9000685	100.6860275	99.50079692	98.3433606	97.21274959
170926A00002	9/26/2017	1.73	12/3/2020	9/26/2017	100.98456	100.8044447	100.6249746	100.4461473	100.2679595	100.0904076	99.91348832	99.73719818	99.56153383
171005A00006	10/5/2017	2.32	10/7/2024	10/5/2017	125.77746	120.9341094	116.3053742	111.8805746	107.6496208	103.602979	99.73163672	96.02707192	92.48122311
171016A00033	10/16/2017	2.2	10/17/2022	10/16/2017	112.2792	110.0189297	107.8161596	105.6690368	103.5757796	101.5346773	99.54408644	97.60242781	95.70818318
171025A00027	10/25/2017	2.36	10/25/2022	10/25/2017	112.75993	110.4703118	108.2393396	106.0651016	103.9457648	101.8795695	99.8648263	97.89991253	95.98326892
171030A00022	10/30/2017	2.28	10/31/2022	10/30/2017	112.68584	110.3789902	108.1315495	105.9415691	103.8071796	101.7265872	99.69807021	97.71997553	95.79071522
171030A00094	10/30/2017	2.13	11/1/2021	10/30/2017	106.51068	105.3140293	104.1441509	103.0001546	101.8811891	100.7864402	99.71512847	98.66650783	97.63986341

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
171101A00021	11/1/2017	2.51	11/1/2023	11/1/2017	119.6678	116.1007975	112.6598302	109.339688	106.1354147	103.0422897	100.0558149	97.17170265	94.38586455
171101A00023	11/1/2017	2.78	11/3/2025	11/1/2017	134.09262	127.7087034	121.6696321	115.9548998	110.5453288	105.4229793	100.571063	95.97386249	91.61665728
171103A00017	11/3/2017	2.09	11/3/2022	11/3/2017	112.74904	110.4236631	108.1585029	105.9515753	103.8009738	101.70487	99.66150929	97.66920765	95.72634794
171122A00009	11/22/2017	2.2	11/22/2022	11/22/2017	113.32496	110.9331615	108.6044609	106.3367229	104.1279057	101.9760535	99.87929205	97.83582433	95.84392672
171130A00005	11/30/2017	2.45	11/30/2022	11/30/2017	113.58843	111.1772672	108.8300331	106.5445509	104.3187384	102.1506019	100.0382314	97.9797963	95.97354133
171205A00013	12/5/2017	2.4	12/6/2021	12/5/2017	107.43368	106.1196327	104.8376216	103.5864861	102.3651209	101.1724731	100.0075387	98.86936025	97.75702383
171208A00006	12/8/2017	2.67	12/8/2026	12/8/2017	142.06368	133.9176464	126.294773	119.1585881	112.475358	106.2138686	100.3452233	94.84265841	89.6813743
171212A00027	12/12/2017	2.21	12/13/2021	12/12/2017	107.53286	106.192204	104.8848465	103.6095547	102.3651601	101.1505501	99.96466504	98.80649509	97.67507719
180102A00020	1/2/2018	2.5	1/3/2023	1/2/2018	114.29662	111.7727642	109.3180808	106.9301381	104.6066148	102.3452916	100.1440455	98.00084462	95.91374355
180103A00027	1/3/2018	2.51	1/3/2023	1/3/2018	114.32053	111.7963847	109.3414197	106.9532013	104.6294083	102.3678211	100.1663166	98.02286259	95.93551362
180104A00013	1/4/2018	2.39	1/4/2023	1/4/2018	114.522	111.9828181	109.5134416	107.11142	104.7744093	102.500168	100.2865519	98.13150889	96.03307391
180111A00016	1/11/2018	2.57	1/11/2023	1/11/2018	114.60482	112.0529045	109.5713011	107.1575788	104.8094075	102.5245562	100.3008877	98.13635419	96.02899235
180112A00025	1/12/2018	2.39	1/12/2021	1/12/2018	101.75758	101.4625402	101.1692169	100.8775995	100.5876728	100.2994223	100.0128332	99.72789125	99.44458209
180123A00023	1/23/2018	2.43	1/29/2021	1/23/2018	102.06116	101.7166744	101.3745105	101.0346436	100.6970505	100.3617086	100.0285954	99.69768884	99.36896709
170731A00027	7/31/2017	2	7/30/2021	7/31/2017	104.82999	103.9350542	103.0553341	102.1904482	101.3400238	100.5037009	99.681131	98.87197729	98.07591375
170801A00020	8/1/2017	2.02	8/2/2021	8/1/2017	104.89638	103.9919118	103.102981	102.2291908	101.3701571	100.5255088	99.69488687	98.87794432	98.07434548
170802A00027	8/2/2017	2.16	8/2/2022	8/2/2017	110.94788	108.9351276	106.9689757	105.0480711	103.1711057	101.3368175	99.54398852	97.79144356	96.07804787
170818A00037	8/18/2017	2.08	8/18/2022	8/18/2017	111.03379	108.9720713	106.9590956	104.9934165	103.0736367	101.1984095	99.36643652	97.5764659	95.82728993
170822A00012	8/22/2017	2.11	8/22/2022	8/22/2017	111.1588	109.0836787	107.057871	105.0799027	103.1483528	101.2618524	99.41908199	97.61876925	95.85968733
170822A00018	8/22/2017	2.25	8/22/2023	8/22/2017	117.61142	114.3068971	111.1128101	108.0248667	105.0389657	102.1511877	99.3577858	96.6551774	94.03993562
170822A00019	8/22/2017	2.44	8/22/2024	8/22/2017	124.58929	119.9542354	115.5179843	111.2709691	107.2041322	103.3088973	99.57714105	96.00116702	92.57368076
170831A00004	8/31/2017	2	8/31/2023	8/31/2017	117.60426	114.2565947	111.0220046	107.8960472	104.8744812	101.9532553	99.12849891	96.3965126	93.75375977
170831A00029	8/31/2017	1.87	8/31/2022	8/31/2017	111.214	109.1036682	107.0441959	105.0340424	103.0717222	101.1558046	99.28491155	97.45771516	95.67293569
170831A00054	8/31/2017	1.85	6/30/2022	8/31/2017	110.17047	108.2568927	106.3865785	104.558127	102.7702003	101.0215184	99.31085577	97.63703881	95.99894271
170905A00072	9/5/2017	1.84	3/5/2021	9/5/2017	102.40492	101.9580797	101.5151319	101.0760272	100.6407158	100.2091486	99.78127743	99.35705496	98.93643462
170906A00005	9/6/2017	1.69	9/7/2021	9/6/2017	105.32219	104.3022003	103.3018804	102.3206635	101.3580065	100.4133867	99.48630079	98.57626425	97.68281012
170911A00032	9/11/2017	1.85	9/12/2022	9/11/2017	111.37282	109.2227004	107.1252935	105.0789701	103.0821641	101.1333685	99.23113261	97.37405993	95.56080525
170915A00005	9/15/2017	1.81	9/15/2021	9/15/2017	105.56934	104.5230611	103.4974415	102.4918702	101.5057636	100.5385609	99.58972218	98.65872835	97.7450795
171004A00034	10/4/2017	1.73	10/5/2020	10/4/2017	100.07681	100.0628683	100.0489432	100.0350318	100.0211342	100.0072503	99.99338011	99.97952357	99.96568068
171016A00005	10/16/2017	2.2	10/17/2022	10/16/2017	112.2792	110.0189297	107.8161596	105.6690368	103.5757796	101.5346773	99.54408644	97.60242781	95.70818318
171016A00060	10/16/2017	1.93	10/16/2020	10/16/2017	100.24851	100.2039245	100.1593921	100.1149167	100.0704981	100.0261362	99.98183091	99.93758211	99.8933897
171025A00020	10/25/2017	2.02	10/26/2020	10/25/2017	100.41049	100.3379624	100.2655486	100.1932475	100.1210587	100.0489821	99.97701737	99.90516428	99.83342257
171026A00005	10/26/2017	2.16	10/26/2021	10/26/2017	106.44277	105.2654664	104.1141049	102.9878358	101.8858458	100.8073564	99.75162206	98.71792847	97.70559094

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
171026A00008	10/26/2017	2.6	10/25/2024	10/26/2017	126.42143	121.5300312	116.8566957	112.3904882	108.1210892	104.0387524	100.1342695	96.3989368	92.82452526
171026A00023	10/26/2017	2	10/26/2020	10/26/2017	100.40904	100.3365147	100.2641022	100.1918022	100.1196147	100.0475393	99.97557574	99.90372384	99.83198332
171027A00029	10/27/2017	2.04	10/27/2020	10/27/2017	100.4278	100.3524716	100.2772669	100.2021813	100.1272145	100.0523662	99.9776362	99.90302415	99.82852983
171031A00006	10/31/2017	2.02	1/25/2021	10/31/2017	101.85818	101.5256147	101.1952239	100.8669853	100.540878	100.2168812	99.89497444	99.5751376	99.25735072
170530A00027	5/30/2017	1.97	5/31/2022	5/30/2017	109.88358	108.065545	106.2870412	104.5468504	102.8438025	101.1767756	99.54469282	97.94652072	96.38126659
170609A00006	6/9/2017	1.89	12/9/2021	6/9/2017	107.06569	105.7410639	104.4490431	103.1884379	101.9581135	100.7569892	99.58403527	98.43826979	97.31875606
170613A00007	6/13/2017	2.01	6/11/2021	6/13/2017	104.04993	103.3071398	102.5749284	101.8530734	101.1413562	100.4395641	99.74749057	99.0649346	98.39170075
170622A00036	6/22/2017	3.23	6/22/2032	6/22/2017	181.10753	162.9027098	146.734332	132.3619259	119.5746575	108.1875325	98.03810477	88.98362068	80.89853759
170626A00017	6/26/2017	1.8	6/28/2021	6/26/2017	104.27649	103.4799113	102.6954547	101.9228477	101.1618234	100.412123	99.6734953	98.9456965	98.22848987
170706A00013	7/6/2017	2.27	7/6/2022	7/6/2017	110.6861	108.7562891	106.8701842	105.0264033	103.2236239	101.4605784	99.73605151	98.04887741	96.39793713
170726A00034	7/26/2017	2.05	7/26/2021	7/26/2017	104.80701	103.9243953	103.056594	102.2032391	101.3639722	100.5384465	99.72632679	98.9272885	98.14101753
170728A00030	7/28/2017	2.18	7/27/2022	7/28/2017	110.88696	108.8927155	106.9443772	105.0405977	103.1800762	101.3615587	99.5838366	97.8457445	96.14615819
170731A00012	7/31/2017	1.82	8/2/2021	7/31/2017	104.85957	103.9533501	103.0627258	102.1873004	101.3266876	100.480514	99.64841881	98.83005297	98.02507899
170731A00029	7/31/2017	2.34	7/31/2023	7/31/2017	117.51595	114.283051	111.1561324	108.1311508	105.2042435	102.3717154	99.63003093	96.97580606	94.40580102
170803A00020	8/3/2017	2.84	8/3/2027	8/3/2017	145.81208	136.6962966	128.2172056	120.3269749	112.9815997	106.1405779	99.76661501	93.82535461	88.28513343
170803A00021	8/3/2017	2.5	8/5/2024	8/3/2017	124.54507	119.9679025	115.5848657	111.3867215	107.364718	103.5105629	99.81639706	96.2747694	92.87861375
170804A00020	8/4/2017	2.13	8/1/2022	8/4/2017	110.87348	108.8644918	106.9019597	104.9845344	103.1109134	101.2798404	99.49010285	97.74053049	96.02999348
170818A00004	8/18/2017	1.95	8/18/2021	8/18/2017	105.09588	104.1411562	103.2037212	102.2831094	101.378871	100.4905719	99.61779338	98.76013125	97.91719525
170822A00017	8/22/2017	2.11	8/22/2022	8/22/2017	111.1588	109.0836787	107.057871	105.0799027	103.1483528	101.2618524	99.41908199	97.61876925	95.85968733
170829A00044	8/29/2017	2.01	8/29/2022	8/29/2017	111.07273	108.9772561	106.9320383	104.9355558	102.9863481	101.0830082	99.22418066	97.40855904	95.63488391
170830A00034	8/30/2017	2.05	8/30/2022	8/30/2017	111.16939	109.0698937	107.0208057	105.0206033	103.0678197	101.1610417	99.2989082	97.48010724	95.70337415
170906A00020	9/6/2017	2.14	9/6/2023	9/6/2017	117.51924	114.1674978	110.9293055	107.8001897	104.7758776	101.8522886	99.02552481	96.29186107	93.64773686
170906A00034	9/6/2017	1.87	9/7/2021	9/6/2017	105.3439	104.3260428	103.3277781	102.348542	101.3877945	100.4450158	99.51970546	98.61138141	97.71957924
170907A00002	9/7/2017	1.69	9/7/2021	9/7/2017	105.32219	104.3022003	103.3018804	102.3206635	101.3580065	100.4133867	99.48630079	98.57626425	97.68281012
170919A00076	9/19/2017	1.97	9/19/2022	9/19/2017	111.73836	109.5621065	107.4397185	105.3695124	103.3498723	101.3792442	99.45613275	97.57909901	95.74675746
171002A00012	10/2/2017	2.08	10/1/2021	10/2/2017	105.93647	104.8407687	103.7676351	102.7163798	101.6863393	100.6768768	99.68738044	98.71726274	97.76595888
171002A00013	10/2/2017	2.23	11/30/2022	10/2/2017	113.08495	110.679613	108.3380799	106.0581789	103.8378312	101.6750468	99.56791887	97.51462001	95.51339808
170821A00038	8/23/2017	2.39	8/23/2024	8/23/2017	125.26681	120.5905341	116.1154256	111.8317701	107.7303765	103.8025439	100.0400325	96.43503676	92.98016006
170829A00023	8/29/2017	1.83	8/29/2022	8/29/2017	111.1008	108.9977341	106.9452333	104.9417645	102.9858544	101.0760842	99.21108693	97.38954554	95.61019038
170907A00059	9/7/2017	1.99	9/7/2022	9/7/2017	111.17948	109.0547246	106.981568	104.9584304	102.9837935	101.0561953	99.17422807	97.33653564	95.54181146
170911A00044	9/11/2017	1.73	9/13/2021	9/11/2017	105.45771	104.4182809	103.3992562	102.4000386	101.420055	100.4587541	99.51560543	98.59009864	97.68174221
170914A00039	9/14/2017	2.23	9/16/2024	9/14/2017	125.01033	120.255845	115.7093701	111.3606893	107.2001468	103.2186107	99.40744164	95.75846334	92.26393543
170915A00031	9/15/2017	2.1	9/15/2023	9/15/2017	118.17718	114.7703923	111.4802455	108.3020928	105.2314987	102.2642297	99.39624395	96.62368124	93.94285369

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170918A00108	9/18/2017	1.97	9/20/2022	9/18/2017	111.75533	109.5757182	107.4501228	105.3768596	103.3543059	101.380901	99.45514356	97.57558849	95.74084471
170921A00063	9/21/2017	2.23	9/21/2022	9/21/2017	111.9082	109.7314772	107.608636	105.5379908	103.5179251	101.546884	99.62337131	97.7459472	95.91322535
170928A00020	9/29/2017	2.29	9/29/2022	9/29/2017	112.17147	109.9665708	107.8168352	105.7205258	103.6759695	101.681558	99.73574432	97.83704042	95.9840142
171010A00024	10/10/2017	2.38	10/10/2023	10/10/2017	118.8632	115.3789244	112.0160199	108.7695553	105.6348309	102.6073658	99.68288634	96.85731484	94.12675966
171011A00013	10/11/2017	2.77	10/13/2026	10/11/2017	140.1801	132.3613077	125.0325561	118.1604992	111.7142303	105.6650934	99.98650754	94.65380624	89.64408968
171013A00021	10/13/2017	2	10/17/2022	10/13/2017	112.26846	110.0001602	107.789719	105.635263	103.5349954	101.4871908	99.49019234	97.54240771	95.64230654
171025A00026	10/25/2017	2.64	10/25/2024	10/25/2017	126.59915	121.7039735	117.0269772	112.5572281	108.2844018	104.1987474	100.291052	96.55260789	92.97518196
171031A00037	10/31/2017	1.98	10/30/2020	10/31/2017	100.47036	100.3866486	100.303077	100.2196447	100.1363513	100.0531965	99.97018002	99.88730146	99.80456052
171206A00038	12/6/2017	2.69	12/6/2027	12/6/2017	148.68382	138.9026373	129.837566	121.4322424	113.635037	106.3986296	99.67962711	93.43821715	87.63785432
171207A00029	12/7/2017	2.04	12/7/2020	12/7/2017	101.10523	100.9135833	100.7226772	100.5325036	100.3430583	100.154337	99.96633545	99.77904956	99.59247516
171219A00025	12/19/2017	2.33	12/19/2022	12/19/2017	114.09704	111.6123154	109.1949099	106.8424767	104.5527702	102.323643	100.1530405	98.03899638	95.97962759
171220A00003	12/20/2017	2.36	12/21/2020	12/20/2017	101.37663	101.1451064	100.9146458	100.6852458	100.4568988	100.2295978	100.0033354	99.77810448	99.553898
180111A00044	1/11/2018	2.34	1/11/2021	1/11/2018	101.72613	101.4340142	101.1435863	100.8548308	100.5677331	100.2822789	99.99845415	99.71624473	99.43563683
180116A00045	1/16/2018	2.49	1/11/2022	1/16/2018	108.12615	106.7153642	105.3370925	103.9902104	102.6736443	101.38637	100.1274095	98.89582812	97.69073274
180117A00016	1/17/2018	2.46	7/19/2021	1/17/2018	105.02999	104.167718	103.3195839	102.4852376	101.664345	100.8565821	100.0616359	99.27920273	98.50898879
180125A00023	1/25/2018	2.57	1/25/2022	1/25/2018	108.38858	106.9614706	105.5623389	104.1903957	102.8448774	101.5250491	100.2302033	98.95965837	97.71275775
180126A00028	1/26/2018	2.69	1/26/2023	1/26/2018	115.1643	112.5598054	110.0278011	107.5658441	105.1715855	102.8427705	100.5772334	98.37289414	96.22775398
180713A00030	7/13/2018	2.8	7/13/2021	7/13/2018	105.32643	104.479399	103.6459832	102.8258546	102.0186971	101.2242044	100.4420799	99.67203601	98.91379425
180713A00035	7/13/2018	3.02	7/13/2022	7/13/2018	112.20661	110.241458	108.3209993	106.4438598	104.6087172	102.8143017	101.0593941	99.34282239	97.66346005
180719A00059	7/19/2018	2.98	7/19/2021	7/19/2018	105.45873	104.5945028	103.7444322	102.9081717	102.0853865	101.2757525	100.478956	99.69469313	98.9226696
180726A00032	7/26/2018	2.95	10/26/2020	7/26/2018	100.47786	100.4052777	100.3328079	100.2604508	100.1882062	100.1160738	100.0440534	99.9721447	99.90034748
180730A00002	7/30/2018	3.03	7/30/2021	7/30/2018	105.71169	104.8125908	103.9287606	103.0598133	102.2053752	101.3650854	100.5385945	99.72556481	98.92566942
180730A00081	7/30/2018	3.5	7/28/2028	7/30/2018	157.99875	147.0061504	136.8727812	127.5266743	118.9022478	110.9397092	103.5845174	96.78689584	90.50139441
180808A00009	8/8/2018	3.12	8/7/2023	8/8/2018	120.01256	116.7197519	113.5352609	110.4549401	107.4748217	104.5911111	101.8001786	99.09855093	96.48290403
180813A00026	8/13/2018	2.87	8/11/2023	8/13/2018	119.94232	116.6234832	113.4145245	110.3112069	107.3094815	104.4054777	101.5954937	98.87598879	96.24357513
180815A00009	8/15/2018	2.93	8/16/2021	8/15/2018	105.95013	104.9973193	104.0616312	103.1426075	102.2398056	101.3527985	100.4811741	99.62453422	98.78249475
180827A00020	8/27/2018	3.21	8/27/2025	8/27/2018	135.17674	129.0087135	123.1621788	117.6186786	112.3609077	107.3726376	102.6386443	98.14464097	93.87721544
180827A00060	8/27/2018	2.9	8/27/2021	8/27/2018	106.13192	105.1441415	104.1747186	103.2231455	102.2889326	101.3716079	100.4707164	99.58581935	98.71649352
180904A00012	9/4/2018	3.35	9/4/2030	9/4/2018	173.87218	158.7937412	145.1739692	132.863161	121.7277258	111.6483777	102.5185366	94.24291552	86.73627098
180910A00028	9/10/2018	3.56	9/9/2033	9/10/2018	198.40816	176.8167611	157.8526387	141.1787831	126.5031631	113.5725096	102.1669896	92.09563519	83.19241766
180911A00042	9/11/2018	2.99	9/11/2023	9/11/2018	120.92487	117.4886583	114.1692997	110.9621615	107.8628222	104.8670608	101.970846	99.17032734	96.46182519
180912A00011	9/12/2018	3.41	9/11/2026	9/12/2018	143.903	136.0884237	128.7549229	121.8702722	115.4045715	109.330065	103.620976	98.2533566	93.20494819
180912A00030	9/12/2018	3	9/13/2021	9/12/2018	106.55381	105.5107839	104.4881605	103.4853445	102.5017641	101.5368695	100.5901315	99.66104075	98.74910689

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180920A00027	9/20/2018	3.04	9/20/2022	9/20/2018	113.98099	111.7777529	109.6290115	107.5330668	105.4882824	103.4930845	101.5459591	99.64544907	97.79015167
180924A00044	9/24/2018	3.1	9/24/2021	9/24/2018	106.85733	105.7783796	104.7211975	103.6851294	102.6695473	101.6738476	100.6974505	99.73979836	98.80035496
180928A00011	9/28/2018	3.12	7/15/2022	9/28/2018	112.43229	110.4589974	108.5306503	106.6458717	104.8033401	103.0017864	101.2399908	99.5167806	97.83102784
181004A00028	10/4/2018	3.31	10/4/2023	10/4/2018	121.76257	118.251252	114.8613466	111.5879545	108.4264014	105.3722295	102.4211853	99.56920986	96.81242775
181009A00024	10/9/2018	3.06	10/9/2020	10/9/2018	100.16784	100.1427531	100.1176932	100.0926605	100.0676548	100.0426763	100.0177247	99.99280009	99.96790242
181010A00018	10/10/2018	3.17	6/1/2021	10/10/2018	104.68567	103.9705822	103.2652481	102.5694697	101.8830538	101.2058124	100.5375625	99.87812595	99.22732936
181010A00020	10/10/2018	3.27	12/1/2022	10/10/2018	115.4848	113.0486093	110.6769569	108.3676488	106.1185821	103.927743	101.7932027	99.71311244	97.68569963
170731A00028	7/31/2017	2.16	8/1/2022	7/31/2017	110.9313	108.9217401	106.958647	105.0406716	103.1665111	101.3349087	99.54465178	97.79456973	96.08353244
170731A00069	7/31/2017	1.75	1/29/2021	7/31/2017	101.87589	101.5312819	101.1889997	100.8490222	100.5113262	100.1758887	99.84268712	99.51169926	99.18290306
170803A00013	8/3/2017	2.14	8/3/2022	8/3/2017	110.9258	108.9102334	106.9413985	105.0179336	103.1385252	101.3019061	99.50685373	97.75218803	96.03676994
170808A00037	8/8/2017	2.19	12/15/2022	8/8/2017	113.24136	110.7882878	108.40129	106.0780766	103.8164576	101.614338	99.46971297	97.38066266	95.34534807
170818A00025	8/18/2017	1.77	8/18/2021	8/18/2017	105.07535	104.1186564	103.1793248	102.2568822	101.350876	100.4608698	99.58644258	98.72718784	97.88271321
170824A00031	8/24/2017	1.98	8/24/2021	8/24/2017	105.2213	104.2474428	103.2915484	102.3531231	101.4316913	100.5267946	99.63799105	98.76485416	97.90697249
170828A00030	8/28/2017	1.96	9/1/2021	8/28/2017	105.33317	104.3340229	103.3537522	102.3918238	101.4477269	100.5209694	99.61107734	98.71759373	97.84007804
170829A00018	8/29/2017	1.9	8/30/2021	8/29/2017	105.24383	104.2513505	103.2775048	102.3217737	101.3836557	100.4626677	99.55834412	98.67023603	97.79791053
170829A00022	8/29/2017	1.72	8/30/2021	8/29/2017	105.22253	104.227987	103.2521493	102.294497	101.3545258	100.4317498	99.52570078	98.63592749	97.76199466
170830A00044	8/30/2017	1.94	8/30/2021	8/30/2017	105.28164	104.288959	103.3149204	102.3589989	101.4206931	100.4995196	99.59501292	98.706724	97.83421993
170831A00051	8/31/2017	1.75	8/31/2021	8/31/2017	105.26708	104.2692064	103.2901548	102.3294001	101.3864333	100.4607645	99.55192139	98.65944875	97.78290768
170831A00053	8/31/2017	1.81	3/1/2022	8/31/2017	108.14594	106.6154714	105.1144492	103.6420985	102.1976663	100.780426	99.38967526	98.02473585	96.68495206
170906A00039	9/6/2017	1.99	9/6/2022	9/6/2017	111.16308	109.0416511	106.9716705	104.9515624	102.9798148	101.0549723	99.17563295	97.34044649	95.5481117
170908A00017	9/9/2019	2.32	9/9/2024	9/9/2019	124.39028	119.6977803	115.2090849	110.9142602	106.803911	102.8691478	99.10155679	95.49317206	92.03644892
170913A00025	9/13/2017	1.94	8/16/2021	9/13/2017	105.05431	104.1059596	103.1746727	102.2599952	101.3614857	100.4787182	99.61128164	98.75877909	97.92082729
171003A00007	10/3/2017	2.22	10/3/2022	10/3/2017	112.09094	109.8747331	107.7142027	105.6075875	103.5531904	101.5493804	99.59458919	97.68730848	95.82608707
171010A00037	10/10/2017	2.09	10/12/2021	10/10/2017	106.13079	104.9993988	103.8920425	102.8079619	101.746429	100.7067458	99.68824278	98.69027769	97.71223392
171012A00027	10/12/2017	2.21	10/12/2022	10/12/2017	112.21826	109.9736612	107.7859145	105.6531941	103.5737489	101.5458967	99.56802107	97.63856829	95.75604419
171016A00021	10/16/2017	2.2	10/17/2022	10/16/2017	112.2792	110.0189297	107.8161596	105.6690368	103.5757796	101.5346773	99.54408644	97.60242781	95.70818318
171018A00001	10/18/2017	1.96	10/18/2021	10/18/2017	106.27342	105.1195019	103.9905373	102.8857261	101.8042996	100.7455213	99.70868543	98.69311512	97.69816126
171030A00019	10/30/2017	2.04	3/16/2021	10/30/2017	102.67048	102.1907404	101.7154843	101.2446507	100.778178	100.3160057	99.85807446	99.40432586	98.9547027
171102A00001	11/3/2017	1.84	11/3/2020	11/3/2017	100.53321	100.4380945	100.3431686	100.2484273	100.1538698	100.0594958	99.96530457	99.87129564	99.77746846
171115A00006	11/15/2017	2.14	11/16/2020	11/15/2017	100.75773	100.6260285	100.4946825	100.3636932	100.2330592	100.1027791	99.97285136	99.84327454	99.7140472
170831A00021	8/31/2017	1.99	2/25/2022	8/31/2017	108.09309	106.5799456	105.0956375	103.6394126	102.2105407	100.8083162	99.4320574	98.08110538	96.75482291
170831A00048	8/31/2017	1.64	11/16/2020	8/31/2017	100.71091	100.5790621	100.4475786	100.3164545	100.1856882	100.0552782	99.92522298	99.79552113	99.66617113
170831A00049	8/31/2017	1.68	3/1/2021	8/31/2017	102.33208	101.8964314	101.4644859	101.0361924	100.6115048	100.1903777	99.77276659	99.3586275	98.94791732

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170906A00036	9/6/2017	1.81	9/6/2022	9/6/2017	111.19166	109.062504	106.9851081	104.9578895	102.9793232	101.0479412	99.16232984	97.32112777	95.52302321
170906A00037	9/6/2017	1.99	9/6/2022	9/6/2017	111.16308	109.0416511	106.9716705	104.9515624	102.9798148	101.0549723	99.17563295	97.34044649	95.5481117
170912A00009	9/12/2017	2.11	12/15/2022	9/12/2017	113.05467	110.6037946	108.218949	105.897842	103.6382851	101.4381847	99.295537	97.20842356	95.17500653
170913A00027	9/13/2017	2.08	9/13/2022	9/13/2017	111.46288	109.3161981	107.2220761	105.1788952	103.1850953	101.2391754	99.33969012	97.48524806	95.67450885
170915A00001	9/15/2017	2.43	9/16/2024	9/15/2017	124.98726	120.2579842	115.7349831	111.4081547	107.2679479	103.3053284	99.51174794	95.87911525	92.39976923
170918A00007	9/18/2017	2.8	9/20/2027	9/18/2017	146.33115	137.0115182	128.3546821	120.3099442	112.8307365	105.8742664	99.40119171	93.37532578	87.76336924
171003A00008	10/3/2017	2.88	10/4/2027	10/3/2017	147.21606	137.809769	129.0753854	120.9612686	113.4200065	106.4080498	99.8853782	93.81519714	88.16366199
171018A00002	10/18/2017	1.82	10/19/2020	10/18/2017	100.29678	100.2437407	100.1907741	100.1378805	100.0850596	100.0323114	99.97963557	99.9270321	99.87450078
171026A00004	10/26/2017	2	10/26/2020	10/26/2017	100.40904	100.3365147	100.2641022	100.1918022	100.1196147	100.0475393	99.97557574	99.90372384	99.83198332
171030A00020	10/30/2017	2.16	1/14/2022	10/30/2017	107.71908	106.3080676	104.9285446	103.5794542	102.2597906	100.9685925	99.70494058	98.46795548	97.25679531
171116A00021	11/16/2017	2.16	11/16/2022	11/16/2017	113.12984	110.7592006	108.4507408	106.2023709	104.0120925	101.8779905	99.79822889	97.77104692	95.79475501
171120A00017	11/20/2017	2.41	11/21/2022	11/20/2017	113.33922	110.9591895	108.6417125	106.384687	104.1860958	102.0440061	99.95656522	97.92199667	95.93859616
171130A00003	11/30/2017	2.22	11/30/2020	11/30/2017	100.99718	100.8258212	100.6550421	100.4848369	100.315203	100.1461373	99.97763714	99.80969972	99.64232226
171208A00007	12/8/2017	2.47	12/9/2024	12/8/2017	127.58828	122.489874	117.6251747	112.9821172	108.5493383	104.3161271	100.2723831	96.4085773	92.7157165
171211A00033	12/11/2017	2.26	12/12/2022	12/11/2017	113.81095	111.3512232	108.9576884	106.6280499	104.3601168	102.1517933	100.0010734	97.90603613	95.86484133
180102A00004	1/2/2018	2.28	1/8/2021	1/2/2018	101.65863	101.3752434	101.0934476	100.813225	100.5345625	100.257447	99.98186564	99.7078056	99.43525427
180103A00007	1/3/2018	2.44	1/7/2022	1/3/2018	108.01233	106.6065419	105.2345551	103.8951523	102.5871732	101.309512	100.0611151	98.84097712	97.6481389
180116A00015	1/16/2018	3.06	1/18/2028	1/16/2018	150.56267	140.6258575	131.4226152	122.8947603	114.9890236	107.6566071	100.8527866	94.53655154	88.67027789
180124A00019	1/24/2018	2.41	1/24/2022	1/24/2018	108.40486	106.9746929	105.5729801	104.1988946	102.8516448	101.5304696	100.234637	98.96344224	97.71620722
180126A00029	1/26/2018	2.88	1/27/2025	1/26/2018	129.37705	124.1021533	119.0740485	114.2798905	109.7075692	105.3456649	101.1834051	97.21062417	93.41772637
180123A00025	1/23/2018	2.44	3/1/2021	1/23/2018	102.59816	102.16252	101.7305667	101.3022555	100.8775405	100.4563766	100.0387195	99.62452566	99.21375211
180212A00042	2/12/2018	2.57	2/11/2022	2/12/2018	108.92444	107.4468601	105.9967562	104.573426	103.1761893	101.8043888	100.4573887	99.13457381	97.83534901
180214A00003	2/14/2018	2.45	2/16/2021	2/14/2018	102.43068	102.0325991	101.6376174	101.2457005	100.8568128	100.4709192	100.087985	99.70797624	99.33085932
180222A00014	2/22/2018	2.68	2/19/2021	2/22/2018	102.52141	102.1150148	101.7118409	101.3118529	100.9150131	100.5212844	100.1306301	99.7430145	99.35840202
180226A00034	2/26/2018	2.82	6/27/2022	2/26/2018	111.53678	109.6259678	107.7580423	105.9316234	104.1453937	102.3980924	100.6885122	99.01549599	97.37793491
180227A00004	2/27/2018	2.67	3/26/2021	2/27/2018	103.14552	102.6351073	102.1297444	101.6293535	101.1338614	100.6431965	100.1572883	99.67606803	99.19946798
180227A00016	2/27/2018	2.66	2/26/2021	2/27/2018	102.63834	102.2113194	101.7878463	101.3678744	100.9513603	100.5382617	100.1285367	99.72214407	99.31904338
180307A00010	3/7/2018	2.68	2/16/2021	3/7/2018	102.46774	102.0701784	101.675708	101.2842908	100.8958914	100.5104749	100.1280069	99.74845368	99.37178188
180308A00016	3/8/2018	2.88	6/1/2022	3/8/2018	111.15249	109.3258094	107.5387701	105.7901508	104.0787794	102.4035316	100.7633288	99.15713512	97.58395593
180313A00022	3/13/2018	2.54	3/12/2021	3/13/2018	102.89646	102.4270727	101.9619723	101.5011032	101.0444076	100.5918289	100.1433113	99.6988002	99.25824195
180406A00014	4/6/2018	2.95	4/6/2023	4/6/2018	117.16198	114.3022766	111.5281695	108.8365696	106.2245237	103.6892044	101.2279032	98.83802483	96.51708192
180411A00014	4/11/2018	2.88	6/27/2022	4/11/2018	111.64618	109.7343421	107.8654065	106.0379967	104.2507946	102.502539	100.792022	99.11808619	97.47962201
180425A00020	4/25/2018	3.11	10/25/2022	4/25/2018	114.39538	112.0876577	109.8389528	107.6473458	105.5109929	103.4281241	101.3970401	99.41610848	97.48376089

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180430A00010	4/30/2018	2.88	1/15/2021	4/30/2018	101.95542	101.6513802	101.3491655	101.0487588	100.7501437	100.4533042	100.1582244	99.86488862	99.5732813
180430A00066	4/30/2018	2.84	3/30/2022	4/30/2018	110.21759	108.5832791	106.982082	105.4130733	103.8753635	102.3680954	100.8904427	99.4416083	98.02082346
180430A00078	10/30/2018	3.24	10/30/2023	10/30/2018	122.04705	118.4479072	114.9754154	111.6243573	108.3897656	105.2669085	102.2512767	99.33857136	96.52469293
180510A00024	5/10/2018	2.77	5/10/2021	5/10/2018	104.10104	103.4529241	102.8128786	102.1807527	101.5564	100.9396774	100.3304456	99.72856836	99.13391297
180514A00030	5/14/2018	2.9	5/16/2022	5/14/2018	111.2199	109.4345968	107.6874146	105.9772038	104.30286	102.6633232	101.0575748	99.48463629	97.94356669
180515A00018	5/15/2018	2.98	5/14/2021	5/15/2018	104.21581	103.5564854	102.9055039	102.2627078	101.6279432	101.00106	100.3819119	99.77035621	99.16625364
180522A00035	5/22/2018	2.83	5/21/2021	5/22/2018	104.34563	103.6635994	102.9904838	102.3261088	101.6703048	101.0229064	100.3837526	99.75268652	99.12955505
180522A00039	5/22/2018	3.43	5/22/2028	5/22/2018	158.22583	147.4016815	137.4090656	128.1793609	119.6499689	111.7637535	104.4685369	97.71664385	91.46449024
180524A00029	5/24/2018	2.74	5/24/2021	5/24/2018	104.3423	103.6512666	102.9693835	102.2964662	101.6323386	100.976829	100.3297704	99.69099998	99.06035913
180530A00024	5/30/2018	3.44	5/30/2029	5/30/2018	163.28896	150.8191283	139.4162581	128.9828438	119.4307983	110.6804935	102.6599061	95.30385356	88.55331027
171116A00009	11/16/2017	2.17	10/20/2020	11/16/2017	100.32406	100.2682902	100.2126003	100.1569878	100.1014525	100.0459943	99.99061289	99.93530827	99.88008022
171116A00013	11/16/2017	2.2	1/15/2021	11/16/2017	101.75187	101.4482263	101.1464068	100.8463934	100.5481699	100.2517203	99.95702856	99.66407909	99.37285636
171116A00022	11/16/2017	1.92	11/16/2020	11/16/2017	100.74762	100.6157345	100.4842089	100.3530429	100.2222347	100.091783	99.96168616	99.83194278	99.70255134
171122A00012	11/22/2017	2.22	11/23/2020	11/22/2017	100.88267	100.7311497	100.5800893	100.4294903	100.2793509	100.1296687	99.98044185	99.83166814	99.68334553
171201A00025	12/1/2017	2.08	5/3/2021	12/1/2017	103.55306	102.9278428	102.310159	101.6998719	101.0968493	100.500962	99.91208397	99.33009202	98.75486589
171205A00004	12/6/2017	2.07	12/7/2020	12/6/2017	101.11092	100.9192721	100.7283581	100.5381765	100.3487232	100.159994	99.97198459	99.78469084	99.5981086
171205A00012	12/5/2017	2.28	12/7/2020	12/5/2017	101.12353	100.9321514	100.7415056	100.551588	100.3623944	100.1739206	99.98616248	99.79911597	99.61277698
171207A00017	12/7/2017	2.23	10/16/2020	12/7/2017	100.26189	100.2172873	100.1727438	100.1282573	100.0838276	100.0394547	99.9951383	99.95087846	99.90667501
171213A00032	12/13/2017	2.17	12/13/2021	12/13/2017	107.48285	106.1425312	104.8355044	103.5605378	102.3164628	101.102167	99.91659112	98.75872526	97.62760657
171213A00034	12/13/2017	2.05	12/15/2020	12/13/2017	101.23795	101.0233782	100.8097272	100.5969952	100.3851763	100.1742644	99.96425364	99.75513818	99.54691222
180108A00006	1/8/2018	2.18	1/8/2021	1/8/2018	101.66789	101.3840749	101.1018533	100.8212124	100.5421387	100.264619	99.98864028	99.71418969	99.44125443
180116A00031	1/16/2018	2.58	1/17/2023	1/16/2018	114.73483	112.1630546	109.6624355	107.2305345	104.8650151	102.5636377	100.324255	98.14480699	96.02331734
180116A00039	1/16/2018	2.37	1/19/2021	1/16/2018	101.87076	101.5553979	101.242	100.9305454	100.6210161	100.3133942	100.0076621	99.70380214	99.40179725
180123A00026	1/23/2018	2.57	1/14/2022	1/23/2018	108.26932	106.8543653	105.4709675	104.1180708	102.7946673	101.4997939	100.2325294	98.99199263	97.77734003
180124A00020	1/24/2018	2.53	1/24/2023	1/24/2018	115.22016	112.6111289	110.0748024	107.6087133	105.2104934	102.8778701	100.6086621	98.40077489	96.25219693
180125A00022	1/25/2018	2.69	1/25/2023	1/25/2018	115.14632	112.5450936	110.0162219	107.5572568	105.1658507	102.8397502	100.5767916	98.37489679	96.23206944
180207A00012	2/7/2018	2.53	2/7/2022	2/7/2018	108.79104	107.3276228	105.8912137	104.4811227	103.0966865	101.7372639	100.4022344	99.09099758	97.80297231
180223A00026	2/23/2018	2.92	12/15/2022	2/23/2018	114.94493	112.4717881	110.0651517	107.722717	105.4422812	103.2217374	101.0590687	98.95234444	96.89971464
180308A00010	3/8/2018	2.72	4/8/2021	3/8/2018	103.40002	102.8505515	102.3069189	101.7690307	101.236796	100.7101259	100.1889334	99.67313327	99.16264206
180308A00011	3/8/2018	2.9	9/15/2022	3/8/2018	113.18634	111.0152014	108.8972895	106.8309627	104.8146372	102.8467891	100.9259517	99.05071283	97.21971239
180314A00005	3/14/2018	2.74	3/15/2021	3/14/2018	102.98033	102.5026566	102.0294215	101.5605616	101.0960163	100.6357261	100.1796326	99.72767833	99.27980713
180316A00010	3/16/2018	2.58	3/16/2021	3/16/2018	102.98716	102.5057748	102.0288941	101.5564587	101.0884062	100.6246758	100.1652077	99.70994293	99.25882399
180320A00007	3/20/2018	2.92	3/21/2022	3/20/2018	109.88937	108.2895895	106.7216427	105.1846601	103.6778006	102.2002535	100.7512363	99.32999393	97.93579746

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
171010A00005	10/10/2017	2.06	10/11/2022	10/10/2017	112.29818	110.0476702	107.85425	105.7160872	103.6314211	101.5985605	99.61588041	97.6818188	95.79487384
171012A00025	10/12/2017	1.93	10/13/2020	10/12/2017	100.2019	100.165678	100.129502	100.0933692	100.0572795	100.021233	99.98522939	99.94926876	99.91335096
171013A00020	10/13/2017	1.9	10/15/2020	10/13/2017	100.23172	100.1899223	100.1481768	100.1064835	100.0648423	100.023253	99.98171575	99.94023027	99.89879651
171026A00011	10/26/2017	2.94	10/26/2027	10/26/2017	148.08092	138.5601948	129.7240297	121.5194577	113.8978802	106.8146861	100.2289041	94.10288812	88.40203027
171027A00005	10/27/2017	1.88	10/27/2020	10/27/2017	100.42638	100.350944	100.2756336	100.2004436	100.1253738	100.0504238	99.97559332	99.90088216	99.82628999
171031A00061	10/31/2017	2.28	10/31/2022	10/31/2017	112.68584	110.3789902	108.1315495	105.9415691	103.8071796	101.7265872	99.69807021	97.71997553	95.79071522
171127A00016	11/27/2017	2.28	11/27/2023	11/27/2017	120.03384	116.3583854	112.8156346	109.3999746	106.1060704	102.9288478	99.86347817	96.90536516	94.05013153
171129A00020	11/29/2017	2.89	11/30/2026	11/29/2017	141.85145	133.8012825	126.2645505	119.205681	112.5917572	106.3923056	100.5791014	95.12599045	90.00872623
171206A00008	12/6/2017	2.36	12/6/2021	12/6/2017	107.38454	106.0708168	104.789125	103.5383035	102.3172471	101.124903	99.96026751	98.82238312	97.7103361
171211A00024	12/11/2017	2.26	12/11/2020	12/11/2017	101.1859	100.9830788	100.7810865	100.5799141	100.3795563	100.1800083	99.98126504	99.78332168	99.58617331
171212A00024	12/12/2017	2.29	12/12/2022	12/12/2017	113.88084	111.4202907	109.0259511	106.6955249	104.4268206	102.2177421	100.0662827	97.97052117	95.92861678
171227A00018	12/27/2017	2.83	12/27/2024	12/27/2017	128.62206	123.4671115	118.5499129	113.8580973	109.3800231	105.1047234	101.021862	97.1216928	93.39502229
180103A00018	1/3/2018	2.29	1/4/2021	1/3/2018	101.59437	101.322573	101.0522335	100.7833377	100.515874	100.249831	99.9851974	99.72196202	99.46011378
180110A00029	1/10/2018	3.13	1/10/2028	1/10/2018	151.00555	141.082385	131.8895959	123.369352	115.4687066	108.1391559	101.3362434	95.01920127	89.15062599
180116A00009	1/16/2018	2.49	1/14/2022	1/16/2018	108.16195	106.7477707	105.3651289	104.0129749	102.6903011	101.3961448	100.1295852	98.88974148	97.67577033
180118A00010	1/18/2018	2.51	8/18/2021	1/18/2018	105.60582	104.6485475	103.7085929	102.7854932	101.8787978	100.9880722	100.1128969	99.25286716	98.40759208
180124A00018	1/24/2018	2.3	1/25/2021	1/24/2018	101.99348	101.6601337	101.3289734	100.9999761	100.6731204	100.3483854	100.0257506	99.70519546	99.38669994
180125A00026	1/26/2018	2.46	1/25/2021	1/26/2018	102.00226	101.6693999	101.3387113	101.0101765	100.6837744	100.3594843	100.0372856	99.71715828	99.39908229
180201A00003	2/1/2018	2.54	2/1/2021	2/1/2018	102.1509	101.7975721	101.4466778	101.0981949	100.7520987	100.4083647	100.066969	99.72788763	99.39109734
180207A00002	2/7/2018	3.13	2/6/2026	2/7/2018	137.90415	131.0746451	124.6289489	118.5434772	112.796214	107.366599	102.235424	97.38473705	92.79775463
180215A00044	2/15/2018	2.64	2/1/2021	2/15/2018	102.18562	101.8322138	101.4812447	101.1326874	100.7865171	100.4427095	100.1012404	99.76208611	99.42522326
180216A00001	2/16/2018	2.5	2/16/2021	2/16/2018	102.45016	102.052033	101.6570047	101.2650416	100.876108	100.4901687	100.1071891	99.72713511	99.34997328
180216A00004	2/16/2018	2.75	2/16/2023	2/16/2018	116.21535	113.5166511	110.8948905	108.3474322	105.8717496	103.4654177	101.126108	98.85158392	96.63969711
180130A00085	1/30/2018	2.79	1/30/2025	1/30/2018	130.05567	124.7245057	119.643773	114.8004078	110.1820911	105.7772067	101.5747969	97.56452239	93.73662372
180130A00091	1/30/2018	2.74	1/25/2023	1/30/2018	115.26918	112.6664366	110.1360813	107.6756651	105.2828393	102.9553495	100.6910312	98.48780543	96.34367487
180205A00019	2/5/2018	2.88	2/5/2025	2/5/2018	130.60878	125.2423345	120.128779	115.2548751	110.6081486	106.1768383	101.9498519	97.91672443	94.06757944
180207A00003	2/7/2018	3.28	2/7/2028	2/7/2018	152.78439	142.6843014	133.333183	124.6714037	116.6443785	109.2021135	102.2987983	95.8924358	89.94450687
180215A00043	2/15/2018	2.63	1/7/2021	2/15/2018	101.73878	101.4581217	101.1790149	100.9014495	100.6254127	100.3508919	100.0778745	99.8063481	99.53630056
180222A00026	2/22/2018	2.98	2/21/2025	2/22/2018	131.42644	125.9794601	120.7916202	115.8492184	111.1393536	106.6498699	102.3693098	98.28687016	94.39236187
180306A00005	3/6/2018	2.65	3/4/2022	3/6/2018	109.44273	107.8930995	106.3734432	104.8829635	103.42089	101.9864785	100.5790106	99.19779227	97.84215288
180326A00010	3/26/2018	2.6	3/26/2021	3/26/2018	103.17819	102.6668661	102.1606041	101.6593333	101.16298	100.671472	100.1847386	99.70271037	99.2253193
180326A00012	3/26/2018	2.74	12/28/2020	3/26/2018	101.58922	101.3374392	101.0869111	100.8376218	100.5895622	100.3427232	100.0970958	99.8526711	99.60944037
180327A00024	3/27/2018	2.79	5/26/2023	3/27/2018	118.22425	115.178962	112.2287579	109.3700383	106.5993644	103.9134531	101.309168	98.78351188	96.33361944

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180328A00014	3/28/2018	2.55	3/29/2021	3/28/2018	103.20743	102.6871953	102.1721941	101.6623505	101.1575873	100.6578289	100.1630012	99.67303135	99.18784817
180402A00028	4/2/2018	2.58	4/1/2021	4/2/2018	103.27693	102.7476278	102.2237423	101.7051884	101.1918851	100.6837531	100.1807144	99.68269287	99.18961368
180403A00005	4/3/2018	2.72	4/3/2023	4/3/2018	117.02306	114.1634348	111.3894352	108.6979761	106.0861041	103.5509914	101.0899292	98.70032174	96.37968107
180425A00004	4/25/2018	2.97	4/26/2021	4/25/2018	103.87118	103.2668378	102.6695178	102.0790998	101.4954647	100.9184961	100.3480802	99.78410594	99.22646455
180426A00053	4/26/2018	2.94	4/26/2023	4/26/2018	118.06503	115.1170529	112.2589023	109.487271	106.798996	104.1910526	101.6605466	99.20470834	96.82088583
180430A00012	4/30/2018	2.95	7/15/2021	4/30/2018	105.36651	104.5148308	103.676909	102.8524161	102.041031	101.2424425	100.4563494	99.68245984	98.92049095
180514A00034	5/14/2018	3.07	5/14/2024	5/14/2018	126.13062	121.7791074	117.6032674	113.5949745	109.7465339	106.0506523	102.5004141	99.08925958	95.810964
180514A00035	5/14/2018	3.07	5/14/2024	5/14/2018	126.13062	121.7791074	117.6032674	113.5949745	109.7465339	106.0506523	102.5004141	99.08925958	95.810964
180524A00024	5/24/2018	3	3/21/2022	5/24/2018	110.01216	108.4113873	106.842468	105.3045303	103.7967329	102.3182642	100.8683416	99.44620941	98.05113832
180525A00001	5/25/2018	3.04	5/25/2023	5/25/2018	118.34537	115.3140089	112.3769564	109.5306475	106.7716831	104.0968175	101.5029492	98.98711413	96.54647796
180529A00037	5/29/2018	2.83	5/28/2021	5/29/2018	104.3782	103.6763274	102.9838741	102.3006554	101.6264877	100.9611919	100.3045937	99.65652355	99.01681596
180530A00014	5/30/2018	2.93	5/30/2023	5/30/2018	118.12876	115.0847527	112.1358473	109.2784401	106.509088	103.8245038	101.2215476	98.69721897	96.24864975
180530A00026	5/30/2018	3.55	5/30/2031	5/30/2018	178.34179	162.0089786	147.3508453	134.1853309	122.3511082	111.7051237	102.1204399	93.48434108	85.69667204
181016A00084	10/16/2018	3.21	10/17/2022	10/16/2018	114.45745	112.1732946	109.9471366	107.7771027	105.6613974	103.5982964	101.5861433	99.62334611	97.70837474
181018A00014	10/18/2018	3.21	10/18/2021	10/18/2018	107.448	106.2899768	105.156904	104.0479833	102.9624478	101.899563	100.8586247	99.8389579	98.8399148
181022A00051	10/22/2018	3.11	10/22/2020	10/22/2018	100.41411	100.3527027	100.2913886	100.2301631	100.169026	100.107977	100.0470161	99.98614307	99.92535765
181025A00010	10/25/2018	3.07	10/25/2022	10/25/2018	114.73833	112.4184692	110.1580718	107.9551991	105.8079888	103.7146538	101.6734784	99.68281504	97.74108048
181102A00006	11/2/2018	3.07	11/2/2021	11/2/2018	107.78178	106.571201	105.3877742	104.2305955	103.0987988	101.9915556	100.9080733	99.84759278	98.80938729
181109A00023	11/9/2018	3.39	11/9/2022	11/9/2018	115.31017	112.9455545	110.642243	108.3982	106.2114774	104.0802071	102.0025972	99.97692797	98.00154853
181114A00026	11/14/2018	3.32	12/14/2022	11/14/2018	115.85846	113.3776512	110.9634309	108.6134925	106.3256343	104.0977496	101.9278222	99.81392128	97.75419714
181115A00036	11/15/2018	3.2	11/15/2021	11/15/2018	107.99617	106.7457052	105.5241813	104.3306048	103.1640238	102.0235295	100.9082534	99.81736514	98.75007069
181121A00016	11/21/2018	3.29	11/21/2023	11/21/2018	122.6566	118.9742497	115.423502	111.9988417	108.6950219	105.5070496	102.4301714	99.45986042	96.59180388
181123A00015	11/23/2018	3.14	11/23/2021	11/23/2018	108.08463	106.8080197	105.5615355	104.3441242	103.1547771	101.9925316	100.8564685	99.74571	98.65941707
181127A00026	11/27/2018	3.2	11/26/2021	11/27/2018	108.21606	106.9290038	105.6725331	104.4455707	103.2470858	102.0760951	100.9316601	99.81288448	98.71891205
181127A00027	11/27/2018	3.25	11/28/2022	11/27/2018	115.37919	112.9536366	110.5921602	108.2925833	106.0528254	103.8708936	101.7448785	99.67295002	97.65335298
181128A00031	11/28/2018	3.29	11/28/2023	11/28/2018	122.79815	119.0900849	115.5151993	112.0678834	108.7427998	105.5348711	102.4392654	99.45138221	96.56683998
181129A00023	11/29/2018	3.16	11/29/2021	11/29/2018	108.22773	106.9309929	105.6652931	104.4295262	103.2226396	102.0436295	100.8915381	99.76545099	98.6644948
181203A00053	12/4/2018	3.23	12/1/2023	12/4/2018	122.65407	118.9384725	115.3566433	111.9029317	108.5719643	105.3586302	102.2580663	99.26564307	96.37695191
181207A00018	12/7/2018	3.21	7/15/2024	12/7/2018	127.10261	122.5438531	118.1756339	113.9889006	109.9750887	106.1260891	102.434221	98.89220664	95.49314743
181213A00031	12/13/2018	2.97	12/13/2023	12/13/2018	122.69739	118.9247689	115.2895779	111.7859389	108.4082667	105.1512525	102.0098488	98.97925398	96.05489867
181214A00012	12/14/2018	3.07	12/14/2021	12/14/2018	108.41441	107.0680451	105.7550919	104.4743145	103.2245403	102.0046529	100.8135889	99.65033507	98.51392498
181218A00033	12/18/2018	2.96	12/18/2020	12/18/2018	101.45847	101.2353382	101.0131993	100.7920478	100.5718772	100.3526808	100.1344521	99.91718477	99.70087231
181219A00006	12/19/2018	3.06	12/19/2023	12/19/2018	122.42024	118.6499344	115.0172294	111.5162277	108.1413243	104.8871929	101.7487699	98.72123915	95.80001804

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181227A00022	12/27/2019	2.91	12/27/2022	12/27/2019	115.1461	112.633531	110.1893419	107.8111314	105.4966046	103.243568	101.0499236	98.91366426	96.83286835
181227A00026	12/27/2018	3.03	12/27/2023	12/27/2018	122.46919	118.671998	115.0142075	111.4897981	108.0930576	104.81856	101.661149	98.61592199	95.67821588
181227A00029	12/27/2018	2.91	12/27/2021	12/27/2018	108.46436	107.0756736	105.7224831	104.4034376	103.1172568	101.8627234	100.6386799	99.44402438	98.27770763
171205A00005	12/6/2017	2.27	12/6/2022	12/6/2017	113.72992	111.2896715	108.914682	106.6027138	104.3516213	102.1593511	100.0239372	97.94349617	95.9162232
171205A00014	12/5/2017	2.49	12/5/2022	12/5/2017	113.76711	111.3385338	108.9746718	106.6733065	104.4323181	102.2496773	100.1234407	98.05174629	96.03280932
171206A00010	12/6/2017	2.45	12/6/2022	12/6/2017	113.69228	111.2615039	108.895575	106.5922658	104.3494495	102.1650906	100.0372397	97.96402921	95.94366905
171206A00041	12/6/2017	2.44	12/6/2024	12/6/2017	127.39605	122.3121345	117.4608956	112.8303511	108.4092053	104.1868102	100.1531229	96.29866801	92.61450172
171207A00036	12/7/2017	2.23	12/7/2022	12/7/2017	113.65473	111.2122663	108.8352019	106.5212827	104.2683562	102.0743627	99.93733006	97.85536928	95.82667012
171214A00005	12/14/2017	2.29	12/14/2022	12/14/2017	113.91574	111.4486046	109.0479883	106.7115805	104.4371745	102.2226596	100.0660158	97.96530926	95.91868729
171221A00003	12/21/2017	2.35	12/21/2020	12/21/2017	101.37434	101.1428189	100.912362	100.6829656	100.4546223	100.2273249	100.0010661	99.77583876	99.55163585
180103A00019	1/3/2018	2.51	1/3/2023	1/3/2018	114.32053	111.7963847	109.3414197	106.9532013	104.6294083	102.3678211	100.1663166	98.02286259	95.93551362
180104A00017	1/4/2018	2.77	1/3/2025	1/4/2018	128.47163	123.2963211	118.3606405	113.6520954	109.158925	104.8700503	100.77503	96.86401939	93.12773269
180117A00011	1/17/2018	2.4	1/14/2021	1/17/2018	101.79465	101.493799	101.1947325	100.897439	100.6019026	100.3081076	100.0160386	99.72568027	99.43701763
180118A00004	1/18/2018	2.88	1/17/2025	1/18/2018	129.24576	124.0059608	119.0102131	114.2458048	109.700761	105.3637941	101.2242602	97.27211877	93.49789493
180118A00039	1/18/2018	3.09	1/19/2027	1/18/2018	144.15384	135.8445971	128.0743401	120.805184	114.0021032	107.6327001	101.6669949	96.07723238	90.83770568
180123A00045	1/23/2018	2.43	1/25/2021	1/23/2018	101.99244	101.6595964	101.3289281	101.0004135	100.6740315	100.3497613	100.0275826	99.70747505	99.38941878
180129A00006	1/29/2018	2.49	11/30/2020	1/29/2018	101.04314	100.8717253	100.7008878	100.5306244	100.3609324	100.1918089	100.023251	99.85525602	99.68782116
180130A00084	1/30/2018	2.59	1/30/2023	1/30/2018	115.4776	112.8469373	110.289883	107.8039584	105.3867866	103.0360843	100.7496577	98.52539835	96.36127936
180206A00013	2/6/2018	2.72	2/6/2024	2/6/2018	122.87183	118.9151681	115.1079267	111.4436727	107.9162842	104.5199344	101.2490758	98.09842492	95.06294885
180214A00004	2/14/2018	2.71	2/14/2023	2/14/2018	116.07408	113.3841434	110.7707263	108.2312152	105.763103	103.3639827	101.031543	98.76356383	96.55791217
180215A00029	2/15/2018	2.65	2/16/2021	2/15/2018	102.45605	102.0585217	101.6640792	101.2726897	100.8843178	100.4989287	100.1164879	99.73696172	99.36031683
180222A00025	2/22/2018	3.48	2/22/2033	2/22/2018	193.22209	172.9154985	154.9914985	139.1552619	125.1499507	112.7516457	101.7649741	92.01933779	83.36565599
180226A00015	2/26/2018	2.85	9/28/2022	2/26/2018	113.33009	111.1159628	108.9571035	106.8517673	104.798281	102.7950358	100.8404845	98.9331383	97.0715647
180306A00038	3/6/2018	2.7	3/5/2021	3/6/2018	102.78115	102.333324	101.8893965	101.4493184	101.0130396	100.5805112	100.1516848	99.72651304	99.30494932
180308A00014	3/8/2018	2.79	9/15/2021	3/8/2018	106.38429	105.3359303	104.3082	103.3004977	102.3122417	101.342873	100.3918535	99.45866553	98.54281083
180323A00005	3/23/2018	2.79	3/23/2021	3/23/2018	103.15017	102.6485505	102.1518109	101.6598795	101.1726867	100.6901641	100.2122448	99.73886304	99.2699543
180129A00004	1/29/2018	2.63	1/31/2022	1/29/2018	108.54495	107.110388	105.701881	104.3187741	102.9604378	101.626263	100.3156599	99.02805733	97.76290226
180202A00011	2/2/2018	2.45	2/2/2021	2/2/2018	102.18359	101.8267514	101.4724006	101.1205133	100.7710637	100.4240266	100.0793772	99.7370907	99.39714301
180207A00022	2/7/2018	2.79	2/7/2023	2/7/2018	115.63882	112.9889719	110.4137201	107.9105473	105.4770343	103.1108575	100.8097847	98.57167043	96.39445252
180222A00023	2/22/2018	2.84	2/22/2022	2/22/2018	109.2797	107.7672195	106.2833994	104.827488	103.3987632	101.996527	100.6201052	99.26884562	97.9421178
180302A00020	3/2/2018	2.79	3/17/2022	3/2/2018	109.61687	108.0312978	106.4770548	104.9532922	103.4591882	101.9939495	100.5568111	99.14703415	97.76390532
180402A00041	4/2/2018	2.77	4/6/2021	4/2/2018	103.39586	102.8522535	102.3143612	101.7820908	101.2553543	100.7340658	100.2181409	99.70749719	99.20205373
180403A00006	4/3/2018	3.07	4/3/2028	4/3/2018	154.10083	143.6373163	133.9681	125.0284953	116.7594105	109.1068376	102.0213907	95.45788754	89.37497109

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180403A00009	4/3/2018	2.91	4/3/2025	4/3/2018	131.9019	126.2962561	120.9638487	115.8898736	111.0604097	106.462361	102.0834036	97.91193544	93.93703046
180403A00041	4/3/2018	2.91	4/3/2025	4/3/2018	131.9019	126.2962561	120.9638487	115.8898736	111.0604097	106.462361	102.0834036	97.91193544	93.93703046
180410A00016	4/10/2018	2.89	4/11/2022	4/10/2018	110.23566	108.5695666	106.9376175	105.3388404	103.7723012	102.2371002	100.7323708	99.25727781	97.81101629
180411A00001	4/11/2018	2.84	1/25/2022	4/11/2018	108.75957	107.3297385	105.9279417	104.5533806	103.2052903	101.8829344	100.5856041	99.3126168	98.0633146
180412A00034	4/12/2018	3.23	4/15/2030	4/12/2018	169.76478	155.5076833	142.5846124	130.8629686	120.2240033	110.561305	101.7794593	93.79285927	86.52465084
180416A00015	4/16/2018	2.79	4/14/2022	4/16/2018	110.42544	108.7436637	107.0965371	105.4830714	103.9023114	102.3533378	100.8352652	99.34724106	97.88844348
180427A00010	4/27/2018	2.95	4/27/2023	4/27/2018	118.11224	115.1603814	112.2985341	109.5233823	106.8317536	104.2206146	101.6870629	99.22832097	96.84172971
180503A00040	5/3/2018	3.3	5/5/2025	5/3/2018	133.43798	127.7140173	122.2722908	117.0973039	112.1745035	107.4902121	103.0315706	98.78648427	94.74357286
180507A00025	5/7/2018	2.92	5/7/2021	5/7/2018	104.04703	103.4092688	102.7793182	102.1570382	101.542289	100.9349344	100.3348416	99.74188061	99.15592488
180514A00033	5/14/2018	3.36	5/15/2028	5/14/2018	157.46586	146.6999966	136.7599371	127.5776526	119.091075	111.2435423	103.9832996	97.26304995	91.03954747
180521A00025	5/21/2018	3.24	5/21/2025	5/21/2018	134.54215	128.7025286	123.1538011	117.8798329	112.8654776	108.0965113	103.5595702	99.24209385	95.1322721
180521A00072	5/21/2018	2.96	5/23/2022	5/21/2018	111.45758	109.6492238	107.879792	106.1480958	104.4529964	102.7934011	101.1682607	99.57656744	98.01735298
180522A00008	5/22/2018	2.98	5/24/2021	5/22/2018	104.4042	103.7142171	103.0333463	102.3614096	101.6982317	101.0436423	100.3974751	99.75956814	99.12976379
180522A00018	5/22/2018	3.1	5/23/2022	5/22/2018	111.36355	109.5618709	107.7988817	106.0734005	104.3842978	102.7304899	101.1109358	99.52463586	97.97062912
180524A00020	5/24/2018	2.74	5/24/2021	5/24/2018	104.3423	103.6512666	102.9693835	102.2964662	101.6323386	100.976829	100.3297704	99.69099998	99.06035913
180529A00044	5/29/2018	3.11	5/29/2024	5/29/2018	125.76737	121.3944139	117.199204	113.1734605	109.3093432	105.5994244	102.0366646	98.61438947	95.3262685
180531A00014	5/31/2018	2.8	5/31/2023	5/31/2018	118.34761	115.2847712	112.3179425	109.443472	106.6578729	103.9578167	101.3401245	98.80175943	96.33981877
180604A00045	6/4/2018	2.87	6/4/2021	6/4/2018	104.5353	103.8117174	103.0981413	102.3943613	101.7001767	101.0153921	100.3398175	99.67326812	99.01556382
180618A00011	6/18/2018	3.02	6/20/2022	6/18/2018	111.76557	109.8743433	108.025173	106.2167239	104.4477169	102.716927	101.0231806	99.36535255	97.74236367
180619A00021	6/19/2018	3.24	6/19/2028	6/19/2018	157.08407	146.191088	136.1437744	126.871656	118.3105051	110.4017537	103.0919658	96.33236045	90.07838273
180619A00023	6/19/2018	3.04	6/19/2023	6/19/2018	118.83008	115.710788	112.6906266	109.7657588	106.9325282	104.1874481	101.5271919	98.94858422	96.44859276
180621A00052	6/25/2018	3.35	6/23/2023	6/25/2018	119.81023	116.6636979	113.6174062	110.6674656	107.8101669	105.0419734	102.3595118	99.75956252	97.2390519
180622A00018	6/22/2018	2.92	6/22/2023	6/22/2018	119.12457	115.9781112	112.9321539	109.98279	107.1262939	104.3591137	101.6778615	99.0793046	96.56035669
180626A00045	6/26/2018	2.91	6/25/2021	6/26/2018	104.95651	104.1676507	103.390635	102.6251972	101.8710797	101.1280328	100.3958139	99.67418757	98.96292506
180627A00017	6/27/2018	2.9	6/25/2021	6/27/2018	104.94895	104.1601242	103.3831401	102.6177335	101.8636469	101.1206306	100.3884419	99.66684555	98.95561269
180627A00026	6/27/2018	2.87	6/27/2023	6/27/2018	119.07706	115.9147808	112.8539618	109.8906357	107.0210238	104.2415248	101.5487048	98.93928769	96.41014689
180628A00027	6/28/2018	2.72	6/28/2021	6/28/2018	104.98017	104.180588	103.3931615	102.6176163	101.853685	101.1011082	100.3596341	99.6290184	98.9090239
180629A00008	6/29/2018	3.02	6/29/2023	6/29/2018	118.96646	115.8124338	112.759515	109.8037502	106.9413759	104.1688052	101.4826177	98.87955031	96.35648867
180702A00012	7/2/2018	3.01	7/3/2023	7/2/2018	119.01337	115.8459704	112.7803853	109.8126422	106.9389568	104.1557211	101.4594937	98.8469905	96.31507638
180705A00060	7/5/2018	3	7/6/2022	7/5/2018	112.03664	110.0939484	108.1952101	106.3390367	104.5240985	102.7491213	101.0128835	99.31421277	97.65198435
180705A00062	7/5/2018	3.04	7/6/2023	7/5/2018	119.15868	115.9797366	112.9031623	109.9249716	107.0413688	104.2487335	101.5436115	98.9227053	96.38286596
180716A00054	7/16/2018	3.59	7/16/2040	7/16/2018	248.83815	210.0477456	178.0488303	151.5958388	129.6787448	111.4774073	96.32496033	83.67841732	73.09504237
180717A00047	7/17/2018	3.3	9/17/2025	7/17/2018	136.09312	129.8242734	123.8856801	118.2581593	112.9237481	107.865615	103.0679823	98.51605471	94.19595324

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180719A00011	7/19/2018	3	11/12/2021	7/19/2018	107.70446	106.4654073	105.2548344	104.0717644	102.9152674	101.7844551	100.6784782	99.59652473	98.53781774
180727A00028	7/27/2018	3.25	7/27/2026	7/27/2018	143.47035	135.788192	128.5713849	121.7892535	115.413297	109.417028	103.7758192	98.46676441	93.46854902
180730A00004	7/30/2018	3.14	7/28/2023	7/30/2018	119.87929	116.620497	113.4680549	110.4179019	107.4661575	104.6091113	101.8432138	99.16506866	96.57142552
180730A00023	7/30/2018	3.13	7/30/2024	7/30/2018	127.93156	123.2829412	118.8305704	114.5651326	110.4778001	106.5602085	102.8044299	99.20294779	95.74863362
180801A00014	8/1/2018	3.03	8/2/2021	8/1/2018	105.76966	104.8610334	103.967991	103.0901385	102.2270908	101.3784756	100.5439331	99.72311548	98.91568607
180801A00015	8/1/2018	3.16	8/1/2023	8/1/2018	120.01741	116.7438759	113.5774567	110.5140701	107.5498124	104.6809499	101.9039094	99.21527171	96.61176299
180321A00005	3/21/2018	2.65	3/22/2021	3/21/2018	103.12981	102.6303803	102.1357957	101.6459824	101.1608714	100.6803952	100.2044873	99.73308277	99.26611771
180412A00016	4/12/2018	2.79	4/12/2021	4/12/2018	103.51036	102.9486987	102.3931335	101.8435652	101.2998968	100.7620337	100.2298831	99.70335409	99.18235788
180426A00016	4/26/2018	2.77	4/26/2021	4/26/2018	103.84006	103.2347382	102.6364627	102.045115	101.4605753	100.8827265	100.311454	99.74664616	99.18819353
180518A00012	5/18/2018	3.1	5/18/2022	5/18/2018	111.26761	109.4816749	107.7338636	106.0230292	104.3480664	102.7079141	101.1015531	99.528004	97.98632499
180524A00050	5/24/2018	2.9	5/24/2021	5/24/2018	104.35104	103.6612565	102.9805837	102.3088432	101.6458597	100.9914628	100.3454864	99.70776852	99.07815152
180529A00007	5/29/2018	2.83	6/1/2021	5/29/2018	104.45199	103.7378047	103.0333662	102.3384747	101.6529373	100.976566	100.309178	99.6505953	99.00064457
180529A00026	5/29/2018	2.67	6/1/2021	5/29/2018	104.44294	103.727453	103.0217519	102.3256334	101.6389036	100.9613735	100.2928591	99.63318138	98.98216613
180529A00066	5/29/2018	2.99	5/26/2023	5/29/2018	118.22322	115.1904404	112.2520936	109.4046154	106.6445988	103.9687906	101.3740825	98.85750386	96.41621422
180530A00025	5/30/2018	3.49	5/30/2030	5/30/2018	170.72046	156.3661773	143.3629756	131.5755986	120.8830327	111.1769339	102.3602394	94.34593787	87.05597975
180530A00039	5/30/2018	2.93	5/30/2023	5/30/2018	118.12876	115.0847527	112.1358473	109.2784401	106.509088	103.8245038	101.2215476	98.69721897	96.24864975
180530A00044	5/30/2018	2.87	5/31/2022	5/30/2018	111.11608	109.2928257	107.5090862	105.7636467	104.0553407	102.3830493	100.7456984	99.14225714	97.57173507
180601A00023	6/1/2018	3.3	6/1/2028	6/1/2018	157.26515	146.4393206	136.4486538	127.2239805	118.7022198	110.8258149	103.542221	96.80344309	90.56561932
180611A00030	6/11/2018	2.91	6/12/2023	6/11/2018	118.89781	115.7876054	112.7758973	109.8588875	107.0329586	104.2946598	101.6406979	99.06792888	96.57334933
180614A00008	6/14/2018	2.94	6/14/2021	6/14/2018	104.77213	104.0173467	103.2734363	102.5401624	101.8172976	101.1046214	100.401919	99.70898208	99.02560782
180615A00063	6/15/2018	3.2	6/15/2026	6/15/2018	142.30819	134.818076	127.7745173	121.1483707	114.9125592	109.0419133	103.5130257	98.30411788	93.39491748
180618A00032	6/18/2018	2.93	6/18/2021	6/18/2018	104.84005	104.0728776	103.3169295	102.5719576	101.8377241	101.1139977	100.4005539	99.69717435	99.00364712
180625A00009	6/25/2018	3	6/27/2022	6/25/2018	111.86499	109.9510906	108.0801348	106.2507431	104.4615964	102.7114322	100.9990418	99.32326657	97.68299621
180713A00027	7/13/2018	3.23	7/13/2028	7/13/2018	157.45872	146.4534911	136.3088701	126.9527149	118.319302	110.3487245	102.9863474	96.18231776	89.89112215
180719A00060	7/19/2018	3.05	7/19/2022	7/19/2018	112.39779	110.4125379	108.4726535	106.5767641	104.7235524	102.9117514	101.1401426	99.40755307	97.71285387
180720A00006	7/20/2018	3.03	7/17/2023	7/20/2018	119.33821	116.1220644	113.0101985	109.9985933	107.0834136	104.2609971	101.5278447	98.88061224	96.31610276
180720A00008	7/20/2018	3	7/20/2022	7/20/2018	112.32233	110.3348327	108.3927913	106.4948362	104.6396515	102.8259713	101.0525777	99.31829833	97.62200426
180720A00030	7/20/2018	2.79	7/20/2021	7/20/2018	105.45141	104.5823304	103.7275631	102.8867563	102.0595698	101.2456744	100.4447514	99.65649214	98.88059778
180724A00075	7/24/2018	2.98	7/24/2023	7/24/2018	119.92745	116.6667457	113.5124681	110.4605324	107.5070351	104.6482458	101.880598	99.20068131	96.60523321
180220A00027	2/20/2018	2.69	2/19/2021	2/20/2018	102.52539	102.1189846	101.7158011	101.3158035	100.9189542	100.525216	100.1345523	99.74692731	99.36230552
180223A00022	2/23/2018	2.93	2/23/2023	2/23/2018	116.30854	113.5948501	110.9589297	108.3981061	105.9098119	103.4915829	101.1410539	98.85595365	96.63410063
180226A00040	2/26/2018	2.79	2/28/2022	2/26/2018	109.32273	107.7902236	106.2870772	104.8125174	103.3657965	101.9461921	100.5530065	99.18556524	97.84321653
180329A00033	4/2/2018	2.79	4/1/2021	4/2/2018	103.31508	102.7865245	102.2633636	101.7455157	101.2329001	100.7254379	100.2230519	99.72566601	99.2332061

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180417A00005	4/17/2018	2.67	4/19/2021	4/17/2018	103.65314	103.0692394	102.4919181	101.921066	101.3565749	100.7983384	100.246253	99.70021721	99.16013181
180418A00021	4/18/2018	2.85	4/19/2021	4/18/2018	103.67792	103.0949058	102.5184456	101.948432	101.3847573	100.8273159	100.2760048	99.7307231	99.19137215
180420A00012	4/20/2018	2.91	4/20/2021	4/20/2018	103.73045	103.1442929	102.5647626	101.9917444	101.4251288	100.864809	100.3106802	99.76264005	99.2205886
180426A00011	4/26/2018	2.94	4/26/2023	4/26/2018	118.06503	115.1170529	112.2589023	109.487271	106.798996	104.1910526	101.6605466	99.20470834	96.82088583
180507A00005	5/7/2018	3.06	5/5/2023	5/7/2018	118.01895	115.05493	112.1816527	109.3957522	106.6940155	104.0733705	101.5308791	99.06373041	96.66923379
180516A00019	5/16/2018	3.19	5/16/2023	5/16/2018	118.5927	115.5861926	112.6725018	109.8481572	107.1098401	104.4543797	101.8787449	99.38003744	96.95548478
180518A00014	5/18/2018	3.17	5/18/2023	5/18/2018	118.57578	115.5632136	112.6438076	109.8140696	107.0706629	104.4103995	101.8302327	99.32724908	96.89866218
180523A00025	5/23/2018	2.86	12/15/2021	5/23/2018	108.38471	107.0318511	105.7126992	104.4260103	103.1705964	101.9453272	100.749126	99.58096726	98.43987282
180529A00042	5/29/2018	3.42	5/30/2028	5/29/2018	156.14808	145.4655171	135.6038515	126.4953229	118.0781179	110.2958189	103.0969052	96.43430335	90.26498053
180530A00006	5/30/2018	2.87	5/31/2022	5/30/2018	111.11608	109.2928257	107.5090862	105.7636467	104.0553407	102.3830493	100.7456984	99.14225714	97.57173507
180530A00007	5/30/2018	2.66	11/30/2021	5/30/2018	107.84831	106.5475445	105.2780618	104.0387434	102.8285239	101.6463879	100.4913667	99.36253541	98.25901114
180530A00067	5/30/2018	2.76	5/28/2021	5/30/2018	104.33089	103.6291952	102.9369205	102.2538788	101.5798864	100.9147642	100.2583381	99.61043839	98.97089968
180530A00084	5/30/2018	2.61	6/1/2021	5/30/2018	104.40168	103.6863523	102.9808095	102.284848	101.5982735	100.9208972	100.2525352	99.59300851	98.94214282
180601A00022	6/1/2018	3.03	6/1/2023	6/1/2018	118.45098	115.3960054	112.4366129	109.569167	106.790202	104.0964089	101.4846277	98.95183886	96.49515631
180604A00027	6/4/2018	2.87	6/4/2021	6/4/2018	104.5353	103.8117174	103.0981413	102.3943613	101.7001767	101.0153921	100.3398175	99.67326812	99.01556382
180604A00047	6/4/2018	2.97	6/3/2022	6/4/2018	111.34816	109.51351	107.718774	105.962719	104.244161	102.5619648	100.9150414	99.30234502	97.72287182
180604A00050	6/4/2018	3.15	6/4/2024	6/4/2018	126.04491	121.6462156	117.4269685	113.3787743	109.4936878	105.7641837	102.1831318	98.74377359	95.43970019
180615A00031	6/15/2018	2.92	6/15/2021	6/15/2018	104.7764	104.0185744	103.2717064	102.535559	101.8099023	101.0945129	100.389174	99.69367454	99.00780947
180620A00026	6/20/2018	2.91	6/18/2021	6/20/2018	104.82533	104.0582214	103.3023333	102.5574209	101.8232462	101.0995781	100.3861919	99.68286945	98.98939874
180530A00027	5/30/2018	3.61	6/1/2032	5/30/2018	186.1155	167.7016365	151.3289929	136.7582171	123.7792732	112.2077089	101.8814161	92.65781665	84.41141614
180530A00030	5/30/2018	3.68	5/30/2034	5/30/2018	201.0803	178.3248112	158.4597218	141.0979797	125.9064223	112.5980168	100.925253	90.67451155	81.66126109
180530A00069	5/30/2018	2.87	5/31/2022	5/30/2018	111.11608	109.2928257	107.5090862	105.7636467	104.0553407	102.3830493	100.7456984	99.14225714	97.57173507
180530A00072	5/30/2018	3.06	5/30/2024	5/30/2018	125.58809	121.2152718	117.0203414	112.9950062	109.131414	105.4221263	101.8600937	98.43863253	95.1514039
180531A00065	5/31/2018	2.65	6/1/2021	5/31/2018	104.42918	103.7137528	103.0081044	102.3120383	101.6253602	100.9478814	100.2794178	99.61979043	98.96882503
180607A00026	6/7/2018	2.92	6/7/2021	6/7/2018	104.62634	103.8933315	103.1705818	102.4578792	101.7550151	101.0617868	100.3779968	99.70345329	99.03796952
180612A00005	6/12/2018	3.09	6/12/2023	6/12/2018	118.8375	115.7410311	112.7423592	109.8377238	107.0235416	104.296394	101.6530181	99.09029817	96.60525784
180615A00061	6/15/2018	3.28	6/15/2028	6/15/2018	157.36429	146.4765573	136.4327025	127.1625048	118.6019584	110.6926897	103.3814324	96.61955408	90.36262929
180615A00069	6/15/2018	2.86	6/15/2022	6/15/2018	111.73097	109.8494015	108.0095135	106.2099863	104.4495586	102.7270225	101.0412201	99.39104138	97.77542119
180618A00024	6/18/2018	2.91	4/13/2021	6/18/2018	103.59436	103.0294682	102.4707401	101.918074	101.3713713	100.8305356	100.2954729	99.76609085	99.24229918
180618A00025	6/18/2018	3.01	4/13/2022	6/18/2018	110.46557	108.7914816	107.1517659	105.5454468	103.9715804	102.429258	100.9176042	99.43577594	97.98296033
180619A00020	6/19/2018	3.1	6/19/2025	6/19/2018	134.41449	128.473171	122.8324541	117.4753968	112.3861157	107.5497115	102.952202	98.58045937	94.4221532
180620A00044	6/20/2018	2.89	6/20/2023	6/20/2018	118.99771	115.8596855	112.8217284	109.8799564	107.0306664	104.2703278	101.5955728	99.00318703	96.4901018
180625A00039	6/25/2018	2.93	6/25/2021	6/25/2018	104.97163	104.1827037	103.4056249	102.6401246	101.8859453	101.1428373	100.4105579	99.68887161	98.97754981

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180625A00041	6/25/2018	3.06	6/20/2023	6/25/2018	118.90759	115.7839104	112.7595772	109.8307444	106.9937445	104.24508	101.5814143	98.99956267	96.49648417
180627A00057	6/27/2018	2.98	6/27/2022	6/27/2018	111.82852	109.9149658	108.0443468	106.2152854	104.4264627	102.6766167	100.9645385	99.28906984	97.64910051
180706A00013	7/6/2018	3.01	7/6/2023	7/6/2018	119.07017	115.8925271	112.8172139	109.8402535	106.9578511	104.1663874	101.4624091	98.84261968	96.30387095
180717A00076	7/17/2018	3.03	7/17/2023	7/17/2018	119.33821	116.1220644	113.0101985	109.9985933	107.0834136	104.2609971	101.5278447	98.88061224	96.31610276
180724A00025	7/24/2018	2.93	7/25/2022	7/24/2018	112.63606	110.6241658	108.6585661	106.7378856	104.8608012	103.0260391	101.2323721	99.47861756	97.76363538
180725A00027	7/25/2018	2.95	12/17/2020	7/25/2018	101.43775	101.2174926	100.9982032	100.779877	100.5625075	100.3460884	100.1306135	99.91607652	99.70247127
180730A00033	7/30/2018	3.11	7/29/2022	7/30/2018	112.70422	110.6861442	108.7145374	106.7880406	104.9053448	103.0651881	101.2663532	99.50766592	97.78799296
180730A00041	7/30/2018	3.14	7/31/2023	7/30/2018	119.93736	116.6682521	113.5060248	110.4466116	107.4861208	104.6208293	101.8471746	99.16174688	96.56128175
180730A00078	7/30/2018	3.14	7/28/2023	7/30/2018	119.87929	116.620497	113.4680549	110.4179019	107.4661575	104.6091113	101.8432138	99.16506866	96.57142552
190102A00003	1/2/2019	2.8	1/27/2021	1/2/2019	102.15004	101.8111187	101.4744459	101.1399993	100.807757	100.4776971	100.1497982	99.82403924	99.50039922
190102A00043	1/2/2019	2.79	1/4/2021	1/2/2019	101.72857	101.4565352	101.1859576	100.9168246	100.6491247	100.3828465	100.1179786	99.85450989	99.59242928
190104A00021	1/4/2019	2.58	1/4/2021	1/4/2019	101.70796	101.4355696	101.1646378	100.8951573	100.6271164	100.3605036	100.0953073	99.83151642	99.56911963
190107A00020	1/7/2019	2.8	1/7/2021	1/7/2019	101.78585	101.5050983	101.2259057	100.9482549	100.6721329	100.3975273	100.1244255	99.85281513	99.5826839
190107A00029	1/7/2019	2.59	1/7/2021	1/7/2019	101.76459	101.4834725	101.2039144	100.9259049	100.6494311	100.3744804	100.10104	99.82909748	99.55864043
190110A00002	1/10/2019	2.93	1/10/2023	1/10/2019	115.45552	112.8963142	110.4075188	107.9866897	105.631491	103.3396864	101.1091341	98.9377822	96.82366361
190110A00010	1/10/2019	2.97	1/16/2024	1/10/2019	122.63716	118.7725383	115.0515071	111.4678963	108.0158372	104.6897486	101.4843209	98.39450079	95.41547728
190110A00014	1/10/2019	2.97	1/17/2024	1/10/2019	122.65602	118.7878446	115.063478	111.4767376	108.0217481	104.6929213	101.4849407	98.39274598	95.41151927
190110A00022	1/10/2019	2.86	5/10/2021	1/10/2019	104.06553	103.4187169	102.7799462	102.149064	101.5259246	100.9103859	100.3023092	99.7015594	99.10800442
190114A00030	1/14/2019	2.85	1/14/2021	1/14/2019	101.92809	101.6269778	101.3276541	101.0301046	100.7343132	100.4402644	100.1479428	99.85733296	99.56841993
190114A00045	1/14/2019	2.84	1/14/2021	1/14/2019	101.92513	101.6240183	101.3247003	101.0271564	100.7313707	100.4373276	100.1450116	99.85440735	99.56549988
190122A00008	1/22/2019	2.98	1/20/2023	1/22/2019	115.76462	113.1710592	110.6493404	108.1970128	105.8117289	103.4912371	101.2333778	99.03607793	96.89734779
190122A00045	1/22/2019	3.17	1/22/2027	1/22/2019	146.45142	137.9934752	130.0855848	122.6889927	115.7678745	109.2890989	103.2220115	97.53823704	92.21149895
190123A00005	1/23/2019	2.94	1/24/2022	1/23/2019	108.88375	107.4540663	106.0527568	104.6790003	103.3320088	102.0110248	100.7153195	99.44419145	98.19696517
190123A00034	1/23/2019	2.98	1/23/2025	1/23/2019	130.82498	125.5003045	120.4247017	115.5851775	110.9694875	106.5660891	102.3640966	98.35324077	94.52383034
190128A00035	1/28/2019	3.04	1/26/2024	1/28/2019	123.07642	119.1719152	115.4132617	111.7942137	108.3088301	104.9514564	101.7167088	98.59945963	95.59482414
190129A00028	1/30/2019	2.92	2/1/2022	1/30/2019	108.96811	107.5271424	106.112396	104.7232113	103.3589534	102.0190079	100.7027799	99.40969343	98.1391908
190130A00012	1/30/2019	2.92	1/31/2022	1/30/2019	108.94848	107.5109381	106.0995012	104.7135163	103.3523524	102.0153989	100.7020648	99.41177745	98.14398256
190130A00019	1/30/2019	3.01	1/30/2024	1/30/2019	123.04493	119.1280759	115.357879	111.7280688	108.2326788	104.8660278	101.622705	98.49755603	95.48566883
190208A00008	2/8/2019	2.86	2/8/2024	2/8/2019	122.67985	118.7380676	114.9449838	111.2942014	107.7796335	104.3954866	101.136244	97.99665189	94.97170492
190211A00017	2/11/2019	3.12	2/11/2026	2/11/2019	137.94583	131.0952358	124.6306428	118.5282753	112.7659376	107.3229057	102.1798216	97.31859713	92.72232411
190214A00008	2/14/2019	2.64	2/14/2023	2/14/2019	115.89743	113.2097321	110.5985011	108.0611276	105.595106	103.1980307	100.8675917	98.60157047	96.3978351
190225A00026	2/25/2019	3.43	2/27/2034	2/25/2019	199.64817	177.1463201	157.4736959	140.2559033	125.1700229	111.9372928	100.3168654	90.10047433	81.10787531
180328A00019	3/28/2018	2.55	3/29/2021	3/28/2018	103.20743	102.6871953	102.1721941	101.6623505	101.1575873	100.6578289	100.1630012	99.67303135	99.18784817

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180329A00003	3/29/2018	3.08	3/29/2028	3/29/2018	154.09298	143.649913	133.9982475	125.0736352	116.8172882	109.1754679	102.099027	95.54299455	89.46620116
180406A00005	4/6/2018	2.76	4/6/2021	4/6/2018	103.39058	102.8469889	102.3091128	101.7768583	101.2501378	100.728865	100.2129558	99.70232759	99.19689955
180410A00017	4/10/2018	3.02	10/10/2023	4/10/2018	120.94038	117.4229657	114.0277953	110.7499046	107.5845651	104.5272681	101.5737134	98.71979811	95.96160623
180412A00036	4/12/2018	3.54	4/15/2038	4/12/2018	231.35188	198.6862929	171.1879614	147.9997765	128.4115118	111.8339631	97.777753	85.83593941	75.66972954
180425A00007	4/25/2018	2.98	4/25/2023	4/25/2018	118.15473	115.2087677	112.3524895	109.582597	106.8959355	104.2894875	101.7603658	99.30580731	96.92316614
180425A00023	4/25/2018	2.97	4/23/2021	4/25/2018	103.81487	103.2196147	102.6311817	102.0494545	101.4743189	100.9056631	100.3433781	99.7873572	99.23749601
180426A00017	4/26/2018	2.85	4/26/2022	4/26/2018	110.75323	109.032009	107.3467113	105.696289	104.0797325	102.496071	100.9443706	99.42373259	97.93329148
180430A00070	4/30/2018	2.91	3/30/2023	4/30/2018	117.45183	114.5993804	111.832008	109.1466572	106.5404055	104.0104541	101.5541212	99.16883658	96.85213619
180521A00005	5/21/2018	3.02	5/22/2023	5/21/2018	118.7969	115.7562282	112.8101294	109.9550375	107.1875453	104.5043985	101.9024882	99.37884245	96.9306197
180521A00022	5/21/2018	2.99	5/21/2021	5/21/2018	104.35423	103.6734272	103.0015026	102.3382859	101.6836084	101.0373058	100.399218	99.76918883	99.14706628
180522A00019	5/22/2018	3.16	5/22/2023	5/22/2018	118.62559	115.5997419	112.6677693	109.8261372	107.0714716	104.4005497	101.8102918	99.29775393	96.86012073
180522A00037	5/22/2018	3.01	5/22/2023	5/22/2018	118.76871	115.7284262	112.7827132	109.9279979	107.1608734	104.4780858	101.8765263	99.35322336	96.9053356
180530A00016	5/30/2018	2.76	5/28/2021	5/30/2018	104.33089	103.6291952	102.9369205	102.2538788	101.5798864	100.9147642	100.2583381	99.61043839	98.97089968
180601A00003	6/1/2018	2.65	12/1/2020	6/1/2018	101.11289	100.9382866	100.7642853	100.5908838	100.4180789	100.2458677	100.0742469	99.90321374	99.73276505
180604A00048	6/4/2018	3.01	6/5/2023	6/4/2018	118.47165	115.4033016	112.4312944	109.5519513	106.7617652	104.0573887	101.4356259	98.89342352	96.42786394
180614A00034	6/15/2018	2.89	1/11/2021	6/15/2018	101.88458	101.5921636	101.3014371	101.0123842	100.7249905	100.4392416	100.1551233	99.8726217	99.59172289
180615A00066	6/15/2018	3	6/14/2024	6/15/2018	126.47314	122.0095237	117.7296982	113.6249861	109.6871756	105.9084939	102.2815809	98.79946387	95.45553478
180620A00014	6/20/2018	3.4	6/20/2028	6/20/2018	156.37547	145.5986784	135.655754	126.477388	118.0004005	110.1671661	102.9250967	96.22617449	90.02653205
180621A00017	6/21/2018	3.42	6/21/2028	6/21/2018	156.57325	145.7844509	135.8305674	126.642186	118.156035	110.3144066	103.0646388	96.35864775	90.15250653
180629A00071	6/29/2018	3.02	6/29/2023	6/29/2018	118.96646	115.8124338	112.759515	109.8037502	106.9413759	104.1688052	101.4826177	98.87955031	96.35648867
180713A00013	7/13/2018	2.88	7/13/2023	7/13/2018	119.41486	116.196614	113.0827245	110.0691495	107.1520304	104.3276847	101.5925962	98.94340622	96.37690556
180719A00061	7/19/2018	3.07	7/19/2023	7/19/2018	119.49582	116.2710626	113.1509745	110.1315351	107.2089005	104.3793989	101.6395215	98.98591449	96.41537049
180529A00060	5/29/2018	2.83	6/1/2021	5/29/2018	104.45199	103.7378047	103.0333662	102.3384747	101.6529373	100.976566	100.309178	99.6505953	99.00064457
180614A00038	6/14/2018	3.08	6/14/2023	6/14/2018	118.84795	115.7447781	112.7397899	109.8292006	107.0094061	104.2769684	101.6286061	99.06118665	96.57171742
180622A00005	6/22/2018	3.5	7/2/2029	6/22/2018	164.5326	151.8685154	140.2974452	129.7186181	120.0410827	111.182701	103.0692491	95.63361545	88.81508289
180627A00027	6/27/2018	2.87	6/27/2023	6/27/2018	119.07706	115.9147808	112.8539618	109.8906357	107.0210238	104.2415248	101.5487048	98.93928769	96.41014689
180629A00039	6/29/2018	2.91	6/29/2021	6/29/2018	105.03149	104.2301928	103.4410969	102.6639268	101.8984137	101.1442968	100.4013232	99.66924729	98.94783061
180705A00003	7/5/2018	3.04	7/5/2023	7/5/2018	119.13965	115.9641278	112.890799	109.9156834	107.0349885	104.245098	101.5425615	98.92408578	96.38652618
180716A00016	7/16/2018	3.03	7/14/2023	7/16/2018	119.28119	116.0753143	112.9731917	109.9708129	107.0643538	104.2501638	101.5247562	98.88479998	96.32711136
180719A00065	7/19/2018	3.36	7/20/2026	7/19/2018	142.53657	134.9616653	127.8431063	121.1509171	114.8572471	108.9362093	103.3637327	98.11742437	93.17644476
180725A00029	7/25/2018	2.98	4/16/2021	7/25/2018	103.6949	103.1207274	102.5529114	101.9913513	101.4359438	100.8865882	100.3431857	99.80563983	99.27385604
180801A00013	8/1/2018	3.04	10/15/2021	8/1/2018	107.20487	106.0577554	104.9351742	103.8363406	102.7605065	101.7069548	100.6749979	99.66397656	98.67325784
180802A00006	8/2/2018	2.99	8/2/2023	8/2/2018	120.13374	116.8412417	113.656857	110.5764563	107.5960861	104.7119659	101.9204784	99.2181625	96.60170523

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180809A00029	8/9/2018	2.99	9/9/2021	8/9/2018	106.4668	105.4367516	104.426611	103.435808	102.4637909	101.5100288	100.5740108	99.65524475	98.7532566
180813A00059	8/13/2018	3.01	8/11/2023	8/13/2018	119.75348	116.451686	113.2589213	110.170994	107.1838964	104.2937963	101.4970285	98.79008657	96.1696152
180816A00024	8/16/2018	3.01	8/16/2023	8/16/2018	119.84879	116.5294443	113.3201784	110.2167419	107.2150711	104.3112817	101.5016592	98.78265085	96.15085759
180816A00038	8/16/2018	3.38	8/16/2028	8/16/2018	157.26915	146.2306509	136.0609776	126.68691	118.041762	110.0647672	102.7005258	95.89850486	89.61258803
180821A00002	8/22/2018	2.89	8/23/2021	8/22/2018	106.04668	105.0717186	104.1146628	103.175022	102.252324	101.3461132	100.4559505	99.58141213	98.72208915
180821A00016	8/21/2018	2.76	8/20/2021	8/21/2018	106.01564	105.0480244	104.0980534	103.1652433	102.2491321	101.349274	100.465239	99.59661212	98.74299294
180827A00031	8/27/2018	2.9	8/27/2021	8/27/2018	106.13192	105.1441415	104.1747186	103.2231455	102.2889326	101.3716079	100.4707164	99.58581935	98.71649352
180827A00032	8/27/2018	2.96	8/29/2022	8/27/2018	112.98262	110.8675109	108.8030491	106.7877022	104.8199985	102.8985205	101.0219024	99.18882794	97.39802832
180829A00044	8/29/2018	2.98	8/26/2022	8/29/2018	112.96579	110.8600288	108.8044953	106.7976789	104.8381254	102.9244341	101.055255	99.22928679	97.44527506
180830A00039	8/30/2018	3.03	8/30/2023	8/30/2018	120.17815	116.8086368	113.5521964	110.4044102	107.3610558	104.4180992	101.5716853	98.8181291	96.15390687
180910A00007	9/10/2018	2.96	9/8/2023	9/10/2018	120.76994	117.3463128	114.0388	110.8428134	107.7539709	104.7680887	101.881171	99.08939984	96.38912676
180911A00011	9/11/2018	3	9/10/2021	9/11/2018	106.49586	105.4625244	104.4492252	103.4553814	102.4804362	101.5238539	100.5851191	99.66373533	98.75922452
180727A00038	7/27/2018	3.36	7/25/2025	7/27/2018	135.32508	129.2703332	123.5258053	118.0739438	112.89828	107.9833581	103.3146671	98.87857858	94.66228833
180731A00002	7/31/2018	2.83	2/16/2021	7/31/2018	102.57873	102.1802965	101.7849614	101.3926932	101.0034562	100.6172153	100.2339358	99.85358371	99.47612538
180731A00009	7/31/2018	2.97	7/31/2023	7/31/2018	120.03375	116.7492405	113.5724093	110.4991433	107.5255121	104.6477564	101.8622794	99.1656389	96.55453999
180731A00046	7/31/2018	2.84	3/26/2021	7/31/2018	103.2975	102.7858186	102.2792107	101.7775965	101.2809023	100.7890558	100.3019862	99.8196242	99.34190166
180801A00011	8/1/2018	3	5/14/2021	8/1/2018	104.22853	103.56916	102.9181329	102.2752915	101.6404821	101.0135544	100.3943623	99.78276292	99.17861705
180806A00008	8/6/2018	2.95	8/7/2023	8/6/2018	120.10973	116.8013447	113.6020884	110.5077656	107.5143691	104.6180673	101.8151954	99.10224708	96.47586713
180813A00037	8/13/2018	2.95	2/14/2022	8/13/2018	109.28167	107.7954525	106.3369729	104.9055164	103.5003942	102.1209402	100.7665104	99.43648179	98.13025156
180816A00032	8/16/2018	3.02	8/16/2023	8/16/2018	119.87955	116.5597371	113.350016	110.2461357	107.2440322	104.3398208	101.5297865	98.81037643	96.17819109
180817A00022	8/17/2018	2.87	8/17/2023	8/17/2018	120.05806	116.7179867	113.4890659	110.3669883	107.3476375	104.427079	101.6015515	98.86745799	96.22135753
180820A00036	8/20/2018	3	8/21/2023	8/20/2018	119.91321	116.5767716	113.3514564	110.2329553	107.2171491	104.3001009	101.4780472	98.74738863	96.10468265
180823A00053	8/23/2018	3.2	8/23/2028	8/23/2018	157.96854	146.7775535	136.4727463	126.9790402	118.2280928	110.1576591	102.7110184	95.83645734	89.48680477
180823A00055	8/23/2018	3.44	8/23/2033	8/23/2018	196.13935	174.7827179	156.0203966	139.5204078	124.994954	112.1943353	100.9017303	90.92871337	82.11140441
180831A00016	8/31/2018	2.99	8/31/2023	8/31/2018	120.07243	116.7013068	113.4434262	110.2943539	107.2498576	104.3058942	101.4586	98.70428186	96.03940846
180831A00018	8/31/2018	2.95	8/31/2022	8/31/2018	113.00039	110.8789782	108.808491	106.7873861	104.81418	102.8874441	101.0058019	99.16792711	97.37254119
180911A00012	9/11/2018	3.06	9/9/2022	9/11/2018	113.39852	111.2442874	109.1424189	107.0913077	105.0894089	103.1352354	101.2273555	99.36438992	97.54501022
180914A00013	9/14/2018	3.48	9/14/2028	9/14/2018	158.74275	147.5255971	137.19876	127.6865405	118.9200559	110.8365944	103.3790327	96.49531138	90.13796132
180917A00078	9/17/2018	3.05	9/15/2023	9/17/2018	121.19588	117.7418598	114.4057077	111.1827306	108.0684526	105.0586019	102.1490997	99.33605023	96.61573186
180918A00038	9/18/2018	3.11	9/16/2022	9/18/2018	113.63893	111.4598306	109.3342123	107.2604181	105.2368548	103.2619894	101.3343467	99.45250618	97.61510012
180918A00041	9/18/2018	3.18	9/18/2024	9/18/2018	129.17089	124.3226538	119.6858242	115.2500301	111.0054662	106.9428595	103.0534373	99.32889696	95.76137881
180920A00028	9/20/2018	3.12	9/20/2023	9/20/2018	121.52079	118.0446907	114.6877221	111.4451218	108.3123462	105.2850593	102.3591224	99.53058337	96.79566757
180921A00021	9/21/2018	2.99	9/21/2021	9/21/2018	106.85858	105.7864701	104.7358472	103.706073	102.6965311	101.7066293	100.7357982	99.78349026	98.84917886

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180921A00024	9/21/2018	2.99	9/21/2021	9/21/2018	106.85858	105.7864701	104.7358472	103.706073	102.6965311	101.7066293	100.7357982	99.78349026	98.84917886
180924A00056	9/24/2018	3.14	9/23/2022	9/24/2018	113.83978	111.6361897	109.4871979	107.3910984	105.346249	103.3510707	101.4040441	99.50370726	97.64865268
180814A00033	8/14/2018	3.25	8/13/2027	8/14/2018	151.05977	141.6452415	132.8898799	124.7439607	117.1617602	110.1012118	103.5235962	97.39325879	91.67735259
180816A00043	8/16/2018	2.83	8/16/2022	8/16/2018	112.86583	110.7845143	108.7523346	106.7678288	104.8295888	102.9362574	101.0865264	99.27913416	97.51286397
180821A00011	8/21/2018	2.98	8/21/2023	8/21/2018	119.85138	116.5158873	113.2914912	110.173886	107.1589533	104.2427571	101.4215344	98.69168662	96.04977186
180821A00028	8/21/2018	2.99	8/21/2023	8/21/2018	119.8823	116.5463295	113.3214738	110.2034206	107.1880512	104.271429	101.4497908	98.71953763	96.07722726
180823A00033	8/23/2018	2.85	8/23/2023	8/23/2018	120.11171	116.7513347	113.5033671	110.3634279	107.3273333	104.3910855	101.5508635	98.80301418	96.14404383
180823A00035	8/23/2018	3.05	8/22/2025	8/23/2018	135.43393	129.2385456	123.366272	117.7985559	112.518001	107.5082939	102.7541308	98.24115026	93.95587005
180824A00023	8/24/2018	2.79	8/24/2021	8/24/2018	106.11971	105.1391478	104.1766838	103.2318164	102.3040661	101.3929707	100.4980845	99.61897766	98.75523525
180827A00034	8/27/2018	2.99	8/28/2023	8/27/2018	120.01538	116.6548072	113.4068381	110.2670738	107.2313161	104.2955541	101.4559542	98.70885187	96.0507425
200911A00023	9/15/2020	2.04	9/14/2027	9/15/2020	140.18515	131.1115823	122.6860804	114.8590149	107.5848021	100.8215525	94.53075405	88.67698346	83.22764364
200922A00040	9/24/2020	2	9/23/2024	9/24/2020	123.245	118.5276002	114.0173853	109.70415	105.5782466	101.6305528	97.85243965	94.2357422	90.77273208
200928A00003	9/28/2020	0.55	9/26/2025	9/28/2020	122.24913	116.2684787	110.6107539	105.2569039	100.189095	95.39063079	90.84587403	86.54017387	82.45979851
200527A00022	5/27/2020	0.53	5/27/2022	5/27/2020	106.98962	105.2153421	103.4794417	101.7807466	100.1181288	98.49050622	96.89684015	95.33613295	93.80742616
200529A00004	5/29/2020	0.56	5/29/2024	5/29/2020	116.42937	112.2145742	108.1734929	104.2979671	100.5802753	97.01310499	93.58952807	90.30297789	87.14722805
200601A00006	6/1/2020	0.6	6/1/2023	6/1/2020	111.54259	108.5851502	105.7209438	102.9464121	100.2581628	97.6529578	95.12770472	92.67944915	90.30536741
200604A00004	6/4/2020	0.76	6/4/2024	6/4/2020	116.51107	112.2962577	108.2553159	104.3800636	100.6627616	97.09608113	93.67307978	90.387178	87.23213791
200604A00010	6/4/2020	0.89	6/4/2025	6/4/2020	121.60613	116.0662941	110.8077039	105.8145718	101.0720832	96.56633484	92.28427316	88.21363704	84.3429051
200615A00005	6/15/2020	0.61	6/15/2023	6/15/2020	111.73966	108.7349817	105.8262027	103.0096101	100.2816674	97.63900183	95.07839481	92.59677395	90.191205
200626A00015	6/26/2020	0.43	6/26/2023	6/26/2020	111.91486	108.8597918	105.9034342	103.0419195	100.2715612	97.58884575	94.99042314	92.47309772	90.03381965
200709A00003	7/10/2020	1.63	7/10/2026	7/10/2020	131.12855	123.9331925	117.1751912	110.8256649	104.8577975	99.24667515	93.96914058	89.00365992	84.33020009
200709A00007	7/10/2020	1.67	7/9/2027	7/10/2020	136.35378	127.6644645	119.5831873	112.0642487	105.06562	98.54862779	92.47766853	86.81994906	81.54525044
200709A00008	7/10/2020	1.88	7/10/2026	7/10/2020	132.74919	125.5050794	118.7004622	112.3063466	106.2958102	100.6438387	95.32718079	90.32421399	85.61482185
200720A00035	7/20/2020	1.81	7/20/2035	7/20/2020	174.35884	151.6877753	132.1932763	115.4128863	100.9535805	88.48104883	77.71067434	68.39993545	60.34200062
200720A00044	7/22/2020	2.22	7/21/2026	7/22/2020	135.1237	127.7693273	120.8618111	114.3716706	108.2715204	102.5359113	97.14118293	92.06532953	87.28787543
200722A00010	7/22/2020	0.66	7/22/2024	7/22/2020	116.68112	112.3072049	108.1190173	104.1076966	100.2648537	96.58254351	93.05323933	89.66980806	86.42548747
200812A00004	8/12/2020	0.59	8/12/2025	8/12/2020	121.92539	116.1102197	110.6014723	105.3815093	100.433791	95.74280624	91.29400339	87.0737261	83.06915395
200819A00007	8/19/2020	0.38	8/21/2023	8/19/2020	112.41596	109.1797714	106.0525849	103.0301418	100.1083782	97.28341073	94.55152766	91.90918027	89.35297468
200910A00011	9/10/2020	1.88	9/10/2036	9/10/2020	180.65801	155.6542578	134.3860124	116.2740714	100.8316904	87.64943472	76.38257452	66.74058565	58.47839666
200910A00014	9/10/2020	1.37	9/10/2030	9/10/2020	147.57806	133.9824854	121.7322658	110.6876653	100.7241002	91.7304277	83.60743668	76.26651363	69.62846419
200911A00022	9/15/2020	1.42	9/15/2025	9/15/2020	125.7231	119.7299902	114.0560129	108.6825506	103.5921639	98.76851398	94.19628783	89.86112832	85.74956974
200922A00025	9/24/2020	2.61	9/26/2022	9/24/2020	112.78957	110.5875914	108.4404525	106.3464276	104.3038606	102.311159	100.3667911	98.46928293	96.61721587
200922A00029	9/24/2020	2.73	9/25/2023	9/24/2020	119.72568	116.2761164	112.9452264	109.7282492	106.6206457	103.6180849	100.7164331	97.91174368	95.2002475

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200922A00035	9/24/2020	2.94	9/23/2024	9/24/2020	127.32563	122.5231535	117.9306122	113.5376847	109.3346173	105.3121863	101.4616661	97.77480006	94.24377217
200922A00043	9/24/2020	2.4	9/25/2023	9/24/2020	118.66993	115.2369849	111.9222824	108.7210755	105.6288392	102.6412562	99.75420601	96.96375442	94.2661443
151008A00019	10/8/2015	1.58	10/15/2020	10/8/2015	100.22424	100.1823855	100.1405888	100.098845	100.057154	100.0155156	99.97392993	99.93239669	99.89091584
151015A00006	10/15/2015	1.68	10/15/2020	10/15/2015	100.22253	100.1807354	100.1389975	100.0973118	100.0556782	100.0140966	99.97256692	99.93108904	99.88966286
151022A00011	10/22/2015	1.57	10/22/2020	10/22/2015	100.32835	100.2669326	100.2056039	100.1443648	100.0832151	100.0221544	99.96118277	99.90029987	99.83950553
151123A00014	11/23/2015	2.13	11/23/2020	11/23/2015	100.86911	100.7176062	100.5665622	100.4159797	100.2658567	100.1161909	99.96698028	99.81822283	99.66991644
151221A00014	12/21/2015	2.94	12/22/2025	12/21/2015	135.91655	129.3073793	123.0629767	117.1611495	111.5811835	106.3037359	101.3107363	96.58529508	92.11161951
151223A00072	12/23/2015	2.81	12/23/2025	12/23/2015	136.49565	129.8236313	123.5211244	117.5655775	111.9359456	106.6125817	101.5771348	96.81245702	92.30251748
151229A00079	12/29/2015	3	12/30/2025	12/29/2015	136.41532	129.7640264	123.4810202	117.5438146	111.9314268	106.6242688	101.604046	96.85366415	92.35714307
160119A00026	1/19/2016	3.14	1/19/2029	1/19/2016	157.88247	146.19248	135.4683371	125.6248301	116.5846944	108.2778322	100.6406135	93.61524722	87.14921822
160129A00016	1/29/2016	1.76	1/29/2021	1/29/2016	101.83422	101.4902171	101.1485321	100.8091417	100.4720227	100.1371525	99.80450865	99.47406911	99.14581205
160129A00068	1/29/2016	1.97	1/30/2023	1/29/2016	113.94127	111.329731	108.7913734	106.3237345	103.9244501	101.5912491	99.32194936	97.11445367	94.96674591
160211A00035	2/11/2016	2.25	2/11/2025	2/11/2016	126.652	121.384019	116.3655423	111.5834702	107.0254581	102.6798685	98.53572749	94.58268313	90.81096718
160216A00002	2/16/2016	1.88	2/16/2022	2/16/2016	107.78215	106.3007926	104.8471924	103.4206362	102.0204326	100.6459132	99.29643162	97.97136283	96.67010196
160218A00029	2/18/2016	1.81	4/15/2021	2/18/2016	103.02834	102.4592691	101.8964764	101.3398594	100.7893167	100.2447491	99.70605961	99.17315338	98.64593749
160331A00024	3/31/2016	1.91	3/31/2022	3/31/2016	108.49588	106.8774611	105.2918397	103.7381034	102.2153719	100.7227969	99.25956016	97.82487284	96.41797363
160422A00026	4/22/2016	2.62	4/22/2026	4/22/2016	136.1898	129.1282974	122.4792035	116.2162138	110.3148428	104.7522867	99.50729853	94.56007363	89.8921444
160523A00047	5/23/2016	1.77	5/18/2021	5/23/2016	103.50777	102.8390691	102.1789917	101.527371	100.8840452	100.2488566	99.62165126	99.00227934	98.39059464
160524A00027	5/24/2016	3.06	5/27/2031	5/24/2016	172.02385	156.0534159	141.7287802	128.8705726	117.3198816	106.9358218	97.59340281	89.18166024	81.6020154
160615A00045	6/15/2016	1.59	6/15/2021	6/15/2016	103.80912	103.05524	102.3122798	101.5800005	100.8581727	100.146574	99.44498787	98.75320406	98.07101813
160620A00015	6/20/2016	1.71	6/20/2023	6/20/2016	115.5653	112.4767881	109.4871312	106.5924889	103.7891966	101.0737605	98.44284794	95.8932786	93.42201622
160630A00042	6/30/2016	1.52	6/30/2021	6/30/2016	103.97978	103.1799543	102.3923749	101.61676	100.8528388	100.1003486	99.35903476	98.62864985	97.90895384
160701A00027	7/1/2016	1.93	7/1/2024	7/1/2016	121.612	117.2076443	112.9871584	108.941764	105.0631573	101.3434833	97.77530863	94.35159568	91.06567862
160705A00104	7/5/2016	2.1	7/6/2026	7/5/2016	134.11501	126.8438706	120.0125025	113.5919334	107.5552612	101.8774912	96.53539009	91.50735217	86.7732761
160706A00014	7/6/2016	1.41	7/6/2021	7/6/2016	103.98275	103.1646787	102.3594219	101.5666831	100.7861721	100.0176079	99.26071765	98.51523711	97.78090977
160706A00029	7/6/2016	2.49	7/8/2030	7/6/2016	159.86326	145.8932829	133.2658079	121.8443715	111.5070607	102.1448896	93.66036725	85.96623025	78.98432153
160830A00010	8/30/2016	1.65	8/30/2021	8/30/2016	105.00756	104.0162978	103.0436573	102.0891158	101.152172	100.2323433	99.32916418	98.4421862	97.57097672
160830A00031	8/30/2016	1.65	8/31/2021	8/30/2016	105.02299	104.0285594	103.052866	102.0953805	101.1555973	100.2330295	99.32720768	98.43767958	97.56400895
160830A00037	8/30/2016	2.16	8/29/2025	8/30/2016	129.5058	123.4760178	117.7628742	112.3481118	107.2146176	102.3463469	97.72825076	93.34620941	89.18697022
160909A00024	9/9/2016	1.7	9/9/2021	9/9/2016	105.21044	104.1870792	103.1835368	102.1992435	101.2336496	100.2862261	99.35646403	98.44387298	97.5479807
160921A00021	9/21/2016	1.45	9/21/2021	9/21/2016	105.30418	104.2406253	103.1984443	102.1769948	101.175663	100.1938594	99.2310172	98.28659131	97.36005741
160926A00004	9/26/2016	1.66	9/26/2023	9/26/2016	116.95473	113.5303656	110.2246217	107.0327148	103.9500864	100.972388	98.0954701	95.31537168	92.62831074
160930A00005	9/30/2016	2.03	9/30/2024	9/30/2016	123.49076	118.7439327	114.2065467	109.8682304	105.7191875	101.7501572	97.95238264	94.31757997	90.83791046

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
161003A00004	10/3/2016	1.91	10/3/2023	10/3/2016	117.22922	113.7929678	110.4760581	107.2736656	104.1811891	101.1942404	98.30863282	95.52037066	92.82563941
161004A00034	10/4/2016	1.67	10/4/2021	10/4/2016	105.55769	104.4547164	103.3746725	102.3168512	101.2805723	100.2651833	99.27005763	98.29459372	97.3382135
161004A00040	10/4/2016	1.45	10/4/2021	10/4/2016	105.50365	104.3983124	103.3160039	102.2560085	101.217642	100.2002482	99.20319688	98.22588311	97.26772562
170111A00009	1/11/2017	3.16	1/11/2028	1/11/2017	151.27434	141.3371878	132.1314685	123.5992671	115.6875576	108.3477634	101.5353607	95.20952049	89.3327824
170111A00020	1/11/2017	2.27	1/11/2022	1/11/2017	107.83282	106.424126	105.0479083	103.7030437	102.38846	101.1031339	99.84608823	98.61638954	97.41314541
170123A00039	1/23/2017	2.79	1/23/2026	1/23/2017	136.95873	130.1629413	123.7483692	117.6916038	111.9707942	106.5655374	101.4567744	96.62669491	92.05864871
170130A00008	1/30/2017	2.58	1/30/2023	1/30/2017	114.9643	112.350077	109.8088429	107.338148	104.9356408	102.5990621	100.3262412	98.11509124	95.96360602
170203A00013	2/3/2017	3.67	2/1/2036	2/3/2017	212.57971	186.0279684	163.2015697	143.5508167	126.6100651	111.9844797	99.33893512	88.38870497	78.89164288
170215A00038	2/15/2017	2.71	8/22/2022	2/15/2017	112.35256	110.2652757	108.2275483	106.237894	104.2948855	102.3971469	100.5433526	98.7322243	96.9625292
170216A00043	2/16/2017	3.17	2/16/2027	2/16/2017	145.26208	136.8059138	128.9039701	121.5169601	114.6085773	108.1452552	102.0959472	96.43192535	91.12659622
170224A00011	2/24/2017	1.83	2/24/2021	2/24/2017	102.31642	101.8953585	101.4777631	101.0635869	100.6527881	100.2453256	99.84115865	99.44024751	99.04255289
170303A00020	3/3/2017	2	3/3/2021	3/3/2017	102.50138	102.059444	101.6213117	101.1869361	100.7562692	100.3292634	99.90587229	99.48605005	99.06975166
170307A00033	3/7/2017	2.2	3/7/2022	3/7/2017	108.82469	107.270904	105.7473426	104.2532011	102.7876984	101.3500803	99.93961904	98.55561142	97.1973782
170314A00006	3/14/2017	2.67	3/14/2024	3/14/2017	123.40371	119.3090129	115.3734823	111.5900549	107.9520253	104.4530218	101.0869873	97.84816237	94.73106872
170322A00024	3/22/2017	3.72	9/22/2036	3/22/2017	218.04867	189.8986626	165.8374442	145.2404817	127.5820435	112.4191046	99.37794307	88.14296733	78.4473934
170323A00013	3/23/2017	2.1	3/23/2022	3/23/2017	108.94326	107.3404435	105.7697273	104.2302236	102.7210802	101.2414753	99.79061619	98.36773825	96.97210338
170327A00075	3/27/2019	2.47	3/28/2022	3/27/2019	109.31986	107.7036785	106.1200709	104.5681301	103.046986	101.5557999	100.093763	98.66009502	97.25404316
170328A00015	3/28/2017	2.75	11/29/2024	3/28/2017	127.73783	122.6975631	117.8862294	113.2921188	108.9041925	104.7120393	100.7058356	96.87630838	93.21470142
170412A00045	4/12/2017	2.01	4/12/2022	4/12/2017	109.1379	107.4730234	105.8424024	104.2450575	102.6800477	101.146467	99.64344319	98.17013569	96.72573446
170417A00057	4/17/2017	2.32	4/17/2023	4/17/2017	115.6678	112.7930067	110.0051654	107.3011042	104.6777908	102.1323233	99.66192357	97.26393152	94.93579871
170417A00068	4/17/2019	2.59	4/17/2024	4/17/2019	122.95348	118.7729834	114.7585022	110.9025073	107.1978549	103.6377653	100.2158025	96.92585419	93.76211375
170419A00023	4/19/2017	2.11	4/19/2023	4/19/2017	115.67012	112.7772722	109.9722963	107.2519779	104.613239	102.053135	99.56884774	97.15767902	94.81704474
170419A00025	4/19/2017	2.72	4/19/2027	4/19/2017	144.81005	136.0629501	127.9065649	120.297808	113.1969606	106.567388	100.3752846	94.58944113	89.18103181
170427A00044	4/27/2017	3.02	4/27/2027	4/27/2017	145.45881	136.7254255	128.5808158	120.9820628	113.8896035	107.2669463	101.0804172	95.29892781	89.89376353
170502A00028	5/2/2017	2.84	5/3/2027	5/2/2017	145.96652	137.1257511	128.884417	121.1986024	114.0278407	107.3348226	101.0851336	95.24701451	89.79114285
170508A00010	5/8/2017	2.43	5/8/2024	5/8/2017	123.50359	119.2219493	115.1130144	111.1688208	107.3818214	103.7448615	100.2511553	96.89426527	93.66808113
170515A00010	5/15/2017	2.58	5/15/2024	5/15/2017	123.41522	119.133303	115.0243712	111.0804279	107.2938993	103.6576062	100.1647412	96.80884655	93.58379394
170515A00054	5/15/2017	3.2	5/17/2032	5/15/2017	183.69902	165.2904578	148.9315804	134.3815609	121.4290938	109.8886386	99.59715582	90.41127214	82.2048152
170515A00056	5/15/2017	3.2	5/17/2032	5/15/2017	183.69902	165.2904578	148.9315804	134.3815609	121.4290938	109.8886386	99.59715582	90.41127214	82.2048152
170517A00027	5/17/2017	1.99	5/17/2022	5/17/2017	109.68748	107.9127794	106.1760557	104.476159	102.8119874	101.1824831	99.58662996	98.0234517	96.49200968
170530A00060	5/30/2017	2.12	3/25/2022	5/30/2017	108.72662	107.1242542	105.5540204	104.0150311	102.5064324	101.0274008	99.577142	98.15488964	96.75990407
170531A00004	5/31/2017	1.79	6/1/2021	5/31/2017	103.83778	103.1246427	102.4212645	101.7274465	101.0429951	100.3677217	99.7014426	99.04397925	98.39515762
170608A00003	6/8/2017	1.97	6/8/2021	6/8/2017	103.97317	103.2397331	102.5166167	101.8036046	101.1004863	100.4070567	99.72311657	99.04847202	98.38293445

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170612A00003	6/12/2017	1.97	6/13/2022	6/12/2017	110.10321	108.2429345	106.4238004	104.6445147	102.9038353	101.2005725	99.5335857	97.9017812	96.30410955
170615A00015	6/15/2017	2.25	6/14/2024	6/15/2017	123.44673	119.0420856	114.8194292	110.7701523	106.8861104	103.1595947	99.58330597	96.15032987	92.8541139
170615A00033	6/15/2017	2.01	6/15/2021	6/15/2017	104.11457	103.3594508	102.6152566	101.8817558	101.1587189	100.4459231	99.74315191	99.05019474	98.36684697
170621A00014	6/21/2017	1.82	6/21/2021	6/21/2017	104.17935	103.4043733	102.6408945	101.8886603	101.1474235	100.4169442	99.69698929	98.98733257	98.28775414
170622A00037	6/22/2017	3.27	6/22/2033	6/22/2017	188.12818	167.8412436	149.9905066	134.2677567	120.4053687	108.1707689	97.36167736	87.80201804	79.33839967
170622A00040	6/22/2017	3.41	6/23/2036	6/22/2017	210.14812	183.0906985	159.9288246	140.0736496	123.0284896	108.3739683	95.75561749	84.87352258	75.47366458
170628A00056	6/28/2017	1.97	6/28/2022	6/28/2017	110.35688	108.4477444	106.5816497	104.7572126	102.9731054	101.228058	99.5208541	97.85032874	96.21536524
170630A00010	6/30/2017	2.63	6/30/2026	6/30/2017	138.91344	131.4678968	124.4709152	117.8929679	111.7066352	105.8864458	100.4087265	95.25146531	90.39418486
170630A00027	6/30/2017	2.35	6/28/2024	6/30/2017	124.10404	119.6383451	115.3587677	111.256414	107.3228794	103.5502147	99.93089754	96.45780647	93.12419673
170717A00033	7/17/2017	2.19	7/18/2022	7/17/2017	110.75686	108.7905146	106.8691257	104.991327	103.1558089	101.361312	99.60662556	97.89058435	96.21206701
170721A00007	7/21/2017	1.8	7/21/2021	7/21/2017	104.64792	103.7794666	102.925386	102.0853197	101.2589248	100.4458695	99.64583281	98.85850373	98.08358124
170818A00035	8/18/2017	1.77	8/18/2021	8/18/2017	105.07535	104.1186564	103.1793248	102.2568822	101.350876	100.4608698	99.58644258	98.72718784	97.88271321
170829A00025	8/29/2017	1.9	8/30/2021	8/29/2017	105.24383	104.2513505	103.2775048	102.3217737	101.3836557	100.4626677	99.55834412	98.67023603	97.79791053
170830A00029	8/30/2017	1.87	3/30/2021	8/30/2017	102.8109	102.2897449	101.7738528	101.2631463	100.7575475	100.2569802	99.76136971	99.27064273	98.78472745
170831A00010	8/31/2017	2.05	8/30/2022	8/31/2017	111.16939	109.0698937	107.0208057	105.0206033	103.0678197	101.1610417	99.2989082	97.48010724	95.70337415
170831A00022	8/31/2017	2.27	2/29/2024	8/31/2017	120.91258	116.928743	113.0980566	109.4138099	105.8696274	102.4594464	99.17749927	96.01829816	92.97661937
170906A00006	9/6/2017	1.81	9/6/2022	9/6/2017	111.19166	109.062504	106.9851081	104.9578895	102.9793232	101.0479412	99.16232984	97.32112777	95.52302321
170908A00016	9/10/2018	1.94	9/10/2021	9/10/2018	105.46044	104.4326379	103.4247917	102.4363274	101.4666901	100.5153456	99.58178006	98.66549854	97.76602438
170912A00031	9/12/2017	1.89	9/12/2022	9/12/2017	111.45506	109.3040808	107.2058274	105.1586745	103.1610552	101.2114623	99.30844468	97.45060523	95.63659837
170913A00003	9/13/2017	2.08	9/13/2022	9/13/2017	111.46288	109.3161981	107.2220761	105.1788952	103.1850953	101.2391754	99.33969012	97.48524806	95.67450885
170919A00073	9/19/2017	2.28	9/19/2024	9/19/2017	125.28116	120.51046	115.9488514	111.5860474	107.4123238	103.4184849	99.59583231	95.93613482	92.4316009
170929A00057	9/29/2017	2.16	9/29/2023	9/29/2017	118.61316	115.1525182	111.8118603	108.586339	105.4713345	102.4624405	99.55545291	96.74635908	94.03132811
171005A00003	10/5/2017	2.02	10/5/2022	10/5/2017	112.11328	109.8828827	107.7087676	105.5891415	103.5222807	101.506529	99.54029435	97.62204599	95.75031147
171006A00034	10/6/2017	2.27	10/6/2022	10/6/2017	112.2467	110.0198074	107.8490072	105.7325153	103.6686161	101.6556609	99.69206478	97.77630371	95.90691163
171016A00045	10/16/2017	2.2	10/17/2022	10/16/2017	112.2792	110.0189297	107.8161596	105.6690368	103.5757796	101.5346773	99.54408644	97.60242781	95.70818318
171017A00024	10/17/2017	2.04	4/19/2021	10/17/2017	103.22029	102.6387662	102.0637887	101.4952459	100.9330302	100.3770363	99.8271612	99.28330422	98.74536685
171018A00011	10/18/2017	2.68	10/18/2027	10/18/2017	147.73339	138.1792252	129.3132819	121.0822619	113.4372681	106.333417	99.72948883	93.58761026	87.87296634
171024A00069	10/24/2017	1.99	10/26/2020	10/24/2017	100.40832	100.3357909	100.263379	100.1910796	100.1188927	100.0468179	99.97485492	99.90300362	99.8312637
171026A00006	10/26/2017	2.32	10/26/2022	10/26/2017	112.68955	110.3977004	108.1646128	105.9883673	103.8671248	101.7991207	99.78266052	97.81611676	95.89792579
171026A00007	10/26/2017	2.47	10/26/2023	10/26/2017	119.4313	115.8872756	112.4679872	109.168303	105.9833385	102.9084399	99.93917184	97.07130514	94.30080629
171030A00021	10/30/2017	2.29	11/30/2022	10/30/2017	113.22226	110.8153368	108.472249	106.1908258	103.9689877	101.8047437	99.69618593	97.64148627	95.6388917
171031A00012	10/31/2017	2.28	10/31/2022	10/31/2017	112.68584	110.3789902	108.1315495	105.9415691	103.8071796	101.7265872	99.69807021	97.71997553	95.79071522
171204A00020	12/4/2017	2.48	12/5/2022	12/4/2017	113.74407	111.3157662	108.9521666	106.6510582	104.4103213	102.2279268	100.1019315	98.03047342	96.01176803

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
171206A00048	12/6/2017	3.04	12/6/2032	12/6/2017	185.05269	165.6354333	148.4746626	133.2942575	119.8532892	107.9413688	97.37463225	87.99227108	79.65353295
171208A00008	12/8/2017	2.25	12/8/2022	12/8/2017	113.71834	111.2720519	108.8913239	106.5738987	104.3176161	102.1204088	99.98029785	97.89538761	95.86386167
171213A00019	12/13/2017	2.17	12/13/2021	12/13/2017	107.48285	106.1425312	104.8355044	103.5605378	102.3164628	101.102167	99.91659112	98.75872526	97.62760657
171215A00004	12/15/2017	2.29	12/15/2020	12/15/2017	101.25844	101.0441655	100.8308064	100.6183613	100.4068242	100.1961893	99.98645065	99.77760262	99.56963944
171218A00020	12/18/2017	2.99	12/20/2027	12/18/2017	149.46669	139.6817744	130.6131578	122.2044016	114.4038104	107.1640118	100.4415716	94.19664608	88.39266626
171219A00063	12/19/2017	2.8	12/20/2027	12/19/2017	149.84655	139.967289	130.814007	122.3293271	114.4607089	107.1600176	100.3831314	94.08958572	88.24225088
171228A00089	12/28/2017	2.13	12/28/2020	12/28/2017	101.47061	101.2186651	100.9679759	100.7185308	100.4703205	100.2233359	99.97756791	99.7330075	99.48964581
171229A00007	12/29/2017	2.12	12/30/2020	12/29/2017	101.50126	101.2435693	100.9871848	100.7320968	100.4782955	100.2257711	99.97451407	99.7245149	99.47576418
180103A00011	1/3/2018	2.35	1/3/2023	1/3/2018	114.40848	111.8737247	109.4086157	107.0106996	104.6776337	102.4071788	100.1971929	98.04562644	95.95051705
180104A00018	1/4/2018	2.97	1/4/2027	1/4/2018	143.03217	134.8146461	127.1279379	119.9348013	113.2008115	106.8941307	100.9853002	95.4470487	90.25411871
180109A00006	1/9/2018	2.18	1/8/2021	1/9/2018	101.66789	101.3840749	101.1018533	100.8212124	100.5421387	100.264619	99.98864028	99.71418969	99.44125443
180109A00028	1/9/2018	2.6	1/9/2025	1/9/2018	128.76097	123.5305812	118.5437612	113.7877875	109.2506764	104.9211377	100.7885301	96.84281994	93.07454275
180110A00005	1/10/2018	2.22	1/11/2021	1/10/2018	101.72991	101.4373609	101.1465034	100.8573258	100.5698135	100.283952	99.99972703	99.71712448	99.43613035
180111A00007	1/11/2018	2.66	1/14/2025	1/11/2018	129.13657	123.8807335	118.8701461	114.0919971	109.5342217	105.1854511	101.0349678	97.07266444	93.2890054
180116A00010	1/16/2018	2.58	1/17/2023	1/16/2018	114.73483	112.1630546	109.6624355	107.2305345	104.8650151	102.5636377	100.324255	98.14480699	96.02331734
180116A00012	1/16/2018	2.4	1/15/2021	1/16/2018	101.8516	101.5473164	101.2448618	100.9442222	100.6453813	100.3483228	100.0530306	99.75948901	99.46768226
180116A00014	1/16/2018	3.01	1/19/2027	1/16/2018	143.58314	135.2926226	127.5402069	120.2880558	113.5011908	107.1472585	101.1963201	95.62065902	90.39460478
180116A00046	1/16/2018	2.58	1/11/2023	1/16/2018	114.62897	112.0767607	109.5948701	107.1808669	104.8324208	102.5473004	100.3233685	98.15857715	96.05096277
180116A00048	1/16/2018	2.37	1/19/2021	1/16/2018	101.87076	101.5553979	101.242	100.9305454	100.6210161	100.3133942	100.0076621	99.70380214	99.40179725
180123A00024	1/23/2018	2.44	2/16/2021	1/23/2018	102.37426	101.976925	101.5826774	101.1914817	100.8033025	100.418105	100.0358548	99.65651803	99.28006151
180130A00070	1/30/2018	3.14	1/29/2027	1/30/2018	144.69344	136.3296639	128.5100443	121.1962789	114.3529533	107.9473083	101.9490272	96.33004231	91.0643572
180202A00012	2/2/2018	2.57	2/2/2022	2/2/2018	108.75155	107.3048752	105.8846367	104.490168	103.1208263	101.7759897	100.4550562	99.15744309	97.88258618
180205A00049	2/5/2018	2.55	2/5/2021	2/5/2018	102.22441	101.8593254	101.4968451	101.1369435	100.7795932	100.4247672	100.0724386	99.72258131	99.37516925
180222A00027	2/22/2018	3.24	2/22/2028	2/22/2018	154.77842	144.454771	134.9027511	126.0604517	117.8712403	110.2832849	103.2491238	96.72527678	90.67189151
180308A00015	3/8/2018	2.82	12/15/2021	3/8/2018	108.12044	106.7728309	105.4587562	104.1769741	102.9263047	101.7056248	100.5138649	99.35000568	98.21307539
180313A00026	3/13/2018	3.34	3/13/2028	3/13/2018	153.97011	143.6815028	134.1648792	125.3580341	117.2040854	109.6509947	102.6511315	96.16087867	90.1402747
180323A00013	3/23/2018	3.18	3/23/2028	3/23/2018	154.84739	144.3989027	134.739916	125.8064015	117.5398476	109.8867564	102.7981899	96.22935867	90.13925044
180327A00013	3/27/2018	2.77	3/26/2021	3/27/2018	103.19521	102.684652	102.1791453	101.6786115	101.1829776	100.6921719	100.2061239	99.72476475	99.24802682
180328A00008	3/28/2018	2.85	3/25/2022	3/28/2018	109.85562	108.2440875	106.6648526	105.1170247	103.5997451	102.1121858	100.6535483	99.22306214	97.81998374
180328A00035	3/28/2018	2.73	3/29/2021	3/28/2018	103.2298	102.7103419	102.1960966	101.6869904	101.1829466	100.6838898	100.1897466	99.70044456	99.2159129
180406A00009	4/6/2018	2.58	4/6/2021	4/6/2018	103.36726	102.8228604	102.2841893	101.75116	101.2236841	100.701675	100.1850479	99.67371988	99.1676095
180425A00019	4/25/2018	3.02	10/25/2021	4/25/2018	107.37757	106.1978203	105.0439584	103.9151434	102.8105661	101.7294516	100.6710581	99.63467434	98.61961885
180426A00018	4/26/2018	2.94	4/26/2023	4/26/2018	118.06503	115.1170529	112.2589023	109.487271	106.798996	104.1910526	101.6605466	99.20470834	96.82088583

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180427A00011	4/27/2018	3.03	4/27/2022	4/27/2018	110.76692	109.0476806	107.3642853	105.7156823	104.1008651	102.5188658	100.9687531	99.44963072	97.96063563
180430A00069	4/30/2018	2.75	3/30/2021	4/30/2018	103.32715	102.8036145	102.2853756	101.7723526	101.264467	100.7616419	100.2638021	99.77087358	99.28278408
180514A00032	5/14/2018	3.27	5/14/2026	5/14/2018	142.11165	134.7475501	127.8164351	121.2904414	115.1436491	109.3519371	103.8928488	98.74546749	93.89030293
180515A00035	5/16/2018	2.98	5/17/2021	5/16/2018	104.27232	103.6037992	102.9438545	102.292318	101.6490296	101.013833	100.3865761	99.76711058	99.15529163
180518A00020	5/21/2018	3.08	3/15/2022	5/21/2018	110.03671	108.4535195	106.9014981	105.3798039	103.8876217	102.424165	100.9886745	99.58041735	98.19868583
180522A00038	5/22/2018	3.23	5/22/2025	5/22/2018	134.51132	128.6689197	123.1177127	117.8415365	112.825222	108.0545241	103.5160597	99.1972509	95.08627116
180523A00014	5/23/2018	2.79	5/24/2021	5/23/2018	104.37554	103.6843844	103.0023774	102.3293372	101.6650878	101.0094576	100.3622796	99.72339075	99.09263257
180524A00006	5/24/2018	2.71	2/16/2021	5/24/2018	102.53198	102.1336552	101.7384317	101.3462744	100.9571478	100.5710165	100.1878461	99.8076024	99.43025189
180529A00043	5/29/2018	2.99	5/30/2023	5/29/2018	118.29897	115.252565	112.3013191	109.4416271	106.6700442	103.9832815	101.3781974	98.85178986	96.40118917
180529A00063	5/29/2018	2.95	5/31/2022	5/29/2018	111.25557	109.4310514	107.6460748	105.8994215	104.189924	102.5164629	100.8779635	99.27339433	97.70176436
180530A00028	5/30/2018	3.67	5/31/2033	5/30/2018	193.95128	173.3828687	155.2612976	139.2792075	125.1694675	112.6997176	101.6676763	91.89710247	83.23431843
180530A00057	5/30/2018	2.76	5/28/2021	5/30/2018	104.33089	103.6291952	102.9369205	102.2538788	101.5798864	100.9147642	100.2583381	99.61043839	98.97089968
180531A00032	5/31/2018	2.8	6/1/2021	5/31/2018	104.43137	103.7172655	103.012906	102.3180928	101.6326329	100.9563384	100.2890264	99.63051907	98.98064297
180612A00018	6/12/2018	2.88	6/10/2022	6/12/2018	111.66878	109.8033856	107.9790426	106.1944655	104.4484211	102.7397276	101.0672522	99.42990809	97.82665227
180619A00019	6/19/2018	2.89	6/18/2021	6/19/2018	104.81061	104.0435651	103.2877371	102.5428842	101.8087683	101.0851584	100.3718299	99.66856455	98.97515035
180619A00031	6/19/2018	2.74	6/21/2021	6/19/2018	104.86462	104.0867807	103.3204726	102.5654386	101.8214309	101.0882091	100.3655398	99.65319612	98.95095777
180620A00015	6/20/2018	3.04	6/20/2023	6/20/2018	118.84957	115.7267234	112.7032046	109.7751665	106.9389422	104.1910349	101.5281086	98.94697909	96.44460599
180620A00017	6/20/2018	3.24	6/20/2028	6/20/2018	157.10377	146.2058588	136.1542717	126.878456	118.3141156	110.4026223	103.0904865	96.32888015	90.07320656
180621A00051	6/25/2018	3.63	6/23/2023	6/25/2018	120.62511	117.466815	114.4090536	111.4479212	108.5796994	105.8008429	103.1079698	100.4978527	97.96741013
180627A00030	6/27/2018	3.02	6/27/2023	6/27/2018	118.92759	115.7806813	112.7344768	109.7850488	106.9286556	104.1617304	101.4808719	98.88283479	96.36452126
180702A00034	7/2/2018	2.86	7/3/2023	7/2/2018	119.16397	115.9810403	112.9006917	109.9189113	107.0318776	104.2359473	101.527646	98.90365856	96.36082031
180706A00010	7/6/2018	2.92	7/6/2021	7/6/2018	105.17158	104.3483039	103.5378984	102.7400674	101.9545195	101.1809728	100.4191534	99.6687961	98.92964349
180716A00056	7/16/2018	3.1	7/16/2025	7/16/2018	134.96133	128.9098645	123.1684217	117.7194087	112.5463334	107.6337248	102.967064	98.53272046	94.31789208
180718A00026	7/18/2018	3.03	7/18/2023	7/18/2018	119.35722	116.1376486	113.0225344	110.0078534	107.089767	104.2646086	101.5288752	98.87921828	96.31243626
180720A00011	7/20/2018	2.93	7/20/2021	7/20/2018	105.43646	104.5692746	103.7163423	102.8773143	102.0518525	101.2396294	100.4403283	99.65364224	98.87927416
180731A00004	7/31/2018	2.97	7/31/2023	7/31/2018	120.03375	116.7492405	113.5724093	110.4991433	107.5255121	104.6477564	101.8622794	99.1656389	96.55453999
180731A00022	7/31/2018	3.47	7/31/2028	7/31/2018	157.78406	146.7884655	136.6532856	127.3064056	118.6821094	110.7204838	103.3668787	96.57142015	90.28857041
180801A00010	8/1/2018	2.99	4/15/2021	8/1/2018	103.68162	103.1104516	102.5455781	101.9868966	101.4343056	100.8877057	100.3469997	99.81209256	99.28289108
180809A00016	8/9/2018	3.1	8/9/2023	8/9/2018	119.99026	116.6913398	113.501131	110.4154653	107.4303536	104.5419812	101.7466995	99.04101767	96.42159472
180814A00010	8/14/2018	3.1	8/14/2025	8/14/2018	135.54461	129.3752012	123.5261509	117.9791382	112.7169829	107.72357	102.9837775	98.48341072	94.20914031
180814A00032	8/14/2018	3.1	8/14/2025	8/14/2018	135.54461	129.3752012	123.5261509	117.9791382	112.7169829	107.72357	102.9837775	98.48341072	94.20914031
180815A00011	8/15/2018	2.97	8/15/2022	8/15/2018	112.75842	110.6879909	108.6662651	106.6917977	104.7631979	102.8791253	101.0382874	99.23943756	97.48137316
180820A00002	8/20/2018	2.91	8/20/2021	8/20/2018	106.00811	105.0426299	104.094719	103.1639006	102.2497151	101.3517194	100.4694859	99.60260193	98.75066925

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180823A00001	8/23/2018	2.88	8/23/2021	8/23/2018	106.03743	105.0625157	104.1055062	103.1659112	102.2432584	101.3370922	100.4469735	99.57247864	98.71319863
180828A00032	8/28/2018	3.49	8/29/2033	8/28/2018	197.06002	175.6130362	156.7725653	140.2048134	125.6204509	112.7684818	101.4309872	91.41861185	82.56668664
180905A00024	9/5/2018	2.9	9/5/2023	9/5/2018	120.52119	117.1115806	113.8173201	110.6338572	107.5568509	104.5821554	101.705811	98.92403354	96.2332065
180914A00028	9/14/2018	3.37	9/12/2025	9/14/2018	136.37482	130.1172515	124.1883116	118.5689771	113.2414227	108.1889424	103.3958731	98.84752416	94.53011191
180917A00032	9/17/2018	3.17	9/15/2023	9/17/2018	120.93369	117.4987958	114.1808135	110.9751066	107.8772462	104.883004	101.9883427	99.18940546	96.48250745
180918A00023	9/18/2018	3.17	9/18/2023	9/18/2018	120.99358	117.5476396	114.2193135	111.0039188	107.8969882	104.8942572	101.9916545	99.18529168	96.47145379
180920A00035	9/20/2018	3.16	9/20/2022	9/20/2018	113.82175	111.6279433	109.4882662	107.4010364	105.3646327	103.3774953	101.4381235	99.54507283	97.69695253
180920A00062	9/20/2018	3.12	9/20/2023	9/20/2018	121.52079	118.0446907	114.6877221	111.4451218	108.3123462	105.2850593	102.3591224	99.53058337	96.79566757
180920A00063	9/20/2018	3	9/20/2021	9/20/2018	106.84887	105.7799514	104.7323989	103.7055762	102.6988722	101.7116995	100.7434933	99.79371072	98.86182914
180924A00052	9/24/2018	3.22	9/22/2023	9/24/2018	121.23294	117.7697666	114.4252048	111.1945148	108.0731752	105.0568712	102.1414841	99.32308088	96.59790472
180927A00030	9/27/2018	3.01	10/27/2020	9/27/2018	100.50077	100.4253826	100.3501172	100.274971	100.1999437	100.125035	100.0502447	99.97557243	99.901018
181001A00074	10/1/2018	3.03	10/3/2022	10/1/2018	114.22042	111.9733086	109.7826942	107.6467784	105.5638362	103.5322096	101.550305	99.61658973	97.72958944
181004A00029	10/4/2018	3.7	10/4/2028	10/4/2018	161.17639	149.7756549	139.2837722	129.6230453	120.7228214	112.5188145	104.9525005	97.97057276	91.52445147
181009A00035	10/9/2018	3.12	10/11/2022	10/9/2018	114.56978	112.2944922	110.0768069	107.9148731	105.8069155	103.7512287	101.7461742	99.79017724	97.88172334
181017A00023	10/17/2018	3.07	10/14/2020	10/17/2018	100.2619	100.2228577	100.1838596	100.1449092	100.1060064	100.0671511	100.0283432	99.98958268	99.95086941
181026A00002	10/26/2018	3.28	10/26/2023	10/26/2018	122.10031	118.513114	115.0517986	111.7111927	108.4863734	105.3726503	102.3655528	99.46081814	96.65438066
181029A00081	10/29/2018	3.27	4/28/2023	10/29/2018	118.45958	115.5116755	112.6534556	109.8816233	107.1930234	104.584638	102.05358	99.59708562	97.21250912
181114A00014	11/14/2018	3.17	11/14/2023	11/14/2018	122.79701	119.1192316	115.572569	112.1515476	108.8509546	105.6658288	102.5914461	99.62330653	96.75712219
181115A00076	11/15/2018	3.22	12/31/2021	11/15/2018	108.94481	107.5398505	106.1710882	104.8371393	103.5366879	102.2684837	101.031338	99.82411975	98.64575233
181126A00046	11/26/2018	3.13	11/25/2020	11/26/2018	101.05758	100.900214	100.7433461	100.5869716	100.4310881	100.2756934	100.1207852	99.96636107	99.81241892
181128A00010	11/28/2018	2.95	11/30/2020	11/28/2018	101.14595	100.9741408	100.8029179	100.6322732	100.4622039	100.2927071	100.1237799	99.95541954	99.78762312
181129A00027	11/29/2018	3.16	11/29/2021	11/29/2018	108.22773	106.9309929	105.6652931	104.4295262	103.2226396	102.0436295	100.8915381	99.76545099	98.66449481
181206A00009	12/6/2018	3.03	12/4/2020	12/6/2018	101.20983	101.0268502	100.8445318	100.6628751	100.4818765	100.3015325	100.1218394	99.94279376	99.76439208
181211A00009	12/11/2018	3.14	12/11/2023	12/11/2018	122.54176	118.7954516	115.1850469	111.704754	108.3490711	105.1127682	101.9908708	98.97864606	96.07158893
181211A00018	12/11/2018	3.14	12/11/2023	12/11/2018	122.54176	118.7954516	115.1850469	111.704754	108.3490711	105.1127682	101.9908708	98.97864606	96.07158893
181212A00019	12/12/2018	3.19	12/12/2023	12/12/2018	122.73324	118.9804486	115.3638701	111.8776935	108.516401	105.2747473	102.147744	99.13064502	96.2189329
181217A00052	12/17/2018	3.04	12/17/2021	12/17/2018	108.43572	107.0795248	105.7572197	104.4675435	103.2092987	101.9813459	100.7826004	99.61202838	98.46864467
181220A00020	12/20/2018	2.78	12/20/2021	12/20/2018	108.38111	107.0120676	105.6775407	104.3762322	103.106913	101.868414	100.6596226	99.47947892	98.32697326
181226A00033	12/26/2018	2.87	12/28/2020	12/26/2018	101.62155	101.3697204	101.1191385	100.8697955	100.6216824	100.3747901	100.1291097	99.88463211	99.64134871
181226A00034	12/26/2018	2.9	12/27/2021	12/26/2018	108.45146	107.0628667	105.7097637	104.3908044	103.1047081	101.8502579	100.6262962	99.43172105	98.26548336
181226A00035	12/26/2018	2.95	12/27/2022	12/26/2018	115.24089	112.7271888	110.281892	107.9025975	105.5870097	103.3329344	101.138273	99.00101757	96.91924602
181226A00061	12/26/2018	2.95	12/27/2022	12/26/2018	115.24089	112.7271888	110.281892	107.9025975	105.5870097	103.3329344	101.138273	99.00101757	96.91924602
181226A00062	12/26/2018	3.02	12/26/2023	12/26/2018	122.41524	118.6222226	114.9683598	111.447646	108.0543834	104.7831593	101.6288297	98.58650343	95.65152825

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181231A00007	12/31/2018	2.86	12/31/2021	12/31/2018	108.47636	107.074662	105.709109	104.3783127	103.0809589	101.8157988	100.5816453	99.37736878	98.20189412
190102A00058	1/2/2019	2.91	1/2/2024	1/2/2019	122.16293	118.3515241	114.6806606	111.1442588	107.7365457	104.4520377	101.2855237	98.23204957	95.28690326
190103A00010	1/3/2019	2.7	1/3/2024	1/3/2019	122.1581	118.3259037	114.6355127	111.0807751	107.655854	104.3552051	101.1735603	98.10591135	95.14749501
190104A00003	1/4/2019	2.81	1/4/2022	1/4/2019	108.46275	107.0569343	105.6859549	104.3485215	103.0434064	101.7694419	100.5255157	99.31056837	98.12359002
190104A00012	1/4/2019	2.76	1/4/2021	1/4/2019	101.72052	101.4484975	101.1779341	100.9088153	100.6411296	100.3748655	100.1100117	99.84655702	99.58449035
190107A00006	1/7/2019	2.82	3/29/2021	1/7/2019	103.27529	102.7556921	102.2413136	101.732075	101.2278998	100.7287126	100.2344399	99.74500922	99.26034986
190108A00039	1/8/2019	3.04	4/30/2024	1/8/2019	124.93391	120.6726142	116.5815426	112.6529193	108.8793673	105.2538892	101.7698457	98.42093426	95.20117064
190110A00016	1/10/2019	2.88	1/25/2022	1/10/2019	108.81453	107.3842967	105.9821051	104.6071562	103.2586848	101.9359544	100.6382561	99.36490693	98.11524895
190110A00077	1/10/2019	2.68	12/8/2020	1/10/2019	101.24487	101.0501921	100.8562697	100.6631031	100.4706879	100.2790195	100.0880936	99.89790585	99.70845185
190110A00090	1/10/2019	2.88	10/7/2020	1/10/2019	100.12702	100.1075187	100.0880329	100.0685671	100.0491214	100.0296956	100.0102897	99.99090377	99.97153768
190117A00002	1/17/2019	2.87	1/7/2021	1/17/2019	101.80522	101.5244416	101.2452137	100.9675276	100.6913707	100.4167302	100.1435936	99.87194861	99.60178292
190122A00007	1/22/2019	3.03	1/22/2024	1/22/2019	122.96442	119.0747688	115.3300978	111.7241855	108.2511191	104.9052725	101.6812909	98.57407551	95.57877047
190130A00011	1/30/2019	2.88	1/29/2021	1/30/2019	102.21358	101.8687726	101.5262871	101.1861001	100.8481886	100.5125298	100.1791014	99.8478812	99.51884734
190130A00018	1/30/2019	2.95	10/17/2022	1/30/2019	113.89671	111.6187056	109.3985683	107.2344323	105.1245057	103.0670677	101.0604653	99.10310972	97.19347394
190211A00002	2/11/2019	2.88	2/12/2024	2/11/2019	122.83026	118.8717659	115.0630585	111.3976743	107.8694632	104.4725726	101.2014308	98.05073215	95.01542295
190214A00004	2/14/2019	2.6	2/14/2022	2/14/2019	109.02512	107.5369018	106.0765138	104.6432433	103.2363975	101.855307	100.4993241	99.16782282	97.86019717
190215A00003	2/15/2019	2.82	2/15/2022	2/15/2019	109.11483	107.6265972	106.1661938	104.7329014	103.3260276	101.9449032	100.5888809	99.25733472	97.94965891
190215A00017	2/15/2019	2.89	2/15/2024	2/15/2019	122.92519	118.9544675	115.1343422	111.4583	107.9201437	104.5139766	101.2341855	98.07542623	95.03260874
190220A00007	2/20/2019	2.87	2/20/2024	2/20/2019	122.94968	118.9609374	115.1240836	111.4325186	107.8799685	104.4604649	101.1683274	97.99814913	94.9447813
190221A00002	2/21/2019	2.81	2/22/2022	2/21/2019	109.23602	107.7238786	106.2403888	104.7848017	103.3563955	101.9544725	100.5783583	99.22740121	97.90097074
190222A00021	2/22/2019	2.95	8/21/2024	2/22/2019	126.73232	122.0569293	117.5814573	113.2962952	109.1923506	105.2610136	101.4941285	97.88396762	94.42320626
190228A00035	2/28/2019	2.8	2/26/2021	2/28/2019	102.69682	102.2696502	101.8460303	101.4259125	101.0092534	100.5960107	100.1861424	99.77960743	99.37636521
190314A00027	3/22/2019	2.92	3/21/2025	3/22/2019	130.6006	125.1042732	119.8733264	114.8935188	110.1514529	105.634517	101.3308352	97.22922041	93.31913058
190318A00021	3/18/2019	2.76	3/18/2024	3/18/2019	123.05043	118.9683853	115.0450953	111.2735185	107.6469622	104.1590666	100.8037865	97.57537382	94.46836118
190319A00013	3/19/2019	2.72	3/18/2022	3/19/2019	109.52829	107.9404227	106.3839912	104.8581386	103.3620388	101.8948949	100.455938	99.04442595	97.65964195
190321A00004	3/21/2019	2.62	3/22/2021	3/21/2019	103.0493	102.5509031	102.0573296	101.5685081	101.0843699	100.6048481	100.1298766	99.65939085	99.19332745
190321A00020	3/21/2019	2.62	3/22/2021	3/21/2019	103.0493	102.5509031	102.0573296	101.5685081	101.0843699	100.6048481	100.1298766	99.65939085	99.19332745
190321A00044	3/21/2019	2.45	3/21/2022	3/21/2019	109.44767	107.8467874	106.2778456	104.7399643	103.2322982	101.754032	100.3043794	98.88258167	97.48790637
190322A00022	3/22/2019	2.56	7/22/2021	3/22/2019	105.16613	104.2940681	103.4364435	102.5929003	101.7630938	100.9466901	100.1433665	99.35281015	98.57471845
190326A00002	3/26/2019	2.56	9/26/2022	3/26/2019	112.68487	110.4840131	108.3379686	106.2450162	104.2035003	102.2118291	100.2684714	98.37195391	96.5208585
190327A00031	3/27/2019	2.53	3/27/2024	3/27/2019	122.34856	118.2494328	114.3109736	110.5259941	106.8876732	103.3895318	100.0254137	96.7894675	93.67612996
190328A00003	3/28/2019	2.64	9/30/2024	3/28/2019	126.15242	121.3498455	116.7585187	112.3679943	108.1684058	104.1504258	100.3052336	96.62448484	93.10028299
190328A00009	3/28/2019	2.33	3/28/2022	3/28/2019	109.38535	107.763888	106.1751793	104.6183108	103.0924057	101.5966188	100.1301352	98.69216894	97.28196174

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190328A00019	3/28/2019	2.56	3/28/2024	3/28/2019	122.4795	118.3746581	114.4308062	110.6407379	106.997614	103.4949381	100.1265381	96.8865475	93.76938898
190328A00022	3/28/2019	2.53	11/20/2020	3/28/2019	100.87772	100.7346392	100.5919723	100.4497212	100.3078842	100.1664594	100.0254449	99.88483908	99.74464003
190328A00046	3/28/2019	2.7	3/4/2025	3/28/2019	129.21049	123.8056782	118.6595598	113.7583919	109.0892309	104.6398852	100.3988668	96.35534732	92.49911663
190328A00053	3/28/2019	2.33	3/28/2022	3/28/2019	109.38535	107.763888	106.1751793	104.6183108	103.0924057	101.5966188	100.1301352	98.69216894	97.28196174
190329A00016	3/29/2019	2.56	3/29/2022	3/29/2019	109.47741	107.8569493	106.2691978	104.7132484	103.1882261	101.693287	100.2276177	98.79043343	97.38097704
190329A00017	3/29/2019	2.59	3/29/2023	3/29/2019	116.05601	113.2365291	110.5009426	107.846253	105.2695868	102.7681915	100.3394292	97.98077139	95.68979356
190401A00006	4/1/2019	2.58	4/1/2022	4/1/2019	109.56177	107.9315779	106.3344459	104.7694472	103.2356929	101.7323263	100.2585216	98.81348232	97.39643996
190401A00009	4/1/2019	2.39	4/1/2022	4/1/2019	109.5496	107.9147071	106.3130459	104.7436828	103.2057225	101.6983018	100.2205892	98.77178237	97.35110781
190403A00006	4/3/2019	2.48	4/3/2024	4/3/2019	123.05724	118.9017282	114.9102552	111.0754303	107.3902401	103.8480258	100.4424629	97.167543	94.0175555
190404A00023	4/5/2019	2.62	5/16/2022	4/5/2019	110.41356	108.6411145	106.9064454	105.208411	103.5459194	101.9179223	100.3234123	98.76142135	97.23101867
190409A00019	4/9/2019	2.91	4/9/2029	4/9/2019	159.46706	147.2640222	136.0984191	125.8762647	116.512561	107.9303927	100.0601197	92.83865385	86.2088116
190409A00020	4/9/2019	2.41	4/8/2022	4/9/2019	109.70672	108.0492431	106.4257087	104.8351552	103.2766564	101.7493206	100.2522884	98.78473196	97.34585295
190409A00031	4/9/2019	2.64	4/9/2024	4/9/2019	122.99957	118.8450399	114.8546578	111.021017	107.3370899	103.7962051	100.392027	97.11853673	93.97001483
190409A00033	4/9/2019	2.62	6/9/2023	4/9/2019	117.4309	114.3642794	111.3943996	108.5175502	105.7301943	103.028957	100.4106165	97.87209604	95.4104559
190411A00020	5/1/2019	2.63	5/2/2022	5/1/2019	110.19933	108.4699295	106.7767955	105.1188588	103.4950931	101.9045115	100.3461651	98.81914081	97.32255981
190426A00033	6/27/2019	2.55	6/27/2022	6/27/2019	111.04446	109.1382836	107.2749036	105.4529439	103.6710898	101.9280827	100.2227177	98.55384012	96.92034295
190501A00017	5/1/2019	2.61	5/1/2024	5/1/2019	123.28385	119.0502854	114.9862681	111.0840345	107.3362261	103.7358638	100.2763257	96.95132646	93.75489843
190506A00027	5/6/2019	2.38	5/6/2022	5/6/2019	110.1584	108.4122436	106.7029598	105.0294567	103.3906817	101.7856236	100.2133102	98.67280648	97.16321311
190510A00005	5/10/2019	2.47	5/10/2021	5/10/2019	103.82191	103.1759713	102.5380612	101.908032	101.285738	100.6710374	100.0637916	99.46386548	98.87112715
190514A00024	5/14/2019	2.34	5/14/2024	5/14/2019	123.2568	118.960036	114.837294	110.8805172	107.0820713	103.4347203	99.93160385	96.56621449	93.33237763
190515A00008	5/15/2019	2.41	11/15/2021	5/15/2019	107.07381	105.829154	104.6133513	103.4254046	102.2643648	101.1293252	100.0194197	98.93382003	97.87173419
190515A00015	5/15/2019	2.25	5/16/2022	5/15/2019	110.11353	108.3380278	106.6004613	104.899688	103.2346085	101.6041676	100.0073516	98.44318648	96.91073562
190515A00055	5/15/2019	2.26	5/15/2023	5/15/2019	116.53253	113.5455563	110.6511799	107.8459254	105.1264738	102.4896543	99.93243625	97.45192204	95.04534003
190520A00034	5/20/2019	2.44	5/20/2021	5/20/2019	103.97615	103.2997409	102.6321252	101.97313	101.3225891	100.6803405	100.0462261	99.42009197	98.80178808
191018A00006	10/18/2019	1.89	6/1/2022	10/18/2019	109.42342	107.6123918	105.8407105	104.1071623	102.4105834	100.7498576	99.12391361	97.53172315	95.97229847
191018A00007	10/18/2019	1.89	7/1/2022	10/18/2019	109.90488	107.9972438	106.1326723	104.309777	102.5272333	100.7837733	99.07818271	97.40929822	95.77600451
191023A00006	10/23/2019	1.95	10/23/2024	10/23/2019	123.502	118.6793566	114.0721983	109.6697192	105.4617159	101.4385514	97.5911207	93.91081768	90.3895053
191104A00018	11/5/2019	1.96	11/5/2024	11/5/2019	123.75255	118.8811664	114.2289774	109.7849089	105.5385098	101.4799145	97.59980605	93.88938268	90.3403259
191104A00019	11/5/2019	1.9	2/1/2022	11/5/2019	107.5458	106.1153728	104.7109733	103.3319522	101.97768	100.6475471	99.3409637	98.05735852	96.79617824
191108A00011	11/8/2019	2.08	10/18/2024	11/8/2019	123.99834	119.1816079	114.5793829	110.1809422	105.9761584	101.9554642	98.10981844	94.43067424	90.90994877
191126A00022	11/26/2019	1.72	5/26/2023	11/26/2019	115.19403	112.1913794	109.2827926	106.4646987	103.7336911	101.0865173	98.52007068	96.03138231	93.61761408
191203A00004	12/4/2019	1.87	12/4/2024	12/4/2019	123.80696	118.8355801	114.0916955	109.563608	105.2402926	101.1113542	97.16698706	93.39793804	89.79547176
191204A00013	12/4/2019	1.72	12/4/2024	12/4/2019	124.05533	119.0514962	114.2772939	109.7208863	105.3711178	101.2174719	97.25003017	93.45943424	89.83685076

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191212A00019	12/13/2019	1.93	12/19/2022	12/13/2019	112.69764	110.2387537	107.8464068	105.5182801	103.2521577	101.0459206	98.89754127	96.8050788	94.7666744
191223A00056	12/23/2019	2.46	12/14/2029	12/23/2019	156.37865	143.423272	131.6491434	120.9420534	111.1994039	102.3289751	94.24782501	86.88131081	80.16221861
200103A00009	1/3/2020	1.9	1/3/2024	1/3/2020	118.63717	114.8829848	111.2678677	107.7857932	104.43104	101.1981734	98.08202884	95.07769632	92.18050565
200110A00014	1/10/2020	1.73	1/10/2023	1/10/2020	113.03264	110.4932189	108.0240145	105.6225835	103.2865885	101.013792	98.8020518	96.64931544	94.55361588
200113A00003	1/13/2020	1.72	1/13/2022	1/13/2020	107.3457	105.93472	104.5556436	103.2073939	101.8889377	100.5992886	99.33750371	98.10268157	96.8939597
200123A00049	1/23/2020	1.63	1/23/2023	1/23/2020	112.99097	110.4125417	107.9060739	105.469118	103.0993247	100.7944403	98.55230201	96.37083338	94.24804047
200128A00015	1/28/2020	1.81	1/28/2025	1/28/2020	124.31658	119.1528244	114.2321826	109.5419688	105.0702206	100.8056579	96.73764068	92.85612894	89.15164615
200129A00010	1/29/2020	1.76	1/31/2022	1/29/2020	107.33435	105.9087379	104.5090205	103.1345476	101.7846941	100.4588551	99.15644514	97.876897	96.61966136
200131A00010	2/3/2020	1.68	2/3/2023	2/3/2020	112.80285	110.2021924	107.6746116	105.2176492	102.8289443	100.506229	98.24732389	96.05013392	93.91264496
200131A00032	1/31/2020	2.1	1/31/2030	1/31/2020	153.12762	140.1404696	128.3564823	117.6579214	107.9391231	99.10520547	91.07091936	83.75962745	77.10239578
200203A00005	2/3/2020	1.7	5/3/2023	2/3/2020	114.23459	111.3287512	108.5120819	105.7812811	103.1331915	100.5647942	98.07320185	95.65565168	93.30949925
200203A00006	2/3/2020	1.76	2/3/2025	2/3/2020	124.17324	118.9916428	114.0548826	109.3501516	104.8653789	100.5891821	96.51082458	92.62017586	88.907674
200207A00017	2/7/2020	1.96	2/8/2027	2/7/2020	136.38955	128.2601816	120.6668701	113.5715578	106.939075	100.7369054	94.93497254	89.50544596	84.42256231
200214A00013	2/18/2020	1.78	11/10/2021	2/18/2020	106.25894	105.0352808	103.8396656	102.6711374	101.5287841	100.4117339	99.31915352	98.2502457	97.20424764
190521A00005	5/21/2019	2.56	5/21/2024	5/21/2019	123.44258	119.1404857	115.0128374	111.0515453	107.2489429	103.5977649	100.0911239	96.72248778	93.48565941
190521A00026	5/21/2019	2.54	5/19/2023	5/21/2019	116.82919	113.8378245	110.9392112	108.1298677	105.4064661	102.7658274	100.2049131	97.72081862	95.31076557
190522A00003	5/22/2019	2.55	5/22/2024	5/22/2019	123.42075	119.1157958	114.9855174	111.0218091	107.2169895	103.5637793	100.0552783	96.68494258	93.44656373
190522A00017	5/23/2019	2.53	3/1/2023	5/23/2019	115.40227	112.6797261	110.0358156	107.467813	104.9731043	102.5491816	100.1936384	97.90416457	95.67854184
190524A00005	5/24/2019	2.34	11/24/2020	5/24/2019	100.93946	100.7848258	100.630673	100.4770007	100.3238068	100.1710889	100.0188448	99.8670723	99.7157692
190524A00015	5/24/2019	2.24	5/24/2022	5/24/2019	110.2344	108.4340214	106.6724673	104.9485526	103.2611397	101.6091366	99.99149522	98.40720901	96.85531064
190528A00028	5/28/2019	2.42	5/30/2023	5/28/2019	116.68197	113.6583482	110.7293374	107.8913505	105.1409599	102.474893	99.89002411	97.38336639	94.95206464
190529A00023	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190529A00031	5/29/2019	2.36	5/30/2023	5/29/2019	116.51176	113.4905359	110.5638657	107.7281635	104.9800036	102.3161153	99.73337429	97.2287955	94.79952521
190529A00060	5/29/2019	2.31	11/29/2021	5/29/2019	107.20079	105.9107348	104.6516021	103.4222944	102.2217618	101.0490033	99.90306404	98.78303214	97.68803681
190530A00005	5/30/2019	2.36	5/28/2021	5/30/2019	104.06053	103.3598683	102.6686145	101.986584	101.3135932	100.6494634	99.99402038	99.34709463	98.70852098
190530A00006	5/30/2019	2.25	5/30/2024	5/30/2019	123.18023	118.8321308	114.6619266	110.6612959	106.822356	103.137641	99.60007668	96.20295744	92.93992445
190530A00045	5/30/2019	2.44	5/30/2024	5/30/2019	123.12467	118.7991872	114.6501623	110.6693555	106.8489676	103.1816104	99.66028244	96.27834615	93.02950631
190531A00013	5/31/2019	2.31	12/6/2022	5/31/2019	113.36935	110.9423453	108.5800996	106.2803959	104.0411097	101.8602077	99.73574269	97.66584914	95.64873903
190603A00033	6/3/2019	2.05	6/3/2024	6/3/2019	122.45094	118.1033307	113.9342294	109.9352501	106.098459	102.4163432	98.88178563	95.4880411	92.22871458
190605A00017	6/5/2019	2.12	6/4/2021	6/5/2019	104.0134	103.2918618	102.5803101	101.8785348	101.1863354	100.5035169	99.82988977	99.16526922	98.50947558
190605A00034	6/5/2019	2.11	6/6/2022	6/5/2019	109.89116	108.0605054	106.2698758	104.5180266	102.8037651	101.1259473	99.48347621	97.87529909	96.30040509
190605A00058	6/5/2019	2.14	12/5/2022	6/5/2019	112.96086	110.5416663	108.1869893	105.8946153	103.6624302	101.4884104	99.37061781	97.30719565	95.29636413
190606A00028	6/6/2019	2.74	6/6/2029	6/6/2019	156.30787	144.1239144	132.9918748	122.8150707	113.5061956	104.986365	97.18426223	90.0353753	83.4813142

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190607A00009	6/7/2019	2.14	6/7/2022	6/7/2019	109.96079	108.1264224	106.3322101	104.5769044	102.8593067	101.1782678	99.53268547	97.92150214	96.34370243
190611A00015	6/11/2019	2.32	6/11/2024	6/11/2019	122.85513	118.4941684	114.3126044	110.3019928	106.4543383	102.7620714	99.2180231	95.81540024	92.54776365
190611A00047	6/11/2019	2.26	6/11/2021	6/11/2019	104.2289	103.4853839	102.7524597	102.0298991	101.3174832	100.6149994	99.92224091	99.23900667	98.56510113
190614A00018	6/14/2019	2.21	6/14/2021	6/14/2019	104.2433	103.4906678	102.7488865	102.01772	101.2969415	100.5863306	99.88567313	99.19476091	98.51339153
200220A00002	2/20/2020	1.76	2/20/2025	2/20/2020	124.45112	119.1998075	114.1993117	109.4363735	104.8985001	100.5739198	96.45153617	92.52088605	88.77210008
200224A00004	2/24/2020	1.68	2/24/2021	2/24/2020	102.19883	101.7787234	101.3620612	100.9488031	100.5389076	100.1323339	99.72904165	99.3289913	98.93214389
200225A00012	2/25/2020	1.57	2/25/2025	2/25/2020	123.61387	118.3631786	113.3643377	108.6039843	104.0695307	99.74911814	95.63157055	91.70635194	87.96352637
200226A00006	2/26/2020	1.57	2/26/2025	2/26/2020	123.62962	118.3748441	113.3722749	108.6085204	104.0709676	99.74773451	95.62762367	91.70007926	87.95514703
200227A00005	2/27/2020	1.43	2/27/2024	2/27/2020	117.78533	113.8644749	110.0946547	106.4692513	102.9819766	99.62685085	96.39818524	93.29056647	90.29884175
200227A00026	2/27/2020	1.41	2/27/2023	2/27/2020	112.502	109.8231923	107.2218132	104.6951824	102.2407291	99.85598654	97.53858745	95.28625913	93.09681916
200228A00019	2/28/2020	1.21	2/20/2025	2/28/2020	122.83358	117.5883583	112.5949963	107.8401221	103.3111459	98.99620714	94.8841278	90.96436996	87.22699579
200228A00030	2/28/2020	1.32	2/28/2023	2/28/2020	112.287	109.6075411	107.0056369	104.4785982	102.023847	99.63890999	97.32141337	95.06907847	92.87971724
200228A00073	2/28/2020	1.32	2/28/2023	2/28/2020	112.287	109.6075411	107.0056369	104.4785982	102.023847	99.63890999	97.32141337	95.06907847	92.87971724
200302A00033	3/2/2020	1.31	3/3/2025	3/2/2020	122.44195	117.1970078	112.20495	107.4522935	102.926346	98.61515351	94.50745305	90.59262946	86.86067468
200303A00002	3/3/2020	1.06	3/3/2023	3/3/2020	112.16212	109.4643186	106.8450807	104.3016699	101.8314591	99.43192846	97.10066063	94.83533556	92.63372616
200304A00007	3/4/2020	1.01	3/15/2022	3/4/2020	106.89571	105.3376024	103.8102122	102.312707	100.8442843	99.40416957	97.99161525	96.60589967	95.24632578
200304A00040	3/4/2020	1.12	3/1/2024	3/4/2020	116.68545	112.7742129	109.0141895	105.3987406	101.9215526	98.57662192	95.35823836	92.26096879	89.27964235
200305A00040	3/10/2020	0.99	3/10/2023	3/10/2020	111.57212	108.8708405	106.2486765	103.7028554	101.2307171	98.82971098	96.49739058	94.23140852	92.02951194
200306A00014	3/6/2020	1.38	3/6/2030	3/6/2020	145.60825	132.8434153	121.2830065	110.8074679	101.3096593	92.69351189	84.87283468	77.77025497	71.31627698
200306A00037	3/6/2020	1.11	3/6/2026	3/6/2020	126.21975	119.6113804	113.3849703	107.5165463	101.9837577	96.76575951	91.84310338	87.19763725	82.81241251
200306A00100	3/10/2020	1.82	3/10/2031	3/10/2020	155.20512	140.4789185	127.2664667	115.4043191	104.7474408	95.16704945	86.54872098	78.7907253	71.8025616
200309A00020	3/9/2020	0.96	3/10/2025	3/9/2020	120.83001	115.598842	110.6214666	105.8842804	101.3744821	97.08001852	92.98953726	89.09234186	85.37835072
200311A00040	3/12/2020	1.3	3/11/2025	3/12/2020	122.50252	117.2291591	112.2112788	107.4351885	102.8880066	98.55760448	94.43255857	90.50210546	86.75610044
200311A00056	3/13/2020	1.27	4/10/2024	3/13/2020	117.79004	113.7286184	109.8287457	106.0831074	102.4847634	99.02712616	95.7039407	92.50926551	89.43745513
200312A00004	3/13/2020	1.23	1/24/2025	3/13/2020	121.51029	116.4230904	111.5757383	106.9556929	102.5511354	98.35092396	94.3445506	90.52210224	86.87422362
200312A00042	3/16/2020	1.38	3/16/2023	3/16/2020	112.66746	109.9332879	107.2796344	104.7036539	102.2026227	99.77393022	97.41507301	95.12364988	92.89735696
200313A00032	3/18/2020	1.46	3/18/2025	3/18/2020	123.38283	118.0652987	113.0062087	108.1916604	103.6085767	99.24464834	95.08828417	91.12856591	87.35520533
190620A00056	6/25/2019	2.07	1/17/2023	6/25/2019	113.49397	110.9373765	108.4516099	106.0342387	103.6829361	101.3954722	99.16970873	97.00359456	94.89516167
190624A00052	6/24/2019	1.89	6/24/2022	6/24/2019	110.1438	108.2490693	106.3968457	104.5857679	102.814532	101.0818903	99.38664764	97.72765884	96.10382598
190625A00023	6/25/2019	2.47	6/25/2027	6/25/2019	142.30343	133.4566125	125.2217208	117.5530873	110.4086933	103.7498612	97.54097125	91.74920288	86.3443
190627A00009	6/27/2019	1.93	6/27/2023	6/27/2019	116.32253	113.2002524	110.1784503	107.2531909	104.4207269	101.6774871	99.02006624	96.44521584	93.94983571
190627A00038	6/27/2019	2.12	6/27/2023	6/27/2019	116.29734	113.1885221	110.1794781	107.2663079	104.4452993	101.7129143	99.0657785	96.50067292	94.01452484
190703A00014	7/3/2019	2.23	10/5/2020	7/3/2019	100.08167	100.0677487	100.0538395	100.0399437	100.0260615	100.0121928	99.99833755	99.98449573	99.97066733

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190703A00019	7/3/2019	2.08	7/5/2022	7/3/2019	110.31838	108.3950314	106.5152168	104.6775585	102.8807346	101.1234787	99.4045766	97.72286401	96.07722365
190708A00011	7/8/2019	2.2	7/8/2024	7/8/2019	122.82737	118.3763299	114.1115348	110.0241118	106.1056629	102.3482408	98.74432116	95.28677785	91.96885867
190711A00016	7/11/2019	2.17	7/11/2022	7/11/2019	110.58347	108.6398641	106.7404503	104.8838556	103.068764	101.2939125	99.55808866	97.86012791	96.19891124
190715A00010	7/15/2019	2.23	7/15/2024	7/15/2019	123.06627	118.5876963	114.2971676	110.185733	106.2449218	102.466714	98.84351416	95.36812552	92.03372704
190729A00009	7/29/2019	2.19	7/29/2024	7/29/2019	123.13187	118.6063649	114.272273	110.1205014	106.14244	102.3299308	98.67524113	95.17103947	91.81037254
190801A00010	8/1/2019	1.97	8/1/2023	8/1/2019	117.01507	113.772631	110.6369297	107.6038837	104.6695887	101.8303104	99.08247608	96.42266717	93.84761119
190802A00017	8/2/2019	2.01	11/15/2023	8/2/2019	118.23827	114.6486606	111.187405	107.8491413	104.6287633	101.5214111	98.52245692	95.62749262	92.83231763
190805A00008	8/5/2019	1.88	8/4/2023	8/5/2019	116.18593	112.9602491	109.8408373	106.8236301	103.9047386	101.0804431	98.3471853	95.70155981	93.14030718
190805A00048	8/5/2019	1.88	8/5/2022	8/5/2019	110.45465	108.4377089	106.4676767	104.5431794	102.662895	100.8255484	99.02990929	97.27479064	95.55904653
190805A00049	8/5/2019	1.88	8/4/2023	8/5/2019	116.18593	112.9602491	109.8408373	106.8236301	103.9047386	101.0804431	98.3471853	95.70155981	93.14030718
190806A00012	8/6/2019	1.93	8/6/2021	8/6/2019	104.88331	103.9665942	103.0658432	102.1806456	101.3106013	100.4553238	99.6144394	98.78758724	97.97441828
190807A00005	8/7/2019	1.77	8/7/2024	8/7/2019	121.5203	116.9974861	112.6674292	108.5209262	104.5492624	100.7441822	97.0978619	93.60288505	90.25221918
190807A00017	8/7/2019	1.76	3/12/2024	8/7/2019	119.21515	115.2225069	111.3851082	107.696081	104.1488974	100.737353	97.45554905	94.29787564	91.25899586
190808A00012	8/8/2019	1.89	8/8/2024	8/8/2019	122.03891	117.5023159	113.1590726	108.9999503	105.0162043	101.1995505	97.54213862	94.0365272	90.6756602
190808A00047	8/8/2019	1.89	8/8/2024	8/8/2019	122.03891	117.5023159	113.1590726	108.9999503	105.0162043	101.1995505	97.54213862	94.0365272	90.6756602
190809A00021	8/9/2019	2.12	8/9/2029	8/9/2019	153.36521	140.9433298	129.6220822	119.2982105	109.8786355	101.2794048	93.42475648	86.24628269	79.6821826
190809A00022	8/9/2019	1.88	8/9/2024	8/9/2019	122.01256	117.473174	113.1274005	108.965983	104.9801598	101.1616309	97.50253146	93.9954062	90.63318644
200323A00007	3/23/2020	1.05	9/23/2021	3/23/2020	104.75858	103.6943588	102.6516185	101.6297149	100.6280286	99.64596474	98.68295148	97.73843906	96.81189865
200403A00016	4/3/2020	0.63	4/17/2023	4/3/2020	111.62111	108.7894377	106.0440248	103.381711	100.7994753	98.29442715	95.86380008	93.50494515	91.21532529
200413A00032	4/13/2020	0.82	4/13/2023	4/13/2020	111.55851	108.751666	106.0298246	103.389891	100.8289066	98.3440392	95.93257748	93.59192435	91.31959157
200429A00018	5/4/2020	0.73	4/17/2023	5/4/2020	111.36561	108.5488673	105.8177179	103.1690367	100.599833	98.10724478	95.68853251	93.34107271	91.06235238
200430A00016	4/30/2020	0.82	4/30/2024	4/30/2020	116.32312	112.2236634	108.2896195	104.5133949	100.8877874	97.40596687	94.06145324	90.84809648	87.7600577
200430A00017	4/30/2020	0.94	4/30/2025	4/30/2020	121.43108	116.0118306	110.8628473	105.9692313	101.3169862	96.8929593	92.68478557	88.68083636	84.87017119
200511A00018	5/11/2020	0.98	2/2/2026	5/11/2020	125.01797	118.563266	112.4759146	106.7332233	101.314012	96.19850398	91.36822596	86.80591622	82.4954392
200511A00023	5/11/2020	1.7	2/3/2031	5/11/2020	153.25196	138.7814561	125.7872877	114.1113571	103.6132181	94.16802985	85.66475422	78.00456948	71.09947282
200513A00002	5/13/2020	0.56	5/13/2024	5/13/2020	116.23743	112.0775769	108.0874917	104.2592862	100.5854885	97.05901766	93.67316033	90.42154945	87.29814405
200513A00003	5/13/2020	0.68	5/13/2025	5/13/2020	121.29468	115.8037395	110.5894189	105.6363206	100.9299899	96.45685236	92.20415495	88.15991149	84.31285221
200604A00001	6/4/2020	0.65	6/5/2023	6/4/2020	111.73339	108.7605592	105.8817643	103.0934027	100.3920397	97.77439763	95.23734703	92.77789874	90.39319647
200720A00014	7/20/2020	0.35	7/20/2022	7/20/2020	107.6504	105.7021353	103.7986909	101.9387152	100.120907	98.34401473	96.60683451	94.90820741	93.24701764
200720A00042	7/22/2020	2.04	7/21/2026	7/22/2020	133.9502	126.6313103	119.7577165	113.3000169	107.2309045	101.5250033	96.15872239	91.11012074	86.35878386
200728A00007	7/28/2020	0.52	1/27/2022	7/28/2020	105.58421	104.1755873	102.7939266	101.4384937	100.10858	98.80350266	97.52260281	96.26524498	95.03081582
200730A00002	7/30/2020	0.67	11/6/2024	7/30/2020	117.98746	113.2364126	108.7007508	104.3695501	100.2325014	96.27987481	92.50248303	88.89164804	85.43916974
200731A00005	7/31/2020	0.45	7/31/2024	7/31/2020	116.73587	112.3094519	108.0724407	104.0157939	100.1309425	96.40976793	92.84457652	89.42807468	86.15334619

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200807A00004	8/7/2020	0.29	8/8/2022	8/7/2020	107.75567	105.7501224	103.7916167	101.8787673	100.0102399	98.18474799	96.40105053	94.65795034	92.95429211
200811A00003	8/11/2020	0.57	8/11/2025	8/11/2020	121.80538	115.9966666	110.4939243	105.2795414	100.3370098	95.65084787	91.20653081	86.99042728	82.98973986
200910A00019	9/10/2020	2.14	9/10/2040	9/10/2020	204.26786	170.3856299	142.6197008	119.8260745	101.0802047	85.63398145	72.88131547	62.33057029	53.5824549
200922A00027	9/24/2020	1.65	9/23/2025	9/24/2020	127.10703	121.0494449	115.3153521	109.8858039	104.7430624	99.87051362	95.2525912	90.87470431	86.72317173
200922A00038	9/24/2020	2.33	9/25/2023	9/24/2020	118.44598	115.0165631	111.7052943	108.5074326	105.418456	102.4340502	99.55009724	96.76266579	94.0680012
200925A00004	9/25/2020	0.53	9/25/2023	9/25/2020	112.68734	109.348573	106.1255997	103.0137575	100.0086023	97.1058939	94.30158594	91.59181529	88.97289285
190815A00015	8/15/2019	1.82	8/15/2022	8/15/2019	110.49409	108.4465125	106.447189	104.494686	102.5876258	100.72468	98.90456792	97.12605422	95.3879472
190816A00014	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190816A00020	8/16/2019	1.79	8/16/2024	8/16/2019	121.74189	117.1847927	112.8230261	108.6472112	104.6484685	100.8183886	97.14900483	93.63276798	90.26252178
190816A00039	8/16/2019	1.91	2/16/2021	8/16/2019	102.16783	101.7709904	101.3772348	100.9865283	100.5988355	100.2141215	99.83235208	99.45349347	99.07751237
190819A00022	8/19/2019	1.8	8/19/2024	8/19/2019	121.83012	117.2612915	112.8886624	108.7027969	104.6947595	100.8560889	97.1787702	93.6552092	90.27820785
190826A00038	8/26/2019	1.74	8/26/2022	8/26/2019	110.48394	108.4035963	106.372974	104.3905787	102.4549703	100.5647617	98.7186163	96.91524554	95.15340706
190826A00063	8/26/2019	2.05	8/28/2028	8/26/2019	145.3074	134.7130274	124.9662926	115.9950097	107.7334891	100.1219193	93.10581363	86.63551125	80.66572783
190830A00002	8/30/2019	1.93	8/28/2026	8/30/2019	133.78709	126.3375995	119.348853	112.7900147	106.6324619	100.849618	95.41679603	90.31105559	85.51107035
190830A00010	9/3/2019	1.75	9/1/2023	9/3/2019	116.21655	112.9014736	109.6983347	106.6027433	103.6105044	100.7176108	97.92023367	95.21471329	92.59755075
190906A00004	9/6/2019	1.78	9/6/2022	9/6/2019	110.73588	108.618897	106.5532678	104.5374247	102.5698585	100.6491159	98.77379759	96.94255536	95.15409018
190906A00005	9/6/2019	1.77	9/6/2023	9/6/2019	116.35721	113.0234462	109.8027756	106.6907354	103.6830681	100.7757075	97.9647694	95.24654205	92.61747765
190910A00013	9/10/2019	1.9	9/9/2022	9/10/2019	111.0284	108.8989038	106.8212746	104.7939211	102.8153125	100.8839753	98.99849057	97.15749184	95.35966251
190912A00033	9/12/2019	1.77	9/12/2023	9/12/2019	117.07967	113.7000624	110.4359836	107.2828399	104.2362481	101.292024	98.44617215	95.69487635	93.03449021
190923A00017	9/23/2019	1.74	9/23/2024	9/23/2019	122.99994	118.2628298	113.7344762	109.4045638	105.2633459	101.3016081	97.51063529	93.88218281	90.40844774
190924A00033	9/24/2019	1.84	9/30/2022	9/24/2019	111.24117	109.0430672	106.9000861	104.8104817	102.7725798	100.7847711	98.8455079	96.95330127	95.10671852
190930A00011	9/30/2019	1.89	10/24/2022	9/30/2019	111.71949	109.4443877	107.2275625	105.0671175	102.9612323	100.9081597	98.90622204	96.9538078	95.04936841
190930A00012	9/30/2019	1.93	9/30/2024	9/30/2019	123.05442	118.3167339	113.7881907	109.4584331	105.3176763	101.3566706	97.56666936	93.93939884	90.46702971
191002A00013	10/2/2019	1.78	10/3/2022	10/2/2019	111.16043	108.9542357	106.8035194	104.7065201	102.6615464	100.6669729	98.72123685	96.82283495	94.97032106
191003A00002	10/3/2019	1.58	10/4/2021	10/3/2019	105.63975	104.5336378	103.4505656	102.3898173	101.3507087	100.3325832	99.3348105	98.35678527	97.39792606
191004A00001	10/4/2019	2.47	10/4/2034	10/4/2019	182.42779	160.42698	141.3328511	124.743888	110.3159898	97.75400349	86.80454367	77.24989513	68.9028321
191004A00004	10/4/2019	1.54	10/4/2024	10/4/2019	122.29804	117.5380253	112.9894399	108.6417606	104.4850445	100.5098959	96.70743267	93.06925555	89.58741897
191007A00020	10/7/2019	1.69	10/7/2022	10/7/2019	111.02985	108.8131229	106.6523483	104.5457411	102.4915873	100.4882401	98.5341164	96.62769399	94.76750876
191007A00029	10/7/2019	1.88	10/9/2029	10/7/2019	151.71522	139.1216095	127.6663233	117.2405544	107.7464182	99.09580526	91.20935951	84.01556798	77.44994937
191008A00006	10/8/2019	1.73	10/8/2021	10/8/2019	105.68317	104.5669332	103.4741607	102.4041224	101.3561145	100.3294622	99.32351798	98.33766024	97.37129204
191011A00013	10/11/2019	1.88	10/11/2022	10/11/2019	111.49598	109.2622393	107.0850638	104.9626373	102.893219	100.875137	98.90678447	96.98661661	95.113148
191017A00003	10/17/2019	1.9	12/10/2021	10/17/2019	106.88461	105.5613643	104.2707249	103.0114938	101.7825354	100.5827684	99.41116237	98.26673478	97.14854845
191024A00017	10/25/2019	1.9	7/15/2021	10/25/2019	104.51277	103.6649425	102.8308296	102.0101026	101.2024412	100.407535	99.62508352	98.85479567	98.09638932

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191025A00005	10/28/2019	1.98	10/28/2024	10/28/2019	123.71397	118.8703722	114.2437321	109.8231426	105.5983047	101.559493	97.69752029	94.00370461	90.46983841
191031A00033	10/31/2019	2.2	5/31/2028	10/31/2019	145.36846	135.1117702	125.6523852	116.924077	108.8664555	101.4244236	94.54768709	88.19031162	82.31032328
191031A00041	10/31/2019	1.72	10/31/2023	10/31/2019	117.69485	114.1472679	110.7255794	107.4245657	104.2392627	101.164943	98.19710241	95.33144795	92.56388672
191105A00018	11/5/2019	1.78	11/6/2023	11/5/2019	117.9912	114.4190278	110.9741367	107.6512341	104.4452783	101.3514692	98.36523466	95.48221834	92.6982679
191113A00019	11/15/2019	1.93	3/15/2021	11/15/2019	102.60305	102.126427	101.65423	101.1864012	100.7228801	100.2636073	99.80852441	99.35757416	98.91070034
191114A00008	11/18/2019	1.93	4/17/2023	11/18/2019	114.61254	111.7519914	108.9780556	106.2875782	103.677537	101.1450399	98.68731822	96.30172087	93.9857081
191120A00006	11/20/2019	2.67	11/20/2035	11/20/2019	192.17346	167.572355	146.4372653	128.2577413	112.6010545	99.10001507	87.44274923	77.36411561	68.6384901
191122A00020	11/26/2019	3.2	11/23/2037	11/26/2019	214.76337	184.7915207	159.4815639	138.0742826	119.9381508	104.547267	91.46319664	80.32001411	70.81196722
191122A00021	11/26/2019	3.4	11/22/2038	11/26/2019	225.5735	192.8064857	165.370496	142.3567995	123.0165707	106.7320015	92.99275795	81.37677004	71.53453833
191129A00012	11/29/2019	1.99	11/29/2024	11/29/2019	124.2759	119.3110702	114.5726437	110.0490221	105.7292674	101.6030639	97.66067902	93.89292646	90.29113228
191206A00013	12/6/2019	3.05	12/6/2044	12/6/2019	253.21697	206.0138723	168.644855	138.9734841	115.3398216	96.45193997	81.3025837	69.10505005	59.24378381
191210A00010	12/10/2019	1.91	12/10/2020	12/10/2019	101.09996	100.9001057	100.7010523	100.5027952	100.3053296	100.1086507	99.91275382	99.71763415	99.52328707
191212A00029	12/13/2019	1.94	5/16/2023	12/13/2019	115.10004	112.1420632	109.2757552	106.4976748	103.8045394	101.1932127	98.66069662	96.20412478	93.82075513
191218A00013	12/18/2019	1.94	12/19/2022	12/18/2019	112.7211	110.2619329	107.8693144	105.5409218	103.2745392	101.0680473	98.91941838	96.8267115	94.78806767
191219A00047	12/19/2019	1.76	12/17/2021	12/19/2019	107.03584	105.6856575	104.3693426	103.0856379	101.8333436	100.6113179	99.41847405	98.25377665	97.11623878
200108A00018	1/8/2020	1.68	1/18/2022	1/8/2020	107.34236	105.9262027	104.5403178	103.1837431	101.8555568	100.5548759	99.28085445	98.03268155	96.80957935
200110A00022	1/13/2020	2	1/6/2025	1/13/2020	124.92503	119.8188049	114.9503215	110.3071625	105.8776364	101.6507287	97.61605843	93.76383782	90.08483435
200121A00008	1/24/2020	1.84	1/20/2022	1/24/2020	107.33549	105.921255	104.5364885	103.1802861	101.8517766	100.5501244	99.27452787	98.02421755	96.79845448
200122A00035	1/22/2020	1.94	1/22/2025	1/22/2020	124.89403	119.7354884	114.8190002	110.131928	105.6623657	101.399089	97.33151282	93.44965114	89.74407996
200127A00023	1/27/2020	1.8	1/27/2025	1/27/2020	124.25399	119.0949519	114.1787077	109.4925862	105.0246406	100.7636063	96.69885776	92.8203696	89.11867906
200130A00015	1/30/2020	1.63	7/30/2021	1/30/2020	104.64791	103.7519237	102.8712109	102.0053813	101.1540603	100.3168859	99.49350789	98.68358768	97.8867976
200130A00025	1/30/2020	1.54	1/30/2023	1/30/2020	112.87575	110.277475	107.7520844	105.2971276	102.910249	100.589186	98.33176455	96.13589526	93.99956948
200131A00015	2/5/2020	1.73	2/5/2025	2/5/2020	124.06274	118.8762054	113.9350952	109.2265533	104.7384642	100.4594045	96.37859983	92.48588482	88.77166541
200131A00016	1/31/2020	1.73	1/31/2025	1/31/2020	123.98154	118.8154633	113.8930634	109.201617	104.7291311	100.4642957	96.39644098	92.51549847	88.81196362
200204A00020	2/4/2020	1.6	2/4/2025	2/4/2020	124.45584	119.2335483	114.2589273	109.5189764	105.0014462	100.6947884	96.58811206	92.67114326	88.93418656
200207A00016	2/7/2020	1.74	2/7/2024	2/7/2020	118.6077	114.7412273	111.021171	107.4412224	103.9953809	100.6779349	97.48344609	94.40673511	91.44286767
200210A00021	2/10/2020	1.76	2/10/2025	2/10/2020	124.28762	119.0773418	114.1143494	109.3856547	104.8790141	100.5828859	96.48638621	92.57924825	88.85178421
200214A00007	2/14/2020	1.59	2/14/2025	2/14/2020	124.57408	119.3114036	114.2999161	109.526351	104.9782096	100.6437131	96.51175816	92.57187408	88.81418382
200218A00004	2/18/2020	1.73	2/21/2023	2/18/2020	113.22188	110.5544003	107.9634306	105.4463455	103.000622	100.6238388	98.31367109	96.06788651	93.88434063
200218A00028	2/18/2020	1.73	2/21/2023	2/18/2020	113.22188	110.5544003	107.9634306	105.4463455	103.000622	100.6238388	98.31367109	96.06788651	93.88434063
200221A00004	2/21/2020	1.69	2/21/2025	2/21/2020	124.12979	118.8821224	113.8853595	109.1262223	104.5922041	100.2715206	96.15306416	92.22636132	88.48153358
200221A00009	2/21/2020	1.69	2/22/2022	2/21/2020	107.6054	106.1058185	104.6346577	103.1911801	101.77467	100.3844358	99.01980899	97.68014332	96.36481372
200224A00001	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200224A00002	2/24/2020	1.56	2/24/2023	2/24/2020	112.83791	110.165057	107.569168	105.0475884	102.5977716	100.2172739	97.90374931	95.65494566	93.46869973
200224A00025	2/24/2020	1.59	1/23/2025	2/24/2020	123.2535	118.1286642	113.2448762	108.5895431	104.1507973	99.91745033	95.87895115	92.02534574	88.34724031
200224A00046	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200225A00006	2/25/2020	1.57	2/25/2022	2/25/2020	107.47793	105.9695425	104.4899096	103.0382766	101.6139154	100.2161231	98.84421997	97.49754922	96.17547567
200226A00005	2/26/2020	1.53	2/27/2023	2/26/2020	112.80884	110.126103	107.5208828	104.9904968	102.5323715	100.1440377	97.82312547	95.56735987	93.37455619
200226A00016	2/26/2020	1.57	2/26/2025	2/26/2020	123.62962	118.3748441	113.3722749	108.6085204	104.0709676	99.74773451	95.62762367	91.70007926	87.95514703
200227A00052	2/27/2020	1.41	2/27/2023	2/27/2020	112.502	109.8231923	107.2218132	104.6951824	102.2407291	99.85598654	97.53858745	95.28625913	93.09681916
200228A00015	3/3/2020	1.34	10/16/2023	3/3/2020	115.57029	112.1198622	108.7905785	105.5774852	102.475863	99.48121397	96.58924927	93.79587825	91.09719792
200228A00031	2/28/2020	1.35	2/28/2024	2/28/2020	117.50557	113.5862901	109.8181493	106.1945239	102.7091158	99.35593563	96.12928595	93.02374537	90.03415365
200228A00039	2/28/2020	1.33	4/28/2023	2/28/2020	113.14544	110.2700428	107.4826239	104.7799415	102.158893	99.61651108	97.14995694	94.75651365	92.43358
200228A00058	2/28/2020	1.31	2/28/2022	2/28/2020	107.14206	105.6265038	104.1400071	102.6817998	101.2511425	99.8473213	98.46964609	97.1174501	95.79008869
200228A00064	2/28/2020	1.35	2/28/2024	2/28/2020	117.50557	113.5862901	109.8181493	106.1945239	102.7091158	99.35593563	96.12928595	93.02374537	90.03415365
200302A00035	3/2/2020	1.22	7/3/2023	3/2/2020	113.7492	110.6584784	107.6676863	104.7729121	101.9704315	99.25669414	96.62831389	94.08205968	91.61484713
200303A00007	3/3/2020	1.11	3/4/2024	3/3/2020	117.42469	113.4714617	109.6717542	106.0187903	102.5061318	99.12765813	95.87754955	92.75027004	89.74055217
200304A00010	3/4/2020	1.2	3/4/2027	3/4/2020	132.8404	124.6721487	117.0527049	109.9424907	103.3049735	97.10641795	91.31565741	85.90388652	80.84447096
200306A00012	3/6/2020	0.95	3/6/2024	3/6/2020	116.12166	112.2044088	108.4393045	104.8196377	101.3390294	97.99141543	94.77102914	91.67238497	88.69026327
200309A00005	3/9/2020	0.77	3/7/2025	3/9/2020	120.903	115.6487753	110.6498361	105.8924848	101.3638326	97.05174478	92.94479263	89.03220849	85.30384414
200309A00019	3/9/2020	0.89	3/11/2024	3/9/2020	115.96196	112.0314568	108.2542488	104.6235445	101.1328919	97.77615875	94.54751471	91.4414151	88.45258508
200316A00064	3/16/2020	0.99	3/16/2022	3/16/2020	106.86227	105.3017334	103.7720125	102.2722727	100.8017076	99.35953889	97.94501558	96.55741259	95.19602967
200317A00065	3/19/2020	2.05	3/19/2025	3/19/2020	126.29277	120.9039537	115.7762965	110.8957737	106.2491846	101.8241026	97.60882648	93.59233363	89.76423736
200323A00010	3/23/2020	1.19	3/23/2022	3/23/2020	107.26119	105.6766637	104.1238231	102.6017938	101.1097368	99.6468429	98.21233141	96.80544907	95.42546873
200327A00026	3/27/2020	0.57	3/29/2021	3/27/2020	102.20638	101.6891052	101.177042	100.6701151	100.1682476	99.67136403	99.1793906	98.69225481	98.20988562
200401A00020	4/1/2020	0.72	3/29/2022	4/1/2020	106.61014	105.0131142	103.4483683	101.9150089	100.4121724	98.93902671	97.49476913	96.07862545	94.68984858
200402A00011	4/2/2020	0.8	3/31/2023	4/2/2020	111.341	108.5776732	105.8971647	103.2965051	100.7728462	98.32346008	95.9457329	93.63715946	91.39533789
200403A00006	4/3/2020	1.05	4/3/2025	4/3/2020	121.57787	116.2485007	111.181158	106.3615994	101.7764346	97.41306766	93.25964552	89.30501021	85.53865439
200429A00009	4/29/2020	0.78	4/29/2025	4/29/2020	121.63046	116.1782767	110.9986791	106.0766093	101.3979226	96.94932869	92.71833496	88.6931941	84.86285544
200429A00047	5/1/2020	2.7	4/30/2025	5/1/2020	130.31086	124.6791214	119.3253337	114.2342499	109.3915479	104.7837663	100.3982473	96.22308415	92.2470728
200429A00052	5/1/2020	1.43	4/30/2024	5/1/2020	118.68915	114.5452219	110.5680308	106.7499309	103.083672	99.56237796	96.17952503	92.92892128	89.80468783
200505A00006	5/5/2020	0.39	11/4/2021	5/5/2020	104.77547	103.5769647	102.4056165	101.2605082	100.1407672	99.04555919	97.97408617	96.92558427	95.89932211
200511A00022	5/11/2020	1.6	2/1/2030	5/11/2020	147.63002	134.9052887	123.3666107	112.8975352	103.3935774	94.76093744	86.91536084	79.78112449	73.29013535
200511A00028	5/13/2020	1.02	5/13/2024	5/13/2020	117.26508	113.1064462	109.1168169	105.2883635	101.6136708	98.08571014	94.69781673	91.44366857	88.31726647
200527A00021	5/27/2020	0.53	11/26/2021	5/27/2020	105.01351	103.7471424	102.5110235	101.3040803	100.1252908	98.97368058	97.8483194	96.74831918	95.67283141
200601A00009	6/1/2020	0.84	6/2/2025	6/1/2020	121.32339	115.7973357	110.5516196	105.570518	100.8392774	96.34405069	92.07183609	88.01042023	84.14832584

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200604A00009	6/4/2020	0.7	6/4/2025	6/4/2020	121.66784	116.0937557	110.803567	105.781288	101.0119267	96.48141595	92.17655039	88.08492845	84.19489871
200604A00013	6/4/2020	2.21	6/4/2035	6/4/2020	181.16355	158.1742261	138.3609852	121.2663442	106.5009081	93.73293464	82.67954267	73.09929941	64.78596341
200605A00007	6/5/2020	0.52	6/5/2023	6/5/2020	111.91771	108.9297995	106.0366443	103.234603	100.5202068	97.89014564	95.34125974	92.87053137	90.47507723
200615A00004	6/15/2020	0.56	6/15/2022	6/15/2020	107.27025	105.4361302	103.6426628	101.8885642	100.1726053	98.49360855	96.85044541	95.24203356	93.66733461
200630A00004	6/30/2020	0.66	7/1/2024	6/30/2020	116.43756	112.1349584	108.0130982	104.0633169	100.2774277	96.64768759	93.16676977	89.82773832	86.62402453
200720A00034	7/20/2020	0.77	7/21/2025	7/20/2020	121.5488	115.8516496	110.4506205	105.3288215	100.4704161	95.86054809	91.48527551	87.33150971	83.38695853
200720A00039	7/22/2020	2.48	7/21/2025	7/22/2020	130.63291	124.7078645	119.0875034	113.7545444	108.6927757	103.8869858	99.32289627	94.98709989	90.86700246
200817A00014	8/17/2020	0.51	8/17/2022	8/17/2020	107.91714	105.8899885	103.910823	101.9782201	100.0908059	98.247256	96.44629343	94.6866867	92.96724784
200902A00018	9/4/2020	1.08	9/3/2025	9/4/2020	123.69723	117.7989329	112.2133617	106.9223678	101.9089515	97.15717883	92.65211014	88.3797325	84.3268977
200910A00008	9/10/2020	1.37	9/10/2030	9/10/2020	147.57806	133.9824854	121.7322658	110.6876653	100.7241002	91.7304277	83.60743668	76.26651363	69.62846419
200910A00015	9/10/2020	1.57	9/10/2032	9/10/2020	158.36515	141.2187663	126.0661489	112.6653419	100.8048457	90.29965226	80.9878123	72.72746165	65.39424392
200911A00006	9/11/2020	0.37	9/11/2023	9/11/2020	112.63213	109.3251962	106.1317726	103.0473455	100.067603	97.18842894	94.40589286	91.71624049	89.11588477
200911A00021	9/15/2020	1.1	9/15/2025	9/15/2020	123.96495	118.0173302	112.3870873	107.0556873	102.0057691	97.22106826	92.68634193	88.38729947	84.31053808
200911A00025	9/15/2020	2.28	9/13/2030	9/15/2020	158.38586	144.2193912	131.4402689	119.905136	109.4861343	100.0691583	91.55231328	83.84455341	76.86447703
200922A00033	9/24/2020	2.37	9/23/2024	9/24/2020	124.8512	120.1003179	115.557698	111.2130945	107.0568181	103.0797064	99.27309261	95.62877562	92.13899254
200922A00044	9/24/2020	2.61	9/25/2023	9/24/2020	119.34177	115.8982504	112.5732468	109.3620042	106.2599888	103.2628745	100.3665323	97.56702032	94.86057361
180831A00019	8/31/2018	3.21	9/2/2025	8/31/2018	135.29595	129.103229	123.234298	117.6705015	112.3943598	107.3894847	102.6405052	98.13299992	93.85343282
180904A00004	9/4/2018	2.89	9/5/2023	9/4/2018	120.48972	117.0806029	113.7868176	110.6038179	107.527263	104.5530077	101.6770924	98.89573363	96.20531497
180905A00015	9/5/2018	2.85	9/1/2022	9/5/2018	113.21337	111.0791729	108.9964004	106.9634918	104.9789431	103.0413062	101.1491863	99.30123949	97.49617072
180910A00033	9/10/2018	3.43	9/8/2028	9/10/2018	158.1652	146.9968099	136.713522	127.2402139	118.508514	110.4561646	103.0264456	96.16765552	89.83264365
180914A00011	9/14/2018	3.01	4/12/2021	9/14/2018	103.63028	103.0682397	102.5122976	101.9623554	101.418316	100.8800847	100.3475687	99.82067717	99.29932113
180914A00012	9/14/2018	2.97	10/13/2020	9/14/2018	100.23957	100.2033166	100.1671093	100.1309452	100.0948243	100.0587466	100.0227119	99.98672011	99.95077124
180914A00026	9/14/2018	3.15	9/14/2023	9/14/2018	120.85043	117.4201961	114.1066225	110.9050814	107.8111575	104.8206354	101.9294897	99.13387504	96.43011711
180918A00012	9/18/2018	3.06	9/17/2021	9/18/2018	106.68037	105.6242977	104.5891233	103.5742267	102.5790158	101.6029217	100.645397	99.70591517	98.78396928
180918A00013	9/18/2018	3.11	9/16/2022	9/18/2018	113.63893	111.4598306	109.3342123	107.2604181	105.2368548	103.2619894	101.3343467	99.45250618	97.61510012
180925A00060	9/25/2018	3.23	8/25/2023	9/25/2018	120.70322	117.3417923	114.0926188	110.9513286	107.9137484	104.9758899	102.1339414	99.38425802	96.72335408
180927A00015	9/27/2018	3.02	9/27/2022	9/27/2018	114.08027	111.8534534	109.6822496	107.5649028	105.4997275	103.4851035	101.5194726	99.60133583	97.72925066
181005A00037	10/9/2018	3.4	10/3/2025	10/9/2018	138.24105	131.8168403	125.7344036	119.9736885	114.5159245	109.3435366	104.4400622	99.79007509	95.37911443
181016A00087	10/16/2018	3.31	10/16/2023	10/16/2018	122.00066	118.4471072	115.0174201	111.7065466	108.509677	105.4222267	102.439824	99.5582987	96.77367174
181022A00026	10/22/2018	3.18	10/15/2021	10/22/2018	107.35575	106.2077609	105.0843103	103.9846202	102.9079421	101.8535585	100.8207818	99.8089521	98.81743645
181025A00021	10/25/2018	2.97	10/26/2020	10/25/2018	100.48954	100.4168438	100.3442615	100.2717933	100.1994388	100.1271979	100.0550702	99.98305543	99.9111534
180622A00003	6/22/2018	2.87	6/22/2022	6/22/2018	111.88593	109.9810713	108.1187887	106.297719	104.5165609	102.7740687	101.0690491	99.40035861	97.76690062
180622A00004	6/22/2018	3.47	12/22/2028	6/22/2018	160.54639	148.8529514	138.1152758	128.2496899	119.1802851	110.838159	103.160733	96.091139	89.5776698

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180622A00006	6/22/2018	3.53	12/21/2029	6/22/2018	168.11867	154.5726977	142.2501218	131.0331613	120.8159906	111.5034663	103.0099951	95.2585275	88.17966286
180628A00034	6/28/2018	2.72	6/28/2021	6/28/2018	104.98017	104.180588	103.3931615	102.6176163	101.853685	101.1011082	100.3596341	99.6290184	98.9090239
180628A00081	6/28/2018	2.72	6/21/2021	6/28/2018	104.84972	104.0719457	103.3056992	102.550726	101.8067785	101.0736164	100.3510061	99.63872083	98.9365403
180705A00061	7/5/2018	3	7/6/2022	7/5/2018	112.03664	110.0939484	108.1952101	106.3390367	104.5240985	102.7491213	101.0128835	99.31421277	97.65198435
180713A00011	7/13/2018	2.95	7/13/2021	7/13/2018	105.32844	104.4830466	103.6512193	102.83263	102.0269644	101.2339177	100.4531951	99.68451047	98.92758677
180716A00037	7/16/2018	3.01	7/18/2022	7/16/2018	112.30323	110.3218763	108.3857692	106.493535	104.6438556	102.835464	101.0671417	99.33771624	97.64605923
180719A00004	7/19/2018	3.07	7/19/2023	7/19/2018	119.49582	116.2710626	113.1509745	110.1315351	107.2089005	104.3793989	101.6395215	98.98591449	96.41537049
180719A00064	7/19/2018	3.3	7/21/2025	7/19/2018	134.98904	128.9547044	123.2291665	117.7949496	112.6356616	107.7359208	103.0812875	98.65820162	94.45392411
180720A00049	7/20/2018	2.93	7/20/2021	7/20/2018	105.43646	104.5692746	103.7163423	102.8773143	102.0518525	101.2396294	100.4403283	99.65364224	98.87927416
180720A00068	7/20/2018	2.89	7/20/2023	7/20/2018	119.57928	116.3364327	113.1991981	110.1635073	107.2254753	104.3813911	101.6277087	98.96103818	96.37813839
180727A00037	7/27/2018	3.13	7/27/2023	7/27/2018	119.82979	116.5748846	113.4261412	110.3795013	107.4310888	104.5771974	101.8142824	99.13895247	96.54796201
180727A00039	7/27/2018	3.48	7/27/2028	7/27/2018	157.79862	146.8180782	136.6957417	127.3597312	118.7445488	110.790479	103.4430505	96.65255088	90.37358802
180813A00013	8/13/2018	2.99	12/5/2022	8/13/2018	114.9189	112.4769161	110.0999325	107.7857226	105.532158	103.3372015	101.198902	99.11539006	97.08487387
180829A00008	8/29/2018	3.23	8/30/2027	8/29/2018	151.23391	141.7464104	132.9273663	124.7260389	117.0957981	109.9937667	103.3805003	97.21969569	91.47792561
180904A00014	9/4/2018	3.37	9/1/2028	9/4/2018	157.4788	146.3676946	136.135608	126.7080826	118.0173419	110.0016568	102.6047768	95.77541768	89.46679994
180906A00004	9/6/2018	2.92	9/7/2021	9/6/2018	106.36046	105.3372273	104.3336537	103.3491795	102.3832631	101.4353831	100.5050377	99.59174335	98.69503423
180906A00020	9/6/2018	2.81	9/7/2021	9/6/2018	106.40739	105.3816513	104.3756542	103.3888359	102.4206516	101.470577	100.5381073	99.62275635	98.72405565
180906A00047	9/6/2018	2.81	9/7/2021	9/6/2018	106.40739	105.3816513	104.3756542	103.3888359	102.4206516	101.470577	100.5381073	99.62275635	98.72405565
180910A00032	9/10/2018	3.22	9/10/2024	9/10/2018	128.27741	123.5011032	118.9314653	114.5584422	110.3725194	106.3646947	102.526447	98.84970877	95.32683876
180913A00029	9/13/2018	3.11	9/13/2023	9/13/2018	120.70404	117.2794571	113.9712478	110.774804	107.6857247	104.6998081	101.8130416	99.0215919	96.32179594
180913A00040	9/13/2018	2.89	9/13/2021	9/13/2018	106.60177	105.5561692	104.5310593	103.5258393	102.5399341	101.5727905	100.6238765	99.69267986	98.77870743
180801A00009	8/1/2018	2.98	3/15/2021	8/1/2018	103.09211	102.614132	102.1405893	101.6714239	101.2065752	100.7459835	100.2895905	99.83733882	99.3891721
180801A00012	8/1/2018	3.03	8/16/2021	8/1/2018	106.04062	105.0873557	104.1512229	103.2317602	102.3285248	101.4410895	100.569042	99.71198423	98.86953186
180803A00009	8/3/2018	2.93	10/30/2020	8/3/2018	100.54977	100.4659904	100.3823528	100.2988546	100.2154953	100.1322748	100.0491927	99.96624864	99.88344231
180809A00030	8/9/2018	2.94	2/9/2021	8/9/2018	102.43867	102.061491	101.6870973	101.3154542	100.9465313	100.5802988	100.2167272	99.85578765	99.49745148
180813A00016	8/13/2018	2.92	8/13/2021	8/13/2018	105.88395	104.9407479	104.014335	103.104266	102.2101109	101.3314545	100.4678963	99.61904906	98.78453904
180815A00021	8/15/2018	3.01	8/15/2023	8/15/2018	119.82973	116.5138918	113.3079267	110.2075923	107.2088361	104.3077842	101.500732	98.78413603	96.15460606
180817A00013	8/17/2018	2.94	2/15/2022	8/17/2018	109.28708	107.7975405	106.3358506	104.9012946	103.4931794	102.1108352	100.7536141	99.42088943	98.11205501
180827A00010	8/27/2018	2.99	8/25/2023	8/27/2018	119.95834	116.608314	113.3702526	110.2397938	107.2127738	104.2852134	101.4533095	98.71342561	96.06208398
180906A00013	9/6/2018	2.81	9/7/2021	9/6/2018	106.40739	105.3816513	104.3756542	103.3888359	102.4206516	101.470577	100.5381073	99.62275635	98.72405565
180910A00013	9/10/2018	3.08	9/11/2023	9/10/2018	120.56982	117.1540482	113.8541551	110.6655557	107.5838756	104.6049383	101.7247545	98.93951322	96.24557225
180911A00080	9/11/2018	2.94	9/9/2022	9/11/2018	113.55436	111.3909605	109.2802704	107.2206736	105.2106111	103.2485823	101.3331427	99.46290127	97.63651798
180917A00054	9/17/2018	3.17	9/15/2023	9/17/2018	120.93369	117.4987958	114.1808135	110.9751066	107.8772462	104.883004	101.9883427	99.18940546	96.48250745

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180918A00011	9/18/2018	3.17	9/18/2023	9/18/2018	120.99358	117.5476396	114.2193135	111.0039188	107.8969882	104.8942572	101.9916545	99.18529168	96.47145379
180918A00037	9/18/2018	3.06	9/17/2021	9/18/2018	106.68037	105.6242977	104.5891233	103.5742267	102.5790158	101.6029217	100.645397	99.70591517	98.78396928
180919A00018	9/19/2018	3.12	6/20/2022	9/19/2018	111.94584	110.052934	108.2021158	106.39205	104.6214564	102.8891093	101.1938342	99.53450516	97.91004225
180926A00031	9/26/2018	3.24	9/26/2023	9/26/2018	121.37748	117.8985419	114.5391777	111.2945918	108.16021	105.1316681	102.2048008	99.37563117	96.6403615
181001A00019	10/1/2018	3.02	10/1/2020	10/1/2018	100.01853	100.0157479	100.0129649	100.0101843	100.0074061	100.0046303	100.0018568	99.99908576	99.99631708
181002A00019	10/2/2018	2.98	10/4/2021	10/2/2018	107.10545	105.9909889	104.899691	103.8308354	102.7837349	101.75773	100.752188	99.76650082	98.80008464
181002A00055	10/2/2018	3.14	10/3/2022	10/2/2018	114.03657	111.7994096	109.6183586	107.4916375	105.4175369	103.3944141	101.4206895	99.49484404	97.615416
181005A00010	10/5/2018	2.95	10/5/2020	10/5/2018	100.09381	100.0798522	100.0659129	100.0519874	100.0380757	100.0241777	100.0102934	99.99642283	99.98256589
181005A00012	10/5/2018	3.33	10/4/2024	10/5/2018	130.16206	125.2363865	120.5275391	116.02477	111.7179258	107.5974105	103.6541515	99.87956799	96.2655413
181010A00021	10/10/2018	3.29	3/15/2023	10/10/2018	117.6298	114.8340814	112.1201734	109.485197	106.9263932	104.4411168	102.0268312	99.68110315	97.40159797
181022A00029	10/22/2018	3.22	10/24/2022	10/22/2018	114.61572	112.3085863	110.0603962	107.8692291	105.7332455	103.6506802	101.6198377	99.6390896	97.7068711
190321A00021	3/21/2019	2.67	3/21/2024	3/21/2019	122.76787	118.6809935	114.7534875	110.9782583	107.3485713	103.8580282	100.5005476	97.2703478	94.16193045
190321A00029	3/21/2019	2.62	3/22/2021	3/21/2019	103.0493	102.5509031	102.0573296	101.5685081	101.0843699	100.6048481	100.1298766	99.65939085	99.19332745
190326A00021	3/26/2019	2.52	3/26/2021	3/26/2019	103.07098	102.5607903	102.0556432	101.5554665	101.0601872	100.5697334	100.084035	99.60302296	99.12662973
190328A00032	4/25/2019	2.48	4/26/2021	4/25/2019	103.58462	102.9812336	102.3848679	101.7953963	101.2126999	100.6366622	100.0671697	99.50411133	98.94737843
190328A00065	3/28/2019	2.56	3/28/2024	3/28/2019	122.4795	118.3746581	114.4308062	110.6407379	106.997614	103.4949381	100.1265381	96.8865475	93.76938898
190329A00018	3/29/2019	2.6	3/29/2024	3/29/2019	122.6484	118.5371475	114.5872258	110.7914117	107.1428468	103.6350168	100.2617329	97.0171129	93.89556486
190401A00010	4/1/2019	2.62	4/1/2024	4/1/2019	122.77807	118.6544435	114.6929594	110.8863433	107.2276881	103.7104342	100.3283503	97.07551481	93.94629888
190402A00014	4/2/2019	2.64	4/2/2024	4/2/2019	122.87204	118.7433306	114.7770521	110.9659095	107.3029792	103.7816866	100.3957862	97.13934324	94.00671647
190408A00047	4/8/2019	2.43	4/7/2023	4/8/2019	116.32162	113.4584969	110.6814431	107.9873478	105.3732301	102.8362367	100.3736346	97.98280577	95.66124136
190416A00021	4/16/2019	2.73	4/16/2024	4/16/2019	123.47227	119.2854771	115.2647457	111.4025527	107.6917586	104.1255878	100.6976074	97.40170818	94.23208584
190423A00002	4/23/2019	2.52	4/23/2024	4/23/2019	123.58063	119.3476852	115.2838584	111.3814284	107.6330744	104.0318518	100.5711704	97.24477378	94.04672061
190424A00004	4/24/2019	2.55	4/23/2021	4/24/2019	103.57282	102.9783659	102.3907298	101.8097929	101.2354412	100.667563	100.1060494	99.55079363	99.00169151
190424A00021	4/24/2019	2.6	4/22/2022	4/24/2019	109.97032	108.2730779	106.6110443	104.9831955	103.3885504	101.8261655	100.2951322	98.79457621	97.32365505
190426A00012	5/1/2019	2.57	7/15/2022	5/1/2019	111.40008	109.4367665	107.5182012	105.6430169	103.8098977	102.0175797	100.264848	98.55053472	96.8735167
190429A00003	4/29/2019	2.62	10/13/2023	4/29/2019	119.69526	116.1882008	112.8034399	109.5360029	106.3811457	103.3343457	100.3912897	97.54786301	94.80013912
190430A00013	4/30/2019	2.52	4/30/2021	4/30/2019	103.678	103.0624423	102.4541747	101.8530656	101.2589892	100.6718228	100.0914465	99.51774313	98.95059823
190501A00028	5/1/2019	2.42	5/1/2024	5/1/2019	123.33924	119.0838334	114.9993423	111.0779244	107.3121432	103.6949465	100.2196442	96.8798872	93.66964788
190502A00027	5/2/2019	2.42	5/2/2022	5/2/2019	110.1543	108.4200737	106.7222978	105.0598984	103.4318415	101.8371332	100.2748178	98.74397604	97.24372318
190506A00011	5/6/2019	2.45	11/6/2020	5/6/2019	100.64318	100.5395303	100.4361038	100.3328999	100.2299178	100.1271569	100.0246164	99.92229547	99.82019347
190510A00009	5/10/2019	2.47	11/10/2021	5/10/2019	107.05454	105.8259282	104.6254352	103.4521062	102.3050268	101.1833234	100.0861607	99.01273979	97.96229608
190513A00076	5/13/2019	2.42	11/12/2021	5/13/2019	107.03232	105.7974816	104.5910489	103.4120536	102.2595675	101.1327039	100.0306152	98.95249104	97.89755583
190515A00002	5/15/2019	2.44	5/16/2022	5/15/2019	110.10767	108.3379324	106.6059158	104.9104848	103.250549	101.6250613	100.0330157	98.47344536	96.94542073

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190515A00060	5/15/2019	2.38	5/14/2021	5/15/2019	103.83419	103.176245	102.5266335	101.8851951	101.251776	100.6262265	100.0084003	99.39815498	98.79535135
180914A00029	9/14/2018	3.48	9/14/2028	9/14/2018	158.74275	147.5255971	137.19876	127.6865405	118.9200559	110.8365944	103.3790327	96.49531138	90.13796132
180920A00014	9/20/2018	3.59	9/20/2028	9/20/2018	159.87711	148.588015	138.195813	128.624134	119.8034964	111.670654	104.1680059	97.24306573	90.84798257
180921A00039	9/21/2018	3.15	9/21/2022	9/21/2018	113.82087	111.623874	109.4811636	107.3910472	105.3518966	103.3621458	101.4202879	99.52487257	97.67450355
180924A00047	9/24/2018	3.14	9/23/2022	9/24/2018	113.83978	111.6361897	109.4871979	107.3910984	105.346249	103.3510707	101.4040441	99.50370726	97.64865268
180925A00045	9/25/2018	3.31	9/25/2025	9/25/2018	137.57007	131.1930213	125.1540766	119.4334741	114.0127098	108.8744532	104.0024666	99.3815301	94.99737293
181001A00059	10/1/2018	3.02	11/2/2020	10/1/2018	100.61304	100.5208041	100.4287352	100.3368368	100.2451086	100.1535499	100.0621604	99.97093967	99.87988715
181003A00021	10/3/2018	3.1	4/5/2021	10/3/2018	103.55097	103.0098569	102.4743911	101.9444888	101.4200638	100.9010313	100.3873084	99.87881388	99.37546818
181005A00005	10/5/2018	3.31	10/5/2023	10/5/2018	121.78241	118.2675709	114.874352	111.5978371	108.4333408	105.3763946	102.4227354	99.56829496	96.80918933
181009A00036	10/9/2018	3.07	10/8/2021	10/9/2018	107.27989	106.1517487	105.0473136	103.9658411	102.9066204	101.8689695	100.852234	99.85578591	98.87902212
181010A00023	10/10/2018	3.41	4/1/2024	10/10/2018	125.77027	121.5916202	117.5767236	113.7182429	110.0092132	106.4430198	103.0133788	99.71431828	96.54016124
181012A00012	10/12/2018	3.05	10/9/2020	10/12/2018	100.16759	100.1425025	100.1174428	100.0924103	100.0674049	100.0424265	100.0174752	99.99255079	99.96765332
181023A00021	10/23/2018	3.28	10/23/2023	10/23/2018	122.04102	118.4644013	115.0130363	111.681798	108.4657983	105.360379	102.3610996	99.4637258	96.66421817
181026A00019	10/29/2018	3.09	10/16/2020	10/29/2018	100.30023	100.255594	100.2110187	100.1665004	100.1220389	100.0776342	100.0332862	99.98899464	99.94475958
181030A00012	10/30/2018	3.32	10/30/2023	10/30/2018	122.31164	118.7082082	115.2315363	111.8764083	108.6378531	105.5111352	102.4917419	99.57537083	96.75791934
181101A00020	11/1/2018	3.26	11/1/2021	11/1/2018	107.78413	106.5797197	105.4022044	104.2506887	103.1243184	102.0222763	100.9437804	99.88808161	98.85446263
181114A00012	11/14/2018	3.13	11/14/2022	11/14/2018	115.27294	112.8842229	110.5579063	108.2919029	106.0842133	103.9329211	101.836189	99.79225435	97.7994259
181114A00021	11/14/2018	3.17	11/14/2023	11/14/2018	122.79701	119.1192316	115.572569	112.1515476	108.8509546	105.6658288	102.5914461	99.62330653	96.75712219
181116A00015	11/19/2018	3.29	2/15/2024	11/19/2018	124.3826	120.3860122	116.5407607	112.8403005	109.2784085	105.8491634	102.5469283	99.36633639	96.30227609
181119A00018	11/19/2018	3.28	11/17/2023	11/19/2018	122.5421	118.8749901	115.3385678	111.9273759	108.6362191	105.4601526	102.3944684	99.43468165	96.5765189
181120A00024	11/20/2018	3.25	11/20/2023	11/20/2018	122.50148	118.8250305	115.2798992	111.8605863	108.5618599	105.3787408	102.3064887	99.34058905	96.47674042
181121A00014	11/21/2018	3.18	11/19/2021	11/21/2018	108.05253	106.7889183	105.5548392	104.34927	103.1712306	102.0197853	100.8940404	99.7931419	98.71627328
181126A00048	11/26/2018	3.24	11/25/2022	11/26/2018	115.29633	112.8812328	110.5297478	108.239726	106.0091084	103.8359226	101.7182786	99.65436426	97.64244161
181204A00023	12/4/2018	3.16	12/3/2021	12/4/2018	108.30748	106.9973393	105.7188622	104.470911	103.2524018	102.0623014	100.8996244	99.76343068	98.65282255
180719A00063	7/19/2018	3.21	7/19/2024	7/19/2018	127.18133	122.6077479	118.2257092	114.0261226	110.0003821	106.1403375	102.4382675	98.88685426	95.47916011
180723A00024	10/23/2018	3.1	10/22/2021	10/23/2018	107.40712	106.2366844	105.0917331	103.9714442	102.8750267	101.8017231	100.7508078	99.72158522	98.71338831
180810A00028	8/10/2018	2.91	8/10/2023	8/10/2018	120.04568	116.7285215	113.5210787	110.4191228	107.4186144	104.515692	101.7066624	98.98799286	96.35630297
180820A00054	8/20/2018	3	8/18/2023	8/20/2018	119.8561	116.5301982	113.3147866	110.2055909	107.1985255	104.2896853	101.4753364	98.75190768	96.11598294
180820A00055	8/20/2018	3.37	8/21/2028	8/20/2018	157.27184	146.2132747	136.0265578	126.6380942	117.9808687	109.9938247	102.6213061	95.81255402	89.52125284
180823A00013	8/23/2018	2.97	8/23/2023	8/23/2018	119.85837	116.5163171	113.2857817	110.1624253	107.1421073	104.2208707	101.394933	98.6606773	96.01464426
180913A00030	9/13/2018	3.33	9/12/2025	9/13/2018	136.15545	129.9035431	123.9800516	118.3659574	113.043445	107.9958177	103.2074211	98.66357276	94.35049687
180914A00008	9/14/2018	3.15	9/14/2023	9/14/2018	120.85043	117.4201961	114.1066225	110.9050814	107.8111575	104.8206354	101.9294897	99.13387504	96.43011711
180926A00004	9/26/2018	3.04	9/26/2022	9/26/2018	114.1021	111.8782688	109.7098972	107.5952381	105.532613	103.5204081	101.5570713	99.64110944	97.77108556

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180927A00008	9/27/2018	3.14	9/27/2022	9/27/2018	113.91919	111.7019666	109.539976	107.4314848	105.374823	103.3683848	101.4106258	99.50006013	97.63525751
181001A00049	10/1/2018	3.01	10/1/2020	10/1/2018	100.01851	100.0157201	100.0129371	100.0101565	100.0073783	100.0046025	100.0018291	99.99905806	99.9962894
181002A00018	10/2/2018	3.1	10/4/2021	10/2/2018	107.05343	105.9419496	104.8535273	103.7874477	102.7430278	101.7196123	100.716572	99.73330267	98.76922372
181004A00049	10/4/2018	3.06	11/4/2020	10/4/2018	100.65409	100.556191	100.4584925	100.3609893	100.2636808	100.1665665	100.0696457	99.97291796	99.8763826
181005A00041	10/5/2018	3.06	10/5/2020	10/5/2018	100.09323	100.0793019	100.065383	100.0514777	100.0375859	100.0237076	100.0098428	99.99599142	99.98215348
181010A00017	10/10/2018	3.08	10/1/2020	10/10/2018	100.0187	100.015915	100.0131318	100.0103511	100.0075727	100.0047967	100.0020232	99.99925196	99.99648314
181010A00019	10/10/2018	3.21	9/15/2021	10/10/2018	106.80061	105.7499892	104.7200366	103.7101423	102.719724	101.7482218	100.7950971	99.85983174	98.94192664
181015A00008	10/15/2018	3.15	9/15/2021	10/15/2018	106.74113	105.690838	104.6612028	103.6516216	102.6615122	101.6903148	100.7374909	99.80252228	98.8849101
181015A00024	10/15/2018	3.29	10/16/2023	10/15/2018	121.93537	118.3828713	114.9542035	111.6443226	108.44842	105.3619118	102.3804273	99.49979697	96.71604256
181023A00036	10/23/2018	2.98	10/23/2020	10/23/2018	100.43366	100.369366	100.3051703	100.2410702	100.1770653	100.1131556	100.0493407	99.98562046	99.92199469
181023A00052	10/23/2018	3.15	10/23/2023	10/23/2018	122.28294	118.6864657	115.2162721	111.867171	108.6342227	105.5127205	102.4981785	99.58631946	96.7730636
181026A00021	10/29/2018	3.11	1/15/2021	10/29/2018	102.02427	101.7200941	101.4177457	101.1172059	100.8184584	100.521487	100.226276	99.93280949	99.64107209
181108A00025	11/8/2018	3.44	7/31/2023	11/8/2018	120.84539	117.5627025	114.3872344	111.3149095	108.3418249	105.464247	102.6786035	99.98147469	97.36958702
181114A00010	11/14/2018	3.08	11/15/2021	11/14/2018	108.05501	106.8010377	105.5761405	104.3793166	103.2096087	102.0661023	100.9479238	99.85423814	98.78424642
180927A00029	9/27/2018	3.01	10/27/2020	9/27/2018	100.50077	100.4253826	100.3501172	100.274971	100.1999437	100.125035	100.0502447	99.97557243	99.901018
180927A00042	9/27/2018	3.02	9/27/2022	9/27/2018	114.08027	111.8534534	109.6822496	107.5649028	105.4997275	103.4851035	101.5194726	99.60133583	97.72925066
181005A00017	10/5/2018	3.27	4/11/2023	10/5/2018	118.11763	115.2290954	112.4272769	109.7090372	107.0713718	104.5114044	102.0263806	99.61366195	97.27072009
181009A00008	10/9/2018	3.24	10/7/2022	10/9/2018	114.32634	112.0739388	109.8782148	107.7373661	105.649658	103.6134235	101.6270604	99.68902784	97.797844
181023A00020	10/23/2018	3.15	10/22/2021	10/23/2018	107.46203	106.2912584	105.1459854	104.0253796	102.92865	101.8550389	100.8038205	99.77429925	98.76580793
181023A00025	10/23/2018	3.27	10/23/2023	10/23/2018	122.00817	118.4320734	114.9812245	111.6504888	108.4349786	105.3300361	102.3312214	99.43430043	96.63523427
181106A00003	11/6/2018	3.31	11/5/2021	11/6/2018	107.92163	106.7035988	105.513048	104.3490568	103.2107434	102.0972645	101.0078134	99.94161817	98.89793943
181109A00027	11/13/2018	3.48	4/15/2024	11/13/2018	126.32746	122.0909514	118.0218376	114.1125451	110.3558927	106.7450644	103.2735888	99.93531905	96.72441496
181109A00028	11/9/2018	3.72	11/9/2026	11/9/2018	147.19568	139.0547992	131.425784	124.2735708	117.5656881	111.2720488	105.3647628	99.8179645	94.60765559
181115A00012	11/15/2018	3.14	11/16/2020	11/15/2018	100.88883	100.7569801	100.6254842	100.4943454	100.3635623	100.2331333	100.1030571	99.97333218	99.84395706
181121A00013	11/21/2018	3.11	11/20/2020	11/21/2018	100.96025	100.8170645	100.6742997	100.531951	100.3900165	100.2484945	100.1073831	99.96668056	99.82638505
181123A00013	11/23/2018	3.14	11/23/2021	11/23/2018	108.08463	106.8080197	105.5615355	104.3441242	103.1547771	101.9925316	100.8564685	99.74571	98.65941707
181126A00047	11/26/2018	3.19	11/26/2021	11/26/2018	108.20407	106.9170867	105.6606922	104.4338048	103.2353937	102.0644756	100.920112	99.80140671	98.70750351
181126A00050	11/26/2018	3.29	11/24/2023	11/26/2018	122.71726	119.0238906	115.4628	112.028431	108.7154979	105.5189716	102.4340652	99.45622044	96.58109503
181211A00031	12/11/2018	2.95	12/11/2023	12/11/2018	122.58925	118.8250237	115.1977308	111.7015274	108.3308561	105.0804348	101.9452403	98.920494	96.00164779
181213A00025	12/13/2018	3.05	12/11/2020	12/13/2018	101.34474	101.141691	100.9394665	100.7380625	100.537474	100.3376959	100.1387234	99.94055155	99.74317539
181214A00016	12/14/2018	3.03	12/14/2020	12/14/2018	101.39683	101.1851802	100.9744278	100.7645664	100.5555903	100.3474938	100.1402712	99.93391714	99.728426
181221A00015	12/21/2018	2.96	12/21/2020	12/21/2018	101.5141	101.2823517	101.0516722	100.822054	100.5934898	100.3659721	100.1394939	99.91404801	99.68962727
181221A00018	12/21/2018	2.98	12/21/2021	12/21/2018	108.43789	107.0687656	105.7341675	104.4328016	103.1634374	101.9249048	100.71609	99.53593222	98.38342084

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181224A00038	12/24/2018	3.04	12/22/2023	12/24/2018	122.40838	118.6285101	114.9868964	111.4776002	108.0949771	104.8336641	101.688563	98.65482612	95.72784099
181228A00006	12/28/2018	2.86	11/13/2020	12/28/2018	100.79772	100.6744023	100.5513963	100.4287049	100.3063266	100.1842604	100.062505	99.94105915	99.8199217
190102A00050	1/2/2019	3.38	1/3/2034	1/2/2019	197.7245	175.6275145	156.282894	139.3296901	124.456176	111.3928998	99.90675017	89.79588207	80.88537371
190107A00034	1/7/2019	2.8	4/15/2021	1/7/2019	103.57643	103.0056002	102.4410617	101.8827126	101.3304514	100.7841788	100.2437975	99.70921252	99.18033075
181102A00007	11/2/2018	3.01	11/2/2020	11/2/2018	100.62515	100.5327632	100.4405513	100.3485116	100.2566438	100.1649473	100.0734216	99.98206628	99.89088085
181107A00008	11/7/2018	3.42	11/7/2023	11/7/2018	122.80684	119.1687594	115.6593489	112.2732724	109.0054548	105.8510632	102.8054936	99.86435853	97.02347536
181109A00029	11/9/2018	3.72	11/9/2026	11/9/2018	147.19568	139.0547992	131.425784	124.2735708	117.5656881	111.2720488	105.3647628	99.81796451	94.60765559
181115A00055	11/15/2018	3.01	11/15/2021	11/15/2018	107.9732	106.719743	105.4953541	104.2990306	103.129815	101.9867933	100.8690921	99.77587629	98.70634735
181121A00015	11/21/2018	3.24	11/21/2022	11/21/2018	115.21631	112.8147843	110.4762726	108.198652	105.979892	103.8180472	101.7112528	99.65772056	97.65573499
181206A00011	12/6/2018	3.11	12/6/2022	12/6/2018	115.21462	112.7661088	110.382816	108.0625095	105.8030515	103.6023958	101.4585829	99.36973521	97.33405342
181211A00020	12/11/2018	3.04	12/11/2020	12/11/2018	101.34273	101.1396832	100.9374617	100.7360606	100.535475	100.3356999	100.1367303	99.9385613	99.74118802
181212A00033	12/12/2018	2.99	12/12/2023	12/12/2018	122.74684	118.9766674	115.3437264	111.8421523	108.4663719	105.2110884	102.071265	99.04210999	96.11906334
181219A00023	12/19/2018	2.97	12/20/2021	12/19/2018	108.40575	107.0400689	105.7087555	104.4105195	103.1441389	101.9084514	100.7023505	99.52478232	98.37474271
190102A00041	1/2/2019	2.91	1/2/2024	1/2/2019	122.16293	118.3515241	114.6806606	111.1442588	107.7365457	104.4520377	101.2855237	98.23204957	95.28690326
190103A00014	1/3/2019	2.8	1/4/2021	1/3/2019	101.73125	101.4592145	101.188632	100.9194943	100.6517897	100.3855068	100.1206342	99.85716084	99.59507559
190107A00010	1/7/2019	2.66	1/9/2023	1/7/2019	115.26228	112.6987916	110.20598	107.7813826	105.4226454	103.1275152	100.893835	98.7195385	96.60264578
190107A00019	1/7/2019	2.92	1/5/2024	1/7/2019	122.25405	118.4314363	114.7500093	111.2036698	107.7866248	104.4933704	101.3186747	98.25756269	95.3053016
190107A00024	1/7/2019	2.91	1/5/2024	1/7/2019	122.2189	118.3968843	114.7160442	111.1702754	107.7537856	104.4610713	101.2869013	98.22630107	95.27453823
190110A00004	1/10/2019	3.09	1/10/2025	1/10/2019	130.04571	124.8132098	119.8233327	115.0634486	110.5216607	106.1867582	102.0481722	98.09593485	94.32064171
190110A00073	1/10/2019	2.68	8/6/2021	1/10/2019	105.6789	104.7563733	103.8499233	102.9591348	102.0836044	101.2229424	100.3767724	99.54473033	98.72646448
190110A00075	1/10/2019	2.67	4/7/2021	1/10/2019	103.43314	102.885563	102.3437868	101.807716	101.2772608	100.752333	100.2328466	99.71871694	99.20986152
190110A00080	1/10/2019	2.68	6/7/2021	1/10/2019	104.5608	103.8266694	103.1028387	102.3890903	101.6852146	100.9910075	100.3062707	99.63081115	98.96444121
190111A00026	1/11/2019	3.48	1/11/2034	1/11/2019	199.53773	177.2778834	157.7907279	140.712499	125.7290595	112.5688914	100.9971124	90.81035874	81.83240613
190115A00034	1/15/2019	2.91	1/17/2023	1/15/2019	115.53774	112.9561405	110.4459109	108.0046083	105.6298898	103.3195095	101.0713143	98.88323856	96.75330043
190117A00004	1/17/2019	2.9	1/18/2022	1/17/2019	108.7503	107.3279102	105.9358288	104.5730929	103.2387816	101.9320129	100.6519417	99.39775761	98.16868334
190122A00041	1/22/2019	2.71	1/22/2021	1/22/2019	102.07276	101.7478859	101.4250925	101.1043572	100.7856601	100.4689819	100.1543032	99.84160515	99.53086893
190131A00017	1/31/2019	2.83	3/25/2022	1/31/2019	109.82469	108.2134071	106.6344189	105.0868331	103.5697913	102.0824656	100.6240577	99.19379714	97.79094047
180914A00046	9/14/2018	2.93	9/14/2021	9/14/2018	106.66081	105.6117589	104.5833188	103.5748897	102.5858913	101.6157657	100.6639761	99.73000587	98.81335771
181005A00011	10/5/2018	3.2	10/5/2023	10/5/2018	122.08456	118.5493952	115.136854	111.8419736	108.6600185	105.5864732	102.6170304	99.7475798	96.97419831
181005A00016	10/5/2018	3.26	1/10/2023	10/5/2018	116.25146	113.682595	111.1843473	108.7542704	106.390022	104.0893598	101.8501365	99.67029435	97.54786108
181009A00060	10/9/2018	3.07	10/12/2021	10/9/2018	107.36013	106.2188319	105.101782	104.0082107	102.937383	101.8885944	100.8611692	99.85445899	98.86784155
181016A00004	10/16/2018	3.07	10/16/2020	10/16/2018	100.29933	100.2547032	100.2101286	100.165611	100.1211503	100.0767463	100.032399	99.98810822	99.94387389
181016A00011	10/16/2018	3.06	10/15/2021	10/16/2018	107.40953	106.2584264	105.1319735	104.0293872	102.9499144	101.8928334	100.8574524	99.84310765	98.8491624

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181018A00011	10/18/2018	3.35	10/18/2023	10/18/2018	122.17116	118.6084676	115.1701	111.8509853	108.6462894	105.5514045	102.5619373	99.67369739	96.88268653
181115A00051	11/15/2018	2.98	5/17/2021	11/15/2018	104.36704	103.6969508	103.0354657	102.3824239	101.7376643	101.1010296	100.4723669	99.85152667	99.23836346
181120A00023	11/20/2018	3.15	11/19/2021	11/20/2018	108.01716	106.7537687	105.519911	104.3145597	103.1367347	101.9855004	100.8599632	99.75926921	98.68260198
181123A00007	11/23/2018	3.08	11/23/2020	11/23/2018	101.01225	100.8605653	100.7093475	100.5585916	100.4082955	100.2584572	100.1090746	99.96014549	99.81166792
181130A00037	11/30/2018	3.05	11/30/2023	11/30/2018	122.71602	118.9857731	115.3901014	111.923307	108.5799752	105.3549564	102.243351	99.24049514	96.34194794
181211A00019	12/11/2018	3.04	12/11/2020	12/11/2018	101.34273	101.1396832	100.9374617	100.7360606	100.535475	100.3356999	100.1367303	99.9385613	99.74118802
181213A00024	12/13/2018	3.05	12/11/2020	12/13/2018	101.34474	101.141691	100.9394665	100.7380625	100.537474	100.3376959	100.1387234	99.94055155	99.74317539
181217A00010	12/17/2018	3.11	12/15/2023	12/17/2018	122.51599	118.7570908	115.1349565	111.6437442	108.2779002	105.0321458	101.9014615	98.8810726	95.96643475
181219A00005	12/19/2018	3.06	12/19/2023	12/19/2018	122.42024	118.6499344	115.0172294	111.5162277	108.1413243	104.8871929	101.7487699	98.72123915	95.80001804
181226A00024	12/26/2018	2.9	12/27/2021	12/26/2018	108.45146	107.0628667	105.7097637	104.3908044	103.1047081	101.8502579	100.6262962	99.43172105	98.26548336
181228A00008	12/28/2018	2.9	12/28/2021	12/28/2018	108.47069	107.0787317	105.7224295	104.4004254	103.1114305	101.8542197	100.6276281	99.43054699	98.26192052
190102A00004	1/2/2019	2.8	2/24/2021	1/2/2019	102.66034	102.2390768	101.8212672	101.4068688	100.9958398	100.5881394	100.1837271	99.78256338	99.38460918
190102A00037	1/2/2019	2.8	7/2/2021	1/2/2019	105.00272	104.1923991	103.3945631	102.6089224	101.8351992	101.0731239	100.3224348	99.58287819	98.8542079
190104A00027	1/4/2019	2.76	1/4/2021	1/4/2019	101.72052	101.4484975	101.1779341	100.9088153	100.6411296	100.3748655	100.1100117	99.84655702	99.58449035
190109A00010	1/9/2019	2.98	1/9/2023	1/9/2019	115.55727	112.9998891	110.5128089	108.0935876	105.7398892	103.4494779	101.2202129	99.05004304	96.93700278
190110A00001	1/10/2019	2.88	1/10/2022	1/10/2019	108.63307	107.219727	105.8392859	104.490599	103.1725691	101.8841496	100.6243418	99.3921917	98.18678786
190110A00003	1/10/2019	2.97	1/10/2024	1/10/2019	122.52406	118.6807089	114.979684	111.4148482	107.980373	104.6707178	101.4806144	98.40505098	95.43925814
181113A00066	11/13/2018	3.25	11/15/2021	11/13/2018	108.05455	106.8037148	105.5818288	104.3878959	103.2209642	102.0801247	100.9645086	99.87328572	98.80566161
181114A00024	11/14/2018	3.27	12/14/2021	11/14/2018	108.66477	107.3167189	106.0021095	104.7197043	103.4683297	102.2468685	101.0542566	99.88948005	98.75157175
181115A00028	11/15/2018	2.95	11/16/2020	11/15/2018	100.88268	100.7506364	100.6189562	100.4876359	100.3566738	100.2260686	100.0958186	99.96592243	99.83637856
181123A00021	11/23/2018	3.25	11/22/2023	11/23/2018	122.54167	118.8578828	115.3058647	111.880087	108.575292	105.3864764	102.3088777	99.33796037	96.46940346
181206A00010	12/6/2018	3.09	12/6/2021	12/6/2018	108.28136	106.961707	105.6741874	104.4176355	103.1909435	101.993056	100.8229667	99.67971573	98.56238704
181206A00012	12/6/2018	3.14	12/6/2023	12/6/2018	122.4446	118.7162127	115.122587	111.6580067	108.3170369	105.0945096	101.9855083	98.98535408	96.08959229
181207A00004	12/7/2018	3.05	12/7/2020	12/7/2018	101.26972	101.0781353	100.8872849	100.6971634	100.5077664	100.31909	100.1311298	99.94388184	99.75734202
181210A00015	12/10/2018	3.12	12/11/2023	12/10/2018	122.473	118.7278525	115.1185728	111.6393743	108.2847566	105.0494903	101.9286023	98.9173606	96.01126096
181211A00043	12/11/2018	3.14	12/11/2023	12/11/2018	122.54176	118.7954516	115.1850469	111.704754	108.3490711	105.1127682	101.9908708	98.97864606	96.07158893
181212A00027	12/12/2018	2.99	12/12/2023	12/12/2018	122.74684	118.9766674	115.3437264	111.8421523	108.4663719	105.2110884	102.071265	99.04210999	96.11906334
181214A00023	12/14/2018	3.07	12/14/2021	12/14/2018	108.41441	107.0680451	105.7550919	104.4743145	103.2245403	102.0046529	100.8135889	99.65033507	98.51392498
181218A00072	12/18/2018	3.04	12/19/2022	12/18/2018	115.30135	112.8116506	110.3891496	108.0315111	105.7364999	103.5019781	101.3259003	99.20630823	97.14132653
181226A00060	12/26/2018	2.9	12/27/2021	12/26/2018	108.45146	107.0628667	105.7097637	104.3908044	103.1047081	101.8502579	100.6262962	99.43172105	98.26548336
181227A00027	12/27/2018	3.24	12/26/2025	12/27/2018	137.73966	131.0664515	124.7615087	118.8024027	113.1682047	107.8393733	102.7976544	98.02598829	93.50842463
190102A00026	1/2/2019	2.62	1/4/2022	1/2/2019	108.43712	107.0278157	105.6534961	104.3128671	103.0046938	101.7278017	100.4810721	99.26343967	98.07388876
190103A00005	1/3/2019	2.61	1/4/2021	1/3/2019	101.71602	101.4436092	101.1726631	100.9031683	100.6351132	100.3684863	100.103276	99.83947103	99.57706028

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190107A00021	1/7/2019	2.79	1/7/2021	1/7/2019	101.78308	101.502335	101.2231474	100.9455016	100.6693847	100.3947841	100.1216872	99.85008177	99.57995546
190107A00023	1/7/2019	2.87	1/6/2023	1/7/2019	115.23675	112.6924187	110.2178995	107.8107575	105.4686618	103.1893826	100.9707857	98.81082775	96.70755113
190107A00035	1/7/2019	2.82	10/15/2021	1/7/2019	106.96776	105.8220323	104.7008173	103.6033298	102.528822	101.4765775	100.4459091	99.43615786	98.44669144
190107A00036	1/7/2019	2.84	4/15/2022	1/7/2019	110.23051	108.5523154	106.908661	105.2985586	103.7210566	102.1752393	100.6602244	99.17516237	97.71923426
190110A00006	1/10/2019	2.73	11/15/2022	1/10/2019	114.39395	112.012064	109.6925137	107.4332101	105.232153	103.0874253	100.9971891	98.95968157	96.97321109
190110A00012	1/10/2019	2.97	1/18/2024	1/10/2019	122.67487	118.8031514	115.0754491	111.485579	108.027659	104.6960942	101.485561	98.39099219	95.40756281
190114A00042	1/14/2019	2.92	1/13/2023	1/14/2019	115.4874	112.9186358	110.4206951	107.9911305	105.6276033	103.3278731	101.0897935	98.91130667	96.79043933
190516A00006	5/16/2019	2.43	5/13/2021	5/16/2019	103.84872	103.1937166	102.5469673	101.9083185	101.2776183	100.6547189	100.0394761	99.43174916	98.83140077
190517A00005	5/17/2019	2.31	5/17/2024	5/17/2019	123.19133	118.8859115	114.7552106	110.7911202	106.9859608	103.3324549	99.82370306	96.45316198	93.21462364
190521A00047	5/21/2019	2.54	5/19/2023	5/21/2019	116.82919	113.8378245	110.9392112	108.1298677	105.4064661	102.7658274	100.2049131	97.72081862	95.31076557
190522A00021	5/23/2019	2.47	10/15/2021	5/23/2019	106.59053	105.4470183	104.3279769	103.2326308	102.1602331	101.1100681	100.0814495	99.07371902	98.08624491
190523A00008	5/23/2019	2.29	5/23/2023	5/23/2019	116.75594	113.7407364	110.8195946	107.9889611	105.2454408	102.5857915	100.0069157	97.50585292	95.07977253
190523A00014	5/23/2019	2.5	11/15/2023	5/23/2019	119.88323	116.2665486	112.7789497	109.4150442	106.1697016	103.0380382	100.0154038	97.09736893	94.2797122
190523A00023	5/23/2019	2.48	3/22/2023	5/23/2019	115.64202	112.850102	110.1406801	107.5108214	104.9577208	102.4786902	100.0711528	97.7326377	95.46077473
190524A00031	5/24/2019	2.43	5/24/2022	5/24/2019	110.22836	108.433867	106.6779732	104.9595058	103.2773359	101.6303803	100.0175988	98.43799227	96.89060066
190528A00002	5/28/2019	2.45	11/30/2020	5/28/2019	101.03633	100.8649247	100.6940958	100.5238411	100.3541577	100.1850427	100.0164934	99.84850694	99.68108058
190528A00006	5/28/2019	2.43	9/15/2023	5/28/2019	118.58908	115.190765	111.9084206	108.7374392	105.6734227	102.7121726	99.84967997	97.08211545	94.4058202
190528A00042	5/28/2019	2.38	11/29/2021	5/28/2019	107.28537	105.994756	104.7350825	103.5052429	102.304187	101.1309137	99.98446778	98.86393722	97.768451
190529A00022	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00069	5/29/2019	2.34	11/29/2021	5/29/2019	107.23704	105.9467439	104.6873794	103.4578437	102.2570869	101.0841078	99.93795136	98.81770574	97.72250003
190530A00004	5/30/2019	2.24	5/30/2023	5/30/2019	116.73581	113.6989016	110.7572843	107.9073271	105.14557	102.4687098	99.8735917	97.35720181	94.91665925
190530A00007	5/30/2019	2.35	11/30/2021	5/30/2019	107.26666	105.9729814	104.7103887	103.4777688	102.2740645	101.0982677	99.9494168	98.82659389	97.72892228
190530A00047	5/30/2019	2.36	5/28/2021	5/30/2019	104.06053	103.3598683	102.6686145	101.986584	101.3135932	100.6494634	99.99402038	99.34709463	98.70852098
190530A00074	5/30/2019	2.4	5/31/2022	5/30/2019	110.2966	108.4807501	106.7042778	104.9659699	103.2646639	101.5992443	99.96864088	98.37182616	96.80781302
190531A00037	5/31/2019	2.61	5/31/2029	5/31/2019	157.32813	145.0089121	133.7552325	123.4690417	114.0618102	105.4535555	97.57197528	90.35167199	83.73345974
190603A00002	6/3/2019	2.03	6/2/2023	6/3/2019	116.18925	113.1504132	110.207228	107.356044	104.593377	101.9159013	99.32044161	96.80396463	94.3635715
190603A00009	6/3/2019	2.17	7/6/2022	6/3/2019	110.50109	108.5730481	106.6886738	104.8465905	103.0454767	101.2840656	99.56114302	97.8755438	96.22614984
190603A00041	6/3/2019	2.01	6/3/2021	6/3/2019	104.02223	103.3023304	102.5923677	101.8921362	101.2014369	100.5200763	99.84786585	99.18462221	98.53016687
190603A00046	6/3/2019	2.17	6/3/2022	6/3/2019	109.9462	108.1242833	106.3420391	104.5982422	102.8917156	101.2213304	99.58600376	97.9846961	96.4164091
190603A00048	6/3/2019	2.24	6/3/2024	6/3/2019	122.39782	118.0728621	113.9249576	109.9458135	106.12758	102.4628227	98.94449768	95.56592831	92.32078355
181218A00077	12/18/2018	3.09	12/18/2023	12/18/2018	122.50484	118.7363534	115.1052917	111.6057649	108.2321799	104.9792215	101.8418361	98.8152171	95.89479074
181220A00027	12/20/2018	2.97	2/28/2022	12/20/2018	109.58795	108.0533787	106.5482073	105.0716588	103.6229841	102.2014602	100.8063881	99.43709275	98.09292126
181221A00024	12/21/2018	2.96	12/28/2020	12/21/2018	101.64394	101.392069	101.1414497	100.8920696	100.6439195	100.3969903	100.1512731	99.90675896	99.6634391

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181226A00036	12/26/2018	3.02	12/26/2023	12/26/2018	122.41524	118.6222226	114.9683598	111.447646	108.0543834	104.7831593	101.6288297	98.58650343	95.65152825
181226A00045	12/26/2018	2.87	12/28/2020	12/26/2018	101.62155	101.3697204	101.1191385	100.8697955	100.6216824	100.3747901	100.1291097	99.88463211	99.64134871
181226A00059	12/26/2018	2.87	12/28/2020	12/26/2018	101.62155	101.3697204	101.1191385	100.8697955	100.6216824	100.3747901	100.1291097	99.88463211	99.64134871
190104A00033	1/4/2019	3.37	1/31/2029	1/4/2019	160.32855	148.4853934	137.6216869	127.6509397	118.4947219	110.0818789	102.3478223	95.23389335	88.68679102
190108A00002	1/8/2019	2.89	1/8/2021	1/8/2019	101.82921	101.5455163	101.2634066	100.9828716	100.703898	100.4264727	100.1505829	99.87621564	99.60335843
190111A00010	1/11/2019	2.87	1/7/2022	1/11/2019	108.58065	107.170836	105.7949006	104.4516191	103.1398288	101.8584224	100.6063439	99.38258657	98.18618927
190111A00037	1/11/2019	2.68	1/11/2022	1/11/2019	108.60681	107.1888956	105.8037061	104.4501062	103.1270144	101.8333984	100.5682726	99.33069559	98.11976746
190114A00040	1/14/2019	2.89	1/14/2025	1/14/2019	130.22276	124.9424824	119.9082888	115.1073373	110.527529	106.1574626	101.9863897	98.00417374	94.20125102
190114A00043	1/14/2019	2.88	1/14/2022	1/14/2019	108.68536	107.2674197	105.8810922	104.5253175	103.1990863	101.901434	100.631438	99.38821584	98.17092263
190114A00061	1/14/2019	2.98	1/31/2024	1/14/2019	122.95604	119.0375143	115.2658069	111.6346436	108.1380524	104.770347	101.5261112	98.40018498	95.38765067
190115A00028	1/15/2019	2.86	11/8/2021	1/15/2019	107.46625	106.2414501	105.0445222	103.8745228	102.7305503	101.6117431	100.5172773	99.44636453	98.39825025
190115A00029	1/15/2019	2.86	11/8/2021	1/15/2019	107.46625	106.2414501	105.0445222	103.8745228	102.7305503	101.6117431	100.5172773	99.44636453	98.39825025
190115A00063	1/15/2019	2.96	1/16/2024	1/15/2019	122.60166	118.7376548	115.0172214	111.4341919	107.9826981	104.6571595	101.4522669	98.36296756	95.38445104
190118A00023	1/18/2019	2.9	1/19/2021	1/18/2019	102.03537	101.7196806	101.4059544	101.0941731	100.7843187	100.4763731	100.1703188	99.86613825	99.56381421
190123A00036	1/23/2019	3.32	1/23/2029	1/23/2019	162.06968	150.0767865	139.07633	128.9805781	119.7099977	111.1924468	103.3624522	96.1605606	89.53275684
190130A00020	1/30/2019	2.97	4/17/2023	1/30/2019	117.42655	114.5280323	111.717015	108.9903142	106.3448805	103.7777956	101.2862658	98.86761594	96.51928305
190201A00016	2/1/2019	2.8	2/1/2022	2/1/2019	108.80078	107.3610519	105.9475227	104.5595337	103.1964506	101.8576595	100.5425662	99.25059521	97.98118932
190204A00036	2/4/2019	2.86	11/4/2021	2/4/2019	107.3903	106.1787254	104.9944373	103.8365221	102.7041058	101.596353	100.5124643	99.45167454	98.41325093
190215A00004	2/15/2019	2.84	2/15/2023	2/15/2019	115.92154	113.2404623	110.6355518	108.1042073	105.6439366	103.252347	100.9271404	98.66610954	96.46713335
190215A00046	2/15/2019	2.7	2/15/2024	2/15/2019	122.97621	118.9858043	115.1471815	111.4537544	107.8992618	104.4777465	101.183539	98.01124173	94.95571499
181115A00061	11/15/2018	2.95	11/16/2020	11/15/2018	100.88268	100.7506364	100.6189562	100.4876359	100.3566738	100.2260686	100.0958186	99.96592243	99.83637856
181123A00016	11/23/2018	3.19	11/23/2022	11/23/2018	115.14294	112.7359313	110.3922071	108.1096331	105.8861652	103.7198455	101.6087973	99.55122101	97.54539073
181130A00025	11/30/2018	3	6/1/2022	11/30/2018	111.70238	109.8647463	108.0670778	106.3081396	104.5867475	102.9017659	101.2521055	99.63672033	98.05460605
181220A00009	12/20/2018	2.95	12/21/2020	12/20/2018	101.51181	101.2800643	101.0493885	100.8197739	100.5912132	100.3636992	100.1372246	99.91178228	99.68736512
181227A00028	12/27/2018	3.46	12/27/2028	12/27/2018	160.54523	148.8317688	138.077188	128.1974137	119.1161867	110.7642972	103.078897	96.00288158	89.48433652
190107A00022	1/7/2019	2.83	1/7/2022	1/7/2019	108.52778	107.1183435	105.7427754	104.3998547	103.088419	101.8073609	100.555625	99.3322043	98.13613807
190107A00028	1/7/2019	2.62	1/7/2022	1/7/2019	108.47552	107.0627695	105.6840328	104.3380818	103.0237473	101.7399156	100.485525	99.25956319	98.06106391
190110A00028	1/10/2019	2.78	1/10/2024	1/10/2019	122.57224	118.7102223	114.9916252	111.4102528	107.9602171	104.635922	101.4320468	98.34353079	95.36555858
190110A00078	1/10/2019	2.69	12/7/2021	1/10/2019	108.01835	106.6938328	105.4017196	104.1408286	102.9100384	101.7082803	100.5345362	99.38783483	98.26724934
190129A00061	1/30/2019	2.92	2/1/2022	1/30/2019	108.96811	107.5271424	106.112396	104.7232113	103.3589534	102.0190079	100.7027799	99.40969343	98.1391908
190131A00014	1/31/2019	2.79	1/29/2021	1/31/2019	102.1831	101.838353	101.4959318	101.1558088	100.817961	100.4823656	100.1490002	99.81784273	99.48887129
190131A00019	1/31/2019	3.44	1/30/2034	1/31/2019	199.23536	176.9076556	157.3714699	140.2594571	125.2544942	112.0825858	100.5067998	90.32208208	81.35081955
190205A00013	2/5/2019	2.85	2/5/2021	2/5/2019	102.33195	101.9666217	101.6039025	101.2437633	100.8861767	100.5311155	100.1785531	99.82846317	99.48081969

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190211A00010	2/11/2019	2.79	2/11/2021	2/11/2019	102.41959	102.036658	101.6565912	101.2793602	100.9049333	100.5332792	100.1643673	99.79816703	99.43464862
190214A00012	2/14/2019	2.6	2/14/2022	2/14/2019	109.02512	107.5369018	106.0765138	104.6432432	103.2363975	101.855307	100.4993241	99.16782282	97.86019717
190214A00013	2/14/2019	2.64	2/14/2023	2/14/2019	115.89743	113.2097321	110.5985011	108.0611276	105.595106	103.1980307	100.8675917	98.60157047	96.3978351
190219A00020	2/19/2019	2.88	2/16/2024	2/19/2019	122.90826	118.9343175	115.1112231	111.4324418	107.8917618	104.4832722	101.2013469	98.04062951	94.99601857
190301A00009	3/1/2019	2.83	3/1/2022	3/1/2019	109.40004	107.8639322	106.3573081	104.8793894	103.4294238	102.0066847	100.6104702	99.24010198	97.89492441
190313A00018	3/13/2019	2.68	3/12/2021	3/13/2019	102.89838	102.4297248	101.9653462	101.505183	101.0491778	100.5972741	100.1494169	99.70555162	99.26562509
190313A00029	3/13/2019	2.56	3/13/2023	3/13/2019	116.20884	113.42702	110.7267624	108.1051973	105.5595714	103.0872453	100.6856881	98.352472	96.0852677
190314A00018	3/14/2019	2.53	3/14/2022	3/14/2019	109.44445	107.8646809	106.3160376	104.7976734	103.3087742	101.8485543	100.4162558	99.01114689	97.63252089
190318A00024	3/18/2019	2.57	3/18/2024	3/18/2019	123.10329	119.0006484	115.0580329	111.2683185	107.6247422	104.1208788	100.7506214	97.50816428	94.38798599
190319A00008	3/19/2019	2.72	3/21/2022	3/19/2019	109.5824	107.985095	106.4195796	104.8849845	103.3804701	101.9052268	100.4584731	99.03945525	97.64744529
190109A00023	1/9/2019	2.92	10/9/2020	1/9/2019	100.16433	100.1392454	100.1141884	100.0891586	100.0641559	100.0391802	100.0142315	99.98930984	99.96441505
190110A00013	1/10/2019	2.97	1/17/2024	1/10/2019	122.65602	118.7878446	115.063478	111.4767376	108.0217481	104.6929213	101.4849407	98.39274598	95.41151927
190110A00015	1/10/2019	2.88	1/18/2022	1/10/2019	108.72323	107.3010335	105.9091441	104.5465968	103.2124709	101.9058844	100.6259922	99.37198416	98.14308297
190111A00013	1/11/2019	2.87	1/7/2022	1/11/2019	108.58065	107.170836	105.7949006	104.4516191	103.1398288	101.8584224	100.6063439	99.38258657	98.18618927
190115A00025	1/15/2019	2.96	1/12/2024	1/15/2019	122.52638	118.6765541	114.9694554	111.3989392	107.9591641	104.6445768	101.4498956	98.37009573	95.4003943
190122A00042	1/22/2019	2.79	1/23/2023	1/22/2019	115.84079	113.2271629	110.6862733	108.2156486	105.8129162	103.4758003	101.2021166	98.98976805	96.83674109
190122A00046	1/22/2019	3.29	1/22/2029	1/22/2019	161.75742	149.7821394	138.7978519	128.7169607	119.4600503	110.9550858	103.136691	95.94550112	89.32758113
190123A00033	1/23/2019	2.8	1/23/2023	1/23/2019	115.86536	113.2514268	110.7102406	108.2393256	105.8363093	103.4989155	101.2249598	99.01234507	96.85905747
190123A00035	1/23/2019	3.18	1/22/2027	1/23/2019	146.52332	138.0630098	130.1528603	122.7541154	115.8309448	109.3502115	103.2812557	97.59569747	92.26725547
190205A00047	2/5/2019	2.85	2/5/2021	2/5/2019	102.33195	101.9666217	101.6039025	101.2437633	100.8861767	100.5311155	100.1785531	99.82846317	99.48081969
190211A00011	2/11/2019	2.8	2/11/2022	2/11/2019	108.99362	107.5196718	106.0730746	104.6531257	103.2591499	101.8904942	100.5465271	99.22663744	97.93023393
190212A00024	2/12/2019	2.79	2/12/2021	2/12/2019	102.43779	102.0519092	101.6689419	101.2888537	100.9116122	100.5371853	100.1655416	99.79665007	99.43048012
190215A00005	2/15/2019	2.89	2/15/2024	2/15/2019	122.92519	118.9544675	115.1343422	111.4583	107.9201437	104.5139766	101.2341855	98.07542623	95.03260874
190219A00045	2/19/2019	2.8	2/28/2022	2/19/2019	109.33747	107.8048433	106.3015844	104.8269142	103.3800847	101.9603737	100.5670832	99.19953899	97.85708901
190226A00020	2/26/2019	2.64	2/26/2024	2/26/2019	122.97116	118.9418639	115.0671814	111.3403504	107.754939	104.3048307	100.9842071	97.78753134	94.7095335
190227A00002	2/27/2019	2.61	2/28/2022	2/27/2019	109.31028	107.7737252	106.2666761	104.7883492	103.3379915	101.9148757	100.5182994	99.1475839	97.80207316
190308A00007	3/8/2019	2.8	3/8/2024	3/8/2019	123.01495	118.9668003	115.0748758	111.3322989	107.7325329	104.2693637	100.936882	97.72946635	94.64176799
190328A00027	3/28/2019	2.51	9/21/2021	3/28/2019	106.20358	105.1376178	104.0930034	103.0691001	102.0652964	101.0810046	100.1156597	99.16871852	98.2396583
190401A00008	4/1/2019	2.62	4/1/2024	4/1/2019	122.77807	118.6544435	114.6929594	110.8863433	107.2276881	103.7104342	100.3283503	97.07551481	93.94629888
190401A00035	4/1/2019	2.53	10/1/2021	4/1/2019	106.40325	105.30492	104.2291928	103.1753809	102.1428198	101.1308718	100.1389244	99.16638917	98.21270056
190404A00003	4/4/2019	2.47	4/4/2024	4/4/2019	123.03756	118.8790297	114.8847667	111.0473634	107.359792	103.8153805	100.4077921	97.13100693	93.97930367
190410A00005	4/10/2019	2.49	10/13/2020	4/10/2019	100.22729	100.1909972	100.1547506	100.1185478	100.0823888	100.0462735	100.0102019	99.97417371	99.93818902
190411A00037	4/11/2019	2.59	4/9/2021	4/11/2019	103.34831	102.796041	102.2496719	101.7091081	101.1742574	100.6450294	100.1213356	99.60308957	99.09020643

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190131A00027	1/31/2019	2.86	1/31/2023	1/31/2019	115.67506	113.0489522	110.4961625	108.0142382	105.6008208	103.2536442	100.9705305	98.74938557	96.5881961
190131A00036	1/31/2019	2.69	7/31/2023	1/31/2019	119.1839	115.9121382	112.7477317	109.6865809	106.7247659	103.8585372	101.0843074	98.39864355	95.79825937
190131A00053	1/31/2019	2.67	1/31/2023	1/31/2019	115.69441	113.057969	110.495332	108.0040208	105.5816556	103.2259499	100.9347063	98.70581286	96.53723878
190201A00013	2/1/2019	2.89	2/1/2024	2/1/2019	122.65186	118.7351551	114.9653698	111.3362191	107.8417217	104.4761821	101.2341761	98.11053592	95.10033698
190208A00005	2/8/2019	2.63	2/8/2023	2/8/2019	115.75344	113.0884356	110.4987376	107.9817916	105.5351466	103.1564491	100.8434382	98.59394173	96.4058719
190212A00017	2/12/2019	2.86	6/30/2023	2/12/2019	118.51682	115.3660529	112.3164231	109.3639743	106.5049377	103.7357212	101.0528998	98.45320633	95.93352253
190213A00023	2/13/2019	2.93	2/13/2024	2/13/2019	123.03162	119.0660441	115.25061	111.5788343	108.0445484	104.6418821	101.3652472	98.20932247	95.16903969
190222A00029	2/22/2019	2.62	2/22/2021	2/22/2019	102.60576	102.1897984	101.7772111	101.3679574	100.9619969	100.55929	100.1597976	99.7634812	99.37030308
190225A00039	2/25/2019	2.62	2/25/2022	2/25/2019	109.26693	107.740594	106.2434058	104.7745952	103.3334222	101.9191722	100.5311545	99.16870179	97.83116886
190226A00006	2/26/2019	2.64	2/26/2024	2/26/2019	122.97116	118.9418639	115.0671814	111.3403504	107.754939	104.3048307	100.9842071	97.78753134	94.7095335
190228A00036	2/28/2019	2.81	2/28/2022	2/28/2019	109.3522	107.819463	106.3160917	104.8413109	103.3943729	101.9745552	100.58116	99.21351274	97.8709615
190318A00008	3/18/2019	2.76	3/18/2024	3/18/2019	123.05043	118.9683853	115.0450953	111.2735185	107.6469622	104.1590666	100.8037865	97.57537382	94.46836118
190318A00015	3/18/2019	2.66	3/18/2021	3/18/2019	102.99691	102.5103972	102.0284827	101.5511035	101.0781959	100.609697	100.1455452	99.68568015	99.23004251
190321A00003	3/21/2019	2.67	3/21/2024	3/21/2019	122.76787	118.6809935	114.7534875	110.9782583	107.3485713	103.8580282	100.5005476	97.2703478	94.16193045
190326A00007	3/26/2019	2.5	3/26/2021	3/26/2019	103.06104	102.5508814	102.045763	101.5456149	101.0503639	100.5599383	100.0742679	99.59328362	99.11691797
190326A00032	3/26/2019	2.4	3/26/2024	3/26/2019	122.60837	118.4880013	114.5294324	110.7254179	107.0690769	103.5538745	100.1736018	96.92235809	93.79453363
190327A00062	3/27/2019	2.44	3/26/2021	3/27/2019	103.03123	102.5211546	102.0161225	101.5160601	101.0208942	100.5305531	100.0449665	99.56406559	99.08778267
190328A00011	3/28/2019	2.37	3/28/2024	3/28/2019	122.53066	118.405029	114.4416684	110.6333	106.9730126	103.4542427	100.0707551	96.81662439	93.68621783
190328A00030	4/25/2019	2.48	4/26/2021	4/25/2019	103.58462	102.9812336	102.3848679	101.7953963	101.2126999	100.6366622	100.0671697	99.50411133	98.94737843
190328A00033	4/25/2019	2.56	4/25/2024	4/25/2019	122.9822	118.7743438	114.7344258	110.8547892	107.1281713	103.5476819	100.106782	96.79926384	93.61923162
190401A00005	4/1/2019	2.54	4/1/2021	4/1/2019	103.18661	102.6584369	102.1356583	101.6181899	101.105951	100.5988627	100.0968479	99.5998306	99.10773662
190402A00004	4/2/2019	2.9	4/2/2029	4/2/2019	159.23978	147.0759451	135.9443054	125.7515281	116.4131826	107.8528523	100.0013349	92.7959271	86.17978357
190402A00010	4/2/2019	2.4	4/6/2022	4/2/2019	109.65495	108.0039859	106.3867595	104.802317	103.2497411	101.7281483	100.2366873	98.7745376	97.34090796
190110A00005	1/10/2019	3.2	1/9/2026	1/10/2019	137.77615	131.0521101	124.7013881	118.701177	113.0301888	107.6685465	102.5976831	97.8002473	93.26001721
190110A00009	1/10/2019	2.97	1/16/2024	1/10/2019	122.63716	118.7725383	115.0515071	111.4678963	108.0158372	104.6897486	101.4843209	98.39450079	95.41547728
190110A00071	1/10/2019	2.67	2/8/2021	1/10/2019	102.37021	101.9955191	101.6235804	101.25436	100.8878279	100.5239549	100.1627119	99.80407047	99.44800244
190110A00079	1/10/2019	2.68	10/7/2021	1/10/2019	106.84814	105.7256526	104.626699	103.5505459	102.496489	101.4638528	100.4519891	99.46027557	98.48811457
190130A00007	1/30/2019	2.89	5/14/2021	1/30/2019	104.15857	103.4994493	102.8486733	102.2060809	101.5715181	100.944835	100.3258852	99.71452603	99.1106183
190131A00011	1/31/2019	3.13	1/30/2026	1/31/2019	137.76334	130.9652123	124.5478063	118.4878021	112.7634264	107.3543412	102.2415421	97.40726432	92.8348955
190131A00018	1/31/2019	2.83	3/25/2022	1/31/2019	109.82469	108.2134071	106.6344189	105.0868331	103.5697913	102.0824656	100.6240577	99.19379714	97.79094047
190131A00049	1/31/2019	2.79	1/29/2021	1/31/2019	102.1831	101.838353	101.4959318	101.1558088	100.817961	100.4823656	100.1490002	99.81784273	99.48887129
190201A00009	2/1/2019	2.8	2/4/2022	2/1/2019	108.85862	107.4086315	105.985186	104.5876111	103.2152602	101.8675078	100.5437488	99.24339694	97.96588497
190206A00013	2/6/2019	2.68	2/6/2023	2/6/2019	115.83882	113.1797074	110.5955467	108.0838073	105.6420553	103.2679533	100.9592556	98.71380432	96.5295254

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190208A00010	2/8/2019	2.77	2/8/2021	2/8/2019	102.35767	101.9835861	101.6122352	101.2435912	100.8776246	100.5143063	100.1536075	99.79549993	99.43995569
190211A00016	2/11/2019	3.01	2/11/2025	2/11/2019	130.29384	124.9427309	119.8440113	114.9844603	110.3516147	105.9337243	101.719708	97.6991123	93.86207214
190228A00037	2/28/2019	2.85	2/28/2023	2/28/2019	116.20381	113.4741482	110.8231702	108.2481559	105.746493	103.3156753	100.9532978	98.65705136	96.424719
190301A00012	3/1/2019	3.41	3/1/2029	3/1/2019	161.29785	149.2840313	138.2727612	128.1746897	118.9088757	110.401956	102.5873999	95.4048408	88.79947573
190308A00014	3/8/2019	2.69	3/8/2021	3/8/2019	102.83084	102.3740964	101.9214074	101.4727237	101.027992	100.5871603	100.1501773	99.71699271	99.28755702
190311A00003	3/11/2019	2.68	9/10/2021	3/11/2019	106.18328	105.1516152	104.1399623	103.1477425	102.1743996	101.2193986	100.2822243	99.36238083	98.45939051
190313A00019	3/13/2019	2.73	7/15/2022	3/13/2019	111.70036	109.7341428	107.8127318	105.9347565	104.0988992	102.3038944	100.5485259	98.83162443	97.15206539
190315A00014	3/15/2019	2.74	3/15/2024	3/15/2019	122.92055	118.8508312	114.9390514	111.1782132	107.561673	104.0831171	100.7365433	97.51624345	94.41678794
190315A00026	3/15/2019	2.66	1/19/2021	3/15/2019	101.96083	101.6452884	101.3317109	101.0200776	100.7103704	100.4025714	100.0966629	99.79262756	99.49044804
190326A00024	3/26/2019	2.59	3/26/2024	3/26/2019	122.55699	118.4573704	114.5182694	110.7325185	107.0933085	103.5941712	100.2289606	96.99183455	93.87723844
190327A00013	3/27/2019	2.53	3/27/2024	3/27/2019	122.34856	118.2494328	114.3109736	110.5259941	106.8876732	103.3895318	100.0254137	96.7894675	93.67612996
190327A00024	3/27/2019	2.48	3/25/2022	3/27/2019	109.28339	107.6765007	106.1018281	104.55848	103.0456003	101.5623633	100.1079725	98.68165964	97.28268309
190327A00032	3/27/2019	2.53	1/26/2024	3/27/2019	121.25009	117.3774848	113.6498289	110.0609151	106.6048339	103.2759605	100.0689396	96.97867104	94.00029603
190122A00043	1/22/2019	2.96	1/22/2025	1/22/2019	130.71032	125.391663	120.3217101	115.487484	110.8767579	106.4780066	102.280361	98.27356818	94.4479522
190201A00011	2/1/2019	2.8	2/4/2022	2/1/2019	108.85862	107.4086315	105.985186	104.5876111	103.2152602	101.8675078	100.5437488	99.24339694	97.96588497
190208A00009	2/8/2019	2.67	2/8/2024	2/8/2019	122.72959	118.7683576	114.9569881	111.2890152	107.7582893	104.3589574	101.0854477	97.9324542	94.89492266
190214A00006	2/14/2019	2.67	2/14/2024	2/14/2019	122.84697	118.8624117	115.0293084	111.3410973	107.7915348	104.3746803	101.0848797	97.91675032	94.86516589
190215A00006	2/15/2019	2.89	2/15/2024	2/15/2019	122.92519	118.9544675	115.1343422	111.4583	107.9201437	104.5139766	101.2341855	98.07542623	95.03260874
190222A00028	2/22/2019	2.62	2/22/2022	2/22/2019	109.20879	107.692797	106.2055919	104.7464194	103.3145524	101.9092887	100.5299496	99.17587896	97.84644249
190228A00039	2/28/2019	2.88	2/28/2024	2/28/2019	123.14234	119.1220196	115.2557304	111.5367451	107.9586631	104.5153972	101.2011564	98.01042998	94.93797212
190311A00009	3/11/2019	2.54	3/11/2022	3/11/2019	109.40546	107.8350437	106.2953951	104.7856879	103.3051211	101.852922	100.4283446	99.03066883	97.65919891
190313A00017	3/13/2019	2.73	7/15/2022	3/13/2019	111.70036	109.7341428	107.8127318	105.9347565	104.0988992	102.3038944	100.5485259	98.83162443	97.15206539
190326A00001	3/26/2019	2.55	3/28/2022	3/26/2019	109.44429	107.8270927	106.2424883	104.6895687	103.1674632	101.6753328	100.2123681	98.77778843	97.37084048
190326A00004	3/26/2019	2.58	9/26/2023	3/26/2019	119.26394	115.818304	112.4913737	109.2783853	106.1747929	103.1762598	100.2786467	97.47800219	94.77055236
190328A00023	3/28/2019	2.51	2/24/2021	3/28/2019	102.54084	102.1198781	101.7023657	101.2882625	100.877527	100.4701183	100.065996	99.66512061	99.26745299
190328A00083	3/28/2019	2.37	3/28/2024	3/28/2019	122.53066	118.405029	114.4416684	110.6333	106.9730126	103.4542427	100.0707551	96.81662439	93.68621783
190404A00024	4/5/2019	2.61	2/15/2022	4/5/2019	108.81338	107.3274465	105.8692944	104.4382133	103.0335119	101.6545222	100.3005979	98.97111397	97.66546574
190409A00009	4/9/2019	2.57	4/9/2021	4/9/2019	103.33758	102.7853429	102.239007	101.6984763	101.1636583	100.6344628	100.1108013	99.59258725	99.07973588
190430A00002	4/30/2019	2.4	11/2/2022	4/30/2019	113.4167	111.0869834	108.8175	106.6062657	104.4513765	102.3510058	100.303401	98.30687977	96.35982636
190514A00073	5/14/2019	2.53	5/14/2024	5/14/2019	123.20137	118.9267919	114.8248358	110.8875262	107.1073091	103.4770238	99.98988006	96.63943622	93.41957915
190515A00038	5/15/2019	2.38	5/14/2021	5/15/2019	103.83419	103.176245	102.5266335	101.8851951	101.251776	100.6262265	100.0084003	99.39815498	98.79535135
190515A00041	5/15/2019	2.41	11/15/2021	5/15/2019	107.07381	105.829154	104.6133513	103.4254046	102.2643648	101.1293252	100.0194197	98.93382003	97.87173419
190520A00054	5/20/2019	2.46	5/20/2021	5/20/2019	103.98921	103.3127549	102.6450911	101.9860485	101.3354605	100.6931652	100.0590045	99.4328246	98.81447528

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190521A00025	5/21/2019	2.47	5/21/2021	5/21/2019	104.01313	103.3335939	102.6629265	102.0009554	101.3475121	100.7024324	100.0655564	99.43672826	98.81579592
190523A00015	5/23/2019	2.51	4/1/2024	5/23/2019	122.36144	118.2454695	114.2914226	110.4920282	106.8403871	103.3299476	99.95448552	96.70808648	93.58512817
190523A00022	5/23/2019	2.47	10/12/2022	5/23/2019	112.77511	110.5244434	108.3307552	106.192214	104.1070652	102.0736232	100.0902682	98.15544346	96.26765164
190605A00012	6/5/2019	1.92	6/6/2022	6/5/2019	109.89671	108.059998	106.2635412	104.5060874	102.7864341	101.1034284	99.455965	97.842983	96.26346409
190605A00035	6/5/2019	2.18	6/5/2023	6/5/2019	116.10184	113.0670829	110.127858	107.2805126	104.5215651	101.8476927	99.25572273	96.74262455	94.30550207
190607A00011	6/7/2019	1.94	6/7/2021	6/7/2019	104.03922	103.3071656	102.5853849	101.8736662	101.1718002	100.4795833	99.79681737	99.12330976	98.45887305
190607A00018	6/7/2019	2.19	6/7/2024	6/7/2019	122.26609	117.9301135	113.7721448	109.7838269	105.9572453	102.2849058	98.75970909	95.37492736	92.1241821
190617A00004	6/17/2019	2.2	6/15/2021	6/17/2019	104.25276	103.49707	102.7523176	102.0182641	101.2946803	100.581343	99.87803565	99.18454766	98.50067431
190618A00002	6/18/2019	2.11	6/18/2025	6/18/2019	129.21753	123.408244	117.8944493	112.6594497	107.6875947	102.9642051	98.47550602	94.2085658	90.15123907
190620A00010	6/20/2019	2.04	6/20/2022	6/20/2019	109.99892	108.1241548	106.2911336	104.4985287	102.7450698	101.0295405	99.35077534	97.70765691	96.09911362
190620A00027	6/20/2019	2.14	6/20/2024	6/20/2019	122.28383	117.9034133	113.7044173	109.6782355	105.8167311	102.1122043	98.55736521	95.14530944	91.86949479
190624A00026	6/24/2019	2.08	6/24/2022	6/24/2019	110.13755	108.2491655	106.4030373	104.5978178	102.8322135	101.1049863	99.41495037	97.76096913	96.14195285
190625A00008	6/25/2019	2.04	6/27/2022	6/25/2019	110.11452	108.2171025	106.3623082	104.5487715	102.7751823	101.0402867	99.34288386	97.68182347	96.05600258
190625A00027	6/25/2019	2.04	6/24/2022	6/25/2019	110.06497	108.1772645	106.3318037	104.5272388	102.7622768	101.0356802	99.34626314	97.69288957	96.07447001
190626A00020	6/26/2019	2.08	6/25/2021	6/26/2019	104.32916	103.542952	102.7685556	102.0057094	101.2541565	100.5136474	99.78394024	99.06479986	98.35599801
190627A00037	6/27/2019	1.93	6/27/2023	6/27/2019	116.32253	113.2002524	110.1784503	107.2531909	104.4207269	101.6774871	99.02006624	96.44521584	93.94983571
190702A00002	7/2/2019	2.16	7/2/2024	7/2/2019	122.56545	118.1390882	113.8974119	109.8316063	105.9333365	102.1947175	98.60828701	95.16697943	91.86410205
190711A00027	7/11/2019	2.19	7/11/2023	7/11/2019	116.73323	113.5741848	110.5174649	107.5590993	104.6953037	101.9224665	99.23714023	96.63603199	94.11599575
190711A00028	7/11/2019	2.22	7/11/2024	7/11/2019	122.95892	118.4955044	114.2191253	110.1208723	106.1923156	102.4254762	98.81279899	95.34712691	92.02167787
190717A00008	7/17/2019	2.22	7/17/2024	7/17/2019	123.05817	118.5732412	114.2768251	110.1599517	106.2141309	102.4313237	98.8039155	95.32469098	91.98681066
190722A00035	7/22/2019	2.18	4/13/2021	7/22/2019	103.19437	102.6307499	102.0732846	101.5218713	100.9764116	100.4368095	99.90297075	99.37480332	98.85221705
190724A00023	7/24/2019	2.13	7/24/2025	7/24/2019	129.93498	123.9821044	118.3370147	112.9821939	107.9012114	103.0786519	98.50004768	94.1518152	90.02119633
190731A00028	7/31/2019	1.93	7/29/2022	7/31/2019	110.79174	108.7860673	106.8267577	104.9124493	103.0418332	101.2136477	99.4266757	97.6797434	95.97171806
190805A00021	8/5/2019	1.89	1/16/2024	8/5/2019	118.80333	115.0051211	111.3486544	107.8278212	104.4368171	101.1701225	98.02248673	94.98891272	92.06464344
190807A00036	8/7/2019	1.75	8/7/2023	8/7/2019	115.83639	112.6064575	109.4832621	106.4627071	103.5408759	100.7140228	97.97856496	95.33107432	92.76826986
190807A00053	8/7/2019	1.66	8/6/2021	8/7/2019	104.7846	103.8663906	102.9642124	102.0776439	101.2062826	100.34974	99.50764042	98.67962102	97.86533092
190219A00026	2/19/2019	2.8	2/22/2022	2/19/2019	109.22146	107.7094316	106.2260519	104.770573	103.342273	101.9404543	100.5644427	99.21358641	97.88725505
190227A00005	2/27/2019	2.87	2/27/2024	2/27/2019	123.08602	119.070224	115.2081768	111.4931648	107.9188042	104.479023	101.1680448	97.98037231	94.91077249
190305A00010	3/5/2019	2.84	3/7/2022	3/5/2019	109.52524	107.9701428	106.44523	104.9496927	103.4827526	102.0436583	100.631684	99.24612889	97.88631562
190308A00003	3/8/2019	2.69	3/8/2021	3/8/2019	102.83084	102.3740964	101.9214074	101.4727237	101.027992	100.5871603	100.1501773	99.71699271	99.28755702
190326A00003	3/26/2019	2.57	3/27/2023	3/26/2019	115.96745	113.1554537	110.4269649	107.7789995	105.2087036	102.7133428	100.2902964	97.9370523	95.6512013
190327A00041	3/27/2019	2.44	3/26/2021	3/27/2019	103.03123	102.5211546	102.0161225	101.5160601	101.0208942	100.5305531	100.0449665	99.56406559	99.08778267
190328A00007	3/28/2019	2.38	3/26/2021	3/28/2019	103.06884	102.5578263	102.0518813	101.5509253	101.0548845	100.5636868	100.0772616	99.59553937	99.11845215

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190328A00018	3/28/2019	2.5	3/29/2021	3/28/2019	103.11357	102.5944468	102.0805422	101.5717742	101.0680661	100.5693428	100.0755305	99.58655712	99.10235178
190328A00024	3/28/2019	2.5	4/23/2021	3/28/2019	103.544	102.9496458	102.3621045	101.7812618	101.2070034	100.6392178	100.077796	99.5226313	98.97361954
190328A00079	3/28/2019	2.37	3/28/2024	3/28/2019	122.53066	118.405029	114.4416684	110.6333	106.9730126	103.4542427	100.0707551	96.81662439	93.68621783
190329A00034	3/29/2019	2.56	3/29/2022	3/29/2019	109.47741	107.8569493	106.2691978	104.7132484	103.1882261	101.693287	100.2276177	98.79043343	97.38097704
190412A00014	4/12/2019	2.63	4/12/2021	4/12/2019	103.42314	102.8617598	102.3064687	101.7571723	101.2137738	100.6761784	100.1442935	99.61802821	99.09729371
190416A00026	4/16/2019	2.63	10/14/2021	4/16/2019	106.74469	105.6034219	104.4865128	103.393185	102.3226972	101.2743388	100.2474287	99.24131334	98.25536549
190424A00027	4/24/2019	2.55	4/23/2021	4/24/2019	103.57282	102.9783659	102.3907298	101.8097929	101.2354412	100.667563	100.1060494	99.55079363	99.00169151
190426A00011	5/1/2019	2.56	3/15/2022	5/1/2019	109.24767	107.670777	106.1249432	104.6093255	103.1231118	101.6655188	100.23579	98.83319552	97.45703017
190501A00003	5/1/2019	2.61	5/1/2024	5/1/2019	123.28385	119.0502854	114.9862681	111.0840345	107.3362261	103.7358638	100.2763257	96.95132646	93.75489843
190503A00009	5/3/2019	2.57	5/3/2021	5/3/2019	103.76077	103.1359634	102.5186699	101.908751	101.3060751	100.7105137	100.1219414	99.54023573	98.96527706
190513A00013	5/13/2019	2.52	5/13/2024	5/13/2019	123.14462	118.8743968	114.7765184	110.8430309	107.0663968	103.4394707	99.9554765	96.60798585	93.39089797
190514A00015	5/14/2019	2.43	5/14/2021	5/14/2019	103.86599	103.2079317	102.558206	101.9166544	101.2831233	100.6574626	100.0395263	99.42917175	98.82625987
190514A00023	5/14/2019	2.43	5/14/2021	5/14/2019	103.86599	103.2079317	102.558206	101.9166544	101.2831233	100.6574626	100.0395263	99.42917175	98.82625987
190514A00056	5/14/2019	2.32	5/15/2023	5/14/2019	116.70043	113.7111148	110.8144572	108.0069753	105.2853486	102.6464044	100.0871107	97.60456827	95.19600394
190515A00011	5/15/2019	2.38	5/17/2021	5/15/2019	103.88557	103.2184696	102.5599294	101.9097847	101.2678755	100.6340457	100.0081435	99.39002061	98.77953249
190515A00057	5/15/2019	2.25	5/16/2022	5/15/2019	110.11353	108.3380278	106.6004613	104.899688	103.2346085	101.6041676	100.0073516	98.44318648	96.91073562
190520A00025	5/20/2019	2.32	5/20/2021	5/20/2019	103.99353	103.315812	102.6469183	101.9866786	101.3349254	100.6914958	100.0562309	99.4289757	98.80957938
190521A00044	5/21/2019	2.47	5/17/2021	5/21/2019	103.94358	103.276269	102.6175182	101.9671647	101.3250486	100.6910138	100.0649084	99.44658411	98.83589636
190523A00020	5/23/2019	2.5	2/9/2024	5/23/2019	121.39437	117.4717754	113.697491	110.0651254	106.5685993	103.2021265	99.96019802	96.83756721	93.82923614
190524A00004	5/24/2019	2.27	5/24/2021	5/24/2019	104.02981	103.3399586	102.6592414	101.987479	101.3244956	100.6701196	100.0241842	99.38652679	98.75698881
190524A00014	5/24/2019	2.24	5/24/2022	5/24/2019	110.2344	108.4340214	106.6724673	104.9485526	103.2611397	101.6091366	99.99149522	98.40720901	96.85531064
190524A00040	5/24/2019	2.47	5/24/2024	5/24/2019	123.13965	118.8335133	114.7023832	110.7381198	106.9330165	103.2797713	99.77146271	96.40152717	93.16373836
190524A00044	5/24/2019	2.27	5/24/2021	5/24/2019	104.02981	103.3399586	102.6592414	101.987479	101.3244956	100.6701196	100.0241842	99.38652679	98.75698881
190528A00003	5/28/2019	2.42	5/31/2022	5/28/2019	110.33147	108.5153065	106.7385249	104.9999136	103.2983097	101.6325977	100.0017072	98.40461046	96.84032034
190529A00011	5/29/2019	2.36	5/30/2023	5/29/2019	116.51176	113.4905359	110.5638657	107.7281635	104.9800036	102.3161153	99.73337429	97.2287955	94.79952521
190529A00012	5/29/2019	2.34	11/29/2021	5/29/2019	107.23704	105.9467439	104.6873794	103.4578437	102.2570869	101.0841078	99.93795136	98.81770574	97.72250003
190529A00032	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190529A00050	5/29/2019	2.31	11/29/2021	5/29/2019	107.20079	105.9107348	104.6516021	103.4222944	102.2217618	101.0490033	99.90306404	98.78303214	97.68803681
190529A00062	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190530A00009	5/30/2019	2.25	5/30/2024	5/30/2019	123.18023	118.8321308	114.6619266	110.6612959	106.822356	103.137641	99.60007668	96.20295744	92.93992445
190530A00021	5/30/2019	2.21	5/27/2022	5/30/2019	110.23409	108.4247847	106.6546337	104.9224348	103.2270357	101.5673311	99.94225988	98.35080336	96.79198279
190530A00030	5/30/2019	2.36	5/28/2021	5/30/2019	104.06053	103.3598683	102.6686145	101.986584	101.3135932	100.6494634	99.99402038	99.34709463	98.70852098
190531A00038	5/31/2019	2.82	5/31/2034	5/31/2019	190.96637	168.6383734	149.188314	132.2272832	117.4208808	104.4813241	93.16073464	83.2454207	74.55100469

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190603A00005	6/3/2019	2.25	6/3/2024	6/3/2019	122.43768	118.1119529	113.9633035	109.9834368	106.1645023	102.4990647	98.98007938	95.60086885	92.3551014
190604A00009	6/4/2019	2.23	6/4/2021	6/4/2019	104.08994	103.3681073	102.6562587	101.9541893	101.2616988	100.578592	99.90467918	99.23977572	98.58370185
190604A00028	6/4/2019	2.2	6/3/2022	6/4/2019	109.99878	108.1763793	106.3936666	104.6494101	102.9424323	101.2716042	99.63584267	98.03410793	96.46540146
190606A00029	6/6/2019	2.96	6/6/2034	6/6/2019	189.00497	167.0726029	147.9575701	131.2800059	116.7131931	103.9758797	92.82574064	83.05380984	74.47973253
190607A00003	6/7/2019	1.92	6/7/2022	6/7/2019	109.91346	108.0734977	106.273918	104.5134594	102.7909138	101.1051232	99.45497714	97.83941032	96.2574
190610A00016	6/10/2019	2.21	6/10/2022	6/10/2019	110.1353	108.2900847	106.4854235	104.7200428	102.9927268	101.3023102	99.64767554	98.02775086	96.44150725
190416A00018	4/16/2019	2.63	4/16/2021	4/16/2019	103.50014	102.9265925	102.3593996	101.7984576	101.2436635	100.6949163	100.1521175	99.61517065	99.08398128
190422A00008	4/22/2019	2.6	4/22/2021	4/22/2019	103.58992	102.9982966	102.4134277	101.8351959	101.2634885	100.6981956	100.1392094	99.58642478	99.03973891
190424A00019	4/24/2019	2.67	4/24/2024	4/24/2019	123.3888	119.17669	115.1325029	111.2485911	107.5176984	103.9329407	100.4877845	97.17602662	93.99177572
190426A00032	6/27/2019	2.55	6/27/2022	6/27/2019	111.04446	109.1382836	107.2749036	105.4529439	103.6710898	101.9280827	100.2227177	98.55384012	96.92034295
190430A00001	4/30/2019	2.47	5/2/2024	4/30/2019	123.55205	119.2893254	115.1978761	111.2698403	107.497762	103.8745705	100.3935586	97.04836121	93.83293577
190430A00003	4/30/2019	2.43	8/2/2023	4/30/2019	118.43059	115.1636746	112.0042368	108.9481609	105.9915143	103.1305361	100.3616285	97.68134841	95.08640055
190507A00006	5/7/2019	2.57	5/8/2023	5/7/2019	116.71918	113.7636671	110.8989808	108.1217459	105.4287352	102.8168641	100.2831831	97.82487028	95.43922556
190507A00023	5/7/2019	2.52	5/7/2021	5/7/2019	103.80059	103.1636918	102.5346008	101.9131729	101.2992684	100.6927513	100.0934888	99.50135109	98.91621166
190508A00008	5/8/2019	2.36	5/9/2022	5/8/2019	110.17768	108.4224333	106.7043806	105.0224159	103.3754725	101.7625261	100.1825919	98.63472307	97.11800913
190509A00029	5/9/2019	2.34	6/9/2022	5/9/2019	110.69168	108.8383811	107.0258419	105.2527865	103.5179922	101.820287	100.1585474	98.53169529	96.93869623
190510A00018	5/10/2019	2.54	5/10/2023	5/10/2019	116.67119	113.7100991	110.840162	108.0579838	105.36032	102.7440694	100.2062671	97.74407699	95.35478533
190514A00020	5/14/2019	2.66	5/14/2025	5/14/2019	130.35977	124.6787801	119.2801736	114.1483495	109.2686585	104.6273387	100.2114564	96.00885134	92.00808626
190514A00021	5/14/2019	2.72	11/14/2025	5/14/2019	133.95379	127.5337408	121.4623941	115.7188971	110.2837606	105.1387608	100.2668503	95.65207534	91.27949952
190514A00025	5/14/2019	2.43	5/14/2021	5/14/2019	103.86599	103.2079317	102.558206	101.9166544	101.2831233	100.6574626	100.0395263	99.42917175	98.82625987
190516A00010	5/16/2019	2.43	5/17/2021	5/16/2019	103.9178	103.2505804	102.5919232	101.9416625	101.2996383	100.6656947	100.0396796	99.42144477	98.81084575
190516A00027	5/16/2019	2.43	5/17/2021	5/16/2019	103.9178	103.2505804	102.5919232	101.9416625	101.2996383	100.6656947	100.0396796	99.42144477	98.81084575
190520A00007	5/20/2019	2.52	5/20/2024	5/20/2019	123.26726	118.9717875	114.8504182	110.8950825	107.098133	103.4523222	99.9507794	96.58698803	93.3547654
190520A00024	5/20/2019	2.32	5/20/2021	5/20/2019	103.99353	103.315812	102.6469183	101.9866786	101.3349254	100.6914958	100.0562309	99.4289757	98.80957938
190521A00068	5/21/2019	2.47	9/15/2021	5/21/2019	106.0671	105.0204569	103.9944198	102.9883875	102.0017791	101.0340358	100.0846202	99.15301509	98.2387226
190522A00019	5/23/2019	2.55	5/15/2024	5/23/2019	123.29744	119.0177619	114.9110017	110.9691653	107.1846816	103.5503737	100.0594364	96.70541392	93.4821802
190523A00006	5/23/2019	2.31	5/24/2021	5/23/2019	104.05641	103.3664529	102.6856365	102.0137758	101.350695	100.6962225	100.0501916	99.4124394	98.78280756
190523A00016	5/23/2019	2.48	2/15/2023	5/23/2019	115.01409	112.3444855	109.7507898	107.2304116	104.7808663	102.3997683	100.084827	97.83384174	95.64469804
190523A00018	5/23/2019	2.51	3/15/2024	5/23/2019	122.06166	118.0075339	114.1108931	110.3647596	106.7625059	103.2978337	99.96475542	96.75757706	93.67088226
190328A00031	4/25/2019	2.56	4/25/2024	4/25/2019	122.9822	118.7743438	114.7344258	110.8547892	107.1281713	103.5476819	100.106782	96.79926384	93.61923162
190329A00033	3/29/2019	2.52	3/29/2021	3/29/2019	103.12367	102.6045247	102.0905904	101.581793	101.0780557	100.5793034	100.0854623	99.59646037	99.11222666
190401A00007	4/1/2019	2.6	4/3/2023	4/1/2019	116.17248	113.3355544	110.5834179	107.913026	105.3214603	102.8059259	100.3637453	97.99235249	95.68928777
190416A00019	4/16/2019	2.7	4/14/2023	4/16/2019	116.64086	113.7625362	110.9709646	108.2629972	105.635618	103.0859401	100.6111998	98.20874962	95.87605331

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190424A00023	4/24/2019	2.43	4/24/2023	4/24/2019	116.63117	113.7092	110.8762598	108.1290717	105.4645049	102.8795644	100.3713851	97.93722411	95.57445541
190430A00021	4/30/2019	2.52	10/29/2021	4/30/2019	106.89619	105.7066876	104.5435826	103.4059993	102.2931049	101.2041022	100.1382282	99.0947521	98.07297353
190509A00019	5/9/2019	2.5	10/12/2021	5/9/2019	106.56912	105.4351847	104.3253215	103.2387708	102.1748036	101.1327211	100.1118529	99.11155588	98.13121274
190515A00013	5/15/2019	2.45	11/16/2020	5/15/2019	100.79837	100.6666235	100.535231	100.4041954	100.2735152	100.1431889	100.0132152	99.88359241	99.75431926
190521A00043	5/21/2019	2.54	5/22/2023	5/21/2019	116.88188	113.8804077	110.9722302	108.1538292	105.4218489	102.7730838	100.2044711	97.71308292	95.29611923
190528A00005	5/28/2019	2.42	6/15/2023	5/28/2019	116.96293	113.8834779	110.9017359	108.0139382	105.216491	102.5059663	99.87909291	97.3327477	94.86394782
190528A00007	5/28/2019	2.44	11/15/2023	5/28/2019	119.68181	116.0684399	112.5840667	109.223301	105.9810152	102.8523287	99.83259401	96.91738407	94.10248022
190528A00015	5/28/2019	2.42	5/27/2022	5/28/2019	110.26269	108.4590047	106.6942491	104.9672361	103.2768222	101.6219106	100.0014482	98.41442373	96.85986558
190529A00005	5/29/2019	2.31	11/29/2021	5/29/2019	107.20079	105.9107348	104.6516021	103.4222944	102.2217618	101.0490033	99.90306404	98.78303214	97.68803681
190529A00009	5/29/2019	2.35	5/31/2022	5/29/2019	110.20942	108.394359	106.6186599	104.8811107	103.1805493	101.5158607	99.88597519	98.28986542	96.72654471
190529A00013	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190529A00034	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00049	5/29/2019	2.32	6/29/2021	5/29/2019	104.57881	103.7794423	102.9922597	102.2169823	101.4533419	100.7010779	99.95993786	99.22967643	98.51005555
190529A00059	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00079	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190530A00003	5/30/2019	2.21	5/27/2022	5/30/2019	110.23409	108.4247847	106.6546337	104.9224348	103.2270357	101.5673311	99.94225988	98.35080336	96.79198279
190530A00031	5/30/2019	2.21	5/31/2022	5/30/2019	110.30273	108.4808984	106.6986691	104.9548224	103.2481863	101.5776369	99.94209557	98.34052705	96.77193691
190603A00032	6/3/2019	1.98	6/3/2022	6/3/2019	109.9518	108.1238656	106.3358345	104.5864709	102.8745884	101.1990492	99.55876214	97.95267969	96.37979617
190604A00008	6/4/2019	2.23	6/4/2021	6/4/2019	104.08994	103.3681073	102.6562587	101.9541893	101.2616988	100.578592	99.90467918	99.23977572	98.58370185
190403A00024	4/3/2019	2.61	7/29/2022	4/3/2019	111.745	109.7363781	107.7740388	105.8566303	103.9828488	102.1514375	100.3611838	98.61091822	96.89951187
190408A00004	4/8/2019	2.6	10/8/2021	4/8/2019	106.60323	105.4817014	104.3837206	103.3085494	102.2554824	101.2238428	100.2129815	99.22227528	98.25112556
190409A00041	4/9/2019	2.57	4/5/2021	4/9/2019	103.2726	102.73233	102.1977101	101.6686474	101.1450556	100.6268501	100.1139482	99.60626856	99.10373181
190411A00019	5/1/2019	2.63	5/2/2022	5/1/2019	110.19933	108.4699295	106.7767955	105.1188588	103.4950931	101.9045115	100.3461651	98.81914081	97.32255981
190422A00084	4/22/2019	2.6	4/22/2021	4/22/2019	103.58992	102.9982966	102.4134277	101.8351959	101.2634885	100.6981956	100.1392094	99.58642478	99.03973891
190424A00015	4/24/2019	2.55	4/26/2021	4/24/2019	103.62555	103.0220342	102.4255322	101.8359254	101.2530949	100.6769242	100.1072998	99.54411056	98.98724787
190426A00008	4/26/2019	2.57	4/26/2022	4/26/2019	109.993	108.2834346	106.6094835	104.9701081	103.3643097	101.7911278	100.2496383	98.73895165	97.25821128
190426A00016	5/1/2019	2.58	4/14/2023	5/1/2019	116.31727	113.4432908	110.6559703	107.9521559	105.3288346	102.7831226	100.3122589	97.91359893	95.584609
190429A00004	4/29/2019	2.65	4/15/2024	4/29/2019	123.14723	118.96984	114.9580943	111.1044937	107.40192	103.8436172	100.4231712	97.1344901	93.971786
190507A00014	5/7/2019	2.6	5/7/2024	5/7/2019	123.3516	119.0971015	115.0136265	111.0933108	107.3287038	103.712741	100.2387208	96.90028446	93.69139542
190509A00030	5/9/2019	2.48	11/9/2021	5/9/2019	107.04818	105.8227925	104.6253769	103.4549871	102.3107158	101.1916958	100.097098	99.02612932	97.97803059
190510A00004	5/10/2019	2.54	11/10/2020	5/10/2019	100.70674	100.5919485	100.4774264	100.3631776	100.249201	100.1354957	100.0220606	99.90889484	99.79599733
190514A00022	5/14/2019	2.49	11/16/2020	5/14/2019	100.80362	100.6718616	100.5404631	100.4094215	100.2787353	100.1484031	100.0184234	99.88879472	99.75951565
190515A00014	5/15/2019	2.26	5/14/2021	5/15/2019	103.8511	103.1918899	102.5410438	101.8984025	101.2638113	100.6371194	100.0181799	99.40684927	98.80298767

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190516A00012	5/16/2019	2.43	11/16/2021	5/16/2019	107.11491	105.8668123	104.6477162	103.4566189	102.2925638	101.1546378	100.0419682	98.95372104	97.88909856
190517A00017	5/17/2019	2.33	2/22/2021	5/17/2019	102.48786	102.0721912	101.6598944	101.2509296	100.8452562	100.4428347	100.0436261	99.64759178	99.25469409
190517A00019	5/17/2019	2.41	5/17/2021	5/17/2019	103.90491	103.2377361	102.5791257	101.9289114	101.2869332	100.6530351	100.0270651	99.40887511	98.79832044
190521A00027	5/21/2019	2.56	5/21/2024	5/21/2019	123.44258	119.1404857	115.0128374	111.0515453	107.2489429	103.5977649	100.0911239	96.72248778	93.48565941
190521A00028	5/21/2019	2.47	11/22/2021	5/21/2019	107.26895	106.0007611	104.7624668	103.553022	102.3714273	101.216729	100.0880164	98.98441966	97.90510731
190523A00007	5/23/2019	2.28	5/23/2022	5/23/2019	110.28607	108.4882066	106.7290653	105.007468	103.3222815	101.6724183	100.0568343	98.47452664	96.92453166
190523A00017	5/23/2019	2.51	3/15/2024	5/23/2019	122.06166	118.0075339	114.1108931	110.3647596	106.7625059	103.2978337	99.96475542	96.75757706	93.67088226
190524A00013	5/24/2019	2.39	5/24/2021	5/24/2019	104.01214	103.3236326	102.6442222	101.9737323	101.3119878	100.6588186	100.0140585	99.37754593	98.74912331
190524A00032	5/24/2019	2.45	5/24/2023	5/24/2019	116.66334	113.6586834	110.7475966	107.9265426	105.1921496	102.5411971	99.97060818	97.4774419	95.05888599
190320A00005	3/20/2019	2.75	3/20/2024	3/20/2019	123.04974	118.9610537	115.0316296	111.2543901	107.6226108	104.1299029	100.7701939	97.53771028	94.42696094
190321A00018	3/21/2019	2.45	3/21/2022	3/21/2019	109.44767	107.8467874	106.2778456	104.7399643	103.2322982	101.754032	100.3043794	98.88258167	97.48790637
190327A00006	3/27/2019	2.53	3/27/2024	3/27/2019	122.34856	118.2494328	114.3109736	110.5259941	106.8876732	103.3895318	100.0254137	96.7894675	93.67612996
190328A00025	3/28/2019	2.51	7/23/2021	3/28/2019	105.14223	104.2672229	103.4067493	102.5604517	101.7279818	100.9090026	100.1031881	99.31022257	98.52980041
190411A00017	4/15/2019	2.65	4/15/2024	4/15/2019	123.14723	118.96984	114.9580943	111.1044937	107.40192	103.8436172	100.4231712	97.1344901	93.971786
190411A00029	4/11/2019	2.46	4/11/2024	4/11/2019	123.12798	118.9441051	114.9262164	111.0667923	107.3587002	103.7951704	100.3697755	97.076411	93.90927689
190424A00007	4/24/2019	2.66	4/24/2024	4/24/2019	123.3502	119.1388135	115.0953273	111.2120957	107.4818635	103.8977473	100.4532141	97.14206157	93.95839899
190426A00009	4/26/2019	2.63	4/26/2024	4/26/2019	123.27082	119.0542001	115.0059197	111.1182984	107.3840527	103.796273	100.3484022	97.03421537	93.84780087
190429A00076	4/29/2019	2.52	4/29/2021	4/29/2019	103.6605	103.0479666	102.4426559	101.8444374	101.2531873	100.6687843	100.0911101	99.52004908	98.95548829
190507A00004	5/7/2019	2.88	5/7/2029	5/7/2019	159.66811	147.3403848	136.0691159	125.7578516	116.319438	107.6750733	99.75346622	92.49008366	85.82647748
190507A00027	5/7/2019	2.59	5/7/2024	5/7/2019	123.31259	119.0588307	114.9760707	111.0564488	107.2925154	103.6772065	100.2038214	96.86600195	93.6577123
190514A00013	5/14/2019	2.49	11/16/2020	5/14/2019	100.80362	100.6718616	100.5404631	100.4094215	100.2787353	100.1484031	100.0184234	99.88879472	99.75951565
190514A00014	5/14/2019	2.43	5/14/2021	5/14/2019	103.86599	103.2079317	102.558206	101.9166544	101.2831233	100.6574626	100.0395263	99.42917175	98.82625987
190515A00003	5/15/2019	2.45	11/16/2020	5/15/2019	100.79837	100.6666235	100.535231	100.4041954	100.2735152	100.1431889	100.0132152	99.88359241	99.75431926
190515A00023	5/15/2019	2.25	5/16/2022	5/15/2019	110.11353	108.3380278	106.6004613	104.899688	103.2346085	101.6041676	100.0073516	98.44318648	96.91073562
190515A00024	5/15/2019	2.38	5/17/2021	5/15/2019	103.88557	103.2184696	102.5599294	101.9097847	101.2678755	100.6340457	100.0081435	99.39002061	98.77953249
190515A00059	5/15/2019	2.38	5/14/2021	5/15/2019	103.83419	103.176245	102.5266335	101.8851951	101.251776	100.6262265	100.0084003	99.39815498	98.79535135
190520A00036	5/20/2019	2.43	11/19/2021	5/20/2019	107.16817	105.9101792	104.6816353	103.4815123	102.3088324	101.1626621	100.0421101	98.94632452	97.87449083
190521A00023	5/21/2019	2.47	11/22/2021	5/21/2019	107.26895	106.0007611	104.7624668	103.553022	102.3714273	101.216729	100.0880164	98.98441966	97.90510731
190523A00024	5/23/2019	2.47	10/31/2022	5/23/2019	113.10357	110.7920569	108.5400542	106.3456057	104.2068393	102.1219586	100.0892391	98.10702544	96.1737272
190524A00002	5/24/2019	2.39	5/24/2021	5/24/2019	104.01214	103.3236326	102.6442222	101.9737323	101.3119878	100.6588186	100.0140585	99.37754593	98.74912331
190529A00089	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190603A00047	6/3/2019	2.22	6/2/2023	6/3/2019	116.16514	113.1392075	110.2082589	107.3686814	104.6170233	101.9499896	99.36443377	96.85734959	94.42586379
190808A00011	8/8/2019	1.86	8/8/2023	8/8/2019	116.18722	112.9488369	109.817521	106.7891624	103.8598293	101.025762	98.28336412	95.62919494	93.05996143

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190808A00045	8/8/2019	1.86	8/8/2023	8/8/2019	116.18722	112.9488369	109.817521	106.7891624	103.8598293	101.025762	98.28336412	95.62919494	93.05996143
190809A00010	8/9/2019	1.88	8/8/2024	8/9/2019	121.99697	117.4612153	113.1187928	108.9604656	104.9774901	101.1615832	97.50489551	93.99998645	90.63980083
190812A00003	8/12/2019	1.67	8/12/2024	8/12/2019	122.02885	117.4556585	113.0785027	108.887968	104.8751438	101.0315911	97.34931564	93.82074148	90.43868729
190813A00016	8/13/2019	1.88	8/13/2024	8/13/2019	122.07492	117.5210127	113.1618323	108.9880526	104.9908391	101.1618246	97.49308116	93.97709541	90.60674431
190813A00020	8/13/2019	1.89	8/12/2022	8/13/2019	110.58454	108.5451325	106.5535885	104.6084973	102.7084975	100.8522762	99.03856739	97.26614992	95.53384538
190815A00007	8/15/2019	1.81	7/6/2023	8/15/2019	115.53008	112.4041489	109.3792781	106.4515276	103.6171431	100.8725443	98.21431528	95.63919526	93.14407053
190816A00006	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190816A00025	8/16/2019	1.89	3/16/2021	8/16/2019	102.60019	102.120646	101.6455843	101.1749437	100.7086628	100.246681	99.78893895	99.3353783	98.88594186
190816A00033	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190819A00026	8/19/2019	1.62	8/19/2024	8/19/2019	121.92585	117.3313504	112.9347381	108.7264672	104.6975031	100.8392916	97.14373161	93.60314785	90.21026677
190819A00030	8/19/2019	2.01	8/20/2029	8/19/2019	152.37113	139.9510586	128.6361755	118.3224168	108.9160068	100.3323971	92.49531624	85.33592197	78.79204374
190820A00013	8/20/2019	1.76	8/21/2023	8/20/2019	116.07992	112.801947	109.6336141	106.57066	103.6090138	100.7447849	97.97425381	95.29386398	92.70021339
190820A00021	8/20/2019	2.13	8/20/2029	8/20/2019	151.16434	138.918231	127.7580608	117.5818636	108.297731	99.82277438	92.08219895	85.00847617	78.54060509
190821A00021	8/21/2019	1.79	8/18/2022	8/21/2019	110.46026	108.4043491	106.3970699	104.4369757	102.5226726	100.652817	98.82611346	97.04131301	95.29721072
190826A00006	8/26/2019	1.72	8/26/2024	8/26/2019	121.5974	117.0101309	112.6208196	108.4198996	104.398315	100.5474932	96.85931569	93.32609233	89.94053598
190826A00034	8/26/2019	1.9	8/24/2029	8/26/2019	151.2695	138.8845506	127.6042306	117.3243463	107.9510208	99.39962873	91.59384158	84.46477703	77.95023862
190826A00056	8/26/2019	1.72	8/26/2024	8/26/2019	121.5974	117.0101309	112.6208196	108.4198996	104.398315	100.5474932	96.85931569	93.32609233	89.94053598
190826A00057	8/26/2019	1.87	8/26/2025	8/26/2019	127.88259	121.9047834	116.2409784	110.8730818	105.7841324	100.9582268	96.38044754	92.03679754	87.91413827
190829A00011	8/30/2019	1.98	12/15/2020	8/30/2019	101.19264	100.9784578	100.7651986	100.5528531	100.3414152	100.1308792	99.92123917	99.71248938	99.50462411
190905A00015	9/5/2019	1.78	9/6/2022	9/5/2019	110.73588	108.618897	106.5532678	104.5374247	102.5698585	100.6491159	98.77379759	96.94255536	95.15409018
190913A00025	9/13/2019	2.04	3/15/2022	9/13/2019	108.45862	106.8880346	105.3483882	103.838847	102.358602	100.9068726	99.48290558	98.08597368	96.7153745
190916A00008	9/16/2019	2.05	9/16/2021	9/16/2019	105.65691	104.6095277	103.582837	102.5762322	101.5891283	100.6209626	99.67119399	98.73930173	97.82478462
190524A00026	5/28/2019	2.45	6/15/2023	5/28/2019	117.04951	113.9688121	110.9858608	108.0968829	105.2982837	102.5866343	99.9586625	97.41124451	94.9413966
190528A00039	5/28/2019	2.38	11/29/2021	5/28/2019	107.28537	105.994756	104.7350825	103.5052429	102.304187	101.1309137	99.98446778	98.86393722	97.768451
190529A00002	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00067	5/29/2019	2.32	6/1/2021	5/29/2019	104.10147	103.3886384	102.6855433	101.9919823	101.3077625	100.6326964	99.96660129	99.30929933	98.66061737
190529A00080	5/29/2019	2.31	11/29/2021	5/29/2019	107.20079	105.9107348	104.6516021	103.4222944	102.2217618	101.0490033	99.90306404	98.78303214	97.68803681
190530A00008	5/30/2019	2.38	5/30/2025	5/30/2019	130.28429	124.5169618	119.0396288	113.8360898	108.8911452	104.1905268	99.72083495	95.46948092	91.42463246
190530A00025	5/30/2019	2.36	6/1/2021	5/30/2019	104.12896	103.416024	102.7128235	102.0191581	101.3348351	100.6596666	99.99347005	99.33606764	98.68728617
190530A00034	5/30/2019	2.44	5/30/2024	5/30/2019	123.12467	118.7991872	114.6501623	110.6693555	106.8489676	103.1816104	99.66028244	96.27834615	93.02950631
190531A00009	6/5/2019	2.1	6/3/2022	6/5/2019	110.16245	108.3325912	106.5426789	104.7914695	103.0777753	101.4004577	99.75842445	98.1506273	96.57605962
190603A00019	6/3/2019	2.19	6/3/2021	6/3/2019	104.04544	103.3267989	102.6180546	101.9190059	101.2294548	100.5492089	99.87808084	99.2158882	98.56245349
190604A00030	6/4/2019	2.2	6/3/2022	6/4/2019	109.99878	108.1763793	106.3936666	104.6494101	102.9424323	101.2716042	99.63584267	98.03410793	96.46540146

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190604A00047	6/4/2019	2.31	12/4/2020	6/4/2019	101.07919	100.8963859	100.7142435	100.5327623	100.3519387	100.1717691	99.99224992	99.81337772	99.63514894
190605A00055	6/5/2019	2.11	6/6/2022	6/5/2019	109.89116	108.0605054	106.2698758	104.5180266	102.8037651	101.1259473	99.48347621	97.87529909	96.30040509
190606A00026	6/6/2019	2.23	6/6/2023	6/6/2019	116.2616	113.2213377	110.2768511	107.4244738	104.6607121	101.9822322	99.38585073	96.8685273	94.4273565
190614A00005	6/14/2019	1.99	6/14/2022	6/14/2019	110.15588	108.2920128	106.4694259	104.6868128	102.9429258	101.2365696	99.56659842	97.93191382	96.33146174
190620A00055	6/25/2019	2.08	4/17/2023	6/25/2019	115.01841	112.1523819	109.3730978	106.6773959	104.06225	101.5247642	99.06216643	96.67180189	94.35112756
190620A00057	6/25/2019	2.09	5/15/2023	6/25/2019	115.50297	112.5425027	109.6736599	106.893012	104.1972812	101.5833358	99.04818192	96.58895689	94.20292217
190625A00007	6/25/2019	2.06	6/25/2021	6/25/2019	104.31405	103.527899	102.7535657	101.990782	101.2392908	100.498843	99.76919629	99.05011581	98.34137327
190625A00012	6/25/2019	2.12	6/25/2024	6/25/2019	122.28648	117.8890519	113.6743606	109.6337055	105.7588635	102.0420548	98.47591578	95.05347337	91.76812193
190625A00024	6/25/2019	2.26	6/25/2025	6/25/2019	129.0317	123.2359632	117.7352314	112.5128207	107.5530889	102.8413658	98.36388663	94.10773062	90.06076378
190628A00024	6/28/2019	2.09	6/28/2022	6/28/2019	110.22236	108.3208399	106.4620896	104.6447337	102.867456	101.1289967	99.42814965	97.76375918	96.1347175
190701A00023	7/1/2019	1.95	7/1/2024	7/1/2019	122.5222	118.07752	113.8187669	109.7370364	105.8239155	102.071447	98.47210162	95.01875204	91.70464821
190703A00004	7/3/2019	2.08	7/5/2022	7/3/2019	110.31838	108.3950314	106.5152168	104.6775585	102.8807346	101.1234787	99.4045766	97.72286401	96.07722365
190611A00007	6/11/2019	2.25	6/10/2022	6/11/2019	110.20622	108.3603592	106.5550592	104.7890517	103.0611206	101.3701001	99.71487252	98.09436565	96.50755023
190617A00026	6/17/2019	2.17	6/17/2022	6/17/2019	110.18259	108.3153633	106.4895458	104.7038267	102.9569516	101.2477186	99.57497619	97.9376201	96.33459099
190619A00007	6/19/2019	2.21	6/20/2022	6/19/2019	110.30538	108.4277589	106.5919363	104.7965829	103.040427	101.3222504	99.64088646	97.99521636	96.3841672
190619A00024	6/19/2019	2.21	7/19/2022	6/19/2019	110.81121	108.8413809	106.9166183	105.0355604	103.1968979	101.3993724	99.64177276	97.92293383	96.24173374
190620A00026	6/20/2019	2.09	6/20/2023	6/20/2019	116.09354	113.0103415	110.0255053	107.1352146	104.3358332	101.6238936	98.99608791	96.44925903	93.9803924
190620A00045	6/20/2019	2.14	6/20/2024	6/20/2019	122.28383	117.9034133	113.7044173	109.6782355	105.8167311	102.1122043	98.55736521	95.14530944	91.86949479
190621A00021	6/21/2019	2.12	6/21/2022	6/21/2019	110.15988	108.2805363	106.4430833	104.6461913	102.8885836	101.1690376	99.48638237	97.83949508	96.22729909
190621A00023	6/21/2019	1.93	6/21/2022	6/21/2019	110.16612	108.280476	106.4369707	104.6342611	102.8710602	101.146136	99.45830825	97.8064457	96.18946364
190624A00036	6/24/2019	1.95	12/28/2020	6/24/2019	101.42583	101.1739582	100.9233438	100.6739731	100.425837	100.1789263	99.93323182	99.68874472	99.44545606
190625A00017	6/25/2019	2.02	12/15/2022	6/25/2019	112.84464	110.3962398	108.0138154	105.6950782	103.4378411	101.2400122	99.09958903	97.01465458	94.98337229
190626A00004	6/26/2019	2.15	6/26/2024	6/26/2019	122.42492	118.021395	113.8009452	109.7548564	105.8748851	102.1532323	98.58251675	95.15574906	91.86630824
190626A00010	6/26/2019	2.1	6/26/2023	6/26/2019	116.22226	113.1177766	110.1128415	107.2035741	104.3862736	101.6574126	99.01362684	96.45170655	93.96858783
190701A00008	7/3/2019	2.1	7/3/2023	7/3/2019	116.33717	113.2087538	110.181192	107.2505448	104.4130585	101.6651543	99.00341903	96.4245955	93.92557436
190701A00017	7/1/2019	1.9	7/1/2022	7/1/2019	110.2785	108.3609319	106.4867495	104.6545512	102.8629996	101.1108149	99.39677184	97.7196964	96.07846331
190703A00022	7/3/2019	2.08	7/5/2022	7/3/2019	110.31838	108.3950314	106.5152168	104.6775585	102.8807346	101.1234787	99.4045766	97.72286401	96.07722365
190719A00002	7/19/2019	2.12	4/21/2022	7/19/2019	109.17191	107.4844898	105.8320445	104.2135659	102.6280809	101.0746532	99.55238164	98.0603985	96.59786786
190724A00021	7/24/2019	2.33	7/23/2027	7/24/2019	143.45465	134.3924462	125.9649632	118.1244226	110.826881	104.0319026	97.70226228	91.80367467	86.30454783
190726A00017	7/26/2019	2.44	7/24/2026	7/26/2019	136.60669	129.196823	122.2369492	115.6973962	109.5505953	103.7709245	98.33456201	93.21934978	88.40466967
190731A00029	7/31/2019	1.93	7/29/2022	7/31/2019	110.79174	108.7860673	106.8267577	104.9124493	103.0418332	101.2136477	99.4266757	97.6797434	95.97171806
190802A00016	8/2/2019	2.01	7/12/2023	8/2/2019	116.21533	113.0607869	110.008548	107.0546448	104.1952956	101.4268913	98.74598581	96.14928764	93.63365167
190802A00029	8/2/2019	2	8/2/2022	8/2/2019	110.63903	108.6293367	106.6661856	104.7482238	102.8741446	101.0426877	99.25263678	97.5028181	95.79209836

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190805A00009	8/5/2019	1.91	8/5/2024	8/5/2019	122.07576	117.5483687	113.2135458	109.0621137	105.0853799	101.2751087	97.62349471	94.1231383	90.76702233
190805A00037	8/5/2019	2.17	8/6/2029	8/5/2019	153.84434	141.4124103	130.080485	119.7454807	110.3144654	101.7036103	93.83725678	86.64708278	80.07135819
190523A00034	5/23/2019	2.31	5/21/2021	5/23/2019	104.00435	103.3235886	102.6517328	101.9886059	101.3340386	100.6878656	100.0499262	99.42006335	98.79812441
190528A00009	5/28/2019	2.45	5/15/2024	5/28/2019	122.90484	118.6326246	114.5331031	110.5982902	106.8206229	103.1929322	99.7084202	96.36063852	93.14346774
190529A00020	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190530A00026	5/30/2019	2.36	5/26/2021	5/30/2019	104.02637	103.3318192	102.646525	101.9703019	101.3029707	100.644357	99.99429066	99.35260611	98.71914199
190530A00029	5/30/2019	2.25	5/30/2024	5/30/2019	123.18023	118.8321308	114.6619266	110.6612959	106.822356	103.137641	99.60007668	96.20295744	92.93992445
190603A00040	6/3/2019	2.11	6/3/2022	6/3/2019	109.84106	108.0200913	106.238784	104.4959064	102.7902821	101.1207828	99.48632594	97.88587243	96.3184244
190603A00050	6/3/2019	2.19	6/3/2021	6/3/2019	104.04544	103.3267989	102.6180546	101.9190059	101.2294548	100.5492089	99.87808084	99.2158882	98.56245349
190604A00007	6/4/2019	2.23	7/8/2021	6/4/2019	104.66228	103.8351288	103.0210214	102.2196504	101.4307186	100.653938	99.88902927	99.13572176	98.39375291
190604A00033	6/4/2019	2.23	6/4/2021	6/4/2019	104.08994	103.3681073	102.6562587	101.9541893	101.2616988	100.578592	99.90467918	99.23977572	98.58370185
190605A00005	6/5/2019	2.01	6/5/2024	6/5/2019	122.32498	117.9729723	113.7999166	109.7973987	105.9574531	102.2725383	98.73551013	95.33959879	92.07838629
190610A00017	6/10/2019	2.29	6/10/2024	6/10/2019	122.71758	118.3626834	114.1868415	110.1816315	106.3390782	102.6516308	99.11213739	95.71382115	92.4502579
190617A00027	6/17/2019	2.21	6/16/2023	6/17/2019	116.37387	113.2996026	110.3230374	107.4403969	104.6480833	101.9426651	99.320868	96.77956617	94.31577427
190619A00009	6/19/2019	2.26	6/19/2024	6/19/2019	122.75145	118.3653118	114.1606058	110.1287385	106.2615802	102.5514368	98.99102379	95.57344146	92.29215162
190620A00025	6/20/2019	2.04	6/20/2022	6/20/2019	109.99892	108.1241548	106.2911336	104.4985287	102.7450698	101.0295405	99.35077534	97.70765691	96.09911362
190701A00007	7/2/2019	2.09	7/1/2022	7/2/2019	110.27192	108.3608157	106.4928361	104.6665977	102.8807737	101.1340944	99.42534394	97.75335726	96.11701745
190703A00015	7/3/2019	2.02	1/6/2021	7/3/2019	101.59038	101.3124485	101.0360473	100.7611611	100.4877772	100.2158834	99.94546729	99.67651693	99.4090203
190711A00019	7/11/2019	2.19	7/11/2023	7/11/2019	116.73323	113.5741848	110.5174649	107.5590993	104.6953037	101.9224665	99.23714023	96.63603199	94.11599575
190715A00024	7/15/2019	2.17	7/15/2021	7/15/2019	104.73231	103.8834852	103.0483928	102.2266975	101.4180785	100.6222255	99.8388376	99.0676236	98.30830117
190715A00029	7/17/2019	2.16	4/18/2022	7/17/2019	109.18692	107.5084338	105.8646294	104.2545064	102.6771045	101.1315	99.61680316	98.13215734	96.67673705
190724A00022	7/24/2019	1.94	7/23/2021	7/24/2019	104.79738	103.9221251	103.0614415	102.214972	101.3823668	100.5632871	99.75740539	98.9644045	98.18397742
190729A00008	7/29/2019	2.18	1/29/2024	7/29/2019	120.04593	116.1847966	112.468636	108.8912397	105.446699	102.1293889	98.93395274	95.85528798	92.88853268
190730A00007	7/30/2019	2.19	7/30/2024	7/30/2019	123.14832	118.6192313	114.2818006	110.1269289	106.1459959	102.3308332	98.67369786	95.16724852	91.80452204
190802A00004	8/2/2019	2	8/2/2022	8/2/2019	110.63903	108.6293367	106.6661856	104.7482238	102.8741446	101.0426877	99.25263678	97.5028181	95.79209836
190604A00031	6/4/2019	2.25	6/5/2023	6/4/2019	116.3017	113.2641133	110.3221237	107.4720797	104.7104976	102.0340526	99.43956998	96.92401724	94.48449645
190604A00048	6/4/2019	2.23	6/4/2021	6/4/2019	104.08994	103.3681073	102.6562587	101.9541893	101.2616988	100.578592	99.90467918	99.23977572	98.58370185
190606A00009	6/6/2019	2	6/4/2021	6/6/2019	104.03185	103.3088886	102.5959505	101.8928263	101.1993145	100.5152188	99.84034844	99.17451782	98.51754615
190606A00025	6/6/2019	2.18	6/4/2021	6/6/2019	104.05515	103.3334502	102.6217366	101.9198009	101.2274427	100.544467	99.87068399	99.20590913	98.54996263
190610A00018	6/10/2019	2.52	6/10/2026	6/10/2019	136.39217	129.147989	122.3358914	115.9277359	109.8973678	104.2204693	98.87441977	93.83816806	89.09211465
190620A00044	6/20/2019	2.04	6/20/2022	6/20/2019	109.99892	108.1241548	106.2911336	104.4985287	102.7450698	101.0295405	99.35077534	97.70765691	96.09911362
190621A00040	6/21/2019	2.12	6/21/2021	6/21/2019	104.29346	103.5194783	102.7569619	102.005653	101.2653058	100.5356816	99.81654853	99.10768157	98.40886193
190625A00013	6/25/2019	2.01	6/24/2022	6/25/2019	110.01054	108.1233388	106.2783784	104.4743045	102.7098244	100.9837006	99.29474771	97.64182989	96.02385788

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190626A00033	6/26/2019	2.08	6/22/2021	6/26/2019	104.28005	103.5031065	102.7377127	101.9836108	101.2405523	100.5082959	99.78660727	99.07525876	98.37402931
190701A00028	7/1/2019	2.11	7/1/2021	7/1/2019	104.45076	103.645876	102.8533483	102.0728985	101.3042523	100.5471434	99.80131383	99.06651308	98.34249801
190703A00017	7/3/2019	2.33	5/4/2026	7/3/2019	134.5824	127.5242618	120.8812235	114.6266528	108.7357665	103.1854934	97.95434673	93.02230714	88.37071438
190709A00018	7/9/2019	2.24	7/9/2024	7/9/2019	123.00784	118.5499675	114.2786935	110.185123	106.2608444	102.4978968	98.88874276	95.42624315	92.10363322
190710A00012	7/10/2019	2.18	7/10/2023	7/10/2019	116.68718	113.5319183	110.4787979	107.5238523	104.6633009	101.8935366	99.21111586	96.61275044	94.09529889
190724A00005	7/24/2019	2.12	7/26/2021	7/24/2019	104.86613	103.9832386	103.1151648	102.2615405	101.4220073	100.5962185	99.78383862	98.98454312	98.19801783
190802A00003	8/2/2019	2.01	8/2/2024	8/2/2019	122.44629	117.9213986	113.5884987	109.4384628	105.4626425	101.6528426	98.00129547	94.50063614	91.14387963
190802A00015	8/2/2019	2	2/15/2023	8/2/2019	113.80416	111.1498496	108.5711072	106.0653507	103.6301057	101.2629968	98.96174248	96.72415133	94.54811762
190805A00029	8/5/2019	1.93	8/5/2022	8/5/2019	110.55161	108.5337061	106.5627278	104.6373027	102.7561084	100.9178691	99.12135431	97.36537626	95.64878865
190806A00026	8/6/2019	1.71	8/7/2023	8/6/2019	116.31928	113.0681173	109.9246407	106.8847022	103.9443412	101.0997709	98.34736938	95.68367166	93.10536183
190808A00024	8/8/2019	1.69	2/8/2024	8/8/2019	119.16874	115.2705182	111.5203727	107.9119012	104.4390169	101.095927	97.87711704	94.77733591	91.7915819
190808A00041	8/8/2019	1.74	8/6/2021	8/8/2019	104.85474	103.9361931	103.0336799	102.1467804	101.2750922	100.4182265	99.57580764	98.74747273	97.93287081
190812A00006	8/12/2019	1.86	8/12/2024	8/12/2019	121.97518	117.426607	113.0724298	108.90334	104.9105238	101.0856325	97.42075587	93.90839693	90.54144792
190813A00030	8/13/2019	1.71	8/15/2022	8/13/2019	110.63755	108.5818459	106.5746963	104.6146574	102.7003396	100.8304031	99.00355662	97.21855465	95.47419585
190814A00006	8/14/2019	1.84	8/14/2023	8/14/2019	116.21896	112.9610686	109.8114602	106.7659537	103.8205525	100.9714356	98.21494949	95.54759912	92.96604061
190529A00006	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00016	5/29/2019	2.32	5/28/2021	5/29/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190529A00028	5/29/2019	2.38	5/29/2024	5/29/2019	122.86919	118.5518842	114.4106441	110.4372525	106.6239312	102.9633117	99.44841082	96.07260825	92.82962483
190530A00002	5/30/2019	2.24	5/28/2021	5/30/2019	104.07849	103.3764563	102.6838663	102.0005351	101.3262782	100.6609155	100.004272	99.35617718	98.71646486
190530A00024	5/30/2019	2.25	5/30/2024	5/30/2019	123.18023	118.8321308	114.6619266	110.6612959	106.822356	103.137641	99.60007668	96.20295744	92.93992445
190530A00042	5/30/2019	2.3	11/30/2020	5/30/2019	101.03527	100.8636113	100.692529	100.5220247	100.3520953	100.1827381	100.0139501	99.8457285	99.67807047
190531A00003	5/31/2019	2.31	10/29/2021	5/31/2019	106.66135	105.4732746	104.3115677	103.175361	102.0638224	100.9761552	99.91159698	98.86941732	97.84891635
190531A00007	6/5/2019	2.14	6/4/2021	6/5/2019	104.12932	103.4059817	102.6926649	101.9891657	101.2952825	100.610819	99.93558446	99.26939305	98.61206401
190531A00035	5/31/2019	2.29	5/31/2022	5/31/2019	110.10481	108.2906898	106.5159184	104.7792796	103.0796118	101.4158005	99.78677636	98.19151252	96.62902275
190531A00047	5/31/2019	2.32	5/28/2021	5/31/2019	104.0335	103.3329356	102.6417839	101.9598545	101.2869639	100.6229333	99.9675886	99.32076025	98.68228311
190603A00003	6/3/2019	2.05	6/3/2024	6/3/2019	122.45094	118.1033307	113.9342294	109.9352501	106.098459	102.4163432	98.88178563	95.4880411	92.22871458
190603A00031	6/3/2019	1.98	6/3/2022	6/3/2019	109.9518	108.1238656	106.3358345	104.5864709	102.8745884	101.1990492	99.55876214	97.95267969	96.37979617
190606A00027	6/6/2019	2.51	6/5/2026	6/6/2019	136.24332	129.0220582	122.2306074	115.8410365	109.8273808	104.1654948	98.83291438	93.80873019	89.07347159
190607A00005	6/7/2019	1.92	6/7/2022	6/7/2019	109.91346	108.0734977	106.273918	104.5134594	102.7909138	101.1051232	99.45497714	97.83941032	96.2574
190607A00012	6/7/2019	2.13	6/7/2022	6/7/2019	109.94315	108.1089409	106.3148867	104.5597363	102.8422909	101.1614016	99.51596606	97.9049269	96.32726881
190607A00019	6/7/2019	2.04	12/7/2020	6/7/2019	101.10523	100.9135833	100.7226772	100.5325036	100.3430583	100.154337	99.96633545	99.77904956	99.59247516
190607A00023	6/7/2019	1.92	6/7/2022	6/7/2019	109.91346	108.0734977	106.273918	104.5134594	102.7909138	101.1051232	99.45497714	97.83941032	96.2574
190611A00046	6/11/2019	2.25	6/13/2022	6/11/2019	110.25759	108.4020044	106.5873535	104.81235	103.075761	101.3764053	99.71315024	98.08490973	96.4906414

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190613A00022	6/13/2019	2.2	6/14/2021	6/13/2019	104.23605	103.483453	102.7417009	102.0105633	101.2898134	100.5792307	99.87860127	99.18771679	98.50637487
190621A00015	6/21/2019	2.2	6/21/2024	6/21/2019	122.54314	118.1542736	113.9472396	109.9134127	106.0446331	102.3331794	98.77174195	95.35339753	92.07158654
190621A00019	6/21/2019	2.12	6/21/2021	6/21/2019	104.29346	103.5194783	102.7569619	102.005653	101.2653058	100.5356816	99.81654853	99.10768157	98.40886193
190621A00061	6/21/2019	2.12	6/21/2021	6/21/2019	104.29346	103.5194783	102.7569619	102.005653	101.2653058	100.5356816	99.81654853	99.10768157	98.40886193
190624A00008	6/24/2019	2.08	6/24/2022	6/24/2019	110.13755	108.2491655	106.4030373	104.5978178	102.8322135	101.1049863	99.41495037	97.76096913	96.14195285
190917A00028	9/17/2019	2.02	3/1/2023	9/17/2019	114.09512	111.3893487	108.7618336	106.2098593	103.7308232	101.3222284	98.98167895	96.70687469	94.49560718
190920A00018	9/20/2019	1.98	9/20/2022	9/20/2019	111.37206	109.2041873	107.0899257	105.0276027	103.0156118	101.0524077	99.13650332	97.26646756	95.44092236
190920A00021	9/20/2019	1.96	9/18/2026	9/20/2019	135.81258	128.1673094	121.0002705	114.2790755	107.9736958	102.0562755	96.50096334	91.28375834	86.38236839
190923A00012	9/23/2019	2.43	9/25/2034	9/23/2019	186.07309	163.553184	144.01286	127.0401471	112.2820251	99.43572953	88.24137363	78.47568527	69.946685
190926A00019	9/26/2019	1.94	9/26/2024	9/26/2019	123.03319	118.3098057	113.7943591	109.4765812	105.346769	101.3957489	97.6148448	93.9958481	90.53099004
190930A00014	9/30/2019	1.89	9/30/2022	9/30/2019	111.34646	109.14723	107.0031427	104.9124545	102.8734904	100.8846406	98.94435664	97.0511491	95.20358472
191001A00005	10/1/2019	1.8	4/18/2023	10/1/2019	114.27643	111.4172509	108.6447454	105.9557525	103.3472446	100.8163247	98.36021968	95.97627413	93.66194443
191002A00017	10/2/2019	1.84	10/2/2024	10/2/2019	122.69233	117.9556762	113.4284422	109.1002406	104.9612614	101.0022316	97.21438345	93.58942372	90.11950538
191003A00013	10/3/2019	1.66	10/3/2022	10/3/2019	110.90665	108.7031909	106.5551513	104.4607744	102.4183708	100.4263164	98.48304984	96.58706945	94.73693033
191003A00033	10/3/2019	1.54	10/3/2022	10/3/2019	111.06311	108.8500785	106.6928436	104.5896314	102.5387367	100.5385207	98.58740821	96.68388427	94.82649153
191004A00011	10/4/2019	1.77	10/5/2020	10/4/2019	100.07736	100.0634251	100.0494996	100.0355877	100.0216897	100.0078053	99.99393464	99.98007765	99.96623429
191009A00028	10/9/2019	1.76	10/9/2024	10/9/2019	122.44812	117.6936982	113.1503461	108.8075598	104.6554129	100.6845253	96.88603021	93.25154272	89.7731312
191018A00005	10/18/2019	1.89	5/2/2022	10/18/2019	108.97223	107.2534323	105.5707055	103.9229848	102.3092494	100.7285175	99.17984533	97.66232459	96.17508118
191021A00034	10/22/2019	1.9	10/17/2022	10/22/2019	111.6322	109.3790193	107.1831962	105.0428786	102.9562891	100.9217211	98.93753491	97.00215505	95.11406687
191025A00010	10/25/2019	2.24	7/25/2028	10/25/2019	146.54585	136.0305808	126.3462289	117.4228026	109.1965434	101.6093432	94.60821665	88.14482557	82.17504956
191104A00024	11/4/2019	2.26	8/3/2029	11/4/2019	152.27429	140.0440089	128.8915915	118.7163791	109.4275946	100.9433237	93.18960897	86.09964105	79.61303545
191105A00007	11/5/2019	1.98	11/5/2026	11/5/2019	136.69314	128.843854	121.4948608	114.6116335	108.162211	102.1169907	96.44854236	91.13143695	86.14209063
191107A00011	11/8/2019	2.02	2/24/2023	11/8/2019	114.00996	111.32214	108.7116253	106.1757465	103.7119467	101.3177723	98.99086837	96.72897349	94.52991588
191120A00002	11/20/2019	1.73	11/20/2020	11/20/2019	100.78426	100.6410765	100.4983117	100.3559656	100.2140361	100.0725214	99.93141975	99.79072919	99.65044792
191120A00027	11/20/2019	1.73	11/20/2020	11/20/2019	100.78426	100.6410765	100.4983117	100.3559656	100.2140361	100.0725214	99.93141975	99.79072919	99.65044792
191120A00031	11/20/2019	1.69	11/21/2022	11/20/2019	112.15162	109.7764463	107.4639361	105.2119741	103.0185338	100.8816742	98.79953468	96.77033149	94.7923536
191121A00034	11/21/2019	2.28	11/2/2029	11/21/2019	153.81173	141.1474636	129.6273926	119.1419846	109.592729	100.8909754	92.9569006	85.71858763	79.1112055
191126A00015	11/27/2019	1.88	10/14/2022	11/27/2019	111.54252	109.2992969	107.1130305	104.9818859	102.9041043	100.8779964	98.90193918	96.97437272	95.09379712
190605A00004	6/5/2019	2.11	1/12/2022	6/5/2019	107.63032	106.2220261	104.84586	103.5007199	102.185556	100.8993664	99.64119376	98.41012302	97.20527912
190605A00020	6/5/2019	2.19	2/5/2024	6/5/2019	120.20136	116.3137426	112.5728349	108.9723311	105.5062327	102.1688292	98.95468314	95.85861509	92.87569036
190606A00023	6/6/2019	2.23	6/6/2024	6/6/2019	122.40902	118.0736646	113.9161503	109.928126	106.1016912	102.4293642	98.90405754	95.51905401	92.26798505
190611A00006	6/11/2019	2.26	6/11/2021	6/11/2019	104.2289	103.4853839	102.7524597	102.0298991	101.3174832	100.6149994	99.92224091	99.23900667	98.56510113
190612A00011	6/12/2019	2.2	6/30/2022	6/12/2019	110.45724	108.5473336	106.6804867	104.855312	103.0704809	101.3247218	99.61681736	97.94560145	96.30995637

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190613A00011	6/13/2019	2.26	6/13/2024	6/13/2019	122.6487	118.2849484	114.1009935	110.0883591	106.2390201	102.5453799	99.00024426	95.59679696	92.32857741
190620A00024	6/20/2019	2.05	6/21/2021	6/20/2019	104.24135	103.4675863	102.7052847	101.9541884	101.2140516	100.4846356	99.76570864	99.05704571	98.35842805
190621A00041	6/21/2019	2.12	6/21/2022	6/21/2019	110.15988	108.2805363	106.4430833	104.6461913	102.8885836	101.1690376	99.48638237	97.83949508	96.22729909
190625A00021	6/25/2019	1.88	6/26/2023	6/25/2019	116.15941	113.0427598	110.0263358	107.1062163	104.2786668	101.5401275	98.88720418	96.31665885	93.82540096
190626A00009	6/26/2019	2.08	6/25/2021	6/26/2019	104.32916	103.542952	102.7685556	102.0057094	101.2541565	100.5136474	99.78394024	99.06479986	98.35599801
190626A00019	6/26/2019	2.1	6/24/2022	6/26/2019	110.17384	108.285116	106.4386542	104.6331073	102.8671818	101.1396394	99.44929398	97.79500892	96.17569426
190627A00010	6/27/2019	1.97	6/27/2024	6/27/2019	122.5368	118.1053802	113.8588559	109.7883937	105.8856421	102.1427023	98.55209913	95.10675615	91.79997091
190628A00004	6/28/2019	2.12	6/28/2023	6/28/2019	116.31402	113.201724	110.189395	107.273126	104.4491942	101.7140513	99.06431384	96.49675384	94.00829041
190701A00006	7/1/2019	2.11	7/1/2021	7/1/2019	104.45076	103.645876	102.8533483	102.0728985	101.3042523	100.5471434	99.80131383	99.06651308	98.34249801
190710A00022	7/10/2019	2.22	7/10/2024	7/10/2019	122.94238	118.4825496	114.209509	110.1143591	106.1886799	102.4245026	98.81428164	95.35086984	92.02749452
190712A00001	7/12/2019	2.05	7/12/2024	7/12/2019	123.11465	118.6221442	114.3185348	110.1947978	106.2423999	102.4532651	98.8197467	95.33460199	91.99096814
190717A00007	7/17/2019	2.18	10/14/2022	7/17/2019	112.18683	109.9365718	107.7434133	105.6055168	103.5211194	101.488528	99.50611552	97.57231847	95.68563339
190724A00025	7/24/2019	1.96	7/24/2023	7/24/2019	116.8536	113.6386978	110.5290765	107.5206901	104.6096721	101.7923273	99.06512313	96.42468161	93.86777139
190730A00016	7/30/2019	2	7/30/2024	7/30/2019	123.2061	118.6526141	114.2923923	110.1162355	106.1154291	102.2817169	98.60727379	95.08468145	91.70690492
190801A00007	8/1/2019	2.17	8/2/2021	8/1/2019	105.02608	104.1209893	103.2314478	102.3570543	101.4974245	100.652187	99.82098285	99.00346479	98.19929705
190805A00004	8/5/2019	1.7	8/5/2022	8/5/2019	110.46001	108.4364845	106.4601331	104.5295714	102.6434669	100.8005343	98.99953376	97.23926919	95.51858606
190805A00007	8/5/2019	1.88	8/5/2022	8/5/2019	110.45465	108.4377089	106.4676767	104.5431794	102.662895	100.8255484	99.02990929	97.27479064	95.55904653
190806A00027	8/6/2019	1.71	8/7/2023	8/6/2019	116.31928	113.0681173	109.9246407	106.8847022	103.9443412	101.0997709	98.34736938	95.68367166	93.10536183
190805A00050	8/5/2019	1.91	8/5/2024	8/5/2019	122.07576	117.5483687	113.2135458	109.0621137	105.0853799	101.2751087	97.62349471	94.1231383	90.76702233
190806A00010	8/6/2019	1.7	8/5/2022	8/6/2019	110.46001	108.4364845	106.4601331	104.5295714	102.6434669	100.8005343	98.99953376	97.23926919	95.51858606
190807A00012	8/7/2019	1.76	2/7/2023	8/7/2019	113.06744	110.4498107	107.9060586	105.4336909	103.0303099	100.6936126	98.42138651	96.21150518	94.06192467
190807A00023	8/7/2019	1.77	8/7/2024	8/7/2019	121.5203	116.9974861	112.6674292	108.5209262	104.5492624	100.7441822	97.0978619	93.60288505	90.25221918
190808A00025	8/8/2019	1.7	8/8/2024	8/8/2019	122.09273	117.5316288	113.1655035	108.9850224	104.9813453	101.1460985	97.47134818	93.94957483	90.57364942
190808A00052	8/8/2019	1.7	8/8/2024	8/8/2019	122.09273	117.5316288	113.1655035	108.9850224	104.9813453	101.1460985	97.47134818	93.94957483	90.57364942
190809A00011	8/9/2019	1.69	8/9/2024	8/9/2019	122.0663	117.5023838	113.1337055	108.950909	104.9451367	101.1079991	97.4315472	93.90824781	90.530959
190809A00015	8/9/2019	1.88	8/9/2022	8/9/2019	110.51767	108.4880031	106.5057907	104.5696346	102.6781903	100.8301614	99.02429723	97.25939133	95.53427935
190813A00008	8/13/2019	1.88	8/13/2024	8/13/2019	122.07492	117.5210127	113.1618323	108.9880526	104.9908391	101.1618246	97.49308116	93.97709541	90.60674431
190813A00022	8/13/2019	1.88	8/13/2024	8/13/2019	122.07492	117.5210127	113.1618323	108.9880526	104.9908391	101.1618246	97.49308116	93.97709541	90.60674431
190814A00005	8/14/2019	1.65	8/14/2024	8/14/2019	121.97547	117.3966807	113.0144351	108.8192867	104.80229	100.9549739	97.26931409	93.73770688	90.35294514
190815A00025	8/15/2019	1.97	8/15/2029	8/15/2019	151.8782	139.5010401	128.2241878	117.9441567	108.5676812	100.0106612	92.19721983	85.05886185	78.53372224
190815A00032	8/15/2019	1.83	8/13/2021	8/15/2019	104.90704	103.968659	103.0470043	102.1416346	101.252121	100.3780496	99.5190209	98.674649	97.84456109
190816A00013	8/16/2019	2.2	8/16/2029	8/16/2019	151.83748	139.5760362	128.3998517	118.2071753	108.9062817	100.4144356	92.65696891	85.56645799	79.08198758
190816A00021	8/16/2019	1.77	8/16/2023	8/16/2019	116.03457	112.7731355	109.6203148	106.5719064	103.6238943	100.7724396	98.01387146	95.344679	92.76150328

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190819A00004	8/20/2019	1.81	5/24/2024	8/20/2019	120.52977	116.2735729	112.1908736	108.2735934	104.514081	100.9050873	97.43974112	94.11152702	90.91426465
190820A00008	8/20/2019	1.76	8/20/2024	8/20/2019	121.67615	117.1071428	112.7345088	108.5487958	104.5410541	100.7028094	97.02603489	93.5031251	90.1268718
190821A00028	8/21/2019	1.8	8/21/2023	8/21/2019	116.20357	112.9237156	109.7535445	106.6887985	103.7254053	100.8594725	98.0872794	95.405268	92.81003498
190821A00030	8/21/2019	1.8	8/21/2024	8/21/2019	121.86082	117.2847294	112.9054107	108.7133804	104.6996663	100.8557731	97.17365414	93.64568583	90.26464276
190826A00018	8/26/2019	1.9	8/27/2029	8/26/2019	151.31184	138.9129208	127.6208107	117.3310199	107.949417	99.39115424	91.5797101	84.44603382	77.92778238
190827A00001	8/27/2019	1.74	8/27/2024	8/27/2019	121.6976	117.1049693	112.7106344	108.505007	104.479011	100.6240542	96.93200055	93.3951431	90.00617921
190829A00012	8/29/2019	1.54	8/29/2024	8/29/2019	121.73824	117.1141555	112.6905975	108.457825	104.4066252	100.5282792	96.81453246	93.25756757	89.84997894
190904A00007	9/4/2019	1.69	9/1/2023	9/4/2019	116.02904	112.7168493	109.5165251	106.4236768	103.4341121	100.543826	97.74899185	95.04595214	92.43120993
190708A00001	7/8/2019	1.99	7/8/2022	7/8/2019	110.55965	108.6186311	106.7217584	104.8676393	103.0549434	101.2823954	99.54877208	97.85289949	96.19365059
190711A00026	7/11/2019	2.17	7/11/2022	7/11/2019	110.58347	108.6398641	106.7404503	104.8838556	103.068764	101.2939125	99.55808866	97.86012791	96.19891124
190712A00009	7/12/2019	2.19	7/12/2023	7/12/2019	116.74965	113.5872627	110.5273668	107.5659944	104.6993577	101.9238416	99.23599419	96.63251864	94.11026455
190712A00018	7/12/2019	2.25	7/12/2024	7/12/2019	123.09874	118.6292922	114.3472064	110.2435552	106.3098958	102.5382367	98.92101013	95.45104705	92.12155344
190715A00014	7/15/2019	2.16	3/30/2022	7/15/2019	108.8705	107.2520023	105.6662456	104.1123157	102.5893353	101.0964589	99.63287114	98.19778553	96.7904433
190715A00027	7/15/2019	1.99	7/15/2021	7/15/2019	104.70548	103.8551169	103.0185367	102.195402	101.3853905	100.58819	99.80349809	99.03102205	98.27047805
190715A00028	7/17/2019	2.17	1/18/2022	7/17/2019	107.76216	106.3469103	104.9618384	103.6059882	102.2784422	100.9783222	99.70478605	98.45702675	97.23427002
190716A00046	7/16/2019	2.19	7/18/2022	7/16/2019	110.75686	108.7905146	106.8691257	104.991327	103.1558089	101.361312	99.60662556	97.89058435	96.21206701
190719A00006	7/19/2019	2.17	7/19/2024	7/19/2019	122.88469	118.3967025	114.097592	109.9783749	106.0305456	102.2460496	98.61725663	95.13693603	91.79823308
190724A00046	7/24/2019	2.12	7/23/2021	7/24/2019	104.81621	103.9427043	103.0837208	102.2388961	101.407882	100.5903422	99.78595062	98.99439209	98.21536123
190726A00005	7/26/2019	1.97	7/26/2022	7/26/2019	110.81913	108.8221104	106.8711408	104.9648583	103.1019509	101.2811547	99.50125176	97.76106832	96.0594724
190729A00007	7/29/2019	2.17	7/28/2023	7/29/2019	116.95225	113.7371159	110.6272405	107.6185987	104.7073454	101.8898034	99.1624557	96.52193699	93.96502646
190729A00017	7/29/2019	1.97	7/29/2021	7/29/2019	104.92249	104.028271	103.1492386	102.2850072	101.4352057	100.599475	99.77746808	98.96884905	98.17329302
190731A00004	7/31/2019	2.18	7/31/2024	7/31/2019	123.1231	118.5912532	114.25129	110.0940994	106.1110518	102.2939695	98.63510042	95.12709395	91.76297799
190806A00007	8/6/2019	1.88	8/5/2022	8/6/2019	110.45465	108.4377089	106.4676767	104.5431794	102.662895	100.8255484	99.02990929	97.27479064	95.55904653
190807A00014	8/7/2019	1.75	8/7/2023	8/7/2019	115.83639	112.6064575	109.4832621	106.4627071	103.5408759	100.7140228	97.97856496	95.33107432	92.76826986
190808A00015	8/8/2019	1.92	8/9/2021	8/8/2019	104.92304	103.9968924	103.0870403	102.1930559	101.3145267	100.4510546	99.60225491	98.76775595	97.94719857
190808A00023	8/8/2019	1.68	11/8/2023	8/8/2019	117.68904	114.1152286	110.6689938	107.3450172	104.138237	101.0438343	98.05721969	95.1740208	92.39007035
190808A00050	8/8/2019	1.7	8/8/2024	8/8/2019	122.09273	117.5316288	113.1655035	108.9850224	104.9813453	101.1460985	97.47134818	93.94957483	90.57364942
190809A00012	8/9/2019	1.69	8/9/2024	8/9/2019	122.0663	117.5023838	113.1337055	108.950909	104.9451367	101.1079991	97.4315472	93.90824781	90.530959
190809A00020	8/9/2019	2.44	8/9/2034	8/9/2019	185.51673	163.2565442	143.9164833	127.0962177	112.4522208	99.68945802	88.55432842	78.82866319	70.32461856
190814A00009	8/14/2019	1.84	8/14/2024	8/14/2019	121.92196	117.3678384	113.0086169	108.834954	104.8380013	101.0093783	97.34114535	93.82577784	90.45614256
190814A00010	8/14/2019	1.84	4/5/2023	8/14/2019	114.17996	111.3631964	108.6309393	105.9801424	103.4078893	100.9113874	98.48796149	96.13504838	93.85019107
190802A00032	8/2/2019	2.01	8/2/2024	8/2/2019	122.44629	117.9213986	113.5884987	109.4384628	105.4626425	101.6528426	98.00129547	94.50063614	91.14387963
190807A00021	8/7/2019	2	8/7/2026	8/7/2019	133.94082	126.5619681	119.6351896	113.1305029	107.0200615	101.2779914	95.88024151	90.80444669	86.02980152

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190807A00054	8/7/2019	1.66	8/6/2021	8/7/2019	104.7846	103.8663906	102.9642124	102.0776439	101.2062826	100.34974	99.50764042	98.67962102	97.86533092
190809A00001	8/9/2019	1.88	8/9/2022	8/9/2019	110.51767	108.4880031	106.5057907	104.5696346	102.6781903	100.8301614	99.02429723	97.25939133	95.53427935
190809A00005	8/9/2019	1.88	7/11/2022	8/9/2019	110.04265	108.1042455	106.2099275	104.3583314	102.5481437	100.7781042	99.04700317	97.35367846	95.69701352
190813A00007	8/13/2019	1.89	8/15/2022	8/13/2019	110.63192	108.5829503	106.5822632	104.6284233	102.7200519	100.8558202	99.0344465	97.25469494	95.51537313
190813A00021	8/13/2019	1.89	8/14/2023	8/13/2019	116.37245	113.112234	109.9603583	106.9126413	103.9650845	101.1138652	98.35532794	95.68597617	93.10246435
190814A00003	8/14/2019	2.01	8/14/2029	8/14/2019	152.28408	139.8921286	128.6010108	118.307243	108.9175582	100.3478514	92.52223749	85.37221068	78.83589359
190814A00008	8/14/2019	1.84	8/14/2024	8/14/2019	121.92196	117.3678384	113.0086169	108.834954	104.8380013	101.0093783	97.34114535	93.82577784	90.45614256
190815A00008	8/15/2019	1.82	8/15/2022	8/15/2019	110.49409	108.4465125	106.447189	104.494686	102.5876258	100.72468	98.90456792	97.12605422	95.3879472
190819A00020	8/19/2019	1.79	8/19/2022	8/19/2019	110.47573	108.4166345	106.4063129	104.4433086	102.5262216	100.653703	98.82445217	97.03721513	95.29078225
190820A00019	8/20/2019	1.76	8/21/2023	8/20/2019	116.07992	112.801947	109.6336141	106.57066	103.6090138	100.7447849	97.97425381	95.29386398	92.70021339
190821A00009	8/21/2019	1.79	8/22/2022	8/21/2019	110.52213	108.4534936	106.4340432	104.4623073	102.5368688	100.656362	98.81947097	97.02492656	95.27150501
190821A00016	8/21/2019	1.79	8/22/2022	8/21/2019	110.52213	108.4534936	106.4340432	104.4623073	102.5368688	100.656362	98.81947097	97.02492656	95.27150501
190826A00028	8/26/2019	1.56	8/26/2022	8/26/2019	110.51081	108.4229534	106.38512	104.3958066	102.4535607	100.5569835	98.70472696	96.89549212	95.12802655
190827A00002	8/27/2019	1.74	8/27/2024	8/27/2019	121.6976	117.1049693	112.7106344	108.505007	104.479011	100.6240542	96.93200055	93.3951431	90.00617921
190828A00009	8/28/2019	1.71	8/28/2024	8/28/2019	121.58502	116.9913748	112.5962333	108.3899829	104.3635321	100.5082746	96.8160613	93.27917317	89.89029644
190828A00015	8/28/2019	2.04	8/28/2029	8/28/2019	150.33508	138.0959216	126.9455929	116.7815725	107.5114801	99.05202509	91.32807011	84.27179619	77.82195658
190829A00031	8/29/2019	1.54	8/29/2024	8/29/2019	121.73824	117.1141555	112.6905975	108.457825	104.4066252	100.5282792	96.81453246	93.25756757	89.84997894
190904A00001	9/4/2019	1.5	9/4/2024	9/4/2019	121.65929	117.0162557	112.5754212	108.326929	104.2614519	100.3701648	96.6447148	93.07719322	89.66010979
190904A00020	9/4/2019	1.69	9/1/2023	9/4/2019	116.02904	112.7168493	109.5165251	106.4236768	103.4341121	100.543826	97.74899185	95.04595213	92.43120993
190905A00035	9/5/2019	1.82	9/7/2021	9/5/2019	105.29549	104.2778911	103.2798792	102.3008926	101.3403913	100.3978555	99.47278488	98.56469751	97.67312901
190910A00027	9/10/2019	1.86	9/9/2022	9/10/2019	110.94667	108.8180285	106.7412351	104.7147008	102.7368954	100.8063456	98.92163316	97.08139191	95.2843057
190816A00036	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190820A00020	8/20/2019	1.76	8/20/2024	8/20/2019	121.67615	117.1071428	112.7345088	108.5487958	104.5410541	100.7028094	97.02603489	93.5031251	90.1268718
190820A00029	8/20/2019	1.76	8/20/2024	8/20/2019	121.67615	117.1071428	112.7345088	108.5487958	104.5410541	100.7028094	97.02603489	93.5031251	90.1268718
190826A00004	8/26/2019	1.74	8/26/2022	8/26/2019	110.48394	108.4035963	106.372974	104.3905787	102.4549703	100.5647617	98.7186163	96.91524554	95.15340706
190826A00025	8/26/2019	1.76	11/26/2024	8/26/2019	123.18178	118.2510145	113.5450038	109.0522401	104.7618766	100.6636829	96.74800588	93.00573352	89.42826112
190829A00005	8/30/2019	2.06	8/30/2023	8/30/2019	117.15268	113.8296815	110.6185712	107.5149665	104.5146837	101.6137259	98.8082737	96.09467607	93.46944205
190829A00015	8/30/2019	2.06	8/30/2022	8/30/2019	111.18952	109.0898202	107.0405291	105.0401277	103.0871488	101.1801794	99.3178581	97.49887293	95.72195911
190904A00008	9/4/2019	1.69	9/3/2024	9/4/2019	121.59106	116.9770301	112.5632	108.3398378	104.2977384	100.4281904	96.7229466	93.17419733	89.77454449
190905A00002	9/5/2019	1.78	9/6/2022	9/5/2019	110.73588	108.618897	106.5532678	104.5374247	102.5698585	100.6491159	98.77379759	96.94255536	95.15409018
190906A00012	9/6/2019	1.76	9/6/2024	9/6/2019	121.93735	117.3058552	112.8756611	108.6369662	104.5804971	100.6974793	96.97960665	93.41901467	90.00825418
190910A00004	9/11/2019	1.86	9/11/2024	9/11/2019	122.44578	117.7865275	113.3303765	109.0674066	104.9882322	101.0839741	97.34622925	93.76704274	90.33888127
190912A00028	9/12/2019	1.94	9/12/2024	9/12/2019	122.80622	118.1360473	113.6695146	109.3966651	105.3080842	101.3948654	97.64858002	94.06124934	90.62531771

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190918A00007	9/20/2019	1.95	12/15/2022	9/20/2019	112.68128	110.2348083	107.854267	105.5373729	103.2819402	101.085878	98.94718505	96.86394537	94.83432345
190919A00007	9/19/2019	2.04	9/19/2024	9/19/2019	123.35251	118.646752	114.1470602	109.8433176	105.7259548	101.7859216	98.01465607	94.40405521	90.94644803
190923A00020	9/23/2019	2.05	9/24/2029	9/23/2019	153.31559	140.7072505	129.2318037	118.7815075	109.259381	100.5780831	92.65890925	85.43089775	78.83003204
190924A00026	9/24/2019	1.9	7/22/2022	9/24/2019	110.27284	108.299393	106.371215	104.4869562	102.6453139	100.8450341	99.08490971	97.36377813	95.6805193
190924A00035	9/24/2019	1.88	9/13/2024	9/24/2019	122.56387	117.8952553	113.4304129	109.1593722	105.0727048	101.1614914	97.4172921	93.83211742	90.3984021
190925A00004	9/25/2019	1.7	9/24/2024	9/25/2019	122.84178	118.1044884	113.5761416	109.2464113	105.1055344	101.1442812	97.35392311	93.72620254	90.2533049
190925A00011	9/25/2019	1.89	9/25/2024	9/25/2019	122.7996	118.0845564	113.5769969	109.2666794	105.1439274	101.199592	97.42501994	93.81202419	90.35285596
190926A00034	9/26/2019	1.88	9/26/2022	9/26/2019	111.26101	109.075348	106.9441884	104.8658215	102.8386007	100.8609425	98.93132386	97.04827927	95.21039817
190927A00012	10/1/2019	1.96	10/1/2024	10/1/2019	123.20101	118.4569715	113.9224361	109.5870234	105.4409271	101.4748779	97.68011069	94.04833438	90.57170375
190930A00069	9/30/2019	1.9	9/29/2023	9/30/2019	117.13451	113.7124822	110.4089567	107.2191614	104.1385415	101.162752	98.28764667	95.50926799	92.82383699
191001A00009	10/1/2019	1.84	10/1/2020	10/1/2019	100.01567	100.0128787	100.0100942	100.007312	100.0045323	100.0017551	99.99898027	99.99620787	99.9934379
190625A00003	6/25/2019	2.03	6/27/2022	6/25/2019	110.09629	108.1990401	106.3444142	104.5310427	102.7576155	101.0228789	99.32563222	97.6647251	96.03905473
190625A00016	6/25/2019	2.13	6/25/2024	6/25/2019	122.32703	117.9288118	113.7133507	109.6719492	105.7963834	102.0788726	98.51205219	95.08894848	91.80295503
190626A00015	6/26/2019	2.15	6/26/2024	6/26/2019	122.42492	118.021395	113.8009452	109.7548564	105.8748851	102.1532323	98.58251675	95.15574906	91.86630824
190627A00052	6/27/2019	2.1	6/27/2022	6/27/2019	110.22393	108.3254767	106.4696724	104.6551448	102.8805832	101.1447333	99.44639373	97.78441366	96.15768968
190701A00009	7/3/2019	2.14	7/2/2024	7/3/2019	122.4839	118.0591425	113.8190216	109.7547239	105.8579163	102.1207157	98.53566129	95.09568915	91.7941081
190703A00021	7/3/2019	2.11	7/2/2021	7/3/2019	104.46738	103.6593755	102.8638254	102.080446	101.3089598	100.5490976	99.80059837	99.06320868	98.33668271
190708A00021	7/8/2019	1.99	7/8/2022	7/8/2019	110.55965	108.6186311	106.7217584	104.8676393	103.0549434	101.2823954	99.54877208	97.85289949	96.19365059
190711A00020	7/11/2019	1.98	7/11/2022	7/11/2019	110.59056	108.640343	106.734577	104.8718809	103.0509277	101.2704442	99.52920844	97.82604672	96.15983149
190711A00022	7/11/2019	2	7/11/2023	7/11/2019	116.7598	113.5869634	110.5171761	107.5464336	104.6709154	101.8869761	99.19113593	96.58007185	94.05060941
190711A00025	7/11/2019	2.18	7/12/2021	7/11/2019	104.68994	103.8504642	103.0244209	102.2114899	101.4113606	100.6237323	99.84831344	99.08482173	98.33298335
190724A00024	7/24/2019	2.49	7/24/2029	7/24/2019	156.98668	144.4620142	133.0379924	122.611961	113.0913386	104.3925821	96.44026218	89.16623716	82.50891518
190729A00006	7/29/2019	2.14	7/29/2022	7/29/2019	110.84334	108.843598	106.8899701	104.9811046	103.1157026	101.2925119	99.51032461	97.76797539	96.06433964
190805A00011	8/5/2019	1.91	8/5/2024	8/5/2019	122.07576	117.5483687	113.2135458	109.0621137	105.0853799	101.2751087	97.62349471	94.1231383	90.76702233
190807A00027	8/7/2019	1.77	8/7/2024	8/7/2019	121.5203	116.9974861	112.6674292	108.5209262	104.5492624	100.7441822	97.0978619	93.60288505	90.25221918
190807A00060	8/7/2019	1.95	2/8/2021	8/7/2019	102.0568	101.683399	101.3127305	100.9447652	100.5794737	100.2168267	99.85679572	99.49935236	99.14446878
190809A00008	8/9/2019	1.87	8/3/2023	8/9/2019	116.14	112.9181717	109.8024032	106.788635	103.8729894	101.0517571	98.32138978	95.67849145	93.11981144
190815A00012	8/15/2019	1.81	8/15/2024	8/15/2019	121.81092	117.2557345	112.8956522	108.721312	104.7238506	100.8948736	97.22642815	93.71097788	90.34137849
190816A00022	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190816A00035	8/16/2019	1.77	8/16/2023	8/16/2019	116.03457	112.7731355	109.6203148	106.5719064	103.6238943	100.7724396	98.01387146	95.344679	92.76150328
190820A00005	8/21/2019	1.76	2/27/2023	8/21/2019	113.39695	110.7066818	108.0940995	105.5565161	103.0913528	100.6961357	98.36849	96.1061363	93.90688551
190821A00002	8/21/2019	1.61	8/21/2024	8/21/2019	121.91424	117.3132938	112.9107742	108.6971	104.6632003	100.8004877	97.10082978	93.55652246	90.16026536
190822A00002	8/22/2019	1.89	8/20/2021	8/22/2019	105.07342	104.1126466	103.1693797	102.2431465	101.3334887	100.4399644	99.56214718	98.69962551	97.85200221

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190827A00022	8/27/2019	1.83	8/27/2021	8/27/2019	105.12989	104.147252	103.1829017	102.2363357	101.3070658	100.3946214	99.49854883	98.61841062	97.75378479
190828A00031	8/28/2019	1.71	8/28/2024	8/28/2019	121.58502	116.9913748	112.5962333	108.3899829	104.3635321	100.5082746	96.8160613	93.27917317	89.89029644
190829A00021	8/30/2019	2.18	8/30/2021	8/30/2019	105.50846	104.5146096	103.539414	102.5823505	101.6429174	100.7206311	99.81502566	98.92565184	98.05207639
190829A00045	8/29/2019	1.9	8/28/2026	8/29/2019	133.58768	126.1443237	119.1614398	112.6082042	106.456008	100.6782877	95.25036873	90.14932206	85.35383225
190830A00021	8/30/2019	1.76	8/30/2024	8/30/2019	121.82837	117.2231229	112.8170772	108.6005834	104.5645076	100.7002041	96.99948696	93.45460281	90.05820588
190904A00019	9/4/2019	1.69	9/4/2024	9/4/2019	121.60646	116.9886706	112.5713816	108.3448408	104.2998231	100.4275981	96.71990153	93.16890762	89.76720333
190905A00003	9/5/2019	1.76	9/5/2024	9/5/2019	121.92173	117.2939999	112.8672737	108.6317656	104.5782227	100.6978887	96.98247527	93.42413382	90.01543019
190906A00018	9/6/2019	1.76	9/6/2024	9/6/2019	121.93735	117.3058552	112.8756611	108.6369662	104.5804971	100.6974793	96.97960665	93.41901467	90.00825418
190912A00027	9/12/2019	1.95	9/12/2023	9/12/2019	117.01967	113.6557757	110.4065618	107.2674761	104.2341783	101.3025249	98.46855865	95.72849919	93.07873408
190912A00034	9/12/2019	1.76	9/12/2022	9/12/2019	111.18777	109.0395946	106.9440923	104.8996354	102.9046591	100.9576572	99.05718045	97.20183302	95.39027074
190913A00014	9/13/2019	2.08	9/13/2024	9/13/2019	123.42572	118.7392574	114.2571411	109.9693762	105.8665122	101.9396089	98.18020612	94.58029543	91.13229333
190918A00016	9/18/2019	1.78	9/18/2024	9/18/2019	123.09217	118.3706144	113.856379	109.5392569	105.4096014	101.4582903	97.67669435	94.05664804	90.59042188
190924A00010	9/24/2019	1.95	9/24/2021	9/24/2019	105.68766	104.615185	103.5643911	102.534622	101.5252517	100.5356787	99.56532502	98.61363502	97.68007426
190925A00018	9/25/2019	1.7	9/25/2024	9/25/2019	122.85795	118.1168219	113.5849545	109.251992	105.1081507	101.1441812	97.3513369	93.72134361	90.24637121
190926A00004	9/26/2019	1.93	9/21/2021	9/26/2019	105.61867	104.5559265	103.5144828	102.4937062	101.4929863	100.5117364	99.54939239	98.60541202	97.67927345
190926A00007	9/26/2019	1.88	9/26/2022	9/26/2019	111.26101	109.075348	106.9441884	104.8658215	102.8386007	100.8609425	98.93132386	97.04827927	95.21039817
190926A00016	9/26/2019	2.28	5/24/2030	9/26/2019	156.77706	143.1465387	130.8144247	119.6499756	109.5362584	100.3686232	92.05335418	84.50647572	77.65269419
190926A00017	9/26/2019	2.23	9/26/2029	9/26/2019	152.74981	140.2805684	128.9277499	118.5854484	109.1583169	100.5604646	92.714475	85.55053049	79.00563143
190930A00041	9/30/2019	1.94	10/25/2021	9/30/2019	106.18235	105.0097601	103.8629501	102.7410802	101.643344	100.5689691	99.51721622	98.48737664	97.47877111
191002A00015	10/2/2019	1.78	10/3/2022	10/2/2019	111.16043	108.9542357	106.8035194	104.7065201	102.6615464	100.6669729	98.72123685	96.82283495	94.97032106
191002A00016	10/2/2019	1.79	10/2/2023	10/2/2019	116.82721	113.4004658	110.0927024	106.8991159	103.8151214	100.8363461	97.95861775	95.17795425	92.49055401
191004A00005	10/4/2019	1.54	10/4/2024	10/4/2019	122.29804	117.5380253	112.9894399	108.6417606	104.4850445	100.5098959	96.70743267	93.06925555	89.58741897
191009A00026	10/9/2019	1.74	10/7/2022	10/9/2019	111.13619	108.9183105	106.7564085	104.6486968	102.5934606	100.5890525	98.63388878	96.7264467	94.86526151
191017A00026	10/17/2019	2.3	7/17/2029	10/17/2019	152.44251	140.2704694	129.1660033	119.0297747	109.7721722	101.3123153	93.57716161	86.50071101	80.02329298
191003A00022	10/3/2019	1.72	2/3/2023	10/3/2019	112.90222	110.3003282	107.7715356	105.3133879	102.9235236	100.5996739	98.3396587	96.1413822	94.00282955
191007A00018	10/8/2019	1.77	7/16/2021	10/8/2019	104.41418	103.5638667	102.7273594	101.904324	101.0944369	100.2973847	99.51286411	98.74058118	97.98025115
191009A00017	10/9/2019	1.76	10/4/2024	10/9/2019	122.37285	117.6363599	113.1095892	108.7821252	104.6441313	100.6863103	96.89987226	93.27650348	89.80833827
191009A00021	10/9/2019	1.71	10/7/2022	10/9/2019	111.07238	108.8551979	106.6939724	104.5869234	102.5323366	100.5285651	98.57402535	96.66719507	94.80660986
191010A00012	10/10/2019	1.61	10/8/2021	10/10/2019	105.73446	104.6152156	103.5195454	102.4467107	101.3960034	100.3667446	99.35828286	98.36999297	97.40127447
191015A00026	10/15/2019	1.69	10/15/2021	10/15/2019	105.93159	104.7891475	103.6712264	102.5770457	101.5058554	100.4569368	99.42960089	98.42318692	97.43706078
191025A00013	10/25/2019	1.98	10/25/2024	10/25/2019	123.66665	118.8339255	114.2173324	109.8060199	105.5897444	101.5588313	97.70414092	94.01703492	90.4893463
191101A00002	11/1/2019	1.85	11/1/2022	11/1/2019	111.75627	109.456677	107.2164133	105.0335339	102.906169	100.8325243	98.81087799	96.83957696	94.9170333
191105A00008	11/5/2019	1.83	11/5/2024	11/5/2019	124.08564	119.1809682	114.4975948	110.0243077	105.7505309	101.6662821	97.76213586	94.02918888	90.45902822

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191113A00017	11/15/2019	1.93	12/6/2021	11/15/2019	106.85628	105.5460458	104.2677869	103.0203408	101.802604	100.6135253	99.45210224	98.31737899	97.20844309
191120A00005	11/20/2019	2.63	11/20/2034	11/20/2019	185.91798	163.4539447	143.9737559	127.062635	112.3655116	99.57816081	88.43969169	78.72617815	70.24525337
191121A00004	11/21/2019	1.77	11/21/2024	11/21/2019	124.07538	119.1156737	114.3818509	109.8623593	105.5463056	101.4234148	97.48399138	93.7188825	90.11944463
191121A00010	11/21/2019	2.59	11/20/2037	11/21/2019	207.25503	177.5142126	152.4576589	131.3166132	113.4523316	98.33351497	85.5177556	74.63626575	65.38129369
191206A00008	12/6/2019	2.44	12/6/2030	12/6/2019	161.53397	146.8583672	133.646489	121.744194	111.0143384	101.3348172	92.59684454	84.7034371	77.5680785
191206A00020	12/9/2019	1.91	12/15/2021	12/9/2019	106.97866	105.6387524	104.3322466	103.0579042	101.8145488	100.601061	99.41637459	98.25947351	97.12938911
191210A00009	12/10/2019	1.92	12/10/2020	12/10/2019	101.10194	100.9020855	100.7030292	100.5047693	100.3073008	100.1106191	99.91471935	99.71959686	99.52524696
191212A00027	12/13/2019	1.93	10/17/2022	12/13/2019	111.6969	109.4430104	107.2464925	105.1054944	103.0182382	100.9830167	98.99819006	97.06218232	95.1734785
191212A00032	12/12/2019	1.99	12/12/2023	12/12/2019	118.60417	114.9208967	111.3719291	107.951532	104.6542525	101.4749076	98.40856814	95.45054501	92.59637518
191219A00036	12/20/2019	2.1	12/20/2024	12/20/2019	125.11768	120.0639597	115.2433141	110.6436471	106.2535686	102.062346	98.0598618	94.23657452	90.58348175
191230A00012	12/30/2019	1.77	12/1/2023	12/30/2019	118.36176	114.7010576	111.1731626	107.7724396	104.4935287	101.3313325	98.28100198	95.33792191	92.49769821
200106A00015	1/6/2020	1.87	2/15/2024	1/6/2020	119.2088	115.3040285	111.547975	107.9341987	104.4565684	101.1092502	97.88669143	94.78360532	91.794957
200110A00004	1/10/2020	1.7	1/10/2022	1/10/2020	107.28855	105.8810926	104.5065179	103.1636726	101.8514577	100.568825	99.31477416	98.08835011	96.88864023
200110A00005	1/10/2020	1.7	1/10/2022	1/10/2020	107.28855	105.8810926	104.5065179	103.1636726	101.8514577	100.568825	99.31477416	98.08835011	96.88864023
191126A00026	11/26/2019	1.91	11/25/2026	11/26/2019	136.51833	128.5996406	121.1899306	114.2537839	107.7584402	101.6735779	95.97111863	90.62504991	85.61126202
191206A00019	12/6/2019	1.96	11/15/2023	12/6/2019	118.07042	114.48357	111.0250025	107.6893552	104.4715247	101.3666532	98.37011539	95.47750525	92.68462431
191210A00011	12/10/2019	1.92	12/12/2022	12/10/2019	112.5641	110.1281649	107.7576831	105.450395	103.2041378	101.0168423	98.88652776	96.81129731	94.7893335
191218A00014	12/18/2019	2.04	12/18/2024	12/18/2019	124.80828	119.7680984	114.960178	110.3724807	105.9936665	101.8130496	97.82055593	94.00668387	90.36246832
191220A00002	12/20/2019	3.02	12/20/2038	12/20/2019	217.12153	185.0097948	158.1749477	135.7109245	116.8720528	101.0439238	87.71967897	76.48068136	66.98074347
200115A00015	1/17/2020	1.88	1/17/2023	1/17/2020	113.03168	110.4807513	108.000518	105.5885598	103.2425538	100.9602733	98.73958367	96.57843699	94.47486837
200115A00018	1/15/2020	1.9	1/16/2024	1/15/2020	118.83883	115.0400046	111.3829401	107.8615256	104.4699562	101.2027117	98.05454075	95.02044594	92.09566968
200124A00008	1/24/2020	1.92	1/22/2027	1/24/2020	137.46312	129.3016561	121.6761487	114.5486505	107.8840873	101.6500301	95.81648174	90.35568306	85.24193453
200130A00011	1/30/2020	1.54	1/30/2023	1/30/2020	112.87575	110.277475	107.7520844	105.2971276	102.910249	100.589186	98.33176455	96.13589526	93.99956948
200130A00021	1/30/2020	1.54	1/30/2023	1/30/2020	112.87575	110.277475	107.7520844	105.2971276	102.910249	100.589186	98.33176455	96.13589526	93.99956948
200130A00048	1/30/2020	1.74	1/31/2022	1/30/2020	107.30652	105.8811137	104.4815985	103.107324	101.7576655	100.4320182	99.12979653	97.85043354	96.59337996
200131A00017	1/31/2020	1.51	1/31/2024	1/31/2020	118.38746	114.5308867	110.819985	107.2484956	103.8104652	100.5002265	97.31238249	94.24179222	91.28355734
200131A00038	1/31/2020	1.73	1/30/2025	1/31/2020	123.96663	118.8041943	113.8851486	109.1967865	104.7271293	100.4648807	96.39938456	92.5205853	88.81899102
200204A00001	2/4/2020	1.79	2/4/2025	2/4/2020	124.33266	119.1437122	114.2000664	109.4888809	104.9980556	100.7161812	96.63249579	92.73684559	89.01964696
200205A00013	2/5/2020	1.77	2/6/2023	2/5/2020	113.07592	110.4615957	107.920976	105.4515688	103.0509852	100.7169305	98.44719957	96.23967358	94.09231544
200214A00002	2/14/2020	1.58	11/15/2024	2/14/2020	123.11761	118.1993678	113.5045937	109.0218894	104.7405086	100.650313	96.74173378	93.00573584	89.43378513
200214A00017	2/14/2020	1.59	2/14/2025	2/14/2020	124.57408	119.3114036	114.2999161	109.526351	104.9782096	100.6437131	96.51175816	92.57187408	88.81418382
200218A00023	2/18/2020	1.55	2/21/2023	2/18/2020	113.26241	110.583951	107.9825278	105.4554818	103.0002667	100.6144392	98.29565346	96.04165746	93.85028804
200219A00015	2/19/2020	1.77	2/19/2027	2/19/2020	136.81769	128.5674968	120.8659436	113.6737799	106.9547528	100.6753651	94.80465252	89.31398006	84.17685571

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200220A00001	2/20/2020	1.74	2/22/2022	2/20/2020	107.6782	106.1780533	104.7063421	103.262324	101.8452828	100.4545267	99.08938709	97.74921733	96.43339216
200220A00025	2/20/2020	1.72	2/21/2023	2/20/2020	113.1965	110.5293349	107.938681	105.4219046	102.9764831	100.5999953	98.29011655	96.04461471	93.86134555
200224A00020	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200225A00044	2/25/2020	1.57	2/25/2022	2/25/2020	107.47793	105.9695425	104.4899096	103.0382766	101.6139154	100.2161231	98.84421997	97.49754922	96.17547567
190910A00017	9/16/2019	1.86	9/16/2024	9/16/2019	122.52554	117.8473495	113.3737862	109.0948197	105.0009623	101.0832402	97.33316255	93.742693	90.30422268
190910A00030	9/10/2019	1.86	9/10/2024	9/10/2019	122.42983	117.7743644	113.3216949	109.061924	104.9856864	101.0841217	97.34884445	93.77191591	90.34581784
190916A00009	9/16/2019	2.04	9/16/2022	9/16/2019	111.43036	109.2745266	107.1717045	105.1202514	103.1185874	101.1651923	99.25860322	97.3974116	95.58026096
190917A00029	9/17/2019	2.02	12/6/2022	9/17/2019	112.70044	110.281231	107.9266149	105.6343797	103.4024058	101.2286645	99.11121313	97.04819045	95.03781257
190923A00078	9/23/2019	1.96	6/28/2024	9/23/2019	121.68617	117.2903509	113.0776927	109.0394569	105.1673818	101.4536525	97.89087292	94.47204069	91.19052308
190930A00008	9/30/2019	1.9	10/10/2023	9/30/2019	117.30532	113.8458934	110.5071883	107.2842933	104.1725303	101.1674392	98.26476606	95.46045238	92.75062473
190930A00075	9/30/2019	2.19	9/29/2027	9/30/2019	141.60943	132.4261884	123.9017377	115.9853725	108.6305387	101.7944766	95.43789216	89.52466019	84.02155294
191001A00023	10/1/2019	1.85	9/27/2024	10/1/2019	122.65756	117.9385663	113.4275496	109.1142334	104.9889045	101.0423797	97.26597436	93.65147225	90.19109772
191004A00013	10/4/2019	1.53	10/22/2021	10/4/2019	105.86825	104.7041147	103.5654362	102.4513897	101.3611828	100.2940569	99.24928538	98.22617165	97.22404791
191008A00031	10/8/2019	1.52	10/8/2024	10/8/2019	122.27007	117.4974576	112.9373082	108.5790238	104.4125914	100.4285502	96.6179582	92.9723605	89.48376016
191008A00033	10/8/2019	1.71	10/8/2024	10/8/2019	122.21362	117.4674054	112.9318409	108.5964458	104.4513176	100.4870984	96.69494197	93.06648289	89.59380751
191010A00011	10/10/2019	1.6	10/10/2023	10/10/2019	116.97708	113.50747	110.1593234	106.9276874	103.8078427	100.7952904	97.88574008	95.07509921	92.35946228
191015A00013	10/15/2019	1.72	10/15/2024	10/15/2019	123.26067	118.4439486	113.8422358	109.4447646	105.24137	101.2224499	97.37893112	93.70223664	90.1842558
191017A00022	10/17/2019	2.25	7/17/2028	10/17/2019	146.51854	136.0344444	126.3768585	117.4762592	109.2693187	101.6983194	94.71062951	88.25823028	82.29728946
191018A00015	10/18/2019	1.89	10/18/2021	10/18/2019	106.01389	104.8643179	103.7395689	102.638848	101.5613917	100.5064681	99.47337627	98.46144367	97.47002532
191024A00016	10/25/2019	1.91	2/16/2021	10/25/2019	102.16783	101.7709904	101.3772348	100.9865283	100.5988355	100.2141215	99.83235208	99.45349347	99.07751237
191025A00002	10/25/2019	1.75	10/26/2020	10/25/2019	100.40115	100.3285274	100.2560188	100.1836241	100.111343	100.0391753	99.96712074	99.89517904	99.82334993
191106A00022	11/6/2019	2.34	1/2/2030	11/6/2019	155.35355	142.3719959	130.5815031	119.8662723	110.1223437	101.2563284	93.18428102	85.8306994	79.12763424
191108A00014	11/8/2019	2.25	11/8/2029	11/8/2019	156.13683	143.2137068	131.4629849	120.7719893	111.0394318	102.174202	94.094296	86.72586331	80.00235722
191113A00020	11/13/2019	1.88	11/13/2020	11/13/2019	100.67746	100.554273	100.4314	100.3088412	100.1865953	100.0646612	99.94303754	99.8217232	99.70071693
191115A00014	11/18/2019	2.45	11/18/2024	11/18/2019	126.17673	121.2084555	116.4648096	111.9343668	107.6063527	103.4706015	99.51751698	95.73803779	92.12360387
191115A00015	11/18/2019	2.61	11/18/2024	11/18/2019	126.89992	121.9160013	117.1572292	112.612159	108.2699956	104.1205535	100.1542179	96.36190968	92.73505177
191121A00009	11/21/2019	2.55	11/21/2036	11/21/2019	200.67997	173.2885143	149.9956899	130.1619717	113.2507908	98.81150204	86.46523993	75.89316372	66.82667666
191206A00009	12/6/2019	2.87	12/4/2037	12/6/2019	207.69192	178.2941323	153.5010544	132.5592987	114.8426376	99.82996318	87.08716219	76.25219327	67.02278749
191216A00042	12/16/2019	1.95	12/16/2022	12/16/2019	112.6971	110.2473835	107.8637555	105.5439205	103.2856853	101.0869517	98.94571194	96.86004373	94.82810568
191223A00006	12/23/2019	1.92	12/23/2020	12/23/2019	101.30709	101.0699882	100.8340076	100.5991368	100.365368	100.1326935	99.90110546	99.67059638	99.44115866
191223A00019	12/23/2019	1.92	12/30/2020	12/23/2019	101.41653	101.159355	100.9034815	100.6488976	100.3955938	100.1435603	99.89278775	99.64326669	99.39498784
191230A00013	12/30/2019	1.84	12/2/2024	12/30/2019	124.57398	119.5655252	114.7865089	110.2251189	105.8702256	101.7113353	97.73855054	93.94253177	90.31446263
191230A00031	12/30/2019	1.85	12/30/2024	12/30/2019	125.07098	119.956865	115.0807425	110.4301513	105.9933653	101.7593417	97.71767692	93.8585646	90.17275773

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200106A00019	1/6/2020	1.89	7/16/2024	1/6/2020	121.68141	117.2271034	112.9602267	108.8718492	104.9535225	101.1972477	97.5954489	94.14094799	90.82694123
200110A00013	1/10/2020	1.76	1/10/2024	1/10/2020	118.95893	115.1593753	111.5015048	107.9791803	104.5865742	101.3181482	98.16863711	95.13303296	92.20657096
200122A00034	1/22/2020	1.87	1/22/2024	1/22/2020	118.82489	115.0073053	111.3326754	107.7948586	104.3880124	101.1065779	97.94526429	94.89903466	91.96309174
200123A00005	1/23/2020	1.81	1/24/2022	1/23/2020	107.33441	105.9160451	104.5258458	103.163003	101.8267345	100.5162881	99.23094029	97.96999463	96.73278056
200127A00013	1/27/2020	1.56	1/27/2023	1/27/2020	112.87975	110.2905346	107.7738007	105.3270925	102.9480576	100.6344378	98.38406405	96.19485304	94.06480277
200129A00018	2/3/2020	1.74	12/15/2022	2/3/2020	112.19122	109.7505137	107.3756218	105.0642572	102.8142375	100.6234754	98.48997312	96.41181773	94.3871769
200130A00016	1/30/2020	1.58	1/30/2025	1/30/2020	124.27856	119.0787078	114.1247416	109.4037909	104.9037231	100.6130989	96.52112892	92.61763365	88.89300561
200130A00028	1/30/2020	1.54	2/7/2023	1/30/2020	113.00619	110.3791687	107.8265005	105.3456617	102.9342333	100.5898921	98.31040672	96.09363267	93.93750902
200131A00007	1/31/2020	1.68	1/31/2023	1/31/2020	112.7542	110.1643968	107.6471057	105.199901	102.8204481	100.5065041	98.25591296	96.0666021	93.93657843
200203A00011	2/3/2020	1.7	2/15/2023	2/3/2020	113.04795	110.4032022	107.8338056	105.3371876	102.9108804	100.5525146	98.25981465	96.03059483	93.86275486
200203A00051	2/3/2020	1.58	11/3/2021	2/3/2020	106.11244	104.9088932	103.7324865	102.5823089	101.4574914	100.357203	99.28064859	98.22706722	97.19573006
200207A00004	2/7/2020	1.53	2/7/2023	2/7/2020	112.98116	110.3544604	107.8020995	105.3215612	102.9104267	100.5663731	98.287169	96.0706703	93.91481618
200207A00009	2/7/2020	1.58	2/7/2025	2/7/2020	124.40976	119.1772206	114.1933402	109.4450415	104.9200029	100.6066099	96.49391068	92.57157459	88.82985414
200207A00015	2/7/2020	1.73	2/7/2022	2/7/2020	107.40568	105.9567477	104.5344999	103.1382575	101.7673675	100.4211982	99.09913834	97.80059627	96.52499918
200212A00003	2/12/2020	1.63	2/12/2025	2/12/2020	124.73351	119.47472	114.4665584	109.695807	105.1500109	100.8174322	96.68700462	92.74829188	88.99144851
200214A00004	2/14/2020	1.81	2/16/2021	2/14/2020	102.12888	101.7321348	101.3384721	100.9478578	100.5602568	100.175634	99.79395535	99.41518694	99.03929555
200214A00005	2/14/2020	1.59	2/14/2025	2/14/2020	124.57408	119.3114036	114.2999161	109.526351	104.9782096	100.6437131	96.51175816	92.57187408	88.81418382
200214A00019	2/14/2020	1.81	2/16/2021	2/14/2020	102.12888	101.7321348	101.3384721	100.9478578	100.5602568	100.175634	99.79395535	99.41518694	99.03929555
200220A00029	2/20/2020	1.72	2/21/2023	2/20/2020	113.1965	110.5293349	107.938681	105.4219046	102.9764831	100.5999953	98.29011655	96.04461471	93.86134555
200221A00003	2/25/2020	1.69	2/25/2025	2/25/2020	124.19432	118.9302599	113.9185226	109.1457202	104.5992458	100.267222	96.13845554	92.20239383	88.44908518
200221A00016	2/21/2020	1.69	2/21/2025	2/21/2020	124.12979	118.8821224	113.8853595	109.1262223	104.5922041	100.2715206	96.15306416	92.22636132	88.48153358
200224A00015	2/24/2020	1.57	1/10/2024	2/24/2020	117.58046	113.822338	110.2041706	106.7199075	103.3638021	100.1303925	97.01448549	94.01114119	91.11565892
200225A00004	2/25/2020	1.54	2/26/2024	2/25/2020	118.17492	114.2505393	110.4771376	106.8481079	103.3571705	99.99835295	96.76597356	93.65462529	90.65916111
200225A00015	2/25/2020	1.54	2/26/2024	2/25/2020	118.17492	114.2505393	110.4771376	106.8481079	103.3571705	99.99835295	96.76597356	93.65462529	90.65916111
200225A00017	2/25/2020	1.94	2/25/2030	2/25/2020	151.72691	138.6991035	126.8893401	116.1774379	106.4556366	97.62725868	89.60551923	82.31246921	75.67805612
200226A00008	2/26/2020	1.38	2/26/2025	2/26/2020	123.75254	118.4635996	113.4293286	108.6361645	104.0713373	99.7228194	95.57927786	91.63003104	87.86500769
200227A00031	2/27/2020	1.43	2/27/2024	2/27/2020	117.78533	113.8644749	110.0946547	106.4692513	102.9819766	99.62685085	96.39818524	93.29056647	90.29884175
200228A00005	2/28/2020	1.35	2/28/2024	2/28/2020	117.50557	113.5862901	109.8181493	106.1945239	102.7091158	99.35593563	96.12928595	93.02374537	90.03415365
200228A00029	2/28/2020	1.31	2/28/2022	2/28/2020	107.14206	105.6265038	104.1400071	102.6817998	101.2511425	99.8473213	98.46964609	97.11745011	95.79008869
200228A00040	2/28/2020	1.14	2/28/2023	2/28/2020	112.32598	109.6354428	107.0229887	104.4859014	102.0215788	99.62752504	97.30134488	95.04073947	92.84350161
200228A00042	2/28/2020	1.17	2/28/2024	2/28/2020	117.57634	113.6369372	109.84988	106.2084772	102.7063645	99.33749038	96.09609932	92.97671525	89.97412665
200228A00043	2/28/2020	1.21	2/28/2025	2/28/2020	122.95672	117.6786833	112.6553628	107.8731678	103.3193054	98.9817271	94.84908168	90.91067118	87.15640992
200228A00065	2/28/2020	1.4	2/28/2025	2/28/2020	122.83714	117.5932155	112.6015388	107.8486938	103.3220447	99.00968922	94.90041175	90.98364046	87.24940691

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200304A00034	3/4/2020	1.12	3/4/2024	3/4/2020	116.7252	112.8035362	109.0338477	105.4094398	101.9239526	98.57133979	95.34585088	92.24201529	89.25462711
200306A00098	3/10/2020	1.59	3/8/2030	3/10/2020	147.97242	135.0839218	123.4091124	112.8276072	103.2315233	94.52412241	86.61860996	79.43706802	72.90950796
200306A00099	3/10/2020	1.92	3/10/2031	3/10/2020	156.45432	141.6603889	128.3852262	116.464958	105.7541597	96.12369544	87.45882089	79.65751501	72.62901268
200306A00101	3/10/2020	1.93	3/8/2030	3/10/2020	151.76409	138.6897144	126.8416005	116.0983771	106.3512576	97.50267833	89.46508986	82.1598838	75.51643937
200309A00004	3/9/2020	0.71	3/8/2024	3/9/2020	115.99025	112.0499051	108.2633264	104.6236974	101.1245448	97.75971635	94.52336293	91.4099219	88.41410142
200309A00041	3/9/2020	0.73	3/9/2022	3/9/2020	106.39746	104.8610861	103.3546708	101.8774154	100.4285453	99.00731271	97.61299553	96.24489637	94.9023414
200311A00021	3/11/2020	1.09	3/11/2024	3/11/2020	117.44712	113.470588	109.6493283	105.9764495	102.4454047	99.04997264	95.78423904	92.64257996	89.61964583
200312A00017	3/16/2020	1.09	2/15/2023	3/16/2020	111.51033	108.8850192	106.3346256	103.8565894	101.4484556	99.10786742	96.8325614	94.62036328	92.46918391
200317A00026	3/17/2020	1.22	3/15/2024	3/17/2020	117.24442	113.2777362	109.4660049	105.8023455	102.2802207	98.89341809	95.63603236	92.50244817	89.48732431
200407A00002	4/8/2020	1.82	4/8/2024	4/8/2020	119.85748	115.7643976	111.8335185	108.0575196	104.4294492	100.942708	97.59102909	94.36845886	91.26933981
200415A00019	4/15/2020	0.68	4/15/2022	4/15/2020	106.75667	105.107699	103.4927285	101.9107877	100.3609398	98.84228331	97.35394984	95.89510293	94.46493643
200415A00035	4/17/2020	2.16	4/16/2025	4/17/2020	127.29562	121.7864554	116.5481315	111.5658785	106.8258127	102.3148788	98.02079554	93.93200579	90.03762951
200417A00009	4/17/2020	1.35	4/16/2027	4/17/2020	132.85038	124.5883833	116.8889252	109.710868	103.0162871	96.77020344	90.94034067	85.49690252	80.41237021
200429A00043	5/1/2020	1.56	4/30/2025	5/1/2020	124.55918	119.0650807	113.8439505	108.8807719	104.1614341	99.67267541	95.40202776	91.33776456	87.46885244
200430A00008	4/30/2020	0.94	4/30/2025	4/30/2020	121.43108	116.0118306	110.8628473	105.9692313	101.3169862	96.8929593	92.68478557	88.68083636	84.87017119
200515A00001	5/15/2020	0.59	5/15/2023	5/15/2020	111.31635	108.4140013	105.6018996	102.8766543	100.2350307	97.67393817	95.19042261	92.7816593	90.44494623
200604A00005	6/4/2020	0.89	6/4/2025	6/4/2020	121.60613	116.0662941	110.8077039	105.8145718	101.0720832	96.56633484	92.28427316	88.21363704	84.3429051
200604A00014	6/4/2020	2.42	6/4/2040	6/4/2020	210.24697	176.219206	148.2294219	125.1645154	106.1221575	90.36996541	77.31274977	66.46620615	57.43575952
200626A00014	6/26/2020	0.62	6/26/2025	6/26/2020	121.52603	115.8789066	110.5229082	105.4414374	100.6189428	96.04084505	91.6934702	87.56398784	83.64035371
200701A00004	7/1/2020	0.54	7/1/2022	7/1/2020	107.42731	105.5431336	103.7015662	101.9012377	100.1408361	98.41910585	96.7348444	95.08689966	93.47416718
200710A00006	7/10/2020	0.4	7/10/2023	7/10/2020	111.99067	108.891093	105.8926566	102.9914206	100.1836236	97.46567692	94.83415589	92.28579058	89.81745771
200720A00041	7/22/2020	2.34	7/21/2027	7/22/2020	141.70954	132.787577	124.4887221	116.7661917	109.5769485	102.8813831	96.6430237	90.82827254	85.40616504
200727A00016	7/27/2020	0.43	7/27/2023	7/27/2020	112.27779	109.1218661	106.0700236	103.1182618	100.2627588	97.49986064	94.8260733	92.23805456	89.7326065
200806A00002	8/6/2020	0.43	8/6/2024	8/6/2020	116.72198	112.2762304	108.0214895	103.9485978	100.0488808	96.31412252	92.73653824	89.30874996	86.02376296
200810A00004	8/10/2020	0.43	8/9/2024	8/10/2020	116.7569	112.3006325	108.0362061	103.9543989	100.0464829	96.30419171	92.71969412	89.28556881	85.99478078
200911A00019	9/15/2020	1.84	9/14/2027	9/15/2020	138.59552	129.5794839	121.2085394	113.4332459	106.208189	99.49163699	93.24522474	87.43366592	82.02449134
200911A00020	9/15/2020	1.14	9/15/2025	9/15/2020	124.18472	118.2314127	112.595703	107.2590452	102.2040685	97.41449897	92.87508517	88.57152808	84.49041704
200911A00024	9/15/2020	2.09	9/14/2027	9/15/2020	140.58255	131.4946069	123.0554657	115.2154572	107.9289553	101.1540313	94.85213638	88.98781284	83.52843172
200917A00002	9/17/2020	0.53	9/17/2025	9/17/2020	122.02887	116.0859252	110.4623397	105.1393636	100.0994411	95.3261308	90.80402856	86.51869716	82.45660048
200922A00023	9/24/2020	2.5	9/26/2022	9/24/2020	112.55924	110.3597191	108.214988	106.1233225	104.083068	102.0926333	100.1504878	98.25515909	96.40522964
190807A00020	8/7/2019	1.57	2/7/2024	8/7/2019	118.71661	114.8298807	111.0907393	107.4928169	104.0300496	100.6966665	97.48717353	94.39633886	91.41917902
190807A00022	8/7/2019	1.76	1/17/2023	8/7/2019	112.73972	110.1923564	107.7156178	105.3070784	102.9644175	100.6854109	98.46792573	96.30991642	94.20941998
190807A00045	8/7/2019	1.77	8/7/2024	8/7/2019	121.5203	116.9974861	112.6674292	108.5209262	104.5492624	100.7441822	97.0978619	93.60288505	90.25221918

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190807A00055	8/7/2019	1.76	8/8/2022	8/7/2019	110.26813	108.2439855	106.2671094	104.3361145	102.4496631	100.6064655	98.80527725	97.04489798	95.32416905
190808A00009	8/8/2019	1.89	8/8/2024	8/8/2019	122.03891	117.5023159	113.1590726	108.9999503	105.0162043	101.1995505	97.54213862	94.0365272	90.6756602
190808A00049	8/8/2019	1.89	8/8/2024	8/8/2019	122.03891	117.5023159	113.1590726	108.9999503	105.0162043	101.1995505	97.54213862	94.0365272	90.6756602
190814A00015	8/14/2019	1.84	8/14/2024	8/14/2019	121.92196	117.3678384	113.0086169	108.834954	104.8380013	101.0093783	97.34114535	93.82577784	90.45614256
190816A00007	8/16/2019	1.77	8/16/2023	8/16/2019	116.03457	112.7731355	109.6203148	106.5719064	103.6238943	100.7724396	98.01387146	95.344679	92.76150328
190816A00011	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190819A00001	8/19/2019	1.82	8/19/2021	8/19/2019	104.99339	104.0360963	103.0961973	102.173221	101.2667135	100.3762368	99.50136852	98.64170092	97.79684037
190820A00038	8/20/2019	1.76	8/20/2024	8/20/2019	121.67615	117.1071428	112.7345088	108.5487958	104.5410541	100.7028094	97.02603489	93.5031251	90.1268718
190820A00054	8/20/2019	1.76	8/18/2022	8/20/2019	110.40093	108.3456192	106.3389293	104.3794129	102.4656763	100.5963764	98.77021797	96.98595237	95.24237494
190821A00017	8/21/2019	1.8	8/21/2024	8/21/2019	121.86082	117.2847294	112.9054107	108.7133804	104.6996663	100.8557731	97.17365414	93.64568583	90.26464276
190822A00016	8/22/2019	1.84	8/22/2022	8/22/2019	110.62161	108.55196	106.5315163	104.5588066	102.6324131	100.7509699	98.9131602	97.11771448	95.3634085
190826A00029	8/26/2019	1.53	8/26/2024	8/26/2019	121.64993	117.037687	112.625077	108.4024273	104.3605822	100.4908759	96.78510335	93.23549312	89.83468234
190828A00008	8/28/2019	1.75	8/29/2022	8/28/2019	110.55002	108.4599233	106.4199722	104.4286526	102.4845069	100.5861312	98.73217262	96.92132755	95.15233912
190903A00004	9/3/2019	1.77	9/6/2022	9/3/2019	110.71554	108.5987659	106.5333438	104.5177039	102.5503368	100.6297894	98.75466258	96.92360816	95.13532725
190906A00014	9/6/2019	1.57	9/6/2024	9/6/2019	121.99154	117.3346859	112.8808452	108.6201055	104.5430912	100.6409318	96.90523233	93.32804497	89.90184286
190909A00028	9/9/2019	1.84	9/9/2022	9/9/2019	110.90581	108.7775909	106.7012154	104.6750907	102.6976868	100.7675308	98.88320446	97.04334194	95.24662729
190917A00022	9/17/2019	2.02	9/16/2022	9/17/2019	111.38908	109.2336798	107.1312838	105.0802483	103.0789936	101.1259998	99.21980428	97.35899861	95.54222659
190917A00045	9/17/2019	1.86	9/17/2021	9/17/2019	105.65196	104.5989871	103.5669226	102.5551461	101.563064	100.5901054	99.63572139	98.69938389	97.78058466
190918A00003	9/18/2019	1.95	9/19/2022	9/18/2019	111.29348	109.129603	107.0191658	104.9605052	102.952022	100.9921777	99.07949193	97.21253961	95.38994862
190925A00024	9/25/2019	1.88	4/14/2022	9/25/2019	108.67073	107.0086742	105.3808147	103.7861777	102.2238228	100.6928445	99.19237065	97.72156129	96.27960669
190815A00004	8/15/2019	1.82	8/15/2022	8/15/2019	110.49409	108.4465125	106.447189	104.494686	102.5876258	100.72468	98.90456792	97.12605422	95.3879472
190816A00015	8/16/2019	2.2	8/16/2029	8/16/2019	151.83748	139.5760362	128.3998517	118.2071753	108.9062817	100.4144356	92.65696891	85.56645799	79.08198758
190816A00016	8/16/2019	2.2	8/16/2029	8/16/2019	151.83748	139.5760362	128.3998517	118.2071753	108.9062817	100.4144356	92.65696891	85.56645799	79.08198758
190816A00031	8/16/2019	1.77	8/16/2024	8/16/2019	121.65749	117.1021032	112.7419969	108.5677904	104.5706061	100.7420366	97.0741171	93.55930018	90.1904313
190819A00005	8/19/2019	1.62	8/21/2023	8/19/2019	116.2601	112.9651218	109.7806418	106.7023518	103.726139	100.8480735	98.06439883	95.37152338	92.76601213
190820A00012	8/20/2019	1.76	8/19/2022	8/20/2019	110.41631	108.3578171	106.3480865	104.3856616	102.4691427	100.5971813	98.76847717	96.98177646	95.23586989
190820A00030	8/20/2019	1.76	4/16/2024	8/20/2019	119.75258	115.6349733	111.681391	107.8843841	104.2368867	100.7321935	97.363939	94.12607801	91.01286773
190821A00027	8/21/2019	1.79	8/22/2022	8/21/2019	110.52213	108.4534936	106.4340432	104.4623073	102.5368688	100.656362	98.81947097	97.02492656	95.27150501
190823A00005	8/23/2019	1.62	8/23/2024	8/23/2019	121.98768	117.3785443	112.9684328	108.7477243	104.7073097	100.8385661	97.13332777	93.58386007	90.1828339
190826A00030	8/26/2019	1.72	8/26/2026	8/26/2019	133.84512	126.3472841	119.3145186	112.7156253	106.5216547	100.7057307	95.24289219	90.10994707	85.2853384
190826A00058	8/26/2019	1.91	8/26/2026	8/26/2019	133.62507	126.1877327	119.2100697	112.6613378	106.5130011	100.7385619	95.31340518	90.21465578	85.42104688
190826A00060	8/26/2019	2.02	8/26/2027	8/26/2019	139.74563	130.7604136	122.412462	114.6533252	107.438471	100.7269497	94.48108917	88.66621698	83.25040745
190826A00065	8/26/2019	2.09	8/28/2029	8/26/2019	150.85809	138.5947138	127.4217239	117.2364819	107.9465004	99.46839059	91.72692496	84.65420176	78.18889812

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190827A00039	8/27/2019	1.78	8/26/2022	8/27/2019	110.564	108.482836	106.4514102	104.468227	102.5318462	100.6408802	98.79399175	96.98989203	95.22733829
190828A00019	8/28/2019	2	3/28/2028	8/28/2019	142.69188	132.783476	123.6314946	115.1742729	107.3554733	100.1236005	93.43156214	87.23627182	81.49828891
190828A00020	8/28/2019	1.95	5/28/2027	8/28/2019	137.90839	129.3205676	121.3232312	113.8726671	106.9286266	100.4540311	94.41470562	88.77913631	83.51824964
190829A00024	8/29/2019	1.54	8/29/2024	8/29/2019	121.73824	117.1141555	112.6905975	108.457825	104.4066252	100.5282792	96.81453246	93.25756757	89.84997894
190829A00029	8/29/2019	1.75	7/14/2023	8/29/2019	115.47368	112.3238558	109.276398	106.3273412	103.4729057	100.7094834	98.03362854	95.44204925	92.93159933
190829A00050	8/29/2019	1.73	8/29/2024	8/29/2019	121.68531	117.0863012	112.6861336	108.4751741	104.4443102	100.5849167	96.88882647	93.3483038	89.95601935
190830A00012	8/30/2019	1.76	8/30/2024	8/30/2019	121.82837	117.2231229	112.8170772	108.6005834	104.5645076	100.7002041	96.99948696	93.45460281	90.05820588
190830A00023	8/30/2019	1.78	9/15/2022	8/30/2019	110.87791	108.7310537	106.6369378	104.5939322	102.6004671	100.655032	98.75617286	96.90248998	95.09263513
190909A00025	9/9/2019	1.88	9/9/2024	9/9/2019	122.49982	117.8463572	113.3954513	109.1372161	105.0623045	101.161873	97.42755143	93.85141545	90.42596008
190909A00029	9/9/2019	1.83	9/8/2023	9/9/2019	116.57728	113.2335028	110.0033404	106.8823063	103.8661153	100.9506756	98.13207882	95.40659034	92.77064091
190919A00017	9/19/2019	1.8	9/19/2022	9/19/2019	111.38526	109.2127492	107.0940286	105.0274164	103.0112988	101.0441238	99.12439828	97.25068502	95.42160041
190919A00025	9/19/2019	1.8	9/19/2024	9/19/2019	123.19549	118.4682821	113.9487645	109.6267042	105.4924313	101.5368021	97.75116755	94.12734341	90.65758297
190923A00032	9/23/2019	1.72	9/22/2023	9/23/2019	117.08279	113.6697547	110.3744922	107.192271	104.1185817	101.1491218	98.27978501	95.50665099	92.82597563
190923A00081	9/23/2019	1.96	9/20/2024	9/23/2019	123.02252	118.3201561	113.8239356	109.5237267	105.4099484	101.4735399	97.70592964	94.09900607	90.64509029
190927A00019	9/30/2019	1.91	9/30/2022	9/30/2019	111.38858	109.1888951	107.0443654	104.9532436	102.9138547	100.9245884	98.98389613	97.09028823	95.2423312
191002A00005	10/2/2019	1.83	10/2/2020	10/2/2019	100.03128	100.0257024	100.0201329	100.0145685	100.0090091	100.0034548	99.99790545	99.99236113	99.9868218
191002A00014	10/2/2019	1.78	10/3/2022	10/2/2019	111.16043	108.9542357	106.8035194	104.7065201	102.6615464	100.6669729	98.72123685	96.82283495	94.97032106
191008A00018	10/8/2019	1.74	10/11/2022	10/8/2019	111.19655	108.9660742	106.7920895	104.6727889	102.6064337	100.5913538	98.62594392	96.70866118	94.83802172
191009A00027	10/9/2019	1.74	10/6/2023	10/9/2019	116.72609	113.2884253	109.9704686	106.7673669	103.6744936	100.6874367	97.80198761	95.01413032	92.32003131
191015A00029	10/15/2019	1.91	10/15/2024	10/15/2019	123.20017	118.4102057	113.8334045	109.4591244	105.277313	101.2784728	97.45362804	93.79429253	90.29244033
191104A00009	11/4/2019	1.91	11/6/2023	11/4/2019	117.75922	114.2069063	110.7808469	107.4757972	104.2867681	101.2090091	98.23799481	95.36941264	92.59915153
191104A00022	11/4/2019	2.17	8/4/2027	11/4/2019	140.59869	131.6647347	123.3585418	115.6327931	108.4439657	101.7520089	95.52005068	89.71413073	84.30295681
191106A00012	11/6/2019	2.02	10/11/2024	11/6/2019	123.62185	118.8361122	114.2627809	109.8912746	105.7116002	101.7143151	97.89049366	94.23169602	90.72993881
191114A00020	11/18/2019	1.91	2/15/2022	11/18/2019	107.80857	106.3302775	104.8796297	103.4559196	102.0584597	100.6865855	99.33965442	98.01704479	96.71815516
191115A00030	11/15/2019	2.35	11/9/2029	11/15/2019	154.66558	141.9326015	130.3512939	119.8112493	110.2131892	101.4677885	93.49463	86.22127397	79.58242903
191120A00011	11/20/2019	1.88	1/20/2023	11/20/2019	113.07829	110.517718	108.0282601	105.6074909	103.2530843	100.9628097	98.73452708	96.56618271	94.45580512
191120A00024	11/20/2019	2.23	11/16/2029	11/20/2019	153.48093	140.7757737	129.2234458	118.7131427	109.1452587	100.4301976	92.48731893	85.24400004	78.63480121
191125A00036	11/25/2019	2.29	11/23/2029	11/25/2019	154.22936	141.4603807	129.8514063	119.2907833	109.6781553	100.9232672	92.94489979	85.66992227	79.03244791
191129A00010	11/29/2019	1.94	8/27/2021	11/29/2019	105.23291	104.249736	103.2848642	102.3377835	101.4080054	100.4950593	99.59849129	98.71786386	97.85275485
191206A00021	12/6/2019	2.02	12/6/2024	12/6/2019	124.52453	119.5307719	114.7656075	110.2172737	105.874684	101.7273859	97.76552043	93.97978474	90.36139697
191212A00028	12/13/2019	1.93	1/17/2023	12/13/2019	113.15334	110.6009158	108.1192264	105.7058437	103.3584438	101.0747994	98.85277447	96.69032056	94.58547187
191223A00009	12/23/2019	1.95	12/23/2022	12/23/2019	112.80784	110.3354235	107.9301794	105.5897543	103.3119015	101.0944728	98.93541359	96.83275735	94.78462122
191231A00006	12/31/2019	1.88	12/31/2021	12/31/2019	107.20111	105.8083154	104.4514989	103.1292847	101.8403631	100.5834898	99.35748171	98.16121338	96.99361342

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200226A00013	2/26/2020	1.35	2/26/2024	2/26/2020	118.21085	114.2669934	110.4753024	106.829102	103.3220475	99.94810503	96.70153555	93.57687815	90.56893524
200228A00012	3/3/2020	1.4	3/3/2025	3/3/2020	122.87902	117.6239834	112.6221805	107.8601181	103.3250891	99.00512555	94.88895127	90.96593853	87.22606732
200228A00013	3/3/2020	1.33	1/14/2022	3/3/2020	106.60517	105.2021479	103.8304689	102.489084	101.1769913	99.89323348	98.63689493	97.40709979	96.20300965
200228A00026	2/28/2020	2.14	2/28/2035	2/28/2020	178.62542	156.2496177	136.9201409	120.2047389	105.7345223	93.1944008	82.31500411	72.86584991	64.64956095
200228A00027	2/28/2020	1.31	2/28/2022	2/28/2020	107.14206	105.6265038	104.1400071	102.6817998	101.2511425	99.8473213	98.46964609	97.1174501	95.79008869
200228A00059	2/28/2020	1.79	2/28/2030	2/28/2020	150.10194	137.1406041	125.3942845	114.7428827	105.0787308	96.30525053	88.33576042	81.09241755	74.50527664
200302A00034	3/2/2020	1.25	3/1/2024	3/2/2020	117.16521	113.2453535	109.4769644	105.8533877	102.368301	99.0156926	95.78984413	92.68531489	89.69692669
200302A00036	3/2/2020	1.45	3/2/2026	3/2/2020	128.22719	121.5760472	115.3076583	109.3980758	103.8249697	98.56751007	93.60625878	88.9230697	84.50099646
200302A00053	3/2/2020	1.31	3/3/2025	3/2/2020	122.44195	117.1970078	112.20495	107.4522935	102.926346	98.61515351	94.50745305	90.59262946	86.86067468
200303A00001	3/3/2020	1.15	3/3/2025	3/3/2020	122.70625	117.4237702	112.3967664	107.6115797	103.0553547	98.71598577	94.58206919	90.64285881	86.88822476
200303A00012	3/3/2020	1.71	3/1/2030	3/3/2020	149.22442	136.3020685	124.5925523	113.9758935	104.3445422	95.6020322	87.66178888	80.44607053	73.88502773
200303A00034	3/3/2020	1.21	3/3/2025	3/3/2020	121.95631	116.7225906	111.7413605	106.999155	102.4832981	98.18185124	94.08356613	90.1778416	86.45468286
200304A00008	3/4/2020	1.03	11/15/2021	3/4/2020	105.46259	104.2280898	103.022281	101.844169	100.6928087	99.56729762	98.46677354	97.3904121	96.33742486
200304A00017	3/4/2020	0.83	3/16/2022	3/4/2020	106.8926	105.327265	103.7929139	102.2887028	100.813819	99.36747841	97.94892456	96.55742714	95.19228097
200305A00007	3/5/2020	1.14	3/5/2025	3/5/2020	121.64261	116.4094067	111.4290752	106.6881079	102.1737928	97.87415837	93.7779263	89.874468	86.15376368
200305A00009	3/10/2020	1.04	10/18/2023	3/10/2020	114.6167	111.1753619	107.8551506	104.6511012	101.5584862	98.57279994	95.68974697	92.90523058	90.21534241
200305A00029	3/5/2020	1.14	3/5/2025	3/5/2020	121.64261	116.4094067	111.4290752	106.6881079	102.1737928	97.87415837	93.7779263	89.874468	86.15376368
200305A00036	3/5/2020	1.36	3/5/2027	3/5/2020	132.4032	124.308548	116.7561096	109.7068754	103.1248338	96.9767238	91.23181144	85.86168601	80.84007325
200305A00043	3/5/2020	0.95	3/7/2022	3/5/2020	106.70168	105.168823	103.6657447	102.1916512	100.7457755	99.32737657	97.9357392	96.5701723	95.23000812
200306A00030	3/6/2020	0.88	3/6/2023	3/6/2020	111.23654	108.5519823	105.9457365	103.4150653	100.9573474	98.57006842	96.25081606	93.99727547	91.80722447
200306A00046	3/6/2020	1.01	3/3/2025	3/6/2020	120.98503	115.773756	110.8141815	106.0928781	101.5972024	97.3152467	93.23579229	89.34826587	85.64269921
200306A00063	3/6/2020	0.64	3/16/2022	3/6/2020	106.60336	105.0403485	103.5082739	102.0062984	100.5336103	99.08942681	97.67299245	96.28357795	94.92047915
200309A00016	3/9/2020	0.77	9/12/2022	3/9/2020	108.75788	106.642707	104.5793716	102.5662798	100.6018944	98.6847362	96.81338088	94.98645699	93.20264341
200115A00014	1/17/2020	1.88	9/15/2022	1/17/2020	111.08402	108.9349955	106.8387549	104.7936671	102.7981608	100.8507246	98.94990311	97.09429559	95.28255274
200116A00005	1/16/2020	1.92	7/16/2021	1/16/2020	104.53657	103.6856998	102.8486448	102.025068	101.2146454	100.4170639	99.63201972	98.85921899	98.09837682
200122A00003	1/22/2020	1.88	1/22/2021	1/22/2020	101.76545	101.4416869	101.1199932	100.8003456	100.4827246	100.1671109	99.85348555	99.5418297	99.23212479
200122A00010	1/22/2020	1.84	1/24/2022	1/22/2020	107.37555	105.9568775	104.5663833	103.2032507	101.8666975	100.5559714	99.27034858	98.0091326	96.77165272
200123A00048	1/23/2020	1.7	1/23/2025	1/23/2020	124.74271	119.5556909	114.6129963	109.9018338	105.4101533	101.1265964	97.04045293	93.14162005	89.4205648
200130A00005	1/30/2020	1.73	1/30/2024	1/30/2020	118.44526	114.6089793	110.9170891	107.3633998	103.9420238	100.6473558	97.47405754	94.41704373	91.47146871
200130A00010	1/30/2020	1.56	1/31/2022	1/30/2020	107.30596	105.8765689	104.4732007	103.0951998	101.7419368	100.4128024	99.10720693	97.82457954	96.56436723
200130A00012	1/30/2020	1.72	1/30/2023	1/30/2020	112.83814	110.2503124	107.7348893	105.2894393	102.9116284	100.5992142	98.3500419	96.16204021	94.0332177
200131A00005	1/31/2020	1.64	2/1/2021	1/31/2020	101.88466	101.5313754	101.1805312	100.8321056	100.4860736	100.1424107	99.80109253	99.46209527	99.12539531
200131A00006	1/31/2020	1.52	1/31/2022	1/31/2020	107.25022	105.8212516	104.4182889	103.0406863	101.6878145	100.3590646	99.05384709	97.77159119	96.51174412

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200203A00012	2/3/2020	1.57	2/3/2025	2/3/2020	124.29557	119.0807017	114.1130313	109.3795947	104.868172	100.5672423	96.46594045	92.55401593	88.82179537
200203A00050	2/3/2020	1.54	2/3/2022	2/3/2020	107.32665	105.8873044	104.4743174	103.0870233	101.7247806	100.3869687	99.07298677	97.7822535	96.51420584
200204A00016	2/4/2020	1.72	2/6/2023	2/4/2020	112.95124	110.3384831	107.7993889	105.3314737	102.9323495	100.5997224	98.3313887	96.12523015	93.97921063
200207A00006	2/7/2020	1.76	2/8/2021	2/7/2020	101.98709	101.6138434	101.243333	100.875525	100.5103899	100.1478985	99.78802226	99.4307328	99.0760023
200210A00009	2/10/2020	1.57	2/10/2025	2/10/2020	124.4114	119.167526	114.1733367	109.4156783	104.8821557	100.5610866	96.44145604	92.51287569	88.76554442
200214A00015	2/18/2020	1.76	8/6/2024	2/18/2020	121.46317	116.9448243	112.6189233	108.4762907	104.5082312	100.7065068	97.06331023	93.57124044	90.22327927
200218A00008	2/18/2020	1.77	2/18/2021	2/18/2020	102.14395	101.7413702	101.3419644	100.945695	100.5525252	100.1624187	99.77533964	99.39125289	99.01012378
200218A00015	2/18/2020	1.77	2/18/2021	2/18/2020	102.14395	101.7413702	101.3419644	100.945695	100.5525252	100.1624187	99.77533964	99.39125289	99.01012378
200220A00015	2/20/2020	1.57	2/20/2025	2/20/2020	124.57697	119.291607	114.2595008	109.4672268	104.9021371	100.5523159	96.4065328	92.45420022	88.68533299
200224A00017	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200224A00018	2/24/2020	1.58	8/19/2024	2/24/2020	120.89958	116.3496919	111.9954053	107.8273064	103.8364829	100.014495	96.35334886	92.8454699	89.48367902
200224A00021	2/24/2020	1.58	9/24/2024	2/24/2020	121.43681	116.7536653	112.2767831	107.9959868	103.901656	99.98469444	96.23649849	92.64892794	89.2142783
200224A00029	2/24/2020	1.56	2/24/2023	2/24/2020	112.83791	110.165057	107.569168	105.0475884	102.5977716	100.2172739	97.90374931	95.65494566	93.46869973
200922A00034	9/24/2020	2.24	9/23/2026	9/24/2020	136.26299	128.639952	121.4927882	114.7893095	108.4996635	102.5961566	97.05308659	91.84658995	86.9545009
200922A00037	9/24/2020	2.76	9/23/2025	9/24/2020	133.23474	127.0179184	121.1307559	115.5540126	110.2696736	105.2608635	100.5117686	96.0075637	91.73434618
190926A00006	9/26/2019	1.7	9/26/2022	9/26/2019	111.29075	109.0969951	106.9580829	104.8722895	102.8379539	100.8534789	98.91732882	97.02802586	95.18414801
190926A00012	9/26/2019	1.93	9/27/2021	9/26/2019	105.71596	104.6339896	103.5740645	102.5355204	101.5177156	100.520034	99.54188332	98.58269476	97.64192115
190930A00035	9/30/2019	1.93	9/30/2024	9/30/2019	123.05442	118.3167339	113.7881907	109.4584331	105.3176763	101.3566706	97.56666936	93.93939884	90.46702971
190930A00040	9/30/2019	1.92	2/25/2022	9/30/2019	107.99057	106.4782117	104.9946829	103.5392233	102.1111031	100.7096173	99.3340845	97.98384602	96.65826504
190930A00070	9/30/2019	1.93	9/27/2024	9/30/2019	123.00587	118.2795919	113.7615299	109.4413944	105.3094629	101.3565436	97.57394366	93.95343883	90.48724598
190930A00071	9/30/2019	2.05	9/29/2025	9/30/2019	129.4133	123.2740962	117.4629542	111.9606231	106.749081	101.8114514	97.13192414	92.69568297	88.48883733
191003A00014	10/3/2019	1.71	9/20/2024	10/3/2019	121.93964	117.2598023	112.7853863	108.5062852	104.4129462	100.4963354	96.74790648	93.15957226	89.72367696
191003A00019	10/3/2019	1.71	9/27/2024	10/3/2019	122.04802	117.3417714	112.843084	108.5417018	104.4279273	100.4925928	96.7270281	93.12303074	89.67283825
191003A00020	10/3/2019	1.72	10/3/2022	10/3/2019	111.03354	108.8287133	106.6793354	104.5836472	102.5399586	100.5466447	98.60214335	96.7049522	94.8536257
191004A00002	10/4/2019	2.08	10/4/2029	10/4/2019	151.27654	138.8443928	127.5296318	117.2259391	107.8376223	99.27850549	91.47093867	84.34491462	77.83728143
191004A00009	10/4/2019	1.71	10/4/2021	10/4/2019	105.59953	104.4963173	103.4160391	102.3579868	101.3214801	100.3058666	99.31051957	98.33483732	97.37824176
191009A00018	10/9/2019	1.74	10/12/2021	10/9/2019	105.75661	104.6273864	103.5221701	102.4401982	101.3807433	100.3431083	99.32662441	98.33064996	97.35456907
191010A00013	10/10/2019	1.59	10/7/2022	10/10/2019	111.23	109.0031571	106.8326517	104.7166868	102.6535325	100.6415267	98.67907195	96.76463248	94.8967312
191015A00001	10/15/2019	1.87	10/15/2021	10/15/2019	105.94387	104.8041372	103.6888218	102.5971467	101.5283664	100.4817664	99.45666175	98.4523953	97.46833656
191021A00021	10/21/2019	2.22	12/21/2027	10/21/2019	143.1034	133.5537578	124.708199	116.5110251	108.9112347	101.8621025	95.32079848	89.24804263	83.60779246
191021A00033	10/22/2019	1.9	7/18/2022	10/22/2019	110.20997	108.2489355	106.3327517	104.4600584	102.6295484	100.8399656	99.09010156	97.37879381	95.70492342
191104A00023	11/4/2019	2.24	8/4/2028	11/4/2019	146.69313	136.1339514	126.4116374	117.4555287	109.2012696	101.5902161	94.5689025	88.08856082	82.104686
191105A00014	11/5/2019	1.96	11/6/2023	11/5/2019	117.92567	114.3706455	110.9419405	107.6343152	104.4427783	101.3625767	98.3891828	95.51828196	92.74576104

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191106A00004	11/6/2019	2.01	11/6/2024	11/6/2019	123.99273	119.1127719	114.4524619	110.000697	105.7470001	101.6814813	97.79480091	94.07813611	90.52314876
191108A00013	11/8/2019	2.25	11/8/2029	11/8/2019	156.13683	143.2137068	131.4629849	120.7719893	111.0394318	102.174202	94.094296	86.72586331	80.00235722
191113A00016	11/15/2019	2.02	8/15/2024	11/15/2019	122.6965	118.1233339	113.7458423	109.5546381	105.5408363	101.6960218	98.01222236	94.48188265	91.09784056
191114A00021	11/18/2019	1.91	6/15/2022	11/18/2019	109.68395	107.8274997	106.0121294	104.2365402	102.499491	100.7997928	99.13630612	97.50793804	95.91363999
191115A00016	11/18/2019	2.48	11/18/2024	11/18/2019	126.31233	121.3411204	116.5946383	112.0614528	107.7307858	103.5924675	99.6368984	95.85501377	92.23825035
191115A00028	11/15/2019	2.34	9/28/2029	11/15/2019	153.94224	141.4090737	129.9973655	119.6007354	110.1234131	101.4791285	93.59012444	86.38627732	79.80431229
191120A00032	11/20/2019	1.73	5/20/2021	11/20/2019	103.60799	102.9317002	102.2642246	101.6053898	100.9550288	100.3129786	99.67908066	99.05318022	98.4351265
191122A00007	11/22/2019	1.87	11/21/2025	11/22/2019	130.48636	124.0923106	118.0493563	112.3363278	106.9334479	101.8222335	96.98540382	92.40679493	88.07128163
191126A00023	11/26/2019	1.81	5/27/2025	11/26/2019	127.29188	121.6079293	116.2103259	111.083073	106.2111581	101.5804883	97.17782825	92.99074287	89.00754414
191206A00044	12/10/2019	2.01	10/31/2024	12/10/2019	123.89517	119.0378273	114.3983706	109.9658264	105.7298366	101.6806209	97.80894148	94.1060692	90.56375288
191212A00026	12/13/2019	1.92	6/16/2022	12/13/2019	109.71798	107.8581389	106.0395048	104.2607735	102.5206982	100.8180846	99.15178802	97.52071098	95.92380039
191217A00012	12/20/2019	2.03	12/20/2024	12/20/2019	124.7941	119.7475289	114.9337878	110.3407938	105.9571666	101.7721827	97.77573347	93.95828574	90.31084507
191223A00008	12/23/2019	1.93	12/23/2021	12/23/2019	107.13492	105.7682767	104.4363236	103.1377525	101.8713211	100.6358477	99.43020814	98.25333197	97.10419947
191223A00022	12/23/2019	1.93	12/30/2021	12/23/2019	107.24975	105.8598302	104.5057373	103.1861004	101.899618	100.6450535	99.42123109	98.22703201	97.06139124
191223A00043	12/23/2019	1.77	3/23/2021	12/23/2019	102.71815	102.2169739	101.7206829	101.2292093	100.7424833	100.260436	99.78300024	99.31010991	98.84170023
191223A00055	12/23/2019	2.46	12/7/2029	12/23/2019	156.2736	143.3510865	131.6046739	120.9208519	111.1976358	102.3433377	94.27547712	86.91981139	80.20947367
191226A00019	12/26/2019	2.4	12/22/2028	12/26/2019	150.30336	139.0480766	128.7223313	119.2442939	110.5397539	102.5413748	95.1880228	88.42416435	82.19932501
191226A00020	12/26/2019	2.44	12/21/2029	12/26/2019	156.26626	143.2884117	131.4962962	120.7750395	111.0214764	102.1428979	94.05593986	86.68559554	79.96433738
200108A00017	1/8/2020	2.55	1/8/2035	1/8/2020	189.8469	166.565737	146.4136127	128.9508488	113.8017178	100.644849	89.20511898	79.24678659	70.5676767
200108A00021	1/13/2020	1.97	1/13/2025	1/13/2020	124.8411	119.7151339	114.8286153	110.1690473	105.7246545	101.4843404	97.43764354	93.57469766	89.88619426
200114A00006	1/15/2020	1.99	1/15/2025	1/15/2020	124.96652	119.8311154	114.9357983	110.268038	105.8160284	101.5686428	97.51539067	93.64637754	89.95226767
200115A00017	1/15/2020	1.88	1/17/2023	1/15/2020	113.03168	110.4807513	108.000518	105.5885598	103.2425538	100.9602733	98.73958367	96.57843699	94.47486837
200115A00024	1/15/2020	1.88	1/17/2023	1/15/2020	113.03168	110.4807513	108.000518	105.5885598	103.2425538	100.9602733	98.73958367	96.57843699	94.47486837
200117A00002	1/17/2020	1.72	1/19/2021	1/17/2020	101.71018	101.3946782	101.0811404	100.769553	100.4598977	100.1521564	99.84631144	99.54234509	99.24024001
200127A00019	1/27/2020	1.8	1/27/2025	1/27/2020	124.25399	119.0949519	114.1787077	109.4925862	105.0246406	100.7636063	96.69885776	92.8203696	89.11867906
200127A00030	1/27/2020	1.8	1/27/2025	1/27/2020	124.25399	119.0949519	114.1787077	109.4925862	105.0246406	100.7636063	96.69885776	92.8203696	89.11867906
200128A00028	1/28/2020	1.81	1/28/2025	1/28/2020	124.31658	119.1528244	114.2321826	109.5419688	105.0702206	100.8056579	96.73764068	92.85612894	89.15164615
200129A00008	1/29/2020	1.76	1/31/2022	1/29/2020	107.33435	105.9087379	104.5090205	103.1345476	101.7846941	100.4588551	99.15644514	97.876897	96.61966136
200203A00022	2/3/2020	1.75	2/3/2025	2/3/2020	124.12558	118.9450643	114.0093491	109.3056273	104.8218295	100.5465747	96.46912776	92.57935942	88.86770903
200214A00016	2/14/2020	1.57	2/14/2024	2/14/2020	118.82933	114.916207	111.1525065	107.5317383	104.0477306	100.6946113	97.46679184	94.35895207	91.36602569
200218A00024	2/20/2020	1.73	7/17/2023	2/20/2020	115.45924	112.3003647	109.2443452	106.2872118	103.4251749	100.6546158	97.97207725	95.37425527	92.85799132
200219A00016	2/19/2020	1.57	10/19/2022	2/19/2020	111.3696	109.105162	106.8986405	104.7481516	102.6518922	100.6081312	98.6152062	96.67152002	94.77553766
200220A00007	2/20/2020	1.72	2/21/2023	2/20/2020	113.1965	110.5293349	107.938681	105.4219046	102.9764831	100.5999953	98.29011655	96.04461471	93.86134555

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200220A00019	2/20/2020	1.59	2/22/2021	2/20/2020	102.18701	101.7720899	101.3605347	100.9523069	100.5473662	100.1456731	99.74718845	99.35187396	98.95969184
200221A00006	2/21/2020	1.5	2/21/2025	2/21/2020	124.25432	118.9726131	113.9442563	109.1558011	104.5945857	100.2486814	96.10684641	92.15848274	88.39359594
200221A00031	2/21/2020	1.69	2/21/2025	2/21/2020	124.12979	118.8821224	113.8853595	109.1262223	104.5922041	100.2715206	96.15306416	92.22636132	88.48153358
200224A00005	2/24/2020	1.59	2/24/2022	2/24/2020	107.49142	105.9861885	104.5095986	103.0608989	101.6393656	100.2442996	98.87502523	97.53088915	96.21125972
200224A00016	2/24/2020	1.56	2/24/2023	2/24/2020	112.83791	110.165057	107.569168	105.0475884	102.5977716	100.2172739	97.90374931	95.65494566	93.46869973
200225A00005	2/25/2020	1.57	2/25/2025	2/25/2020	123.61387	118.3631786	113.3643377	108.6039843	104.0695307	99.74911814	95.63157055	91.70635194	87.96352637
200225A00018	2/25/2020	1.94	2/25/2030	2/25/2020	151.72691	138.6991035	126.8893401	116.1774379	106.4556366	97.62725868	89.60551923	82.31246921	75.67805612
200225A00046	2/25/2020	1.54	2/23/2024	2/25/2020	118.12896	114.2157514	110.4527384	106.8333643	103.351396	100.0009047	96.7762494	93.6720611	90.68322844
200226A00012	2/26/2020	1.54	2/28/2022	2/26/2020	107.48094	105.9627575	104.4736734	103.0129248	101.5797712	100.1734972	98.79341156	97.43884638	96.10915586
200226A00014	2/26/2020	1.53	2/27/2023	2/26/2020	112.80884	110.126103	107.5208828	104.9904968	102.5323715	100.1440377	97.82312547	95.56735987	93.37455619
200226A00019	2/26/2020	1.38	2/26/2025	2/26/2020	123.75254	118.4635996	113.4293286	108.6361645	104.0713373	99.7228194	95.57927786	91.63003104	87.86500769
200227A00004	2/27/2020	1.65	2/27/2030	2/27/2020	151.13288	137.9939509	126.0909986	115.3015184	105.5157209	96.635152	88.57147093	81.24536636	74.58559296
200227A00009	2/27/2020	1.47	2/27/2025	2/27/2020	123.16102	117.9133257	112.9178019	108.1610459	103.6304358	99.31408166	95.20077913	91.2799664	87.54168407
200227A00011	2/27/2020	1.42	2/28/2022	2/27/2020	107.30413	105.7873208	104.2995866	102.8401639	101.4083128	100.0033185	98.62449045	97.27116136	95.94268603
200227A00016	2/27/2020	1.47	2/27/2025	2/27/2020	123.16102	117.9133257	112.9178019	108.1610459	103.6304358	99.31408166	95.20077913	91.2799664	87.54168407
200228A00020	2/28/2020	1.32	2/24/2023	2/28/2020	112.22641	109.5613616	106.9731033	104.4589842	102.0164629	99.64310075	97.33655676	95.09458331	92.91502173
200228A00061	2/28/2020	1.13	7/20/2022	2/28/2020	109.12845	107.1657678	105.2481853	103.3743439	101.5429343	99.75269763	98.0024224	96.29094275	94.6171361
200302A00031	3/2/2020	1.02	11/18/2022	3/2/2020	110.59131	108.2433994	105.9573381	103.7310476	101.5625335	99.44988476	97.39126954	95.38493118	93.42918441
200304A00021	3/4/2020	0.94	3/4/2024	3/4/2020	116.79361	112.851775	109.0631282	105.4209092	101.9186911	98.55036482	95.31012108	92.19243408	89.19204611
200304A00038	3/4/2020	1.01	3/1/2022	3/4/2020	106.71307	105.1978879	103.7118171	102.2540847	100.8239489	99.42069307	98.04362508	96.6920759	95.36539885
200304A00052	3/6/2020	2.11	3/8/2027	3/6/2020	137.91299	129.6229628	121.8854502	114.6607815	107.9123309	101.6062679	95.71133066	90.19861838	85.04140166
200304A00054	3/6/2020	2.35	3/8/2027	3/6/2020	139.66427	131.3155886	123.5222445	116.2444082	109.4453016	103.0909519	97.14996397	91.59331235	86.39415082
200305A00002	3/5/2020	1.14	3/5/2025	3/5/2020	121.64261	116.4094067	111.4290752	106.6881079	102.1737928	97.87415837	93.7779263	89.874468	86.15376368
200309A00027	3/9/2020	0.97	3/10/2025	3/9/2020	120.8788	115.6464999	110.6680321	105.9297916	101.4189755	97.12352918	93.0320985	89.1339857	85.41910781
200309A00056	3/9/2020	0.97	3/7/2025	3/9/2020	120.84107	115.6197075	110.6511946	105.9220049	101.4194069	97.13141169	93.04672581	89.15470736	85.44532492
200324A00020	3/24/2020	1.23	3/24/2022	3/24/2020	107.33649	105.7483855	104.1920905	102.6667288	101.1714566	99.70546016	98.26795447	96.85818212	95.47541202
200325A00029	3/25/2020	1.15	3/24/2023	3/25/2020	112.68995	109.919513	107.2315933	104.6232417	102.091636	99.63407255	97.24796027	94.93081511	92.68025502
200406A00013	4/6/2020	0.83	4/1/2022	4/6/2020	106.81933	105.2116683	103.6366528	102.0933702	100.5809431	99.09852578	97.64530287	96.220488	94.82332247
200407A00001	4/8/2020	2.41	4/7/2025	4/8/2020	128.38851	122.8848242	117.6501197	112.6698034	107.9301554	103.4182698	99.12200187	95.0299189	91.13125459
200413A00031	4/13/2020	0.73	4/13/2022	4/13/2020	106.81215	105.1686878	103.5590406	101.9822428	100.4373662	98.92351704	97.43983446	95.98548904	94.55968131
200416A00005	4/16/2020	0.49	4/15/2022	4/16/2020	106.74019	105.0864212	103.4668374	101.8804541	100.3263275	98.80354953	97.31124561	95.84857342	94.4147213
200417A00016	4/21/2020	2.18	4/21/2025	4/21/2020	127.47901	121.9481014	116.6897473	111.6890441	106.9319883	102.4054141	98.0969385	93.99491052	90.08836369
200428A00013	4/30/2020	1.49	4/29/2024	4/30/2020	118.90726	114.7625223	110.7844116	106.9652884	103.297913	99.77541882	96.39129061	93.13934457	90.01370916

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200429A00010	4/29/2020	0.78	4/29/2025	4/29/2020	121.63046	116.1782767	110.9986791	106.0766093	101.3979226	96.94932869	92.71833496	88.6931941	84.86285544
200429A00017	5/4/2020	0.66	8/15/2022	5/4/2020	108.21007	106.185543	104.2088165	102.2784691	100.3931357	98.55150041	96.75229435	94.99429363	93.27631754
200429A00056	5/1/2020	1.54	4/30/2025	5/1/2020	124.45828	118.9665888	113.7477858	108.7868513	104.0696777	99.58300715	95.31437478	91.2520572	87.38502401
200506A00002	5/8/2020	0.97	5/5/2025	5/8/2020	121.64451	116.2036048	111.0346723	106.1226838	101.4535216	97.01392165	92.79141642	88.77428284	84.9514935
200506A00005	5/6/2020	0.97	5/6/2025	5/6/2020	121.65693	116.212413	111.0401882	106.1251981	101.453302	97.01121454	92.78644859	88.76726311	84.94261416
200507A00005	5/7/2020	0.67	5/5/2023	5/7/2020	111.42116	108.5478159	105.7630638	103.0636144	100.4463207	97.90817456	95.44629894	93.05794147	90.740468
200508A00004	5/8/2020	0.43	5/8/2023	5/8/2020	111.32965	108.436549	105.6331234	102.9160262	100.2820555	97.72815104	95.25138723	92.84896588	90.51820975
200511A00017	5/11/2020	0.83	2/3/2025	5/11/2020	119.74076	114.6598392	109.8202692	105.209394	100.8152855	96.62669674	92.63302001	88.82424704	85.19093224
200611A00013	6/11/2020	0.59	6/12/2023	6/11/2020	111.64597	108.6521626	105.7536574	102.9467801	100.2280262	97.59405216	95.04166746	92.56782562	90.16961673
200709A00004	7/10/2020	1.4	7/10/2025	7/10/2020	124.68454	118.947343	113.5057148	108.3428459	103.4429742	98.7913173	94.3740054	90.17801977	86.19113552
200709A00005	7/10/2020	2.23	7/10/2030	7/10/2020	156.87642	143.0501336	130.5571773	119.2617527	109.0425584	99.79117193	91.41062075	83.81411967	76.92395283
200720A00037	7/22/2020	2.1	7/21/2025	7/22/2020	128.61422	122.7398168	117.1681961	111.8821616	106.8655847	102.103333	97.58120276	93.28585763	89.20477047
200722A00011	7/22/2020	0.59	7/24/2023	7/22/2020	112.13837	109.0072155	105.978859	103.0493478	100.2149081	97.4719329	94.81697399	92.24673341	89.75805622
200818A00004	8/18/2020	0.92	8/18/2026	8/18/2020	126.96142	119.7569061	112.9995788	106.6595118	100.7089293	95.12203702	89.87487173	84.94516219	80.31220186
200818A00007	8/18/2020	1.31	8/20/2029	8/18/2020	142.6105	130.759501	119.9691065	110.1392467	101.1797524	93.00933107	85.55465298	78.74953569	72.53421584
200818A00008	8/18/2020	1.5	8/18/2031	8/18/2020	153.01765	137.7676266	124.1503798	111.9829729	101.1037905	91.36996194	82.65510574	74.84735493	67.84762744
200818A00009	8/18/2020	1.7	8/18/2033	8/18/2020	164.25483	145.3081889	128.7129602	114.1650736	101.4011519	90.1928916	80.3422422	71.67726825	64.04859452
200911A00026	9/15/2020	1.45	9/15/2025	9/15/2020	125.88793	119.890552	114.2124747	108.8350691	103.7408884	98.91358702	94.33784526	89.99929977	85.88447895
200925A00008	9/25/2020	0.74	9/25/2025	9/25/2020	122.10751	116.1728214	110.5573251	105.2422512	100.2100285	95.44420281	90.92936036	86.65105631	82.59574904
200109A00012	1/14/2020	1.94	12/15/2022	1/14/2020	112.65795	110.2117466	107.8314744	105.5148436	103.2596687	101.0638588	98.92541305	96.84241548	94.81303075
200115A00022	1/15/2020	1.88	10/14/2022	1/15/2020	111.54252	109.2992969	107.1130305	104.9818859	102.9041043	100.8779964	98.90193918	96.97437272	95.09379712
200123A00013	1/27/2020	1.89	1/27/2025	1/27/2020	124.68091	119.5122187	114.5866528	109.8915282	105.4148847	101.1454445	97.07257004	93.18622415	89.476933
200129A00017	2/3/2020	1.75	8/15/2022	2/3/2020	110.35626	108.3100747	106.3121148	104.3609488	102.4551997	100.5935399	98.77468935	96.99741349	95.26052128
200131A00014	2/5/2020	1.7	2/22/2022	2/5/2020	107.61996	106.1202654	104.6489946	103.2054089	101.7887926	100.398454	99.03372461	97.69395812	96.37852941
200131A00047	1/31/2020	1.68	1/31/2023	1/31/2020	112.7542	110.1643968	107.6471057	105.199901	102.8204481	100.5065041	98.25591296	96.0666021	93.93657843
200203A00001	2/3/2020	1.7	2/3/2023	2/3/2020	112.85254	110.2512603	107.7230736	105.2655185	102.876234	100.5529515	98.29349129	96.09575806	93.95773725
200203A00004	2/3/2020	1.7	2/3/2023	2/3/2020	112.85254	110.2512603	107.7230736	105.2655185	102.876234	100.5529515	98.29349129	96.09575806	93.95773725
200205A00011	2/7/2020	2.31	2/7/2024	2/7/2020	120.67024	116.7674073	113.0120135	109.3977186	105.918486	102.5685695	99.34249799	96.2350605	93.2412926
200210A00005	2/10/2020	1.77	2/10/2027	2/10/2020	136.67411	128.4653826	120.8004047	113.640426	106.9496452	100.6949715	94.84580673	89.37384541	84.25289228
200214A00020	2/18/2020	1.78	1/15/2025	2/18/2020	123.97847	118.8652475	113.9913488	109.3442793	104.9122637	100.6842046	96.64963935	92.79870012	89.12207632
200219A00007	2/19/2020	1.81	8/19/2021	2/19/2020	104.98425	104.0270072	103.0871536	102.164222	101.2577586	100.3673255	99.49250021	98.63287513	97.7880566
200220A00008	2/20/2020	1.74	2/20/2024	2/20/2020	118.81484	114.8997601	111.1344672	107.51244	104.0274787	100.6736854	97.44544755	94.33742284	91.3445244
200221A00013	2/21/2020	1.69	2/21/2025	2/21/2020	124.12979	118.8821224	113.8853595	109.1262223	104.5922041	100.2715206	96.15306416	92.22636132	88.48153358

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200224A00007	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200224A00024	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200224A00035	2/24/2020	1.59	2/24/2025	2/24/2020	123.6948	118.4459654	113.4487057	108.6896811	104.1563258	99.83680111	95.71994956	91.79525218	88.05278871
200225A00014	2/25/2020	1.57	2/25/2022	2/25/2020	107.47793	105.9695425	104.4899096	103.0382766	101.6139154	100.2161231	98.84421997	97.49754922	96.17547567
200225A00042	2/25/2020	1.39	2/25/2022	2/25/2020	107.46312	105.9507798	104.4673274	103.0120072	101.5840863	100.1828566	98.80763411	97.45775768	96.13258813
200227A00012	2/27/2020	1.41	2/27/2023	2/27/2020	112.502	109.8231923	107.2218132	104.6951824	102.2407291	99.85598654	97.53858745	95.28625913	93.09681916
200228A00014	2/28/2020	1.4	2/28/2025	2/28/2020	122.83714	117.5932155	112.6015388	107.8486938	103.3220447	99.00968922	94.90041175	90.98364046	87.24940691
200228A00041	2/28/2020	1.14	2/28/2023	2/28/2020	112.32598	109.6354428	107.0229887	104.4859014	102.0215788	99.62752504	97.30134488	95.04073947	92.84350161
200228A00067	2/28/2020	1.4	2/28/2025	2/28/2020	122.83714	117.5932155	112.6015388	107.8486938	103.3220447	99.00968922	94.90041175	90.98364046	87.24940691
200310A00022	3/10/2020	1.12	3/10/2027	3/10/2020	132.32779	124.1548049	116.5326607	109.4215191	102.7846176	96.58801554	90.800364	85.39269555	80.33823186
200310A00073	3/12/2020	2.12	3/11/2027	3/12/2020	138.03076	129.725723	121.9748182	114.7382165	107.9791446	101.6636394	95.76031955	90.24017679	85.07638482
200311A00016	3/11/2020	0.87	5/11/2021	3/11/2020	102.83529	102.189895	101.5525698	100.9231672	100.30154	99.68754485	99.08104172	98.48189405	97.88996859
200311A00058	3/16/2020	1.1	10/14/2022	3/16/2020	109.86731	107.6423821	105.4740353	103.3604456	101.2998648	99.29061425	97.3310807	95.41971378	93.55502282
200312A00016	3/16/2020	1.09	2/15/2023	3/16/2020	111.51033	108.8850192	106.3346256	103.8565894	101.4484556	99.10786742	96.8325614	94.62036328	92.46918391
200326A00028	3/26/2020	1.54	3/26/2025	3/26/2020	123.89065	118.5341002	113.4389827	108.591178	103.9774007	99.58514901	95.40265448	91.41883482	87.62325035
200330A00041	4/1/2020	1.09	4/1/2025	4/1/2020	121.74986	116.4232332	111.3581718	106.5404757	101.9567924	97.59456077	93.44195942	89.48785949	85.72178022
200330A00045	3/30/2020	1.47	3/30/2027	3/30/2020	133.52283	125.3000813	117.6331848	110.4817562	103.8085483	97.57918785	91.7619398	86.32749186	81.24875789
200331A00029	4/2/2020	1.77	4/3/2023	4/2/2020	113.96204	111.1544984	108.4310696	105.7887273	103.224574	100.7358347	98.31985101	95.97407537	93.69606557
200414A00016	4/16/2020	1.64	4/15/2024	4/16/2020	119.27733	115.1718611	111.2299248	107.4440939	103.8073267	100.3129405	96.95459082	93.72625247	90.62220136
200415A00030	4/15/2020	0.76	3/15/2023	4/15/2020	111.03785	108.3280353	105.6980688	103.1451361	100.6665373	98.2596842	95.92209502	93.65138909	91.44528219
200420A00011	4/20/2020	0.7	4/19/2024	4/20/2020	116.48569	112.3989535	108.4764382	104.7106398	101.0944401	97.6210861	94.28416924	91.07760543	87.99561666
200427A00010	4/27/2020	0.68	4/27/2022	4/27/2020	106.90461	105.2184925	103.5675986	101.9509013	100.3674113	98.81617671	97.29628212	95.80684627	94.34702069
200429A00045	5/1/2020	1.54	4/30/2025	5/1/2020	124.45828	118.9665888	113.7477858	108.7868513	104.0696777	99.58300715	95.31437478	91.2520572	87.38502401
200429A00050	5/1/2020	2.61	4/30/2025	5/1/2020	129.85678	124.2359077	118.8925929	113.8116069	108.9786442	104.3802592	100.0038089	95.83740103	91.86984488
200429A00051	5/1/2020	2.54	4/30/2025	5/1/2020	129.5036	123.8911859	118.5560167	113.4828846	108.6574969	104.0664202	99.69702346	95.53742526	91.57644538
200429A00058	5/1/2020	1.83	4/30/2025	5/1/2020	125.92142	120.394722	115.1421728	110.1487009	105.4001453	100.8831969	96.5853429	92.49481394	88.60053621
200504A00004	5/4/2020	0.75	5/5/2025	5/4/2020	121.55327	116.0828003	110.8867078	105.9497813	101.2577414	96.79717385	92.55547266	88.5207863	84.68196844
200504A00015	5/4/2020	0.68	5/4/2023	5/4/2020	111.4369	108.5663777	105.784292	103.087356	100.4724315	97.9365183	95.47674709	93.0903726	90.77476737
200529A00008	5/29/2020	0.33	5/31/2022	5/29/2020	107.01938	105.2272961	103.4742507	101.7590419	100.0805136	98.43755671	96.82910737	95.25414415	93.71168607
200529A00009	5/29/2020	0.42	5/30/2023	5/29/2020	111.55928	108.5955017	105.7252485	102.9449503	100.2512023	97.6407544	95.11050291	92.65748267	90.27885972
200611A00011	6/11/2020	1.2	6/9/2028	6/11/2020	136.62127	126.6793021	117.5201105	109.0781418	101.2936605	94.11220019	87.48407265	81.36392491	75.71033967
200615A00023	6/17/2020	1.68	6/17/2024	6/17/2020	120.37972	116.0465613	111.8928965	107.9102265	104.0905082	100.4261295	96.90988291	93.53494162	90.2948362
200629A00005	6/29/2020	0.55	6/29/2022	6/29/2020	107.42188	105.5437136	103.7079315	101.9131697	100.1581206	98.44153283	96.7622085	95.11899989	93.51080698

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200730A00001	7/30/2020	0.46	7/30/2024	7/30/2020	116.76609	112.3422568	108.1076186	104.0531367	100.170251	96.45085221	92.88725573	89.47217689	86.19870829
200803A00011	8/3/2020	0.72	8/4/2025	8/3/2020	121.38485	115.6473504	110.2100388	105.0557504	100.1683854	95.53283814	91.13493092	86.96135246	82.99960072
200818A00005	8/18/2020	1.05	8/18/2027	8/18/2020	132.01049	123.3319182	115.2724256	107.7848749	100.8259356	94.35576273	88.33770035	82.73801123	77.52563124
200818A00006	8/18/2020	1.18	8/18/2028	8/18/2020	137.22425	126.9994322	117.5973027	108.9477069	100.9867945	93.65642734	86.90364207	80.68016615	74.94198129
200825A00007	8/27/2020	4.79	8/27/2026	8/27/2020	152.7736	144.743604	137.2000732	130.1107966	123.4458664	117.1774981	111.2798693	105.728971	100.5024714
200910A00013	9/10/2020	2.14	9/10/2040	9/10/2020	204.26786	170.3856299	142.6197008	119.8260745	101.0802047	85.63398145	72.88131547	62.33057029	53.5824549
200910A00016	9/10/2020	1.73	9/8/2034	9/10/2020	169.22912	148.299816	130.1552918	114.4102045	100.7342726	88.8441779	78.49668759	69.4828127	61.6228415
200910A00017	9/10/2020	1.88	9/10/2036	9/10/2020	180.65801	155.6542578	134.3860124	116.2740714	100.8316904	87.64943472	76.38257452	66.74058565	58.47839666
200910A00018	9/10/2020	2.02	9/10/2038	9/10/2020	192.38326	163.0600599	138.5807125	118.1157021	100.9814431	86.61399322	74.54760985	64.3972345	55.84417152
200922A00036	9/24/2020	1.55	9/23/2025	9/24/2020	126.55498	120.5117446	114.7914418	109.3751545	104.2451695	99.38489651	94.77879144	90.41228455	86.27171458
200925A00003	9/25/2020	0.59	9/25/2024	9/25/2020	117.1479	112.5508406	108.1574522	103.9576482	99.94190009	96.1011997	92.4270278	88.91132496	85.54646414
190909A00030	9/9/2019	1.83	9/9/2024	9/9/2019	122.28499	117.6359682	113.1893566	108.9352793	104.8643947	100.9678645	97.23732355	93.6648522	90.24294999
190912A00026	9/12/2019	1.94	9/12/2022	9/12/2019	111.1589	109.0185675	106.9305788	104.8933246	102.9052533	100.9648717	99.07074245	97.22148126	95.41575475
190912A00031	9/12/2019	1.75	9/12/2024	9/12/2019	122.86402	118.1681737	113.6777063	109.3825467	105.2731759	101.3405903	97.57627075	93.97215374	90.5206047
190917A00035	9/19/2019	2.02	10/16/2023	9/19/2019	117.78991	114.3038858	110.9399452	107.6931003	104.5586008	101.5319189	98.60873698	95.78493708	93.0565899
190917A00044	9/17/2019	1.86	9/17/2021	9/17/2019	105.65196	104.5989871	103.5669226	102.5551461	101.563064	100.5901054	99.63572139	98.69938389	97.78058466
190925A00019	9/27/2019	1.93	9/27/2023	9/27/2019	117.19857	113.7821602	110.4838322	107.2988388	104.2226495	101.2509425	98.37959292	95.60466343	92.92239398
190926A00015	9/26/2019	2.32	11/26/2030	9/26/2019	159.93244	145.3823924	132.282188	120.4793931	109.8383464	100.2382356	91.57140196	83.74184646	76.6639126
190927A00036	9/27/2019	1.94	9/6/2024	9/27/2019	122.709	118.0616045	113.6160164	109.3624155	105.291509	101.3945035	97.66307538	94.08934306	90.66584131
190930A00077	9/30/2019	2.23	9/28/2029	9/30/2019	152.77938	140.3005699	128.9396948	118.5906411	109.1578829	100.5553735	92.70556109	85.53851061	78.99112025
191001A00006	10/1/2019	1.83	6/18/2024	10/1/2019	121.00001	116.6513964	112.4829102	108.4860159	104.6526395	100.9751401	97.44628318	94.05921629	90.8074461
191002A00006	10/2/2019	1.84	10/2/2024	10/2/2019	122.69233	117.9556762	113.4284422	109.1002406	104.9612614	101.0022316	97.21438345	93.58942372	90.11950538
191004A00003	10/4/2019	1.89	10/5/2026	10/4/2019	134.08072	126.4818847	119.3610749	112.685744	106.4257261	100.5530499	95.04176794	89.86779995	85.00878919
191004A00012	10/4/2019	1.78	10/4/2024	10/4/2019	122.46037	117.7220447	113.1934955	108.8643104	104.7246502	100.7652157	96.97721467	93.35233156	89.88269873
191004A00032	10/4/2019	2.01	1/3/2028	10/4/2019	141.54775	132.0083756	123.1766658	114.9963671	107.4159867	100.3883673	93.87029913	87.82216927	82.20764368
191007A00024	10/7/2019	1.7	7/14/2022	10/7/2019	109.75223	107.8077848	105.9076772	104.0505482	102.2350894	100.4600442	98.72420568	97.02641343	95.36555179
191007A00027	10/7/2019	1.69	10/7/2022	10/7/2019	111.02985	108.8131229	106.6523483	104.5457411	102.4915873	100.4882401	98.5341164	96.62769399	94.76750876
191017A00025	10/17/2019	1.74	10/19/2020	10/17/2019	100.29254	100.2395086	100.1865456	100.1336555	100.0808381	100.0280934	99.9754211	99.92282113	99.87029331
191021A00002	10/21/2019	1.9	10/21/2020	10/21/2019	100.32447	100.2659255	100.2074608	100.1490789	100.0907797	100.032563	99.9744286	99.91637636	99.8584061
191025A00009	10/25/2019	2.26	5/25/2029	10/25/2019	151.25372	139.3451658	128.4664551	118.5229917	109.4293426	101.1083022	93.49006014	86.51145668	80.11531759
191031A00019	10/31/2019	1.88	10/31/2022	10/31/2019	111.80642	109.509376	107.2715396	105.0909657	102.9657907	100.8942264	98.8745567	96.90513359	94.98437421
191101A00006	11/1/2019	1.69	11/2/2020	11/1/2019	100.50373	100.411455	100.3193537	100.2274245	100.1356669	100.0440804	99.95266459	99.86141893	99.77034295
191104A00025	11/4/2019	2.33	8/2/2030	11/4/2019	158.36559	144.3722525	131.7339445	120.3121781	109.9832764	100.636722	92.1736971	84.50579264	77.55386518

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191114A00009	11/18/2019	1.94	8/16/2023	11/18/2019	116.55749	113.2881133	110.1275541	107.0716016	104.1162331	101.2576034	98.49203591	95.81601385	93.22617282
191119A00027	11/19/2019	1.8	11/19/2024	11/19/2019	124.17917	119.2241172	114.4944469	109.9786459	105.6658581	101.5458425	97.60893469	93.84601093	90.24845421
191120A00010	11/20/2019	1.88	1/20/2022	11/20/2019	107.38987	105.9752384	104.5900847	103.233502	101.9046188	100.6025994	99.32664196	98.0759768	96.84986481
191122A00005	11/22/2019	2.03	11/22/2027	11/22/2019	142.99264	133.4788123	124.66229	116.4882851	108.9065932	101.8711877	95.33985085	89.27383924	83.63758043
191122A00006	11/22/2019	1.74	11/22/2023	11/22/2019	118.11483	114.4878644	110.9916512	107.6206819	104.3697139	101.2337601	98.20807372	95.28813534	92.46964029
191122A00018	11/26/2019	3.11	11/22/2039	11/26/2019	224.77789	190.2519731	161.6343644	137.8685571	118.0926833	101.6027645	87.8230535	76.28207323	66.59323487
191202A00005	12/2/2019	2.03	12/2/2024	12/2/2019	124.5064	119.5264215	114.7738811	110.2371005	105.9050746	101.7674258	97.8143643	94.03665089	90.42556256
191209A00009	12/9/2019	1.91	12/9/2021	12/9/2019	106.88068	105.560671	104.2731062	103.0168008	101.7906275	100.5935124	99.42443196	98.28241049	97.16651696
191220A00001	12/20/2019	2.62	12/19/2031	12/20/2019	169.56572	152.8573827	137.9604101	124.6679523	112.7978124	102.18939	92.70101996	84.20765011	76.59881559
191223A00007	12/23/2019	1.95	6/23/2021	12/23/2019	104.1989	103.4192802	102.6512904	101.8946743	101.1491806	100.4145652	99.69059153	98.97702945	98.27365557
200109A00014	1/14/2020	1.93	8/15/2022	1/14/2020	110.71067	108.6609148	106.6594484	104.7048445	102.795724	100.9307574	99.10866283	97.32820393	95.58818795
200117A00026	1/17/2020	1.69	1/18/2022	1/17/2020	107.35591	105.9396574	104.5536762	103.1970069	101.8687276	100.5679553	99.29384407	98.04558288	96.82239387
200121A00009	1/24/2020	1.94	1/24/2025	1/24/2020	124.87138	119.7083071	114.7876979	110.0968959	105.6239758	101.3576943	97.28744735	93.40323051	89.69560154
200122A00028	1/22/2020	1.84	1/21/2022	1/22/2020	107.34551	105.9301604	104.5439621	103.1860273	101.8555068	100.5515859	99.27348247	98.02044511	96.79175188
200127A00016	1/27/2020	1.81	1/27/2025	1/27/2020	124.30143	119.1413149	114.2240349	109.5369131	105.0680011	100.8060327	96.74038135	92.86102011	89.15848505
200127A00018	1/27/2020	1.8	1/27/2025	1/27/2020	124.25399	119.0949519	114.1787077	109.4925862	105.0246406	100.7636063	96.69885776	92.8203696	89.11867906
200130A00006	1/30/2020	1.77	1/30/2025	1/30/2020	124.15676	118.9900153	114.0668109	109.3744324	104.9008952	100.634897	96.56577642	92.68347249	88.97848841
200131A00048	1/31/2020	1.69	1/31/2024	1/31/2020	118.3164	114.4792184	110.7865606	107.2322389	103.8103613	100.515318	97.34176615	94.28461558	91.33901568
200203A00009	2/3/2020	1.52	2/3/2023	2/3/2020	112.8905	110.2786821	107.7404469	105.2733094	102.8748866	100.5428896	98.27511912	96.0694614	93.92388447
200204A00012	2/4/2020	1.98	2/4/2027	2/4/2020	136.47058	128.3545942	120.7727651	113.6872371	107.0630242	100.8677748	95.0715607	89.64668443	84.56750224
200204A00015	2/4/2020	1.72	2/6/2023	2/4/2020	112.95124	110.3384831	107.7993889	105.3314737	102.9323495	100.5997224	98.3313887	96.12523015	93.97921063
200207A00018	2/7/2020	2.14	2/7/2030	2/7/2020	153.6751	140.6307781	128.7968558	118.0546687	108.2977493	99.43051415	91.36710234	84.03034241	77.35083417
200211A00022	2/11/2020	1.73	2/10/2023	2/11/2020	113.04167	110.4141049	107.860962	105.3797198	102.9679547	100.623339	98.34363691	96.12669995	93.97046327
200214A00014	2/18/2020	1.8	2/18/2025	2/18/2020	124.61099	119.3634745	114.3662212	109.6060188	105.0704185	100.7476888	96.62677012	92.69723344	88.94924064
200219A00006	2/19/2020	1.76	2/18/2022	2/19/2020	107.64213	106.1553157	104.6964676	103.2648651	101.8598089	100.4806233	99.12665494	97.79727193	96.49186302
200221A00001	2/21/2020	1.57	2/22/2021	2/21/2020	102.17888	101.7639791	101.3524439	100.944236	100.5393151	100.1376417	99.73917663	99.34388159	98.9517188
200221A00014	2/21/2020	1.49	2/21/2023	2/21/2020	113.10972	110.4332099	107.8336907	105.3085062	102.8551115	100.4710644	98.15402047	95.90172871	93.71202714
200224A00019	2/24/2020	1.59	2/18/2025	2/24/2020	123.59995	118.3756143	113.4007314	108.6621262	104.1473831	99.84480206	95.74335382	91.83263771	88.10284277
200225A00045	2/25/2020	1.54	2/24/2023	2/25/2020	112.78695	110.1147491	107.519496	104.9985381	102.5493292	100.1694261	97.85648326	95.6082488	93.42255989
200225A00050	2/25/2020	1.57	2/25/2025	2/25/2020	123.61387	118.3631786	113.3643377	108.6039843	104.0695307	99.74911814	95.63157055	91.70635194	87.96352637
200226A00015	2/26/2020	1.53	2/26/2024	2/26/2020	118.13814	114.2144185	110.4416562	106.8132478	103.3229142	99.96468364	96.73287499	93.62208181	90.62715762
200227A00013	2/27/2020	1.43	2/27/2024	2/27/2020	117.78533	113.8644749	110.0946547	106.4692513	102.9819766	99.62685085	96.39818524	93.29056647	90.29884175
200227A00022	2/27/2020	1.41	2/27/2023	2/27/2020	112.502	109.8231923	107.2218132	104.6951824	102.2407291	99.85598654	97.53858745	95.28625913	93.09681916

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200227A00030	2/27/2020	1.59	2/27/2026	2/27/2020	129.03109	122.368131	116.0876597	110.1657926	104.5802568	99.31027284	94.33644727	89.64067325	85.2060389
200228A00025	2/28/2020	1.57	3/2/2027	2/28/2020	133.89425	125.7606185	118.170183	111.083952	104.4659201	98.28282679	92.5039342	87.10082361	82.04720948
200228A00060	2/28/2020	1.31	2/28/2022	2/28/2020	107.14206	105.6265038	104.1400071	102.6817998	101.2511425	99.8473213	98.46964609	97.1174501	95.79008869
200228A00062	2/28/2020	1.32	2/28/2023	2/28/2020	112.287	109.6075411	107.0056369	104.4785982	102.023847	99.63890999	97.32141337	95.06907847	92.87971724
200228A00063	2/28/2020	1.32	2/28/2023	2/28/2020	112.287	109.6075411	107.0056369	104.4785982	102.023847	99.63890999	97.32141337	95.06907847	92.87971724
200228A00066	2/28/2020	1.35	2/28/2024	2/28/2020	117.50557	113.5862901	109.8181493	106.1945239	102.7091158	99.35593563	96.12928595	93.02374537	90.03415365
200302A00011	3/2/2020	1.31	2/27/2025	3/2/2020	122.38606	117.1562306	112.1779452	107.4378289	102.9232858	98.62245037	94.52414171	90.61782014	86.8935473
200302A00051	3/2/2020	1.22	8/8/2023	3/2/2020	114.23434	111.0253867	107.9227607	104.9223754	102.0203231	99.21286693	96.49643269	93.8676006	91.32309792
200302A00054	3/2/2020	1.31	3/3/2025	3/2/2020	122.44195	117.1970078	112.20495	107.4522935	102.926346	98.61515351	94.50745305	90.59262946	86.86067468
200303A00010	3/3/2020	1.34	3/3/2025	3/3/2020	122.58764	117.339333	112.3440268	107.588235	103.0592604	98.74514419	94.63461912	90.71706581	86.98247222
200305A00020	3/5/2020	0.95	3/5/2025	3/5/2020	121.75701	116.4897387	111.4778091	106.707546	102.1660788	97.84128897	93.72176158	89.79674111	86.05608977
200305A00035	3/5/2020	1.25	3/5/2026	3/5/2020	127.05569	120.4271502	114.1811687	108.2937532	102.7425394	97.50666828	92.56667732	87.90440019	83.502874
200306A00002	3/6/2020	0.64	3/7/2022	3/6/2020	106.49118	104.9557989	103.4503184	101.9739335	100.5258725	99.1053902	97.7117672	96.34430865	95.00234317
200306A00009	3/6/2020	0.82	3/7/2022	3/6/2020	106.50747	104.9761396	103.4745631	102.0019447	100.5575178	99.14054238	97.75030384	96.38611179	95.04729913
200309A00033	3/9/2020	1.06	3/9/2026	3/9/2020	125.953	119.3417455	113.1133108	107.2436279	101.7102613	96.49228927	91.57019418	86.92576142	82.54198593
200309A00046	3/9/2020	0.78	3/11/2025	3/9/2020	121.00266	115.7325615	110.7191143	105.948514	101.4077735	97.08466767	92.96768423	89.04597852	85.30933128
200310A00019	3/10/2020	0.95	3/10/2023	3/10/2020	111.46851	108.7685697	106.1477181	103.6031798	101.1322957	98.73251602	96.40139514	94.13658651	91.93583805
200310A00025	3/10/2020	0.87	3/11/2024	3/10/2020	116.62558	112.6639517	108.8571689	105.1983516	101.6809685	98.29881294	95.04598465	91.91687312	88.90614159
200310A00037	3/10/2020	0.84	3/7/2022	3/10/2020	106.53735	105.0057832	103.5039757	102.0311303	100.5864805	99.1692861	97.77883236	96.41442879	95.07540821
200310A00042	3/10/2020	1.41	3/11/2030	3/10/2020	145.99877	133.1953679	121.6012408	111.0962047	101.5725773	92.93381799	85.0933247	77.97336665	71.50413604
200310A00065	3/13/2020	1.1	3/13/2025	3/13/2020	121.55207	116.2940514	111.291372	106.5303241	101.9980115	97.68229307	93.57173435	89.65556294	85.9236266
200311A00022	3/11/2020	1.23	3/11/2026	3/11/2020	128.34031	121.6083966	115.2670086	109.2915258	103.6590069	98.34806357	93.33874704	88.61244425	84.15178169
200311A00036	3/16/2020	1.03	4/15/2022	3/16/2020	107.31956	105.6658544	104.0462361	102.459732	100.9054032	99.38234562	97.88968878	96.42659404	94.99225321
200313A00022	3/13/2020	1.11	3/8/2022	3/13/2020	106.95405	105.4162398	103.9083575	102.4296036	100.9792057	99.55641787	98.16051998	96.79081638	95.4466349
200326A00026	3/26/2020	1.32	3/26/2024	3/26/2020	117.77065	113.7586395	109.9045997	106.201454	102.6424844	99.22130994	95.93186792	92.76839597	89.72541551
200327A00074	3/31/2020	1.76	3/29/2024	3/31/2020	119.47473	115.4217035	111.528307	107.787383	104.1921338	100.7361036	97.41315877	94.21747051	91.14349747
200331A00060	3/31/2020	1.09	3/31/2025	3/31/2020	121.73672	116.413802	111.3521316	106.5375379	101.9566907	97.59704946	93.44681188	89.49486654	85.7307488
200402A00021	4/2/2020	0.77	10/2/2024	4/2/2020	118.89008	114.2083472	109.7351898	105.4602145	101.373605	97.46608455	93.72888377	90.15370978	86.73271769
200403A00021	4/3/2020	0.74	4/29/2022	4/3/2020	107.02825	105.3350778	103.6773571	102.0540453	100.4641434	98.90669106	97.3807642	95.88547372	94.41996361
200420A00047	4/20/2020	0.77	4/20/2023	4/20/2020	111.51136	108.6832752	105.9413199	103.2823433	100.7033278	98.20138612	95.77375474	93.4177879	91.1309515
200429A00003	4/29/2020	0.74	4/28/2023	4/29/2020	111.52929	108.675938	105.9100514	103.2283992	100.6278946	98.10558588	95.65864892	93.28438094	90.98019434
200430A00007	4/30/2020	0.72	4/28/2023	4/30/2020	111.4745	108.6219005	105.8567439	103.1758045	100.5759964	98.05436808	95.6080961	93.23447813	90.93092703
200430A00009	4/30/2020	1.16	4/30/2026	4/30/2020	127.21149	120.3818499	113.9566282	107.9098069	102.2171778	96.85620688	91.80590886	87.04673307	82.56045773

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200505A00004	5/5/2020	0.77	5/5/2025	5/5/2020	121.65495	116.1820382	110.9835864	106.0443855	101.3501523	96.88746911	92.64372639	88.60706943	84.76634883
200505A00005	5/5/2020	0.77	5/5/2025	5/5/2020	121.65495	116.1820382	110.9835864	106.0443855	101.3501523	96.88746911	92.64372639	88.60706943	84.76634883
200511A00014	5/11/2020	0.52	2/1/2022	5/11/2020	105.62151	104.2053315	102.8149309	101.4496606	100.1088983	98.79204137	97.49850657	96.22772893	94.97916124
200511A00015	5/11/2020	0.6	2/1/2023	5/11/2020	110.09382	107.5337047	105.0455513	102.6269461	100.2755681	97.98918693	95.76565928	93.60292455	91.49900142
200511A00021	5/11/2020	1.53	2/1/2029	5/11/2020	142.46702	131.3938157	121.2538601	111.9638997	103.448493	95.63924236	88.47410462	81.89677211	75.85611685
200513A00001	5/13/2020	0.44	5/12/2023	5/13/2020	111.40443	108.498034	105.6820202	102.9529988	100.3077311	97.74312255	95.2562152	92.84418062	90.50431315
200709A00002	7/10/2020	1.66	7/10/2025	7/10/2020	126.05606	120.2846704	114.8101316	109.6155718	104.6851731	100.0041003	95.55843362	91.33510697	87.32185052
200709A00014	7/13/2020	0.57	1/20/2023	7/13/2020	109.87912	107.3578299	104.9067917	102.5236057	100.2059713	97.95168253	95.75862309	93.62476204	91.54814976
200716A00015	7/20/2020	1.54	7/19/2024	7/20/2020	120.28192	115.8457807	111.5969057	107.5263739	103.6257408	99.88700973	96.30260581	92.86535095	89.56844074
200731A00004	7/31/2020	0.38	7/31/2023	7/31/2020	112.17266	109.0060443	105.9441415	102.9829417	100.11861	97.34747867	94.66603862	92.0709319	89.55894425
200814A00011	8/18/2020	1.58	8/16/2030	8/18/2020	149.76509	136.1562259	123.8818448	112.804421	102.801232	93.76269895	85.59092107	78.19837931	71.50678997
200818A00010	8/18/2020	1.88	8/20/2035	8/18/2020	176.02679	153.0941053	133.3867612	116.4332773	101.8332468	89.24632121	78.38294787	68.99657347	60.877076
200827A00007	8/27/2020	0.77	8/27/2025	8/27/2020	121.92281	116.0941439	110.5739907	105.3445015	100.3889473	95.69164496	91.2378866	87.01387377	83.00665689
200922A00030	9/24/2020	2.45	9/25/2023	9/24/2020	118.82989	115.3944291	112.0772739	108.8736776	105.7791129	102.7892606	99.89999799	97.10738916	94.40767509
200922A00039	9/24/2020	3	9/23/2025	9/24/2020	134.55965	128.3083991	122.3881405	116.7795712	111.4646165	106.4263446	101.648888	97.11737114	92.81784336
200922A00041	9/24/2020	2.68	9/23/2024	9/24/2020	126.19694	121.4180004	116.8482303	112.4773453	108.2956212	104.2938621	100.4633694	96.79591172	93.28369725
200925A00002	9/25/2020	0.74	9/25/2025	9/25/2020	122.10751	116.1728214	110.5573251	105.2422512	100.2100285	95.44420281	90.92936036	86.65105631	82.59574904
200928A00002	9/28/2020	0.35	9/28/2023	9/28/2020	112.77123	109.4064019	106.1589156	103.0240213	99.99719196	97.07410985	94.25065542	91.52289694	88.88708077
200302A00008	3/2/2020	1.2	3/9/2023	3/2/2020	112.10246	109.3974119	106.771459	104.2218316	101.7458738	99.34103884	97.00488378	94.73506457	92.5293314
200302A00028	3/2/2020	1.25	2/26/2024	3/2/2020	117.10832	113.2030352	109.4481772	105.837165	102.3637383	99.021943	95.80611506	92.7108643	89.73105982
200304A00053	3/6/2020	2.33	3/6/2025	3/6/2020	127.44637	122.0754488	116.9624363	112.0935973	107.4560005	103.037467	98.82652215	94.81235155	90.98475922
200305A00011	3/5/2020	0.95	3/7/2022	3/5/2020	106.70168	105.168823	103.6657447	102.1916512	100.7457755	99.32737657	97.9357392	96.5701723	95.23000812
200306A00065	3/6/2020	1.38	3/6/2030	3/6/2020	145.60825	132.8434153	121.2830065	110.8074679	101.3096593	92.69351189	84.87283468	77.77025497	71.31627698
200309A00003	3/9/2020	0.72	3/9/2022	3/9/2020	106.38247	104.8462065	103.3399077	101.8627666	100.4140088	98.99288648	97.5986777	96.23068508	94.88823484
200309A00064	3/9/2020	0.55	3/9/2022	3/9/2020	106.38094	104.8404992	103.3301622	101.8491239	100.3966041	98.97185003	97.57413474	96.20275631	94.85703659
200311A00006	3/13/2020	1.12	3/10/2025	3/13/2020	121.61065	116.3613676	111.3665141	106.6124601	102.0863778	97.776189	93.67051719	89.75864331	86.03046421
200319A00024	3/19/2020	1.12	3/15/2022	3/19/2020	107.06262	105.5031825	103.9744834	102.4756929	101.0060076	99.56465241	98.15087927	96.76396582	95.40321448
200326A00030	3/26/2020	1.13	3/24/2023	3/26/2020	112.12277	109.3708438	106.7007088	104.109453	101.5942852	99.15253104	96.78162713	94.47911573	92.24263967
200327A00036	3/27/2020	0.77	9/27/2023	3/27/2020	114.10953	110.7268219	107.4617821	104.3096578	101.2659165	98.32623477	95.48648752	92.74273741	90.09122523
200327A00075	3/31/2020	1.75	3/29/2024	3/31/2020	119.43695	115.3846149	111.4918913	107.7516208	104.1570063	100.7015927	97.37924717	94.18414144	91.11073477
200331A00030	4/2/2020	1.17	4/1/2022	4/2/2020	107.35214	105.7401079	104.1607954	102.6132937	101.0967231	99.6102356	98.15301395	96.72426975	95.32324244
200401A00025	4/1/2020	0.54	4/1/2022	4/1/2020	106.64635	105.0353632	103.4571649	101.9108393	100.3955029	98.91030438	97.45442328	96.02706827	94.62747604
200406A00020	4/6/2020	0.65	4/6/2022	4/6/2020	106.88285	105.2549026	103.6602735	102.0980175	100.5672292	99.06703625	97.59659816	96.15510481	94.74177503

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200413A00023	4/13/2020	0.74	2/7/2022	4/13/2020	106.00784	104.5693888	103.1574271	101.7712885	100.4103251	99.07391021	97.76143752	96.47231995	95.2059892
200424A00006	4/24/2020	0.6	4/24/2023	4/24/2020	111.62807	108.774264	106.0078861	103.3257087	100.7246504	98.201764	95.75422967	93.37934851	91.07453642
200428A00011	4/30/2020	1.95	4/29/2025	4/30/2020	126.51089	120.9735448	115.71055	110.7068325	105.9482326	101.4214417	97.11394673	93.01397777	89.11045979
200429A00015	4/29/2020	0.66	4/29/2024	4/29/2020	116.4582	112.3390877	108.3865455	104.5929115	100.9509202	97.4536818	94.09466051	90.86765395	87.76677414
200429A00046	5/1/2020	2.07	4/30/2025	5/1/2020	127.1323	121.5766252	116.2961482	111.2757489	106.5012219	101.9592161	97.63717858	93.52330227	89.60647734
200430A00006	4/30/2020	0.61	4/29/2022	4/30/2020	106.81382	105.1224985	103.4665876	101.8450524	100.2568949	98.7011555	97.17691117	95.68327359	94.21938756
200506A00010	5/6/2020	0.94	5/6/2026	5/6/2020	127.26917	120.3690424	113.880063	107.7756344	102.0310188	96.62319819	91.53074568	86.73370702	82.21349157
200511A00016	5/11/2020	0.71	2/1/2024	5/11/2020	114.80442	111.0254052	107.3894307	103.8903511	100.5223204	97.2797731	94.15740889	91.15017865	88.25327126
200225A00003	2/25/2020	1.54	2/27/2023	2/25/2020	112.83441	110.1513456	107.5458053	105.0151064	102.5566751	100.1680419	97.84683697	95.59078494	93.39770095
200226A00002	2/26/2020	1.53	2/27/2023	2/26/2020	112.80884	110.126103	107.5208828	104.9904968	102.5323715	100.1440377	97.82312547	95.56735987	93.37455619
200226A00009	2/26/2020	1.75	2/26/2030	2/26/2020	152.24085	139.0519293	127.1018652	116.2679866	106.440339	97.52031235	89.41941916	82.05820983	75.36530902
200226A00017	2/26/2020	1.53	2/27/2023	2/26/2020	112.80884	110.126103	107.5208828	104.9904968	102.5323715	100.1440377	97.82312547	95.56735987	93.37455619
200226A00025	2/26/2020	1.38	2/26/2025	2/26/2020	123.75254	118.4635996	113.4293286	108.6361645	104.0713373	99.7228194	95.57927786	91.63003104	87.86500769
200227A00006	2/27/2020	1.47	2/27/2025	2/27/2020	123.16102	117.9133257	112.9178019	108.1610459	103.6304358	99.31408166	95.20077913	91.2799664	87.54168407
200227A00023	2/27/2020	1.47	2/27/2025	2/27/2020	123.16102	117.9133257	112.9178019	108.1610459	103.6304358	99.31408166	95.20077913	91.2799664	87.54168407
200227A00027	2/27/2020	1.47	2/27/2025	2/27/2020	123.16102	117.9133257	112.9178019	108.1610459	103.6304358	99.31408166	95.20077913	91.2799664	87.54168407
200228A00016	2/28/2020	1.35	2/22/2024	2/28/2020	117.41721	113.5201559	109.7726765	106.1682503	102.7006723	99.36404015	96.15273768	93.06141961	90.08499684
200302A00045	3/4/2020	1.31	3/4/2025	3/4/2020	122.45562	117.2069866	112.2115652	107.4558478	102.9271184	98.6134009	94.50341229	90.58651871	86.85269492
200303A00004	3/3/2020	1.06	3/3/2022	3/3/2020	107.06466	105.5366715	104.0382067	102.5684819	101.1267399	99.71224992	98.32430597	96.96222608	95.62535114
200303A00018	3/3/2020	1.27	3/3/2025	3/3/2020	122.24769	117.0072409	112.0195142	107.2710381	102.7491269	98.4418326	94.33789828	90.42671431	86.69827795
200305A00008	3/10/2020	1.01	6/19/2023	3/10/2020	112.94708	109.9123486	106.9746804	104.1303127	101.3756546	98.70728181	96.12192762	93.61647421	91.18794453
200305A00012	3/5/2020	1.14	3/5/2025	3/5/2020	121.64261	116.4094067	111.4290752	106.6881079	102.1737928	97.87415837	93.7779263	89.874468	86.15376368
200306A00001	3/6/2020	1.11	3/6/2026	3/6/2020	126.21975	119.6113804	113.3849703	107.5165463	101.9837577	96.76575951	91.84310338	87.19763725	82.81241251
200306A00039	3/6/2020	0.88	3/6/2023	3/6/2020	111.23654	108.5519823	105.9457365	103.4150653	100.9573474	98.57006842	96.25081606	93.99727547	91.80722447
200309A00021	3/9/2020	1.05	3/9/2026	3/9/2020	125.89228	119.2827467	113.0559612	107.1878595	101.6560094	96.43949227	91.51879368	86.87570186	82.49321444
200316A00013	3/16/2020	1	4/15/2022	3/16/2020	107.27132	105.6180125	103.9987926	102.4126797	100.8587349	99.33605457	97.8437683	96.38103766	94.94705462
200318A00043	3/18/2020	1.06	3/20/2023	3/18/2020	112.39709	109.6430414	106.9706934	104.3771383	101.8595936	99.41539283	97.04198016	94.73690479	92.49781607
200325A00030	3/25/2020	1.5	3/25/2025	3/25/2020	124.74458	119.3390998	114.197912	109.3067164	104.6520596	100.2212835	96.00247372	91.98441207	88.15653192
200326A00029	3/26/2020	1.82	3/26/2027	3/26/2020	136.04736	127.7539096	120.0185412	112.800838	106.0635123	99.7721463	93.89495669	88.40258041	83.26787851
200330A00027	3/30/2020	0.62	3/30/2022	3/30/2020	106.74678	105.1409458	103.5676997	102.0261355	100.5153782	99.03458433	97.58294096	96.15966394	94.76399674
200403A00014	4/3/2020	0.63	4/17/2023	4/3/2020	111.62111	108.7894377	106.0440248	103.381711	100.7994753	98.29442715	95.86380008	93.50494515	91.21532529
200406A00006	4/6/2020	1.13	4/7/2025	4/6/2020	122.02747	116.6739187	111.5839813	106.7433056	102.138397	97.75656347	93.58586295	89.61505528	85.833557
200408A00019	4/10/2020	1.7	4/11/2022	4/10/2020	108.33582	106.6856069	105.0692422	103.4857663	101.9342531	100.4138106	98.9235796	97.46273225	96.0304704

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200408A00021	4/8/2020	0.99	4/4/2025	4/8/2020	122.35453	116.9709827	111.8529163	106.9858579	102.3562029	97.95115645	93.75868084	89.7674463	85.96678573
200429A00035	5/1/2020	1.41	4/30/2024	5/1/2020	118.61158	114.4691052	110.4933288	106.6766018	103.0116757	99.49167596	96.11008005	92.86069751	89.73765078
200429A00044	5/1/2020	1.86	4/30/2025	5/1/2020	126.07278	120.5424599	115.2864197	110.2895819	105.5377799	101.0176993	96.71682236	92.62337498	88.72627885
200429A00053	5/1/2020	2.18	4/30/2025	5/1/2020	127.68729	122.1183309	116.8250536	111.7923126	107.005882	102.4523915	98.11926994	93.99469276	90.06753369
200501A00003	5/1/2020	0.66	4/14/2023	5/1/2020	111.1397	108.3353636	105.6160616	102.978695	100.4203006	97.93804224	95.52920486	93.19118791	90.9215
200504A00013	5/4/2020	1.26	5/4/2027	5/4/2020	132.3995	124.087686	116.3459117	109.132211	102.407915	96.13737889	90.28773049	84.82864065	79.73211378
200511A00019	5/11/2020	1.18	2/1/2027	5/11/2020	130.681	122.7681112	115.3787681	108.4757942	102.0248301	95.99410539	90.35423134	85.07801155	80.14026811
200511A00020	5/11/2020	1.4	2/1/2028	5/11/2020	136.81401	127.3484579	118.5953651	110.4976247	103.0029771	96.0635736	89.63558313	83.67883705	78.15650634
200604A00012	6/4/2020	1.59	6/4/2030	6/4/2020	149.01982	135.7350084	123.7296073	112.8738721	103.0518372	94.15978589	86.10489928	78.8040605	72.1827955
200611A00010	6/11/2020	1.08	6/11/2027	6/11/2020	131.48033	123.0641813	115.234152	107.9464517	101.1607892	94.84007214	88.95013614	83.45949837	78.3391333
200615A00019	6/17/2020	1.34	6/16/2025	6/17/2020	124.09607	118.4536603	113.0987248	108.0150324	103.1873682	98.60145913	94.24391006	90.10214426	86.1643484
200709A00006	7/10/2020	2.58	7/10/2030	7/10/2020	160.9372	146.904706	134.2199445	122.7459502	112.3603582	102.9537772	94.42835125	86.69648922	79.67973914
200720A00012	7/20/2020	0.77	7/15/2025	7/20/2020	121.41944	115.7471783	110.3689515	105.2679947	100.4285918	95.83600244	91.4763955	87.33678808	83.40498868
200722A00012	7/22/2020	0.41	7/21/2023	7/22/2020	112.14779	109.0121962	105.9796328	103.0461176	100.2078507	97.46120206	94.80270294	92.22903737	89.7370345
200803A00005	8/3/2020	0.54	6/30/2023	8/3/2020	111.71533	108.6633439	105.7100689	102.8516295	100.0843339	97.40466405	94.80926601	92.29494052	89.85863468
200814A00009	8/18/2020	1.36	8/16/2028	8/18/2020	138.84394	128.5601896	119.1018043	110.3985134	102.3863536	95.00707607	88.20761064	81.93958133	76.15887009
200817A00011	8/17/2020	0.53	2/18/2025	8/17/2020	119.51413	114.3527586	109.4398831	104.7623076	100.3076024	96.06405711	92.02063542	88.16693275	84.49313694
200828A00002	8/28/2020	0.73	8/28/2026	8/28/2020	127.25368	119.9522031	113.1075187	106.6888357	100.6675918	95.01727706	89.71327646	84.73272539	80.05437675
200910A00009	9/10/2020	1.57	9/10/2032	9/10/2020	158.36515	141.2187663	126.0661489	112.6653419	100.8048457	90.29965225	80.9878123	72.72746165	65.39424392
200910A00010	9/10/2020	1.73	9/8/2034	9/10/2020	169.22912	148.299816	130.1552918	114.4102045	100.7342726	88.8441779	78.49668759	69.4828127	61.6228415
200910A00012	9/10/2020	2.02	9/10/2038	9/10/2020	192.38326	163.0600599	138.5807125	118.1157021	100.9814431	86.61399322	74.54760985	64.3972345	55.84417152
130614A00011	6/14/2013	2.95	6/14/2028	6/14/2018	101.14054	100.969552	100.7991404	100.6293028	100.4600366	100.2913388	99.70372233	97.30698444	94.19655052
140328A00011	3/28/2014	3.32	3/30/2026	3/29/2021	103.58914	103.0651096	102.5542203	102.0456766	101.540381	101.0377952	100.2490005	98.10747533	94.89519708
141110A00008	11/10/2014	2.31	11/12/2024	11/12/2019	101.02725	100.8572021	100.6877304	100.5188284	100.3504933	100.181971	99.54320501	97.86856891	95.97364661
141224A00038	12/24/2014	2.93	12/24/2024	12/24/2019	101.10676	100.9359949	100.7658072	100.5961894	100.4271388	100.2586526	99.74291298	97.66750573	94.96457577
150901A00019	9/1/2015	3.26	9/3/2030	9/1/2020	101.16142	100.9905461	100.8202406	100.6505054	100.4813377	100.3127345	99.44038824	96.3354158	92.49374548
160128A00029	1/29/2016	3.45	1/29/2036	1/29/2021	102.85755	102.5064482	102.1694854	101.8297546	101.4915009	101.014959	98.82029499	94.20728971	88.85976885
200102A00020	1/2/2020	2.78	1/3/2040	1/2/2025	127.40557	122.5578596	117.924205	113.2319564	107.672142	100.9962661	93.86198881	86.90104187	80.43205064
200115A00023	1/15/2020	2.16	1/15/2030	1/15/2025	120.47738	116.4261324	112.5530543	108.8022598	104.9592754	100.8912406	96.75028495	92.70820722	88.85001125
200309A00013	3/9/2020	1.1	3/8/2030	3/9/2025	116.90026	112.822895	108.9157475	104.9603873	100.7012357	96.32788884	92.09299448	88.0868508	84.32205258
200316A00030	3/16/2020	1.35	3/15/2030	3/16/2025	118.71161	114.5638182	110.6000031	106.6853778	102.5422267	98.2121093	93.93948292	89.85945375	86.01042644
200505A00010	5/5/2020	0.89	5/6/2030	5/5/2025	117.60209	113.3033708	109.1870888	105.0123991	100.5737832	96.08221252	91.76112168	87.68466675	83.85993713
200423A00010	4/23/2020	1.59	4/23/2030	4/23/2025	123.98782	118.8191693	113.8812818	108.7962173	102.8872186	96.33808248	89.77969757	83.56300641	77.79868906

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150417A00033	4/17/2015	1.78	4/18/2022	4/17/2020	100.9386	100.7685367	100.5990425	100.4301183	100.2617614	100.0835358	99.33466824	98.13292852	96.90286705
151027A00015	10/27/2015	2.89	10/28/2030	10/27/2020	101.13175	100.9605606	100.789954	100.6199226	100.4504635	100.2775721	99.00391575	95.56111846	91.59914814
170113A00025	1/13/2017	3.59	1/13/2032	1/13/2022	109.67476	108.2892402	106.9313197	105.5967812	104.2845439	102.890973	100.7489621	97.38575772	93.31068626
170705A00037	7/5/2017	2.85	7/6/2032	7/6/2027	135.90859	129.1203187	122.7577449	116.7057939	110.8367407	105.1356256	99.66946082	94.49774976	89.64819692
190329A00026	3/29/2019	3	3/29/2034	3/29/2024	122.76443	118.9607788	115.3063048	111.7683175	108.0791333	103.7373276	98.74933955	93.52414261	88.39529235
191220A00029	12/20/2019	2.57	12/19/2031	12/20/2024	122.85521	118.6108836	114.5534842	110.6174381	106.5131838	102.0061509	97.27750217	92.59520777	88.11370424
200316A00032	3/16/2020	1.35	3/15/2030	3/16/2025	118.71161	114.5638191	110.6000038	106.6853781	102.5422262	98.21210761	93.93948003	89.85944972	86.0104214
200423A00009	4/23/2020	1.59	4/23/2030	4/23/2025	123.98783	118.8191816	113.8812907	108.7962226	102.8872194	96.33807818	89.77968807	83.56299201	77.79867022
140822A00012	8/22/2014	3.7	8/22/2034	8/23/2021	106.74542	105.7588855	104.815084	103.8791973	102.9520998	101.9090677	99.6350462	95.54356838	90.66978653
141119A00005	11/19/2014	2.53	11/19/2024	11/19/2019	101.03322	100.8634909	100.6943285	100.5257311	100.357696	100.190208	99.59925868	97.9606327	96.07589211
150223A00011	2/23/2015	3.54	2/22/2030	2/23/2022	109.75283	108.3053618	106.8882667	105.4966714	104.1296155	102.7000703	100.6695939	97.67481656	94.12213002
150327A00011	3/27/2015	2.88	3/27/2030	3/27/2020	103.4489	102.9080453	102.380808	101.856037	101.3346269	100.7792902	99.08128783	95.52117279	91.49561003
180712A00016	7/12/2018	3.66	7/12/2033	7/12/2028	151.17762	142.0351791	133.5545325	125.5130408	117.7110516	110.1269068	102.8613977	96.0220036	89.6688051
190409A00016	4/9/2019	2.91	4/9/2029	4/9/2024	122.4589	118.6598759	115.0100225	111.4906798	107.9498381	103.9998452	99.54646813	94.85050853	90.18265776
190530A00037	5/30/2019	2.85	5/30/2034	5/30/2024	122.72381	118.8379561	115.1071013	111.4863343	107.6457881	103.0885277	97.92535002	92.59239155	87.41222324
190827A00044	8/27/2019	1.9	8/27/2029	8/27/2024	118.85777	115.1144601	111.5271371	108.0529404	104.4842071	100.644557	96.68329226	92.79164448	89.06534403
191031A00037	10/31/2019	2.59	10/30/2034	10/31/2024	123.99849	119.5440279	115.2856323	111.0804846	106.4192841	101.0664001	95.40764739	89.8535185	84.60826072
200115A00025	1/15/2020	2.1	1/15/2025	1/15/2023	112.2186	109.9057976	107.6570194	105.4679516	103.3092997	100.9382635	98.17168636	95.22031127	92.28397729
141010A00012	10/10/2014	2.44	10/10/2024	10/10/2019	101.01782	100.8481466	100.6790409	100.5105	100.342521	100.1739624	99.50781132	97.84380584	95.98387085
150421A00009	4/21/2015	2.17	4/21/2025	4/21/2020	100.97159	100.8018164	100.6326097	100.4639682	100.2958891	100.1077128	98.94406353	96.950594	94.86638466
151124A00024	11/24/2015	2.6	11/24/2025	11/24/2020	101.06725	100.8919602	100.7172636	100.5431535	100.3696269	100.1966808	99.45429925	97.3195868	94.96508805
160825A00032	8/25/2016	3.14	8/25/2036	8/25/2021	106.24489	105.2581523	104.3142471	103.3782756	102.436982	100.7636334	96.67180361	91.16618738	85.53757506
170802A00074	8/2/2017	2.92	8/2/2027	8/2/2022	112.2385	110.2259359	108.2621997	106.3440653	104.4526087	102.27253	99.2113285	95.41696874	91.39016251
180212A00090	2/12/2018	2.92	2/13/2023	2/12/2021	108.80145	107.370216	105.9657685	104.5874108	103.2344463	101.8974429	100.4661399	98.79540456	96.96767411
090429A00044	4/29/2009	4.1	4/29/2024	4/29/2014	101.29627	101.1264268	100.9571532	100.7884443	100.6202975	100.4527099	100.2856787	100.0373495	99.09678964
100707A00014	7/7/2010	3.19	7/7/2025	7/7/2015	101.17748	101.006985	100.8370623	100.6677113	100.4989289	100.3307124	100.1338666	99.11637429	97.21640278
120924A00030	9/24/2012	2.2	9/24/2027	9/25/2017	101.01273	100.8420216	100.6718928	100.5023372	100.3333517	100.1263327	98.46908979	95.60372543	92.59126673
140617A00012	6/17/2014	3.14	6/18/2029	6/17/2019	101.17349	101.0023494	100.8317871	100.6617996	100.4923841	100.3235376	99.78927916	97.28413103	93.8999109
140714A00012	7/14/2014	3.04	7/16/2029	7/15/2019	101.15656	100.9854395	100.8148943	100.6449239	100.4755255	100.3066961	99.62685853	96.9299488	93.46379838
140723A00038	7/23/2014	2.3	7/23/2024	7/23/2019	101.02467	100.8547775	100.6854554	100.5167023	100.3485152	100.1807709	99.59681532	98.04632061	96.28647237
190930A00079	9/30/2019	2.04	10/1/2029	9/30/2024	119.71388	115.8800807	112.2084526	108.6594439	105.0434528	101.1802456	97.1934605	93.26636459	89.49880755
191028A00015	10/28/2019	2.49	10/27/2034	10/28/2024	123.62392	119.3136084	115.1887101	111.13296	106.6505567	101.4232324	95.80594578	90.23973168	84.95984858
200108A00009	1/8/2020	2.4	1/8/2035	1/8/2025	124.6054	120.0004109	115.600092	111.2395474	106.3497523	100.6951301	94.72934114	88.907515	83.44709736

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200108A00040	1/8/2020	2.52	1/8/2030	1/8/2025	125.2671	120.5048748	115.9595259	111.5204781	106.7377637	101.3243474	95.58738784	89.90493005	84.49179486
200110A00012	1/10/2020	2.57	1/10/2035	1/10/2025	124.39027	119.8378494	115.4876912	111.1763051	106.3742989	100.8838281	95.11979979	89.48612636	84.18082339
200430A00021	4/30/2020	1.2	4/30/2030	4/30/2025	117.99661	113.7136392	109.6179297	105.5040287	101.1497116	96.72024519	92.43842153	88.38786654	84.58177089
180504A00024	5/4/2018	3.62	5/4/2028	5/4/2023	120.18492	117.14157	114.1933145	111.3350836	108.5421258	105.5611394	101.8935089	97.45668935	92.5969197
181212A00026	12/12/2018	3.22	12/12/2028	12/12/2023	120.13747	116.9112115	113.8022184	110.8004212	107.8748058	104.869455	101.6308558	98.20540173	94.73565334
190111A00040	1/11/2019	3.74	1/11/2034	1/11/2024	124.83112	121.0541738	117.4169051	113.9021471	110.3096768	105.9990108	100.6461734	94.63957966	88.52207604
190116A00015	1/16/2019	3.61	1/17/2034	1/16/2024	122.66994	119.1219245	115.7048104	112.4033933	109.07644	105.2723006	100.7688245	95.84227368	90.85126048
190301A00015	3/1/2019	3.86	3/1/2034	3/2/2026	140.96823	134.2118252	127.8310294	121.6275524	115.0981788	107.961242	100.4638211	93.00646174	85.89151293
190807A00041	8/7/2019	2.27	8/7/2034	7/7/2024	121.45758	117.4433774	113.5928045	109.7813403	105.4477097	100.2624269	94.67722511	89.16878137	83.96722784
161118A00013	11/18/2016	2.96	11/18/2026	11/18/2021	108.06301	106.7673893	105.5479481	104.3346	103.1380644	101.8311294	99.55682286	95.96949337	91.76781112
170411A00031	4/11/2017	3.39	4/12/2032	4/11/2022	111.32025	109.5937281	107.906597	106.2542392	104.6244889	102.7217062	99.7820749	95.81873251	91.46407661
170515A00052	5/15/2017	3.78	5/15/2042	5/15/2024	129.29913	124.9354875	120.7488418	116.6201287	111.9641819	106.111452	99.23973787	92.02375002	85.01757103
171004A00022	10/4/2017	2.74	10/4/2027	10/4/2022	113.11769	110.9551211	108.8496161	106.7959863	104.7660816	102.4125015	99.22655039	95.40134584	91.37871047
171012A00039	10/12/2017	3.73	10/12/2032	10/13/2020	101.29011	101.1151312	100.940742	100.7669367	100.5937124	100.4210661	98.96111886	93.57383994	87.24747168
180105A00005	1/5/2018	3.07	1/5/2028	1/5/2023	114.33054	112.0621356	109.858296	107.7118447	105.6144675	103.4453101	100.9348905	98.05056703	94.99307724
151209A00031	12/9/2015	3.18	12/9/2030	12/9/2020	101.72836	101.4675661	101.2124939	100.9565196	100.7018375	100.4414526	99.22005667	95.87227654	91.9131376
151224A00017	12/24/2015	3.06	12/24/2030	12/24/2020	101.7474	101.4860295	101.2304002	100.9738731	100.7186472	100.4624534	99.34459204	96.0763394	92.12363712
160105A00024	1/5/2016	3.78	1/4/2036	1/5/2021	102.89097	102.5405399	102.2042099	101.8651092	101.5275	101.1149803	99.29255864	94.99169107	89.76334541
160506A00054	5/10/2016	3.31	5/12/2036	5/10/2021	104.776	104.0436839	103.334548	102.6275256	101.928967	100.8711818	97.24166039	91.62026239	85.78087522
160506A00056	5/10/2016	3.77	5/10/2041	5/10/2021	105.09797	104.3623488	103.6500131	102.9398002	102.2380932	101.1570619	97.10329288	90.51341025	83.6253839
160627A00034	6/27/2016	1.7	6/26/2026	6/28/2021	103.99624	103.2340034	102.4932923	101.758618	101.0318615	99.97223965	97.8347402	95.27304822	92.71287867
100517A00013	5/17/2010	3.71	5/19/2025	5/18/2015	101.26506	101.0944888	100.9244899	100.7550626	100.5862042	100.4179118	100.2500359	99.79365565	98.31631838
111005A00009	10/5/2011	2.72	10/5/2026	10/5/2016	101.09992	100.9292347	100.7591287	100.5895954	100.420632	100.2522356	99.69693556	97.65634738	95.08971024
111215A00019	12/15/2011	2.53	12/15/2026	12/15/2021	107.49772	106.2117688	105.0041045	103.8025077	102.616541	101.362096	99.5502605	97.09254823	94.40489028
120702A00016	7/2/2012	2.42	7/6/2027	7/3/2013	101.04987	100.8791395	100.7089808	100.5393952	100.3703799	100.1966325	99.02220435	96.3857934	93.46406615
130416A00025	4/16/2013	2.27	4/18/2028	4/16/2018	101.02506	100.8542571	100.6840338	100.5143839	100.3453048	100.137128	98.39414828	95.33983436	92.12054706
140416A00025	4/14/2014	3.56	4/16/2029	4/14/2021	104.32267	103.7092598	103.1097697	102.513992	101.9251312	101.3305879	100.165512	97.18088196	93.05172088
190329A00023	3/29/2019	3	3/29/2034	3/29/2024	122.76443	118.9607788	115.3063048	111.7683174	108.0791322	103.737324	98.74933242	93.52413187	88.39527828
190430A00020	4/30/2019	3.41	4/28/2034	4/28/2026	144.12982	136.866186	129.9549146	122.8227633	115.0134801	106.7240735	98.41982049	90.46736501	83.07068228
191007A00013	10/7/2019	2	10/5/2029	10/7/2024	118.86336	115.0581152	111.4132234	107.8753027	104.2150645	100.2824832	96.25300662	92.31651733	88.5584442
191031A00036	10/31/2019	2.9	10/31/2039	10/31/2024	126.40459	121.7545292	117.2629326	112.6970466	107.2606585	100.7005369	93.68032977	86.83117496	80.4654431
200318A00015	3/18/2020	1.69	3/18/2030	3/18/2023	112.84764	110.3105155	107.8493429	105.4447795	102.7866745	99.21458931	95.03357482	90.81080401	86.77064992
200512A00023	5/12/2020	1.78	5/11/2035	5/12/2025	127.09028	121.8332481	116.6059568	110.258196	102.7319924	94.96301835	87.58168058	80.81455954	74.70013166

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170809A00042	8/9/2017	2.35	8/9/2027	8/9/2022	110.66762	108.8130126	107.0054128	105.2382109	103.4965059	101.5477075	99.03831368	96.14074347	93.15871522
180130A00087	1/30/2018	2.92	1/31/2028	1/30/2023	114.00094	111.7380349	109.5395315	107.3982731	105.3033348	103.1091734	100.537437	97.60254871	94.51772062
180302A00003	3/2/2018	3.89	3/2/2033	3/2/2023	119.37507	116.5879651	113.8846416	111.2586533	108.6266153	105.3975966	100.87068	95.24132639	89.18865919
180315A00030	3/15/2018	3.76	3/15/2033	3/17/2025	133.99844	128.6080252	123.4736154	118.5284764	113.4111959	107.6200994	101.1640776	94.44184392	87.83786864
190204A00054	2/4/2019	3.98	2/6/2034	2/2/2024	125.93716	122.0356145	118.2825357	114.6531118	110.8869604	106.2824087	100.5730559	94.21295646	87.75727438
190222A00023	2/22/2019	3.66	2/22/2034	2/22/2026	143.64377	136.7172691	130.1603397	123.6338971	116.479133	108.5882108	100.4373101	92.5016557	85.05689572
150202A00006	2/2/2015	1.92	2/3/2025	2/3/2020	100.96193	100.7918911	100.6224201	100.453519	100.285185	100.0887987	98.88438567	96.92987666	94.90526106
150319A00020	3/19/2015	2.98	3/19/2030	3/19/2020	101.11363	100.9428594	100.7726597	100.6030299	100.4339672	100.260963	98.98361056	95.67567832	91.90034934
151005A00020	10/5/2015	2.27	10/6/2025	10/5/2020	100.98936	100.8194131	100.6500308	100.4812146	100.3129616	100.129757	98.95449557	96.80487305	94.52681554
160311A00019	3/11/2016	3.02	3/11/2031	3/11/2021	103.32178	102.8022203	102.2956574	101.7913961	101.2903328	100.7049287	98.73930559	95.07694494	90.9767637
160711A00011	7/11/2016	1.66	7/13/2026	7/11/2021	104.80658	103.8727895	102.978842	102.092281	101.207023	99.93694721	97.69187109	95.08788917	92.49595557
170721A00021	7/21/2017	2.95	7/21/2032	7/21/2022	112.50734	110.5169463	108.5760706	106.6797024	104.7845899	102.3960139	98.85775038	94.50817987	89.96004044
200306A00021	3/6/2020	1.16	3/6/2030	3/6/2025	117.13874	113.0542518	109.1423679	105.1986346	100.9590668	96.5919657	92.35280849	88.3379788	84.56339194
200423A00008	4/23/2020	1.59	4/23/2030	4/23/2025	123.98783	118.8191816	113.8812907	108.7962226	102.8872194	96.33807818	89.77968807	83.56299201	77.79867022
200609A00003	6/9/2020	1.66	6/8/2035	6/9/2025	124.92086	119.5797945	114.3869388	108.2952467	100.6783129	92.43722674	84.49925068	77.23535102	70.71610328
200612A00001	6/12/2020	0.75	6/12/2030	6/12/2025	117.06425	112.7709367	108.6508563	104.4222319	99.91313876	95.38189008	91.04538685	86.96453853	83.14050336
130521A00009	5/21/2013	2.55	5/22/2028	5/21/2018	101.07261	100.901735	100.7314322	100.5617031	100.392545	100.2191384	99.02241583	96.16653917	92.96116289
140508A00011	5/8/2014	2.32	5/8/2024	5/8/2019	101.02754	100.8577261	100.6884826	100.5198076	100.3516983	100.1841519	99.64931867	98.17735347	96.48925033
171005A00047	10/5/2017	3.29	10/5/2032	10/5/2022	114.65141	112.4130869	110.2335884	108.1076779	105.9516326	103.0722286	98.73597869	93.39579155	87.81413237
180105A00006	1/5/2018	3.07	1/5/2028	1/5/2023	114.33053	112.0621341	109.8582947	107.7118437	105.6144669	103.44531	100.9348916	98.0505699	94.9930823
180627A00005	6/27/2018	3.63	6/30/2033	6/30/2023	120.08407	117.0714776	114.1573078	111.3334861	108.5391281	105.408318	101.5321112	97.03709222	92.30167291
190409A00017	4/9/2019	3.01	4/9/2029	4/9/2024	123.73325	119.7662222	115.956236	112.2833947	108.571849	104.3679993	99.54680963	94.40923397	89.27571941
190520A00018	5/20/2019	3.7	5/20/2044	5/20/2024	126.73598	122.520865	118.4753094	114.4971057	109.870166	103.658318	96.20108946	88.46941414	81.12938898
190930A00083	9/30/2019	2.04	10/1/2029	9/30/2024	119.71388	115.8800807	112.2084526	108.6594439	105.0434526	101.180245	97.19345954	93.26636326	89.49880591
150108A00029	1/8/2015	3.16	1/9/2035	1/10/2022	109.23991	107.8285389	106.443592	105.082889	103.7292241	101.8444749	98.1208291	92.99536949	87.5871983
150501A00019	5/1/2015	3.69	5/1/2035	5/1/2020	105.04197	104.3069288	103.5951496	102.8854916	102.185318	101.4047509	99.12054698	94.43142314	88.97582774
150715A00020	7/15/2015	3.45	7/15/2030	7/15/2020	101.19361	101.0226993	100.8523589	100.6825889	100.5133863	100.3447485	99.78599002	97.08236183	93.40038442
151223A00007	12/23/2015	3.76	12/23/2030	12/23/2022	116.9715	114.4891193	112.0753332	109.7249566	107.3684156	104.4345973	100.2150739	94.91383028	89.20074613
160209A00028	2/9/2016	2.04	2/9/2026	2/9/2021	102.77341	102.2656939	101.7706278	101.2777709	100.7879247	100.128859	98.36237271	95.99017499	93.56971925
161012A00020	10/11/2016	2.96	10/14/2031	10/11/2023	120.94632	117.4794043	114.1347898	110.8805257	107.3283526	102.6084101	96.71597381	90.34856603	84.07486782
190329A00025	3/29/2019	3	3/29/2034	3/29/2024	122.76439	118.9607448	115.3062776	111.768297	108.0791208	103.737327	98.74935402	93.52417329	88.39533875
190530A00044	5/30/2019	2.85	5/30/2034	5/30/2024	122.72384	118.8379738	115.1071153	111.4863448	107.645794	103.0885264	97.92533934	92.59237063	87.41219231
190807A00044	8/7/2019	2.27	8/7/2034	8/7/2024	122.27251	118.0829759	114.0700228	110.0934268	105.5987646	100.3166407	94.69381936	89.1733861	83.96848089

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191007A00012	10/7/2019	2	10/5/2029	10/7/2024	118.86336	115.0581191	111.4132263	107.8753045	104.2150643	100.28248	96.25300013	92.31650758	88.55843143
200326A00035	3/26/2020	1.68	3/26/2030	3/26/2025	119.21639	115.0689893	111.1067855	107.2171625	103.1320885	98.84869389	94.59659083	90.51941725	86.66544414
130322A00001	3/22/2013	2.06	3/22/2023	3/22/2018	100.98938	100.8186428	100.6484817	100.478894	100.3098767	100.1376734	99.27801632	97.51910206	95.61807726
161006A00023	10/6/2016	2.49	10/6/2031	10/6/2021	107.27897	106.0263206	104.8465382	103.6726688	102.4963076	100.7364157	97.36387266	93.08276729	88.70713603
161012A00009	10/12/2016	2.56	10/14/2031	10/12/2021	107.36141	106.1080167	104.9275277	103.752958	102.5799388	100.8878615	97.62401766	93.39258977	89.02482459
170519A00006	5/19/2017	3	5/19/2032	5/19/2022	111.00809	109.2798002	107.5909877	105.9370831	104.2967206	102.2601699	99.0315215	94.84488084	90.37277818
171016A00037	10/16/2017	3.39	10/18/2032	10/16/2022	115.07281	112.7998777	110.5865446	108.4276708	106.2214597	103.1660413	98.45901794	92.62188205	86.51852149
171214A00010	12/14/2017	2.57	12/14/2022	12/14/2020	101.60629	101.3382027	101.0760413	100.812937	100.551167	100.2907212	99.80330156	98.34290638	96.63056094
180703A00033	7/3/2018	3.4	7/3/2028	7/3/2023	117.39128	114.64887	111.9951116	109.4218024	106.9128351	104.3341365	101.4752479	98.33807926	95.08506793
190813A00067	8/13/2019	1.9	8/13/2024	8/13/2019	121.03848	116.7224626	112.5883465	108.6274773	104.8316573	101.1931206	97.70450745	94.35884167	91.14950796
190823A00018	8/23/2019	2.12	8/23/2034	8/23/2019	141.77739	131.5575419	122.3210039	113.9599512	106.3794221	99.49568611	93.2348264	87.53151172	82.32792984
190905A00021	9/5/2019	2.08	9/5/2029	9/5/2019	145.00329	134.2857466	124.4874831	115.523555	107.3173304	99.79963232	92.90797598	86.58588853	80.78230067
190930A00026	9/30/2019	1.95	9/30/2024	9/30/2019	121.10919	116.8033695	112.6826318	108.7379285	104.9607101	101.3428909	97.87682176	94.55526364	91.37136342
191004A00025	10/4/2019	1.74	10/4/2024	10/4/2019	121.0971	116.6253833	112.3486447	108.2572792	104.3422077	100.5948468	97.00707931	93.57122593	90.28001924
191015A00025	10/15/2019	2.01	10/15/2029	10/15/2019	127.1378	121.1401765	115.534578	110.291122	105.3824515	100.7835055	96.47130966	92.42478746	88.62459013
200818A00012	8/18/2020	0.97	8/18/2027	8/18/2020	128.31477	120.5790934	113.3783099	106.6723421	100.4243248	94.6003285	89.16911081	84.10189087	79.37214329
200910A00006	9/10/2020	0.96	9/10/2027	9/10/2020	128.45114	120.6420996	113.37759	106.6164695	100.3209168	94.45614824	88.99015875	83.89348616	79.13899662
200430A00027	4/30/2020	1.31	4/30/2035	4/30/2020	135.63686	125.3941508	116.1800216	107.8770092	100.3822201	93.6054095	87.46732463	81.89827723	76.83691085
200512A00001	5/12/2020	1.17	5/12/2027	5/12/2020	128.86456	121.3798554	114.3951928	107.8742069	101.7833784	96.0917922	90.7709213	85.79442949	81.13799177
200512A00017	5/12/2020	0.85	5/12/2025	5/12/2020	118.86012	114.0201434	109.4149985	105.0318803	100.8587566	96.88431789	93.09792945	89.48958708	86.04987601
200608A00001	6/8/2020	1.34	6/7/2030	6/8/2020	136.3968	126.3887014	117.2694542	108.95292	101.3618436	94.42688913	88.08578461	82.28256289	76.9668884
200623A00028	6/23/2020	1.23	6/23/2038	6/23/2020	145.68604	131.9066667	119.7846621	109.0956972	99.64818811	91.27823998	83.8454094	77.22914619	71.32580067
200806A00004	8/6/2020	0.3	3/6/2024	8/6/2020	107.54361	105.5646266	103.6434917	101.7780301	99.96616613	98.20591789	96.49539204	94.83277924	93.21634982
200206A00033	2/6/2020	2.15	2/6/2030	2/6/2020	147.45101	136.1213905	125.8021412	116.3963495	107.8169261	99.98555834	92.83178285	86.29215976	80.30953828
200206A00038	2/6/2020	1.78	2/6/2023	2/6/2020	112.70957	110.1744648	107.7103322	105.3147785	102.9855079	100.7203153	98.5170817	96.37377103	94.28842576
200227A00046	2/27/2020	1.52	3/1/2027	2/27/2020	117.43798	113.5169533	109.7844071	106.2294989	102.8420978	99.6127291	96.5325268	93.59319053	90.78694548
200309A00082	3/9/2020	1.18	3/8/2030	3/9/2020	137.70188	126.9113329	117.0958582	108.1608888	100.0215356	92.60155233	85.83241317	79.65249267	74.00633711
200413A00009	4/13/2020	0.77	4/13/2027	4/13/2020	115.75195	111.7722456	107.988694	104.3897592	100.9646727	97.70337791	94.59647771	91.63518691	88.81128802
200424A00022	4/24/2020	1.39	4/24/2030	4/24/2020	136.51105	126.6083381	117.5756508	109.3295654	101.7951684	94.9051448	88.5989661	82.82216889	77.52571414
191203A00010	12/3/2019	2.21	12/3/2029	12/3/2019	147.33856	136.208749	126.0554138	116.7862384	108.3181528	100.5763581	93.49346005	87.00869765	81.06725581
200103A00002	1/3/2020	2.07	1/3/2030	1/3/2020	143.94301	133.788271	124.5019006	116.0027029	108.2175806	101.0806828	94.53264599	88.51991826	82.99415809
200109A00006	1/9/2020	1.95	1/9/2030	1/9/2020	128.74159	122.4725304	116.6247298	111.165242	106.0639773	101.2934325	96.82844991	92.64600005	88.72498654
200109A00008	1/9/2020	1.95	1/9/2030	1/9/2020	128.74157	122.4725195	116.6247224	111.1652378	106.0639759	101.2934336	96.82845314	92.64600518	88.72499333

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200110A00053	1/10/2020	1.99	1/10/2025	1/10/2020	123.5334	118.7073519	114.1028766	109.7085005	105.5134111	101.5074173	97.6809097	94.02482399	90.53060626
200206A00008	2/6/2020	1.64	2/6/2025	2/6/2020	122.30922	117.600175	113.1082367	108.8221591	104.731341	100.8257839	97.09605441	93.53324975	90.12896473
190905A00024	9/5/2019	2.08	9/5/2029	9/5/2019	145.00329	134.2857466	124.4874831	115.523555	107.3173304	99.79963232	92.90797598	86.58588853	80.78230067
190906A00009	9/6/2019	2.08	9/6/2034	9/6/2019	141.62908	131.3598139	122.0839341	113.6919539	106.0875153	99.18571132	92.91163413	87.19911801	81.98964845
190913A00006	9/13/2019	2.33	9/13/2034	9/13/2019	144.03959	133.5958976	124.1624719	115.6279607	107.8943668	100.875339	94.49469607	88.68514758	83.38718475
190920A00014	9/20/2019	2.28	9/20/2034	9/20/2019	143.5561	133.1471719	123.7451808	115.2391423	107.5313773	100.5358157	94.1765248	88.38643424	83.10623021
191004A00023	10/4/2019	2.02	10/4/2029	10/4/2019	144.73297	133.9438267	124.0878838	115.0781893	106.8363685	99.29173555	92.38050038	86.04506125	80.23337336
191203A00009	12/3/2019	2.21	12/3/2029	12/3/2019	147.33856	136.208749	126.0554139	116.7862384	108.3181528	100.5763581	93.49346005	87.00869765	81.06725581
190708A00030	7/8/2019	2.57	7/2/2029	7/8/2019	149.08346	138.3131754	128.4489936	119.4085522	111.1174404	103.5083904	96.52055473	90.09885884	84.19342321
190718A00012	7/18/2019	2.55	7/18/2029	7/18/2019	144.53804	134.8490234	125.9499743	117.770334	110.2462787	103.3200361	96.93927917	91.0565831	85.62893945
190719A00017	7/19/2019	2.55	7/19/2034	7/19/2019	145.64636	135.2109509	125.7740572	117.2267509	109.4730415	102.4282346	96.01751411	90.17471111	84.84123488
190826A00032	8/26/2019	1.72	8/24/2029	8/26/2019	126.2013	120.329091	114.8356581	109.6924838	104.8734369	100.3545532	96.11384121	92.13110526	88.38778597
190829A00039	8/29/2019	1.85	8/29/2034	8/29/2019	141.24504	131.0017883	121.7479872	113.3747907	105.7863746	98.89828031	92.63597677	86.93361459	81.73294472
190830A00013	8/30/2019	2.06	8/30/2034	8/30/2019	141.20638	131.0273813	121.8278036	113.5002408	105.9501034	99.09398925	92.85827232	87.17787859	81.99522393
190404A00015	4/4/2019	2.88	4/3/2026	4/4/2019	135.03011	128.4865308	122.3141997	116.4898809	110.9919211	105.800131	100.8956794	96.2609936	91.87966961
190510A00022	5/10/2019	2.95	5/10/2034	5/10/2019	148.9367	138.3940132	128.8489374	120.1937938	112.3335567	105.1842708	98.67167575	92.73000869	87.3009645
190517A00012	5/17/2019	2.88	5/17/2034	5/17/2019	148.2636	137.7681592	128.2659041	119.6496255	111.8247152	104.7075878	98.22431043	92.30941078	86.90484172
190605A00025	6/5/2019	2.64	6/5/2029	6/5/2019	149.4117	138.7065463	128.8950482	119.896585	111.6382617	104.0541293	97.08448634	90.67525393	84.77741733
190619A00010	6/19/2019	2.04	6/17/2022	6/19/2019	105.53377	104.53503	103.5554617	102.5944983	101.6515992	100.7262453	99.81793811	98.92619833	98.05056521
190628A00026	6/28/2019	2.54	6/28/2034	6/28/2019	145.28418	134.9364739	125.573503	117.0883984	109.3869181	102.3858566	96.01166601	90.19925768	84.89096183
181226A00030	12/26/2018	2.91	12/26/2028	12/26/2018	130.48127	124.863961	119.5846232	114.6193984	109.946307	105.5450873	101.3970487	97.48493908	93.79282361
190131A00013	1/31/2019	3.48	1/31/2034	1/31/2019	180.95727	162.8673425	146.9163314	132.8319626	120.3783611	109.3509885	99.57231136	90.88808961	83.16419307
190205A00027	2/5/2019	2.87	2/7/2022	2/5/2019	108.84246	107.4095382	106.002978	104.6221115	103.2662909	101.9348893	100.6273007	99.34293819	98.08123414
190313A00044	3/13/2019	2.7	6/13/2022	3/13/2019	110.78236	108.966561	107.1906404	105.4533441	103.7534736	102.0898802	100.4614628	98.86716524	97.30597388
190401A00017	4/1/2019	2.55	4/1/2022	4/1/2019	109.22852	107.6480988	106.0996184	104.5821821	103.0949302	101.6370346	100.2076969	98.80614694	97.43164217
190403A00014	4/3/2019	3.05	4/3/2029	4/3/2019	150.66083	140.395311	130.9605527	122.2834448	114.2977266	106.9433115	100.1656803	93.91533565	88.14731378
180809A00031	8/9/2018	2.98	8/9/2021	8/9/2018	105.79042	104.8711162	103.9678913	103.0803262	102.2080149	101.3505658	100.5076002	99.67875245	98.86366902
180906A00032	9/6/2018	3.24	9/5/2025	9/6/2018	133.51011	127.6719651	122.1345196	116.8805698	111.8939891	107.1596541	102.6633775	98.39184482	94.33255623
180913A00033	9/13/2018	3.31	9/13/2033	9/13/2018	151.88366	141.59404	132.2382275	123.7193861	115.9516322	108.8587129	102.3728514	96.43373864	90.98765151
181214A00030	12/14/2018	3.47	12/14/2033	12/14/2018	183.65666	165.3626491	149.2219975	134.9618372	122.3456471	111.1682104	101.2512977	92.43996793	84.5993951
181218A00040	12/18/2018	3.23	6/18/2030	12/18/2018	136.76436	129.8424515	123.402713	117.4061423	111.8172218	106.6035851	101.7357145	97.18666969	92.93184376
181218A00086	12/18/2018	3.06	10/18/2023	12/18/2018	119.2209	116.0189255	112.9258271	109.9372119	107.0488961	104.2568908	101.5573915	98.94676817	96.42155619
180309A00015	3/9/2018	3.37	3/10/2031	3/9/2018	140.60115	132.9409702	125.851267	119.2829154	113.1914497	107.5365873	102.2818045	97.39395798	92.84294694

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180410A00002	4/10/2018	3.14	4/11/2033	4/10/2018	148.66841	138.9176818	130.0259755	121.906673	114.4826967	107.6853853	101.4535099	95.73241226	90.47324829
180420A00011	4/20/2018	2.74	4/20/2023	4/20/2018	109.12029	107.6246427	106.1643007	104.7381237	103.3450197	101.983941	100.6538824	99.35387853	98.08300227
180601A00038	6/1/2018	2.86	6/1/2021	6/1/2018	104.41499	103.7100728	103.0147247	102.3287545	101.6519731	100.9841964	100.3252452	99.67494497	99.03312595
180615A00021	6/15/2018	3.02	6/15/2023	6/15/2018	117.06198	114.2362022	111.4978249	108.8435146	106.2700956	103.7745378	101.3539484	99.0055646	96.72674669
180717A00021	7/17/2018	3.34	7/17/2028	7/17/2018	146.60844	137.7930386	129.6249226	122.0517581	115.0257539	108.5032446	102.4443119	96.81244264	91.57421977
170829A00066	8/29/2017	2.11	8/29/2024	8/29/2017	122.85424	118.4462604	114.2259484	110.1842662	106.3126655	102.6030533	99.04776607	95.63954392	92.37150741
170921A00052	9/21/2017	2.21	9/21/2022	9/21/2017	111.31305	109.2396954	107.217159	105.2438602	103.3182777	101.4389485	99.6044646	97.81347121	96.06466387
171201A00016	12/1/2017	2.91	12/2/2030	12/1/2017	136.48619	129.2261387	122.4950978	116.248439	110.4456817	105.0500816	100.0282577	95.34986038	90.98727349
171207A00020	12/7/2017	2.25	12/7/2020	12/7/2017	101.11564	100.9246588	100.7344078	100.5448826	100.356079	100.1679931	99.98062049	99.79395724	99.60799927
171207A00022	12/7/2017	2.45	12/7/2022	12/7/2017	113.21143	110.8673768	108.5854017	106.3633851	104.1992959	102.0911897	100.0372047	98.03555691	96.08453647
180126A00011	1/26/2018	2.72	1/26/2028	1/26/2018	126.17759	121.3475998	116.7793559	112.4560707	108.3621702	104.4831941	100.8057086	97.31722642	94.00613313
170406A00033	4/6/2017	3.01	4/6/2027	4/6/2017	139.92008	132.3368309	125.2429901	118.6038288	112.3872787	106.5637119	101.1057422	95.98804359	91.18718462
170407A00001	4/6/2017	2.97	4/6/2027	4/6/2017	137.55405	130.4181956	123.7344374	117.4710302	111.5986401	106.0901504	100.920482	96.06642926	91.50650995
170504A00012	5/4/2017	2.28	5/4/2026	5/4/2017	118.64515	115.1324946	111.7718676	108.5553103	105.4753417	102.5249263	99.69744442	96.98666443	94.38671766
170518A00027	5/18/2017	2.11	5/18/2022	5/18/2017	109.30705	107.5868817	105.9033276	104.2552812	102.6416821	101.0615124	99.51379411	97.99758767	96.51198958
170619A00095	6/16/2017	2.79	6/16/2027	6/16/2017	139.35869	131.5981753	124.3513001	117.5806932	111.2519195	105.3332338	99.79535527	94.61126254	89.75600652
170711A00010	7/11/2017	2.38	7/12/2027	7/11/2017	122.94084	118.5550957	114.392649	110.4399753	106.6844725	103.1143941	99.71878547	96.48742487	93.4107692
160908A00035	9/8/2016	2.3	9/8/2031	9/8/2016	134.69026	127.0032237	119.9133445	113.3671236	107.3163288	101.7174378	96.53114303	91.72191261	87.25759899
160923A00009	9/23/2016	2.24	9/23/2031	9/23/2016	134.25913	126.5960492	119.5283362	113.0026469	106.9708861	101.3896566	96.21976446	91.42578108	86.97565308
161014A00019	10/14/2016	2.39	10/15/2031	10/14/2016	135.60222	127.8047057	120.6171196	113.9844632	107.8571839	102.1905983	96.94437694	92.08208789	87.57079054
170106A00030	1/6/2017	2.39	1/6/2027	1/6/2017	121.28679	117.2757487	113.4558002	109.8160411	106.3462759	103.0369649	99.87917753	96.86454936	93.98524186
170406A00029	4/6/2017	3.01	4/6/2027	4/6/2017	139.92008	132.3368357	125.2429936	118.6038311	112.38728	106.5637123	101.1057417	95.98804241	91.18718281
170406A00032	4/6/2017	3.01	4/6/2027	4/6/2017	139.92008	132.3368357	125.2429936	118.6038311	112.38728	106.5637123	101.1057417	95.98804241	91.18718281
160812A00006	8/12/2016	2.16	8/12/2026	8/12/2016	130.74213	124.4914259	118.6046401	113.0582306	107.8303108	102.9005235	98.24992574	93.86088329	89.71697334
160908A00019	9/8/2016	1.87	9/8/2023	9/8/2016	115.754	112.6036511	109.5586973	106.614999	103.7686071	101.0157502	98.35282527	95.77638909	93.28315042
160908A00022	9/8/2016	2.21	9/8/2026	9/8/2016	131.7272	125.0974688	118.8640618	113.000856	107.4835957	102.289746	97.39836181	92.78996743	88.44644578
160908A00024	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884
160908A00026	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884
160908A00030	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884
160428A00025	4/28/2016	1.25	4/28/2021	4/28/2016	101.71797	101.3700242	101.0250224	100.682927	100.3436969	100.0072924	99.67367425	99.34280393	99.01464381
160511A00015	5/11/2016	2.42	5/11/2026	5/11/2016	131.44652	125.1614154	119.2342881	113.6425253	108.3650707	103.3823104	98.67596562	94.22899455	90.02550166
160603A00029	6/3/2016	2.18	6/3/2031	6/3/2016	134.57603	127.03068	120.0613943	113.617412	107.6528939	102.1264073	97.0004696	92.24114277	87.81767131
160608A00027	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160616A00029	6/16/2016	1.58	6/16/2026	6/16/2016	116.54009	113.0383593	109.6901478	106.4873208	103.4222404	100.487729	97.67703729	94.9838163	92.40209065
160810A00035	8/10/2016	2.1	8/10/2026	8/10/2016	129.13577	122.9827993	117.1869776	111.7252724	106.5762644	101.7200264	97.13801102	92.8129484	88.72875143
151223A00078	12/23/2015	2.28	12/23/2025	12/23/2015	117.25866	114.0394603	110.9508936	107.9864967	105.140175	102.4061792	99.77908383	97.25376623	94.82538776
160209A00008	2/9/2016	2.45	2/10/2031	2/9/2016	133.92628	126.6862239	119.9815319	113.7664085	107.9993763	102.6428353	97.6626719	93.02791042	88.71040077
160210A00051	2/10/2016	2.28	2/10/2031	2/10/2016	134.21363	126.9213205	120.1701032	113.9135611	108.1096611	102.7203105	97.71095792	93.05023877	88.70965724
160330A00003	3/30/2016	1.68	3/30/2021	3/30/2016	102.69134	102.1749258	101.6637112	101.1576188	100.6565719	100.1604953	99.66931526	99.18295963	98.70135752
160413A00014	4/13/2016	2.55	4/14/2031	4/13/2016	135.1508	127.7282053	120.8624271	114.5051906	108.6128267	103.1458012	98.06829252	93.34781605	88.95488813
160414A00042	4/13/2016	2.48	4/13/2026	4/13/2016	131.41643	125.2109566	119.3549106	113.8264724	108.6053044	103.6724448	99.01020776	94.60208985	90.43268501
150929A00076	9/29/2015	2.28	9/29/2025	9/29/2015	115.82777	112.8080163	109.9055687	107.1148455	104.43057	101.8477542	99.36168131	96.9678891	94.66215417
151001A00023	10/1/2015	2.02	10/1/2025	10/1/2015	115.91977	112.8387026	109.8792406	107.0355115	104.3019739	101.6733936	99.14482417	96.71158952	94.3692668
151113A00035	11/13/2015	1.8	11/14/2022	11/13/2015	106.52266	105.2896892	104.0828896	102.9014649	101.7446522	100.6117188	99.50196068	98.41470107	97.34928916
151124A00007	11/24/2015	1.98	11/23/2022	11/24/2015	106.51841	105.2874396	104.0825647	102.9029913	101.7479595	100.6167393	99.5086293	98.42295524	97.35906867
151204A00011	12/4/2015	2.28	12/4/2025	12/4/2015	117.25317	114.0352601	110.9478587	107.9845136	105.13914	102.4059978	99.77966965	97.2550406	94.82727883
151216A00005	12/16/2015	2.15	12/16/2020	12/16/2015	101.24372	101.0272169	100.8116505	100.5970182	100.3833138	100.1705313	99.95866469	99.74770795	99.5376552
150604A00039	6/4/2015	2.82	6/4/2030	6/4/2015	135.50087	128.609831	122.2003808	116.233456	110.673494	105.4880948	100.6477175	96.12540676	91.89654794
150617A00017	6/17/2015	2.27	6/17/2025	6/17/2015	115.55996	112.6870825	109.9214031	107.2579897	104.6921745	102.2195384	99.83589578	97.53728055	95.31993306
150617A00030	6/17/2015	2.91	6/16/2025	6/17/2015	127.9823	122.9548211	118.170465	113.6158759	109.2785211	105.1466305	101.2091449	97.45566888	93.87642651
150729A00028	7/29/2015	2.25	7/29/2025	7/29/2015	115.78427	112.8551458	110.0369435	107.3244941	104.7129096	102.197565	99.77408231	97.43831559	95.18633699
150803A00041	8/3/2015	3.01	8/2/2030	8/3/2015	135.95538	128.9578017	122.4551001	116.406675	110.775606	105.5282911	100.6341246	96.06520802	91.79609104
150804A00022	8/4/2015	2.37	8/4/2022	8/4/2015	111.08774	109.1184533	107.1946577	105.3150258	103.4782774	101.6831773	99.92853412	98.2131982	96.53605984
140730A00035	7/30/2014	2.67	1/30/2023	7/30/2014	108.15889	106.8134438	105.4978264	104.2111109	102.9524059	101.7208556	100.515638	99.33596364	98.18107372
140924A00057	9/24/2014	3.25	9/25/2028	9/24/2014	151.65082	141.8509096	132.8035959	124.4458812	116.7203971	109.574874	102.9616607	96.83729263	91.16210216
150203A00027	2/3/2015	2.26	2/4/2030	2/3/2015	130.8605	124.4319986	118.4389046	112.8469138	107.6247188	102.7437212	98.1777776	93.9029714	89.89740679
150219A00016	2/19/2015	2.68	2/19/2025	2/19/2015	125.3436	120.6554781	116.1813473	111.9101467	107.8314485	103.9354178	100.2127765	96.65476813	93.25312595
150223A00017	2/23/2015	1.77	2/23/2022	2/23/2015	105.23205	104.2460026	103.2763898	102.3228029	101.3848512	100.4621564	99.5543529	98.66108681	97.7820155
150410A00021	4/10/2015	2.27	4/10/2025	4/10/2015	114.49113	111.7527119	109.1132268	106.5682492	104.1135863	101.745263	99.45950893	97.25274635	95.12157905
120330A00013	3/30/2012	2.98	4/2/2024	3/30/2012	121.01586	117.4248644	113.9693359	110.6433145	107.4411391	104.3574304	101.3870758	98.52521374	95.76722036
120820A00011	8/20/2012	2.4	8/22/2022	8/20/2012	110.95275	109.0123011	107.1173401	105.2665124	103.458509	101.692069	99.96597724	98.27906227	96.63019466
130422A00020	4/22/2013	1.98	4/22/2025	4/22/2013	113.69848	110.9786338	108.3570771	105.8294128	103.3914737	101.0393092	98.76917188	96.5775063	94.46093729
140313A00025	3/13/2014	2.43	3/15/2021	3/13/2014	102.87564	102.4013663	101.9314975	101.4659686	101.0047192	100.5476903	100.0948239	99.64606296	99.2013517
140318A00003	3/17/2014	3.08	3/18/2024	3/17/2014	123.73554	119.8185008	116.0517601	112.4286787	108.9429522	105.5885894	102.3598951	99.25145352	96.25811315
140508A00008	5/8/2014	1.66	5/10/2021	5/8/2014	102.0568	101.6702909	101.2873879	100.9080382	100.5321873	100.1597818	99.79076955	99.42509948	99.06272156
200610A00006	6/10/2020	1.11	6/10/2027	6/10/2020	128.71043	121.150283	114.1005163	107.5236302	101.3850852	95.65305466	90.29819702	85.29344812	80.6138322

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200618A00004	6/18/2020	0.7	6/18/2030	6/18/2020	122.31388	116.0905651	110.3023192	104.9138394	99.89298941	95.21049238	90.83965529	86.75612231	82.93765307
200709A00018	7/9/2020	0.59	7/7/2023	7/9/2020	106.29426	104.7066464	103.1587518	101.6492398	100.1768305	98.74029783	97.33846683	95.97021086	94.63444927
200716A00004	7/16/2020	0.97	7/16/2027	7/16/2020	128.0214	120.3922394	113.2847747	106.6602732	100.4830827	94.72037257	89.34189563	84.31977166	79.62828991
200724A00011	7/24/2020	1.41	7/26/2038	7/24/2020	165.86744	144.4788989	126.3251942	110.8818905	97.71336848	86.45727544	76.81177554	68.52508274	61.38685732
110504A00017	5/4/2011	3.46	5/4/2021	5/4/2011	104.32047	103.7020952	103.0911413	102.487473	101.89096	101.3014751	100.7188939	100.1430952	99.57396048
200421A00026	4/21/2020	1.34	4/19/2030	4/21/2020	136.01057	126.1503641	117.1556651	108.9435628	101.4395989	94.57685917	88.29516872	82.54037605	77.26371756
200428A00009	4/28/2020	1.08	4/29/2030	4/28/2020	122.99964	116.8776668	111.175691	105.8602211	100.9007176	96.26931452	91.94056588	87.89121806	84.10000504
200501A00002	5/1/2020	1.3	5/1/2035	5/1/2020	135.71768	125.411721	116.1459602	107.8010345	100.2724583	93.46864811	87.30922623	81.72355859	76.6494938
200512A00013	5/12/2020	1.17	5/12/2027	5/12/2020	128.86456	121.3798554	114.3951928	107.8742069	101.7833784	96.0917922	90.7709213	85.79442949	81.13799177
200512A00018	5/12/2020	0.85	5/12/2025	5/12/2020	118.86012	114.0201434	109.4149985	105.0318803	100.8587566	96.88431789	93.09792945	89.48958708	86.04987601
200512A00020	5/12/2020	0.86	5/12/2025	5/12/2020	119.73606	114.670884	109.8548075	105.2741517	100.9160674	96.76848015	92.82003936	89.06007038	85.47853034
200110A00039	1/10/2020	2.32	1/10/2030	1/10/2020	148.91107	137.570677	127.2340705	117.8055342	109.1990171	101.3371048	94.15010884	87.57525544	81.55596377
200206A00027	2/6/2020	2.15	2/6/2030	2/6/2020	147.45101	136.1213905	125.8021412	116.3963495	107.8169261	99.98555834	92.83178285	86.29215976	80.30953828
200303A00028	3/3/2020	1.54	3/4/2030	3/3/2020	137.54335	127.6918245	118.6949224	110.4717259	102.949471	96.06268032	89.75239516	83.96549109	78.65406968
200306A00048	3/6/2020	1.04	3/6/2035	3/6/2020	134.87568	124.6856808	115.5175964	107.2549446	99.79566301	93.05020956	86.93992686	81.39563105	76.35639353
200309A00034	3/9/2020	0.96	3/9/2035	3/9/2020	134.10117	123.9693785	114.8536897	106.6382806	99.2216671	92.51481492	86.43951299	80.92697025	75.91660423
200309A00081	3/9/2020	1.18	3/8/2030	3/9/2020	137.70191	126.9113484	117.0958662	108.1608904	100.0215316	92.60154367	85.83240049	79.65247658	74.00631814
191008A00007	10/8/2019	1.67	10/9/2029	10/8/2019	126.38636	120.3962964	114.7990411	109.5645652	104.6653875	100.0763391	95.77435197	91.73826887	87.94867119
191031A00025	10/31/2019	1.91	10/31/2024	10/31/2019	112.0623	109.6688096	107.3541299	105.1150002	102.948319	100.8511358	98.82064235	96.85416511	94.94915762
191101A00004	11/1/2019	1.91	11/1/2029	11/1/2019	141.81713	131.9562386	122.9259599	114.6497986	107.0587769	100.0906501	93.68921318	87.80368138	82.38813789
191105A00012	11/5/2019	2.07	11/3/2034	11/5/2019	144.10527	133.469386	123.877571	115.2132044	107.3738232	100.2692947	93.82023481	87.95663987	82.61670247
191113A00013	11/13/2019	2.17	11/13/2026	11/13/2019	133.74684	126.5769682	119.8531553	113.5449983	107.6243326	102.0650573	96.84297204	91.93562879	87.32219533
191209A00005	12/9/2019	2.22	12/10/2029	12/9/2019	143.08377	133.103492	123.9687994	115.6013028	107.9303663	100.8922988	94.42963233	88.49047951	83.02796035
190905A00019	9/5/2019	2.08	9/5/2029	9/5/2019	145.00329	134.2857467	124.4874831	115.523555	107.3173304	99.79963231	92.90797597	86.58588851	80.78230064
190905A00023	9/5/2019	2.08	9/5/2029	9/5/2019	145.00329	134.2857466	124.4874831	115.523555	107.3173304	99.79963232	92.90797598	86.58588853	80.78230067
190910A00044	9/10/2019	2.02	9/10/2026	9/10/2019	131.91413	125.0125954	118.5300592	112.4386669	106.7125618	101.3277326	96.26187169	91.49424611	87.00557806
190911A00016	9/11/2019	1.9	9/11/2029	9/11/2019	127.45717	121.4718697	115.875816	110.6394866	105.7358403	101.140095	96.82952248	92.78326351	88.98216082
190926A00002	9/30/2019	2.01	9/29/2034	9/30/2019	143.02606	132.5922776	123.1718517	114.6527236	106.9363126	99.93578837	93.57457686	87.78506729	82.50749044
191004A00022	10/4/2019	2.02	10/4/2029	10/4/2019	144.733	133.9438448	124.0878952	115.0781949	106.8363691	99.29173185	92.38049298	86.04505068	80.2333601
190510A00049	5/10/2019	2.58	5/8/2026	5/10/2019	118.68822	115.2367927	111.9325423	108.7678625	105.7356001	102.8290229	100.0417916	97.36793468	94.80182389
190515A00035	5/15/2019	2.82	2/15/2029	5/15/2019	149.70496	139.3144634	129.7646757	120.9820773	112.8999738	105.4578293	98.6006667	92.27853007	86.44600098
190605A00027	6/5/2019	2.64	6/5/2029	6/5/2019	149.4117	138.7065463	128.8950482	119.896585	111.6382617	104.0541293	97.08448634	90.67525393	84.77741733
190708A00029	7/8/2019	2.57	7/2/2029	7/8/2019	149.08346	138.3131754	128.4489936	119.4085522	111.1174404	103.5083904	96.52055473	90.09885884	84.19342321

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190731A00013	7/31/2019	2.23	7/22/2022	7/31/2019	105.80438	104.7602436	103.7364895	102.7325167	101.7477488	100.7816325	99.83363587	98.90324781	97.98997668
190802A00011	8/2/2019	2.01	8/2/2029	8/2/2019	127.82797	121.8812506	116.3180118	111.1093895	106.2289358	101.6523961	97.35751084	93.32383791	89.53259068
190315A00019	3/15/2019	2.88	3/15/2034	3/15/2019	149.76497	139.2298383	129.6843402	121.0224426	113.1504891	105.9856558	99.45461366	93.49236499	88.0412306
190322A00011	3/22/2019	2.99	3/22/2034	3/22/2019	148.72508	138.3242169	128.8966664	120.3384646	112.5577496	105.4732555	99.01300699	93.11318424	87.71713347
190327A00035	3/27/2019	2.68	3/27/2034	3/27/2019	147.85316	137.4516991	128.02739	119.4755338	111.7036469	104.6299437	98.1820153	92.29568086	86.91398648
190329A00021	3/29/2019	2.96	3/29/2034	3/29/2019	148.44074	138.0594706	128.6497128	120.1076966	112.3417253	105.2706797	98.82271531	92.93412832	87.54836858
190402A00005	4/2/2019	2.77	4/2/2032	4/2/2019	149.3968	138.7991798	129.1756253	120.4251716	112.4581628	105.1949069	98.56449956	92.50379461	86.95650127
190412A00011	4/12/2019	3.07	4/12/2034	4/12/2019	149.80159	139.2600863	129.7106235	121.046682	113.1741961	106.010005	99.48050287	93.52046564	88.07202941
190205A00022	2/5/2019	3.32	2/5/2029	2/5/2019	152.32466	142.1412415	132.7671765	124.1324965	116.1736732	108.8329934	102.0579977	95.80097508	90.01850941
190205A00025	2/5/2019	2.88	2/7/2022	2/5/2019	108.85654	107.4234713	106.0167736	104.6357721	103.2798188	101.948287	100.6405703	99.35608209	98.09425447
190227A00033	2/27/2019	2.65	2/27/2026	2/27/2019	119.00869	115.6383186	112.4083978	109.3118146	106.3418718	103.4922595	100.7570299	98.13057394	95.60759972
190305A00017	3/5/2019	3.12	3/5/2026	3/5/2019	134.01754	127.909606	122.1373558	116.6802655	111.5191824	106.6362231	102.0146831	97.63895191	93.4944365
190308A00008	3/8/2019	3.19	3/8/2034	3/8/2019	150.63279	140.0994119	130.5516539	121.8842496	114.0041843	106.8291709	100.2863287	94.3110337	88.8459176
190315A00017	3/15/2019	2.88	3/15/2034	3/15/2019	149.76508	139.2299296	129.6844082	121.0224897	113.1505175	105.9856673	99.45460992	93.49234763	88.04120101
180913A00062	9/13/2018	3.05	9/13/2023	9/13/2018	119.23988	116.0374067	112.9419616	109.9493351	107.0555083	104.2566438	101.549076	98.92930295	96.39397751
180925A00013	9/25/2018	3.41	9/25/2028	9/25/2018	131.01579	125.5700926	120.4421562	115.6101759	111.0540164	106.755075	102.6961542	98.86134572	95.23592482
181115A00044	11/15/2018	3.26	11/15/2023	11/15/2018	120.9964	117.5691797	114.2619444	111.0697242	107.9877861	105.0116246	102.1369485	99.35966937	96.67589071
190111A00038	1/11/2019	2.63	1/11/2022	1/11/2019	107.98231	106.6588041	105.3653325	104.1008656	102.8644181	101.6550497	100.4718624	99.31399818	98.18063667
190118A00006	1/18/2019	3.14	1/18/2034	1/18/2019	151.61862	141.0844618	131.5286823	122.8475739	114.9494088	107.7529617	101.1862253	95.18529146	89.69337609
190205A00017	2/5/2019	3.36	2/5/2029	2/5/2019	152.69349	142.4893582	133.0960906	124.4435926	116.4682234	109.1121671	102.3228705	96.05253735	90.25767312
180605A00031	6/5/2018	3.37	6/5/2030	6/5/2018	137.66441	130.6976498	124.2161229	118.1805802	112.5552844	107.3076683	102.4080305	97.82926245	93.5466034
180702A00022	7/2/2018	2.84	6/30/2023	7/2/2018	117.3386	114.4593968	111.6705654	108.968608	106.3501895	103.8121306	101.3513991	98.96510164	96.65047599
180702A00040	7/2/2018	2.9	7/2/2021	7/2/2018	105.02695	104.2249552	103.4352698	102.657607	101.8916931	101.137263	100.3940593	99.66183241	98.94033998
180809A00032	8/9/2018	3.08	8/9/2023	8/9/2018	119.06765	115.9164152	112.8678784	109.918114	107.0633703	104.3000595	101.6247495	99.0341564	96.5251373
180813A00045	8/13/2018	2.89	8/13/2025	8/13/2018	117.90779	114.8752981	111.9592149	109.1540567	106.4546381	103.8560551	101.3536683	98.94308622	96.62015061
180907A00013	9/7/2018	3.27	9/8/2025	9/7/2018	133.04936	127.3193357	121.8830891	116.7238432	111.8258664	107.174406	102.7556221	98.55652572	94.5649226
171204A00024	12/4/2017	2.71	12/4/2024	12/4/2017	126.17792	121.4035357	116.8433687	112.4865146	108.3226913	104.3422007	100.5358911	96.89512337	93.41173844
171219A00009	12/19/2017	2.3	12/19/2024	12/19/2017	113.97476	111.4358893	108.9835202	106.6139672	104.3237295	102.1094818	99.96806299	97.89646781	95.89183744
180206A00046	2/6/2018	2.72	2/6/2023	2/6/2018	114.86189	112.3197173	109.8484172	107.4456016	105.1089806	102.8363551	100.6256118	98.47472002	96.38172747
180215A00034	2/15/2018	2.9	2/15/2023	2/15/2018	115.47142	112.8909952	110.3832152	107.9456125	105.5758164	103.2715512	101.0306313	98.85095694	96.7305109
180228A00055	2/28/2018	3.33	2/28/2028	2/28/2018	145.21889	136.6997701	128.7825432	121.4203839	114.5703765	108.1931708	102.2526679	96.71573401	91.5519414
180322A00044	3/22/2018	3.18	3/22/2033	3/22/2018	148.69491	139.0064675	130.1664497	122.0897912	114.700744	107.9317869	101.7226693	96.01957163	90.77436936
170504A00049	5/4/2017	2.63	5/6/2024	5/4/2017	122.34192	118.2977402	114.4138695	110.6829908	107.0981687	103.6528255	100.3407201	97.15592871	94.09282665

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170524A00037	5/24/2017	2.46	5/24/2024	5/24/2017	121.02759	117.1234812	113.3738817	109.7717006	106.3102211	102.983076	99.78422705	96.70794595	93.74879612
170707A00013	7/7/2017	2.88	7/8/2030	7/7/2017	134.81635	127.9350141	121.5366863	115.5820139	110.0351886	104.8636005	100.0375289	95.52986532	91.31586475
170802A00013	8/2/2017	2.5	8/2/2024	8/2/2017	123.24734	118.9229342	114.778979	110.8069571	106.9988018	103.3468676	99.84390591	96.48304261	93.25775647
170921A00057	9/21/2017	2.79	9/21/2027	9/21/2017	138.48659	130.8695544	123.7634343	117.1303752	110.935549	105.146894	99.73488004	94.67229543	89.93405225
171204A00009	12/4/2017	2.23	12/4/2024	12/4/2017	113.53343	111.0523912	108.6545915	106.3365279	104.0948738	101.926467	99.8283001	97.79751195	95.8313794
161229A00019	12/29/2016	2.46	12/29/2026	12/29/2016	121.27385	117.3145773	113.5418651	109.9451707	106.5146316	103.2410144	100.1156699	97.13049232	94.27788111
170105A00010	1/5/2017	2.61	1/5/2027	1/5/2017	121.33717	117.3400891	113.532863	109.904694	106.445478	103.1457594	99.9966846	96.98995947	94.11781032
170120A00028	1/20/2017	2.34	1/20/2022	1/20/2017	107.76706	106.3921655	105.0457754	103.7270139	102.4350388	101.169043	99.92825162	98.71192127	97.51933787
170307A00013	3/7/2017	2.33	3/7/2024	3/7/2017	111.16269	109.1232239	107.1432221	105.2204574	103.3528009	101.5382196	99.77477104	98.06059886	96.39392815
170317A00044	3/17/2017	3.11	3/17/2027	3/17/2017	138.19377	131.0853936	124.4238453	118.1779872	112.3190333	106.8203567	101.6573156	96.80709467	92.24856029
170406A00034	4/6/2017	3.01	4/6/2027	4/6/2017	139.92008	132.3368309	125.2429901	118.6038288	112.3872787	106.5637119	101.1057422	95.98804359	91.18718462
160930A00025	9/30/2016	1.66	9/30/2027	9/30/2016	120.43572	116.0335747	111.8604412	107.9021745	104.1456126	100.5785029	97.18943356	93.96776938	90.90359398
161014A00029	10/14/2016	2.51	10/15/2031	10/14/2016	138.05846	130.0785017	122.7249409	115.941126	109.676031	103.8836572	98.52250059	93.55507857	88.94751042
161102A00014	11/2/2016	1.99	11/2/2023	11/2/2016	117.15423	113.7756062	110.5152233	107.3682195	104.3299631	101.3960419	98.56225133	95.82458342	93.17921592
161116A00006	11/16/2016	2.39	11/16/2026	11/16/2016	119.95799	116.1089678	112.438634	108.9370347	105.5948431	102.4033192	99.3542692	96.44000747	93.65332144
161207A00014	12/7/2016	2.75	12/8/2031	12/7/2016	140.44541	132.2063499	124.6228086	117.634739	111.1881344	105.2343736	99.72964259	94.63442404	89.91304295
161214A00034	12/14/2016	2.65	12/14/2026	12/14/2016	121.20677	117.265736	113.5097907	109.9285126	106.5121454	103.2515531	100.1381756	97.1639892	94.32146863
160719A00012	7/19/2016	1.32	7/19/2021	7/19/2016	102.31768	101.8370648	101.3621262	100.8927481	100.4288223	99.97024339	99.51690891	99.06871913	98.62557699
160719A00026	7/19/2016	1.87	7/20/2026	7/19/2016	117.07504	113.5197506	110.1218128	106.8728223	103.7648886	100.7905997	97.94298949	95.21550767	92.60199232
160801A00002	8/1/2016	1.58	8/3/2026	8/1/2016	117.0152	113.3986525	109.9445279	106.6440427	103.4889536	100.4715224	97.58448162	94.82100273	92.17466639
160906A00027	9/6/2016	2.03	9/8/2031	9/6/2016	134.27075	126.5674629	119.4647236	112.9085646	106.8503499	101.246206	96.05652001	91.24549387	86.78074868
160908A00015	9/8/2016	1.87	9/8/2023	9/8/2016	115.754	112.6036511	109.5586973	106.614999	103.7686071	101.0157502	98.35282527	95.77638909	93.28315042
160908A00017	9/8/2016	1.87	9/8/2023	9/8/2016	115.754	112.6036511	109.5586973	106.614999	103.7686071	101.0157502	98.35282527	95.77638909	93.28315042
160608A00015	6/8/2016	1.63	6/8/2021	6/8/2016	103.69694	102.971582	102.2563976	101.5511746	100.8557054	100.1697884	99.49322741	98.82583162	98.16741538
160608A00016	6/8/2016	1.63	6/8/2021	6/8/2016	103.68639	102.9631287	102.250004	101.5468013	100.8533139	100.1693412	99.49468769	98.82916358	98.17258399
160608A00021	6/8/2016	1.91	6/8/2023	6/8/2016	114.57468	111.7030187	108.9208373	106.224727	103.6114368	101.0778638	98.62104532	96.23815135	93.9264774
160608A00025	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414
160629A00066	6/29/2016	2.61	6/30/2036	6/29/2016	177.16265	157.5509435	140.5647066	125.8238606	113.0061557	101.8380273	92.08694724	83.55501762	76.07359813
160705A00010	7/5/2016	1.68	7/5/2023	7/5/2016	114.49231	111.5102641	108.6235513	105.8284686	103.1214891	100.4992492	97.95853946	95.49629633	93.1095942
160201A00016	2/1/2016	2.1	2/2/2026	2/1/2016	116.5814	113.293017	110.1411756	107.1189856	104.2199585	101.4379796	98.76728378	96.20243296	93.73829539
160210A00049	2/10/2016	1.78	2/10/2026	2/10/2016	116.21483	112.9243752	109.7709678	106.7476769	103.8479713	101.0656974	98.39505422	95.83057112	93.36708643
160301A00012	3/1/2016	2.02	3/1/2023	3/1/2016	113.59148	110.9843833	108.4520375	105.9918604	103.601373	101.2781972	99.02005053	96.82474225	94.69016865
160428A00028	4/28/2016	2	4/28/2026	4/28/2016	117.44628	114.0184059	110.7371219	107.5948305	104.5843897	101.6990785	98.93256977	96.27890383	93.73246491

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160524A00028	5/24/2016	2.06	5/24/2023	5/24/2016	114.96014	112.089666	109.3077996	106.6112136	103.996727	101.4613015	99.00203368	96.61614813	94.30099073
160603A00014	6/3/2016	1.74	6/3/2026	6/3/2016	117.07986	113.5627055	110.1996939	106.9826615	103.9039428	100.9563332	98.1330585	95.42774591	92.83439735
151023A00018	10/23/2015	1.74	10/23/2020	10/23/2015	100.34515	100.2810195	100.2169876	100.1530499	100.0892063	100.0254566	99.96180059	99.89823803	99.83476875
151030A00026	10/30/2015	3.29	10/30/2030	10/30/2015	157.42257	145.6658479	134.9806547	125.260229	116.4091289	108.3419669	100.9822953	94.26162022	88.11852973
151118A00037	11/18/2015	2.75	11/18/2025	11/18/2015	126.43009	121.536764	116.8879109	112.4695525	108.2686005	104.2727929	100.470637	96.85135606	93.40484046
151125A00037	11/25/2015	2.41	11/25/2025	11/25/2015	116.75457	113.6105978	110.5921519	107.6931109	104.9076985	102.2304615	99.65624951	97.18019584	94.79769998
151216A00006	12/16/2015	2.3	12/16/2021	12/16/2015	107.31815	106.0023858	104.7192102	103.4674217	102.2458751	101.05348	99.8891981	98.75204013	97.64106267
160104A00020	1/4/2016	2.47	1/4/2023	1/4/2016	113.79119	111.3464216	108.9682229	106.6542647	104.4023238	102.2102739	100.0760807	97.99779661	95.97355633
150714A00003	7/14/2015	3.76	7/12/2030	7/14/2015	142.10389	134.7996109	128.0102978	121.6938474	115.8119583	110.3297608	105.2154846	100.4401602	95.97735207
150803A00039	8/3/2015	3.01	8/2/2030	8/3/2015	135.9554	128.9578151	122.4551101	116.406682	110.7756102	105.5282928	100.634124	96.06520546	91.79608666
150824A00050	8/24/2015	2.03	8/25/2025	8/24/2015	115.42677	112.457078	109.6014403	106.8544758	104.2111015	101.6665107	99.21615593	96.85573308	94.58116664
150925A00034	9/25/2015	2.36	9/25/2025	9/25/2015	116.06046	113.0349038	110.1268665	107.3307532	104.6412785	102.0534466	99.56253295	97.16406798	94.85382134
151006A00050	10/6/2015	2.21	10/6/2022	10/6/2015	106.52756	105.3436671	104.1842971	103.0487209	101.9362349	100.8461627	99.77785411	98.73068396	97.70405058
151013A00033	10/13/2015	2.23	10/14/2025	10/13/2015	115.94146	112.8698617	109.9191954	107.0836377	104.3576888	101.7361535	99.21412147	96.78695008	94.45024771
141015A00027	10/15/2014	2.01	10/15/2021	10/15/2014	106.08857	104.9790864	103.8931509	102.8300138	101.7889592	100.7693008	99.77038048	98.79156717	97.83225506
141107A00027	11/7/2014	1.98	11/8/2021	11/7/2014	103.6049	102.935047	102.2762141	101.6280995	100.9904134	100.3628771	99.74522237	99.13719083	98.53853356
150115A00031	1/15/2015	1.42	1/18/2022	1/15/2015	103.81901	103.0524157	102.2998499	101.5608919	100.8351368	100.1221963	99.42169854	98.73328636	98.05661706
150311A00003	3/11/2015	2.72	3/31/2025	3/11/2015	125.91576	121.1579136	116.6218806	112.2959385	108.1690518	104.2308284	100.4714785	96.88177599	93.45302292
150409A00009	4/9/2015	1.89	4/9/2025	4/9/2015	113.99305	111.2578572	108.6217337	106.0802402	103.6291682	101.2645283	98.98253702	96.77960484	94.65232469
150615A00024	6/15/2015	2.26	6/16/2025	6/15/2015	115.53192	112.6597965	109.8948434	107.2321258	104.6669778	102.1949815	99.81195282	97.51392701	95.29714563
200616A00005	6/16/2020	0.74	6/17/2030	6/16/2020	122.55469	116.3192278	110.519681	105.1206751	100.0900121	95.39835858	91.01897029	86.92744439	83.1014976
110701A00011	7/1/2011	3.87	7/1/2026	7/1/2011	124.07554	120.3096043	116.710252	113.2685921	109.9762742	106.8254544	103.8087602	100.9192596	98.15043137
120517A00021	5/17/2012	1.85	5/17/2024	5/17/2012	111.09791	108.957519	106.8820192	104.8688953	102.9157516	101.0203033	99.18037004	97.39387093	95.65881871
120806A00015	8/6/2012	2.38	8/6/2027	8/6/2012	122.3446	117.9451573	113.7713893	109.809537	106.0467855	102.4711948	99.07163422	95.83772169	92.75976836
120807A00026	8/7/2012	2.42	8/9/2027	8/7/2012	122.51364	118.1079984	113.9283661	109.9609576	106.1929384	102.6123505	99.20804643	95.96962845	92.88739322
121114A00020	11/14/2012	1.74	11/14/2022	11/14/2012	111.22282	109.0523391	106.9377213	104.877113	102.8687347	100.9108805	99.00191449	97.14026737	95.32443294
200406A00030	4/6/2020	1.61	4/5/2030	4/6/2020	142.41224	131.2319511	121.0670483	111.8184501	103.3972876	95.72379974	88.72635383	82.34057658	76.50858216
200414A00024	4/14/2020	1.37	4/14/2027	4/14/2020	130.01183	122.5542619	115.589681	109.0826005	103.0002791	97.31249293	91.99132879	87.01099564	82.34765241
200429A00030	4/29/2020	1.41	4/29/2030	4/29/2020	139.01361	128.3671826	118.6804117	109.8598361	101.8216317	94.49057016	87.79909294	81.68648936	76.09816689
200512A00010	5/12/2020	1.48	5/10/2030	5/12/2020	141.36576	130.1546725	119.9710544	110.7137694	102.292198	94.625088	87.63953797	81.27009704	75.45796558
200512A00011	5/12/2020	1.48	5/10/2030	5/12/2020	141.36579	130.1547	119.9710724	110.7137787	102.2921996	94.62508258	87.6395262	81.27007954	75.45794289
200605A00018	6/5/2020	0.91	6/5/2025	6/5/2020	120.24219	115.0922327	110.1985184	105.5467976	101.1237025	96.91668262	92.91394964	89.10442672	85.47770103
200206A00034	2/6/2020	1.84	2/6/2025	2/6/2020	123.21694	118.3210734	113.6531149	109.2012146	104.9542047	100.901553	97.03332315	93.34013808	89.8131455

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200220A00026	2/20/2020	2.22	2/21/2040	2/20/2020	159.97736	143.5543429	129.3147839	116.9328575	106.1349822	96.69099586	88.40688156	81.1187663	74.68796032
200317A00043	3/17/2020	1.29	3/15/2030	3/17/2020	125.27469	119.0647704	113.2788862	107.8833782	102.8475449	98.14335997	93.7452206	89.62971992	85.77544296
200323A00090	3/23/2020	1.55	3/23/2027	3/23/2020	118.80264	114.5521079	110.5179297	106.6870342	103.0472435	99.58720226	96.29631687	93.1646988	90.18311306
200327A00084	3/27/2020	1.1	3/27/2025	3/27/2020	119.49607	114.7587612	110.2460035	105.9458374	101.8470094	97.93892465	94.21160415	90.65564599	87.26218858
200406A00014	4/6/2020	1.33	4/6/2035	4/6/2020	137.90473	127.427248	118.0059903	109.5199658	101.8632326	94.94290681	88.67744882	82.9951857	77.83303674
191112A00022	11/12/2019	2.36	11/13/2029	11/12/2019	148.63149	137.4835494	127.3078598	118.0130211	109.516733	101.7448446	94.63050572	88.11341026	82.13912216
191122A00003	11/22/2019	2.32	11/22/2039	11/22/2019	175.58888	154.6434522	136.821504	121.6121155	108.5927764	97.41345133	87.783612	79.46166822	72.24634268
191224A00002	12/24/2019	2.17	12/24/2029	12/24/2019	128.5554	122.3799059	116.6147397	111.2281414	106.1910731	101.476969	97.0615077	92.92240582	89.03923298
200115A00013	1/15/2020	2.18	1/15/2030	1/15/2020	138.45341	129.6255673	121.514751	114.0560569	107.1909057	100.8663889	95.03468627	89.65254599	84.68082069
200130A00046	1/30/2020	1.81	1/29/2027	1/30/2020	118.30505	114.4062673	110.6927671	107.1540039	103.7801135	100.5618643	97.49061275	94.55826173	91.75722213
200206A00032	2/6/2020	2.15	2/6/2030	2/6/2020	147.45102	136.1213995	125.8021468	116.3963522	107.8169263	99.98555645	92.83177917	86.29215457	80.30953183
190524A00041	5/24/2019	2.83	5/24/2034	5/24/2019	147.78392	137.3221289	127.8503824	119.2617992	111.4620672	104.3678634	97.90548713	92.00967261	86.62255587
190813A00064	8/13/2019	1.9	8/13/2024	8/13/2019	121.03848	116.7224626	112.5883465	108.6274773	104.8316573	101.1931206	97.70450745	94.35884167	91.14950796
190930A00028	9/30/2019	1.95	9/30/2024	9/30/2019	121.10918	116.8033616	112.6826259	108.7379246	104.960708	101.3428905	97.87682299	94.55526639	91.37136758
191004A00019	10/4/2019	2.02	10/4/2029	10/4/2019	144.73299	133.9438397	124.0878921	115.0781935	106.8363692	99.29173322	92.3804954	86.04505397	80.23336411
191004A00026	10/4/2019	1.74	10/4/2024	10/4/2019	121.0971	116.6253833	112.3486447	108.2572792	104.3422077	100.5948468	97.00707931	93.57122593	90.28001924
191009A00009	10/9/2019	1.8	10/9/2026	10/9/2019	117.54927	113.8282678	110.277971	106.8889726	103.652452	100.5601384	97.60427265	94.77757215	92.07319815
190104A00035	1/4/2019	3.1	1/5/2026	1/4/2019	134.12422	128.0042568	122.215615	116.7383109	111.5536847	106.6443049	101.9938807	97.58718046	93.40995598
190205A00019	2/5/2019	2.94	2/5/2024	2/5/2019	121.75471	118.0250855	114.4338453	110.9750923	107.6432094	104.4328482	101.3389151	98.35655765	95.48115147
190329A00067	3/29/2019	2.61	3/29/2024	3/29/2019	120.20459	116.5592847	113.0523499	109.6776926	106.4295206	103.3023299	100.2908889	97.39022337	94.59560167
190411A00022	4/11/2019	2.68	4/11/2022	4/11/2019	106.89639	105.741722	104.609505	103.4990932	102.4098698	101.3412416	100.2926376	99.26350804	98.25332368
190503A00015	5/3/2019	3.03	5/3/2034	5/3/2019	149.70841	139.1114997	129.5172912	120.817559	112.9167964	105.7306234	99.18440272	93.21203763	87.75492649
190506A00025	5/6/2019	3.03	5/4/2029	5/6/2019	152.78706	141.9828798	132.0712769	122.9724934	114.6143449	106.9314609	99.86460629	93.36007382	87.36913992
200406A00032	4/6/2020	1.09	4/4/2025	4/6/2020	120.3847	115.407085	110.6695787	106.159254	101.8639492	97.77222045	93.87329535	90.1570297	86.61386752
200414A00009	4/14/2020	0.82	4/14/2025	4/14/2020	110.68367	108.0356902	105.4833938	103.0225014	100.6489571	98.35891556	96.14872948	94.014938	91.95425588
200501A00009	5/4/2020	0.67	5/1/2025	5/4/2020	110.47517	107.78551	105.1944444	102.6975111	100.2904819	97.96935022	95.73031799	93.56978347	91.48432956
200512A00014	5/12/2020	1.17	5/12/2027	5/12/2020	128.86456	121.3798554	114.3951928	107.8742069	101.7833784	96.0917922	90.7709213	85.79442949	81.13799177
200512A00021	5/12/2020	0.86	5/12/2025	5/12/2020	119.73606	114.670884	109.8548075	105.2741517	100.9160674	96.76848015	92.82003936	89.06007038	85.47853034
200709A00019	7/9/2020	0.77	7/9/2025	7/9/2020	111.08946	108.28947	105.5951569	103.0016147	100.5041992	98.09851561	95.78040324	93.5459214	91.39133617
200116A00012	1/16/2020	2.16	1/19/2027	1/16/2020	134.55246	127.1490523	120.2177161	113.7255679	107.6421929	101.9394458	96.59126917	91.57352792	86.86385735
200212A00013	2/12/2020	1.98	2/12/2027	2/12/2020	133.6127	126.1759554	119.2180947	112.7055119	106.6071333	100.8942145	95.5401534	90.52032086	85.81190403
200311A00026	3/11/2020	1.34	3/11/2030	3/11/2020	137.92444	127.4760112	117.9585296	109.2823884	101.3671162	94.14039571	87.53719536	81.4989986	75.97311788
200319A00035	3/19/2020	1.72	3/18/2033	3/19/2020	141.83002	131.1030268	121.4303589	112.6954752	104.7957156	97.64055439	91.15008149	85.25368235	79.88889041

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200326A00032	3/26/2020	1.49	3/26/2030	3/26/2020	125.23194	119.0534334	113.2954536	107.9247106	102.9108325	98.22608774	93.84513627	89.74480633	85.90389312
200406A00027	4/6/2020	1.31	4/5/2030	4/6/2020	137.6215	127.6295366	118.5144355	110.1922567	102.5876074	95.63272747	89.26667533	83.43460511	78.08712375
190813A00052	8/13/2019	2.24	8/13/2029	8/13/2019	146.32229	135.5944929	125.7803225	116.7959359	108.5656333	101.0210299	94.10031335	87.7475791	81.91223709
190813A00057	8/13/2019	1.9	8/13/2024	8/13/2019	121.03848	116.7224626	112.5883465	108.6274773	104.8316573	101.1931206	97.70450745	94.35884167	91.14950796
190816A00023	8/16/2019	2.14	8/16/2034	8/16/2019	141.96745	131.7341743	122.4854657	114.1133665	106.5227974	99.62992339	93.360735	87.64981859	82.4392887
190829A00032	8/29/2019	1.69	8/28/2026	8/29/2019	117.40562	113.7757046	110.3089118	106.9964112	103.829918	100.8016557	97.90432123	95.13105301	92.47540098
190905A00018	9/5/2019	1.85	9/5/2029	9/5/2019	140.70005	131.0555225	122.2116668	114.0958205	106.6423518	99.79194207	93.49094427	87.69081079	82.34758134
190925A00009	9/25/2019	2	9/25/2026	9/25/2019	130.08373	123.5770269	117.460081	111.70709	106.2940993	101.1988638	96.40071709	91.88045067	87.6202037
190605A00007	6/5/2019	2.47	6/5/2026	6/5/2019	133.46189	126.7878479	120.5028446	114.5818724	109.0016747	103.740613	98.77854467	94.09671147	89.67763614
190605A00023	6/5/2019	2.64	6/5/2029	6/5/2019	149.41173	138.706564	128.8950606	119.8965927	111.6382653	104.0541294	97.08448318	90.67524799	84.77740898
190620A00033	6/20/2019	2.1	6/20/2029	6/20/2019	127.81892	121.9828986	116.5169782	111.3937335	106.5879955	102.0766528	97.8384688	93.85391629	90.10502754
190702A00071	7/2/2019	2.69	7/1/2039	7/2/2019	191.1652	166.7009099	146.0215578	128.4950867	113.600053	100.9055777	90.05504163	80.75280343	72.75336645
190708A00025	7/8/2019	2.21	7/1/2024	7/8/2019	121.68254	117.4721999	113.4350853	109.5629789	105.8481138	102.283141	98.86110397	95.57541473	92.41983183
190802A00020	8/2/2019	2.42	8/2/2034	8/2/2019	144.65376	134.2279273	124.8050884	116.2752766	108.5416424	101.5187882	95.13132441	89.31261623	84.00369679
190315A00021	3/15/2019	3.11	3/15/2034	3/15/2019	149.86829	139.3879425	129.8882985	121.2646104	113.4243231	106.285557	99.77579267	93.83072708	88.39327726
190315A00023	3/15/2019	2.88	3/15/2034	3/15/2019	149.76502	139.2298803	129.684372	121.0224653	113.1505034	105.9856625	99.45461343	93.49235845	88.04121829
190403A00013	4/3/2019	3.05	4/3/2029	4/3/2019	150.66082	140.3953014	130.9605455	122.2834398	114.2977235	106.9433102	100.1656806	93.91533738	88.1473168
190422A00037	4/22/2019	3.07	4/21/2034	4/22/2019	149.79247	139.2530941	129.705527	121.0432674	113.1722719	106.0093998	99.48106324	93.52205445	88.0745241
190501A00015	5/1/2019	2.78	5/1/2029	5/1/2019	130.13785	124.2804766	118.7901034	113.6398294	108.8049501	104.2627595	99.99237427	95.97457442	92.19165917
190531A00036	5/31/2019	2.71	5/31/2034	5/31/2019	146.63574	136.2547565	126.8562099	118.3340421	110.5946604	103.5553783	97.14305861	91.2929349	85.94758648
181116A00006	11/16/2018	3.18	11/17/2025	11/16/2018	119.10332	115.8968571	112.818384	109.8616573	107.0207894	104.290222	101.6647051	99.1392778	96.70925065
181214A00010	12/14/2018	3.41	12/14/2028	12/14/2018	149.34885	139.9672605	131.3050652	123.3015843	115.9016276	109.0549701	102.7158771	96.84267793	91.39738158
190104A00006	1/4/2019	2.83	1/5/2026	1/4/2019	118.62126	115.3264373	112.1666535	109.1351704	106.2256365	103.4320631	100.7488007	98.17051795	95.69218102
190131A00023	1/31/2019	3.02	1/30/2034	1/31/2019	150.47705	140.0215192	130.5371371	121.9209537	114.0819124	106.9393835	100.4218881	94.46598801	89.015317
190205A00023	2/5/2019	3.32	2/5/2029	2/5/2019	152.32466	142.1412415	132.7671765	124.1324965	116.1736732	108.8329934	102.0579977	95.80097508	90.01850941
190207A00003	2/7/2019	2.68	2/7/2024	2/7/2019	120.35272	116.8261429	113.4288174	110.155247	107.0002038	103.9587102	101.026026	98.19763531	95.46923481
180628A00068	6/28/2018	3.12	6/28/2028	6/28/2018	141.31844	133.5886925	126.3996663	119.7089088	113.4775888	107.6701648	102.254086	97.19952281	92.4791223
180712A00044	7/12/2018	3.44	7/12/2033	7/12/2018	150.37974	140.3792323	131.2723093	122.9676147	115.3839855	108.4492402	102.0991151	96.27633439	90.92979515
180809A00034	8/9/2018	3.08	8/9/2023	8/9/2018	119.06765	115.9164152	112.8678784	109.918114	107.0633703	104.3000595	101.6247495	99.0341564	96.5251373
180914A00049	9/14/2018	3.37	9/14/2033	9/14/2018	152.44307	142.1156024	132.7253767	124.1752008	116.3788749	109.2598654	102.750146	96.78918555	91.32306351
180924A00033	9/24/2018	3.08	9/22/2023	9/24/2018	119.41558	116.2723779	113.2342669	110.2970842	107.4568608	104.7098085	102.0523106	99.4809132	96.99231643
180925A00116	9/25/2018	3.28	9/25/2028	9/25/2018	131.43534	125.948334	120.7825139	115.9157769	111.327718	106.99949	102.9136729	99.05415601	95.4060306
180104A00024	1/4/2018	2.98	1/4/2028	1/4/2018	143.6103	135.0681738	127.1299844	119.7489645	112.8822374	106.4904754	100.5375858	94.9904274	89.81855249

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180104A00041	1/4/2018	3.08	1/4/2033	1/4/2018	172.93966	156.6814204	142.223944	129.3524087	117.8789646	107.6392016	98.48909757	90.30237867	82.96823523
180125A00027	1/25/2018	2.69	1/24/2025	1/25/2018	115.75946	112.9625479	110.2670446	107.6684169	105.1623671	102.7448201	100.41191	98.15996836	95.98551235
180206A00045	2/6/2018	2.71	2/6/2023	2/6/2018	114.61266	112.1101796	109.6772118	107.3114191	105.010558	102.7724737	100.5950957	98.47643442	96.414577
180309A00011	3/9/2018	3.19	3/10/2025	3/9/2018	130.0487	124.8670682	119.9299372	115.2243866	110.7382461	106.4600512	102.3789982	98.48490251	94.76816019
180601A00037	6/1/2018	2.86	6/1/2021	6/1/2018	104.43108	103.7235479	103.0256411	102.3371597	101.6579132	100.9877168	100.32639	99.67375755	99.02964853
170406A00036	4/6/2017	3.07	4/6/2032	4/6/2017	142.46257	133.9046512	126.0433979	118.8135832	112.1566759	106.0201034	100.3566002	95.12363244	90.28288774
170602A00030	6/2/2017	1.88	6/2/2022	6/2/2017	109.36256	107.6143203	105.9039619	104.230314	102.5922547	100.9887081	99.41864194	97.88106546	96.37502711
170619A00089	6/16/2017	2.79	6/16/2027	6/16/2017	139.35869	131.5981753	124.3513001	117.5806932	111.2519195	105.3332338	99.79535527	94.61126254	89.75600652
170619A00092	6/16/2017	2.79	6/16/2027	6/16/2017	139.35866	131.5981486	124.3512798	117.5806787	111.2519104	105.3332297	99.79535581	94.6112674	89.75601538
170731A00041	7/31/2017	2.74	7/31/2030	7/31/2017	133.92099	127.0843203	120.7276261	114.8117919	109.301227	104.1635198	99.36913139	94.89111934	90.70489093
171109A00016	11/9/2017	2.94	11/9/2032	11/9/2017	169.91257	154.1231067	140.0661263	127.5369639	116.3564019	106.3673708	97.43209291	89.42960859	82.25363225
170309A00016	3/9/2017	2.39	3/8/2024	3/9/2017	111.66253	109.6079585	107.6134447	105.6767339	103.7956706	101.9681969	100.1923468	98.46624161	96.78808534
170309A00042	3/9/2017	2.18	3/11/2024	3/9/2017	111.24564	109.1984606	107.2111337	105.2814127	103.4071489	101.5862911	99.8168794	98.09704128	96.42498648
170313A00045	3/13/2017	3.22	3/15/2032	3/13/2017	143.33492	134.786065	126.9286179	119.6982375	113.037151	106.8934331	101.2203703	95.97589837	91.12210458
170322A00033	3/22/2017	3.61	3/24/2042	3/22/2017	194.3773	171.9968837	152.8486926	136.4115238	122.2542565	110.0194796	99.41021485	90.17913164	82.11976936
170406A00023	4/6/2017	2.24	4/6/2022	4/6/2017	108.87658	107.2779548	105.7118343	104.1772982	102.6734646	101.1994837	99.75453673	98.33783446	96.94861581
170406A00026	4/6/2017	2.61	4/8/2024	4/6/2017	121.45841	117.5749271	113.8421391	110.2533078	106.8020377	103.4822555	100.2881923	97.21436578	94.2555648
161229A00018	12/29/2016	2.46	12/29/2026	12/29/2016	121.27385	117.3145833	113.5418697	109.9451739	106.5146336	103.2410152	100.1156697	97.13049113	94.27787901
170120A00027	1/20/2017	2.35	1/20/2022	1/20/2017	107.85025	106.4627883	105.1041329	103.7733967	102.4697288	101.192313	99.94036618	98.71313687	97.50990327
170124A00017	1/24/2017	2.82	1/23/2032	1/24/2017	141.28588	132.9358464	125.2546878	118.180745	111.6585931	105.6383672	100.0751632	94.92850717	90.16188408
170201A00016	2/1/2017	2.49	2/1/2024	2/1/2017	120.95281	117.2133297	113.6129233	110.1456593	106.8058891	103.5882346	100.4875736	97.49902639	94.61794292
170221A00033	2/21/2017	2.31	2/18/2022	2/21/2017	108.23729	106.7797789	105.3496487	103.9461859	102.568704	101.2165394	99.88905048	98.58561716	97.30563952
170301A00031	3/1/2017	2.11	3/1/2024	3/1/2017	110.84968	108.8556709	106.9189765	105.0374692	103.2091164	101.4319764	99.70419376	98.02399466	96.38968271
160810A00025	8/10/2016	2.17	8/10/2026	8/10/2016	131.11241	124.5890372	118.4510017	112.6732169	107.2323617	102.1067493	97.276204	92.72194829	88.42649896
160824A00019	8/24/2016	1.98	8/25/2031	8/24/2016	133.66317	126.0520429	119.0302729	112.5452313	106.5494584	101.000114	95.85849387	91.08959936	86.66175498
160908A00036	9/8/2016	2.3	9/8/2031	9/8/2016	134.69028	127.0032376	119.9133543	113.3671297	107.3163316	101.7174375	96.53114014	91.72190735	87.25759163
161103A00013	11/3/2016	1.69	11/3/2021	11/3/2016	105.92396	104.7484868	103.5992792	102.4754659	101.3762101	100.3007111	99.2482031	98.21795266	97.20925738
161116A00005	11/16/2016	2.01	11/16/2021	11/16/2016	106.08566	104.9437607	103.8275995	102.7363035	101.6690364	100.6249994	99.60342908	98.6035952	97.62479916
161227A00073	12/27/2016	2.83	12/28/2026	12/27/2016	132.77906	126.710796	120.9985656	115.6187073	110.5492849	105.7699546	101.2618392	97.00741337	92.99039856
160524A00101	5/24/2016	2.98	5/23/2031	5/24/2016	160.35391	147.1421616	135.2233262	124.4606271	114.732587	105.9312317	97.96051683	90.73494598	84.17835575
160526A00018	5/26/2016	1.68	5/26/2021	5/26/2016	103.39798	102.7391124	102.0888627	101.4470625	100.8135465	100.1881535	99.57072668	98.96111319	98.35916406
160608A00024	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414
160608A00029	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160711A00004	7/11/2016	1.51	7/13/2026	7/11/2016	116.53767	112.9857484	109.5914629	106.3463731	103.2425554	100.2725674	97.42941598	94.70652665	92.09771557
160802A00026	8/2/2016	1.84	8/2/2023	8/2/2016	115.35344	112.2763651	109.299391	106.4187099	103.6306804	100.9318188	98.31879208	95.78841019	93.33761912
160209A00006	2/9/2016	1.91	2/9/2026	2/9/2016	115.97992	112.7079965	109.5719596	106.5649523	103.6805157	100.9125625	98.25535412	95.7034772	93.25182362
160225A00011	2/25/2016	1.5	2/27/2023	2/25/2016	107.82022	106.2471538	104.7122608	103.2142987	101.7520793	100.3244621	98.93035237	97.56869871	96.23849097
160328A00030	3/28/2016	1.79	3/29/2021	3/28/2016	102.73179	102.2180907	101.7095364	101.2060513	100.70756	100.2139884	99.7252638	99.24131516	98.76207261
160329A00017	3/29/2016	2.48	3/30/2026	3/29/2016	129.67479	123.8430213	118.3322451	113.1227111	108.1960002	103.534925	99.12344012	94.94656062	90.99028569
160413A00020	4/13/2016	2.48	4/13/2026	4/13/2016	131.41643	125.2109566	119.3549106	113.8264724	108.6053044	103.6724448	99.01020776	94.60208985	90.43268501
160504A00022	5/4/2016	2	5/4/2023	5/4/2016	114.49999	111.6938316	108.9729453	106.3341876	103.7745501	101.2911559	98.88125358	96.54221002	94.27150488
151007A00010	10/7/2015	1.7	10/7/2020	10/7/2015	100.10401	100.0845237	100.065057	100.0456104	100.0261837	100.006777	99.98739013	99.96802319	99.94867609
151030A00004	10/30/2015	2.48	10/30/2025	10/30/2015	125.88685	121.0397737	116.4335129	112.054385	107.889567	103.9270402	100.1555349	96.56447951	93.14395262
151201A00004	12/1/2015	2.44	12/1/2022	12/1/2015	113.16802	110.8288412	108.551323	106.3333731	104.1729867	102.0682437	100.0173051	98.01840789	96.06986192
151210A00011	12/10/2015	2.16	12/12/2022	12/10/2015	107.21788	105.9316759	104.6733487	103.4420394	102.236924	101.057211	99.90214063	98.77098277	97.66303563
151228A00013	12/28/2015	2.27	12/29/2025	12/28/2015	117.22938	114.0106268	110.9225081	107.9585626	105.1126939	102.3791517	99.75250895	97.22764214	94.79971166
160119A00072	1/19/2016	2.77	1/21/2031	1/19/2016	136.98847	129.3485801	122.2897643	115.7610225	109.7162711	104.1138338	98.91598806	94.08856169	89.60057261
150617A00018	6/17/2015	2.45	6/17/2025	6/17/2015	115.52365	112.6609459	109.9047811	107.2502643	104.6927677	102.2279089	99.85153689	97.55971747	95.34872087
150701A00056	7/1/2015	2.34	7/1/2025	7/1/2015	116.02993	113.0963779	110.2738186	107.5570849	104.9412878	102.4218015	99.99424739	97.65447895	95.3985679
150722A00035	7/22/2015	2.92	7/22/2025	7/22/2015	128.5541	123.4152427	118.528865	113.880983	109.4584647	105.2489769	101.2409315	97.42343671	93.78625109
150803A00037	8/3/2015	3.41	8/2/2030	8/3/2015	157.57085	146.0399093	135.5383975	125.9658663	117.2322911	109.2569349	101.9673405	95.29843624	89.19174333
150824A00033	8/24/2015	2.22	8/25/2025	8/24/2015	115.38756	112.4291471	109.5840359	106.8468968	104.2126929	101.6766603	99.23429146	96.8813191	94.6137022
151005A00084	10/5/2015	2.25	10/5/2022	10/5/2015	111.83215	109.6746808	107.5711794	105.5199303	103.5192878	101.5676703	99.66355732	97.80548667	95.99205174
141017A00022	10/17/2014	2.78	10/17/2024	10/17/2014	123.81854	119.552844	115.4693473	111.5591319	107.8137712	104.225299	100.7861814	97.48929055	94.32788079
141203A00039	12/3/2014	3.6	12/4/2034	12/3/2014	158.36284	146.5588114	135.9212398	126.3189198	117.6366934	109.7733572	102.6398602	96.15774613	90.25780672
150213A00014	2/13/2015	2.41	2/13/2025	2/13/2015	114.81077	112.1547654	109.5920856	107.118656	104.730608	102.4242703	100.196157	98.04295686	95.96152374
150414A00037	4/14/2015	2.34	4/14/2025	4/14/2015	114.67838	111.9352329	109.2911986	106.7418475	104.2829784	101.9106082	99.62095885	97.41044548	95.27566509
150420A00012	4/20/2015	2.07	4/20/2022	4/20/2015	108.86444	107.220107	105.6097252	104.0323138	102.4869299	100.9726663	99.4886498	98.0340394	96.60802509
150427A00014	4/27/2015	2.98	4/27/2035	4/27/2015	152.51724	141.0043118	130.6472742	121.3141445	112.8893085	105.2713627	98.37125366	92.11067386	86.42067705
190104A00034	1/4/2019	3.18	1/4/2029	1/4/2019	142.54217	134.3321379	126.7265009	119.6754489	113.1336136	107.0596482	101.4158468	96.16780142	91.28409391
110505A00036	5/5/2011	3.23	5/5/2021	5/5/2011	104.11	103.5030258	102.9033099	102.3107186	101.7251243	101.1464025	100.5744317	100.0090931	99.45027092
130321A00009	3/21/2013	2.17	3/23/2026	3/21/2013	122.41493	118.0233732	113.8481076	109.8766935	106.0974916	102.4996064	99.07283396	95.80761348	92.69498306
140703A00026	7/3/2014	3.11	7/3/2024	7/3/2014	123.51048	119.5274758	115.7044789	112.0339999	108.5089553	105.1226385	101.8686979	98.7411146	95.73418333
140929A00028	9/29/2014	2.62	3/29/2023	9/29/2014	115.53771	112.895091	110.3299107	107.8394114	105.4209528	103.0720057	100.7901463	98.57305124	96.41849298
141015A00029	10/15/2014	2.32	10/15/2024	10/15/2014	120.64301	116.8050103	113.1259561	109.5981897	106.2144722	102.9679565	99.8521638	96.86096115	93.9885411
180905A00017	9/5/2018	3.43	9/6/2033	9/5/2018	181.1755	163.6018012	148.056614	134.2877198	122.0758654	111.2302795	101.584819	92.99465499	85.33342196

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180913A00012	9/13/2018	3.31	9/13/2033	9/13/2018	151.88366	141.5940364	132.2382252	123.7193847	115.9516316	108.858713	102.372852	96.43373966	90.98765285
181003A00019	10/3/2018	3.44	10/3/2025	10/3/2018	135.1247	129.1430555	123.473774	118.0987189	113.0009101	108.1644408	103.5744035	99.21682166	95.0785869
181003A00032	10/3/2018	3.23	10/3/2025	10/3/2018	118.93305	115.7831906	112.757296	109.8494025	107.0538746	104.3653887	101.7789129	99.28968953	96.89321809
181119A00008	11/19/2018	3.23	11/17/2023	11/19/2018	120.20799	116.9104827	113.7272826	110.6536764	107.6851793	104.8175213	102.0466347	99.36864333	96.7798523
181128A00011	11/28/2018	3.27	11/28/2023	11/28/2018	121.67671	118.1475362	114.7435522	111.45951	108.2904224	105.231544	102.278358	99.4265633	96.67206251
171207A00021	12/7/2017	2.25	12/7/2020	12/7/2017	101.11487	100.9240183	100.7338998	100.5445065	100.3558341	100.1678784	99.98063538	99.79410092	99.60827096
171219A00067	12/19/2017	2.72	12/20/2027	12/19/2017	140.69272	132.6924205	125.245925	118.3108933	111.8484792	105.8230236	100.2017747	94.95463422	90.05392722
180202A00027	2/2/2018	3.02	2/3/2025	2/2/2018	128.5913	123.5666255	118.7742208	114.2020678	109.8388326	105.6738241	101.6969542	97.89870045	94.27007162
180206A00040	2/6/2018	2.47	2/8/2021	2/6/2018	102.23705	101.8649926	101.4956565	101.1290078	100.7650171	100.4036554	100.0448943	99.68870576	99.33506205
180305A00030	3/5/2018	3.12	3/5/2025	3/5/2018	129.61734	124.4645345	119.5542232	114.8736243	110.4107002	106.1541088	102.0931602	98.21777512	94.51844707
180517A00018	5/17/2018	3.46	5/17/2033	5/17/2018	151.87802	141.8514701	132.7135738	124.3742108	116.7532425	109.7793289	103.3888942	97.52522173	92.13766045
170526A00017	5/26/2017	2.16	5/28/2024	5/26/2017	111.09329	109.0056509	106.9800847	105.0142236	103.1058108	101.2526922	99.45281146	97.70420413	96.00499331
170602A00019	6/2/2017	2.42	6/3/2024	6/2/2017	121.97133	117.8556427	113.9059725	110.1145976	106.4742101	102.977887	99.6190671	96.39152998	93.28937554
170615A00006	6/15/2017	2.15	6/17/2024	6/15/2017	111.3307	109.1910313	107.1161145	105.1034447	103.150635	101.2554083	99.41559189	97.62911174	95.8939871
170619A00096	6/16/2017	2.79	6/16/2027	6/16/2017	139.35869	131.5981753	124.3513001	117.5806932	111.2519195	105.3332338	99.79535527	94.61126254	89.75600652
170713A00021	7/13/2017	3.25	7/13/2037	7/13/2017	193.63207	171.1262077	151.78936	135.1390036	120.7697649	108.3406193	97.56428172	88.1984024	80.03825218
170921A00055	9/21/2017	2.82	9/21/2027	9/21/2017	140.92054	132.8090949	125.2524633	118.2090803	111.6407284	105.5122479	99.79127581	94.44800931	89.45498973
161014A00026	10/14/2016	2.16	10/14/2031	10/14/2016	135.47433	127.6432399	120.4268825	113.7696565	107.6214861	101.9372289	96.67615342	91.80147515	87.27994415
170126A00003	1/26/2017	2.86	1/26/2027	1/26/2017	137.22588	130.2684726	123.7412902	117.6148358	111.8618068	106.4569166	101.3767348	96.59954076	92.10519021
170221A00028	2/21/2017	2.31	2/18/2022	2/21/2017	108.23729	106.7797789	105.3496487	103.9461859	102.568704	101.2165394	99.88905048	98.58561716	97.30563952
170309A00014	3/9/2017	2.58	3/9/2027	3/9/2017	122.60491	118.4439842	114.4858243	110.7186286	107.1313727	103.7137539	100.4561392	97.34951664	94.38545127
170317A00040	3/17/2017	2.74	3/18/2024	3/17/2017	121.93817	118.0486484	114.3085258	110.7112106	107.2504401	103.9202624	100.7150191	97.62932884	94.65807249
170524A00027	5/24/2017	2.32	5/24/2027	5/24/2017	122.13675	117.88494	113.8450257	110.0044213	106.3513827	102.8749497	99.56488742	96.41163396	93.40625096
160810A00022	8/10/2016	1.53	8/10/2021	8/10/2016	104.5195	103.6069789	102.7104793	101.8295821	100.9638815	100.1129856	99.27651627	98.45410777	97.64540686
160810A00027	8/10/2016	2.13	8/10/2026	8/10/2016	129.31154	123.1514428	117.3488747	111.8807833	106.7257273	101.8637588	97.27631123	92.94609685	88.85701182
160810A00029	8/10/2016	2.17	8/10/2026	8/10/2016	131.11241	124.5890372	118.4510017	112.6732169	107.2323617	102.1067493	97.276204	92.72194829	88.42649896
160907A00041	9/7/2016	1.83	9/7/2023	9/7/2016	115.83549	112.6457165	109.5629662	106.5830368	103.7019149	100.915768	98.22093446	95.61391526	93.09136559
161005A00016	10/5/2016	2.32	10/6/2031	10/5/2016	135.08994	127.3220797	120.1617948	113.5543024	107.4502446	101.805113	96.57873572	91.73482268	87.24056138
161005A00031	10/5/2016	1.43	10/5/2021	10/5/2016	103.11853	102.4980993	101.8871306	101.2853819	100.6926221	100.1086284	99.53318589	98.96608675	98.4071304
160608A00019	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414
160608A00020	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414
160608A00022	6/8/2016	1.91	6/8/2023	6/8/2016	114.57468	111.7030187	108.9208373	106.224727	103.6114368	101.0778638	98.62104532	96.23815135	93.9264774
160608A00028	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160705A00008	7/5/2016	1.7	7/6/2026	7/5/2016	125.15038	119.7018101	114.5542879	109.6889496	105.0882379	100.7358	96.61639743	92.71582316	89.0208258
160713A00015	7/13/2016	1.57	7/13/2026	7/13/2016	116.74406	113.1858667	109.7855882	106.5347684	103.4254696	100.4502366	97.60206379	94.87436508	92.26094577
160404A00019	4/4/2016	2.48	4/4/2031	4/4/2016	134.66315	127.26762	120.4268346	114.0927042	108.221726	102.7745158	97.71538763	93.01197913	88.63491755
160405A00011	4/5/2016	1.31	4/5/2021	4/5/2016	101.64624	101.3087699	100.974016	100.6419466	100.3125264	99.9857207	99.66149533	99.33981688	99.0206525
160413A00018	4/13/2016	1.78	4/13/2026	4/13/2016	116.7172	113.311386	110.0511603	106.9289853	103.9377708	101.0708444	98.32192421	95.68509326	93.15477568
160413A00021	4/13/2016	2.48	4/13/2026	4/13/2016	131.41643	125.2109566	119.3549106	113.8264724	108.6053044	103.6724448	99.01020776	94.60208985	90.43268501
160413A00033	4/13/2016	2.32	4/13/2026	4/13/2016	126.04928	120.8405556	115.908839	111.2373774	106.8105369	102.6137198	98.63328923	94.85650103	91.27143975
160606A00018	6/6/2016	1.74	6/5/2026	6/6/2016	117.08031	113.5630392	110.1999159	106.9827838	103.903976	100.9562873	98.1329424	95.42756759	92.8341641
151118A00025	11/18/2015	2.4	11/18/2022	11/18/2015	112.50496	110.2730679	108.0989146	105.980573	103.9161975	101.9040188	99.94234062	98.02953596	96.1640434
151124A00006	11/24/2015	1.66	11/24/2020	11/24/2015	100.63585	100.5154644	100.395393	100.2756332	100.1561838	100.0370435	99.91821106	99.79968514	99.68146452
151215A00039	12/15/2015	2.46	12/15/2025	12/15/2015	117.17991	113.9747914	110.8993357	107.947147	105.1121925	102.3887809	99.77153975	97.25539592	94.83555658
151229A00026	12/29/2015	2.28	12/29/2025	12/29/2015	117.26038	114.0407716	110.9518397	107.9871137	105.1404955	102.4062333	99.77889876	97.25336687	94.82479679
160203A00017	2/3/2016	2.07	2/3/2023	2/3/2016	113.29693	110.7759534	108.3251747	105.9422437	103.6248983	101.3709653	99.17835646	97.04506448	94.96915949
160328A00038	3/28/2016	2.54	3/30/2026	3/28/2016	130.00658	124.1622058	118.6394635	113.4185673	108.481063	103.80973	99.3884925	95.20233639	91.23723392
150803A00036	8/3/2015	3.41	8/2/2030	8/3/2015	157.57089	146.0399378	135.5384178	125.9658795	117.2322981	109.2569366	101.9673377	95.2984296	89.19173343
150803A00040	8/3/2015	3.01	8/2/2030	8/3/2015	135.95544	128.9578481	122.4551346	116.4066989	110.7756203	105.5282967	100.6341224	96.06519877	91.79607546
150803A00042	8/3/2015	3.01	8/2/2030	8/3/2015	135.95541	128.9578231	122.4551157	116.4066856	110.775612	105.5282931	100.6341229	96.06520319	91.79608338
150812A00052	8/14/2015	2.13	8/14/2025	8/14/2015	115.71076	112.7344797	109.8724598	107.1193159	104.4699579	101.9195723	99.463605	97.09774548	94.81791206
151002A00042	10/2/2015	1.26	10/2/2020	10/2/2015	100.02726	100.0216971	100.0161389	100.0105856	100.0050373	99.99949387	99.99395539	99.98842182	99.98289315
151022A00020	10/22/2015	1.71	10/22/2020	10/22/2015	100.33186	100.269547	100.2073282	100.1451993	100.0831601	100.0212104	99.95935002	99.89757877	99.83589645
150114A00029	1/14/2015	1.99	1/14/2022	1/14/2015	104.11557	103.3485952	102.5957158	101.8565065	101.1305577	100.4174774	99.71688939	99.02843301	98.35176211
150205A00031	2/5/2015	1.96	10/6/2025	2/5/2015	115.74268	112.6660043	109.7107736	106.8711268	104.1415288	101.516751	98.99185274	96.56216321	94.22326467
150224A00010	2/24/2015	2.34	2/24/2025	2/24/2015	115.28358	112.396177	109.6166067	106.9399241	104.3614456	101.8767338	99.48158273	97.17200468	94.94421729
150318A00003	3/18/2015	2.04	3/18/2022	3/18/2015	105.97049	104.8931581	103.8357995	102.7978658	101.7788286	100.7781787	99.7954256	98.83009617	97.88173421
150729A00041	7/29/2015	2.44	7/29/2025	7/29/2015	115.74486	112.8267943	110.0189217	107.316123	104.7135543	102.2066317	99.79101534	97.4625948	95.21747531
150803A00033	8/3/2015	3.41	8/2/2030	8/3/2015	157.57089	146.0399378	135.5384178	125.9658795	117.2322981	109.2569366	101.9673377	95.2984296	89.19173343
121016A00013	10/16/2012	1.64	10/14/2022	10/16/2012	105.87487	104.6972082	103.5439697	102.4144195	101.3078563	100.223606	99.16102061	98.11947715	97.09837609
130206A00009	2/6/2013	2.83	2/7/2028	2/6/2013	136.24115	129.1143013	122.4644075	116.2556653	110.4551852	105.0327391	99.96053006	95.21298314	90.7665552
130522A00027	5/22/2013	2.08	5/22/2023	5/22/2013	108.42565	106.8931291	105.3975484	103.9376942	102.5124076	101.1205771	99.76113663	98.433063	97.13537399
140317A00056	3/17/2014	1.82	3/17/2021	3/17/2014	101.60144	101.304073	101.008808	100.7156244	100.424498	100.1354051	99.84832213	99.56322619	99.28009459
140821A00030	8/21/2014	2.27	8/21/2024	8/21/2014	112.79988	110.4811544	108.2364402	106.0627483	103.9572361	101.9171969	99.94005179	98.02334326	96.16472818
140908A00080	9/8/2014	2.51	3/8/2024	9/8/2014	117.93327	114.755174	111.691502	108.7373803	105.8881695	103.1394559	100.4870387	97.9269184	95.45528629
110304A00006	3/4/2011	3.6	3/4/2021	3/4/2011	103.12254	102.688603	102.2583845	101.831833	101.4089017	100.9895442	100.5737151	100.1613695	99.7524636

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200520A00009	5/20/2020	1.63	5/20/2038	5/20/2020	166.97848	146.2652164	128.6316775	113.5852276	100.715707	89.68114003	80.1959907	72.02150251	64.95774192
200612A00004	6/12/2020	1.42	6/12/2040	6/12/2020	149.65679	133.929337	120.3249577	108.5221295	98.25164272	89.28763044	81.44020315	74.54939011	68.48014654
200814A00003	8/14/2020	0.96	8/14/2035	8/14/2020	134.96028	124.4726435	115.0643875	106.6094105	98.99759689	92.13266016	85.93029458	80.31658687	75.22664943
110719A00017	7/19/2011	3.68	7/20/2026	7/19/2011	123.40537	119.6585959	116.077631	112.6536211	109.3782519	106.2437136	103.2426656	100.3682063	97.61384247
120807A00025	8/7/2012	1.82	8/8/2022	8/7/2012	105.61473	104.5298949	103.4665988	102.4242078	101.4021143	100.3997347	99.41650763	98.4518934	97.50537254
200317A00009	3/17/2020	1.61	3/16/2035	3/17/2020	138.37704	127.987659	118.6360464	110.2042871	102.5890232	95.69954097	89.45612281	83.78862552	78.63525222
200318A00012	3/18/2020	1.68	3/18/2033	3/18/2020	141.42721	130.7313372	121.0867809	112.3773235	104.5005955	97.36632797	90.89483763	85.0157106	79.66665806
200330A00058	3/30/2020	1.49	3/29/2030	3/30/2020	137.23687	127.353174	118.3320851	110.0914152	102.5573104	95.66336047	89.34980874	83.56284923	78.25400205
200406A00036	4/6/2020	1.09	4/4/2025	4/6/2020	120.38469	115.4070746	110.6695718	106.1592503	101.8639485	97.77222258	93.87330007	90.1570368	86.61387683
200406A00037	4/6/2020	0.9	4/6/2023	4/6/2020	111.26024	108.5766552	105.9731255	103.4467739	100.9948416	98.61468727	96.30378066	94.05969724	91.88011309
200413A00013	4/13/2020	1.19	4/12/2030	4/13/2020	123.64966	117.496066	111.7645721	106.4215215	101.4362282	96.78069164	92.42934256	88.358814	84.54773581
200110A00043	1/10/2020	2.32	1/10/2030	1/10/2020	148.91107	137.570677	127.2340705	117.8055342	109.1990171	101.3371048	94.15010884	87.57525544	81.55596377
200206A00031	2/6/2020	2.15	2/6/2030	2/6/2020	147.45101	136.1213905	125.8021412	116.3963495	107.8169261	99.98555834	92.83178285	86.29215976	80.30953828
200206A00035	2/6/2020	1.78	2/6/2023	2/6/2020	112.70957	110.1744648	107.7103322	105.3147785	102.9855079	100.7203153	98.5170817	96.37377103	94.28842576
200306A00057	3/6/2020	0.92	3/8/2027	3/6/2020	126.22361	119.4170056	113.0464216	107.0811698	101.4928942	96.25537748	91.34436945	86.73742856	82.41377799
200309A00083	3/9/2020	0.82	3/9/2023	3/9/2020	110.72326	108.1286466	105.6093145	103.1626366	100.786092	98.47726324	96.23383117	94.05357062	91.93434576
200311A00015	3/11/2020	1.26	3/11/2027	3/11/2020	128.88556	121.5780839	114.7477846	108.3607432	102.3856319	96.79350012	91.55758216	86.65312132	82.05720913
190913A00018	9/13/2019	2.11	9/11/2026	9/13/2019	118.41305	114.7157343	111.1860329	107.8148001	104.5934626	101.5139759	98.56878866	95.75080864	93.05337184
191004A00017	10/4/2019	2.02	10/4/2029	10/4/2019	144.733	133.9438486	124.0878975	115.0781959	106.8363689	99.29173076	92.3804911	86.04504814	80.23335702
191008A00014	10/8/2019	1.85	10/8/2026	10/8/2019	131.15642	124.2021162	117.6752537	111.5470642	105.7908714	100.3819266	95.29725943	90.51554073	86.0169567
191011A00027	10/11/2019	1.84	10/11/2029	10/11/2019	127.3598	121.3237135	115.6834529	110.4087607	105.4719438	100.8476395	96.51260218	92.44551174	88.62680012
191112A00023	11/12/2019	2.36	11/13/2029	11/12/2019	148.6315	137.4835537	127.3078626	118.0130225	109.5167331	101.7448438	94.63050407	88.11340792	82.13911924
200110A00038	1/10/2020	2.32	1/10/2030	1/10/2020	148.91107	137.570677	127.2340705	117.8055342	109.1990171	101.3371048	94.15010884	87.57525544	81.55596377
190708A00026	7/8/2019	2.21	7/1/2024	7/8/2019	121.68254	117.4721999	113.4350853	109.5629789	105.8481138	102.283141	98.86110397	95.57541473	92.41983183
190708A00028	7/8/2019	2.57	7/2/2029	7/8/2019	149.08338	138.3131116	128.4489469	119.4085211	111.1174233	103.5083861	96.52056205	90.09887666	84.19345054
190708A00032	7/8/2019	2.58	7/2/2029	7/8/2019	149.18204	138.4058969	128.536309	119.490871	111.1951369	103.5818075	96.59000647	90.16463321	84.25578442
190712A00003	7/12/2019	2.61	7/12/2034	7/12/2019	146.2243	135.7478442	126.2737915	117.6927952	109.9084944	102.8358678	96.39980982	90.53389521	85.17930598
190809A00017	8/9/2019	2.27	8/9/2034	8/9/2019	143.21084	132.8884404	123.5591384	115.1140423	107.457254	100.5042158	94.18027969	88.41946723	83.16339262
190905A00025	9/5/2019	2.08	9/5/2029	9/5/2019	145.00329	134.2857467	124.4874831	115.523555	107.3173304	99.79963231	92.90797597	86.58588851	80.78230064
190430A00026	4/30/2019	3.03	4/28/2034	4/30/2019	149.40906	138.8963446	129.3729659	120.7326853	112.8816896	105.7370422	99.22533639	93.2815255	87.84790339
190502A00016	5/2/2019	2.87	5/1/2026	5/2/2019	135.42223	128.7770793	122.5132675	116.6066514	111.0347529	105.7766325	100.8127762	96.12499007	91.69630389
190506A00026	5/6/2019	3.03	5/4/2029	5/6/2019	152.78706	141.9828798	132.0712769	122.9724934	114.6143449	106.9314609	99.86460629	93.36007382	87.36913992
190607A00013	6/7/2019	2.59	6/7/2034	6/7/2019	145.76039	135.3795417	125.986478	117.47401	109.7476158	102.7238409	96.32891546	90.49755343	85.17190881

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190621A00020	6/21/2019	2.58	6/21/2034	6/21/2019	145.66606	135.2914723	125.904139	117.3969233	109.6753458	102.6559912	96.26512528	90.43749424	85.1152815
190705A00007	7/5/2019	2.56	7/5/2034	7/5/2019	145.7413	135.2995453	125.8568433	117.3042201	109.5456392	102.4963655	96.08154566	90.23497719	84.89803908
190104A00038	1/4/2019	3.25	1/4/2029	1/4/2019	151.21608	141.1894276	131.9531573	123.4393647	115.5863791	108.3381557	101.6437321	95.45673886	89.73496153
190205A00021	2/5/2019	3.32	2/5/2029	2/5/2019	152.32466	142.1412415	132.7671765	124.1324965	116.1736732	108.8329934	102.0579977	95.80097508	90.01850941
190308A00026	3/8/2019	3.18	3/8/2034	3/8/2019	175.81171	158.7803751	143.7369565	130.4296058	118.6401259	108.1792832	98.88279684	90.60790337	83.23041226
190313A00039	3/13/2019	2.7	6/13/2022	3/13/2019	110.78236	108.966561	107.1906404	105.4533441	103.7534736	102.0898802	100.4614628	98.86716524	97.30597388
190315A00029	3/15/2019	2.88	3/15/2034	3/15/2019	149.76504	139.2298983	129.6843855	121.0224747	113.1505091	105.9856648	99.45461271	93.49235499	88.04121237
190405A00004	4/5/2019	3.02	4/5/2034	4/5/2019	149.31039	138.8053494	129.2888135	120.6546456	112.8091238	105.6693902	99.1621062	93.22228381	87.79226799
180717A00026	7/17/2018	3.24	7/16/2025	7/17/2018	130.96521	125.6200392	120.5392648	115.7081705	111.1129484	106.7406347	102.5790532	98.61676259	94.84300831
181010A00025	10/10/2018	3.48	10/10/2030	10/10/2018	141.17772	133.7535041	126.8641444	120.4650038	114.5155568	108.9789795	103.8217845	99.01349412	94.52634787
181105A00015	11/5/2018	3.57	11/5/2025	11/5/2018	136.46201	130.3337401	124.5299182	119.0314416	113.820439	108.8801864	104.1950266	99.7502955	95.532253
181214A00009	12/14/2018	3.22	12/14/2028	12/14/2018	130.998	125.3840418	120.1067186	115.1423413	110.4690775	106.0667964	101.9169235	98.00230973	94.30711177
181218A00089	12/18/2018	3.05	6/19/2023	12/18/2018	117.28309	114.4312789	111.668059	108.9900449	106.3940041	103.8768528	101.435648	99.06757917	96.76996194
190103A00020	1/3/2019	3.12	1/5/2026	1/3/2019	134.97458	128.7100574	122.7868441	117.184286	111.8830979	106.8652671	102.1139622	97.61344823	93.34900901
180206A00048	2/6/2018	2.72	2/6/2023	2/6/2018	114.86189	112.3197182	109.848418	107.4456021	105.108981	102.8363553	100.6256119	98.47471989	96.38172719
180220A00107	2/20/2018	3.13	2/20/2025	2/20/2018	128.00421	123.1587857	118.5362776	114.1251189	109.914405	105.8938538	102.0537667	98.38499255	94.87889344
180223A00012	2/23/2018	3.33	2/24/2031	2/23/2018	139.99794	132.4301465	125.4219801	118.9255663	112.8975429	107.2986022	102.093082	97.24860042	92.73573043
180322A00040	3/22/2018	3.16	3/21/2031	3/22/2018	147.1499	137.8849701	129.3933852	121.6018742	114.4447093	107.8628777	101.8033498	96.21843173	91.0651917
180403A00014	4/3/2018	3.11	4/3/2025	4/3/2018	130.0856	124.8296009	119.8250275	115.058402	110.5170448	106.1890223	102.0630993	98.12869347	94.37583442
180716A00062	7/16/2018	2.91	7/16/2025	7/16/2018	117.65475	114.6793225	111.8165217	109.0611015	106.4080997	103.8528214	101.3908225	99.01789436	96.73004987
170710A00079	7/10/2017	2.76	7/12/2032	7/10/2017	142.62076	133.8214941	125.755263	118.351951	111.5487878	105.2895232	99.52370086	94.20601703	89.29575508
170901A00030	9/1/2017	1.82	9/1/2022	9/1/2017	110.35714	108.392884	106.4753795	104.6032077	102.7750038	100.989454	99.24529289	97.54130158	95.87630538
170921A00054	9/21/2017	2.22	9/21/2022	9/21/2017	111.48391	109.3823106	107.3323688	105.332472	103.3810731	101.4766838	99.61787212	97.8032601	96.03152092
171030A00039	10/30/2017	2.86	10/30/2030	10/30/2017	135.5682	128.4725064	121.8863803	115.7674065	110.0770682	104.7803587	99.84543509	95.24330989	90.94757367
171207A00025	12/7/2017	2.91	12/7/2027	12/7/2017	142.69837	134.2766355	126.4453673	119.1592112	112.3765632	106.0592349	100.1721541	94.68309344	89.56242399
171207A00026	12/7/2017	2.93	12/7/2027	12/7/2017	144.31273	135.5666329	127.4404726	119.8863456	112.8603196	106.322083	100.2346275	94.56395915	89.27883669
170224A00008	2/24/2017	2.18	2/24/2022	2/24/2017	108.15119	106.6761464	105.2291189	103.8093717	102.4161947	101.0489018	99.70683041	98.3893399	97.09581095
170303A00004	3/3/2017	2.8	3/4/2024	3/3/2017	121.9255	118.0771337	114.3750365	110.8128242	107.3844285	104.0840787	100.906285	97.84582404	94.89772353
170317A00039	3/17/2017	2.73	3/18/2024	3/17/2017	121.55951	117.7339033	114.0545941	110.515139	107.109418	103.8316144	100.6761979	97.63790885	94.71174335
170317A00041	3/17/2017	2.73	3/18/2024	3/17/2017	121.55951	117.7339033	114.0545941	110.515139	107.109418	103.8316144	100.6761979	97.63790885	94.71174335
170511A00011	5/11/2017	2.41	5/11/2027	5/11/2017	122.49966	118.2359138	114.1846072	110.3331247	106.6696958	103.1833351	99.86378389	96.70145785	93.68739741
170707A00007	7/7/2017	2.65	7/8/2024	7/7/2017	123.45911	119.2010619	115.1183603	111.2027167	107.4462853	103.8416391	100.3817447	97.05993886	93.8699063
161004A00070	10/4/2016	1.92	10/4/2023	10/4/2016	116.51156	113.228257	110.0576948	106.9953364	104.0368546	101.1781224	98.4152018	95.74433427	93.16193126

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
161012A00011	10/12/2016	1.53	10/12/2023	10/12/2016	108.78953	107.0101404	105.2802048	103.5979343	101.9616182	100.3696205	98.82037674	97.31238967	95.84422617
161202A00001	12/2/2016	2.65	12/1/2023	12/2/2016	119.80713	116.2847288	112.8879826	109.6116035	106.4505661	103.4000901	100.4556257	97.61284148	94.86761212
161222A00013	12/22/2016	2.93	12/22/2026	12/22/2016	137.19983	130.3341839	123.8880333	117.8328488	112.1422123	106.7916521	101.7584877	97.02168815	92.56174241
170112A00015	1/12/2017	2.32	1/12/2027	1/12/2017	121.01995	117.0173921	113.2055415	109.5735196	106.1111501	102.8089116	99.65789057	96.64973847	93.77663177
170224A00007	2/24/2017	2.02	2/24/2021	2/24/2017	102.32486	101.9069583	101.492479	101.081377	100.673611	100.2691406	99.86792582	99.46992752	99.07510707
160907A00049	9/7/2016	1.41	9/9/2024	9/7/2016	111.10467	108.7736772	106.5183034	104.3354535	102.2221874	100.1757064	98.19334583	96.27256732	94.41095194
160908A00016	9/8/2016	1.87	9/8/2023	9/8/2016	115.754	112.6036511	109.5586973	106.614999	103.7686071	101.0157502	98.35282527	95.77638909	93.28315042
160908A00023	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884
160908A00027	9/8/2016	2.21	9/8/2026	9/8/2016	131.7272	125.0974688	118.8640618	113.000856	107.4835957	102.289746	97.39836181	92.78996743	88.44644578
160908A00028	9/8/2016	2.21	9/8/2026	9/8/2016	131.7272	125.0974688	118.8640618	113.000856	107.4835957	102.289746	97.39836181	92.78996743	88.44644578
160908A00037	9/8/2016	1.4	9/8/2023	9/8/2016	109.41998	107.467054	105.5689944	103.7238256	101.9296552	100.1846729	98.4871461	96.83541622	95.2278948
160413A00016	4/13/2016	2.55	4/14/2031	4/13/2016	135.1508	127.7282054	120.8624272	114.5051907	108.6128267	103.1458011	98.06829245	93.34781595	88.95488801
160421A00016	4/21/2016	2.26	4/21/2026	4/21/2016	129.90822	123.9830084	118.3878309	113.1021447	108.1068077	103.3839733	98.91699509	94.6903397	90.68950597
160428A00020	4/28/2016	1.69	4/28/2021	4/28/2016	103.08539	102.4907056	101.9029476	101.3219939	100.7477263	100.1800296	99.61879123	99.06390099	98.51525133
160608A00034	6/8/2016	2.44	6/9/2031	6/8/2016	134.91403	127.3884126	120.4353677	114.004587	108.0506283	102.532406	97.41274153	92.65796257	88.23754636
160810A00028	8/10/2016	2.19	8/10/2026	8/10/2016	132.19398	125.4498835	119.1080338	113.1421084	107.5276427	102.2418922	97.26370206	92.57338878	88.15263007
160810A00030	8/10/2016	2.24	8/11/2031	8/10/2016	134.00742	126.4167877	119.4117873	112.9402893	106.9552653	101.4142516	96.27887197	91.51441402	87.08945192
160211A00038	2/11/2016	1.83	2/11/2026	2/11/2016	115.72697	112.4620293	109.3326907	106.3321145	103.4538547	100.6918362	98.04033178	95.49393901	93.04756002
160212A00006	2/12/2016	1.57	2/13/2023	2/12/2016	106.70014	105.3326362	103.9959695	102.6891718	101.4113162	100.1615128	98.93890698	97.74267741	96.5720348
160212A00047	2/12/2016	1.94	2/12/2026	2/12/2016	116.07584	112.801039	109.6622532	106.6526216	103.7656782	100.9953293	98.33583013	95.78176164	93.32801032
160303A00035	3/3/2016	2.14	3/3/2026	3/3/2016	117.47296	114.0145331	110.7036318	107.5326184	104.4943138	101.5819626	98.78920525	96.11005213	93.53885914
160307A00024	3/7/2016	2.17	3/6/2026	3/7/2016	117.06571	113.7131063	110.501546	107.4238305	104.4731838	101.6432238	98.92793739	96.32165571	93.81903265
160401A00005	4/1/2016	2.02	4/3/2023	4/1/2016	114.08674	111.3768244	108.7472887	106.1952534	103.7179601	101.3127672	98.97714367	96.70866393	94.50500256
151029A00008	10/29/2015	2.28	10/29/2025	10/29/2015	116.09438	113.0178495	110.062498	107.2224867	104.4923019	101.8667351	99.34086382	96.91003401	94.56984348
151120A00019	11/20/2015	2.72	11/20/2030	11/20/2015	136.35235	129.1214257	122.4154043	116.1901671	110.4056856	105.0256121	100.0169146	95.34954968	90.9961703
160106A00042	1/6/2016	2.43	1/6/2026	1/6/2016	117.35983	114.0998464	110.9734808	107.974065	105.0953139	102.3313017	99.67643834	97.12544842	94.67335095
160113A00002	1/13/2016	2.12	1/13/2026	1/13/2016	117.03048	113.7675037	110.638676	107.6372812	104.7569931	101.9918475	99.33621954	96.78480134	94.33258238
160126A00004	1/26/2016	2.52	1/26/2026	1/26/2016	132.74432	126.519742	120.637604	115.0770962	109.818781	104.8444997	100.1372809	95.68125721	91.46158721
160210A00054	2/10/2016	1.78	2/10/2026	2/10/2016	116.21484	112.9243816	109.7709725	106.7476799	103.8479728	101.0656975	98.39505308	95.8305688	93.367083
150803A00038	8/3/2015	3.41	8/2/2030	8/3/2015	157.57089	146.0399378	135.5384178	125.9658795	117.2322981	109.2569366	101.9673377	95.2984296	89.19173343
150825A00008	8/25/2015	2.82	8/25/2025	8/25/2015	128.49672	123.2736517	118.3113244	113.5951022	109.1112544	104.8468929	100.7899157	96.92895508	93.2533289
150828A00018	8/28/2015	1.7	8/29/2022	8/28/2015	105.45237	104.408112	103.3842986	102.3803316	101.3956331	100.4296483	99.48184402	98.5517077	97.63874624
150911A00007	9/10/2015	2.51	9/9/2022	9/10/2015	111.94026	109.8569333	107.8240234	105.8399838	103.9033281	102.0126261	100.1665002	98.36362407	96.60271975

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150929A00087	9/29/2015	2.09	9/29/2025	9/29/2015	115.86855	112.8371564	109.9238578	107.1230147	104.4293017	101.8376856	99.343408	96.94196753	94.62910467
151023A00019	10/23/2015	1.74	10/23/2020	10/23/2015	100.34515	100.2810195	100.2169876	100.1530499	100.0892063	100.0254566	99.96180059	99.89823803	99.83476875
140730A00037	7/30/2014	2.83	1/30/2024	7/30/2014	111.94956	109.9838947	108.0736926	106.216925	104.4116503	102.656013	100.9482392	99.28663241	97.66956954
140821A00040	8/21/2014	3.41	8/21/2031	8/21/2014	168.09658	154.2114256	141.7013726	130.4188282	120.232952	111.0276637	102.6998994	95.15808208	88.32077989
140917A00030	9/17/2014	3.23	9/17/2029	9/17/2014	151.64602	141.6276949	132.4277426	123.9725089	116.1954393	109.036351	102.440788	96.35944396	90.74764663
150227A00011	2/27/2015	2.33	2/27/2025	2/27/2015	122.30253	118.1164694	114.1160643	110.2918333	106.6348381	103.1366473	99.78930462	96.58529945	93.51753924
150529A00055	5/29/2015	1.78	5/31/2022	5/29/2015	104.87708	103.9288728	102.9985347	102.0855471	101.1894118	100.3096499	99.44580134	98.59742372	97.76409152
150722A00033	7/22/2015	2.47	7/22/2025	7/22/2015	115.85762	112.9366284	110.1259331	107.4204097	104.81521	102.3057456	99.88767273	97.55687729	95.30946101
120820A00009	8/20/2012	2.4	8/22/2022	8/20/2012	110.95276	109.0123095	107.1173468	105.2665174	103.4585123	101.6920706	99.9659772	98.27906066	96.63019151
130312A00007	3/12/2013	1.76	3/12/2021	3/12/2013	102.50615	102.0439761	101.5860096	101.1321892	100.6824586	100.2367623	99.7950459	99.357256	98.92334012
130614A00018	6/14/2013	2.83	6/14/2023	6/14/2013	109.54807	107.9580156	106.4069599	104.8936104	103.4167284	101.9751265	100.5676662	99.1932552	97.85084551
131018A00006	10/18/2013	3.28	10/20/2025	10/18/2013	131.75566	126.3944209	121.3054812	116.4732025	111.882934	107.5209489	103.3743803	99.43116276	95.67997763
140313A00028	3/13/2014	2.86	3/13/2024	3/13/2014	119.69888	116.3723304	113.1672977	110.0785537	107.1011279	104.2302931	101.4615519	98.79062401	96.21343443
140717A00027	7/17/2014	3.14	7/17/2026	7/17/2014	133.82057	127.7171859	121.9598226	116.5264856	111.396709	106.5514413	101.9729398	97.64467317	93.55123192
020129A00031	12/31/2001	6.03	6/30/2021	12/31/2001	104.22332	103.7751207	103.3317705	102.8931811	102.459267	102.0299451	101.6051341	101.1847549	100.7687305
110504A00014	5/4/2011	3.46	5/4/2021	5/4/2011	104.32047	103.7020952	103.0911413	102.487473	101.89096	101.3014751	100.7188939	100.1430952	99.57396048
110810A00009	8/10/2011	2.36	8/10/2021	8/10/2011	103.05809	102.5305978	102.0098989	101.495849	100.9883074	100.4871371	99.99220539	99.50338349	99.02054623
111220A00025	12/20/2011	2.17	12/20/2021	12/20/2011	104.00058	103.2786061	102.5694524	101.872739	101.1881024	100.5151944	99.85368058	99.20323996	98.56356429
120806A00014	8/6/2012	1.77	8/8/2022	8/6/2012	105.56175	104.477461	103.4146944	102.3728225	101.351238	100.3493576	99.36662028	98.40248651	97.45643712
120808A00006	8/8/2012	2.06	8/9/2027	8/8/2012	121.86929	117.4689208	113.2949738	109.333605	105.5719234	101.9979204	98.60040384	95.36893627	92.29377902
190614A00022	6/14/2019	2.62	6/14/2034	6/14/2019	146.04854	135.6470317	126.2353001	117.7059398	109.9642343	102.9265579	96.5189899	90.6761113	85.33995852
190702A00068	7/2/2019	2.69	7/1/2039	7/2/2019	191.16538	166.7010391	146.0216397	128.4951303	113.6000657	100.9055655	90.05500937	80.75275521	72.75330558
190712A00016	7/12/2019	2.39	7/12/2029	7/12/2019	128.527	122.630537	117.1099354	111.9372002	107.0866555	102.5347342	98.2597896	94.24192518	90.46284077
190726A00012	7/26/2019	2.58	7/26/2034	7/26/2019	145.93628	135.4799512	126.024166	117.4597733	109.690584	102.6317296	96.20824007	90.35381096	85.00973175
190813A00051	8/13/2019	2.19	8/13/2029	8/13/2019	145.82666	135.1289566	125.3425431	116.3837776	108.1771443	100.6544254	93.75396007	87.4199814	81.6020244
001127A00007	11/27/2000	6.74	11/27/2020	11/27/2000	101.30729	101.1816793	101.0564105	100.9314818	100.8068918	100.6826391	100.5587221	100.4351394	100.3118896
190308A00016	3/8/2019	3.18	3/8/2034	3/8/2019	175.81171	158.7803751	143.7369565	130.4296058	118.6401259	108.1792832	98.88279684	90.60790337	83.23041226
190322A00008	3/22/2019	2.64	3/20/2026	3/22/2019	118.59803	115.2009132	111.9467643	108.8282841	105.8386009	102.9712428	100.2201118	97.5794598	95.04386582
190403A00010	4/3/2019	3.08	4/3/2029	4/3/2019	152.81702	142.109075	132.2782151	123.2467194	114.9441833	107.3067926	100.276673	93.80130739	87.83301218
190403A00015	4/3/2019	3.05	4/3/2029	4/3/2019	150.66084	140.3953198	130.9605588	122.2834487	114.2977284	106.9433117	100.165679	93.91533307	88.14731012
190529A00061	5/29/2019	2.46	5/29/2026	5/29/2019	118.56606	115.0672647	111.7195508	108.5150283	105.4462758	102.506313	99.68857132	96.98686682	94.39537497
190605A00024	6/5/2019	2.64	6/5/2029	6/5/2019	149.4117	138.7065463	128.8950482	119.896585	111.6382617	104.0541293	97.08448634	90.67525393	84.77741733
180718A00008	7/18/2018	3.37	7/18/2028	7/18/2018	152.29658	142.2628075	132.9912222	124.4190062	116.4888614	109.1484987	102.3501748	96.05027274	90.20892503

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181128A00004	11/28/2018	3.08	11/28/2023	11/28/2018	121.69703	118.1553342	114.7395841	111.4444948	108.2650369	105.1964256	102.2341073	99.37374622	96.61121273
181129A00005	11/29/2018	3.21	11/29/2023	11/29/2018	121.4931	117.9650475	114.5622408	111.2794323	108.1116283	105.0540774	102.1022576	99.25186275	96.49879098
190129A00073	1/29/2019	3.11	1/29/2029	1/29/2019	130.73266	125.0729647	119.7557737	114.7567717	110.0535721	105.6255467	101.4536748	97.52040663	93.80953931
190205A00020	2/5/2019	3.32	2/5/2029	2/5/2019	152.32466	142.1412415	132.7671765	124.1324965	116.1736732	108.8329934	102.0579977	95.80097508	90.01850941
190305A00015	3/5/2019	3.32	3/5/2029	3/5/2019	152.76216	142.4636262	132.9906917	124.2713564	116.2403082	108.8382662	102.0113929	95.71076619	89.89190574
171207A00024	12/7/2017	2.93	12/7/2027	12/7/2017	144.31273	135.5666329	127.4404726	119.8863456	112.8603196	106.322083	100.2346275	94.56395915	89.27883669
180104A00023	1/4/2018	2.91	1/4/2028	1/4/2018	137.44354	130.1560184	123.3572997	117.0106872	111.0824757	105.5416913	100.3598545	95.51076363	90.97029985
180402A00013	4/2/2018	2.99	4/3/2028	4/2/2018	139.45035	131.9990201	125.0566704	118.5842988	112.5461473	106.9094119	101.6439816	96.72220191	92.11865984
180517A00024	5/17/2018	3.46	5/17/2033	5/17/2018	151.87801	141.8514636	132.7135694	124.374208	116.7532411	109.7793287	103.3888949	97.52522323	92.1376626
180628A00078	6/28/2018	2.73	6/28/2023	6/28/2018	109.69619	108.0983147	106.5397729	105.0192573	103.5355136	102.0873398	100.6735837	99.29314018	97.94494888
180713A00031	7/13/2018	3.06	7/14/2025	7/13/2018	117.49684	114.5357309	111.6863855	108.943614	106.3025048	103.7584098	101.3069287	98.94389357	96.66535543
170619A00097	6/16/2017	2.74	6/16/2027	6/16/2017	136.91652	129.6253556	122.8076916	116.429448	110.4592018	104.867967	99.62899184	94.71757317	90.11088817
170619A00101	6/16/2017	2.74	6/16/2027	6/16/2017	136.91652	129.6253556	122.8076916	116.429448	110.4592018	104.867967	99.62899184	94.71757317	90.11088817
170727A00003	7/27/2017	1.97	7/29/2024	7/27/2017	111.87046	109.618253	107.4367567	105.323158	103.2747734	101.2890468	99.36354166	97.49593503	95.68401113
170804A00005	8/4/2017	1.94	8/5/2024	8/4/2017	112.05387	109.7516058	107.5227697	105.3643985	103.2736747	101.2479153	99.28456385	97.38118415	95.53545321
170921A00053	9/21/2017	2.22	9/21/2022	9/21/2017	111.48391	109.3823106	107.3323688	105.332472	103.3810731	101.4766838	99.61787212	97.8032601	96.03152092
171013A00024	10/13/2017	2.47	10/15/2024	10/13/2017	123.18273	118.8302619	114.6653196	110.6786908	106.861669	103.2060244	99.70397435	96.34815696	93.13160538
170224A00009	2/24/2017	2.39	2/24/2023	2/24/2017	114.31701	111.7343653	109.2251646	106.7868882	104.4171156	102.1135245	99.87388524	97.69605716	95.57798421
170330A00060	3/30/2017	2.06	3/30/2022	3/30/2017	108.67208	107.1070411	105.5735961	104.0708645	102.5979966	101.1541739	99.73860714	98.35053539	96.98922459
170406A00024	4/6/2017	2.61	4/8/2024	4/6/2017	121.45843	117.5749416	113.8421505	110.2533162	106.8020432	103.4822583	100.2881925	97.21436344	94.25556006
170406A00027	4/6/2017	2.61	4/8/2024	4/6/2017	121.45843	117.5749416	113.8421505	110.2533162	106.8020432	103.4822583	100.2881925	97.21436344	94.25556006
170406A00037	4/6/2017	3.07	4/6/2032	4/6/2017	142.46256	133.904645	126.0433937	118.8135807	112.1566749	106.0201036	100.3566015	95.1236345	90.2828905
170512A00024	5/12/2017	2.88	5/13/2030	5/12/2017	134.22934	127.4933654	121.222989	115.3808172	109.9327797	104.8478082	100.0975502	95.65611193	91.49982721
160908A00033	9/8/2016	2.17	9/8/2026	9/8/2016	129.88324	123.6253621	117.7349913	112.1881376	106.962517	102.0374166	97.39357558	93.01307543	88.87923966
160908A00034	9/8/2016	2.17	9/8/2026	9/8/2016	129.88324	123.6253621	117.7349913	112.1881376	106.962517	102.0374166	97.39357558	93.01307543	88.87923966
161128A00006	11/28/2016	1.93	11/29/2021	11/28/2016	106.63958	105.4061409	104.2018684	103.0257287	101.876738	100.7539577	99.6564926	98.5834876	97.534126
170105A00012	1/5/2017	2.68	1/5/2024	1/5/2017	120.48752	116.8491498	113.3437161	109.965507	106.7090959	103.5693264	100.5412959	97.62034183	94.80202782
170126A00004	1/26/2017	2.13	1/26/2022	1/26/2017	107.78755	106.4035422	105.0463318	103.7151682	102.4093301	101.1281232	99.87087842	98.63695119	97.4257201
170207A00055	2/7/2017	2.36	2/8/2027	2/7/2017	121.4537	117.3843661	113.5111166	109.8226537	106.308417	102.9585313	99.76375734	96.71544628	93.80549795
160608A00030	6/8/2016	2.36	6/8/2026	6/8/2016	131.46285	125.0991651	119.1021308	113.4483106	108.1159052	103.0846276	98.33558881	93.8511935	89.61504414
160608A00033	6/8/2016	2.44	6/9/2031	6/8/2016	134.91402	127.3884083	120.4353639	114.0045838	108.0506258	102.5324043	97.41274062	92.65796256	88.2375473
160810A00024	8/10/2016	1.52	8/10/2021	8/10/2016	104.48373	103.5768062	102.6857722	101.8102111	100.949721	100.1039139	99.27241491	98.45486183	97.65090469
160908A00025	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160908A00031	9/8/2016	2.21	9/8/2026	9/8/2016	131.72719	125.097463	118.8640577	113.0008534	107.4835945	102.289746	97.39836298	92.78996959	88.44644884
160908A00032	9/8/2016	2.17	9/8/2026	9/8/2016	129.88324	123.6253621	117.7349913	112.1881376	106.962517	102.0374166	97.39357558	93.01307543	88.87923966
160115A00011	1/15/2016	2.18	1/15/2026	1/15/2016	116.57792	113.339046	110.2329557	107.2530224	104.3929995	101.6469971	99.00945917	96.47514221	94.03909554
160412A00029	4/12/2016	2.48	4/14/2031	4/12/2016	134.66451	127.2685244	120.4273672	114.0929313	108.2217037	102.7742916	97.7150016	93.01146517	88.63430415
160427A00004	4/27/2016	2.09	4/27/2026	4/27/2016	117.06828	113.6639607	110.4047993	107.2832968	104.2923988	101.4254656	98.67624533	96.03884848	93.5077243
160511A00016	5/11/2016	2.48	5/12/2031	5/11/2016	134.93064	127.4620895	120.5577925	114.1684962	108.2496838	102.7610796	97.66621436	92.93203691	88.52856855
160523A00086	5/23/2016	2.2	5/26/2026	5/23/2016	130.00146	123.9838621	118.3061267	112.9468008	107.8859157	103.1048743	98.58634898	94.31418745	90.27332621
160608A00023	6/8/2016	2.36	6/8/2026	6/8/2016	131.46286	125.0991756	119.1021385	113.4483157	108.115908	103.0846283	98.33558753	93.85119045	89.61503946
150805A00015	8/5/2015	2.29	8/5/2022	8/5/2015	111.2965	109.3164689	107.3823373	105.4927608	103.6464425	101.8421322	100.0786237	98.35475354	96.66939878
150814A00029	8/14/2015	2.39	8/14/2025	8/14/2015	115.87185	112.9017598	110.0453687	107.2973376	104.652614	102.106419	99.65423046	97.29176764	95.01497638
150929A00083	9/29/2015	2.09	9/29/2025	9/29/2015	115.86855	112.8371564	109.9238578	107.1230147	104.4293017	101.8376856	99.343408	96.94196753	94.62910467
151102A00024	11/2/2015	2.37	11/2/2022	11/2/2015	112.53429	110.2885133	108.10031	105.9677875	103.8891341	101.8626118	99.88655245	97.95935464	96.07948013
151209A00024	12/9/2015	2.22	12/9/2025	12/9/2015	117.06881	113.8556353	110.7728008	107.8138569	104.9727257	102.2436739	99.62129043	97.10046642	94.67637588
151223A00036	12/23/2015	2.64	12/23/2025	12/23/2015	120.98309	117.0674701	113.3343288	109.7735766	106.3757547	103.1319945	100.0339758	97.07388967	94.24440277
150203A00012	2/3/2015	1.61	2/3/2022	2/3/2015	104.03513	103.2294497	102.4382225	101.6610291	100.8974703	100.1471627	99.40973796	98.68484206	97.97213444
150320A00019	3/20/2015	2.25	3/20/2025	3/20/2015	122.24766	118.0132403	113.9688303	110.1046152	106.4113442	102.8802975	99.50325271	96.27245355	93.18058077
150603A00012	6/3/2015	2.77	6/3/2030	6/3/2015	135.17988	128.3051518	121.9108734	115.9580705	110.4112651	105.2381343	100.4092076	95.89759379	91.67873672
150603A00032	6/3/2015	2.21	6/3/2025	6/3/2015	115.38912	112.5213957	109.7606218	107.1018831	104.5405253	102.072142	99.69255921	97.39782193	95.18418072
150617A00036	6/17/2015	2.44	6/15/2022	6/17/2015	110.13851	108.3606878	106.6218795	104.9208578	103.2564484	101.6275261	100.0330122	98.47187235	96.94311379
150624A00077	6/24/2015	2.54	6/24/2022	6/24/2015	110.45908	108.6525071	106.886023	105.1583474	103.4682586	101.8145867	100.1962111	98.61205776	97.06109657
110909A00006	9/9/2011	2.26	9/9/2026	9/9/2011	118.94809	115.2342635	111.6887819	108.3024683	105.0667118	101.9734332	99.01504817	96.18443362	93.47489649
111115A00005	11/15/2011	2.26	11/15/2021	11/15/2011	103.7952	103.1225305	102.4609771	101.8102306	101.1699974	100.5399949	99.91995132	99.3096048	98.70870328
140219A00005	2/19/2014	3.13	2/20/2029	2/19/2014	132.29526	126.4853867	121.0313403	115.9075881	111.0906388	106.5588648	102.292341	98.27269853	94.48299259
140428A00015	4/28/2014	2.35	4/29/2024	4/28/2014	111.87004	109.7618342	107.7164689	105.7315388	103.8047541	101.9339296	100.1169793	98.35191088	96.63682094
140618A00019	6/18/2014	3.08	6/18/2024	6/18/2014	113.57921	111.3488978	109.1872214	107.0914877	105.0591328	103.0877126	101.1748959	99.31845902	97.51627925
140925A00039	9/25/2014	2.02	9/27/2021	9/25/2014	103.15355	102.5746832	102.0040791	101.441541	100.8868785	100.3399076	99.80045046	99.26833478	98.74339399
200330A00079	3/30/2020	1.51	3/30/2035	3/30/2020	137.39959	127.0829587	117.7969049	109.4243214	101.8625585	95.02152514	88.82205221	83.19448	78.07743839
200406A00029	4/6/2020	1.61	4/5/2030	4/6/2020	142.4122	131.2319216	121.0670286	111.8184391	103.3972847	95.72380411	88.7263648	82.34059354	76.50860456
200406A00033	4/6/2020	1.09	4/4/2025	4/6/2020	120.38469	115.4070746	110.6695718	106.1592503	101.8639485	97.77222258	93.87330007	90.1570368	86.61387683
200406A00035	4/6/2020	1.05	4/4/2025	4/6/2020	118.51046	113.973725	109.6497951	105.5273724	101.5958278	97.84515366	94.26592475	90.8492603	87.58678983
200514A00008	5/14/2020	1.23	5/14/2030	5/14/2020	135.1699	125.3018111	116.3054528	108.0968098	100.6004799	93.74874755	87.48075756	81.74178278	76.48257329
200522A00009	5/22/2020	0.96	5/22/2030	5/22/2020	122.66259	116.4251126	110.6269863	105.2322719	100.2082843	95.52526985	91.15612224	87.0761272	83.26273385
200221A00012	2/21/2020	2.14	2/21/2040	2/21/2020	158.78051	142.4838328	128.3538475	116.0672226	105.3524766	95.98121393	87.76090721	80.52894175	74.14769283

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
200306A00050	3/6/2020	0.87	3/6/2030	3/6/2020	122.79047	116.7035302	111.0322108	105.7435206	100.8073699	96.19629104	91.88519086	87.85112836	84.07311451
200306A00058	3/6/2020	1.06	3/6/2030	3/6/2020	122.69731	116.6440814	111.0027873	105.7408259	100.8284521	96.2385061	91.94616958	87.92874719	84.16546955
200309A00084	3/9/2020	1.06	3/9/2027	3/9/2020	127.47	120.2329765	113.4685332	107.1430929	101.2256399	95.68751052	90.50220306	85.64520411	81.09382929
200327A00094	3/27/2020	1.6	3/27/2030	3/27/2020	138.2559	128.3112882	119.233839	110.9409959	103.3585635	96.41981956	90.06472188	84.23920358	78.89454608
200330A00047	3/30/2020	1.5	3/30/2035	3/30/2020	137.30194	126.9926316	117.7131663	109.3465234	101.7901259	94.95394679	88.75887289	83.13529397	78.02188345
191101A00005	11/1/2019	1.83	11/2/2026	11/1/2019	132.73568	125.606818	118.9211983	112.6486442	106.7612014	101.2329604	96.03989515	91.15971643	86.57173693
191112A00024	11/12/2019	2.09	11/12/2024	11/12/2019	123.18012	118.5359744	114.098368	109.8569063	105.8017779	101.9237204	98.2139871	94.66431428	91.26689199
191203A00011	12/3/2019	2.21	12/3/2029	12/3/2019	147.33856	136.208749	126.0554138	116.7862384	108.3181528	100.5763581	93.49346005	87.00869765	81.06725581
191203A00013	12/3/2019	1.93	12/3/2024	12/3/2019	122.77284	118.0780124	113.5945245	109.3115994	105.21908	101.307386	97.56747756	93.99082107	90.56935769
191206A00005	12/6/2019	2.18	12/7/2026	12/6/2019	134.13658	126.8771762	120.0735507	113.6943471	107.7105418	102.0952584	96.82359725	91.87247846	87.22049928
200110A00037	1/10/2020	2.32	1/10/2030	1/10/2020	148.91107	137.570677	127.2340705	117.8055342	109.1990171	101.3371048	94.15010884	87.57525544	81.55596377
050823A00085	8/23/2005	4.78	8/25/2025	8/23/2005	138.75956	133.257477	128.0265093	123.0515331	118.3183594	113.8136672	109.5249455	105.4404395	101.5491008
050823A00088	8/23/2005	4.78	8/25/2025	8/23/2005	138.75966	133.2575637	128.0265812	123.0515912	118.3184047	113.8137005	109.5249676	105.4404512	101.5491028
110223A00003	2/23/2011	3.41	2/23/2021	2/23/2011	102.93105	102.5011865	102.0748304	101.6519393	101.232471	100.8163842	100.4036382	99.99419287	99.58800872
111128A00006	11/28/2011	3.03	11/28/2031	11/28/2011	140.02607	132.1237582	124.8508151	118.1491804	111.9666932	106.256445	100.9762106	96.08794384	91.55733147
120210A00004	2/10/2012	1.98	2/10/2022	2/10/2012	107.31449	105.9803399	104.6702601	103.3836426	102.1199017	100.8784705	99.65880072	98.46036175	97.28263986
120423A00011	4/23/2012	2.07	4/25/2022	4/24/2017	106.27368	105.1168147	103.9812713	102.8664753	101.7718688	100.696914	99.64109279	98.60390542	97.58486983
200210A00007	2/10/2020	1.78	2/10/2025	2/10/2023	119.61059	115.6020833	111.7689528	108.1023449	104.5939093	101.2357641	98.02046647	94.94098584	91.99067889
200316A00008	3/16/2020	1.31	3/15/2030	3/16/2020	123.69438	117.7026194	112.1151367	106.9001034	102.0284654	97.47368462	93.21150343	89.21973161	85.47805523
200317A00024	3/17/2020	1.09	3/17/2025	3/17/2020	111.06645	108.4769856	105.9793843	103.5696017	101.2437981	98.99833091	96.8297426	94.73475037	92.71023595
200402A00050	4/6/2020	0.73	4/5/2024	4/6/2020	108.16657	106.1438504	104.1811002	102.2760395	100.426493	98.63038437	96.88573094	95.19063869	93.54329769
970806A00017	8/1/1997	7.02	7/23/2026	8/1/1997	133.66854	129.8234816	126.1444164	122.622609	119.249851	116.0184268	112.9210806	109.9509858	107.1017165
190111A00047	1/11/2019	2.8	1/11/2021	1/11/2019	101.29327	101.0905097	100.8886885	100.6877957	100.4878242	100.2887671	100.0906178	99.89336941	99.69701543
190118A00031	1/18/2019	2.81	1/19/2021	1/18/2019	101.33174	101.1231673	100.9155961	100.7090208	100.5034339	100.2988274	100.0951939	99.89252554	99.69081504
190220A00012	2/20/2019	2.76	2/19/2021	2/20/2019	101.44222	101.2139503	100.9870214	100.7614157	100.5371201	100.3141221	100.0924091	99.87196859	99.65278841
190520A00020	5/20/2019	2.39	5/20/2026	5/20/2019	118.60424	115.1616273	111.8667537	108.7119207	105.6898908	102.7938563	100.0174105	97.35452157	94.79950768
190604A00010	6/4/2019	2.45	6/4/2021	6/4/2019	102.55327	102.1228112	101.6968327	101.2752588	100.8580143	100.4450256	100.036221	99.6315304	99.23088546
191216A00013	12/16/2019	1.95	12/16/2024	12/16/2019	112.47889	110.0123414	107.6291693	105.3258436	103.0990078	100.9454724	98.86220494	96.84632168	94.89507874
170530A00019	5/30/2017	1.58	6/1/2021	5/30/2017	102.24468	101.8154267	101.3906395	100.9702394	100.5541516	100.1423031	99.73462253	99.33104036	98.93148855
171206A00020	12/6/2017	2.62	12/6/2027	12/6/2017	123.74459	119.2078257	114.9105768	110.8377898	106.9754754	103.3106287	99.83115255	96.5257878	93.38404956
180126A00018	1/26/2018	2.34	1/26/2023	1/26/2018	107.65786	106.3301195	105.0317268	103.7617727	102.5193801	101.3037076	100.1139468	98.94932142	97.80908534
180529A00057	5/29/2018	3.09	5/30/2028	5/29/2018	133.50533	127.3966966	121.6736975	116.3081205	111.2740331	106.5475849	102.1068258	97.93154226	94.00310835
180716A00046	7/16/2018	2.9	7/16/2025	7/16/2018	116.93479	114.0857556	111.3421519	108.6991513	106.1521822	103.6969155	101.3292508	99.04530188	96.84138452

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
181214A00026	12/14/2018	2.92	12/14/2020	12/14/2018	101.01926	100.8626527	100.7065903	100.5510653	100.3960748	100.2416158	100.0876853	99.93428053	99.78139854
150601A00997	6/1/2015	5.46	9/30/2022	6/1/2015	118.18447	116.0088625	113.8870498	111.8173319	109.7980781	107.8277214	105.9047547	104.0277288	102.1952492
150601A01008	6/1/2015	5.08	4/15/2025	6/1/2015	120.54774	117.8202076	115.1892129	112.6504922	110.2000061	107.8339229	105.5486062	103.3406038	101.2066371
150601A01016	6/1/2015	5.73	10/28/2025	6/1/2015	145.43464	139.4322697	133.7373903	128.3322243	123.20013	118.3255211	113.6937933	109.2912567	105.1050732
150601A01021	6/1/2015	5.28	10/3/2025	6/1/2015	123.16749	120.1145018	117.1781645	114.3529797	111.633748	109.015553	106.4937438	104.063919	101.7219111
160928A00032	9/28/2016	2.52	9/29/2036	9/28/2016	152.1071	139.5136972	128.2957547	118.2818007	109.3235953	101.2927879	94.07807716	87.58279702	81.72286172
160928A00041	9/28/2016	3.26	9/29/2036	9/30/2019	159.74248	146.6731305	135.0217302	124.6122593	115.2924783	106.9305111	99.41194449	92.63736023	86.5202355
150601A00772	6/1/2015	1.84	5/13/2022	6/1/2015	104.55085	103.6729973	102.8115163	101.9659368	101.1358046	100.3206832	99.52015338	98.73381164	97.96126994
150601A00851	6/1/2015	7.12	4/30/2027	6/1/2015	142.01808	137.0907968	132.4081764	127.9557576	123.7200471	119.6884466	115.8491875	112.1912702	108.7044087
150601A00872	6/1/2015	7.42	7/31/2028	6/1/2015	151.99142	145.7754459	139.9160797	134.3892758	129.1728042	124.2460985	119.5901194	115.1872311	111.0210875
150601A00912	6/1/2015	5.96	11/30/2029	6/1/2015	153.08537	145.6893089	138.7840382	132.3317496	126.297857	120.6507011	115.3612809	110.4030119	105.7515075
150601A00953	6/1/2015	6.6	6/10/2032	6/1/2015	176.39779	165.3893701	155.2993037	146.0400071	137.5330299	129.7080309	122.5018804	115.8578665	109.7249951
150601A00978	6/1/2015	6.32	11/24/2033	6/1/2015	171.39289	160.7376818	151.0142147	142.1277584	133.9941823	126.5386819	119.6946675	113.4027935	107.6101091
150601A00558	6/1/2015	2.51	8/30/2024	6/1/2015	112.40255	110.1679023	108.0041175	105.9083518	103.8778937	101.9101602	100.0026906	98.15313895	96.35926867
150601A00585	6/1/2015	2.45	10/8/2024	6/1/2015	112.59276	110.2976412	108.0767685	105.9271072	103.8457718	101.8300158	99.87722425	97.98490587	96.15068678
150601A00660	6/1/2015	2.26	1/5/2022	6/1/2015	107.81783	106.4318329	105.0797872	103.7604484	102.4726301	101.2152035	99.98709301	98.78727377	97.61476845
150601A00678	6/1/2015	2.12	1/30/2025	6/1/2015	112.8603	110.3708587	107.9671576	105.645505	103.4023982	101.2345106	99.13868165	97.11190761	95.15133225
150601A00735	6/1/2015	2.35	5/1/2025	6/1/2015	114.15536	111.4988493	108.9379893	106.4685058	104.0863475	101.7876737	99.56884144	97.42639417	95.3570507
150601A00736	6/1/2015	2.87	5/1/2030	6/1/2015	131.97861	125.6845955	119.8152363	114.3369912	109.2192604	104.4341059	99.95600046	95.76160157	91.82954858
150601A00387	6/1/2015	2.81	12/19/2023	6/1/2015	110.65612	108.8485463	107.0903217	105.3796831	103.7149418	102.0944828	100.5167612	98.98029809	97.48367745
150601A00411	6/1/2015	3.38	1/24/2029	6/1/2015	130.17034	124.7990906	119.7464558	114.9901002	110.5094438	106.2855086	102.3007819	98.53909337	94.9855016
150601A00425	6/1/2015	2.64	2/21/2024	6/1/2015	110.95167	109.0391731	107.1810025	105.3751559	103.6197219	101.9128743	100.2528675	98.63803185	97.06677048
150601A00448	6/1/2015	2.61	4/26/2024	6/1/2015	111.48919	109.4657114	107.5020202	105.5958474	103.7450265	101.9474897	100.2012622	98.50445795	96.85527421
150601A00459	6/1/2015	2.42	5/16/2024	6/1/2015	111.28579	109.2370919	107.2495741	105.3208916	103.4488095	101.6311952	99.86601307	98.15131911	96.48525624
150601A00557	6/1/2015	2.03	9/2/2021	6/1/2015	102.68583	102.1931248	101.7069369	101.2271195	100.7535331	100.2860423	99.82451613	99.3688274	98.91885278
120716A00025	7/16/2012	1.83	7/18/2022	7/17/2017	107.38019	105.9517724	104.5534219	103.1842626	101.8434534	100.530185	99.24367789	97.98318133	96.74797184
120827A00048	8/27/2012	2.01	8/27/2027	8/27/2012	123.67111	118.8251424	114.2398872	109.898782	105.786445	101.8885832	98.19190743	94.68405556	91.35352128
121126A00009	11/26/2012	1.07	11/30/2020	11/26/2012	100.82848	100.6563823	100.4848702	100.3139377	100.143582	99.97380008	99.80458912	99.63594627	99.46786867
130206A00004	2/6/2013	2.14	2/7/2028	2/6/2013	124.26282	119.3587313	114.7257506	110.3461644	106.2035567	102.2827041	98.56948081	95.05077276	91.71439769
130624A00017	6/24/2013	3.4	6/26/2023	6/24/2013	118.48446	115.5533357	112.7133861	109.9610943	107.2931103	104.7062399	102.1974361	99.76379115	97.40252892
150601A00100	6/1/2015	3.26	1/7/2021	6/1/2015	100.95337	100.8128582	100.6729316	100.5335862	100.3948181	100.2566234	100.1189982	99.9819386	99.84544089
200225A00049	2/25/2020	1.79	2/24/2040	2/25/2020	152.78821	138.0690748	125.2333526	114.0082051	104.1634803	95.50464896	87.86696549	81.11063012	75.11677401
200317A00022	3/17/2020	0.97	3/17/2022	3/17/2020	103.73098	102.8838119	102.0520609	101.2352879	100.4330682	99.64499353	98.87067175	98.1097256	97.36179214

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
020918A00047	9/18/2002	4.72	9/19/2022	9/18/2002	113.13918	111.4649974	109.8297457	108.2322184	106.6712565	105.145746	103.6546155	102.1968343	100.7714107
030605A00010	6/5/2003	3.97	6/5/2023	6/5/2003	113.94553	111.9826122	110.0711949	108.209462	106.3956776	104.6281826	102.9053902	101.2257825	99.58790664
070518A00023	5/18/2007	5.46	5/18/2027	5/18/2007	135.19172	130.3925358	125.8382449	121.5138307	117.4053212	113.499708	109.7848727	106.2495195	102.8831137
120410A00005	4/10/2012	2.35	4/12/2027	4/10/2012	123.13449	118.6656992	114.4260645	110.4015517	106.5790934	102.9465188	99.49248636	96.20642118	93.07845809
170130A00036	1/30/2017	3.11	1/31/2033	1/30/2017	143.85673	134.9129517	126.7315262	119.2373314	112.3633672	106.049815	100.2432115	94.89572386	89.96451202
170313A00041	3/13/2017	3.21	3/15/2032	3/13/2017	140.80846	132.8140661	125.4508711	118.6609941	112.3924059	106.5982895	101.2364783	96.26895724	91.66142225
170315A00005	3/15/2017	2.1	3/15/2022	3/15/2017	104.66119	103.8088588	102.9720225	102.150237	101.3430759	100.5501292	99.77100291	99.00531828	98.25271077
180928A00077	9/28/2018	2.85	9/28/2021	9/28/2018	103.70058	103.1197818	102.547274	101.9828632	101.426358	100.8775733	100.3363303	99.80245587	99.27578258
190628A00007	6/28/2019	2.28	6/28/2034	6/28/2019	142.71976	132.915983	124.0296555	115.9621517	108.6264332	101.9455933	95.85159522	90.28417668	85.18989703
200130A00027	1/31/2020	1.79	1/31/2025	1/31/2020	112.32147	109.8083486	107.3815798	105.0374577	102.7724613	100.5832463	98.4666351	96.41960737	94.439291
150601A01005	6/1/2015	5.82	3/10/2025	6/1/2015	140.36404	135.2037284	130.2802228	125.5811735	121.0949437	116.810567	112.7177047	108.8066065	105.0680736
150601A01041	6/1/2015	5.99	10/2/2036	6/1/2015	197.48349	181.0410705	166.4041402	153.3483859	141.6796517	131.2296386	121.8522477	113.420467	105.8237159
150601A01056	6/1/2015	4.7	3/16/2022	6/1/2015	112.32748	110.7611492	109.2256766	107.7202198	106.2439668	104.7961347	103.3759681	101.9827379	100.6157403
150819A00027	8/19/2015	3.05	8/19/2030	8/19/2020	135.84621	129.1044792	122.8318094	116.9900601	111.5445314	106.4636257	101.7185471	97.28303227	93.13310875
160331A00096	3/31/2016	1.32	11/30/2020	3/31/2016	100.63644	100.5076417	100.3792055	100.251129	100.1234107	99.99604901	99.86904231	99.74238904	99.61608765
160928A00033	9/28/2016	2.46	9/29/2036	9/28/2016	151.48802	138.9332026	127.7504053	117.7685203	108.8396318	100.8356752	93.64560144	87.17296757	81.33388547
150601A00932	6/1/2015	5.84	10/20/2020	6/1/2015	100.52836	100.4726284	100.4169789	100.3614076	100.3059143	100.2504988	100.1951609	100.1399005	100.0847175
150601A00935	6/1/2015	6.46	11/21/2030	6/1/2015	162.93156	154.229289	146.16005	138.6706803	131.7129313	125.2429824	119.2210025	113.6107583	108.3792625
150601A00938	6/1/2015	6.35	12/21/2020	6/1/2015	102.27505	102.0440226	101.8140565	101.5851487	101.3572915	101.1304778	100.9047003	100.6799519	100.4562254
150601A00950	6/1/2015	6.76	12/18/2031	6/1/2015	172.29918	162.1908277	152.8856871	144.3103813	136.3988843	129.091733	122.3353259	116.0813021	110.285989
150601A00955	6/1/2015	5.84	7/15/2032	6/1/2015	160.65831	151.5936286	143.2516009	135.5650315	128.4736227	121.9232131	115.8651043	110.255466	105.0548101
150601A00963	6/1/2015	4.76	12/27/2022	6/1/2015	109.87178	108.6175127	107.3902959	106.1892959	105.0137137	103.8627823	102.7357651	101.6319543	100.5506698
150601A00527	6/1/2015	2.5	7/26/2024	6/1/2015	112.07223	109.8983863	107.7921544	105.7508613	103.7719566	101.8530105	99.9917061	98.18583413	96.43328668
150601A00544	6/1/2015	1.95	8/13/2021	6/1/2015	102.48722	102.0255597	101.5696339	101.1193232	100.674512	100.2350883	99.80094314	99.37197073	98.94806825
150601A00563	6/1/2015	2.14	9/10/2021	6/1/2015	102.81454	102.3071046	101.8065479	101.3127187	100.8254658	100.3446432	99.87010903	99.40172619	98.93936163
150601A00685	6/1/2015	1.91	2/10/2022	6/1/2015	103.88356	103.1459574	102.4215511	101.7099597	101.0108159	100.3237667	99.64847335	98.98461014	98.33186409
150601A00690	6/1/2015	2.34	2/28/2025	6/1/2015	113.53219	111.0003729	108.5565924	106.1970241	103.9180437	101.71621	99.58825525	97.53107439	95.54171614
150601A00918	6/1/2015	5.62	4/28/2025	6/1/2015	123.54169	120.6200815	117.8036011	115.087572	112.4675566	109.9393469	107.4989509	105.1425798	102.8666365
150601A00089	6/1/2015	2.56	10/27/2020	6/1/2015	100.2251	100.1885201	100.152001	100.1155386	100.0791329	100.0427836	100.0064907	99.97025408	99.93407355
150601A00096	6/1/2015	2.32	11/23/2020	6/1/2015	100.45499	100.3795503	100.3043017	100.2292406	100.1543665	100.0796784	100.0051756	99.93085742	99.8567231
150601A00390	6/1/2015	2.39	5/20/2022	6/1/2015	105.97407	104.9464864	103.9397243	102.9531327	101.9860918	101.0380076	100.1083107	99.19645529	98.30191725
150601A00422	6/1/2015	2.03	2/19/2021	6/1/2015	101.04303	100.8559993	100.6700378	100.4851336	100.3012765	100.1184563	99.93666303	99.75588681	99.57611791
150601A00509	6/1/2015	2.52	7/8/2024	6/1/2015	111.94065	109.7995883	107.7244044	105.7125117	103.7614453	101.8688554	100.0325014	98.25024584	96.52004895

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00526	6/1/2015	2	7/28/2021	6/1/2015	102.38648	101.9480531	101.5148187	101.0866729	100.6635158	100.2452502	99.83178175	99.42301855	99.01887123
150601A00011	6/1/2015	5.17	8/3/2022	6/1/2015	116.42649	114.4161332	112.4520347	110.532842	108.6572517	106.8240067	105.0318945	103.2797454	101.5664306
150601A00018	6/1/2015	4.91	9/5/2025	6/1/2015	141.20741	135.3580789	129.8044521	124.5297587	119.518273	114.7552439	110.226829	105.9200336	101.8226547
150601A00019	6/1/2015	5.64	10/3/2022	6/1/2015	118.8632	116.6446482	114.4812159	112.3711585	110.3127983	108.3045233	106.3447834	104.4320884	102.5650044
150601A00024	6/1/2015	5.58	11/8/2022	6/1/2015	119.65185	117.3187851	115.0455588	112.8301961	110.6708018	108.5655587	106.5127233	104.5106227	102.5576508
150601A00030	6/1/2015	5.28	11/26/2027	6/1/2015	159.56582	150.6719028	142.3858298	134.6616318	127.4570939	120.7334293	114.4549814	108.5889538	103.1051642
150601A00033	6/1/2015	5.96	12/24/2025	6/1/2015	149.07046	142.6626799	136.5934291	130.8425615	125.3912547	120.2219166	115.3180967	110.6644055	106.246439
130207A00012	2/7/2013	2.9	2/7/2033	2/7/2013	142.92269	133.8274956	125.5256657	117.9373189	110.9913862	104.6245682	98.7804253	93.40858025	88.46401882
140311A00037	3/11/2014	2.59	3/11/2021	3/11/2014	102.8716	102.3970869	101.9268847	101.4609322	100.9991719	100.5415472	100.0880028	99.6384842	99.19293785
140314A00026	3/14/2014	2.99	3/14/2024	3/14/2019	121.76658	118.1215547	114.6128432	111.2345026	107.9808882	104.8466339	101.8266356	98.91603783	96.11021935
140325A00012	3/25/2014	3.61	3/26/2029	3/25/2019	134.26147	128.2301978	122.5790304	117.2797562	112.3064993	107.6355053	103.2449523	99.11477986	95.22653422
140414A00009	4/14/2014	2.32	4/30/2024	4/14/2014	113.3402	110.9307319	108.5981163	106.3392278	104.1510969	102.0308966	99.97593511	97.98364786	96.05159084
141124A00024	11/24/2014	2.27	11/30/2021	11/24/2014	107.00509	105.7678446	104.5601854	103.3810523	102.229437	101.1043785	100.0049596	98.93030533	97.87957993
200401A00011	4/1/2020	0.68	4/3/2023	4/1/2020	105.86106	104.4192979	103.0114071	101.6363006	100.2929355	98.98031089	97.69746587	96.44347777	95.21746015
200521A00005	5/21/2020	0.75	5/21/2030	5/21/2020	122.18379	116.086594	110.4102292	105.120895	100.187798	95.58285992	91.28045906	87.25719698	83.49168946
080423A00066	4/23/2008	4.41	4/24/2023	4/23/2008	113.45023	111.6591572	109.9130471	108.2103849	106.5497201	104.9296629	103.348881	101.8060966	100.300084
120210A00005	2/10/2012	1.64	2/10/2022	2/10/2012	104.97479	104.0171636	103.0750648	102.1481256	101.2359861	100.338298	99.45472399	98.58493746	97.72862183
121217A00009	12/17/2012	2.02	12/17/2027	12/17/2012	122.81821	118.1003417	113.6465708	109.4393898	105.4625983	101.7011944	98.14127713	94.76995772	91.57527827
121220A00023	12/20/2012	1.82	12/20/2022	12/20/2012	110.8523	108.770344	106.7440867	104.7715619	102.850895	100.9802949	99.15804914	97.38251972	95.65213918
180725A00035	7/25/2018	2.85	7/25/2023	7/25/2018	110.04763	108.4180769	106.8292666	105.279827	103.7684461	102.2938665	100.8548835	99.45034155	98.07913234
190102A00024	1/2/2019	2.97	1/3/2034	1/2/2019	146.98301	137.2867767	128.4683402	120.4361112	113.1089676	106.414973	100.2902623	94.67807037	89.52788387
190618A00009	6/18/2019	2.34	6/18/2021	6/18/2019	102.53387	102.098728	101.6682007	101.2422077	100.8206698	100.4035094	99.99065099	99.58202079	99.17754687
190813A00019	8/13/2019	2.13	8/13/2021	8/13/2019	102.93611	102.4098697	101.890415	101.3776013	100.8712875	100.3713366	99.87761564	99.38999566	98.90835135
191231A00027	12/31/2019	1.9	4/28/2023	12/31/2019	106.62265	105.3528702	104.1105546	102.8948545	101.7049581	100.5400861	99.39949012	98.28245126	97.18827838
200203A00046	2/3/2020	1.98	2/3/2040	2/3/2020	155.08707	140.2100268	127.2323242	115.8792232	105.9189171	97.15543923	89.42279338	82.58008937	76.50750616
151123A00067	11/23/2015	1.68	11/23/2020	11/23/2015	100.63077	100.5118048	100.393141	100.2747809	100.1567235	100.0389675	99.92151156	99.80435461	99.6874954
160506A00016	5/6/2016	1.28	5/6/2021	5/6/2016	101.84884	101.4656353	101.0859791	100.7098129	100.3370838	99.96774008	99.60173096	99.23900682	98.87951906
160928A00044	9/28/2016	2.89	9/29/2036	9/28/2023	155.92479	143.0934138	131.6587425	121.44703	112.3080368	104.1116495	96.74501083	90.11007863	84.12154861
160930A00033	9/30/2016	1.8	9/30/2026	9/30/2016	117.01384	113.4175086	109.9831238	106.7018869	103.565542	100.5663416	97.69701222	94.9507216	92.32104913
170130A00039	1/30/2017	2.74	1/31/2028	1/30/2017	125.40089	120.5876138	116.0363547	111.7302134	107.6535117	103.7916969	100.1312539	96.65962364	93.36512928
170929A00046	9/29/2017	2.49	9/30/2027	9/29/2017	122.44418	118.0989163	113.9764	110.0630078	106.3460542	102.8137236	99.45500537	96.25963258	93.21802702
150601A00905	6/1/2015	6.14	10/29/2029	6/1/2015	153.55927	146.2243745	139.3716912	132.9643754	126.9687049	121.3537894	116.0913128	111.1553003	106.5219081
150601A00919	6/1/2015	7.41	6/7/2030	6/1/2015	166.76232	158.2327897	150.3000938	142.9158872	136.0361454	129.6207498	123.6331136	118.0398451	112.8104458

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00946	6/1/2015	6.28	8/22/2031	6/1/2015	167.50263	157.804971	148.8633531	140.6101088	132.9842167	125.9305969	119.3994892	113.3458997	107.72911
150601A00994	6/1/2015	5.86	6/24/2022	6/1/2015	116.45573	114.5817943	112.7494203	110.9572787	109.204102	107.4886767	105.8098403	104.166479	102.5575243
150601A01040	6/1/2015	5.4	10/2/2026	6/1/2015	151.32439	144.0757145	137.2549009	130.833787	124.7862292	119.0879465	113.7163774	108.6505486	103.8709543
150601A01048	6/1/2015	5.27	1/3/2025	6/1/2015	137.27585	132.2970821	127.5409297	122.9959876	118.65151	114.4973676	110.5240085	106.7224208	103.0840987
150601A00492	6/1/2015	1.92	6/25/2021	6/1/2015	102.11377	101.7218236	101.3340542	100.9503842	100.5707413	100.1950549	99.82325622	99.45527824	99.09105547
150601A00624	6/1/2015	2.48	12/8/2021	6/1/2015	107.62727	106.3201029	105.0448629	103.8003933	102.5855882	101.3993943	100.2408076	99.1088707	98.00266998
150601A00693	6/1/2015	2.31	2/27/2025	6/1/2015	113.49825	110.9601471	108.5104869	106.1454217	103.8613044	101.6546727	99.52223864	97.4608785	95.46762333
150601A00714	6/1/2015	1.67	4/1/2022	6/1/2015	104.12529	103.3060569	102.5018099	101.7121226	100.9365815	100.1747893	99.42636403	98.69093838	97.96815897
150601A00745	6/1/2015	1.76	5/7/2021	6/1/2015	101.66789	101.3513381	101.0375448	100.7264736	100.418085	100.1123406	99.80920257	99.50863394	99.21059847
150601A00898	6/1/2015	6.66	6/8/2029	6/1/2015	148.51715	142.2865369	136.4352996	130.9360577	125.7636483	120.8949253	116.3085833	111.9849972	107.9060775
150601A00407	6/1/2015	2.06	1/22/2021	6/1/2015	100.82928	100.6817183	100.5348611	100.3887047	100.2432434	100.0984716	99.95438357	99.81097386	99.66823695
150601A00438	6/1/2015	1.91	3/18/2021	6/1/2015	101.32363	101.080622	100.8392733	100.599563	100.3614728	100.1249843	99.89007974	99.65674155	99.4249524
150601A00447	6/1/2015	2.02	4/28/2021	6/1/2015	101.67891	101.3748261	101.0733012	100.7742976	100.4777803	100.1837147	99.89206711	99.60280442	99.31589413
150601A00449	6/1/2015	2.12	4/28/2021	6/1/2015	101.70824	101.4040793	101.1024804	100.8034034	100.5068131	100.212675	99.92095542	99.63162118	99.3446398
150601A00458	6/1/2015	1.86	5/14/2021	6/1/2015	101.76229	101.433486	101.1076487	100.7847331	100.4646956	100.1474934	99.83308483	99.5214289	99.21248552
150601A00473	6/1/2015	2.22	5/31/2024	6/1/2015	111.43196	109.346532	107.3241686	105.3624317	103.4589935	101.611634	99.81823483	98.07677421	96.38532151
120523A00024	5/23/2012	2.6	5/24/2027	5/23/2012	123.82244	119.253837	114.9215144	110.8108436	106.9082248	103.2010028	99.67739438	96.32642261	93.13785532
120827A00052	8/27/2012	2.01	8/27/2027	8/27/2012	123.67112	118.8251463	114.2398899	109.8987836	105.7864456	101.8885829	98.19190634	94.68405379	91.35351891
120907A00026	9/7/2012	1.71	9/7/2022	9/7/2012	110.24799	108.2656682	106.3310262	104.442603	102.5989924	100.7988408	99.0408454	97.32375141	95.64635026
140311A00039	3/11/2014	3.06	3/11/2024	3/11/2014	119.63257	116.3105085	113.1088449	110.0224269	107.0463534	104.1759615	101.4068137	98.7346855	96.15555406
150601A00022	6/1/2015	5.43	10/26/2037	6/1/2015	183.92713	169.2001526	156.100101	144.4202163	133.9824027	124.6329927	116.2391738	108.6859642	101.8736514
150601A00330	6/1/2015	2.6	8/2/2023	6/1/2015	109.07905	107.5022195	105.9648163	104.4655204	103.0030635	101.5762303	100.1838556	98.82482198	97.49805751
191231A00021	12/31/2019	1.9	2/28/2023	12/31/2019	106.62262	105.3528498	104.1105427	102.8948509	101.7049626	100.5400987	99.39951067	98.28247963	97.18831447
200311A00027	3/11/2020	1.52	3/9/2035	3/11/2020	136.25279	126.3324438	117.3882593	109.3103352	102.0022538	95.37931679	89.36702479	83.89976518	78.91967775
011115A00014	11/15/2001	5.19	11/16/2021	11/15/2001	106.0375	105.3148315	104.6071905	103.9140703	103.234984	102.5694664	101.917073	101.2773789	100.6499776
081226A00013	12/26/2008	3.99	12/26/2023	12/26/2008	113.86471	111.8448588	109.8870139	107.9887018	106.147566	104.3613642	102.6279618	100.9453259	99.31151925
110414A00007	4/14/2011	3.95	1/21/2025	4/14/2011	120.20352	117.1362392	114.1824029	111.3368346	108.594633	105.9511544	103.4019979	100.9429909	98.57017555
120315A00002	3/14/2012	2.56	3/15/2027	3/14/2022	123.43322	119.0512537	114.8915613	110.9406853	107.1860839	103.616065	100.2197236	96.98688336	93.90804272
190523A00038	5/23/2019	2.54	5/24/2021	5/23/2019	102.36124	101.9698542	101.5821926	101.1981971	100.8178101	100.4409752	100.067637	99.69774163	99.33123629
190627A00020	6/27/2019	2.28	6/25/2021	6/27/2019	102.5216	102.0841424	101.6513719	101.2232017	100.7995502	100.3803379	99.96548736	99.55492284	99.14857057
190823A00009	8/23/2019	1.8	8/23/2029	8/23/2019	125.97068	120.2440689	114.8828282	109.8596291	105.1494202	100.7292187	96.57792475	92.67615353	89.00608341
191114A00013	11/14/2019	1.9	11/14/2022	11/14/2019	106.37471	105.1541438	103.9593732	102.7896182	101.6441289	100.522185	99.42309427	98.34619125	97.2908359
191114A00014	11/14/2019	1.9	11/14/2023	11/14/2019	109.24467	107.4428368	105.6896402	103.9833556	102.3223352	100.7050021	99.12984718	97.59542535	96.1003524

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
191115A00029	11/15/2019	2.07	11/15/2029	11/15/2019	126.89697	121.018431	115.5223482	110.3795693	105.5634131	101.0494415	96.81525487	92.84030697	89.10573825
181120A00026	11/20/2018	2.92	11/20/2020	11/20/2018	100.75032	100.6354345	100.520827	100.4065007	100.2924547	100.1786879	100.065199	99.95198721	99.8390513
181211A00042	12/11/2018	3.7	12/11/2028	12/11/2023	148.69976	139.740299	131.4566608	123.7923263	116.6958655	110.1204524	104.0234257	98.36589407	93.11238151
181220A00006	12/20/2018	2.93	12/20/2022	12/20/2018	107.86987	106.5909381	105.3395989	104.1150059	102.916345	101.7428346	100.5937241	99.46829219	98.36584552
181226A00040	12/26/2018	2.84	12/28/2020	12/26/2018	101.09329	100.9233132	100.7539903	100.5853208	100.4173007	100.2499257	100.083192	99.91709545	99.75163211
190102A00022	1/2/2019	2.97	1/3/2034	1/2/2019	146.98289	137.2866892	128.4682803	120.4360746	113.1089505	106.4149724	100.2902755	94.67809505	89.52791812
190327A00030	3/27/2019	2.9	3/27/2036	3/27/2019	151.23173	139.7860388	129.5206689	120.2960413	111.9905705	104.498191	97.72624375	91.59366586	86.02943787
170705A00029	7/5/2017	1.98	7/5/2022	7/5/2017	105.49564	104.4626657	103.4497873	102.456408	101.4819569	100.5258861	99.58766926	98.66680061	97.76279405
180725A00034	7/25/2018	2.79	7/25/2022	7/25/2018	106.50687	105.4611401	104.4358251	103.4303254	102.4440635	101.476485	100.527057	99.59526748	98.68062383
180727A00030	7/27/2018	2.89	7/27/2021	7/27/2018	103.06187	102.5770329	102.0979572	101.6245283	101.1566351	100.6941695	100.2370263	99.78510353	99.33830156
181003A00044	10/3/2018	2.78	10/2/2020	10/3/2018	100.03657	100.0309924	100.0254186	100.0198498	100.014286	100.0087273	100.0031735	99.99762483	99.99208113
181003A00072	10/3/2018	2.78	10/2/2020	10/3/2018	100.03657	100.0309924	100.0254186	100.0198498	100.014286	100.0087273	100.0031735	99.99762483	99.99208113
181029A00097	10/29/2018	3.53	10/27/2028	10/29/2018	146.84685	138.1630902	130.1240415	122.676599	115.7723663	109.3672129	103.4208745	97.89659222	92.76078765
150601A01047	6/1/2015	5.35	12/30/2024	6/1/2015	137.52009	132.5482785	127.7982869	123.2587546	118.9189819	114.7688839	110.7989508	107.0002115	103.3641987
150601A01055	6/1/2015	5.29	3/16/2022	6/1/2015	113.18787	111.6147	110.072513	108.5604622	107.0777322	105.6235368	104.1971174	102.7977419	101.4247037
151026A00034	10/26/2015	2.88	10/28/2030	10/26/2020	135.44005	128.5948682	122.2335763	116.3162485	110.8066086	105.671668	100.8814038	96.40846959	92.22793664
160928A00030	9/28/2016	2.52	9/29/2036	9/28/2016	152.1071	139.5136972	128.2957547	118.2818007	109.3235953	101.2927879	94.07807716	87.58279702	81.72286172
160928A00042	9/28/2016	3.05	9/29/2036	9/28/2021	157.57568	144.6413994	133.1130074	122.8157779	113.5986061	105.3306167	97.89827944	91.20295716	85.15881862
160930A00032	9/30/2016	2.15	9/30/2031	9/30/2016	132.37774	125.0689321	118.3189755	112.0782743	106.3020877	100.9500158	95.98554543	91.37564637	87.09041273
150601A00941	6/1/2015	6.23	3/8/2021	6/1/2015	104.35797	103.9036256	103.4532985	103.0069369	102.5644882	102.1259007	101.6911239	101.2601079	100.8328037
150601A00943	6/1/2015	6.44	5/9/2031	6/1/2015	166.76417	157.3631104	148.6783801	140.6472037	133.2128464	126.3239904	119.9341782	114.0013168	108.4872359
150601A00971	6/1/2015	6.42	6/20/2033	6/1/2015	179.24738	167.1993347	156.2311667	146.2325178	137.1053212	128.7623402	121.1258897	114.1267176	107.7030239
150601A00993	6/1/2015	5.37	6/9/2034	6/1/2015	175.98658	163.3272867	151.8793065	141.5107753	132.1054407	123.5606917	115.7858516	108.7006956	102.2341629
150601A01013	6/1/2015	5.21	9/29/2023	6/1/2015	126.30044	122.9406822	119.6941995	116.5564748	113.5231997	110.5902635	107.7537432	105.0098933	102.3551367
150601A01020	6/1/2015	5.22	10/19/2020	6/1/2015	100.23739	100.2102452	100.1831355	100.1560619	100.1290244	100.1020229	100.0750575	100.0481279	100.0212342
150601A00680	6/1/2015	2.23	2/6/2025	6/1/2015	113.12244	110.6269846	108.2175019	105.8902947	103.6418489	101.4688277	99.36806059	97.33653446	95.3713843
150601A00739	6/1/2015	2.35	5/6/2025	6/1/2015	114.16362	111.5053482	108.9428333	106.4717978	104.0881845	101.7881465	99.56803555	97.42438981	95.35392331
150601A00868	6/1/2015	7.08	6/5/2028	6/1/2015	150.00136	143.8910946	138.1290586	132.691947	127.5581949	122.7078394	118.1223895	113.7847074	109.6788997
150601A00889	6/1/2015	6.55	3/2/2029	6/1/2015	153.09407	146.1650983	139.6676416	133.570413	127.8446439	122.4638644	117.4037043	112.6417113	108.157187
150601A00928	6/1/2015	5.94	8/21/2030	6/1/2015	151.34043	144.1158545	137.3850249	131.1082659	125.2494496	119.7756498	114.6568345	109.8655891	105.3768686
150601A00929	6/1/2015	5.91	8/30/2030	6/1/2015	158.0012	149.6783415	141.9525784	134.774437	128.0989609	121.8852665	116.0961447	110.6977039	105.6590506
150601A00461	6/1/2015	1.94	5/14/2021	6/1/2015	101.70047	101.3878268	101.077923	100.7707211	100.4661814	100.164265	99.86493358	99.56814992	99.2738774
150601A00475	6/1/2015	3.04	6/1/2029	6/1/2015	129.81226	124.2122345	118.9574911	114.0229529	109.3855778	105.0241773	100.9192532	97.05285118	93.40842683

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00477	6/1/2015	3.21	6/1/2029	6/1/2015	137.43468	130.602329	124.2185927	118.2496357	112.6644375	107.4345389	102.5338128	97.93825724	93.62580829
150601A00497	6/1/2015	1.95	7/1/2021	6/1/2015	102.16219	101.7631273	101.3683991	100.9779225	100.5916212	100.2094204	99.8312474	99.45703141	99.08670324
150601A00508	6/1/2015	1.97	7/8/2021	6/1/2015	102.21915	101.8105853	101.4065485	101.0069521	100.6117147	100.220757	99.83400167	99.45137329	99.07279843
150601A00679	6/1/2015	1.86	2/4/2022	6/1/2015	103.81657	103.0854115	102.3673254	101.661931	100.9688635	100.287773	99.61832325	98.96019126	98.31306657
150601A00165	6/1/2015	2.66	6/4/2032	6/1/2015	138.78335	130.7111737	123.2906197	116.4607763	110.1669929	104.3601911	98.99625365	94.03548393	89.44212873
150601A00261	6/1/2015	3.19	2/11/2033	6/1/2015	164.81247	150.9141933	138.4728102	127.3203867	117.3095904	108.3110365	100.210991	92.90938105	86.31806886
150601A00270	6/1/2015	3.12	3/21/2031	6/1/2015	161.62828	148.7163822	137.0419554	126.4763367	116.9050257	108.226054	100.3485454	93.1914503	86.68243018
150601A00299	6/1/2015	1.8	4/11/2023	6/1/2015	107.18247	105.7672192	104.3850094	103.0347887	101.7155432	100.4263002	99.16612591	97.93412342	96.72943105
150601A00397	6/1/2015	2.2	12/31/2020	6/1/2015	100.75817	100.626677	100.4957058	100.3652519	100.2353122	100.1058832	99.97696162	99.84854429	99.72062796
150601A00451	6/1/2015	1.91	4/30/2021	6/1/2015	101.72702	101.4076512	101.0911522	100.7774761	100.4665806	100.1584243	99.85296687	99.55016853	99.2499905
120907A00032	9/7/2012	1.86	9/9/2024	9/7/2012	118.34023	114.6928938	111.1908399	107.8273031	104.5958765	101.4904888	98.50538491	95.6351078	92.87448098
121120A00010	11/20/2012	1.93	11/22/2027	11/20/2012	121.94553	117.3515004	113.0124326	108.9115859	105.0334589	101.3636851	97.88894144	94.59686509	91.47597729
121120A00011	11/20/2012	2.22	11/22/2027	11/20/2012	131.49021	124.9218809	118.783721	113.0439943	107.6735156	102.6454316	97.93502075	93.51951067	89.37791313
121219A00029	12/19/2012	1.75	12/19/2022	12/21/2017	106.44409	105.1745379	103.9323493	102.7166838	101.5267357	100.3617316	99.22092822	98.10361147	97.00909481
150601A00038	6/1/2015	5.77	6/2/2023	6/1/2015	125.3971	122.3628675	119.4220732	116.571187	113.8068396	111.1258138	108.525037	106.0015731	103.5526155
150601A00058	6/1/2015	4.46	8/16/2024	6/1/2015	116.23832	113.975323	111.7831637	109.6590199	107.6002051	105.6041597	103.6684443	101.7907328	99.96880626
970806A00018	8/1/1997	6.7	10/23/2026	8/1/1997	134.11374	130.0865692	126.2397961	122.5636123	119.0488173	115.6867796	112.4693968	109.3890598	106.4386192
050812A00050	8/12/2005	4.97	8/12/2025	8/12/2005	126.24952	122.6748689	119.2441451	115.9503411	112.7868367	109.7473788	106.8260587	104.0172913	101.3157948
080220A00035	2/20/2008	4.65	2/22/2022	2/20/2008	107.87156	106.884133	105.9131426	104.9581803	104.0188541	103.094785	102.1856065	101.2909638	100.4105136
110824A00006	8/24/2011	2.69	8/24/2026	8/24/2011	123.40681	119.1695005	115.1324468	111.2843742	107.6147229	104.1136016	100.771741	97.58045023	94.53157754
111007A00007	10/7/2011	3.92	10/7/2031	10/7/2011	163.35752	150.9893073	139.8068935	129.6849216	120.5121643	112.189852	104.6302043	97.75514193	91.49515722
120621A00009	6/21/2012	3.18	6/21/2032	6/21/2012	154.48162	142.9756919	132.5799318	123.1743651	114.6529544	106.9218856	99.89807828	93.50788545	87.68595926
170612A00024	6/12/2017	1.72	6/13/2022	6/12/2017	105.19557	104.2051217	103.2336472	102.2805868	101.3454061	100.427592	99.52665168	98.64211139	97.77351558
190513A00026	5/13/2019	2.55	5/13/2021	5/13/2019	102.34089	101.9536792	101.5700914	101.1900674	100.8135523	100.4404925	100.0708355	99.70452985	99.34152539
200310A00067	3/10/2020	0.94	3/10/2025	3/10/2020	110.69639	108.1133152	105.6218955	103.2180915	100.8980729	98.65820575	96.49504093	94.40530345	92.38588243
200311A00028	3/11/2020	1.04	3/12/2024	3/11/2020	108.9695	106.8916699	104.875725	102.9192921	101.0201053	99.17600329	97.38492409	95.64489936	93.95404948
200330A00010	3/30/2020	0.61	3/30/2022	3/30/2020	103.44533	102.5976618	101.7654701	100.948312	100.1457602	99.35740406	98.58284901	97.8217156	97.0736388
200428A00018	4/28/2020	1.33	4/27/2035	4/28/2020	134.78833	124.8840186	115.9611652	107.9085932	100.6288415	94.03636199	88.05596556	82.62148258	77.67460543
150601A00966	6/1/2015	4.84	2/3/2023	6/1/2015	110.45584	109.1358245	107.8450481	106.5825961	105.3475951	104.1392066	102.9566255	101.7990783	100.6658215
150601A01011	6/1/2015	5.05	9/8/2025	6/1/2015	122.29871	119.2961848	116.4073836	113.6269894	110.9499708	108.3715686	105.8872788	103.4928372	101.1842049
150601A01051	6/1/2015	4.91	2/7/2025	6/1/2015	136.53946	131.4672653	126.6260895	122.0040414	117.5899041	113.3730968	109.3436346	105.4920926	101.8095707
151119A00027	11/19/2015	1.64	11/19/2020	11/19/2015	100.59658	100.4832695	100.3702328	100.2574697	100.1449789	100.0327595	99.92081039	99.80913062	99.69771914
160210A00068	2/10/2016	2.76	2/10/2031	2/10/2021	134.17897	127.2604605	120.8403829	114.8768647	109.3319277	104.1710949	99.36304067	94.87927965	90.69388744

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170130A00046	1/30/2017	2.52	1/30/2026	1/30/2017	118.12064	114.7478731	111.5156963	108.4170159	105.4451452	102.5937804	99.85697646	97.22912378	94.70492766
150601A00893	6/1/2015	6.49	4/6/2029	6/1/2015	152.71644	145.7959304	139.3084786	133.2225033	127.5089823	122.1412268	117.0946771	112.3467177	107.8765102
150601A00900	6/1/2015	6.06	6/28/2024	6/1/2015	119.90288	117.5899231	115.3476886	113.1734191	111.0644884	109.0183928	107.0327435	105.1052611	103.2337694
150601A00927	6/1/2015	6.08	8/7/2030	6/1/2015	151.91997	144.7036882	137.9785985	131.7053762	125.8481965	120.3743994	115.2541862	110.460347	105.9680161
150601A00939	6/1/2015	5.79	1/17/2031	6/1/2015	158.33515	149.8150762	141.921403	134.6009195	127.8053956	121.491078	115.6182421	110.1507912	105.0558988
150601A00947	6/1/2015	6.19	8/20/2021	6/1/2015	108.82644	107.8712658	106.9332715	106.0119975	105.1069966	104.2178374	103.3441035	102.4853933	101.641319
150601A00960	6/1/2015	6.49	12/16/2032	6/1/2015	167.41401	157.7209895	148.8216485	140.6401859	133.1087938	126.1667461	119.7596019	113.8385036	108.3595586
150601A00543	6/1/2015	2.23	8/8/2024	6/1/2015	112.02774	109.8283239	107.6979409	105.6338408	103.6334019	101.6941265	99.81363415	97.98965543	96.22002561
150601A00555	6/1/2015	2.13	9/2/2021	6/1/2015	102.82804	102.3174772	101.8138629	101.3170403	100.8268565	100.3431638	99.86581904	99.3946834	98.9296224
150601A00864	6/1/2015	7.37	3/31/2028	6/1/2015	150.11032	144.1478392	138.5180915	133.1992248	128.1709918	123.4146237	118.9127116	114.649099	110.6087826
150601A00875	6/1/2015	7.14	9/29/2028	6/1/2015	152.18208	145.7770383	139.7477465	134.0683765	128.715081	123.6658279	118.9002496	114.399506	110.1461586
150601A00883	6/1/2015	6.21	11/30/2028	6/1/2015	147.85209	141.5253419	135.5760366	129.9778055	124.7063362	119.739195	115.0556691	110.6366226	106.4643649
150601A00888	6/1/2015	5.92	3/1/2029	6/1/2015	148.18807	141.6000556	135.4188953	129.6152448	124.1621106	119.0346485	114.2099778	109.6670119	105.3863051
150601A00005	6/1/2015	4.84	6/9/2025	6/1/2015	138.9381	133.42249	128.1746053	123.1797238	118.4240277	113.8945397	109.5790665	105.4661467	101.5450017
150601A00023	6/1/2015	5.46	10/30/2037	6/1/2015	198.64375	180.8444907	165.1292061	151.2230678	138.8903423	127.9285089	118.1633036	109.4445365	101.6425593
150601A00061	6/1/2015	4.25	9/30/2024	6/1/2015	116.31455	113.9783733	111.7171485	109.5278273	107.4075126	105.3534464	103.3630019	101.4336764	99.5630844
150601A00424	6/1/2015	1.95	2/19/2021	6/1/2015	101.13449	100.9281441	100.7230095	100.5190749	100.3163288	100.1147596	99.9143561	99.71510713	99.51700168
150601A00436	6/1/2015	1.99	3/18/2021	6/1/2015	101.22612	101.004386	100.7840596	100.5651303	100.3475832	100.1314038	99.9165776	99.70309047	99.49092845
150601A00529	6/1/2015	2.08	7/28/2021	6/1/2015	102.20137	101.8035084	101.409951	101.0206204	100.6354407	100.254338	99.87724013	99.50407679	99.13477942
120119A00015	1/19/2012	2.27	1/19/2024	1/19/2012	115.64866	112.7795469	110.0086845	107.3320135	104.7456734	102.2459876	99.82945368	97.49273357	95.2326449
120217A00007	2/17/2012	2.25	2/20/2024	2/17/2012	116.14212	113.1645819	110.291145	107.517461	104.8393927	102.2529997	99.75452804	97.3404004	95.00720637
120614A00015	6/14/2012	1.89	6/14/2022	6/14/2012	109.23816	107.5103428	105.8199943	104.1659499	102.5470918	100.9623485	99.41069277	97.89113906	96.40274138
121219A00045	12/19/2012	1.75	12/19/2022	12/19/2017	106.8949	105.5336074	104.2028577	102.9016715	101.6291121	100.3842819	99.16632052	97.97440269	96.80773647
130913A00018	9/13/2013	3.72	9/13/2028	9/13/2013	134.82979	128.854497	123.2381695	117.9554759	112.9830833	108.299482	103.8848308	99.72081572	95.79052174
140911A00033	9/11/2014	3.02	9/13/2027	9/11/2014	132.38495	126.3287899	120.6351993	115.279202	110.2377165	105.4894031	101.014522	96.79480353	92.81332931
190701A00022	7/1/2019	2.28	7/1/2021	7/1/2019	102.73608	102.2602912	101.7899991	101.325099	100.8654885	100.411068	99.96174075	99.51741226	99.0779906
191114A00012	11/14/2019	1.89	11/15/2021	11/14/2019	103.54276	102.873924	102.2161184	101.5690393	100.9323955	100.3059067	99.6893035	99.08232623	98.48472493
200326A00037	3/26/2020	1.78	3/26/2035	3/26/2020	138.4943	128.458886	119.4086387	111.2328015	103.8341908	97.12742442	91.03739129	85.49793113	80.45069255
200327A00004	3/27/2020	0.63	3/28/2022	3/27/2020	103.4604	102.6129738	101.781013	100.9640746	100.1617317	99.37357438	98.5992083	97.83825447	97.09034821
200331A00056	3/31/2020	0.96	3/29/2030	3/31/2020	122.98632	116.9709926	111.3638896	106.1327199	101.2480262	96.68291266	92.41280301	88.41522395	84.6696097
970806A00059	8/1/1997	8.25	9/22/2025	8/1/1997	158.24969	151.8171249	145.7088855	139.906538	134.3928018	129.1514716	124.1673446	119.426153	114.9145012
170130A00043	1/30/2017	2.64	1/29/2027	1/30/2017	121.75557	117.6785865	113.7976315	110.1014368	106.5794629	103.2218505	100.019372	96.96338704	94.0458014
170616A00003	6/16/2017	1.91	6/17/2024	6/16/2017	111.346	109.1767312	107.0740974	105.0354862	103.058408	101.1404899	99.27946867	97.47318546	95.71957976

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170705A00028	7/5/2017	1.86	7/6/2021	7/5/2017	102.55021	102.0734897	101.6023139	101.1365711	100.6761575	100.2209719	99.77091622	99.32589457	98.88581375
181015A00043	10/15/2018	2.91	10/15/2020	10/15/2018	100.27393	100.2320987	100.1903181	100.1485898	100.1069136	100.0652894	100.0237172	99.98219685	99.94072827
190102A00015	1/2/2019	2.97	1/3/2034	1/2/2019	146.98348	137.287121	128.4685775	120.4362578	113.1090376	106.4149783	100.2902131	94.67797546	89.52775074
190102A00020	1/2/2019	2.97	1/3/2034	1/2/2019	146.98311	137.2868487	128.4683876	120.4361382	113.1089778	106.4149695	100.2902478	94.67804681	89.52785316
150601A00988	6/1/2015	4.57	3/22/2024	6/1/2015	114.73254	112.7253289	110.7759524	108.8822574	107.0421856	105.2537715	103.5151366	101.8244855	100.1801013
150601A01012	6/1/2015	5.43	9/15/2023	6/1/2015	126.61175	123.2905088	120.0798169	116.9753183	113.9728601	111.0684772	108.2583831	105.5389604	102.9067523
150601A01015	6/1/2015	5.61	10/28/2025	6/1/2015	144.84483	138.8574441	133.1769672	127.785652	122.6668832	117.8050991	113.1857186	108.7950739	104.6203477
151110A00011	11/10/2015	3.23	11/12/2030	11/10/2020	136.39564	129.5133156	123.1182245	117.1700708	111.6322501	106.4714842	101.6574938	97.16270627	92.96199281
160210A00062	2/10/2016	1.36	2/10/2021	2/10/2016	101.23402	100.9848577	100.7371418	100.4908633	100.2460086	100.0025644	99.76051722	99.51985412	99.28056212
160928A00029	9/28/2016	2.52	9/29/2036	9/28/2016	152.1071	139.5136972	128.2957547	118.2818007	109.3235953	101.2927879	94.07807716	87.58279702	81.72286172
150601A00909	6/1/2015	6.14	11/30/2020	6/1/2015	100.55862	100.5012886	100.444079	100.3869943	100.3300339	100.2731975	100.2164846	100.1598947	100.1034275
150601A00931	6/1/2015	7.13	9/20/2030	6/1/2015	166.62392	157.8811568	149.7644646	142.2220204	135.2067294	128.6757604	122.5901298	116.9143276	111.6159827
150601A00948	6/1/2015	6.04	10/22/2031	6/1/2015	156.46647	148.2182007	140.5887307	133.5237095	126.9740754	120.8954974	115.2478824	109.9949361	105.1037741
150601A00952	6/1/2015	6.34	2/13/2032	6/1/2015	171.66993	161.2575191	151.6913668	142.8927325	134.7908937	127.3222703	120.4296507	114.0615062	108.1713851
150601A00964	6/1/2015	5.25	1/6/2033	6/1/2015	158.95439	149.5831738	140.9881826	133.0946375	125.8356986	119.1515574	112.9886403	107.2989082	102.0392396
150601A00976	6/1/2015	6.8	9/22/2033	6/1/2015	183.82056	171.533394	160.3543042	150.1688806	140.8756125	132.3843344	124.6148688	117.4958416	110.9636456
150601A00865	6/1/2015	6	4/3/2028	6/1/2015	139.04267	133.9416301	129.1152005	124.545729	120.216842	116.1133441	112.2211251	108.5270746	105.0190039
150601A00871	6/1/2015	6.74	7/31/2028	6/1/2015	149.28395	143.0849481	137.244127	131.7372312	126.5418418	121.6372224	117.0041811	112.6249447	108.4830441
150601A00897	6/1/2015	6.15	5/28/2029	6/1/2015	150.84252	143.9777865	137.5453945	131.5135973	125.8532389	120.5375234	115.5418068	110.8434097	106.4214462
150601A00899	6/1/2015	7.07	6/14/2029	6/1/2015	149.3404	143.1175204	137.2720928	131.7769555	126.6071372	121.7396637	117.1533833	112.8288085	108.7479736
150601A00901	6/1/2015	7.16	7/26/2029	6/1/2015	150.4398	144.0982597	138.1455628	132.5534358	127.2959102	122.3491144	117.6910889	113.3016192	109.1620837
150601A00906	6/1/2015	6.2	11/1/2029	6/1/2015	154.41365	146.9790594	140.0368261	133.5490774	127.4811635	121.8013633	116.4806162	111.4922802	106.811913
150601A00496	6/1/2015	2.27	6/27/2024	6/1/2015	111.74926	109.6193416	107.5547666	105.5529717	103.6115171	101.7280771	99.90043414	98.12647227	96.40417221
150601A00505	6/1/2015	2.07	7/8/2021	6/1/2015	102.31015	101.8918377	101.4782455	101.0692857	100.664872	100.2649202	99.8693482	99.47807628	99.09102657
150601A00732	6/1/2015	1.91	4/29/2022	6/1/2015	104.53393	103.6703694	102.8228353	101.9908633	101.1740098	100.3718487	99.58397057	98.80998135	98.0495021
150601A00832	6/1/2015	7.17	8/28/2025	6/1/2015	127.68938	124.6115263	121.6489939	118.7964318	116.0487756	113.4012328	110.8492668	108.388581	106.0151042
150601A00847	6/1/2015	6.59	1/31/2022	6/1/2015	112.96732	111.6141391	110.285535	108.9808834	107.6995776	106.4410312	105.2046772	103.9899673	102.7963709
150601A00848	6/1/2015	6.36	2/18/2022	6/1/2015	107.24781	106.4762753	105.7185552	104.9742515	104.2429809	103.5243752	102.8180808	102.1237578	101.4410795
150601A00395	6/1/2015	2.86	1/3/2024	6/1/2015	110.87749	109.0441815	107.2613879	105.5272887	103.8401428	102.1982856	100.6001252	99.0441381	97.52886611
150601A00396	6/1/2015	3.61	1/3/2029	6/1/2015	131.01576	125.6575582	120.6149525	115.8659619	111.3903169	107.169317	103.185698	99.42351119	95.86801363
150601A00409	6/1/2015	1.98	1/22/2021	6/1/2015	100.90544	100.742053	100.5794443	100.4176083	100.2565389	100.0962302	99.93667608	99.77787087	99.6198087
150601A00410	6/1/2015	2.68	1/24/2024	6/1/2015	110.75601	108.8921701	107.0803434	105.3186351	103.605237	101.9384211	100.3165349	98.73799756	97.20129634
150601A00426	6/1/2015	3.37	2/21/2029	6/1/2015	130.41393	124.9810054	119.8731145	115.0672958	110.5424014	106.2789414	102.2589419	98.46581632	94.8842482

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
150601A00478	6/1/2015	2	6/16/2021	6/1/2015	102.05493	101.6795767	101.3080638	100.9403218	100.5762868	100.2158965	99.85908993	99.50580778	99.15599201
150601A00001	6/1/2015	5.43	6/15/2037	6/1/2015	195.80048	178.633957	163.4370855	149.9550855	137.9687537	127.2892048	117.7534267	109.2205191	101.5685055
150601A00035	6/1/2015	5.73	4/1/2038	6/1/2015	189.23465	173.7915028	160.0880047	147.898707	137.0300237	127.3154358	118.6114554	110.7942239	103.7566387
150601A00040	6/1/2015	5.45	7/14/2023	6/1/2015	113.45737	111.8155946	110.2146434	108.6531537	107.1298178	105.6433824	104.1926459	102.776456	101.393707
150601A00370	6/1/2015	2.58	10/31/2023	6/1/2015	109.83805	108.1156566	106.4389016	104.806186	103.2159837	101.6668338	100.1573374	98.68615444	97.25200063
150601A00371	6/1/2015	1.88	10/30/2020	6/1/2015	100.23736	100.1941195	100.150948	100.1078473	100.0648172	100.0218576	99.9789684	99.93614932	99.89340024
150601A00394	6/1/2015	2.1	12/31/2020	6/1/2015	100.76321	100.6285635	100.4944568	100.3608872	100.2278511	100.0953451	99.96336569	99.83190953	99.70097321
120614A00013	6/14/2012	1.89	6/14/2022	6/14/2012	109.23821	107.5103793	105.8200225	104.16597	102.547104	100.9623531	99.4106899	97.89112893	96.40272419
120907A00005	9/7/2012	1.76	9/7/2022	9/7/2012	108.139	106.5339722	104.9658919	103.4336308	101.9361025	100.4722624	99.04110511	97.6416629	96.27300407
121214A00014	12/14/2012	2.16	12/14/2027	12/14/2017	123.25504	118.5677657	114.142395	109.9615962	106.0093255	102.2707242	98.73202267	95.38045251	92.20416617
130624A00019	6/24/2013	3.4	6/26/2023	6/24/2013	118.48446	115.5533357	112.7133861	109.9610943	107.2931103	104.7062399	102.1974361	99.76379115	97.40252892
130925A00035	9/25/2013	1.53	6/25/2025	9/25/2013	115.27453	112.0515308	108.9566932	105.9837155	103.1266592	100.3799243	97.73822726	95.19658079	92.75027465
141126A00006	11/26/2014	2.41	11/30/2021	11/26/2014	107.07778	105.8240823	104.6003756	103.4055887	102.2387004	101.0987374	99.98477101	98.89591477	97.83132223
081219A00006	12/19/2008	3.88	12/22/2023	12/19/2008	126.04316	122.1840405	118.4659209	114.8827399	111.428738	108.098443	104.886654	101.7884251	98.7990514
110927A00009	9/27/2011	3.07	9/27/2021	9/27/2011	106.88533	105.7968249	104.7304665	103.6855797	102.6615207	101.6576711	100.673437	99.70824744	98.76155346
130211A00035	2/11/2013	2.27	2/15/2023	2/11/2013	114.48474	111.8218323	109.2346787	106.7206975	104.2774085	101.9024308	99.59347753	97.34835219	95.1649441
140923A00069	9/23/2014	2.63	9/23/2021	9/23/2014	106.36106	105.28798	104.2365094	103.2059971	102.1958209	101.2053832	100.2341095	99.28144757	98.34686602
150115A00022	1/17/2017	2.56	1/16/2024	1/17/2017	121.18173	117.3423151	113.6457945	110.0860159	106.6571351	103.3535943	100.1701061	97.10163865	94.14340147
150601A00356	6/1/2015	3.66	9/22/2023	6/1/2015	122.47403	118.9913403	115.6277636	112.378548	109.2391553	106.2052549	103.2727126	100.4375808	97.69608868
191002A00043	2/3/2020	1.75	2/3/2023	2/3/2020	112.97676	110.37393	107.8442285	105.3851919	102.9944581	100.6697576	98.40890981	96.2098184	94.07046799
191002A00044	2/3/2020	1.75	2/3/2023	2/3/2020	112.97676	110.37393	107.8442285	105.3851919	102.9944581	100.6697576	98.40890981	96.2098184	94.07046799
200131A00031	1/31/2020	1.74	1/31/2024	1/31/2020	118.49623	114.6558965	110.9601748	107.4028747	103.9781013	100.6802416	97.50395007	94.44413377	91.49593952
190621A00035	6/21/2019	2.19	12/15/2023	6/21/2019	119.3418	115.636464	112.0664326	108.6259092	105.3093903	102.1116454	99.02770089	96.0528259	93.18251832
190726A00014	7/26/2019	2.23	7/24/2024	7/26/2019	123.21547	118.704595	114.3839863	110.2446061	106.277892	102.4757334	98.83044463	95.33474054	91.98171331
190815A00040	8/15/2019	1.86	8/15/2023	8/15/2019	116.29588	113.0336525	109.8799363	106.8305398	103.8814547	101.0288491	98.26905884	95.5985791	93.01405672
190815A00041	8/15/2019	1.86	8/15/2024	8/15/2019	122.02177	117.4623058	113.0980784	108.919723	104.918371	101.0856232	97.41352201	93.89452664	90.5214885
190829A00017	8/29/2019	1.8	8/29/2023	8/29/2019	116.32637	113.0192559	109.8234954	106.7347349	103.7488123	100.8617515	98.0697524	95.36918255	92.75656858
190904A00044	9/4/2019	1.72	12/30/2022	9/4/2019	112.3715	109.8829214	107.4624625	105.1077191	102.8163946	100.5862944	98.41532012	96.30146441	94.24280602
181227A00001	12/27/2018	2.92	12/27/2021	12/27/2018	108.47725	107.0884806	105.7352024	104.4160709	103.1298054	101.8751889	100.6510636	99.45632772	98.28993191
190311A00068	3/25/2019	2.76	9/26/2022	3/25/2019	113.10365	110.8983264	108.747904	106.6506617	104.6049414	102.6091487	100.6617501	98.76126998	96.906288
190318A00016	3/19/2019	2.7	3/18/2022	3/19/2019	109.49777	107.9101464	106.3539554	104.828339	103.3324712	101.8655553	100.4268224	99.01553043	97.63096277
190422A00030	4/22/2019	2.93	12/22/2025	4/22/2019	135.85838	129.2507965	123.0079154	117.107549	111.5289859	106.2528862	101.261182	96.53698638	92.06450888
190515A00032	5/15/2019	2.49	5/15/2024	5/15/2019	123.06188	118.7866795	114.6842625	110.7466403	106.9662464	103.3359088	99.84882667	96.49854868	93.27895273

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190614A00007	6/14/2019	2.22	6/15/2021	6/14/2019	104.2673	103.5115563	102.766745	102.0326334	101.308992	100.5955977	99.89223393	99.19869008	98.5147614
180518A00071	5/25/2018	3.56	5/18/2026	5/25/2018	142.56238	135.2205728	128.3093623	121.8010777	115.6699813	109.8921197	104.44519	99.30841709	94.46244067
180524A00003	5/24/2018	2.91	5/24/2021	5/24/2018	104.35769	103.6678766	102.9871791	102.315414	101.6524062	100.9979852	100.351985	99.71424347	99.08460306
180626A00026	6/26/2018	2.92	6/25/2021	6/26/2018	104.96407	104.1751772	103.39813	102.6326609	101.8785125	101.135435	100.4031859	99.68152959	98.97023743
180821A00041	8/21/2018	3	9/21/2023	8/21/2018	120.5117	117.0632123	113.7328176	110.5157994	107.4076587	104.4041019	101.5010302	98.69452961	95.98086122
180910A00037	9/10/2018	3.03	9/9/2022	9/10/2018	113.33722	111.1836309	109.0823893	107.0318925	105.030596	103.0770132	101.1697124	99.30731497	97.48849261
181203A00039	12/3/2018	3.27	12/1/2023	12/3/2018	122.79034	119.0724672	115.488427	112.0325638	108.6995022	105.4841294	102.3815802	99.38722325	96.49664827
180123A00067	1/23/2018	2.67	1/23/2023	1/23/2018	115.06133	112.4672523	109.9452353	107.4928314	105.1076956	102.7875778	100.5303184	98.33384389	96.1961627
180124A00073	1/24/2018	2.46	1/25/2021	1/24/2018	102.00226	101.6693999	101.3387113	101.0101765	100.6837744	100.3594843	100.0372856	99.71715828	99.39908229
180130A00062	1/30/2018	2.51	2/1/2021	1/30/2018	102.14049	101.7871795	101.4363077	101.0878472	100.7417732	100.3980613	100.0566875	99.71762808	99.38085956
180302A00011	3/2/2018	2.68	3/2/2021	3/2/2018	102.71843	102.2795512	101.8444157	101.4129751	100.9851824	100.5609916	100.1403573	99.7232349	99.30958069
180328A00015	3/28/2018	2.93	3/28/2023	3/28/2018	116.93744	114.1094691	111.3654831	108.7024799	106.1175873	103.6080533	101.1712411	98.80462255	96.5057736
180404A00018	4/4/2018	2.89	4/4/2022	4/4/2018	110.10399	108.4602378	106.8499217	105.2720985	103.7258642	102.210348	100.7247105	99.26814257	97.83986361
170908A00021	9/8/2017	1.96	9/8/2022	9/8/2017	111.13468	109.0072299	106.9315219	104.9059676	102.929042	100.9992773	99.11525994	97.27562855	95.47907134
171110A00006	11/10/2017	2.11	11/10/2020	11/10/2017	100.65758	100.5428381	100.4283683	100.3141716	100.200247	100.0865936	99.97321033	99.86009623	99.7472503
171222A00037	12/22/2017	2.71	12/29/2023	12/22/2017	121.38939	117.604127	113.9581951	110.445569	107.0605274	103.7976362	100.6517318	97.61790567	94.69148919
171228A00024	12/28/2017	2.71	6/28/2024	12/28/2017	124.73484	120.2791883	116.008541	111.9140845	107.9874884	104.2208723	100.6067775	97.138142	93.80827623
180104A00016	1/4/2018	2.56	1/4/2023	1/4/2018	114.45764	111.9288057	109.4693156	107.0767392	104.7487533	102.4831361	100.2777621	98.13059661	96.03969118
180110A00011	1/10/2018	2.38	1/11/2021	1/10/2018	101.73765	101.4455159	101.1550664	100.8662892	100.57917	100.2936944	100.0098483	99.7276176	99.44698855
161031A00028	10/31/2016	1.51	10/30/2020	10/31/2016	100.43107	100.3473952	100.2638563	100.1804567	100.0971958	100.0140736	99.93108953	99.84824338	99.76553479
161118A00026	12/20/2016	3.03	12/21/2026	12/20/2016	143.20513	135.0336647	127.3870625	120.2286731	113.5246088	107.2435189	101.3563856	95.83633751	90.65847908
170327A00077	3/27/2019	2.74	3/27/2024	3/27/2019	123.14066	119.0270237	115.0744771	111.2758173	107.624208	104.1131555	100.7364899	97.48834672	94.36314989
170331A00032	3/31/2017	2.03	3/31/2021	3/31/2017	102.90842	102.3840326	101.8649728	101.3511562	100.8425038	100.3389381	99.84038328	99.34676491	98.85801005
170518A00008	5/18/2018	3.06	5/18/2028	5/18/2018	152.75085	142.2500986	132.5559232	123.6018736	115.3273147	107.6768907	100.6000382	94.05054779	87.98616701
170816A00030	8/16/2017	1.95	8/16/2021	8/16/2017	105.06336	104.1149632	103.1836319	102.2689105	101.3703577	100.4875473	99.62006843	98.76752409	97.929531
160223A00012	2/23/2016	1.89	2/23/2023	2/23/2016	114.16276	111.4659029	108.8467134	106.3025099	103.83072	101.4288756	99.09460756	96.82564146	94.619793
160304A00016	3/4/2016	1.82	3/4/2021	3/4/2016	102.38061	101.9367581	101.4967442	101.0605219	100.6280421	100.199257	99.77411927	99.35258254	98.93460121
160316A00009	3/16/2016	1.95	3/16/2021	3/16/2016	102.62831	102.1486838	101.6735443	101.2028265	100.7364689	100.2744109	99.81659315	99.36295732	98.9134462
160714A00018	9/6/2016	2.28	9/4/2026	9/6/2016	136.22549	128.67505	121.5918101	114.9444413	108.7038743	102.8431225	97.33712281	92.16258902	87.29787721
161005A00007	10/5/2016	1.51	10/5/2020	10/5/2016	100.07164	100.0577267	100.0438258	100.0299384	100.0160645	100.0022041	99.98835709	99.97452357	99.96070345
161005A00008	10/5/2016	1.51	10/5/2020	10/5/2016	100.07164	100.0577267	100.0438258	100.0299384	100.0160645	100.0022041	99.98835709	99.97452357	99.96070345
151013A00012	10/13/2015	1.58	10/13/2020	10/13/2015	100.19432	100.1580596	100.1218404	100.085665	100.0495334	100.0134454	99.97740106	99.94140019	99.90544273
151215A00027	12/15/2015	2.09	12/15/2020	12/15/2015	101.21599	101.0017734	100.7884788	100.5760979	100.3646249	100.1540537	99.94437873	99.73559408	99.52769406

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160211A00036	2/11/2016	2.41	2/11/2026	2/11/2016	133.69601	126.9643113	120.6137116	114.6206804	108.963254	103.6209266	98.57454641	93.80621946	89.29922114
160212A00014	2/12/2016	1.61	2/12/2021	2/12/2016	101.99151	101.606673	101.2247444	100.8456891	100.4694746	100.0960692	99.72544122	99.35755984	98.99239451
160216A00007	2/16/2016	1.68	2/16/2021	2/16/2016	102.07825	101.6816226	101.2880805	100.8975862	100.5101045	100.1256003	99.7440396	99.36538847	98.98961369
160216A00051	2/16/2016	1.49	2/16/2021	2/16/2016	102.05665	101.659469	101.2653799	100.8743505	100.4863452	100.1013289	99.71926714	99.34012579	98.96387139
140625A00021	6/27/2016	3.2	6/25/2021	6/27/2016	105.1757	104.3859189	103.6079881	102.8416447	102.0866312	101.3426976	100.6096011	99.88710616	99.17498391
140930A00104	9/30/2016	3.23	9/30/2021	9/30/2016	107.10935	106.0101944	104.933573	103.8787976	102.8452081	101.8321711	100.839078	99.86534397	98.91040701
141218A00039	12/18/2014	2.29	12/18/2020	12/18/2014	101.3106	101.0877018	100.8657931	100.644871	100.424929	100.2059604	99.98795877	99.77091765	99.55483064
150120A00025	1/20/2015	2.54	1/21/2025	1/20/2015	127.71365	122.4948812	117.5200788	112.7765254	108.2522394	103.9359254	99.81693071	95.88520567	92.13126569
150601A00333	6/1/2015	3.06	8/9/2021	6/1/2015	105.89242	104.9615474	104.0470233	103.148424	102.2653361	101.3973601	100.5441103	99.70521391	98.88031081
150601A00775	6/1/2015	2.28	11/12/2021	6/1/2015	106.83229	105.5986959	104.3934883	103.2156988	102.0643996	100.9387046	99.83776666	98.76077577	97.70695688
190829A00016	8/29/2019	1.82	8/29/2022	8/29/2019	110.69075	108.5992052	106.5578362	104.5651266	102.619618	100.7199058	98.86463632	97.05250526	95.28225503
190829A00028	8/29/2019	1.78	8/29/2024	8/29/2019	121.89838	117.2950089	112.8906135	108.6755595	104.6407293	100.7774925	97.07767716	93.533543	90.13775627
190829A00073	8/29/2019	1.81	3/15/2023	8/29/2019	113.77364	111.028173	108.3633691	105.7763867	103.2645012	100.8251009	98.45568118	96.15383959	93.91727095
190829A00076	8/29/2019	1.81	6/30/2023	8/29/2019	115.43856	112.3324993	109.3264783	106.4165769	103.599061	100.8703721	98.22711727	95.66606017	93.18411208
191002A00045	2/14/2020	1.75	2/14/2023	2/14/2020	113.15754	110.5148309	107.9473165	105.4524351	103.0277267	100.6708295	98.37947505	96.15148425	93.98476313
130501A00021	5/1/2013	2.27	5/1/2023	5/1/2013	115.7712	112.8505033	110.0191333	107.2737937	104.6113295	102.0287238	99.5230905	97.09166804	94.73181263
190829A00075	8/29/2019	1.8	6/15/2023	8/29/2019	115.17374	112.1199046	109.1631555	106.2997485	103.5261095	100.8388293	98.23465489	95.71048045	93.26333978
190829A00078	8/29/2019	1.8	12/15/2023	8/29/2019	117.99621	114.3135895	110.7656452	107.3466095	104.0510003	100.8736072	97.80947627	94.85389523	92.00237983
190830A00020	8/31/2020	1.67	8/31/2023	8/31/2020	115.95122	112.6435222	109.447445	106.358609	103.3728349	100.48613	97.69467943	94.99483643	92.38311441
190904A00037	9/4/2019	1.73	6/15/2022	9/4/2019	109.36212	107.5086504	105.6962005	103.9234767	102.1892395	100.4923016	98.8315247	97.20581744	95.61413261
190917A00033	1/10/2020	2.03	1/10/2023	1/10/2020	113.28476	110.751912	108.2888956	105.893288	103.5627702	101.2951224	99.08821854	96.94002177	94.84857961
190722A00047	11/22/2019	2.03	11/22/2021	11/22/2019	106.7463	105.4814522	104.2464508	103.0402456	101.8618386	100.7102775	99.58465289	98.48409625	97.40777731
190221A00011	2/21/2019	2.81	8/23/2021	2/21/2019	105.97268	104.9980956	104.0414105	103.1021357	102.1797989	101.2739449	100.3841346	99.50994419	98.65096495
190311A00072	3/25/2019	2.79	9/25/2023	3/25/2019	119.91763	116.4650494	113.1312162	109.9113717	106.8009742	103.7956901	100.8913835	98.08410537	95.37008445
190405A00040	4/3/2020	3.12	4/5/2030	4/3/2020	165.52406	151.6584172	139.0855478	127.6774563	117.3194639	107.9087569	99.35310276	91.56971136	84.4842237
190531A00051	6/3/2019	2.27	6/3/2021	6/3/2019	104.10088	103.3820235	102.673065	101.9738042	101.284043	100.6035891	99.93225488	99.26985811	98.61622119
190621A00039	6/21/2019	2.21	6/17/2024	6/21/2019	122.51569	118.1409394	113.9469554	109.925188	106.0675468	102.3663747	98.81442137	95.40481879	92.13105844
190829A00013	8/29/2019	1.78	8/29/2024	8/29/2019	121.89838	117.2950089	112.8906135	108.6755595	104.6407293	100.7774925	97.07767716	93.533543	90.13775627
181016A00019	10/18/2018	3.32	10/16/2023	10/18/2018	122.0333	118.4792252	115.0490285	111.7376586	108.5403055	105.4523841	102.4695223	99.58754956	96.80248633
181029A00051	2/5/2019	3.69	2/5/2029	2/5/2019	163.54254	151.5376657	140.5242363	130.4146986	121.1296671	112.5971247	104.7517034	97.53403989	90.89019526
181210A00066	12/10/2018	3.13	12/11/2023	12/10/2018	122.50738	118.761652	115.1518098	111.6720641	108.3169139	105.0811293	101.9597366	98.94800333	96.04142494
190110A00036	1/10/2019	2.88	10/9/2020	1/10/2019	100.16333	100.1382431	100.113187	100.088158	100.0631562	100.0381813	100.0132335	99.98831262	99.96341866
190122A00017	1/22/2019	2.94	5/2/2022	1/22/2019	110.71339	108.9795433	107.2820494	105.619833	103.9918655	102.3971577	100.8347585	99.303753	97.80326032

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190221A00009	2/21/2019	2.81	2/22/2021	2/21/2019	102.62793	102.2125596	101.8005491	101.3918594	100.9864505	100.5842831	100.1853182	99.78951773	99.39684417
180424A00028	4/24/2018	2.98	4/23/2021	4/24/2018	103.82063	103.2253587	102.6369067	102.0551607	101.4800064	100.9113322	100.3490288	99.79298966	99.2431104
180621A00031	6/21/2018	3.07	6/21/2023	6/21/2018	118.95619	115.828529	112.8004285	109.8680256	107.0276418	104.2757694	101.6090621	99.02432607	96.51851179
180727A00017	7/27/2018	3.16	7/27/2023	7/27/2018	119.92022	116.6639719	113.5139146	110.4659932	107.5163307	104.6612199	101.8971148	99.22062332	96.62849886
180821A00040	8/21/2018	2.99	8/21/2023	8/21/2018	119.8823	116.5463295	113.3214738	110.2034206	107.1880512	104.271429	101.4497908	98.71953763	96.07722726
180910A00039	9/10/2018	3.03	9/9/2022	9/10/2018	113.33722	111.1836309	109.0823893	107.0318925	105.030596	103.0770132	101.1697124	99.30731497	97.48849261
181015A00034	4/15/2019	3.25	4/15/2021	4/15/2019	103.82556	103.2539325	102.6886005	102.1294641	101.5764218	101.0293741	100.4882238	99.95287576	99.42323678
170531A00055	5/31/2017	2.13	5/31/2022	5/31/2017	109.82583	108.0142385	106.241941	104.5077301	102.8104452	101.1489733	99.52224614	97.92923815	96.36896418
170628A00044	10/9/2018	2.12	10/8/2021	10/9/2018	106.09561	104.9770017	103.8818945	102.8095552	101.7592794	100.7303914	99.72224302	98.73421181	97.76570017
170726A00025	7/26/2017	2.14	7/26/2022	7/26/2017	110.79403	108.8036508	106.8590631	104.9589114	103.1018943	101.2867577	99.5122932	97.7773358	96.08076201
180312A00014	3/12/2018	3	3/13/2023	3/12/2018	116.836	114.056976	111.3591602	108.7397038	106.195873	103.7250464	101.3247104	98.9924532	96.72596058
180328A00042	3/28/2018	2.95	3/28/2023	3/28/2018	116.99034	114.1616693	111.4170006	108.7533303	106.1677856	103.6576142	101.2201787	98.85295059	96.55350542
180403A00024	4/3/2018	2.96	4/3/2023	4/3/2018	117.13123	114.2815545	111.5169666	108.8344086	106.2309531	103.7037967	101.2502536	98.8677498	96.55381788
160405A00018	4/5/2016	1.61	4/5/2021	4/5/2016	102.76836	102.2296399	101.696552	101.1690099	100.6469274	100.13022	99.61880509	99.11260156	98.61153008
160711A00016	7/11/2016	1.42	7/12/2021	7/11/2016	104.07853	103.2417821	102.4184406	101.608181	100.8106936	100.025678	99.25284344	98.49190789	97.74259816
160712A00019	7/12/2017	2.32	7/12/2027	7/12/2017	141.41627	132.5375928	124.2773303	116.5891144	109.4302949	102.76162	96.54694741	90.75298268	85.34903999
160729A00017	7/31/2017	2.47	7/31/2029	7/31/2017	154.40642	142.0901131	130.8559022	120.6029466	111.2402808	102.6858065	94.8653871	87.71203985	81.1652129
160801A00007	8/1/2016	1.47	8/2/2021	8/1/2016	104.42083	103.5186278	102.6319359	101.7603579	100.9035101	100.0610219	99.23253495	98.41770261	97.61618971
170519A00019	5/19/2017	2	11/19/2021	5/19/2017	106.66113	105.4063689	104.1809985	102.9839979	101.8143907	100.6712448	99.55367009	98.46081588	97.39186889
160218A00014	2/18/2016	1.57	2/18/2021	2/18/2016	102.11817	101.7150327	101.3150801	100.918276	100.5245834	100.1339655	99.74638644	99.36181071	98.98020342
160222A00005	2/22/2016	2.79	2/22/2028	2/22/2016	148.90901	138.8956455	129.6320313	121.0580224	113.1185926	105.7633756	98.94624846	92.62495385	86.76075793
160303A00020	3/3/2016	2.97	3/3/2031	3/3/2016	172.58438	156.7805587	142.5794861	129.8093397	118.3175653	107.9686269	98.64202974	90.23058125	82.6388615
160307A00029	3/7/2016	3.21	3/7/2031	3/7/2016	172.51635	156.8643775	142.7932163	130.1338576	118.7362021	108.4668591	99.20720821	90.85169593	83.30633515
160331A00088	3/31/2016	1.69	3/30/2021	3/31/2016	102.71942	102.1985377	101.6829148	101.1724755	100.667142	100.1668381	99.67148906	99.18102171	98.69536422
160404A00040	4/4/2016	1.65	4/5/2021	4/4/2016	102.78937	102.2505853	101.7174336	101.1898281	100.6676828	100.150913	99.63943605	99.13317102	98.63203849
160208A00024	2/8/2016	1.64	2/8/2021	2/8/2016	101.94306	101.5699136	101.1995031	100.8317944	100.466758	100.1043649	99.74458639	99.38739413	99.03276031
160209A00019	2/9/2016	2.52	2/9/2026	2/9/2016	134.31787	127.576635	121.2163717	115.2135829	109.5463414	104.1941739	99.13795682	94.35982153	89.84306523
160209A00026	2/9/2016	1.57	2/8/2021	2/9/2016	101.91737	101.5442879	101.1739356	100.8062849	100.4413061	100.0789703	99.7192488	99.36211324	99.00753581
160210A00041	2/10/2016	1.97	2/10/2023	2/10/2016	113.64301	111.0078799	108.4473459	105.9588759	103.5400413	101.1885096	98.90204022	96.67848025	94.51576056
160212A00005	2/12/2016	1.42	2/16/2021	2/12/2016	102.02938	101.6322616	101.2382376	100.8472729	100.459332	100.0743797	99.69238146	99.31330336	98.93711186
160212A00027	2/12/2016	2.53	2/12/2026	2/12/2016	134.43261	127.676367	121.3025	115.2873969	109.6090184	104.2467886	99.18149066	94.3951702	89.87104633
141117A00011	11/17/2014	3.81	11/17/2034	11/17/2014	206.63203	182.6647277	161.8258768	143.6849336	127.8729277	114.0733599	102.0144895	91.46278891	82.21738606
151002A00007	10/2/2015	1.65	10/2/2020	10/2/2015	100.02943	100.0238685	100.0183085	100.0127535	100.0072033	100.0016581	99.99611782	99.99058245	99.98505199

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
151002A00014	10/2/2015	1.65	10/2/2020	10/2/2015	100.02943	100.0238685	100.0183085	100.0127535	100.0072033	100.0016581	99.99611782	99.99058245	99.98505199
151002A00038	10/2/2015	2.81	10/2/2025	10/2/2015	133.679	127.4179506	121.4903389	115.8766171	110.5584864	105.5188108	100.7415374	96.21162214	91.91496104
151211A00037	12/11/2017	2.69	1/11/2023	12/11/2017	114.89462	112.3391783	109.8541295	107.4370363	105.0855665	102.7974867	100.5706577	98.40302974	96.29263742
160205A00004	2/5/2016	1.7	2/5/2021	2/5/2016	101.91973	101.5553194	101.1935158	100.8342875	100.4776068	100.1234469	99.77178092	99.42258272	99.07582633
190322A00024	3/22/2019	2.55	3/22/2021	3/22/2019	103.01531	102.5170101	102.0235333	101.5348077	101.050765	100.5713378	100.0964604	99.62606803	99.16009738
190327A00027	3/27/2019	2.66	1/15/2025	3/27/2019	128.11886	122.9126941	117.9490418	113.2152681	108.6994683	104.390422	100.2775496	96.35087219	92.60097341
190514A00006	5/14/2019	2.43	5/17/2021	5/14/2019	103.9178	103.2505804	102.5919232	101.9416625	101.2996383	100.6656947	100.0396796	99.42144477	98.81084575
190515A00030	5/15/2019	2.49	5/15/2024	5/15/2019	123.06188	118.7866795	114.6842625	110.7466403	106.9662464	103.3359088	99.84882667	96.49854868	93.27895273
190621A00037	6/21/2019	2.21	5/15/2024	6/21/2019	121.9626	117.7082952	113.6261465	109.7081898	105.9468819	102.3350723	98.86598137	95.53317754	92.33055783
140811A00047	8/11/2016	3.13	8/11/2021	8/11/2016	106.03287	105.0951266	104.1739603	103.2689366	102.3796336	101.5056439	100.6465741	99.80204424	98.97168713
181119A00020	11/19/2018	3.06	11/19/2020	11/19/2018	100.93444	100.7940944	100.6541566	100.5146199	100.3754826	100.2367429	100.0983991	99.96044953	99.82289243
181220A00079	12/20/2018	3.23	6/20/2025	12/20/2018	134.00139	128.1008936	122.4982467	117.1766982	112.1205392	107.3150324	102.7463454	98.40149011	94.26826538
190206A00010	2/12/2019	2.84	2/11/2022	2/12/2019	109.05056	107.5761876	106.1291683	104.7088047	103.3144215	101.9453654	100.6010049	99.2807285	97.98394472
190221A00012	2/21/2019	2.83	8/23/2022	2/21/2019	112.60987	110.5169155	108.4737024	106.4787436	104.5306041	102.6279016	100.7693037	98.9535258	97.17932933
190311A00073	3/14/2019	2.81	3/14/2024	3/14/2019	123.16339	119.0925951	115.1796105	111.4174551	107.7994964	104.3194308	100.9712656	97.74930147	94.64811663
190318A00017	3/19/2019	2.7	3/18/2022	3/19/2019	109.49777	107.9101464	106.3539554	104.828339	103.3324712	101.8655553	100.4268224	99.01553043	97.63096277
180613A00046	6/13/2018	3	1/13/2022	6/13/2018	108.83298	107.4150434	106.0290581	104.6739459	103.3486749	102.0522592	100.7837569	99.54226675	98.32692688
180613A00047	6/13/2018	3.17	1/12/2024	6/13/2018	123.26923	119.4065756	115.6870065	112.1043641	108.6527947	105.3267332	102.1208867	99.03021924	96.04993785
180621A00068	6/21/2018	3.32	6/23/2025	6/21/2018	134.53187	128.6074136	122.9823268	117.6397477	112.5638674	107.7398566	103.1537983	98.79262568	94.64406543
180709A00081	7/9/2018	3.05	7/7/2023	7/9/2018	119.20724	116.0244454	112.944204	109.9625274	107.0756156	104.2798445	101.5717553	98.94804615	96.40556339
180925A00033	9/25/2018	3.26	9/25/2023	9/25/2018	121.42128	117.9450246	114.5881365	111.3458313	108.2135471	105.1869309	102.2618281	99.43427189	96.70047385
181031A00070	3/1/2019	3.77	3/1/2029	3/1/2019	164.83219	152.6637322	141.5072716	131.2727778	121.8786874	113.2510646	105.3228508	98.03319267	91.3268382
170918A00051	12/18/2017	2.24	12/19/2022	12/18/2017	113.4248	110.9573105	108.5565422	106.2201734	103.945983	101.7318466	99.57573162	97.47569242	95.42986554
171219A00022	12/19/2017	2.26	12/18/2020	12/19/2017	101.30398	101.0810912	100.8591928	100.638281	100.4183492	100.1993908	99.98139937	99.76436837	99.54829146
171219A00024	12/19/2017	2.26	12/18/2020	12/19/2017	101.30398	101.0810912	100.8591928	100.638281	100.4183492	100.1993908	99.98139937	99.76436837	99.54829146
180118A00008	1/18/2018	2.44	1/19/2021	1/18/2018	101.8925	101.5770956	101.2636543	100.9521566	100.6425844	100.3349198	100.029145	99.72524276	99.42319572
180518A00046	5/25/2018	3.62	5/18/2027	5/25/2018	150.35765	141.3765732	133.0025723	125.1911796	117.9014244	111.0955366	104.7386799	98.79870814	93.24594391
180612A00031	6/12/2018	3.04	6/13/2022	6/12/2018	111.66538	109.7968095	107.9694217	106.1819207	104.4330669	102.7216721	101.0465975	99.40675077	97.80108372
160830A00068	11/30/2016	1.95	11/30/2023	11/30/2016	118.27779	114.6383788	111.1305404	107.7487084	104.4875897	101.3421497	98.30759786	95.37937422	92.55313628
161221A00053	12/23/2016	3.05	12/23/2021	12/23/2016	108.56626	107.1897938	105.8481922	104.5401403	103.2643908	102.0197575	100.8051116	99.61937853	98.46153434
170327A00078	3/27/2019	3.04	3/27/2026	3/27/2019	138.31228	131.284953	124.6623832	118.4190764	112.5312792	106.9768484	101.7351341	96.78687086	92.11407809
170331A00031	3/31/2017	2.03	3/31/2021	3/31/2017	102.90842	102.3840326	101.8649728	101.3511562	100.8425038	100.3389381	99.84038328	99.34676491	98.85801005
170614A00019	6/14/2017	2.48	6/13/2025	6/14/2017	129.96875	124.1925966	118.7082406	113.499294	108.5503885	103.8471034	99.37590129	95.12406868	91.07966053

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
170622A00045	6/22/2017	2.76	6/22/2027	6/22/2017	144.47554	135.5641838	127.2670593	119.5384344	112.3362254	105.6216887	99.35913726	93.51568304	88.06100269
160309A00008	3/9/2016	1.83	3/3/2021	3/9/2016	102.36937	101.9284706	101.4913565	101.0579826	100.6283011	100.2022649	99.77982781	99.36094441	98.94557
160406A00009	4/6/2016	1.62	4/6/2021	4/6/2016	102.78856	102.2468279	101.7107903	101.1803604	100.6554508	100.1359755	99.62185031	99.11299299	98.6093228
160520A00018	9/20/2017	2.34	9/20/2024	9/20/2017	124.66851	119.9318938	115.4025306	111.0702378	106.9253916	102.9588907	99.16212485	95.52694547	92.04563856
160527A00021	5/27/2016	1.68	5/27/2021	5/27/2016	103.58578	102.8899103	102.2033589	101.5259384	100.8574676	100.1977701	99.5466742	98.90401245	98.26962186
160601A00021	6/1/2016	1.71	6/1/2021	6/1/2016	103.68221	102.9710081	102.2695198	101.5775501	100.8949064	100.2214014	99.55685268	98.90108257	98.25391819
160714A00024	9/20/2016	2.5	9/20/2028	9/20/2016	149.80056	138.9292197	128.9304638	119.7295815	111.2586284	103.4557789	96.26474546	89.63425684	83.51758721
160212A00002	2/12/2016	1.58	11/17/2020	2/12/2016	100.69887	100.564429	100.4303562	100.2966546	100.1633224	100.0303582	99.89776042	99.7655275	99.63365792
160212A00017	2/12/2016	1.57	2/12/2021	2/12/2016	101.97638	101.5915803	101.2096869	100.8306665	100.4544869	100.0811161	99.71052257	99.34267543	98.97754415
160222A00019	2/22/2016	3.09	2/21/2031	2/22/2016	170.76954	155.274412	141.3409598	128.8026815	117.5116457	107.3363384	98.15976507	89.87778103	82.39762075
160225A00024	2/25/2016	2.22	2/26/2024	2/25/2016	120.6759	116.706756	112.8898724	109.2185946	105.6865977	102.2878659	99.01667625	95.8675821	92.83539864
160229A00028	2/29/2016	1.74	3/1/2021	2/29/2016	102.29985	101.8649707	101.4337749	101.0062166	100.5822498	100.1618296	99.74491166	99.33145244	98.92140908
160302A00013	3/2/2016	1.63	3/2/2021	3/2/2016	102.32616	101.8876006	101.4527948	101.0216919	100.5942446	100.1704067	99.75013267	99.33337759	98.92009745
151002A00091	10/2/2015	1.65	10/2/2020	10/2/2015	100.02943	100.0238685	100.0183085	100.0127535	100.0072033	100.0016581	99.99611782	99.99058245	99.98505199
151008A00025	10/8/2015	2.91	10/8/2025	10/8/2015	134.34511	128.0456965	122.0824405	116.435583	111.0866362	106.0182904	101.214333	96.65957259	92.33976985
160203A00012	2/3/2016	1.54	2/3/2021	2/3/2016	101.88008	101.5210065	101.1644599	100.8104148	100.458845	100.1097247	99.76302823	99.41873043	99.07680644
160209A00007	2/9/2016	1.53	2/9/2021	2/9/2016	101.91733	101.5413545	101.1681512	100.7976919	100.4299464	100.0648849	99.70247796	99.34269673	98.98551268
160210A00021	2/10/2016	1.97	2/10/2023	2/10/2016	113.64301	111.0078799	108.4473459	105.9588759	103.5400413	101.1885096	98.90204022	96.67848025	94.51576056
160211A00093	2/16/2016	2.62	2/16/2021	2/16/2016	102.44437	102.046865	101.6524503	101.2610885	100.8727442	100.4873824	100.1049689	99.72546976	99.34885178
150601A00188	6/1/2015	2.06	8/24/2021	6/1/2015	105.2679	104.2938026	103.3376695	102.3990085	101.477344	100.5722176	99.68318721	98.8098263	97.95172339
150601A00625	6/1/2015	3.96	12/9/2044	6/1/2015	281.09016	230.4166232	190.1325505	158.0022752	132.285612	111.6255558	94.9619226	81.46483815	70.48343023
150601A00672	6/1/2015	1.96	1/28/2022	6/1/2015	107.54303	106.1189881	104.7218371	103.3508622	102.0053702	100.6846921	99.38818232	98.11521736	96.86519505
150731A00016	7/31/2015	3.04	7/31/2025	7/31/2015	133.73573	127.7001565	121.9751955	116.5432445	111.3877905	106.4933335	101.84532	97.43008008	93.23476954
150824A00031	8/24/2015	1.93	2/25/2021	8/24/2015	102.31763	101.8943232	101.4745103	101.0581485	100.6451953	100.235609	99.82934868	99.42637395	99.0266451
151002A00011	10/2/2015	1.65	10/2/2020	10/2/2015	100.02943	100.0238685	100.0183085	100.0127535	100.0072033	100.0016581	99.99611782	99.99058245	99.98505199
130211A00026	2/11/2013	2.27	2/15/2023	2/11/2013	114.48474	111.8218323	109.2346787	106.7206975	104.2774085	101.9024308	99.59347753	97.34835219	95.1649441
111213A00004	12/13/2011	2.96	12/13/2021	12/13/2011	108.25732	106.9152452	105.6063991	104.3295615	103.0835683	101.8673111	100.6797343	99.51983167	98.38664352
120531A00008	5/31/2012	2.27	5/31/2022	5/31/2012	110.06993	108.2561334	106.4816712	104.7453359	103.045966	101.3824471	99.75371008	98.15872823	96.59651543
130211A00016	2/11/2013	2.27	2/15/2023	2/11/2013	114.48474	111.8218323	109.2346787	106.7206975	104.2774085	101.9024308	99.59347753	97.34835219	95.1649441
140314A00003	3/14/2014	3.32	3/14/2024	3/14/2014	125.06628	120.9609723	117.0144724	113.2197623	109.5701742	106.0593705	102.681326	99.43031034	96.30087221
150115A00021	1/17/2017	2.26	1/18/2022	1/17/2017	107.88399	106.4678555	105.0819194	103.7252202	102.3968402	101.0959005	99.82155867	98.57300727	97.34947166
190829A00072	8/29/2019	1.81	12/15/2022	8/29/2019	112.35457	109.9119452	107.5351702	105.2219624	102.9701384	100.7776096	98.64237709	96.56252694	94.53622575
190829A00080	8/29/2019	1.8	12/29/2023	8/29/2019	118.21008	114.4790912	110.8859325	107.4246348	104.0895284	100.8752287	97.77661943	94.78883706	91.9072564

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190904A00034	9/4/2019	1.74	6/1/2022	9/4/2019	109.16144	107.3527831	105.5834287	103.852164	102.1578265	100.4993009	98.87551738	97.28544861	95.72810795
200131A00029	1/31/2020	1.78	10/31/2024	1/31/2020	122.86883	118.0334323	113.4151962	109.0031793	104.7870522	100.7570617	96.90399565	93.21914949	89.6942954
110609A00010	6/9/2011	3.83	6/9/2021	6/9/2011	105.31008	104.5682904	103.8369581	103.1158657	102.4047988	101.7035491	101.0119142	100.329697	99.65670581
111024A00013	10/24/2011	3.24	10/25/2021	10/24/2011	107.62105	106.4398326	105.2845342	104.1543044	103.0483335	101.9658462	100.9060999	99.86838313	98.85201376
190520A00048	5/20/2019	2.53	5/20/2024	5/20/2019	123.30668	119.010453	114.8883543	110.932311	107.1346748	103.4881974	99.9860074	96.62158747	93.38875425
190530A00040	5/30/2019	2.32	11/30/2021	5/30/2019	107.23032	105.9368863	104.6745265	103.4421355	102.2386564	101.0630813	99.91444848	98.79184021	97.69437988
190530A00048	5/30/2019	2.41	5/31/2022	5/30/2019	110.31404	108.4980283	106.7214014	104.9829418	103.2814868	101.615921	99.98517402	98.38821831	96.82406668
190604A00019	6/4/2019	2.27	6/4/2024	6/4/2019	122.53454	118.2035533	114.0499583	110.0654415	106.2421334	102.5725811	99.04972353	95.6668681	92.41766889
190722A00054	12/19/2019	2.02	12/20/2021	12/19/2019	107.19996	105.8425014	104.5192661	103.2289687	101.9703913	100.7423754	99.54381817	98.3736694	97.23092825
190722A00056	12/19/2019	2.02	12/20/2021	12/19/2019	107.19996	105.8425014	104.5192661	103.2289687	101.9703913	100.7423754	99.54381817	98.3736694	97.23092825
181003A00023	10/3/2018	3.17	4/4/2022	10/3/2018	110.54524	108.897853	107.2839599	105.7026243	104.1529407	102.6340364	101.1450704	99.6852317	98.25373829
181220A00041	12/20/2018	3.36	12/18/2026	12/20/2018	145.46934	137.2357187	129.5290347	122.3125874	115.5524337	109.2171662	103.2777098	97.70713546	92.48049026
190206A00009	2/12/2019	2.84	2/11/2022	2/12/2019	109.05056	107.5761876	106.1291683	104.7088047	103.3144215	101.9453654	100.6010049	99.2807285	97.98394472
190311A00076	3/14/2019	2.88	9/16/2024	3/14/2019	126.93072	122.1611169	117.599086	113.2344718	109.0576734	105.0596086	101.2316838	97.56576439	94.05414808
190325A00022	3/25/2019	2.55	11/25/2022	3/25/2019	113.72759	111.3305308	108.9967078	106.7239779	104.5102931	102.3536919	100.2522944	98.20429836	96.20797527
190501A00024	5/1/2019	2.62	5/1/2024	5/1/2019	123.32267	119.0883741	115.0236483	111.1207272	107.3722514	103.7712411	100.3110734	96.98546271	93.78844047
180130A00063	1/30/2018	2.63	1/31/2022	1/30/2018	108.54495	107.110388	105.701881	104.3187741	102.9604378	101.626263	100.3156599	99.02805733	97.76290226
180316A00031	3/16/2018	2.96	12/16/2022	3/16/2018	115.05713	112.5795794	110.1687137	107.82222	105.5378876	103.3136015	101.1473377	99.03715828	96.98120698
180518A00025	5/18/2018	2.96	5/18/2021	5/18/2018	104.27821	103.6066707	102.9437848	102.2893813	101.6432979	101.0053764	100.3754627	99.75340648	99.13906123
180625A00012	6/25/2018	3.07	6/23/2023	6/25/2018	118.99536	115.8605808	112.8257588	109.88701	107.0406343	104.283104	101.6110538	99.02127233	96.51069366
180821A00039	8/21/2018	2.99	7/21/2023	8/21/2018	119.2944	116.0663364	112.943207	109.920987	106.9958281	104.1640533	101.4221479	98.76675169	96.19465081
180911A00007	9/11/2018	3.12	9/8/2023	9/11/2018	120.63666	117.2299429	113.9384611	110.7576704	107.6832329	104.7110059	101.8370325	99.05753148	96.36888892
160711A00022	1/10/2018	1.91	1/10/2025	1/10/2018	124.5128	119.4041063	114.5338037	109.8894416	105.4592951	101.2323166	97.19809207	93.34680127	89.66917985
161017A00007	10/17/2016	1.99	10/18/2023	10/17/2016	117.72351	114.2322669	110.8634631	107.6120925	104.4733836	101.4427888	98.51597244	95.68879918	92.95732376
170327A00079	3/27/2019	3.19	3/29/2027	3/27/2019	146.18409	137.5371206	129.4663068	121.9301105	114.8902038	108.3112013	102.16042	96.40765914	91.02499957
170404A00003	4/4/2017	2.74	4/4/2025	4/4/2017	129.97301	124.442466	119.1813084	114.1749576	109.409705	104.8726536	100.5516653	96.43531195	92.51283021
171110A00007	11/10/2017	2.38	11/10/2022	11/10/2017	113.07977	110.737188	108.4555194	106.232744	104.066922	101.9561937	99.89877504	97.89295422	95.93708794
180105A00021	1/5/2018	2.33	1/5/2021	1/5/2018	101.62198	101.3472667	101.0740429	100.802295	100.5320111	100.2631794	99.99578802	99.72982554	99.46528046
160301A00006	3/1/2016	1.69	3/1/2021	3/1/2016	102.27854	101.8437172	101.4125755	100.9850709	100.5611576	100.1407905	99.72392539	99.31051864	98.90052744
160309A00014	3/9/2016	1.84	3/9/2021	3/9/2016	102.46739	102.0086907	101.5540934	101.1035471	100.6569976	100.2143917	99.77567743	99.34080342	98.90971933
160315A00003	3/15/2016	1.88	3/15/2021	3/15/2016	102.57977	102.103203	101.63107	101.1633049	100.699847	100.240637	99.7856165	99.33472823	98.88791597
160520A00017	9/20/2017	2.34	9/20/2024	9/20/2017	124.66851	119.9318938	115.4025306	111.0702378	106.9253916	102.9588907	99.16212485	95.52694547	92.04563856
160627A00068	6/27/2016	1.4	6/28/2021	6/27/2016	103.85849	103.0652202	102.2840084	101.5145833	100.7566799	100.0100411	99.27441739	98.54956665	97.83525371

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160711A00020	8/24/2017	1.59	8/24/2022	8/24/2017	110.15396	108.0830365	106.0614943	104.0878536	102.1606882	100.2786237	98.44033536	96.64454635	94.8900253
160208A00004	2/8/2016	1.46	2/8/2021	2/8/2016	101.9261	101.5524284	101.1814985	100.8132812	100.4477469	100.0848662	99.7246102	99.36695042	99.0118588
160210A00036	2/10/2016	1.77	2/10/2023	2/10/2016	113.63323	110.9879936	108.4178357	105.9202057	103.4926529	101.132824	98.83845883	96.60738584	94.4375183
160210A00042	2/10/2016	2.57	2/10/2026	2/10/2016	134.63527	127.8812273	121.5089462	115.4948746	109.8170331	104.4548995	99.389306	94.60234248	90.07726814
160210A00053	2/10/2016	1.99	2/10/2023	2/10/2016	113.69312	111.0573611	108.4962112	106.0071389	103.5877152	101.2356072	98.94857383	96.72446194	94.561202
160211A00089	2/16/2016	3.91	2/16/2024	2/16/2016	126.6643	122.6236558	118.7357558	114.9939967	111.3920997	107.9240903	104.5842813	101.367258	98.26786323
160216A00040	2/16/2016	1.49	2/16/2021	2/16/2016	102.05665	101.659469	101.2653799	100.8743505	100.4863452	100.1013289	99.71926714	99.34012579	98.96387139
150812A00040	8/12/2015	2.94	8/12/2025	8/12/2015	133.4274	127.357184	121.6014714	116.1423282	110.9629324	106.0475015	101.3812223	96.9501871	92.74133359
151030A00001	10/30/2015	1.9	10/30/2020	10/30/2015	100.46367	100.3799671	100.2964011	100.2129744	100.1296866	100.0465373	99.96352632	99.88065327	99.79791784
151211A00040	12/11/2017	2.7	2/13/2023	12/11/2017	115.53001	112.8607925	110.2672581	107.7468291	105.2970341	102.9155006	100.5999495	98.34819142	96.1581225
151211A00041	12/11/2017	2.71	3/13/2023	12/11/2017	116.08216	113.3129392	110.6247024	108.0146088	105.4799312	103.0180549	100.6264722	98.30277758	96.04466247
151214A00051	12/14/2015	2.92	12/15/2025	12/14/2015	135.67104	129.0934604	122.8777937	117.0020933	111.4458684	106.1899803	101.2165444	96.50884093	92.05123237
160201A00024	2/1/2016	2.16	2/1/2023	2/1/2016	113.96002	111.3517904	108.8165955	106.3519819	103.9555966	101.625179	99.35855606	97.15363922	95.00842001
120614A00005	6/14/2012	2.22	6/15/2022	6/14/2012	110.58476	108.7138207	106.8843578	105.095059	103.3446688	101.6319847	99.95585406	98.31517188	96.70887793
140605A00058	6/6/2016	3.29	6/7/2021	6/6/2016	104.88698	104.152939	103.4291665	102.7154512	102.0115843	101.3173629	100.6325895	99.95707201	99.29062356
140923A00070	9/23/2014	2.88	9/23/2022	9/23/2014	113.29769	111.0998622	108.956516	106.8659488	104.8265219	102.8366592	100.8948446	98.99961905	97.14957784
141215A00062	12/15/2014	2.65	12/16/2024	12/15/2014	128.54824	123.4046869	118.4976076	113.8147566	109.3445963	105.076254	100.9994796	97.10460552	93.38250985
150601A00334	6/1/2015	3.33	8/9/2022	6/1/2015	113.25548	111.1983962	109.1893004	107.2267842	105.3094879	103.4361005	101.6053573	99.81603824	98.06696608
150601A00998	6/1/2015	5.37	10/25/2034	6/1/2015	232.13906	206.4225389	183.9878799	164.3899829	147.2467124	132.2296739	119.0563852	107.4836236	97.30176904
190904A00040	9/4/2019	1.73	6/22/2022	9/4/2019	109.47127	107.5952768	105.7611764	103.9676346	102.2133726	100.4971662	98.81784221	97.17427658	95.56539113
190904A00043	9/4/2019	1.72	12/15/2022	9/4/2019	112.14454	109.7043904	107.3300366	105.0191985	102.7696944	100.5794371	98.44642912	96.36875796	94.34459151
191002A00042	1/13/2020	1.76	1/13/2023	1/13/2020	112.67903	110.1444879	107.6800117	105.2831864	102.9516953	100.6833196	98.4759332	96.32749804	94.23605974
061013A00024	10/13/2006	5.53	10/15/2021	10/13/2006	109.88852	108.7257119	107.5876677	106.4735994	105.3827533	104.3144068	103.2678672	102.24247	101.2375775
110706A00010	7/6/2011	3.93	7/6/2021	7/6/2011	105.96676	105.1400002	104.326151	103.5249138	102.735997	101.9591175	101.1940011	100.4403819	99.69800181
120419A00009	4/19/2012	2.76	4/19/2022	4/19/2012	110.1756	108.4857267	106.8307837	105.2097677	103.62171	102.0656784	100.5407755	99.04613708	97.58093058
190607A00040	6/7/2019	2.12	6/7/2022	6/7/2019	109.92551	108.0914594	106.2975634	104.5425682	102.8252752	101.1445353	99.49924664	97.88835167	96.31083519
190621A00034	6/21/2019	2.17	6/15/2023	6/21/2019	116.24149	113.1723597	110.2006954	107.3227327	104.5348855	101.8337337	99.21601307	96.67860768	94.21854136
190805A00031	8/5/2020	1.77	8/4/2023	8/5/2020	115.85163	112.63097	109.5164512	106.5040152	103.589777	100.7700209	98.04119227	95.39988939	92.84285621
190807A00043	8/7/2019	1.8	8/7/2023	8/7/2019	115.98881	112.7565778	109.6311453	106.6084091	103.6844505	100.8555223	98.11803991	95.46857347	92.90384045
190826A00046	8/26/2019	1.77	8/26/2024	8/26/2019	121.81	117.218381	112.8248595	108.6198619	104.5943272	100.7396775	97.04778981	93.51096914	90.12192407
190904A00036	9/4/2019	1.74	6/8/2022	9/4/2019	109.27069	107.4395606	105.6485858	103.896516	102.1821507	100.5043386	98.86197585	97.25400339	95.6794044
190328A00077	3/28/2019	2.46	9/28/2021	3/28/2019	106.27736	105.1891303	104.1231173	103.0786472	102.0550722	101.0517703	100.0681436	99.10361774	98.15764058
190329A00012	3/29/2019	2.61	3/29/2024	3/29/2019	122.68618	118.5742361	114.6236415	110.827174	107.1779743	103.6695277	100.2956445	97.05044198	93.92832757

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190501A00014	5/1/2019	2.62	5/1/2024	5/1/2019	123.32267	119.0883741	115.0236483	111.1207272	107.3722514	103.7712411	100.3110734	96.98546271	93.78844047
190529A00078	5/29/2019	2.39	11/30/2020	5/29/2019	101.02612	100.8547238	100.6839079	100.5136661	100.3439956	100.1748935	100.006357	99.83838332	99.67096972
190530A00049	5/30/2019	2.44	5/30/2023	5/30/2019	116.73871	113.7142857	110.7844947	107.9457462	105.1946119	102.5278189	99.94224072	97.43489002	95.00291111
190530A00066	5/30/2019	2.44	5/30/2023	5/30/2019	116.73871	113.7142857	110.7844947	107.9457462	105.1946119	102.5278189	99.94224072	97.43489002	95.00291111
180912A00017	9/12/2018	3.13	9/12/2023	9/12/2018	120.74745	117.325557	114.0198311	110.8256775	107.738707	104.7547292	101.8697417	99.07992112	96.38161364
181001A00031	10/1/2018	3.23	9/29/2023	10/1/2018	121.40592	117.9164132	114.5471727	111.2933609	108.1503648	105.1137838	102.1794185	99.34326004	96.60148067
181113A00073	11/13/2018	3.17	11/13/2020	11/13/2018	100.83577	100.7124024	100.5893544	100.4666209	100.3442008	100.2220928	100.1002957	99.97880828	99.85762932
181220A00076	12/20/2018	3.02	1/20/2023	12/20/2018	115.8623	113.2675443	110.7446524	108.2911772	105.9047705	103.58318	101.3242451	99.1258923	96.98613116
190122A00018	1/22/2019	2.98	12/1/2022	1/22/2019	114.82025	112.391758	110.0276396	107.7257071	105.4838622	103.3000958	101.1724833	99.09918023	97.07841819
190123A00059	1/23/2019	2.95	1/24/2022	1/23/2019	108.89746	107.4676771	106.0662693	104.6924162	103.3453298	102.0242526	100.7284556	99.45723744	98.20992256
180110A00012	1/10/2018	2.38	1/11/2021	1/10/2018	101.73765	101.4455159	101.1550664	100.8662892	100.57917	100.2936944	100.0098483	99.7276176	99.44698855
180201A00022	2/1/2018	2.99	2/3/2025	2/1/2018	130.03555	124.7208024	119.6555004	114.8266375	110.221954	105.8298884	101.6395338	97.64059786	93.82336471
180417A00028	4/17/2018	2.88	4/16/2021	4/17/2018	103.63926	103.0652603	102.4976223	101.9362388	101.3810066	100.8318248	100.2885948	99.75122006	99.21960611
180515A00022	5/15/2018	3.19	5/15/2023	5/15/2018	118.57316	115.5700704	112.6596174	109.8383409	107.1029316	104.4502274	101.8772054	99.38097513	96.95877119
180713A00024	7/13/2018	2.96	7/13/2021	7/13/2018	105.33651	104.491084	103.6592208	102.8405962	102.0348956	101.2418143	100.4610574	99.69233897	98.93538179
180726A00046	7/26/2018	3.2	12/26/2023	7/26/2018	123.04243	119.2387373	115.5744881	112.0436718	108.6405803	105.3597914	102.1961516	99.14476103	96.2009589
170622A00044	6/22/2017	2.38	6/21/2024	6/22/2017	123.27084	118.8677619	114.6469531	110.5997698	106.718036	102.9940148	99.42038182	95.99019977	92.69689563
170703A00022	7/3/2017	2.86	7/3/2026	7/3/2017	138.97867	131.5722431	124.6108272	118.0651998	111.908224	106.1146848	100.6611415	95.52579269	90.68835287
170822A00023	8/23/2017	3.95	8/23/2028	8/23/2017	162.61408	151.3281779	140.9279835	131.3388985	122.4929813	114.3283245	106.7884899	99.82199897	93.38187371
171016A00016	10/16/2017	2.23	10/17/2022	10/16/2017	112.3439	110.0829207	107.879456	105.7316526	103.6377286	101.5959729	99.6047416	97.66245509	95.76759481
171219A00031	12/19/2017	2.42	12/20/2021	12/19/2017	107.70766	106.3467403	105.0201037	103.7264638	102.4646008	101.2333548	100.0316212	98.85834853	97.71253434
171228A00023	12/28/2017	2.69	3/29/2024	12/28/2017	122.98844	118.870945	114.9149671	111.113272	107.4589946	103.9456147	100.5669372	97.31707459	94.19042922
160524A00015	11/25/2016	2.71	11/25/2026	11/25/2016	140.51113	132.522771	125.0436062	118.0384043	111.4745559	105.3218685	99.55237413	94.14015331	89.06117443
161123A00037	11/23/2016	2.16	11/23/2021	11/23/2016	106.91769	105.6485692	104.4094532	103.1992905	102.0170756	100.8618489	99.73269439	98.62873705	97.54914066
170327A00080	3/27/2019	3.43	3/27/2029	3/27/2019	161.98331	149.8331185	138.704565	128.505883	119.154015	110.5737413	102.6969032	95.46170609	88.81209469
170404A00002	4/4/2017	2.42	4/4/2023	4/4/2017	115.71062	112.8766497	110.1274914	107.4600952	104.8715388	102.3590235	99.91986838	97.55150438	95.25146881
170405A00031	4/5/2017	2.22	4/4/2022	4/5/2017	109.04812	107.413087	105.8113305	104.2419116	102.703931	101.196522	99.71884941	98.27010787	96.84952061
170609A00052	6/11/2018	2.9	6/9/2027	6/11/2018	145.316	136.4255402	128.1442435	120.4269996	113.232281	106.5218375	100.2604205	94.41553084	88.95719037
160211A00056	2/11/2016	1.82	2/10/2023	2/11/2016	113.26717	110.6367706	108.0808559	105.5969033	103.1824872	100.835278	98.55303815	96.33361756	94.17494976
160211A00086	2/16/2016	2.8	2/16/2022	2/16/2016	109.10545	107.6140084	106.1505076	104.7142268	103.3044695	101.9205625	100.5618548	99.2277169	97.91753959
160212A00037	2/12/2016	3.03	2/12/2031	2/12/2016	169.8594	154.4550284	140.6006393	128.1312943	116.9004192	106.7776727	97.64707411	89.40535501	81.96050804
160304A00015	3/4/2016	1.82	3/4/2021	3/4/2016	102.38061	101.9367581	101.4967442	101.0605219	100.6280421	100.199257	99.77411927	99.35258254	98.93460121
160323A00030	3/23/2016	2.22	3/22/2023	3/23/2016	114.95906	112.1761132	109.4754518	106.8541546	104.3094226	101.8385738	99.43903716	97.1083472	94.84413916

Classification | Public

	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160406A00012	4/6/2016	1.62	4/6/2021	4/6/2016	102.78856	102.2468279	101.7107903	101.1803604	100.6554508	100.1359755	99.62185031	99.11299299	98.6093228
151027A00021	10/27/2015	2.02	10/27/2021	10/27/2015	106.30397	105.1243527	103.9707989	102.8424542	101.7384994	100.6581505	99.60065673	98.56529892	97.55138773
151215A00010	12/15/2015	2.16	12/15/2020	12/15/2015	101.23085	101.0166107	100.8032935	100.5908901	100.3793946	100.1688012	99.9591039	99.75029707	99.54237495
160210A00050	2/10/2016	1.64	2/10/2021	2/10/2016	101.97295	101.593952	101.2177699	100.8443751	100.4737367	100.1058242	99.74060744	99.37805693	99.01814345
160210A00052	2/10/2016	1.64	2/10/2021	2/10/2016	101.97295	101.593952	101.2177699	100.8443751	100.4737367	100.1058242	99.74060744	99.37805693	99.01814345
160211A00005	2/11/2016	1.3	2/11/2021	2/11/2016	101.91059	101.5282518	101.1487895	100.7721679	100.3983553	100.02732	99.65903116	99.29345826	98.93057122
160211A00034	2/11/2016	1.82	2/10/2023	2/11/2016	113.26717	110.6367706	108.0808559	105.5969033	103.1824872	100.835278	98.55303815	96.33361756	94.17494976
150601A00713	6/1/2015	2.2	4/1/2022	6/1/2015	108.9175	107.2925906	105.7006445	104.1407379	102.6119846	101.1135304	99.64455196	98.20425513	96.79187377
150630A00091	6/30/2015	2.31	6/30/2021	6/30/2015	104.58817	103.7857407	102.9955822	102.2174159	101.4509705	100.6959828	99.95219752	99.21936696	98.49725059
150630A00097	6/30/2015	3.05	7/1/2024	6/30/2015	126.1753	121.6811942	117.3737311	113.2440166	109.2836432	105.4846574	101.8395319	98.34113917	94.9827279
150909A00003	9/9/2015	3.11	9/9/2025	9/9/2015	134.88945	128.6813215	122.7992175	117.2242753	111.9388253	106.9263056	102.1711873	97.65890439	93.37578902
151013A00007	10/13/2015	1.75	10/13/2020	10/13/2015	100.19538	100.1591636	100.122993	100.0868656	100.0507814	100.0147402	99.97874204	99.94278679	99.90687438
151027A00020	10/27/2015	1.75	10/27/2020	10/27/2015	100.40598	100.3306735	100.255487	100.1804195	100.1054707	100.0306405	99.95592851	99.88133446	99.80685811
191002A00046	2/14/2020	1.75	2/14/2023	2/14/2020	113.15754	110.5148309	107.9473165	105.4524351	103.0277267	100.6708295	98.37947505	96.15148425	93.98476313
110706A00009	7/6/2011	3.93	7/6/2021	7/6/2011	105.96676	105.1400002	104.326151	103.5249138	102.735997	101.9591175	101.1940011	100.4403819	99.69800181
110805A00021	8/5/2011	3.36	8/5/2021	8/5/2011	106.11588	105.1963097	104.2926698	103.4045505	102.5315543	101.673297	100.8294075	99.9995269	99.18330835
150211A00005	2/11/2015	2.35	2/15/2022	2/11/2015	108.44017	106.9570694	105.5017046	104.0733613	102.6713497	101.2950028	99.94367602	98.61674542	97.31360752
150601A00656	6/1/2015	2.59	12/17/2021	6/1/2015	107.82195	106.4699013	105.1516735	103.8660046	102.6116993	101.3876201	100.1926839	99.025859	97.88616169
150601A00677	6/1/2015	2.39	1/30/2025	6/1/2015	127.98038	122.696466	117.6613447	112.8620229	108.2862488	103.9224699	99.75978937	95.78792534	91.99717326
190517A00023	5/17/2019	2.51	5/17/2024	5/17/2019	123.17537	118.8914718	114.7808978	110.8356308	107.0480712	103.4110163	99.91763674	96.56145459	93.33632301
190523A00035	5/23/2019	2.34	11/23/2021	5/23/2019	107.13203	105.8615295	104.6210601	103.4095661	102.2260412	101.0695253	99.93910188	98.83389535	97.75306898
190607A00041	6/7/2019	2.12	6/7/2022	6/7/2019	109.92551	108.0914594	106.2975634	104.5425682	102.8252752	101.1445353	99.49924664	97.88835167	96.31083519
190722A00051	11/22/2019	2.03	11/22/2021	11/22/2019	106.7463	105.4814522	104.2464508	103.0402456	101.8618386	100.7102775	99.58465289	98.48409625	97.40777731
190917A00030	1/10/2020	2.03	1/10/2023	1/10/2020	113.28476	110.751912	108.2888956	105.893288	103.5627702	101.2951224	99.08821854	96.94002177	94.84857961
191002A00038	1/13/2020	1.76	1/13/2023	1/13/2020	112.67903	110.1444879	107.6800117	105.2831864	102.9516953	100.6833196	98.4759332	96.32749804	94.23605974
181206A00021	12/6/2018	3.15	12/6/2023	12/6/2018	122.47882	118.7498618	115.1556785	111.6905556	108.3490578	105.1260164	102.0165146	99.01587297	96.11963632
181210A00068	12/10/2018	3.34	12/10/2025	12/10/2018	138.00522	131.3821988	125.1217886	119.2020812	113.6026189	108.3042887	103.2892258	98.54072509	94.04315899
181220A00077	12/20/2018	3.06	12/20/2023	12/20/2018	122.43944	118.6655462	115.0294898	111.5253517	108.1475134	104.890636	101.7496441	98.7197106	95.79624274
181220A00078	12/20/2018	3.17	12/20/2024	12/20/2018	130.06379	124.9008312	119.9746446	115.2729754	110.7842849	106.4976991	102.4029664	98.49041733	94.7509281
190315A00039	3/15/2019	2.64	9/15/2021	3/15/2019	106.23561	105.1880521	104.1611155	103.154196	102.1667124	101.1981055	100.2478379	99.31539189	98.40026947
190426A00023	4/26/2019	2.91	6/24/2026	4/26/2019	139.13812	131.7601083	124.8236158	118.2997444	112.161652	106.3843926	100.9447715	95.82121192	90.99363341
180615A00039	6/15/2018	3.49	6/15/2028	6/15/2018	157.08042	146.2956752	136.3434149	127.154584	118.6662249	110.8209036	103.5661971	96.85422995	90.6412564
180618A00036	6/18/2018	3.89	6/18/2048	6/18/2018	307.38688	245.656284	198.060333	161.2028107	132.5269424	110.1035494	92.47359752	78.53095709	67.43494217

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
180627A00065	6/27/2018	2.9	6/25/2021	6/27/2018	104.94895	104.1601242	103.3831401	102.6177335	101.8636469	101.1206306	100.3884419	99.66684555	98.95561269
180821A00029	8/21/2018	3.01	8/21/2023	8/21/2018	119.94413	116.6072137	113.381439	110.2624899	107.2462469	104.3287728	101.5063036	98.77523964	96.13213805
180919A00013	9/19/2018	3.14	9/19/2022	9/19/2018	113.76039	111.5704214	109.4344228	107.3507122	105.3176754	103.3337595	101.3974703	99.50736932	97.66207173
181206A00018	12/6/2018	3.13	12/6/2023	12/6/2018	122.41038	118.6825636	115.0894955	111.6254577	108.285016	105.0630027	101.9545019	98.9548352	96.05954826
180130A00064	1/30/2018	2.75	1/30/2023	1/30/2018	115.38459	112.7651468	110.2188105	107.7431253	105.3357362	102.9943809	100.7168852	98.50115946	96.3451944
180131A00022	1/31/2018	2.96	1/30/2025	1/31/2018	129.81308	124.5181903	119.4712632	114.6593982	110.0704295	105.6928831	101.5159341	97.52936638	93.72353559
180205A00047	2/5/2018	2.56	2/5/2021	2/5/2018	102.228	101.862902	101.5004137	101.1405042	100.783146	100.4283121	100.0759758	99.72611071	99.37869093
180518A00042	5/25/2018	3.42	5/19/2025	5/25/2018	134.33072	128.5364695	123.0296826	117.7944751	112.8159308	108.0800381	103.5736299	99.28432754	95.2004892
180518A00048	5/25/2018	3.65	5/18/2028	5/25/2018	157.94628	147.2393321	137.3505065	128.2125868	119.7642321	111.9494321	104.7170172	98.02021529	91.81625185
180529A00072	5/29/2018	3	5/30/2023	5/29/2018	118.32734	115.2805337	112.3288977	109.4688249	106.6968703	104.0097445	101.4043057	98.87755168	96.42661241
170814A00034	8/14/2017	2.1	8/15/2022	8/14/2017	111.0454	108.9922638	106.9874858	105.0296349	103.1173303	101.2492406	99.42408224	97.64061712	95.89765091
171110A00008	11/10/2017	2.65	11/12/2024	11/10/2017	126.9708	122.0061321	117.264939	112.7359035	108.4083471	104.2721919	100.3179223	96.53655073	92.91958483
171110A00019	5/4/2018	2.46	5/4/2023	5/4/2018	116.3453	113.4073951	110.5595186	107.7983323	105.1206488	102.5234206	100.003733	97.55879726	95.18594403
171219A00032	12/19/2017	2.42	12/20/2021	12/19/2017	107.70766	106.3467403	105.0201037	103.7264638	102.4646008	101.2333548	100.0316212	98.85834853	97.71253434
171229A00031	12/29/2017	2.36	12/29/2020	12/29/2017	101.51157	101.2570768	101.0038606	100.7519086	100.5012115	100.2517598	100.0035444	99.75655606	99.51078581
180125A00038	2/1/2018	2.91	2/3/2025	2/1/2018	129.65426	124.3481741	119.2912325	114.4704433	109.8735589	105.4890295	101.3059593	97.31406634	93.50364499
161115A00021	11/15/2016	2.02	11/15/2021	11/15/2016	106.61846	105.3766793	104.163701	102.9785337	101.8202294	100.6878827	99.58062838	98.49763952	97.43812503
161123A00035	11/23/2016	2.16	11/23/2021	11/23/2016	106.91769	105.6485692	104.4094532	103.1992905	102.0170756	100.8618489	99.73269439	98.62873705	97.54914066
161125A00002	11/25/2016	2.62	11/27/2023	11/25/2016	120.50376	116.8371743	113.3025189	109.8942337	106.6070292	103.4358732	100.375977	97.42278096	94.57194269
170412A00019	4/12/2017	2.56	4/12/2024	4/12/2017	122.74847	118.5885335	114.5933202	110.7553786	107.0676423	103.5234038	100.1162941	96.84026355	93.68956377
170703A00024	7/3/2017	2.95	7/6/2027	7/3/2017	146.17985	137.1554627	128.7551512	120.9323035	113.644035	106.8508723	100.5164643	94.60731842	89.0925606
170727A00020	7/27/2017	1.94	7/27/2021	7/27/2017	104.73024	103.8449286	102.9745292	102.1186684	101.2769842	100.4491269	99.63475784	98.83354958	98.0451851
160309A00015	3/9/2016	1.84	3/9/2021	3/9/2016	102.46739	102.0086907	101.5540934	101.1035471	100.6569976	100.2143917	99.77567743	99.34080342	98.90971933
160311A00005	3/11/2016	1.91	3/11/2021	3/11/2016	102.53045	102.0657249	101.6052152	101.1488618	100.6966085	100.2484001	99.8041824	99.36390217	98.92750712
160422A00019	4/22/2016	1.69	4/22/2021	4/22/2016	103.06804	102.4781409	101.8949836	101.3184494	100.7484259	100.1848032	99.62747392	99.07633304	98.53127786
160819A00015	10/12/2016	2.3	10/13/2026	10/12/2016	136.98313	129.2648085	122.0319531	115.2514628	108.8926664	102.9271287	97.32847609	92.07223664	87.13569332
161017A00015	10/17/2016	1.68	10/18/2021	10/17/2016	105.78574	104.6375086	103.5140838	102.4146674	101.3384964	100.2848394	99.25299583	98.24229368	97.25208836
161031A00027	10/31/2016	1.51	10/30/2020	10/31/2016	100.43107	100.3473952	100.2638563	100.1804567	100.0971958	100.0140736	99.93108953	99.84824338	99.76553479
160209A00049	2/9/2016	1.92	2/9/2023	2/9/2016	113.50078	110.8708651	108.3153209	105.8316273	103.4173656	101.0702126	98.78793683	96.56839387	94.40952263
160211A00091	2/16/2016	3.55	2/16/2023	2/16/2016	117.73312	115.0256555	112.3950581	109.8387012	107.3540682	104.9387433	102.5904063	100.3068285	98.08586868
160217A00004	2/17/2016	1.54	2/17/2021	2/17/2016	102.09122	101.691053	101.2940234	100.9000979	100.5092401	100.1214142	99.73658486	99.35471743	98.97577767
160222A00018	2/22/2016	2.59	2/23/2026	2/22/2016	134.99573	128.180329	121.7526794	115.6887006	109.9659313	104.5634096	99.4615662	94.64212451	90.08800898
160229A00027	2/29/2016	1.74	3/1/2021	2/29/2016	102.29985	101.8649707	101.4337749	101.0062166	100.5822498	100.1618296	99.74491166	99.33145244	98.92140908

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
160308A00011	3/8/2016	1.81	2/16/2021	3/8/2016	102.12888	101.7321348	101.3384721	100.9478578	100.5602568	100.175634	99.79395535	99.41518694	99.03929555
150601A00406	6/1/2015	3.71	1/17/2024	6/1/2015	125.10155	121.1909392	117.4253238	113.798477	110.3044821	106.9377118	103.6928117	100.5646856	97.54848109
150601A00682	6/1/2015	2.3	2/9/2022	6/1/2015	108.19986	106.7384328	105.3040212	103.8959359	102.5135128	101.1561096	99.82310488	98.51389731	97.22790481
150731A00020	7/31/2015	2.47	7/29/2022	7/31/2015	111.47642	109.4704436	107.5106992	105.5958354	103.72455	101.8955873	100.1077364	98.35982887	96.65073716
151002A00053	10/2/2017	2.17	10/4/2021	10/2/2017	106.08068	104.974728	103.8917546	102.8310458	101.7919204	100.7737249	99.77583189	98.79763881	97.83856672
151030A00022	10/30/2015	1.8	10/30/2020	10/30/2015	100.45531	100.3716154	100.2880563	100.2046365	100.1213556	100.0382133	99.95520919	99.87234304	99.7896145
160209A00010	2/9/2016	1.57	2/9/2021	2/9/2016	101.93212	101.5561102	101.1828731	100.8123802	100.4446013	100.0795066	99.7170666	99.3572525	99.00003577
081028A00036	10/30/2008	4.22	10/30/2023		125.28772	121.6356901	118.1126682	114.7119503	111.4287987	108.2586194	105.1968679	102.2392095	99.38150666
180404A00037	4/6/2018	2.51	4/6/2028	4/6/2022	149.27126	138.9863583	129.4925503	120.8223765	113.2215632	107.0627599	102.6057488	99.68337327	97.70646689
180925A00059	9/25/2018	3.01	9/25/2028	9/25/2023	156.83674	145.5564531	135.1856054	125.7297103	117.3727947	110.3823026	104.8458559	100.5321638	97.04945574
190104A00032	1/4/2019	2.33	1/4/2024	12/4/2020	120.16267	116.3789873	112.7358275	109.2264235	105.8566787	102.7897342	100.5895627	99.97156582	99.96626735
190529A00115	5/29/2019	1.92	5/29/2024	11/30/2020	121.04263	116.7602721	112.6533484	108.7140017	104.9819223	101.8257114	100.0731742	99.76248461	99.60343664
190530A00092	5/30/2019	1.69	5/30/2024	11/30/2020	120.94698	116.6418009	112.5135998	108.5546881	104.8105181	101.680142	100.0257697	99.74278758	99.57525945
190606A00030	6/6/2019	1.48	6/6/2024	12/7/2020	120.21661	115.9019215	111.7655486	107.8009129	104.0833379	101.143298	99.90597057	99.67978196	99.50157878
190606A00032	6/6/2019	1.75	6/6/2024	12/7/2020	120.49095	116.1925321	112.0712202	108.1197635	104.3979256	101.3732859	99.94717892	99.68506676	99.50720484
190731A00008	7/31/2019	1.53	7/31/2024	11/2/2020	121.25546	116.7378779	112.4129212	108.2735053	104.3972543	101.3042465	99.95322141	99.86050371	99.77767664
190801A00025	8/1/2019	1.68	8/1/2024	11/2/2020	121.05307	116.5593914	112.2569437	108.1388346	104.2867651	101.2365984	99.9412896	99.85847525	99.77579797
190807A00056	8/7/2019	1.49	8/7/2024	11/9/2020	120.34639	115.8471781	111.5403228	107.4208984	103.6093454	100.7825284	99.89383988	99.78725928	99.68566235
190809A00026	8/9/2019	1.52	8/9/2024	11/9/2020	120.50103	115.9921011	111.676174	107.5479364	103.7215475	100.8510758	99.89448211	99.77716056	99.66734843
190812A00020	8/12/2019	1.47	8/12/2024	11/12/2020	120.334	115.8185802	111.4968486	107.3641853	103.5470451	100.7386479	99.88021537	99.7580478	99.64003569
190816A00029	8/16/2019	1.11	8/16/2024	11/16/2020	119.71884	115.1792645	110.8356155	106.6870948	102.9168721	100.3805104	99.85165132	99.72208035	99.59286064
190909A00021	9/9/2019	1.2	9/9/2024	12/9/2020	120.4427	115.8074095	111.3752936	107.143974	103.2776659	100.5651347	99.80145167	99.60314489	99.41147483
190911A00012	9/11/2019	1.27	9/11/2024	12/11/2020	120.77415	116.1250592	111.6799673	107.4351003	103.5353562	100.7122992	99.81520555	99.6065659	99.40946612
191017A00012	10/17/2019	1.43	10/17/2022	10/19/2020	111.03646	108.7816046	106.5846508	104.4432566	102.3613322	100.5573009	99.96081498	99.91657403	99.87238958
191209A00045	12/9/2019	1.56	12/9/2024	12/9/2022	123.39654	118.3902374	113.6149044	109.0629514	104.8353638	101.3422615	98.6757991	96.4518107	94.3995886
200131A00023	1/31/2020	1.56	1/31/2025	1/31/2023	123.17267	118.0248283	113.1204341	108.4554586	104.179841	100.7376342	98.08460305	95.79780997	93.65091784
200228A00090	2/28/2020	1	2/28/2025	3/1/2021	120.89827	115.6990102	110.7511466	106.0808944	102.1032004	99.97265959	99.42039458	99.01546737	98.61440266
181031A00046	11/2/2018	3.05	10/29/2021	11/2/2020	107.4568	106.2543545	105.1172621	103.9880843	102.8717678	101.7794466	100.7332009	100.0206146	99.86021004
181203A00046	12/4/2018	2.8	12/4/2023	12/4/2020	121.24388	117.5418871	113.9743134	110.5345421	107.2209237	104.1048988	101.5279494	100.0800228	99.69978428
190510A00019	5/10/2019	2.39	5/10/2022	5/10/2021	109.9379	108.186929	106.4735675	104.7959031	103.1530786	101.5606479	100.2360141	99.40901504	98.79137363
190523A00048	5/23/2019	2.32	5/23/2024	5/23/2023	122.52923	118.2378854	114.1214688	110.1711874	106.3934597	102.91724	99.89284149	97.22352641	94.75296818
190523A00050	5/23/2019	2.3	5/23/2023	5/23/2022	116.22338	113.2278479	110.3260788	107.5137732	104.7889012	102.2158232	100.045849	98.27692165	96.69009797
190530A00057	5/30/2019	1.71	5/30/2024	11/30/2020	121.02673	116.7200096	112.5903212	108.629901	104.8821898	101.7360307	100.0421081	99.74616269	99.5786303

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190607A00022	6/7/2019	1.5	6/7/2024	12/7/2020	120.31221	115.9922767	111.850981	107.8815994	104.1564968	101.1932091	99.91116595	99.67007411	99.48373739
190607A00025	6/7/2019	1.48	6/7/2024	12/7/2020	120.23195	115.9135781	111.7737881	107.8059948	104.0856545	101.1432752	99.90090377	99.66631326	99.47998177
190610A00069	6/10/2019	2.04	6/10/2022	12/10/2020	109.83357	107.9906027	106.1893302	104.4267468	102.7023966	101.0653463	100.0044597	99.71967524	99.52532852
190703A00023	7/3/2019	1.9	6/30/2022	12/30/2020	109.90729	108.0012926	106.1408943	104.3209157	102.5417454	100.8791151	99.9187773	99.62556308	99.37745145
190712A00038	7/12/2019	1.87	7/12/2021	10/13/2020	104.55541	103.7091094	102.8898617	102.0772752	101.2762239	100.4935205	99.98279434	99.94961565	99.91647539
190812A00027	8/12/2019	1.71	8/12/2024	8/12/2022	121.34377	116.8078737	112.4663591	108.3120358	104.4224639	101.2095422	98.84788478	96.93798447	95.18246048
190814A00019	8/14/2019	1.46	8/14/2024	11/16/2020	120.32045	115.7987167	111.4712046	107.3334527	103.5148695	100.7172333	99.87684743	99.75231089	99.63156752
200130A00029	1/30/2020	1.3	1/30/2023	2/1/2021	112.28086	109.6898917	107.1719475	104.7241881	102.3605692	100.4302973	99.69884059	99.36086009	99.03238801
200221A00041	2/21/2020	1.53	2/21/2025	2/21/2023	123.35765	118.1276195	113.1482854	108.4168066	104.0970121	100.6296234	97.93695681	95.59999056	93.4024741
200227A00018	2/27/2020	0.99	2/27/2025	2/28/2022	121.87077	116.6215291	111.6262651	106.8976341	102.7516695	99.9666437	98.28378305	96.90308875	95.57939945
190426A00017	4/26/2019	2.31	4/26/2022	10/26/2020	109.56611	107.8600472	106.1900457	104.5543016	102.9520325	101.4015375	100.1826906	99.92025967	99.84856401
190516A00018	5/16/2019	2.03	5/16/2024	11/16/2020	121.27157	117.0270183	112.9549234	109.047287	105.3335443	102.1291938	100.1965884	99.8127849	99.68375678
190702A00051	7/2/2019	1.46	7/2/2024	10/2/2020	120.533	116.1242142	111.9007084	107.8559463	104.0737668	101.1122005	99.98670288	99.98125457	99.97581021
190712A00044	7/12/2019	1.73	7/12/2022	10/13/2020	110.13903	108.1892198	106.2859273	104.4248037	102.6061912	100.9116542	99.98846506	99.94496142	99.91182503
190807A00035	8/7/2019	1.45	8/7/2024	11/9/2020	120.17873	115.6829063	111.3793253	107.2636325	103.4658381	100.6945783	99.88801793	99.78316189	99.68156899
190812A00026	8/12/2019	1.48	8/12/2024	11/12/2020	120.37608	115.8598008	111.5372446	107.4036418	103.5830561	100.7607737	99.88191064	99.75923784	99.64122444
190816A00028	8/16/2019	1.33	8/16/2022	11/16/2020	109.90252	107.8509392	105.8485793	103.8929855	101.988281	100.3696963	99.88073436	99.75069736	99.62144509
190821A00024	8/21/2019	1.65	8/21/2024	8/22/2022	121.22513	116.661889	112.2953851	108.118892	104.2214163	101.0366439	98.70327654	96.79604797	95.03000119
190821A00046	8/21/2019	1.44	8/21/2024	11/23/2020	120.33558	115.7904885	111.4415211	107.2845784	103.4560289	100.6747201	99.8609449	99.71764988	99.57778723
190924A00014	9/24/2019	1.54	9/24/2024	12/24/2020	121.26278	116.5831621	112.1100532	107.8380238	103.889458	100.9196963	99.81672341	99.5609121	99.32913106
191008A00028	10/11/2019	1.08	10/8/2024	10/8/2020	120.33118	115.5994483	111.0791575	106.7718301	102.8940074	100.3548629	99.96773982	99.94566231	99.92360759
200128A00045	1/28/2020	1.45	1/28/2025	1/28/2021	122.60748	117.4823033	112.5993088	107.9572471	103.7470927	100.7524971	99.70224942	99.35463533	99.02951561
200227A00024	2/27/2020	0.85	2/27/2025	3/1/2021	121.18961	115.9561421	110.9762315	106.2730642	102.2425675	100.0177402	99.43587334	99.02966907	98.62769946
200228A00095	2/28/2020	1.15	2/28/2023	3/1/2021	111.85163	109.1776688	106.5814013	104.0601173	101.661549	100.0251441	99.48628991	99.08101859	98.67974825
200228A00096	2/28/2020	1.28	2/28/2022	3/1/2021	107.09767	105.5823741	104.0964187	102.6386073	101.2122467	100.0569303	99.54788534	99.14235447	98.74084325
200306A00069	3/6/2020	0.58	3/6/2025	3/7/2022	119.96146	114.7324923	109.7590781	105.1001212	101.3262646	99.11953659	97.63769537	96.27241736	94.93808201
070906A00048	9/10/2007	3.79	9/12/2022	12/10/2020	114.95484	112.7744644	110.6481023	108.5728282	106.5473041	104.570985	102.6697237	101.0220262	100.0289196
181210A00035	12/12/2018	2.65	1/16/2024	1/15/2021	121.50081	117.6556874	113.9542108	110.3893546	106.9615481	103.7720812	101.2327106	99.91559866	99.48311084
190426A00018	4/26/2019	2.14	4/26/2024	10/26/2020	121.37606	117.1948059	113.1813164	109.3276468	105.6544106	102.4250154	100.3216047	99.90721096	99.83553425
190426A00024	4/26/2019	2.24	4/26/2022	10/26/2020	109.45128	107.7462034	106.0771557	104.4423553	102.841045	101.2956562	100.1251159	99.91521826	99.84352677
190509A00033	5/9/2019	2.41	5/9/2022	5/10/2021	109.95436	108.2062015	106.4955543	104.8205037	103.1801934	101.5892657	100.2594089	99.42949113	98.81734059
190509A00063	5/9/2019	2.11	5/9/2024	11/9/2020	121.47232	117.2466878	113.1919727	109.3000984	105.5946873	102.3578612	100.3040784	99.84365611	99.73260445
190522A00029	5/22/2019	2.41	5/22/2024	5/22/2023	122.86765	118.5730942	114.4534434	110.4998494	106.7162678	103.2186875	100.1626358	97.4712235	94.99007276

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
190530A00108	5/30/2019	1.88	5/30/2024	11/30/2020	120.89934	116.6164964	112.5092368	108.5698276	104.8418751	101.7141415	100.0370583	99.7459021	99.57867208
190603A00067	6/3/2019	1.72	6/3/2024	12/3/2020	120.32487	116.0397534	111.930864	107.9911344	104.2837272	101.292893	99.93012994	99.68339187	99.50835356
190605A00032	6/5/2019	1.92	6/3/2022	12/3/2020	109.50781	107.6896285	105.9116985	104.1718363	102.4696074	100.871185	99.94587256	99.71878811	99.54370317
190607A00016	6/7/2019	1.75	6/7/2024	12/7/2020	120.50646	116.2043706	112.0796607	108.1250653	104.4005209	101.3737828	99.94396786	99.67384216	99.48784173
190725A00018	7/25/2019	1.78	7/25/2024	10/26/2020	121.36409	116.886868	112.599399	108.4940978	104.6359563	101.4960283	100.0020652	99.89218434	99.82881285
190830A00028	8/30/2019	1.39	8/30/2024	11/30/2020	120.25021	115.6772341	111.302769	107.1237084	103.2925991	100.5705958	99.83290993	99.66322985	99.49610394
200207A00008	2/7/2020	1.35	2/7/2025	2/7/2023	123.30543	118.0980274	113.1387822	108.4247724	104.1174978	100.6618389	97.98885921	95.67668967	93.50477358
200221A00045	2/21/2020	1.03	2/21/2025	2/22/2021	121.97651	116.7472355	111.7699222	107.0545543	102.8986835	100.2913781	99.53492015	99.14290725	98.75920485
200227A00025	2/27/2020	1.09	2/27/2025	2/27/2023	122.35731	117.0968068	112.0906213	107.3456255	103.1061029	99.82606119	97.24866324	94.94006596	92.73772318
180406A00015	4/10/2018	2.61	4/10/2028	4/10/2023	150.21355	139.8755326	130.3322929	121.6069569	113.9259252	107.6250196	102.8256988	99.23527373	96.38485573
190606A00054	6/6/2019	1.8	6/6/2024	12/7/2020	120.69071	116.3884314	112.2633856	108.3080829	104.5762051	101.5068844	99.9814088	99.6941518	99.51617972
190613A00024	6/13/2019	2.18	6/13/2024	6/13/2023	122.32696	117.9693005	113.7917449	109.78528	105.9624056	102.4749253	99.45125186	96.76479897	94.26209195
190702A00082	7/2/2019	1.63	6/30/2022	12/30/2020	109.76644	107.855416	105.9901703	104.1655863	102.3824052	100.7382667	99.87579692	99.60101187	99.35247075
190805A00014	8/5/2019	1.49	8/5/2024	8/5/2022	121.16319	116.630809	112.2923472	108.1411702	104.2631079	101.087121	98.76524486	96.87911136	95.13812204
190808A00013	8/8/2019	1.23	8/8/2024	11/9/2020	120.11355	115.592463	111.2653915	107.1289858	103.3282144	100.6121826	99.89351752	99.78958971	99.68769983
191011A00020	10/11/2019	1.53	10/11/2024	10/13/2020	121.46633	116.7259714	112.1969045	107.8739372	103.8871821	100.9123115	99.96150554	99.93680403	99.91212727
191029A00020	10/29/2019	1.51	10/31/2022	11/2/2020	111.41956	109.1183784	106.877028	104.6930412	102.5691521	100.6909279	99.94180616	99.85884149	99.7760158
191121A00031	11/21/2019	1.54	11/21/2024	11/21/2022	123.02912	118.0920576	113.3804854	108.886948	104.7109991	101.2698256	98.66172264	96.49155463	94.4859484
200303A00035	3/3/2020	0.81	3/3/2025	3/3/2023	121.0474	115.8033447	110.8141243	106.107355	102.0384097	98.99324862	96.52349367	94.24181036	92.04411478
190513A00033	5/13/2019	2.35	5/15/2023	5/13/2022	116.22831	113.2576039	110.379302	107.5891632	104.8867264	102.3421882	100.1760309	98.39887701	96.81990278
190513A00065	5/13/2019	2.01	5/13/2022	11/13/2020	109.65509	107.8924066	106.1677236	104.4792312	102.8261437	101.2391413	100.1018666	99.84824619	99.72710228
190516A00028	5/16/2019	2.03	5/16/2024	11/16/2020	121.27157	117.0270183	112.9549234	109.047287	105.3335443	102.1291938	100.1965884	99.8127849	99.68375678
190702A00079	7/2/2019	1.69	7/2/2024	7/5/2022	121.47425	117.0468609	112.8053833	108.7418574	104.9076265	101.6582192	99.2653629	97.39761448	95.71958474
190712A00047	7/12/2019	1.54	7/12/2024	10/13/2020	121.01096	116.5601771	112.2973399	108.2153344	104.3876673	101.3235101	99.98284853	99.93864497	99.90551383
190725A00022	7/25/2019	1.7	7/25/2022	10/26/2020	110.28674	108.2972769	106.3550871	104.4566976	102.6024133	100.8816811	99.96707532	99.90158544	99.83806049
190820A00068	8/20/2019	1.39	8/20/2024	11/20/2020	120.10974	115.5725443	111.2310503	107.0820139	103.2750385	100.5695801	99.85260379	99.71058768	99.57073104
190823A00023	8/23/2019	1.37	8/23/2024	11/23/2020	120.06703	115.5208366	111.1711292	107.0150892	103.2089186	100.5294532	99.8431995	99.69338482	99.54534526
190828A00011	8/28/2019	1.1	8/28/2024	11/30/2020	119.84203	115.2601726	110.8776058	106.6938765	102.8985324	100.3575809	99.81957842	99.65983649	99.50060962
190828A00021	8/28/2019	1.36	8/28/2024	11/30/2020	120.09437	115.5311721	111.1658327	106.9958203	103.1818367	100.5100678	99.83326207	99.6726255	99.51368347
190917A00040	9/17/2019	1.63	9/17/2024	12/17/2020	121.54717	116.8857217	112.4289251	108.1701916	104.2109841	101.1415546	99.86914889	99.61048139	99.39757211
191008A00020	10/8/2019	1.58	10/8/2024	10/11/2022	121.64279	116.9084926	112.3848245	108.0658447	104.0652851	100.8350534	98.43064534	96.4176148	94.5395468
191211A00013	12/11/2019	1.57	12/11/2024	12/12/2022	123.473	118.4582937	113.6751922	109.1159622	104.880151	101.3764347	98.70197733	96.47449865	94.42107859
200221A00040	2/21/2020	1.28	2/21/2025	2/22/2021	122.15165	116.9493395	111.9967997	107.3002423	103.125227	100.4011758	99.55979479	99.16487893	98.78197477

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	Parallel-Shift Sensitivity Analysis												
9/30/2020					Price								
REFERENCE	SETTLEMENT	Rate	MATURITY	First/Next	-400	-300	-200	-100	Base	100	200	300	400
061128A00049	11/30/2006	3.84	11/30/2021	2/28/2007	109.24371	107.9213175	106.6786584	105.4417333	104.2226282	103.0317493	101.8681245	100.7365364	99.73753408
070727A00036	7/31/2007	4.23	8/1/2022	10/31/2007	114.92029	112.8679635	110.8689611	108.9141294	107.0027378	105.1346056	103.3085022	101.5739856	100.1670417

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