Federal Home Loan Bank of Des Moines Monthly Price Report

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

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

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

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

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190411A00036	4/11/2019	2.62	4/10/2020	4/11/2019	100.06304	100.0630357	100.0630357	100.0630357	100.0613458	100.0336219	100.0059279	99.97826355	99.9506289
190412A00013	4/12/2019	2.64	4/10/2020	4/12/2019	100.06359	100.0635911	100.0635911	100.0635911	100.0619011	100.0341768	100.0064823	99.97881748	99.95118236
190509A00015	5/9/2019	2.55	5/4/2020	5/9/2019	100.20972	100.2097179	100.2097179	100.2097179	100.2032608	100.1090367	100.014995	99.92113525	99.82745696
190912A00012	9/12/2019	2.06	4/27/2020	9/12/2019	100.12896	100.128961	100.128961	100.128961	100.1244008	100.0496066	99.97492786	99.90036445	99.82591608
190916A00006	9/16/2019	2.12	4/15/2020	9/16/2019	100.07414	100.0741435	100.0741435	100.0741435	100.0716096	100.0300426	99.98852611	99.94705994	99.90564402
191210A00004	12/10/2019	1.83	8/10/2020	12/10/2019	100.57697	100.5769669	100.5769669	100.5769669	100.5093051	100.1442452	99.78184107	99.42206377	99.06488471
191220A00012	12/20/2019	1.85	11/20/2020	12/20/2019	101.03534	101.0353415	101.0353415	101.0353415	100.8556168	100.2104639	99.573547	98.944709	98.32379684
200117A00005	1/17/2020	1.84	10/19/2020	1/17/2020	100.88837	100.8883662	100.8883662	100.8883662	100.7444865	100.1870234	99.63572201	99.09048066	98.55119966
200309A00025	3/9/2020	0.57	2/9/2021	3/9/2020	100.26609	100.2660933	100.2660933	100.2660933	99.98334282	99.12275704	98.27688897	97.44536385	96.62781955
200313A00021	3/13/2020	0.74	3/12/2021	3/13/2020	100.59677	100.5967732	100.5967732	100.5967732	100.2687051	99.3214785	98.39203227	97.47986976	96.58451261
200318A00003	3/18/2020	0.71	2/18/2021	3/18/2020	100.39893	100.3989258	100.3989258	100.3989258	100.1030234	99.21768454	98.34790672	97.49328279	96.65341966
200318A00021	3/18/2020	0.71	2/18/2021	3/18/2020	100.39893	100.3989258	100.3989258	100.3989258	100.1030234	99.21768454	98.34790672	97.49328279	96.65341966
200325A00012	3/25/2020	0.71	2/25/2021	3/25/2020	100.40708	100.4070841	100.4070841	100.4070841	100.1010716	99.19694315	98.30903385	97.43691086	96.58015656
200327A00011	3/27/2020	0.46	12/24/2020	3/27/2020	100.1521	100.1520951	100.1520951	100.1520951	99.93277438	99.19895008	98.47584155	97.76321555	97.06084555
200330A00035	3/30/2020	0.39	10/30/2020	3/30/2020	100.07965	100.0796498	100.0796498	100.0796498	99.92440901	99.33966246	98.7617199	98.19046329	97.62577732
200330A00052	3/30/2020	0.46	12/30/2020	3/30/2020	100.15556	100.15556	100.15556	100.15556	99.9289965	99.17897061	98.44012774	97.7122196	96.9950052
190409A00039	4/9/2019	2.59	4/3/2020	4/9/2019	100.01874	100.0187441	100.0187441	100.0187441	100.018237	100.0099178	100.0016059	99.99330128	99.98500402
190429A00010	4/29/2019	2.59	4/23/2020	4/29/2019	100.14371	100.1437065	100.1437065	100.1437065	100.1398199	100.0760709	100.0124133	99.94884702	99.88537176
190621A00038	6/21/2019	2.24	6/15/2020	6/21/2019	100.41645	100.4164482	100.4164482	100.4164482	100.3926562	100.1820661	99.97237077	99.76356448	99.55564155
190709A00002	7/9/2019	2.31	7/3/2020	7/9/2019	100.53322	100.5332161	100.5332161	100.5332161	100.4990113	100.2385965	99.97953053	99.72180281	99.46540305
190710A00011	7/10/2019	2.25	5/11/2020	7/10/2019	100.22004	100.2200416	100.2200416	100.2200416	100.2111575	100.0975592	99.98423172	99.8711741	99.75838533
190815A00016	8/15/2019	2.06	8/14/2020	8/15/2019	100.68132	100.6813211	100.6813211	100.6813211	100.6093764	100.2330978	99.85963981	99.48897058	99.1210589
200121A00006	1/21/2020	1.88	1/15/2021	1/21/2020	101.30738	101.3073809	101.3073809	101.3073809	101.0580792	100.2599224	99.47433923	98.70103432	97.93972134
200129A00006	1/29/2020	1.84	1/25/2021	1/29/2020	101.31922	101.3192191	101.3192191	101.3192191	101.0563267	100.2310892	99.41928389	98.62058495	97.83467694
200220A00022	2/20/2020	1.75	2/16/2021	2/20/2020	101.32561	101.3256058	101.3256058	101.3256058	101.0314148	100.1469444	99.27790335	98.42389066	97.58451904
200311A00018	3/11/2020	0.71	12/11/2020	3/11/2020	100.32149	100.3214916	100.3214916	100.3214916	100.1177088	99.41831348	98.72864559	98.04850328	97.37769026
200318A00042	3/18/2020	0.6	12/18/2020	3/18/2020	100.25041	100.2504131	100.2504131	100.2504131	100.0382413	99.32021448	98.61244539	97.91471538	97.22681203
200323A00004	3/23/2020	0.67	12/23/2020	3/23/2020	100.3071	100.3071027	100.3071027	100.3071027	100.0888401	99.35707904	98.63596296	97.92526093	97.2247487
200323A00040	3/23/2020	0.67	12/23/2020	3/23/2020	100.3071	100.3071027	100.3071027	100.3071027	100.0888401	99.35707904	98.63596296	97.92526093	97.2247487
200324A00015	3/24/2020	0.58	9/25/2020	3/24/2020	100.16022	100.1602161	100.1602161	100.1602161	100.0428375	99.55304021	99.06802171	98.58771236	98.11204386
200325A00002	3/25/2020	0.87	3/25/2021	3/25/2020	100.59113	100.5911328	100.5911328	100.5911328	100.2457736	99.26595836	98.30516834	97.36285408	96.43848706
200327A00015	3/27/2020	0.73	3/26/2021	3/27/2020	100.453	100.4530011	100.4530011	100.4530011	100.1064556	99.12470791	98.1620777	97.21801139	96.29197657
190418A00002	4/19/2019	2.62	4/17/2020	4/19/2019	100.10763	100.1076336	100.1076336	100.1076336	100.1047607	100.0576336	100.0105663	99.96355863	99.91661055

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190528A00001	5/28/2019	2.51	5/22/2020	5/28/2019	100.31969	100.3196903	100.3196903	100.3196903	100.3069848	100.1628529	100.0191461	99.87586247	99.7330002
190531A00055	5/31/2019	2.49	5/29/2020	5/31/2019	100.36278	100.3627815	100.3627815	100.3627815	100.3476443	100.1840931	100.021075	99.85858736	99.69662768
190715A00019	7/15/2019	2.24	4/15/2020	7/15/2019	100.07914	100.079142	100.079142	100.079142	100.0766078	100.0350366	99.99351582	99.95204537	99.91062518
190910A00026	9/10/2019	2.06	7/10/2020	9/10/2019	100.50291	100.5029099	100.5029099	100.5029099	100.4630043	100.1833599	99.90527996	99.62875145	99.35376129
191216A00010	12/16/2019	1.84	8/17/2020	12/16/2019	100.61148	100.6114811	100.6114811	100.6114811	100.5363746	100.1520277	99.77062455	99.39213128	99.0165146
191223A00049	12/23/2019	1.85	10/23/2020	12/23/2019	100.9117	100.9117045	100.9117045	100.9117045	100.7634772	100.1950259	99.63297682	99.07722213	98.52765651
200129A00009	1/29/2020	1.84	1/25/2021	1/29/2020	101.31922	101.3192191	101.3192191	101.3192191	101.0563267	100.2310892	99.41928389	98.62058495	97.83467694
200311A00011	3/11/2020	0.71	12/11/2020	3/11/2020	100.32149	100.3214916	100.3214916	100.3214916	100.1177088	99.41831348	98.72864559	98.04850328	97.37769026
200316A00014	3/16/2020	1.04	3/16/2021	3/16/2020	100.74124	100.7412377	100.7412377	100.7412377	100.4081955	99.45165186	98.51322881	97.59241544	96.68871983
200331A00003	3/31/2020	0.51	11/2/2020	3/31/2020	100.15269	100.1526905	100.1526905	100.1526905	99.99405396	99.40092016	98.81478492	98.23552509	97.66302039
190424A00026	4/24/2019	2.58	4/20/2020	4/24/2019	100.12496	100.1249622	100.1249622	100.1249622	100.1215822	100.0661388	100.0107704	99.9554768	99.90025791
190607A00010	6/7/2019	2.27	6/1/2020	6/7/2019	100.34336	100.3433624	100.3433624	100.3433624	100.3270038	100.1551912	99.98396447	99.81332081	99.6432572
190620A00013	6/20/2019	2.2	6/15/2020	6/20/2019	100.40801	100.4080072	100.4080072	100.4080072	100.3842165	100.1736392	99.96395658	99.75516301	99.54725276
190821A00014	8/22/2019	2.04	5/21/2020	8/22/2019	100.24697	100.2469679	100.2469679	100.2469679	100.2346156	100.0933324	99.9524593	99.81199457	99.67193641
190821A00034	8/21/2019	2.03	6/22/2020	8/21/2019	100.40633	100.40633	100.40633	100.40633	100.3788307	100.1489469	99.92012294	99.69235156	99.46562544
190822A00008	8/22/2019	2.06	4/22/2020	8/22/2019	100.10569	100.1056899	100.1056899	100.1056899	100.1019736	100.0410161	99.98014443	99.91935839	99.85865782
200218A00021	2/18/2020	1.82	11/18/2020	2/18/2020	101.00721	101.0072088	101.0072088	101.0072088	100.8297797	100.1901707	99.55865975	98.93509377	98.31932339
200309A00051	3/9/2020	0.72	9/10/2020	3/9/2020	100.21025	100.2102496	100.2102496	100.2102496	100.1094019	99.66038545	99.21539045	98.774363	98.33725013
200318A00046	3/18/2020	0.63	2/18/2021	3/18/2020	100.32702	100.3270201	100.3270201	100.3270201	100.0312097	99.14622118	98.2767894	97.42250728	96.58298183
200320A00028	3/20/2020	0.62	12/18/2020	3/20/2020	100.26495	100.2649535	100.2649535	100.2649535	100.0527681	99.33468266	98.62685552	97.92906804	97.24110781
200326A00008	3/26/2020	0.56	11/25/2020	3/26/2020	100.20179	100.2017903	100.2017903	100.2017903	100.017061	99.36140706	98.7143051	98.07558876	97.44509597
200326A00041	3/26/2020	0.36	10/2/2020	3/26/2020	100.05351	100.0535059	100.0535059	100.0535059	99.92850897	99.41995681	98.91655489	98.41822538	97.92489202
200327A00082	3/27/2020	0.36	10/8/2020	3/27/2020	100.05531	100.0553076	100.0553076	100.0553076	99.92383062	99.39895249	98.87956944	98.36559548	97.85694642
200331A00025	3/31/2020	0.56	12/31/2020	3/31/2020	100.23244	100.2324436	100.2324436	100.2324436	100.0045967	99.2515509	98.50976985	97.77900268	97.05900591
190621A00011	6/21/2019	2.21	5/21/2020	6/21/2019	100.27104	100.2710427	100.2710427	100.2710427	100.2586882	100.1173765	99.97647499	99.83598193	99.6958955
190718A00016	7/18/2019	2.24	6/18/2020	7/18/2019	100.43285	100.4328528	100.4328528	100.4328528	100.4074686	100.1885756	99.97064738	99.75367751	99.53765963
191206A00012	12/6/2019	1.82	6/8/2020	12/6/2019	100.29581	100.2958112	100.2958112	100.2958112	100.2757478	100.0846725	99.89433323	99.70472587	99.51584613
191216A00022	12/16/2019	1.93	12/10/2020	12/16/2019	101.18013	101.1801269	101.1801269	101.1801269	100.9767864	100.2767263	99.58635104	98.90546065	98.23386054
200214A00023	2/19/2020	1.81	12/15/2020	2/19/2020	101.11715	101.1171465	101.1171465	101.1171465	100.907801	100.1944175	99.49109708	98.79762769	98.11380336
200219A00002	2/19/2020	1.82	10/19/2020	2/19/2020	100.87715	100.8771532	100.8771532	100.8771532	100.7332807	100.1758536	99.62458808	99.07938224	98.54013648
200318A00033	3/18/2020	0.58	2/18/2021	3/18/2020	100.28208	100.2820791	100.2820791	100.2820791	99.98632613	99.10155657	98.23234107	97.37827259	96.53895819
200318A00045	3/18/2020	0.62	1/15/2021	3/18/2020	100.29354	100.2935385	100.2935385	100.2935385	100.0453372	99.2516544	98.47049565	97.70156636	96.94458114
200319A00021	3/19/2020	0.6	12/18/2020	3/19/2020	100.25041	100.2504131	100.2504131	100.2504131	100.0382413	99.32021448	98.61244539	97.91471538	97.22681203

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200319A00033	3/19/2020	0.63	2/19/2021	3/19/2020	100.32796	100.3279639	100.3279639	100.3279639	100.0307098	99.14303845	98.27101747	97.41423609	96.57229783
200320A00022	3/20/2020	0.57	9/21/2020	3/20/2020	100.15184	100.1518364	100.1518364	100.1518364	100.0388756	99.5600084	99.08571451	98.61592858	98.15058651
200320A00030	3/20/2020	0.64	1/20/2021	3/20/2020	100.30698	100.3069792	100.3069792	100.3069792	100.0520378	99.2449535	98.4508163	97.66931667	96.90015494
200325A00057	3/25/2020	0.71	2/25/2021	3/25/2020	100.40708	100.4070841	100.4070841	100.4070841	100.1010716	99.19694315	98.30903385	97.43691086	96.58015656
190709A00049	7/9/2019	2.29	6/9/2020	7/9/2019	100.39336	100.3933575	100.3933575	100.3933575	100.3727492	100.1787548	99.98551947	99.79303859	99.60130775
191210A00005	12/10/2019	1.85	11/10/2020	12/10/2019	100.99125	100.9912547	100.9912547	100.9912547	100.8229335	100.2051567	99.59493547	98.99213176	98.39661085
191219A00046	12/19/2019	1.77	12/18/2020	12/19/2019	101.20162	101.2016239	101.2016239	101.2016239	100.9881473	100.2649729	99.55213224	98.84940495	98.15657676
191219A00050	12/19/2019	1.84	11/19/2020	12/19/2019	101.02447	101.0244666	101.0244666	101.0244666	100.8458872	100.2034947	99.56926925	98.94305575	98.32470301
191223A00045	12/23/2019	1.84	9/23/2020	12/23/2019	100.77399	100.7739864	100.7739864	100.7739864	100.6585013	100.1723998	99.69098634	99.21419342	98.74195469
200214A00011	2/18/2020	1.81	1/21/2021	2/18/2020	101.26887	101.2688686	101.2688686	101.2688686	101.0114999	100.1974054	99.39639246	98.60814755	97.8323672
200219A00005	2/19/2020	1.81	1/20/2021	2/19/2020	101.26458	101.2645765	101.2645765	101.2645765	101.0085698	100.1971961	99.39881792	98.61312476	97.83981607
200220A00023	2/20/2020	1.81	11/20/2020	2/20/2020	101.00937	101.009366	101.009366	101.009366	100.8296618	100.1846038	99.54778096	98.91903613	98.29821632
200302A00055	3/2/2020	1.24	2/2/2021	3/2/2020	100.83316	100.8331581	100.8331581	100.8331581	100.5598371	99.71537658	98.88502258	98.06842418	97.26524205
200304A00003	3/4/2020	0.98	12/4/2020	3/4/2020	100.49841	100.498414	100.498414	100.498414	100.302937	99.6217916	98.94985386	98.28693817	97.63286385
200306A00026	3/6/2020	0.72	2/5/2021	3/6/2020	100.3924	100.3924036	100.3924036	100.3924036	100.1152724	99.26481336	98.42871123	97.60660524	96.79814652
200309A00024	3/11/2020	0.57	1/7/2021	3/11/2020	100.23857	100.2385678	100.2385678	100.2385678	100.0012793	99.22946537	98.46949585	97.72109987	96.98401478
200313A00012	3/16/2020	0.77	1/5/2021	3/16/2020	100.39987	100.3998687	100.3998687	100.3998687	100.1650859	99.39786379	98.6423295	97.89821766	97.16527093
200316A00039	3/16/2020	0.83	2/16/2021	3/16/2020	100.50379	100.5037885	100.5037885	100.5037885	100.2106392	99.33015112	98.46504362	97.61491668	96.779384
200316A00047	3/16/2020	1.04	3/16/2021	3/16/2020	100.74124	100.7412377	100.7412377	100.7412377	100.4081955	99.45165186	98.51322881	97.59241544	96.68871983
200316A00058	3/16/2020	0.81	11/16/2020	3/16/2020	100.35388	100.3538796	100.3538796	100.3538796	100.1792276	99.54741268	98.92353847	98.30745593	97.69901973
200318A00001	3/18/2020	0.68	11/18/2020	3/18/2020	100.27323	100.2732299	100.2732299	100.2732299	100.0963736	99.45942653	98.8305535	98.20960174	97.59642228
200320A00017	3/20/2020	0.62	12/18/2020	3/20/2020	100.26495	100.2649535	100.2649535	100.2649535	100.0527681	99.33468266	98.62685552	97.92906804	97.24110781
200320A00040	3/20/2020	0.57	9/25/2020	3/20/2020	100.15528	100.1552753	100.1552753	100.1552753	100.0378993	99.54811628	99.06311194	98.58281665	98.10716212
200324A00014	3/24/2020	0.69	12/24/2020	3/24/2020	100.32314	100.3231355	100.3231355	100.3231355	100.1036499	99.36912247	98.64531806	97.93200331	97.22895156
200324A00048	3/24/2020	0.64	11/2/2020	3/24/2020	100.23062	100.2306221	100.2306221	100.2306221	100.0719313	99.47853269	98.89213488	98.31261469	97.7398518
200326A00044	3/26/2020	0.38	10/9/2020	3/26/2020	100.06627	100.0662661	100.0662661	100.0662661	99.93370297	99.40607163	98.88399358	98.36738146	97.85614973
200330A00051	3/30/2020	0.37	10/1/2020	3/30/2020	100.05831	100.0583129	100.0583129	100.0583129	99.93439325	99.42854757	98.92779528	98.43205988	97.94126638
190528A00037	5/28/2019	2.6	4/28/2020	5/28/2019	100.17573	100.1757252	100.1757252	100.1757252	100.1709939	100.0933955	100.015919	99.93856431	99.86133109
190530A00046	5/30/2019	2.51	5/29/2020	5/30/2019	100.36606	100.3660582	100.3660582	100.3660582	100.3509206	100.1873653	100.0243431	99.86185139	99.69988765
190813A00003	8/13/2019	2.04	7/13/2020	8/13/2019	100.51211	100.5121099	100.5121099	100.5121099	100.4697575	100.1818367	99.89557529	99.61095893	99.32797337
190821A00033	8/21/2019	2.05	4/21/2020	8/21/2019	100.1003	100.1003025	100.1003025	100.1003025	100.0967552	100.0385675	99.98046021	99.92243304	99.86448585
190910A00024	9/10/2019	2.05	4/10/2020	9/10/2019	100.04721	100.0472071	100.0472071	100.0472071	100.045518	100.0178078	99.99012728	99.9624765	99.93485539
190910A00025	9/10/2019	2.05	6/10/2020	9/10/2019	100.35165	100.3516495	100.3516495	100.3516495	100.3305167	100.1338217	99.93790779	99.74277018	99.54840426

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191022A00014	10/22/2019	1.86	4/24/2020	10/22/2019	100.1013	100.1013022	100.1013022	100.1013022	100.0972493	100.030772	99.96439186	99.89810871	99.83192234
191216A00011	12/16/2019	1.84	10/16/2020	12/16/2019	100.87515	100.8751505	100.8751505	100.8751505	100.7345291	100.1852948	99.64204371	99.10467834	98.57310328
200108A00011	1/8/2020	1.88	1/4/2021	1/8/2020	101.25774	101.257736	101.257736	101.257736	101.02343	100.2552499	99.49871332	98.75355708	98.01952592
200121A00001	1/21/2020	1.88	1/15/2021	1/21/2020	101.30738	101.3073809	101.3073809	101.3073809	101.0580792	100.2599224	99.47433923	98.70103432	97.93972134
200203A00020	2/3/2020	1.83	9/3/2020	2/3/2020	100.682	100.6819992	100.6819992	100.6819992	100.5886844	100.157565	99.73013187	99.30633797	98.88613696
200218A00016	2/18/2020	1.83	9/18/2020	2/18/2020	100.74733	100.7473254	100.7473254	100.7473254	100.6373838	100.1650316	99.69711161	99.23356148	98.77432013
200218A00022	2/18/2020	1.82	12/18/2020	2/18/2020	101.13738	101.1373771	101.1373771	101.1373771	100.9243769	100.2027732	99.49146329	98.790228	98.09885429
200309A00053	3/9/2020	0.68	12/9/2020	3/9/2020	100.29789	100.2978886	100.2978886	100.2978886	100.096543	99.40264693	98.7183264	98.04338422	97.37762864
200319A00010	3/19/2020	0.65	3/19/2021	3/19/2020	100.52069	100.5206909	100.5206909	100.5206909	100.1829543	99.21735406	98.27023884	97.34108216	96.42937735
200319A00017	3/19/2020	0.6	12/15/2020	3/19/2020	100.24752	100.2475164	100.2475164	100.2475164	100.0389696	99.32905798	98.62917467	97.93910833	97.2586535
200323A00012	3/23/2020	0.69	2/23/2021	3/23/2020	100.3865	100.3864997	100.3864997	100.3864997	100.0833994	99.18472852	98.30208701	97.43504938	96.58320511
200323A00019	3/23/2020	0.69	3/23/2021	3/23/2020	100.56625	100.5662547	100.5662547	100.5662547	100.2228657	99.24630329	98.28863773	97.34932512	96.42784224
200325A00022	3/25/2020	0.62	10/26/2020	3/25/2020	100.21153	100.2115293	100.2115293	100.2115293	100.060518	99.48620035	98.91844726	98.35714671	97.80218924
200325A00056	3/25/2020	0.63	11/25/2020	3/25/2020	100.24822	100.2482179	100.2482179	100.2482179	100.0634508	99.40762433	98.7603514	98.12146566	97.49080502
200327A00052	3/27/2020	0.73	3/26/2021	3/27/2020	100.453	100.4530011	100.4530011	100.4530011	100.1064556	99.12470791	98.1620777	97.21801139	96.29197657
200330A00063	3/30/2020	0.64	3/30/2021	3/30/2020	100.36722	100.3672239	100.3672239	100.3672239	100.0152434	99.02328185	98.05084187	97.09735247	96.16226471
190517A00016	5/17/2019	2.51	5/15/2020	5/17/2019	100.27531	100.2753148	100.2753148	100.2753148	100.2650394	100.140314	100.0159135	99.89183647	99.76808177
190520A00094	5/22/2019	2.6	4/22/2020	5/22/2019	100.13868	100.1386805	100.1386805	100.1386805	100.1349625	100.0739767	100.0130768	99.95226253	99.89153378
190524A00006	5/24/2019	2.52	5/18/2020	5/24/2019	100.29505	100.2950544	100.2950544	100.2950544	100.283738	100.1507002	100.0180291	99.88572337	99.75378137
190530A00011	5/30/2019	2.41	5/29/2020	5/30/2019	100.37553	100.3755258	100.3755258	100.3755258	100.3603618	100.196525	100.0332252	99.87045988	99.70822636
190531A00010	5/31/2019	2.49	5/26/2020	5/31/2019	100.34276	100.3427646	100.3427646	100.3427646	100.32867	100.1734458	100.0187074	99.86445253	99.71067901
190701A00004	7/1/2019	2.24	6/25/2020	7/1/2019	100.47113	100.4711306	100.4711306	100.4711306	100.4420313	100.2037702	99.96664231	99.73063965	99.49575421
190715A00021	7/15/2019	2.25	6/15/2020	7/15/2019	100.41856	100.4185584	100.4185584	100.4185584	100.3947662	100.1841729	99.97447432	99.76566485	99.55773875
190814A00040	8/14/2019	2.11	5/6/2020	8/14/2019	100.17812	100.1781174	100.1781174	100.1781174	100.1709693	100.071245	99.97172755	99.8724163	99.7733106
191112A00020	11/12/2019	1.85	10/13/2020	11/12/2019	100.86737	100.867375	100.867375	100.867375	100.7300087	100.1889878	99.65377288	99.12427077	98.60039023
200122A00009	1/22/2020	1.86	12/22/2020	1/22/2020	101.18429	101.1842929	101.1842929	101.1842929	100.9664008	100.233757	99.51171751	98.80005335	98.09854202
200214A00008	2/18/2020	1.81	1/12/2021	2/18/2020	101.2381	101.2380988	101.2380988	101.2380988	100.992946	100.2032061	99.4257818	98.66038672	97.90674312
200309A00017	3/9/2020	0.55	3/9/2021	3/9/2020	100.41067	100.4106657	100.4106657	100.4106657	100.0870484	99.14882654	98.2280704	97.32429621	96.4370379
200312A00035	3/12/2020	0.72	12/11/2020	3/12/2020	100.32857	100.3285678	100.3285678	100.3285678	100.1247786	99.4253554	98.73565993	98.05549031	97.38465024
200319A00032	3/19/2020	0.6	12/18/2020	3/19/2020	100.25041	100.2504131	100.2504131	100.2504131	100.0382413	99.32021448	98.61244539	97.91471538	97.22681203
200320A00032	3/20/2020	0.67	2/19/2021	3/20/2020	100.36403	100.3640276	100.3640276	100.3640276	100.0667271	99.1788796	98.3066846	97.44973132	96.60762326
200323A00006	3/23/2020	0.85	3/23/2021	3/23/2020	100.56801	100.5680106	100.5680106	100.5680106	100.2254699	99.25112148	98.29559235	97.35834178	96.43884957
200324A00010	3/24/2020	0.58	9/25/2020	3/24/2020	100.16022	100.1602161	100.1602161	100.1602161	100.0428375	99.55304021	99.06802171	98.58771236	98.11204386

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200325A00027	3/25/2020	0.71	3/25/2021	3/25/2020	100.58937	100.5893696	100.5893696	100.5893696	100.2431533	99.26110752	98.29816537	97.35377416	96.42740236
200330A00025	3/30/2020	0.5	2/26/2021	3/30/2020	100.21484	100.2148421	100.2148421	100.2148421	99.90764157	99.00179211	98.11224427	97.23856171	96.38032353
150601A00528	6/1/2015	3.08	7/27/2029	6/1/2015	112.79505	112.7950475	112.7950475	112.1789997	108.1117962	103.5438457	99.26034722	95.24025602	91.46426954
150601A00542	6/1/2015	1.97	8/4/2021	6/1/2015	101.13235	101.1323519	101.1323519	101.1323519	100.914816	100.2382881	99.57329682	98.91952255	98.27665814
150601A00684	6/1/2015	2.25	2/7/2025	6/1/2015	104.6976	104.6976017	104.6976017	104.6976017	103.3495901	100.9488872	98.63523515	96.40472175	94.25363998
170630A00051	6/30/2017	1.75	6/30/2021	6/30/2017	100.98975	100.9897537	100.9897537	100.9897537	100.780866	100.1116965	99.45387409	98.80707816	98.17100102
170929A00028	9/29/2017	2.8	9/30/2030	9/29/2017	113.88433	113.8843325	113.8843325	112.6653948	107.6250873	102.2924133	97.33537426	92.72294657	88.42694782
171127A00023	11/27/2017	2.85	11/27/2030	11/27/2017	114.40543	114.4054293	114.4054293	113.092736	107.9374434	102.5114362	97.47289249	92.78939247	88.43152241
180322A00030	3/22/2018	2.79	3/24/2025	3/22/2018	107.03114	107.0311388	107.0311388	107.0311388	105.527015	102.9176463	100.40605	97.98771424	95.65836885
180323A00008	3/23/2018	3.35	3/24/2031	3/23/2018	117.94243	117.942433	117.942433	116.3966226	110.8953879	105.1617603	99.84862464	94.91989052	90.34289595
150601A00460	6/1/2015	3.05	5/16/2029	6/1/2015	112.38913	112.3891268	112.3891268	111.8403438	107.8930609	103.4203278	99.22113175	95.27558183	91.56540699
150601A00589	6/1/2015	2.52	7/14/2025	6/1/2015	105.81679	105.8167941	105.8167941	105.8167941	104.2530385	101.6329926	99.11465794	96.69317771	94.3639638
160608A00031	6/8/2016	2.36	6/8/2026	6/8/2016	111.2932	111.2931988	111.2931988	111.2931988	106.1464975	100.8546722	95.88115247	91.20476235	86.80585484
160610A00017	6/10/2016	2.21	6/11/2029	6/10/2016	109.22832	109.2283246	109.2283246	108.5915802	104.4421951	99.83948668	95.527165	91.4836299	87.68907242
170324A00011	3/24/2017	3	3/25/2030	3/24/2017	114.30935	114.3093529	114.3093529	113.3301025	108.5522568	103.4103994	98.61568355	94.14057423	89.959963
170630A00023	6/30/2017	2.77	7/1/2030	6/30/2017	113.37566	113.3756629	113.3756629	112.2869662	107.4075265	102.20236	97.35624904	92.84012452	88.62752952
170908A00007	9/8/2017	2.52	9/9/2030	9/8/2017	112.26815	112.268152	112.268152	111.0674321	106.0987207	100.8417583	95.95505309	91.40803151	87.1729192
171020A00012	10/20/2017	2.85	10/21/2030	10/20/2017	114.28924	114.289237	114.289237	113.0228045	107.9187373	102.5327247	97.52869179	92.87488662	88.54248283
180126A00015	1/26/2018	3.08	1/27/2031	1/26/2018	116.02207	116.0220736	116.0220736	114.5977228	109.2773647	103.7055411	98.53697547	93.737491	89.27611878
180302A00012	3/2/2018	3.3	3/4/2031	3/2/2018	117.49479	117.4947868	117.4947868	116.0038214	110.5696233	104.8923758	99.62876184	94.74350103	90.20464472
180607A00028	6/7/2018	2.76	6/7/2021	6/7/2018	101.57481	101.5748118	101.5748118	101.5748118	101.3837705	100.7528008	100.1318523	99.52065944	98.91896694
150601A00433	6/1/2015	1.91	3/17/2021	6/1/2015	100.78842	100.7884176	100.7884176	100.7884176	100.6546717	100.1677483	99.68728785	99.21314723	98.74518797
150601A00440	6/1/2015	3.27	3/16/2029	6/1/2015	113.14972	113.1497186	113.1497186	112.6516789	108.7794432	104.3530903	100.1930337	96.28020073	92.59705012
150601A00450	6/1/2015	3.28	4/27/2029	6/1/2015	113.35852	113.35852	113.35852	112.8243236	108.8837911	104.403592	100.1957821	96.24065514	92.52010249
160531A00012	5/31/2016	1.43	6/1/2021	5/31/2016	100.73357	100.733571	100.733571	100.733571	100.5428442	99.91405263	99.29527473	98.68624491	98.08670753
160609A00075	6/9/2016	1.94	6/9/2026	6/9/2016	105.31883	105.318827	105.318827	105.318827	103.1235947	99.98052712	96.97898739	94.11127848	91.37018079
161222A00035	12/22/2016	2.29	12/22/2023	12/22/2016	103.86169	103.8616876	103.8616876	103.8616876	102.9573716	101.055756	99.21027864	97.41881816	95.67934966
170406A00031	4/6/2017	3.01	4/6/2027	4/6/2017	116.78445	116.784452	116.784452	116.0887533	110.0067243	103.9641203	98.32462024	93.05863528	88.13891292
170831A00026	8/31/2017	1.65	8/31/2020	8/31/2017	100.35371	100.3537097	100.3537097	100.3537097	100.3137924	100.0609914	99.80974145	99.56002671	99.31183157
170915A00019	9/15/2017	2.67	9/16/2030	9/15/2017	113.13192	113.1319186	113.1319186	111.921667	106.9147411	101.6173437	96.69306434	92.11109142	87.84343445
180202A00020	2/2/2018	3.41	2/3/2031	2/2/2018	118.1691	118.169104	118.169104	116.6710593	111.206361	105.4970466	100.2036267	95.29063674	90.72596054
150601A00439	6/1/2015	2.57	3/18/2024	6/1/2015	104.48588	104.4858832	104.4858832	104.4858832	103.5145962	101.5394663	99.62521867	97.76947141	95.96995339
170428A00034	4/28/2017	2.92	4/29/2030	4/28/2017	113.9862	113.9862017	113.9862017	112.971071	108.1593455	102.9965483	98.1848441	93.69619126	89.50503578

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170505A00007	5/5/2017	2.92	5/6/2030	5/5/2017	114.10337	114.1033651	114.1033651	113.0491102	108.1858738	102.9829094	98.1362467	93.6172408	89.39980341
170512A00030	5/12/2017	2.94	5/12/2027	5/12/2017	115.63633	115.6363282	115.6363282	114.9493408	109.2457686	103.4785639	98.09193234	93.05797912	88.35101941
170705A00021	7/5/2017	2.59	7/6/2027	7/5/2017	113.36677	113.3667698	113.3667698	112.7647834	107.7724226	102.5297659	97.62284166	93.0273047	88.72073664
170901A00005	9/1/2017	2.58	9/3/2030	9/1/2017	112.61268	112.6126831	112.6126831	111.4086356	106.4248864	101.1519561	96.25039026	91.68952593	87.44150723
171130A00037	11/10/2017	2.85	11/12/2030	11/10/2017	114.4045	114.4044973	114.4044973	113.092608	107.9376359	102.5118861	97.47354299	92.7901959	88.43243887
180321A00015	3/21/2018	3.02	3/21/2025	3/21/2018	107.7946	107.7946028	107.7946028	107.7946028	106.0693543	103.2353815	100.5142356	97.90045097	95.38886619
180508A00038	5/8/2018	3.57	5/9/2033	5/8/2018	123.30552	123.3055153	123.3055153	120.0238616	113.0857563	106.2061241	99.91605206	94.15676804	88.87594522
150601A00316	6/1/2015	1.93	6/19/2020	6/1/2015	100.18324	100.1832418	100.1832418	100.1832418	100.1724091	100.0600859	99.94814853	99.83659483	99.72542264
150601A00320	6/1/2015	2.63	6/28/2023	6/1/2015	103.771	103.7710036	103.7710036	103.7710036	103.0604385	101.4397367	99.86198552	98.32569357	96.82943279
150601A00443	6/1/2015	1.91	4/9/2021	6/1/2015	100.84123	100.841226	100.841226	100.841226	100.6927042	100.1719003	99.65846375	99.15222083	98.65300373
150601A00506	6/1/2015	3.14	7/6/2029	6/1/2015	112.99758	112.9975786	112.9975786	112.3996756	108.3580094	103.806622	99.5371669	95.52888729	91.76273695
150601A00549	6/1/2015	1.94	8/13/2021	6/1/2015	101.13326	101.1332604	101.1332604	101.1332604	100.9100606	100.220868	99.54345639	98.8775007	98.22268844
160628A00006	6/28/2016	1.44	6/28/2023	6/28/2016	101.94272	101.9427214	101.9427214	101.9427214	101.215183	99.56229354	97.95345425	96.38713075	94.86185424
160707A00017	7/7/2016	1.22	7/7/2021	7/7/2016	101.36879	101.3687858	101.3687858	101.3687858	100.9092391	99.68744399	98.49334383	97.32599372	96.18449172
170331A00016	3/31/2017	3.02	4/1/2030	3/31/2017	114.42047	114.4204697	114.4204697	113.4399893	108.6574169	103.5105155	98.71111142	94.23163962	90.04696458
170406A00019	4/6/2017	1.84	4/6/2020	4/6/2017	100.02483	100.0248252	100.0248252	100.0248252	100.0238119	100.0071871	99.99057826	99.97398544	99.9574086
170518A00028	5/18/2017	2.45	5/20/2024	5/18/2017	108.34617	108.3461728	108.3461728	108.3461728	105.8930385	102.0971893	98.46514509	94.98887604	91.66079357
170526A00022	5/26/2017	2.77	5/28/2030	5/26/2017	113.264	113.2639988	113.2639988	112.2163277	107.3882475	102.2230747	97.41167572	92.92560233	88.7389464
170714A00014	7/14/2017	2.78	7/15/2030	7/14/2017	113.53222	113.5322246	113.5322246	112.4039782	107.476311	102.2329916	97.35373825	92.8088894	88.57146508
170817A00008	8/17/2017	2.71	8/16/2030	8/17/2017	113.25398	113.2539835	113.2539835	112.0849131	107.1185309	101.8498566	96.94971156	92.38786378	88.13683193
180302A00014	3/2/2018	2.69	3/2/2023	3/2/2018	103.67926	103.6792567	103.6792567	103.6792567	103.0470125	101.5293068	100.0490253	98.60493928	97.19587018
180612A00012	6/12/2018	2.94	6/12/2023	6/12/2018	104.52142	104.5214173	104.5214173	104.5214173	103.7766509	102.0832489	100.434929	98.83012301	97.26732971
180712A00048	7/12/2018	3.05	7/12/2023	7/12/2018	108.78441	108.7844103	108.7844103	108.7844103	107.0405105	103.8744255	100.8214927	97.87700045	95.03646313
160603A00015	6/3/2016	1.95	6/5/2023	6/3/2016	105.06409	105.0640891	105.0640891	105.0640891	103.4540056	100.4681472	97.58639835	94.80449431	92.11837358
160708A00021	7/8/2016	2	7/6/2029	7/8/2016	108.25977	108.2597721	108.2597721	107.5987202	103.4393285	98.84259958	94.53813802	90.50404421	86.72024719
170417A00018	4/17/2017	2.82	4/17/2030	4/17/2017	113.42933	113.429328	113.429328	112.4196742	107.6315668	102.4940804	97.70593835	93.23924188	89.06856671
170417A00059	4/17/2017	2.14	4/18/2022	4/17/2017	103.6348	103.6347973	103.6347973	103.6347973	102.8389024	100.9041095	99.01668336	97.17514817	95.37808506
170519A00021	5/19/2017	2.79	5/20/2030	5/19/2017	113.36265	113.3626471	113.3626471	112.3165902	107.4898439	102.3244891	97.5127472	93.02619275	88.83893744
170609A00011	6/9/2017	2.74	6/10/2030	6/9/2017	113.20525	113.2052521	113.2052521	112.119166	107.2474208	102.0503483	97.21172277	92.70253009	88.49636273
170720A00017	7/20/2017	2.74	7/19/2030	7/20/2017	113.31585	113.3158467	113.3158467	112.1875999	107.2645977	102.0275945	97.15436331	92.61525866	88.3833159
170811A00006	8/11/2017	2.67	8/12/2030	8/11/2017	113.0248	113.0247965	113.0247965	111.8582779	106.9019717	101.6439812	96.75376446	92.20115242	87.95872099
170830A00040	8/30/2017	1.84	8/30/2022	8/30/2017	101.95374	101.9537399	101.9537399	101.9537399	101.4767627	100.2356575	99.02150639	97.83349618	96.67084523
180329A00011	3/29/2018	2.77	3/29/2023	3/29/2018	103.90981	103.9098072	103.9098072	103.9098072	103.2502564	101.6883253	100.1656866	98.68103195	97.23310669

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180402A00025	4/2/2018	3.27	4/2/2031	4/2/2018	117.58273	117.5827258	117.5827258	115.9925099	110.4623162	104.7119073	99.38594378	94.44777281	89.86424374
150601A00342	6/1/2015	3.97	8/26/2033	6/1/2015	124.19462	124.1946226	124.1945595	121.1835867	114.6625948	108.1006966	102.0891452	96.57351461	91.50534079
150601A00434	6/1/2015	1.91	3/17/2021	6/1/2015	100.78842	100.7884164	100.7884164	100.7884164	100.6546707	100.1677481	99.68728836	99.21314845	98.7451899
150601A00559	6/1/2015	3.06	8/31/2029	6/1/2015	112.8335	112.8335019	112.8335019	112.1834932	108.0615989	103.4520847	99.13217268	95.08025592	91.27653046
161222A00036	12/22/2016	2.69	12/22/2026	12/22/2016	108.20628	108.206279	108.206279	108.18303	105.6882783	102.3178408	99.1074045	96.04779911	93.1304522
170616A00012	6/16/2017	2.69	6/17/2030	6/16/2017	112.92406	112.924058	112.924058	111.8402942	106.9804544	101.796137	96.96940623	92.47131529	88.27551838
170804A00009	8/4/2017	2.71	8/5/2030	8/4/2017	113.25334	113.2533381	113.2533381	112.084862	107.1187522	101.8503004	96.95033496	92.38863067	88.13771193
170825A00015	8/25/2017	2.68	8/26/2030	8/25/2017	113.08284	113.082843	113.082843	111.9150134	106.9559107	101.6950259	96.80215232	92.24709745	88.00241627
170921A00056	9/21/2017	2.82	9/21/2027	9/21/2017	116.47471	116.47471	116.47471	115.374669	108.9627819	102.6525151	96.78630961	91.3298703	86.25174182
170925A00048	9/25/2017	2.75	9/25/2030	9/25/2017	113.59457	113.5945663	113.5945663	112.3789523	107.3514903	102.0323848	97.08794711	92.4872349	88.20213945
171117A00017	11/17/2017	2.9	11/18/2030	11/17/2017	114.70012	114.7001185	114.7001185	113.3845394	108.2161796	102.776359	97.72496348	93.0294954	88.66047019
171208A00017	12/8/2017	2.9	12/9/2030	12/8/2017	114.8178	114.8177989	114.8177989	113.4557432	108.2363998	102.7567494	97.67099704	92.9459767	88.55161609
171215A00022	12/15/2017	2.91	12/16/2030	12/15/2017	114.87784	114.8778409	114.8778409	113.5146887	108.2924834	102.8098609	97.72136645	92.99381277	88.59710838
180119A00025	1/19/2018	3.08	1/21/2031	1/19/2018	116.02166	116.0216624	116.0216624	114.5976412	109.277396	103.7056613	98.53716238	93.73772588	89.27638595
180209A00010	2/9/2018	3.25	2/10/2031	2/9/2018	117.18696	117.1869593	117.1869593	115.7008502	110.281192	104.6190356	99.36936429	94.49700166	89.97009248
150601A00435	6/1/2015	1.91	3/17/2021	6/1/2015	100.78842	100.7884161	100.7884161	100.7884161	100.6546705	100.1677481	99.6872885	99.21314876	98.74519037
160524A00006	5/24/2016	1.3	5/26/2020	5/24/2016	100.12095	100.1209477	100.1209477	100.1209477	100.1113734	99.992306	99.87354914	99.75510156	99.63696199
160608A00026	6/8/2016	2.36	6/8/2026	6/8/2016	111.2932	111.2931988	111.2931988	111.2931988	106.1464975	100.8546722	95.88115247	91.20476235	86.80585484
160608A00032	6/8/2016	2.36	6/8/2026	6/8/2016	111.2932	111.2931988	111.2931988	111.2931988	106.1464975	100.8546722	95.88115247	91.20476235	86.80585484
160620A00018	6/20/2016	1.25	6/21/2021	6/20/2016	100.65176	100.6517582	100.6517582	100.6517582	100.4433463	99.77576233	99.11946991	98.47415167	97.83950277
160701A00032	7/1/2016	1.99	7/2/2029	7/1/2016	108.20965	108.2096546	108.2096546	107.5490708	103.3916852	98.79714902	94.49473153	90.46254514	86.6805299
160715A00015	7/15/2016	2.13	7/16/2029	7/15/2016	108.91113	108.9111283	108.9111283	108.2457238	104.0611904	99.43670701	95.10627711	91.04786502	87.24127534
161222A00037	12/22/2016	3.08	12/22/2031	12/22/2016	116.45078	116.4507808	116.4507808	114.6615841	109.181804	103.4928214	98.23417241	93.36746563	88.85811139
170317A00022	3/17/2017	3.11	3/18/2030	3/17/2017	114.91845	114.9184549	114.9184549	113.9343711	109.1313342	103.9622883	99.14219705	94.64338399	90.44061132
170407A00012	4/7/2017	2.88	4/8/2030	4/7/2017	113.7622	113.7622003	113.7622003	112.7500542	107.9481649	102.7958151	97.99379595	93.51413242	89.33133055
170602A00010	6/2/2017	2.7	6/3/2030	6/2/2017	112.97955	112.979545	112.979545	111.8959705	107.0340706	101.8474661	97.01857065	92.51843161	88.32069743
170623A00020	6/23/2017	2.67	6/24/2030	6/23/2017	112.81204	112.8120412	112.8120412	111.7289918	106.8737807	101.6944568	96.87239451	92.37867132	88.18696375
171006A00020	10/6/2017	2.88	10/7/2030	10/6/2017	114.46405	114.4640516	114.4640516	113.1964483	108.0848628	102.690841	97.67933303	93.01854632	88.67961731
171013A00004	10/13/2017	2.77	10/15/2030	10/13/2017	113.82141	113.8214148	113.8214148	112.5604344	107.4772575	102.1132895	97.12972663	92.49494916	88.18025077
171103A00011	11/3/2017	2.83	11/4/2030	11/3/2017	114.28607	114.2860678	114.2860678	112.9759725	107.8264917	102.4064829	97.37345195	92.69502649	88.3418349
171222A00017	12/22/2017	3.04	12/23/2030	12/22/2017	115.65487	115.6548746	115.6548746	114.2821856	109.0246663	103.5049688	98.38207822	93.62257972	89.19617593
180112A00013	1/12/2018	3.05	1/14/2031	1/12/2018	115.83998	115.8399834	115.8399834	114.4185622	109.1067419	103.5438048	98.38345007	93.59156167	89.1372254
180316A00003	3/16/2018	2.43	3/16/2021	3/16/2018	101.26851	101.2685077	101.2685077	101.2685077	101.1156468	100.5686061	100.0290395	99.4967776	98.97165621

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00571	6/1/2015	2.5	9/23/2022	6/1/2015	102.73535	102.7353531	102.7353531	102.7353531	102.2456612	101.0009196	99.78387774	98.59368409	97.42951982
200302A00006	3/2/2020	1.2	3/2/2023	3/2/2020	102.66453	102.664529	102.664529	102.664529	101.2078228	98.36092309	95.60821553	92.94608892	90.37109071
200305A00038	3/5/2020	1.51	3/5/2029	3/5/2020	110.75834	110.7583385	110.7583385	107.6003881	98.95258476	90.99842385	83.74188527	77.11831744	71.06935561
200306A00031	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00038	3/6/2020	1.2	3/8/2027	3/6/2020	106.22421	106.2242085	106.2242085	105.4196445	98.65139295	92.29556713	86.38655647	80.89081095	75.77745557
200309A00045	3/9/2020	0.97	3/7/2025	3/9/2020	103.34917	103.3491722	103.3491722	103.3491722	99.74533124	95.07473786	90.64716477	86.44878604	82.46663013
200310A00024	3/10/2020	0.91	3/10/2025	3/10/2020	103.95637	103.9563651	103.9563651	103.9563651	100.3067204	95.58704594	91.11390858	86.8732285	82.85179944
200310A00054	3/10/2020	1.1	3/10/2025	3/10/2020	103.95168	103.9516763	103.9516763	103.9516763	100.3296675	95.63922542	91.19295552	86.97695232	82.97817076
200310A00062	3/10/2020	1.05	3/8/2024	3/10/2020	102.99437	102.994374	102.994374	102.994374	100.5766285	96.79210965	93.16923487	89.70029052	86.37797094
200311A00055	3/11/2020	1.66	12/17/2027	3/11/2020	110.47123	110.4712287	110.4712287	108.7645034	101.1857624	94.10550116	87.56906666	81.53193139	75.95343115
200316A00067	3/18/2020	1.1	9/15/2022	3/18/2020	101.9986	101.9986036	101.9986036	101.9986036	100.9009356	98.49890675	96.16591008	93.89957516	91.69762749
200317A00039	3/19/2020	1.11	4/15/2022	3/19/2020	101.67911	101.6791051	101.6791051	101.6791051	100.8503516	98.84826307	96.8957307	94.99120848	93.13321002
200318A00013	3/18/2020	1.5	3/18/2025	3/18/2020	106.01866	106.0186589	106.0186589	106.0186589	102.3363206	97.57602989	93.06386879	88.78566568	84.72812909
200318A00038	3/18/2020	1.48	3/18/2025	3/18/2020	105.9187	105.9186955	105.9186955	105.9186955	102.2377411	97.47986441	92.97002762	88.69406324	84.63868367
200318A00054	3/18/2020	1.56	3/18/2025	3/18/2020	106.31855	106.3185492	106.3185492	106.3185492	102.6320591	97.86452634	93.34539228	89.060473	84.99646533
200323A00011	3/23/2020	1.37	3/23/2023	3/23/2020	103.22807	103.2280701	103.2280701	103.2280701	101.7178586	98.81015685	96.00037006	93.28467326	90.659413
200323A00018	3/23/2020	1.37	3/23/2023	3/23/2020	103.22807	103.2280701	103.2280701	103.2280701	101.7178586	98.81015685	96.00037006	93.28467326	90.659413
200324A00012	3/25/2020	1.78	3/25/2025	3/25/2020	107.39542	107.3954151	107.3954151	107.3954151	103.6687313	98.86036891	94.30300232	89.98225981	85.88466503
200324A00031	3/24/2020	1.64	3/22/2024	3/24/2020	105.3888	105.3887958	105.3887958	105.3887958	102.9079797	99.04280905	95.3436743	91.80259071	88.41199965
200325A00046	3/25/2020	1.76	3/25/2025	3/25/2020	107.29509	107.2950939	107.2950939	107.2950939	103.5698074	98.76387599	94.20884969	89.89036104	85.79493761
200325A00047	3/25/2020	1.68	9/25/2024	3/25/2020	106.25953	106.2595291	106.2595291	106.2595291	103.1925837	98.84909754	94.7126825	90.77241337	87.01799759
200326A00011	3/30/2020	1.54	3/31/2025	3/30/2020	106.21191	106.2119112	106.2119112	106.2119112	102.4788751	97.68526275	93.14307977	88.83787238	84.7560906
200207A00007	2/7/2020	1.74	2/7/2023	2/7/2020	104.16634	104.1663428	104.1663428	104.1663428	102.7536925	99.94853678	97.23406948	94.60688855	92.06373803
200211A00017	2/11/2020	1.77	8/12/2024	2/11/2020	106.48871	106.4887105	106.4887105	106.4887105	103.5622146	99.32139276	95.27758482	91.42066068	87.74106145
200228A00071	2/28/2020	1.74	12/14/2029	2/28/2020	113.91316	113.9131585	113.9131585	109.5738718	100.1643294	91.56869284	83.78188117	76.72356326	70.32176646
200302A00014	3/2/2020	1.2	3/2/2022	3/2/2020	101.75466	101.7546643	101.7546643	101.7546643	100.9927651	99.10433917	97.26033519	95.4594442	93.70040445
200302A00016	3/2/2020	1.36	3/3/2025	3/2/2020	105.27501	105.2750126	105.2750126	105.2750126	101.6599893	96.95243616	92.48862223	88.25472931	84.23779052
200304A00005	3/4/2020	0.98	3/4/2025	3/4/2020	104.29197	104.2919714	104.2919714	104.2919714	100.6606726	95.94688596	91.47843705	87.24136254	83.22256238
200304A00025	3/4/2020	1.04	3/6/2023	3/4/2020	102.20113	102.2011321	102.2011321	102.2011321	100.737748	97.88767113	95.13228296	92.46793896	89.89115535
200305A00016	3/5/2020	0.99	3/6/2023	3/5/2020	102.05319	102.0531906	102.0531906	102.0531906	100.5907146	97.74281264	94.98954559	92.3272707	89.75250586
200306A00010	3/6/2020	0.88	3/6/2023	3/6/2020	101.72772	101.7277194	101.7277194	101.7277194	100.2672411	97.42412396	94.67552338	92.0178005	89.44747697
200310A00041	3/10/2020	1.39	3/12/2029	3/10/2020	109.70699	109.7069912	109.7069912	106.5280877	97.90277799	89.97912473	82.75294372	76.1594147	70.14003645
200311A00023	3/11/2020	1.41	3/10/2028	3/11/2020	110.35723	110.3572319	110.3572319	108.3624556	100.4999772	93.19382338	86.46701393	80.27077711	74.56067241

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200312A00006	3/12/2020	1.23	3/12/2025	3/12/2020	104.60352	104.6035176	104.6035176	104.6035176	100.9649712	96.2542381	91.78875235	87.55453906	83.53848874
200312A00014	3/12/2020	1.04	3/12/2025	3/12/2020	104.61131	104.6113064	104.6113064	104.6113064	100.9449626	96.20482113	91.71230445	87.45326238	83.41442333
200313A00019	3/13/2020	1.55	3/13/2026	3/13/2020	107.44089	107.4408863	107.4408863	107.4408863	101.9677794	96.34374683	91.06342919	86.10412447	81.44473942
200316A00042	3/16/2020	1.23	3/15/2024	3/16/2020	103.72711	103.7271063	103.7271063	103.7271063	101.2823828	97.4667056	93.81457884	90.31816511	86.97004343
200316A00046	3/16/2020	1.18	3/18/2024	3/16/2020	103.53495	103.5349483	103.5349483	103.5349483	101.0835256	97.26436182	93.60926232	90.1103483	86.76016053
200316A00055	3/16/2020	1.06	3/14/2025	3/16/2020	104.7166	104.7166035	104.7166035	104.7166035	101.0411381	96.29378566	91.79465439	87.52954607	83.48514504
200316A00072	3/16/2020	1.18	3/16/2023	3/16/2020	102.63986	102.6398577	102.6398577	102.6398577	101.1499868	98.26851021	95.48355253	92.79136576	90.18836875
200317A00023	3/17/2020	1.1	3/17/2025	3/17/2020	104.92514	104.9251442	104.9251442	104.9251442	101.2352859	96.47588469	91.96564622	87.69029799	83.63645607
200318A00049	3/18/2020	0.84	3/18/2021	3/18/2020	100.55023	100.5502285	100.5502285	100.5502285	100.2146751	99.25378238	98.31119948	97.38640718	96.47890577
200319A00037	3/19/2020	0.99	6/18/2021	3/19/2020	100.86644	100.8664426	100.8664426	100.8664426	100.4132589	99.20569772	98.02695927	96.87602211	95.75191252
180919A00090	3/19/2020	3.24	3/19/2024	3/19/2020	111.7787	111.7787031	111.7787031	111.7787031	109.2446635	105.2617128	101.448044	97.79556615	94.29661845
200218A00025	2/21/2020	1.71	2/24/2023	2/21/2020	104.1448	104.1448026	104.1448026	104.1448026	102.6930609	99.84067205	97.08196528	94.41337128	91.83147661
200220A00014	2/20/2020	2.09	12/21/2029	2/20/2020	117.34168	117.34168	117.34168	112.9442321	103.3807689	94.62244158	86.68541649	79.48820278	72.95778942
200228A00091	2/28/2020	1.72	12/7/2029	2/28/2020	113.69239	113.6923857	113.6923857	109.3871361	100.0017414	91.42772675	83.6593645	76.61676074	70.22832119
200304A00012	3/4/2020	0.98	3/4/2025	3/4/2020	104.29197	104.2919714	104.2919714	104.2919714	100.6606726	95.94688596	91.47843705	87.24136254	83.22256238
200304A00029	3/4/2020	1.17	3/4/2025	3/4/2020	104.33557	104.3355657	104.3355657	104.3355657	100.7295784	96.04222608	91.59802899	87.3831854	83.38474468
200305A00014	3/10/2020	1	2/15/2023	3/10/2020	102.04677	102.0467683	102.0467683	102.0467683	100.6283418	97.83143845	95.1258823	92.50821749	89.97513777
200305A00037	3/5/2020	1.43	3/6/2028	3/5/2020	108.93648	108.9364845	108.9364845	106.9874471	99.25978468	92.07468166	85.45730938	79.3600382	73.73945349
200305A00039	3/5/2020	1.58	3/5/2030	3/5/2020	112.63817	112.6381716	112.6381716	107.9293088	98.39098016	89.71109946	81.86714131	74.77435457	68.35696631
200306A00055	3/6/2020	0.82	3/6/2025	3/6/2020	103.4987	103.4987039	103.4987039	103.4987039	99.87064765	95.17129562	90.71707335	86.4940065	82.48898593
200309A00007	3/9/2020	1.11	3/9/2027	3/9/2020	105.6	105.5999995	105.5999995	104.7923689	98.03739776	91.70003668	85.80878901	80.33012872	75.23320473
200309A00043	3/9/2020	0.92	6/7/2024	3/9/2020	102.63444	102.6344391	102.6344391	102.6344391	99.95484738	95.95547103	92.13603774	88.48749474	85.00129713
200309A00054	3/9/2020	0.98	3/9/2028	3/9/2020	106.90644	106.9064357	106.9064357	104.9225234	97.16982996	89.99371525	83.3894988	77.30892157	71.70801566
200310A00005	3/10/2020	1.41	3/8/2030	3/10/2020	110.96116	110.9611584	110.9611584	106.2512956	96.77623838	88.16655873	80.38887058	73.35864318	67.00031479
200312A00037	3/12/2020	1.3	3/12/2025	3/12/2020	104.95215	104.9521529	104.9521529	104.9521529	101.3088073	96.58968251	92.116116	87.87411865	83.85056754
200316A00050	3/16/2020	1.54	3/16/2027	3/16/2020	108.61761	108.6176098	108.6176098	107.7852459	100.9372936	94.48668181	88.48922376	82.91085519	77.72023318
200317A00011	3/17/2020	1.04	3/17/2022	3/17/2020	101.47509	101.4750886	101.4750886	101.4750886	100.6918977	98.76775576	96.88980173	95.05664594	93.26695
200317A00033	3/19/2020	1.1	2/15/2022	3/19/2020	101.5281	101.5281012	101.5281012	101.5281012	100.7874115	98.94340944	97.14191436	95.3816986	93.66157785
200317A00045	3/19/2020	1.43	3/19/2025	3/19/2020	105.67191	105.6719054	105.6719054	105.6719054	101.9905636	97.23632609	92.73015635	88.45787535	84.40618522
200317A00064	3/19/2020	1.12	5/16/2022	3/19/2020	101.77032	101.7703183	101.7703183	101.7703183	100.8906927	98.80653134	96.77537179	94.79550208	92.86527923
200318A00037	3/18/2020	1.35	3/18/2024	3/18/2020	104.21459	104.2145901	104.2145901	104.2145901	101.7565982	97.92413872	94.25615591	90.74475473	87.38246049
200302A00017	3/2/2020	1.3	3/4/2024	3/2/2020	103.9759	103.975902	103.975902	103.975902	101.5601983	97.76629093	94.13377924	90.6549872	87.32264346
200302A00025	3/2/2020	1.02	3/2/2022	3/2/2020	101.75299	101.75299	101.75299	101.75299	100.9883341	99.09353657	97.24342114	95.43666804	93.67200535

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200303A00009	3/3/2020	1.3	3/3/2025	3/3/2020	104.97759	104.9775851	104.9775851	104.9775851	101.3666229	96.66619646	92.20924622	87.98196597	83.97140015
200304A00013	3/4/2020	1.01	3/4/2022	3/4/2020	101.38977	101.3897745	101.3897745	101.3897745	100.6261947	98.7362387	96.89087659	95.08879047	93.3287102
200304A00032	3/4/2020	1.6	12/15/2028	3/4/2020	111.28368	111.2836814	111.2836814	108.4042409	99.92725871	92.10417846	84.95089111	78.40665136	72.41651265
200306A00006	3/6/2020	0.88	3/6/2023	3/6/2020	101.72772	101.7277194	101.7277194	101.7277194	100.2672411	97.42412396	94.67552338	92.0178005	89.44747697
200306A00036	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00040	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00077	3/6/2020	1.06	3/6/2025	3/6/2020	103.79419	103.7941927	103.7941927	103.7941927	100.1880363	95.5090587	91.07324996	86.86678746	82.87670217
200310A00015	3/10/2020	1.37	3/11/2030	3/10/2020	110.57278	110.5727776	110.5727776	105.8512565	96.38606834	87.78896863	80.02379514	73.00593261	66.65975236
200310A00034	3/10/2020	1.41	3/11/2030	3/10/2020	110.97013	110.9701251	110.9701251	106.2452825	96.76358388	88.1486834	80.36690544	73.33354025	66.97287298
200310A00040	3/10/2020	1.36	3/10/2028	3/10/2020	108.39161	108.3916082	108.3916082	106.4312005	98.71098791	91.53832795	84.93362196	78.84913988	73.24138216
200311A00012	3/11/2020	0.87	3/11/2022	3/11/2020	101.12841	101.1284096	101.1284096	101.1284096	100.3553739	98.45007868	96.59017384	94.77430469	93.00116616
200316A00015	3/16/2020	0.99	3/14/2022	3/16/2020	101.37015	101.3701532	101.3701532	101.3701532	100.5917959	98.67639698	96.80679974	94.98163162	93.19957058
200316A00037	3/16/2020	1.06	3/14/2025	3/16/2020	104.7166	104.7166035	104.7166035	104.7166035	101.0411381	96.29378566	91.79465439	87.52954607	83.48514504
200318A00026	3/20/2020	1.08	3/16/2022	3/20/2020	101.55222	101.5522206	101.5522206	101.5522206	100.7702351	98.84788069	96.97160712	95.14002979	93.35181517
200319A00025	3/19/2020	1.39	3/21/2024	3/19/2020	104.38356	104.3835599	104.3835599	104.3835599	101.9153596	98.07232687	94.39450612	90.87395211	87.5031435
200324A00013	3/25/2020	1.78	3/25/2025	3/25/2020	107.39542	107.3954151	107.3954151	107.3954151	103.6687313	98.86036891	94.30300232	89.98225981	85.88466503
200324A00051	3/24/2020	1.73	11/1/2024	3/24/2020	106.6314	106.6314017	106.6314017	106.6314017	103.4358318	98.99468401	94.76901206	90.74724396	86.91849109
200326A00009	3/27/2020	1.54	3/27/2025	3/27/2020	106.19834	106.1983434	106.1983434	106.1983434	102.4807212	97.69671962	93.16313331	88.86559658	84.79064007
200327A00013	3/27/2020	0.72	3/27/2023	3/27/2020	101.81927	101.8192745	101.8192745	101.8192745	100.3010312	97.39199039	94.58170123	91.86627963	89.24201682
200211A00014	2/11/2020	1.75	8/11/2023	2/11/2020	104.93481	104.9348098	104.9348098	104.9348098	103.0632223	99.76991243	96.59887522	93.54495068	90.60322357
200214A00018	2/18/2020	1.77	1/12/2022	2/18/2020	102.68141	102.6814062	102.6814062	102.6814062	101.9805378	100.2175286	98.49331968	96.80675784	95.15673441
200220A00013	2/20/2020	2.09	12/14/2029	2/20/2020	117.30791	117.3079128	117.3079128	112.9433511	103.396821	94.65214583	86.72610294	79.53760202	73.01397661
200221A00011	2/21/2020	1.69	8/21/2024	2/21/2020	106.17115	106.1711515	106.1711515	106.1711515	103.2193669	98.96366779	94.90676487	91.03838354	87.34883151
200221A00024	2/21/2020	2.05	12/28/2029	2/21/2020	116.98597	116.9859665	116.9859665	112.5586025	102.9940154	94.23921277	86.30725225	79.11632937	72.59316806
200224A00006	2/24/2020	1.58	11/15/2024	2/24/2020	105.98702	105.9870213	105.9870213	105.9870213	102.7510937	98.28982739	94.04673968	90.01002493	86.16858041
200225A00008	2/25/2020	1.52	6/3/2024	2/25/2020	105.15314	105.1531356	105.1531356	105.1531356	102.4592583	98.41804864	94.55760089	90.86885839	87.3432706
200226A00004	2/26/2020	1.58	2/26/2025	2/26/2020	106.3481	106.3480997	106.3480997	106.3480997	102.7372968	98.01621829	93.53854563	89.29052698	85.25925495
200228A00045	2/28/2020	1.45	2/28/2025	2/28/2020	105.71163	105.7116348	105.7116348	105.7116348	102.1020783	97.3910457	92.92339529	88.68535539	84.66400123
200302A00002	3/2/2020	1.12	3/3/2025	3/2/2020	104.98671	104.9867094	104.9867094	104.9867094	101.3497195	96.62156575	92.13911801	87.88840632	83.85632373
200302A00013	3/2/2020	1.25	3/4/2024	3/2/2020	103.77793	103.7779286	103.7779286	103.7779286	101.3641095	97.57403951	93.94524706	90.47006078	87.1412137
200304A00019	3/4/2020	1.04	3/6/2023	3/4/2020	102.20113	102.2011321	102.2011321	102.2011321	100.737748	97.88767113	95.13228296	92.46793896	89.89115535
200304A00030	3/4/2020	1.6	12/22/2028	3/4/2020	111.30828	111.3082811	111.3082811	108.4041905	99.91024318	92.07318161	84.90838495	78.35476971	72.35709451
200304A00033	3/4/2020	1.17	3/4/2025	3/4/2020	104.33557	104.3355657	104.3355657	104.3355657	100.7295784	96.04222608	91.59802899	87.3831854	83.38474468

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200305A00001	3/5/2020	1.14	3/5/2025	3/5/2020	104.18909	104.1890946	104.1890946	104.1890946	100.58132	95.89517195	91.45229621	87.23887556	83.24194541
200305A00006	3/5/2020	0.99	3/6/2023	3/5/2020	102.05319	102.0531906	102.0531906	102.0531906	100.5907146	97.74281264	94.98954559	92.3272707	89.75250586
200305A00030	3/5/2020	1.58	3/5/2030	3/5/2020	112.63817	112.6381716	112.6381716	107.9293088	98.39098016	89.71109946	81.86714131	74.77435457	68.35696631
200306A00028	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00064	3/6/2020	1.2	3/8/2027	3/6/2020	106.22421	106.2242085	106.2242085	105.4196445	98.65139295	92.29556713	86.38655647	80.89081095	75.77745557
200309A00044	3/9/2020	0.94	9/9/2024	3/9/2020	102.88541	102.885412	102.885412	102.885412	99.91002307	95.67954951	91.64982511	87.81033582	84.15117104
200310A00014	3/10/2020	0.91	3/10/2025	3/10/2020	103.95637	103.9563651	103.9563651	103.9563651	100.3067204	95.58704594	91.11390858	86.8732285	82.85179944
200207A00013	2/12/2020	1.73	2/10/2023	2/12/2020	104.14913	104.1491326	104.1491326	104.1491326	102.7296597	99.91635323	97.19425568	94.55993603	92.01011099
200221A00023	2/21/2020	2.05	12/7/2029	2/21/2020	116.88693	116.8869287	116.8869287	112.5581233	103.0441312	94.33010096	86.43092097	79.26598649	72.76305354
200225A00029	2/25/2020	1.89	12/28/2029	2/25/2020	115.42804	115.428042	115.428042	111.0124988	101.5110797	92.82489944	84.95703012	77.82601915	71.35891193
200302A00056	3/2/2020	1.2	3/2/2023	3/2/2020	102.66453	102.664529	102.664529	102.664529	101.2078228	98.36092309	95.60821553	92.94608892	90.37109071
200304A00011	3/4/2020	0.83	3/4/2022	3/4/2020	101.38742	101.3874177	101.3874177	101.3874177	100.6210717	98.72473372	96.87325086	95.06529448	93.29958416
200304A00018	3/4/2020	0.98	3/4/2025	3/4/2020	104.29197	104.2919714	104.2919714	104.2919714	100.6606726	95.94688596	91.47843705	87.24136254	83.22256238
200304A00020	3/4/2020	0.98	3/4/2025	3/4/2020	104.29197	104.2919714	104.2919714	104.2919714	100.6606726	95.94688596	91.47843705	87.24136254	83.22256238
200304A00035	3/4/2020	1.17	3/4/2025	3/4/2020	104.33557	104.3355657	104.3355657	104.3355657	100.7295784	96.04222608	91.59802899	87.3831854	83.38474468
200305A00017	3/5/2020	1.19	3/5/2025	3/5/2020	104.43722	104.4372245	104.4372245	104.4372245	100.8260555	96.13395578	91.68534814	87.46640542	83.46415354
200305A00019	3/5/2020	0.81	3/6/2023	3/5/2020	102.0512	102.0512042	102.0512042	102.0512042	100.581691	97.72172444	94.957052	92.28399644	89.69904317
200306A00003	3/6/2020	0.7	3/6/2023	3/6/2020	101.72485	101.724851	101.724851	101.724851	100.2573467	97.40219039	94.64220891	91.97372899	89.39323982
200306A00022	3/6/2020	1.2	3/8/2027	3/6/2020	106.22421	106.2242085	106.2242085	105.4196445	98.65139295	92.29556713	86.38655647	80.89081095	75.77745557
200306A00066	3/6/2020	1.2	3/8/2027	3/6/2020	106.22421	106.2242085	106.2242085	105.4196445	98.65139295	92.29556713	86.38655647	80.89081095	75.77745557
200309A00009	3/9/2020	0.92	3/9/2027	3/9/2020	105.61761	105.61761	105.61761	104.7983169	97.97573899	91.58866986	85.65304271	80.13482628	75.00271203
200309A00029	3/9/2020	1.02	3/7/2025	3/9/2020	103.59758	103.5975757	103.5975757	103.5975757	99.99033037	95.31377242	90.88045529	86.67654298	82.68905443
200309A00040	3/9/2020	0.91	3/8/2024	3/9/2020	102.43851	102.4385115	102.4385115	102.4385115	100.026081	96.25236523	92.63996033	89.1811657	85.86868807
200309A00048	3/9/2020	1.11	3/9/2027	3/9/2020	105.6	105.5999995	105.5999995	104.7923689	98.03739776	91.70003668	85.80878901	80.33012872	75.23320473
200310A00003	3/10/2020	1.1	3/10/2025	3/10/2020	103.95168	103.9516763	103.9516763	103.9516763	100.3296675	95.63922542	91.19295552	86.97695232	82.97817076
200310A00020	3/10/2020	1.1	3/10/2025	3/10/2020	103.95168	103.9516763	103.9516763	103.9516763	100.3296675	95.63922542	91.19295552	86.97695232	82.97817076
200311A00024	3/11/2020	1.54	3/11/2030	3/11/2020	114.25507	114.2550665	114.2550665	109.4205886	99.69050477	90.84373618	82.85256306	75.62990448	69.09793933
200312A00036	3/12/2020	1.04	3/11/2022	3/12/2020	101.46267	101.4626699	101.4626699	101.4626699	100.6884337	98.77979914	96.91661925	95.09753757	93.32124726
200326A00025	3/26/2020	0.99	3/28/2022	3/26/2020	101.3972	101.397198	101.397198	101.397198	100.5979665	98.6464399	96.74243739	94.88450781	93.07125449
200327A00022	3/27/2020	0.9	3/27/2023	3/27/2020	101.82214	101.8221379	101.8221379	101.8221379	100.31127	97.41462738	94.61604768	91.91168341	89.29786029
200327A00059	3/27/2020	1.01	3/27/2024	3/27/2020	102.87308	102.8730824	102.8730824	102.8730824	100.4024762	96.57463744	92.91235277	89.40762075	86.05286879
200327A00088	3/27/2020	1.22	3/27/2025	3/27/2020	104.59145	104.5914539	104.5914539	104.5914539	100.8962539	96.15122872	91.65516469	87.39376295	83.35361745
200330A00006	3/30/2020	0.9	3/28/2025	3/30/2020	103.94533	103.9453252	103.9453252	103.9453252	100.2270365	95.46582608	90.95565803	86.68205875	82.63146155

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200330A00043	3/30/2020	0.86	3/30/2023	3/30/2020	101.70618	101.7061773	101.7061773	101.7061773	100.1889327	97.28659383	94.48277996	91.77361493	89.15539755
200330A00064	3/30/2020	0.83	3/30/2023	3/30/2020	101.61543	101.6154303	101.6154303	101.6154303	100.0987607	97.19778401	94.39529816	91.68742804	89.07047356
200327A00025	3/30/2020	0.86	3/30/2022	3/30/2020	101.13863	101.1386311	101.1386311	101.1386311	100.3373909	98.38339366	96.47711602	94.61709695	92.80193041
200327A00039	3/27/2020	0.84	3/28/2022	3/27/2020	101.09522	101.0952215	101.0952215	101.0952215	100.2971056	98.34866292	96.44768412	94.59271978	92.78237489
200327A00040	3/27/2020	0.72	3/27/2023	3/27/2020	101.81927	101.8192745	101.8192745	101.8192745	100.3010312	97.39199039	94.58170123	91.86627963	89.24201682
200327A00079	3/27/2020	0.99	3/27/2025	3/27/2020	104.39728	104.3972757	104.3972757	104.3972757	100.6764757	95.90658595	91.3878983	87.10594232	83.04715353
200330A00036	3/30/2020	0.86	3/30/2023	3/30/2020	101.70618	101.7061773	101.7061773	101.7061773	100.1889327	97.28659383	94.48277996	91.77361493	89.15539755
200330A00044	3/30/2020	1.09	3/28/2025	3/30/2020	103.94082	103.9408156	103.9408156	103.9408156	100.2509168	95.51937878	91.03646159	86.78787174	82.76020889
200331A00007	3/31/2020	0.72	3/29/2024	3/31/2020	102.4318	102.4318015	102.4318015	102.4318015	99.94478883	96.10123509	92.42473337	88.90717588	85.54089126
200325A00016	3/30/2020	1.67	3/31/2025	3/30/2020	106.86613	106.8661325	106.8661325	106.8661325	103.1239348	98.31442228	93.75693338	89.43698697	85.34100717
200325A00032	3/25/2020	1.29	9/26/2022	3/25/2020	102.50077	102.5007669	102.5007669	102.5007669	101.3796441	98.94253787	96.57626211	94.27835526	92.04645671
200326A00016	3/26/2020	1.54	3/25/2025	3/26/2020	106.19156	106.1915608	106.1915608	106.1915608	102.4816453	97.70245386	93.17317086	88.8794746	84.807936
200327A00027	3/27/2020	0.9	3/27/2023	3/27/2020	101.82214	101.8221379	101.8221379	101.8221379	100.31127	97.41462738	94.61604768	91.91168341	89.29786029
200327A00035	3/27/2020	0.83	3/27/2024	3/27/2020	102.87257	102.8725701	102.8725701	102.8725701	100.3869663	96.53954638	92.85902503	89.33731503	85.96676376
200327A00037	3/27/2020	1.18	3/27/2026	3/27/2020	106.425	106.4250008	106.4250008	106.4250008	100.840511	95.17599724	89.86161345	84.87400624	80.19149282
200327A00076	3/27/2020	1.18	3/27/2026	3/27/2020	106.425	106.4250008	106.4250008	106.4250008	100.840511	95.17599724	89.86161345	84.87400624	80.19149282
200330A00066	3/30/2020	1.08	3/31/2025	3/30/2020	103.89697	103.8969744	103.8969744	103.8969744	100.1963562	95.45900595	90.97098237	86.71792843	82.68638578
200331A00008	3/31/2020	0.64	3/31/2023	3/31/2020	101.58307	101.5830746	101.5830746	101.5830746	100.0567844	97.14131709	94.3251921	91.6044877	88.97545988
200319A00009	3/19/2020	0.94	3/18/2022	3/19/2020	101.63392	101.6339184	101.6339184	101.6339184	100.8457815	98.91088188	97.02259712	95.17951957	93.38029378
200319A00038	3/19/2020	1.18	9/17/2021	3/19/2020	101.32599	101.3259936	101.3259936	101.3259936	100.7672161	99.32462511	97.90974259	96.52184096	95.1602176
200320A00013	3/20/2020	1.25	3/20/2024	3/20/2020	104.54631	104.5463114	104.5463114	104.5463114	102.0645123	98.20117267	94.50426783	90.96577937	87.57811743
200324A00029	3/24/2020	1.86	3/24/2025	3/24/2020	107.79243	107.7924334	107.7924334	107.7924334	104.064046	99.24840643	94.68386964	90.35606937	86.25153371
200325A00038	3/25/2020	1.48	9/25/2023	3/25/2020	104.16505	104.1650536	104.1650536	104.1650536	102.1836676	98.78979511	95.52637437	92.38770734	89.36837624
200325A00043	3/25/2020	1.62	6/25/2024	3/25/2020	105.65369	105.6536903	105.6536903	105.6536903	102.8872744	98.78057562	94.85973252	91.11531702	87.53843551
200326A00012	3/26/2020	0.99	3/25/2022	3/26/2020	101.3914	101.3914026	101.3914026	101.3914026	100.5966433	98.65285528	96.75622012	94.90530375	93.09872565
200327A00032	3/27/2020	0.66	3/28/2022	3/27/2020	101.092	101.0920024	101.0920024	101.0920024	100.2909411	98.33581808	96.42843994	94.56734537	92.75112799
200327A00055	3/27/2020	1.01	3/27/2024	3/27/2020	102.87308	102.8730824	102.8730824	102.8730824	100.4024762	96.57463744	92.91235277	89.40762075	86.05286879
200327A00056	3/27/2020	1.18	3/27/2025	3/27/2020	104.39059	104.3905927	104.3905927	104.3905927	100.6981955	95.95804236	91.46666861	87.20978375	83.17398963
200327A00058	3/27/2020	0.9	3/27/2023	3/27/2020	101.82214	101.8221379	101.8221379	101.8221379	100.31127	97.41462738	94.61604768	91.91168341	89.29786029
200330A00020	3/30/2020	0.68	3/30/2021	3/30/2020	100.40761	100.4076074	100.4076074	100.4076074	100.0555658	99.0633861	98.09073099	97.1370294	96.20173229
200331A00011	3/31/2020	1.09	3/31/2025	3/31/2020	103.9473	103.9472991	103.9472991	103.9472991	100.2459761	95.50740284	91.01820188	86.76401417	82.73137937
200331A00017	3/31/2020	0.9	3/31/2025	3/31/2020	103.95182	103.9518171	103.9518171	103.9518171	100.2219767	95.45365471	90.93713623	86.65788114	82.60226183
200218A00026	2/21/2020	1.73	3/25/2024	2/21/2020	105.76145	105.7614478	105.7614478	105.7614478	103.2683993	99.38860391	95.67570872	92.12167347	88.71888789

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200225A00023	2/25/2020	1.62	2/25/2025	2/25/2020	106.54228	106.5422833	106.5422833	106.5422833	102.9325592	98.2094399	93.72962815	89.47938696	85.44582238
200225A00028	2/25/2020	1.89	12/21/2029	2/25/2020	115.39805	115.3980474	115.3980474	111.015209	101.5303651	92.85750945	85.0003219	77.87774849	71.41717738
200227A00055	2/27/2020	1.41	2/27/2023	2/27/2020	103.27441	103.2744056	103.2744056	103.2744056	101.8210406	98.97299044	96.21884315	93.55500972	90.97805826
200302A00003	3/2/2020	1.2	3/2/2023	3/2/2020	102.66453	102.664529	102.664529	102.664529	101.2078228	98.36092309	95.60821553	92.94608892	90.37109071
200305A00032	3/5/2020	1.58	3/5/2030	3/5/2020	112.63817	112.6381716	112.6381716	107.9293088	98.39098016	89.71109946	81.86714131	74.77435457	68.35696631
200305A00045	3/5/2020	0.99	3/6/2023	3/5/2020	102.05319	102.0531906	102.0531906	102.0531906	100.5907146	97.74281264	94.98954559	92.3272707	89.75250586
200306A00007	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00049	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200309A00030	3/9/2020	1.11	3/9/2027	3/9/2020	105.6	105.5999995	105.5999995	104.7923689	98.03739776	91.70003668	85.80878901	80.33012872	75.23320473
200310A00016	3/10/2020	1.02	3/10/2026	3/10/2020	105.41417	105.4141734	105.4141734	105.4141734	99.94765629	94.34900828	89.09440869	84.16106153	79.52778995
200311A00032	3/11/2020	1.11	3/11/2025	3/11/2020	104.95886	104.9588636	104.9588636	104.9588636	101.2915533	96.5453559	92.04684412	87.78187532	83.73718436
200312A00019	3/17/2020	1.06	5/16/2022	3/17/2020	101.64141	101.6414124	101.6414124	101.6414124	100.7623031	98.67954178	96.64975398	94.67122857	92.74232336
200316A00071	3/16/2020	1.18	3/16/2023	3/16/2020	102.63986	102.6398577	102.6398577	102.6398577	101.1499868	98.26851021	95.48355253	92.79136576	90.18836875
200317A00027	3/17/2020	1.29	3/17/2025	3/17/2020	104.96631	104.9663077	104.9663077	104.9663077	101.3023338	96.56976854	92.08413992	87.83134129	83.79814189
200319A00039	3/19/2020	1.12	3/18/2022	3/19/2020	101.636	101.6360037	101.6360037	101.6360037	100.8507432	98.92241562	97.04042971	95.20338925	93.4099497
200320A00026	3/20/2020	2.11	3/20/2029	3/20/2020	116.19146	116.1914571	116.1914571	112.9507466	104.0705392	95.86631973	88.37877628	81.54148965	75.29451071
200325A00044	3/25/2020	1.7	12/23/2024	3/25/2020	106.64422	106.6442176	106.6442176	106.6442176	103.2684307	98.70183858	94.36257426	90.23810857	86.31667392
200325A00048	3/25/2020	1.34	12/27/2022	3/25/2020	102.89173	102.8917315	102.8917315	102.8917315	101.5800038	98.90095495	96.30555223	93.79064055	91.353208
200327A00019	3/30/2020	0.85	3/15/2022	3/30/2020	101.09527	101.0952655	101.0952655	101.0952655	100.3164178	98.40121744	96.53188717	94.70705049	92.92538155
200327A00031	3/27/2020	1.18	3/27/2025	3/27/2020	104.39059	104.3905927	104.3905927	104.3905927	100.6981955	95.95804236	91.46666861	87.20978375	83.17398963
200218A00030	2/21/2020	1.71	2/24/2023	2/21/2020	104.1448	104.1448026	104.1448026	104.1448026	102.6930609	99.84067205	97.08196528	94.41337128	91.83147661
200220A00034	2/25/2020	1.71	3/27/2023	2/25/2020	104.26562	104.2656159	104.2656159	104.2656159	102.7393276	99.80609625	96.97184568	94.23269786	91.58494924
200302A00005	3/2/2020	1.31	3/3/2025	3/2/2020	105.02716	105.0271564	105.0271564	105.0271564	101.4155173	96.71390308	92.25580888	88.02742652	84.01579855
200302A00018	3/2/2020	1.25	3/2/2023	3/2/2020	102.81192	102.8119199	102.8119199	102.8119199	101.3543139	98.50525531	95.75044204	93.08626122	90.50925864
200304A00002	3/4/2020	0.98	3/4/2025	3/4/2020	104.29197	104.2919714	104.2919714	104.2919714	100.6606726	95.94688596	91.47843705	87.24136254	83.22256238
200304A00015	3/4/2020	0.83	3/4/2022	3/4/2020	101.38742	101.3874177	101.3874177	101.3874177	100.6210717	98.72473372	96.87325086	95.06529447	93.29958416
200304A00022	3/4/2020	0.86	3/6/2023	3/4/2020	102.19955	102.1995465	102.1995465	102.1995465	100.7291202	97.86696719	95.1001625	92.4250271	89.8380447
200305A00015	3/5/2020	0.99	3/6/2023	3/5/2020	102.05319	102.0531906	102.0531906	102.0531906	100.5907146	97.74281264	94.98954559	92.3272707	89.75250586
200306A00013	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200306A00054	3/6/2020	1.01	3/6/2025	3/6/2020	103.54593	103.5459259	103.5459259	103.5459259	99.94316891	95.2701495	90.84007873	86.63914406	82.65438596
200309A00038	3/9/2020	1.26	3/11/2030	3/9/2020	109.48007	109.4800721	109.4800721	104.7676849	95.34790059	86.799753	79.08024183	72.1050116	65.79867063
200310A00023	3/10/2020	1.02	3/10/2026	3/10/2020	105.41417	105.4141734	105.4141734	105.4141734	99.94765629	94.34900828	89.09440869	84.16106153	79.52778995
200310A00038	3/10/2020	1.41	3/11/2030	3/10/2020	110.97013	110.9701251	110.9701251	106.2452825	96.76358388	88.1486834	80.36690544	73.33354025	66.97287298

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200311A00043	3/11/2020	1.3	3/11/2025	3/11/2020	104.94942	104.9494181	104.9494181	104.9494181	101.3099048	96.59315876	92.12172066	87.88162306	83.8597628
200311A00044	3/11/2020	1.73	3/11/2030	3/11/2020	114.1489	114.1489046	114.1489046	109.3974907	99.78370824	91.02640158	83.11178778	75.95440136	69.47783802
200312A00015	3/12/2020	1.23	3/10/2025	3/12/2020	104.59843	104.5984309	104.5984309	104.5984309	100.9675353	96.26154199	91.8002965	87.56986708	83.55718378
200316A00009	3/16/2020	1.25	3/14/2025	3/16/2020	104.70832	104.7083239	104.7083239	104.7083239	101.0607522	96.3428778	91.87083977	87.63061592	83.60905332
200316A00041	3/16/2020	1.16	3/16/2023	3/16/2020	102.58013	102.5801306	102.5801306	102.5801306	101.0906313	98.21004053	95.4259467	92.73460244	90.13242733
200316A00048	3/16/2020	1.11	3/16/2023	3/16/2020	102.43081	102.4308127	102.4308127	102.4308127	100.9422423	98.06386632	95.28193211	92.59269415	89.99257376
200317A00025	3/17/2020	1.66	3/15/2030	3/17/2020	115.47541	115.4754121	115.4754121	110.6101692	100.8203237	91.91191054	83.86432583	76.58995065	70.0104873
200318A00039	3/18/2020	1.08	3/18/2022	3/18/2020	101.55658	101.5565811	101.5565811	101.5565811	100.7716092	98.8440825	96.9628819	95.12661169	93.33392775
200310A00021	3/10/2020	1.1	3/10/2025	3/10/2020	103.95168	103.9516763	103.9516763	103.9516763	100.3296675	95.63922542	91.19295552	86.97695232	82.97817076
200310A00028	3/10/2020	1.1	3/10/2025	3/10/2020	103.95168	103.9516763	103.9516763	103.9516763	100.3296675	95.63922542	91.19295552	86.97695232	82.97817076
200310A00033	3/10/2020	0.91	3/10/2025	3/10/2020	103.95637	103.9563651	103.9563651	103.9563651	100.3067204	95.58704594	91.11390858	86.8732285	82.85179944
200310A00051	3/10/2020	1.41	3/8/2030	3/10/2020	110.96116	110.9611584	110.9611584	106.2512956	96.77623838	88.16655873	80.38887058	73.35864318	67.00031479
200311A00031	3/11/2020	1.41	12/24/2027	3/11/2020	108.5595	108.5595005	108.5595005	106.8341757	99.29553585	92.27041313	85.78764125	79.80265286	74.27475928
200312A00009	3/12/2020	1.46	3/12/2027	3/12/2020	108.04645	108.0464497	108.0464497	107.2277215	100.4039413	93.98023281	88.00751539	82.45192268	77.28229046
200316A00040	3/16/2020	1.04	3/16/2022	3/16/2020	101.47302	101.4730188	101.4730188	101.4730188	100.6913203	98.76976238	96.89426992	95.06345874	93.27599572
200316A00043	3/16/2020	1.3	3/14/2025	3/16/2020	104.95762	104.9576226	104.9576226	104.9576226	101.3066128	96.58273158	92.10490945	87.85911407	83.83218287
200319A00005	3/19/2020	0.81	3/19/2021	3/19/2020	100.53211	100.532111	100.532111	100.532111	100.1951395	99.2315327	98.28634054	97.35903938	96.44912528
200320A00025	3/20/2020	0.78	3/19/2021	3/20/2020	100.50274	100.502736	100.502736	100.502736	100.1658071	99.20235482	98.25731513	97.33016443	96.42039882
200324A00066	3/26/2020	1.81	3/26/2025	3/26/2020	107.55003	107.5500267	107.5500267	107.5500267	103.8173661	99.00291766	94.43985608	90.11378136	86.01119103
200327A00043	3/27/2020	1.48	3/27/2028	3/27/2020	110.98238	110.9823807	110.9823807	108.9316948	101.0085989	93.64568226	86.86923803	80.6296487	74.88172622
200327A00047	3/27/2020	0.99	3/27/2025	3/27/2020	104.39728	104.3972757	104.3972757	104.3972757	100.6764757	95.90658595	91.3878983	87.10594232	83.04715353
200327A00060	3/27/2020	1.18	3/27/2025	3/27/2020	104.39059	104.3905927	104.3905927	104.3905927	100.6981955	95.95804236	91.46666861	87.20978375	83.17398963
200327A00073	3/27/2020	0.99	3/27/2025	3/27/2020	104.39728	104.3972757	104.3972757	104.3972757	100.6764757	95.90658595	91.3878983	87.10594232	83.04715353
200330A00017	3/30/2020	0.86	3/30/2023	3/30/2020	101.70618	101.7061773	101.7061773	101.7061773	100.1889327	97.28659383	94.48277996	91.77361493	89.15539755
200330A00028	3/30/2020	1.09	3/28/2025	3/30/2020	103.94082	103.9408156	103.9408156	103.9408156	100.2509168	95.51937878	91.03646159	86.78787174	82.76020889
200330A00037	3/30/2020	1.09	3/28/2025	3/30/2020	103.94082	103.9408156	103.9408156	103.9408156	100.2509168	95.51937878	91.03646159	86.78787174	82.76020889
200331A00015	3/31/2020	0.64	3/31/2023	3/31/2020	101.58307	101.5830746	101.5830746	101.5830746	100.0567844	97.14131709	94.3251921	91.6044877	88.97545988
200316A00019	3/16/2020	1.11	3/16/2023	3/16/2020	102.43081	102.4308127	102.4308127	102.4308127	100.9422423	98.06386632	95.28193211	92.59269415	89.99257376
200316A00049	3/16/2020	1.25	3/14/2025	3/16/2020	104.70832	104.7083239	104.7083239	104.7083239	101.0607522	96.3428778	91.87083977	87.63061592	83.60905332
200316A00068	3/16/2020	1.05	3/16/2022	3/16/2020	101.49282	101.4928193	101.4928193	101.4928193	100.711049	98.78929196	96.91360422	95.0826015	93.29495059
200316A00070	3/16/2020	1.05	3/16/2022	3/16/2020	101.49282	101.4928193	101.4928193	101.4928193	100.711049	98.78929196	96.91360422	95.0826015	93.29495059
200318A00044	3/18/2020	1.17	3/18/2024	3/18/2020	104.21905	104.2190475	104.2190475	104.2190475	101.7461924	97.8941642	94.20794484	90.67955491	87.30144092
200325A00009	3/27/2020	1.67	3/27/2025	3/27/2020	106.85114	106.8511423	106.8511423	106.8511423	103.124411	98.3245753	93.77574557	89.46352898	85.37443051

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200325A00013	3/25/2020	1.03	8/16/2021	3/25/2020	101.0377	101.0376959	101.0376959	101.0376959	100.5161249	99.16031409	97.82912789	96.52195401	95.23819994
200325A00042	3/25/2020	1.58	3/25/2024	3/25/2020	105.15888	105.1588821	105.1588821	105.1588821	102.6717011	98.80374679	95.10232402	91.55940708	88.16739951
200327A00045	3/27/2020	2.24	3/27/2034	3/27/2020	129.85434	129.8543358	128.8812388	114.6236549	101.2429529	89.53797122	79.34613254	70.46238956	62.71046839
200327A00046	3/27/2020	1.23	3/27/2025	3/27/2020	104.64167	104.6416692	104.6416692	104.6416692	100.9457685	96.19952532	91.70228871	87.43975775	83.39852441
200327A00048	3/27/2020	1.18	3/24/2025	3/27/2020	104.38337	104.3833725	104.3833725	104.3833725	100.7024272	95.96935152	91.48430259	87.23305541	83.20227178
200327A00051	3/27/2020	0.99	3/27/2025	3/27/2020	104.39728	104.3972757	104.3972757	104.3972757	100.6764757	95.90658595	91.3878983	87.10594232	83.04715353
200327A00061	3/31/2020	1.18	3/31/2025	3/31/2020	104.40022	104.4002215	104.4002215	104.4002215	100.6925559	95.94297482	91.44317746	87.17878581	83.13632161
200327A00077	3/27/2020	0.83	3/27/2024	3/27/2020	102.87257	102.8725701	102.8725701	102.8725701	100.3869663	96.53954638	92.85902503	89.33731503	85.96676376
200330A00038	3/30/2020	1.79	3/29/2030	3/30/2020	114.81715	114.8171487	114.8171487	109.9700465	100.290022	91.47324939	83.50790999	76.30730275	69.79395825
200331A00014	3/31/2020	0.72	3/29/2024	3/31/2020	102.4318	102.4318015	102.4318015	102.4318015	99.94478883	96.10123509	92.42473337	88.90717588	85.54089126
200331A00024	3/31/2020	0.64	3/31/2023	3/31/2020	101.58307	101.5830746	101.5830746	101.5830746	100.0567844	97.14131709	94.3251921	91.6044877	88.97545988
200327A00042	3/27/2020	0.83	3/27/2024	3/27/2020	102.87257	102.8725701	102.8725701	102.8725701	100.3869663	96.53954638	92.85902503	89.33731503	85.96676376
200327A00054	3/27/2020	0.9	3/27/2023	3/27/2020	101.82214	101.8221379	101.8221379	101.8221379	100.31127	97.41462738	94.61604768	91.91168341	89.29786029
200330A00007	3/30/2020	0.93	4/1/2024	3/30/2020	102.56003	102.5600266	102.5600266	102.5600266	100.0782212	96.24445924	92.57709939	89.0680718	85.70974074
200330A00008	3/30/2020	1.09	3/28/2025	3/30/2020	103.94082	103.9408156	103.9408156	103.9408156	100.2509168	95.51937878	91.03646159	86.78787174	82.76020889
200330A00046	3/30/2020	0.86	3/30/2023	3/30/2020	101.70618	101.7061773	101.7061773	101.7061773	100.1889327	97.28659383	94.48277996	91.77361493	89.15539755
200331A00018	3/31/2020	0.82	3/31/2023	3/31/2020	101.58664	101.5866397	101.5866397	101.5866397	100.0677833	97.16476353	94.36039222	91.65078457	89.0322314
200318A00047	3/18/2020	1.29	3/18/2025	3/18/2020	105.88182	105.8818243	105.8818243	105.8818243	102.1748375	97.38992562	92.85529142	88.55660083	84.4804123
200320A00049	3/25/2020	1.47	3/25/2025	3/25/2020	105.84044	105.8404366	105.8404366	105.8404366	102.1354119	97.36472864	92.84363669	88.55782892	84.49389003
200320A00052	3/25/2020	1.47	3/25/2025	3/25/2020	105.84044	105.8404366	105.8404366	105.8404366	102.1354119	97.36472864	92.84363669	88.55782892	84.49389003
200327A00030	3/27/2020	1.01	3/27/2024	3/27/2020	102.87308	102.8730824	102.8730824	102.8730824	100.4024762	96.57463744	92.91235277	89.40762075	86.05286879
200327A00041	3/27/2020	0.9	3/27/2023	3/27/2020	101.82214	101.8221379	101.8221379	101.8221379	100.31127	97.41462738	94.61604768	91.91168341	89.29786029
200327A00053	3/27/2020	0.84	3/25/2022	3/27/2020	101.09067	101.0906686	101.0906686	101.0906686	100.297015	98.35628663	96.46265156	94.61467741	92.81098528
200330A00011	3/30/2020	0.93	4/1/2024	3/30/2020	102.56003	102.5600266	102.5600266	102.5600266	100.0782212	96.24445924	92.57709939	89.0680718	85.70974074
200330A00013	3/30/2020	0.68	3/30/2021	3/30/2020	100.40761	100.4076074	100.4076074	100.4076074	100.0555658	99.0633861	98.09073099	97.1370294	96.20173229
200330A00021	3/30/2020	0.8	3/30/2022	3/30/2020	101.01751	101.0175091	101.0175091	101.0175091	100.2167178	98.26396057	96.35889867	94.50007179	92.68607456
200331A00016	3/31/2020	1.11	3/31/2026	3/31/2020	106.01226	106.0122609	106.0122609	106.0122609	100.412563	94.75129347	89.44077335	84.45756017	79.77989179
010824A00019	8/24/2001	6.24	8/24/2021	8/24/2001	108.43371	108.4337066	108.4337066	108.4337066	107.8854116	106.454295	105.0494498	103.6702123	102.3159409
011029A00020	10/29/2001	5.73	10/29/2021	10/29/2001	108.98523	108.9852335	108.9852335	108.9852335	108.3537539	106.7329064	105.1447123	103.5882529	102.0626434
050308A00058	3/8/2005	5.32	3/11/2025	3/8/2005	124.96005	124.9600525	124.9600525	124.9600525	121.0453306	115.847177	110.9121597	106.2254969	101.7733145
050523A00034	5/23/2005	4.81	6/5/2020	5/23/2005	100.85999	100.859987	100.859987	100.859987	100.8414134	100.6575445	100.4743534	100.2918362	100.1099891
050525A00028	5/25/2005	4.82	6/5/2020	5/25/2005	100.83278	100.8327794	100.8327794	100.8327794	100.8142406	100.6307137	100.4478598	100.2656752	100.0841562
050912A00098	9/12/2005	4.74	9/21/2020	9/12/2005	102.23314	102.2331397	102.2331397	102.2331397	102.1189333	101.6333592	101.1524173	100.6760414	100.2041665

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
100713A00024	7/13/2010	3.95	7/15/2020	7/13/2010	101.08408	101.0840822	101.0840822	101.0840822	101.0399685	100.7454473	100.4526543	100.1615743	99.87219216
110201A00004	2/1/2011	4.25	2/16/2021	2/1/2011	103.5588	103.5588048	103.5588048	103.5588048	103.2617831	102.3664913	101.4867613	100.6221895	99.77238599
110505A00022	5/5/2011	4.59	5/15/2026	5/5/2011	126.35604	126.3560406	126.3560406	126.3560406	120.1368279	113.8200615	107.8889279	102.3176735	97.08240149
110601A00013	6/1/2011	3.49	6/15/2021	6/1/2011	104.12678	104.1267806	104.1267806	104.1267806	103.6694617	102.4456769	101.2508118	100.0838492	98.94381918
110919A00026	9/19/2011	2.66	9/30/2021	9/19/2011	103.8651	103.8651034	103.8651034	103.8651034	103.2827966	101.7811911	100.3091247	98.86580219	97.45045655
111006A00021	10/6/2011	2.93	10/15/2020	10/6/2011	101.46976	101.469756	101.469756	101.469756	101.3298527	100.7814663	100.2390185	99.70241321	99.17155622
111024A00022	10/24/2011	3.11	10/30/2023	10/24/2011	110.8453	110.845295	110.845295	110.845295	108.7053734	105.0886556	101.6130489	98.27226424	95.06032975
120127A00018	1/27/2012	3.64	2/1/2027	1/27/2012	122.89144	122.891443	122.891443	122.1925002	115.1070407	108.2885445	101.9316638	96.00261567	90.47025523
120330A00009	3/30/2012	2.98	3/30/2022	3/30/2012	105.41827	105.4182743	105.4182743	105.4182743	104.6011725	102.6033629	100.6541292	98.75198604	96.89550395
120411A00012	4/11/2012	2.87	4/15/2022	4/11/2012	105.30975	105.3097516	105.3097516	105.3097516	104.4671705	102.4271322	100.4373997	98.4964056	96.60264294
120601A00012	6/1/2012	1.93	6/15/2021	6/1/2012	102.21726	102.2172631	102.2172631	102.2172631	101.7637412	100.5522843	99.369544	98.21450861	97.08621356
120718A00011	7/18/2012	2.29	7/30/2021	7/18/2012	102.69998	102.6999766	102.6999766	102.6999766	102.1936884	100.8702249	99.57041912	98.2936845	97.03945354
120928A00018	9/28/2012	1.87	9/30/2020	9/28/2012	100.81991	100.8199063	100.8199063	100.8199063	100.6966578	100.1912925	99.69097985	99.19564466	98.705213
130415A00006	4/15/2013	1.78	4/15/2020	4/15/2013	100.05998	100.0599809	100.0599809	100.0599809	100.0574478	100.015893	99.97438861	99.93293456	99.89153074
131113A00036	11/13/2013	3.14	11/15/2021	11/13/2013	104.69797	104.6979693	104.6979693	104.6979693	104.0603787	102.4331351	100.8392946	99.27789397	97.74800713
131113A00040	11/13/2013	2.8	11/16/2020	11/13/2013	101.62409	101.6240872	101.6240872	101.6240872	101.4484562	100.8120688	100.183663	99.56308918	98.95020144
140113A00011	1/13/2014	2.88	1/15/2021	1/13/2014	102.11202	102.1120178	102.1120178	102.1120178	101.8618427	101.060135	100.2710405	99.49426286	98.72951516
140204A00007	2/4/2014	2.68	2/16/2021	2/4/2014	102.15636	102.1563558	102.1563558	102.1563558	101.8611118	100.9726158	100.0995985	99.24165785	98.39840554
001003A00016	10/3/2000	7.13	10/5/2020	10/3/2000	103.5871	103.5870972	103.5870972	103.5870972	103.4568677	102.9294825	102.4074985	101.8908329	101.3794046
011107A00022	11/7/2001	5.56	11/5/2021	11/7/2001	108.53541	108.5354057	108.5354057	108.5354057	107.898685	106.2668375	104.6680403	103.1013552	101.5658795
050927A00012	9/27/2005	5.06	9/21/2020	9/27/2005	102.32042	102.3204151	102.3204151	102.3204151	102.206366	101.7213455	101.2409409	100.7650864	100.2937174
080909A00042	9/9/2008	4.74	9/11/2023	9/9/2008	116.12815	116.1281547	116.1281547	116.1281547	114.0787719	110.4992841	107.054199	103.7377373	100.5444004
081215A00091	12/15/2008	4.19	12/15/2023	12/15/2008	115.27856	115.2785598	115.2785598	115.2785598	112.9726462	109.1533554	105.4864754	101.9650306	98.58240873
100629A00001	6/29/2010	3.85	6/30/2020	6/29/2010	100.90526	100.9052625	100.9052625	100.9052625	100.8734395	100.6206715	100.3691643	100.1189085	99.86989488
100809A00028	8/9/2010	3.61	8/17/2020	8/9/2010	101.29448	101.2944812	101.2944812	101.2944812	101.2191353	100.8331741	100.4501658	100.0700765	99.69287272
100826A00013	8/26/2010	3.32	8/31/2020	8/26/2010	101.30177	101.3017708	101.3017708	101.3017708	101.2115281	100.7870574	100.3661376	99.94872434	99.53477412
101208A00006	12/8/2010	4.12	12/15/2020	12/8/2010	102.77735	102.7773494	102.7773494	102.7773494	102.5664791	101.8464676	101.1365853	100.4366192	99.74636218
110222A00011	2/22/2011	4.35	3/2/2021	2/22/2011	103.80581	103.8058103	103.8058103	103.8058103	103.4881168	102.5535343	101.6358701	100.7346672	99.84948533
111024A00009	10/24/2011	2.65	10/30/2020	10/24/2011	101.49751	101.4975121	101.4975121	101.4975121	101.3410169	100.7504951	100.1668425	99.58993968	99.01967016
111024A00026	10/24/2011	2.65	10/30/2020	10/24/2011	101.49751	101.4975121	101.4975121	101.4975121	101.3410169	100.7504951	100.1668425	99.58993968	99.01967016
120112A00013	1/12/2012	2.76	1/16/2024	1/12/2012	110.14633	110.1463314	110.1463314	110.1463314	107.7952556	103.9888531	100.3384548	96.83681905	93.47708191
120320A00005	3/20/2012	3.18	3/30/2022	3/20/2012	105.82201	105.8220142	105.8220142	105.8220142	105.003416	103.0014732	101.048187	99.14206992	97.28169013
120514A00018	5/14/2012	2.26	5/15/2020	5/14/2012	100.24408	100.2440756	100.2440756	100.2440756	100.2338029	100.1091123	99.98474651	99.86070422	99.73698413

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
120801A00007	8/1/2012	2.08	8/17/2020	8/1/2012	100.70409	100.7040913	100.7040913	100.7040913	100.6289523	100.2443866	99.86276574	99.48405605	99.10822418
121116A00007	11/16/2012	1.99	11/16/2021	11/16/2012	102.79341	102.7934096	102.7934096	102.7934096	102.1602958	100.546743	98.96638699	97.4182688	95.90146642
121116A00021	11/16/2012	2.35	11/17/2025	11/16/2012	112.70703	112.7070317	112.7070317	112.7070317	107.7454634	102.2050803	96.985391	92.06614669	87.4284828
121116A00022	11/16/2012	2.78	11/16/2029	11/16/2012	125.8504	125.8503977	125.8503977	121.480412	111.5464074	102.3957366	94.08956753	86.54505086	79.68787718
130211A00025	2/11/2013	1.88	2/16/2021	2/11/2013	101.44173	101.4417321	101.4417321	101.4417321	101.1473939	100.2623608	99.39276397	98.53820221	97.69828812
130212A00016	2/12/2013	2.13	2/15/2022	2/12/2013	103.48506	103.4850596	103.4850596	103.4850596	102.737624	100.874688	99.05461763	97.27617525	95.53816681
130405A00007	4/5/2013	2.91	4/17/2028	4/5/2013	122.67847	122.6784731	122.6784731	120.5326812	112.1864532	104.3414205	97.11467628	90.45404841	84.31202617
130424A00005	4/24/2013	3.07	4/24/2030	4/24/2013	129.95482	129.9548159	129.9548159	124.7545017	114.2616902	104.6262235	95.91174991	88.02464612	80.8812772
130509A00004	5/9/2013	2.4	5/15/2023	5/9/2013	106.63078	106.6307808	106.6307808	106.6307808	104.9686244	101.8723034	98.88368012	95.99838515	93.21225416
001003A00018	10/3/2000	7.13	10/5/2020	10/3/2000	103.5871	103.5870972	103.5870972	103.5870972	103.4568677	102.9294825	102.4074985	101.8908329	101.3794046
050923A00095	9/23/2005	4.77	9/21/2020	9/23/2005	102.24763	102.2476348	102.2476348	102.2476348	102.1334211	101.6478058	101.166823	100.6904065	100.2184912
050923A00096	9/23/2005	4.86	9/22/2025	9/23/2005	126.26705	126.2670489	126.2670489	126.2670489	121.3812402	115.6138176	110.1666666	105.0202037	100.1561446
060613A00028	6/13/2006	5.47	6/15/2021	6/13/2006	106.5504	106.550399	106.550399	106.550399	106.0882608	104.848829	103.6385747	102.4564738	101.3015494
081217A00076	12/17/2008	3.86	12/22/2023	12/17/2008	114.11268	114.1126828	114.1126828	114.1126828	111.7971538	107.9810868	104.3181786	100.8013829	97.42402281
091210A00005	12/10/2009	5.08	12/16/2024	12/10/2009	122.65615	122.6561526	122.6561526	122.6561526	119.1015758	114.1833656	109.5039852	105.0504588	100.8105908
101101A00006	11/1/2010	3.34	11/16/2020	11/1/2010	101.96877	101.9687667	101.9687667	101.9687667	101.79287	101.1552418	100.5256063	99.90381378	99.28971808
110802A00008	8/2/2011	3.34	8/16/2021	8/2/2011	104.49731	104.4973078	104.4973078	104.4973078	103.9660125	102.5813013	101.221769	99.8867872	98.5757477
110822A00010	8/22/2011	2.8	8/30/2021	8/22/2011	103.84766	103.8476571	103.8476571	103.8476571	103.3019736	101.8849307	100.4942513	99.12926378	97.78931857
111006A00023	10/6/2011	3.81	10/15/2026	10/6/2011	123.01859	123.0185868	123.0185868	122.7006143	115.9109519	109.3360571	103.1890787	97.4397742	92.06019334
120113A00013	1/13/2012	3.87	1/15/2032	1/13/2012	141.86918	141.8691814	141.8691814	132.5564386	120.2055819	109.0204339	99.04385073	90.13668209	82.17654545
120119A00010	1/18/2012	2.43	1/31/2022	1/18/2012	104.30388	104.3038805	104.3038805	104.3038805	103.5714424	101.7379621	99.94586763	98.19398559	96.48118327
120709A00015	7/9/2012	2.5	7/15/2022	7/9/2012	105.10014	105.1001441	105.1001441	105.1001441	104.1029792	101.8237797	99.60580656	97.44702243	95.3454728
120709A00016	7/9/2012	3.2	7/15/2027	7/9/2012	121.15916	121.1591577	121.1591577	119.9265059	112.4378908	105.3069765	98.68871006	92.54340343	86.83464095
120907A00024	9/7/2012	2.31	9/16/2024	9/7/2012	109.89578	109.8957841	109.8957841	109.8957841	106.7958544	102.3712569	98.15606096	94.13927671	90.3105478
121121A00003	11/21/2012	2.3	11/30/2022	11/21/2012	105.40031	105.4003076	105.4003076	105.4003076	104.1327666	101.4884244	98.92462589	96.43840916	94.02694255
130211A00017	2/11/2013	3.27	2/15/2028	2/11/2013	123.40072	123.4007178	123.4007178	121.4819914	113.3613706	105.6860945	98.60075913	92.05671964	86.00958042
130503A00007	5/3/2013	1.48	5/4/2020	5/3/2013	100.12845	100.1284523	100.1284523	100.1284523	100.1219868	100.0276416	99.93348129	99.83950528	99.74571301
130515A00037	5/15/2013	1.64	5/15/2020	5/15/2013	100.19011	100.1901086	100.1901086	100.1901086	100.1798206	100.054952	99.93041135	99.80619726	99.68230843
130523A00042	5/28/2013	2.38	5/23/2022	5/28/2013	104.51771	104.5177096	104.5177096	104.5177096	103.6153661	101.4831245	99.40528918	97.38009146	95.40583459
130528A00028	5/28/2013	2.63	5/30/2023	5/28/2013	107.45219	107.4521868	107.4521868	107.4521868	105.7471126	102.5996297	99.56261172	96.63153049	93.80207338
130606A00012	6/6/2013	2.26	6/15/2020	6/6/2013	100.42067	100.4206687	100.4206687	100.4206687	100.3968761	100.1862796	99.97657787	99.76776522	99.55983595
130821A00017	8/21/2013	2.8	8/28/2020	8/21/2013	101.11721	101.1172117	101.1172117	101.1172117	101.0300835	100.6136464	100.2006407	99.79102434	99.38475556
130821A00018	8/21/2013	3.37	8/30/2022	8/21/2013	107.95434	107.9543436	107.9543436	107.9543436	106.8545406	104.4122029	102.0385461	99.73125429	97.48810377

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
051003A00009	10/3/2005	5.15	10/15/2025	10/3/2005	127.00056	127.0005587	127.0005587	127.0005587	122.0176242	116.2090479	110.7247497	105.5447763	100.6505079
080910A00065	9/10/2008	5.03	9/15/2023	9/10/2008	116.52126	116.5212583	116.5212583	116.5212583	114.468848	110.8879663	107.4415016	104.123672	100.9289763
081209A00008	12/9/2008	4.87	12/15/2023	12/9/2008	117.10681	117.106807	117.106807	117.106807	114.7978523	110.9630794	107.2805415	103.7432963	100.3447624
090226A00006	2/26/2009	4.55	3/1/2024	2/26/2009	117.57277	117.5727687	117.5727687	117.5727687	115.0218155	110.9522826	107.0529353	103.3157446	99.73310294
100712A00003	7/12/2010	3.91	7/15/2020	7/12/2010	101.07231	101.0723105	101.0723105	101.0723105	101.0281995	100.7337008	100.4409303	100.1498726	99.86051274
100923A00051	9/23/2010	3.4	9/30/2021	9/23/2010	104.72958	104.7295802	104.7295802	104.7295802	104.146779	102.6426305	101.1679909	99.7220675	98.30409532
100930A00007	9/30/2010	3.27	9/30/2020	9/30/2010	101.53103	101.5310329	101.5310329	101.5310329	101.4074028	100.8999452	100.3975555	99.90015823	99.40767925
110810A00020	8/10/2011	2.86	8/16/2021	8/10/2011	103.82723	103.8272298	103.8272298	103.8272298	103.2975181	101.9176845	100.5629461	99.23267659	97.92627028
110825A00016	8/25/2011	3.06	8/31/2022	8/25/2011	107.20414	107.2041362	107.2041362	107.2041362	106.1059905	103.670245	101.3031199	99.00229833	96.76555596
111024A00021	10/24/2011	2.65	10/30/2020	10/24/2011	101.49751	101.4975121	101.4975121	101.4975121	101.3410169	100.7504951	100.1668425	99.58993968	99.01967016
120130A00009	1/30/2012	2.79	1/31/2022	1/30/2012	104.65548	104.6554768	104.6554768	104.6554768	103.9242891	102.0931514	100.3032387	98.55338461	96.84246328
120315A00021	3/15/2012	3.12	3/15/2022	3/15/2012	105.5837	105.5836958	105.5836958	105.5836958	104.7886167	102.8283363	100.9147972	99.04659794	97.2223891
120726A00001	7/26/2012	2.36	8/1/2022	7/26/2012	104.87324	104.8732375	104.8732375	104.8732375	103.8464883	101.5259147	99.26878833	97.07303239	94.9366501
130107A00001	1/7/2013	2.53	1/17/2023	1/7/2013	106.31616	106.3161597	106.3161597	106.3161597	104.9384711	102.1581672	99.46586358	96.85826396	94.33221701
130516A00014	5/16/2013	1.64	6/1/2020	5/16/2013	100.26203	100.2620336	100.2620336	100.2620336	100.2456562	100.0736638	99.90226126	99.73144555	99.56121367
130911A00009	9/11/2013	2.87	9/15/2020	9/11/2013	101.28381	101.2838102	101.2838102	101.2838102	101.1767449	100.7103557	100.248274	99.79044002	99.33679526
130920A00020	9/20/2013	2.71	9/30/2020	9/20/2013	101.31701	101.3170113	101.3170113	101.3170113	101.1932749	100.685599	100.1830059	99.68541974	99.192766
130926A00009	9/26/2013	4	10/2/2028	9/26/2013	133.32734	133.3273351	133.3273351	130.5782516	121.4301497	112.8119278	104.8978848	97.6261926	90.94076957
131024A00019	10/24/2013	3.23	10/30/2023	10/24/2013	111.28034	111.280336	111.280336	111.280336	109.1368082	105.5123368	102.0291994	98.68109863	95.46205486
140113A00012	1/13/2014	3.48	1/17/2023	1/13/2014	109.00148	109.0014792	109.0014792	109.0014792	107.6083373	104.7902277	102.061024	99.41740077	96.85617871
140423A00036	4/23/2014	4.03	4/23/2029	4/23/2014	133.76245	133.7624521	133.7624521	130.3016212	120.6897562	111.6928453	103.4700917	95.95002524	89.0681451
140820A00026	8/20/2014	2.94	8/19/2024	8/20/2014	112.52223	112.5222322	112.5222322	112.5222322	109.4855047	105.074633	100.8684157	96.85630392	93.02834612
140908A00060	9/8/2014	2.34	11/30/2020	9/8/2014	101.41122	101.4112174	101.4112174	101.4112174	101.219816	100.5460566	99.88123947	99.22518767	98.57772884
140908A00062	9/8/2014	2.45	5/28/2021	9/8/2014	102.54981	102.5498087	102.5498087	102.5498087	102.1188803	100.9564686	99.82044808	98.70992786	97.62405658
011107A00031	11/7/2001	5.56	11/5/2021	11/7/2001	108.53541	108.5354057	108.5354057	108.5354057	107.898685	106.2668375	104.6680403	103.1013552	101.5658795
051003A00008	10/3/2005	5.08	10/15/2020	10/3/2005	102.65129	102.6512908	102.6512908	102.6512908	102.5106618	101.9585365	101.412379	100.8720928	100.3375833
051107A00075	11/7/2005	5.29	11/17/2025	11/7/2005	129.44829	129.4482876	129.4482876	129.4482876	124.1976502	118.2012562	112.5444254	107.2059578	102.166093
060308A00014	3/8/2006	5.44	3/16/2026	3/8/2006	130.74519	130.7451897	130.7451897	130.7451897	124.8106414	118.5140601	112.5908498	107.016712	101.7690557
060613A00029	6/13/2006	5.47	6/15/2021	6/13/2006	106.5504	106.550399	106.550399	106.550399	106.0882608	104.848829	103.6385747	102.4564738	101.3015494
060808A00022	8/8/2006	5.57	6/15/2026	8/8/2006	132.8295	132.8294959	132.8294959	132.8294959	126.2836285	119.700212	113.5202876	107.7167067	102.2642974
061220A00034	12/20/2006	5.07	12/30/2021	12/20/2006	108.77952	108.779518	108.779518	108.779518	108.073237	106.2835259	104.5324498	102.8188229	101.1415084
081211A00029	12/11/2008	4.57	12/15/2023	12/11/2008	115.98487	115.9848666	115.9848666	115.9848666	113.6856888	109.8715198	106.2089793	102.6911479	99.31146576
100505A00024	5/5/2010	4.31	5/15/2020	5/5/2010	100.50024	100.5002373	100.5002373	100.5002373	100.4899426	100.3649663	100.2403154	100.1159887	99.99198476

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
100930A00008	9/30/2010	3.82	9/30/2025	9/30/2010	119.44368	119.4436806	119.4436806	119.4436806	114.6672552	109.0968885	103.8386481	98.87334379	94.183064
110113A00008	1/13/2011	4.15	1/15/2021	1/13/2011	103.13391	103.1339066	103.1339066	103.1339066	102.8826224	102.0764051	101.2828511	100.5016631	99.7325533
110527A00007	5/27/2011	3.98	6/1/2021	5/27/2011	104.38549	104.3854883	104.3854883	104.3854883	103.9460956	102.7614914	101.6039459	100.4725391	99.36639186
110818A00012	8/18/2011	2.86	8/31/2022	8/18/2011	106.71432	106.7143172	106.7143172	106.7143172	105.61849	103.1887653	100.8275294	98.5324698	96.30136577
120112A00014	1/12/2012	3.43	1/15/2032	1/12/2012	139.33724	139.3372446	139.3372446	129.8917435	117.5214363	106.3556905	96.4076186	87.53620224	79.61749037
120306A00004	3/6/2012	2.95	3/15/2023	3/6/2012	107.91839	107.91839	107.91839	107.91839	106.3981025	103.4408943	100.5819839	97.81756867	95.14401515
120411A00008	4/11/2012	2.42	4/15/2020	4/11/2012	100.08664	100.0866398	100.0866398	100.0866398	100.0841053	100.0425276	100.0010004	99.95952351	99.91809691
120907A00023	9/7/2012	2.05	9/15/2022	9/7/2012	104.81072	104.8107157	104.8107157	104.8107157	103.6947765	101.2483948	98.87226503	96.56397229	94.32119946
121116A00006	11/16/2012	2.64	11/13/2025	11/16/2012	113.196	113.1959979	113.1959979	113.1959979	108.2893508	102.7817109	97.59095222	92.69716511	88.08179445
130107A00002	1/7/2013	3.22	1/18/2028	1/7/2013	122.78524	122.7852398	122.7852398	120.9549046	112.9279604	105.3363032	98.32332202	91.84166301	85.84808365
130213A00039	2/13/2013	1.92	2/16/2021	2/13/2013	101.47746	101.4774633	101.4774633	101.4774633	101.1830798	100.2978736	99.4281057	98.57337499	97.73329399
130405A00006	4/5/2013	2.41	4/7/2025	4/5/2013	111.63177	111.6317744	111.6317744	111.6317744	107.7652887	102.7920978	98.07946671	93.61238554	89.37678645
130424A00004	4/24/2013	2.46	4/24/2025	4/24/2013	111.99539	111.995394	111.995394	111.995394	108.0541225	103.0293255	98.26967223	93.75977881	89.48523472
130528A00027	5/28/2013	1.94	5/28/2020	5/28/2013	100.26804	100.2680402	100.2680402	100.2680402	100.2532589	100.0925875	99.93243297	99.77279297	99.61366502
130529A00006	5/29/2013	2.05	6/1/2020	5/29/2013	100.30549	100.305487	100.305487	100.305487	100.2891326	100.1173686	99.94619052	99.77559527	99.60557996
020920A00012	9/20/2002	5.4	9/20/2022	9/20/2002	112.75421	112.7542118	112.7542118	112.7542118	111.5946802	109.0448418	106.5677633	104.1609443	101.8219861
060908A00017	9/8/2006	5.27	9/15/2021	9/8/2006	107.62014	107.6201372	107.6201372	107.6201372	107.045989	105.556411	104.0953165	102.6619577	101.2556125
080508A00054	5/8/2008	5.01	5/8/2020	5/8/2008	100.49512	100.4951205	100.4951205	100.4951205	100.4872558	100.3816725	100.276322	100.1712033	100.0663157
081205A00033	12/5/2008	4.77	12/7/2023	12/5/2008	116.6344	116.6343951	116.6343951	116.6343951	114.3522312	110.547117	106.8924124	103.3812911	100.0072796
091112A00011	11/12/2009	4.77	11/15/2024	11/12/2009	121.77477	121.7747697	121.7747697	121.7747697	118.3212824	113.4769002	108.8652106	104.4737227	100.290686
100809A00029	8/9/2010	4.23	8/15/2025	8/9/2010	121.21912	121.219119	121.219119	121.219119	116.6500721	111.1463932	105.9437477	101.0240476	96.37038246
100817A00002	8/17/2010	3.03	8/31/2020	8/17/2010	101.23728	101.2372849	101.2372849	101.2372849	101.1469131	100.7219195	100.3004903	99.88258082	99.46814708
110103A00009	1/3/2011	3.99	1/3/2022	1/3/2011	106.90757	106.9075744	106.9075744	106.9075744	106.2021755	104.4187427	102.6740584	100.9669413	99.29625785
110302A00006	3/2/2011	4.26	3/15/2021	3/2/2011	103.86593	103.8659278	103.8659278	103.8659278	103.5297725	102.559499	101.6074644	100.673157	99.75608431
110302A00007	3/2/2011	4.86	3/16/2026	3/2/2011	127.27204	127.2720365	127.2720365	127.2720365	121.4036874	115.2063731	109.3781356	103.8949015	98.73429157
110524A00009	5/24/2011	3.64	6/1/2021	5/24/2011	104.17371	104.1737141	104.1737141	104.1737141	103.7335681	102.5474247	101.3884321	100.2556656	99.14824168
110818A00006	8/18/2011	3.09	8/30/2021	8/18/2011	104.01869	104.0186864	104.0186864	104.0186864	103.474211	102.0597994	100.6716427	99.30907327	97.97144549
111024A00027	10/24/2011	3.11	10/30/2023	10/24/2011	110.8453	110.845295	110.845295	110.845295	108.7053734	105.0886556	101.6130489	98.27226424	95.06032975
111031A00013	10/31/2011	2.82	11/1/2021	10/31/2011	104.34828	104.348284	104.348284	104.348284	103.7262194	102.1355823	100.5771757	99.05008841	97.55344305
111223A00006	12/23/2011	2.98	12/30/2021	12/23/2011	104.76997	104.7699656	104.7699656	104.7699656	104.0786517	102.3306154	100.6203423	98.94667366	97.30849887
120113A00012	1/13/2012	3.62	1/15/2027	1/13/2012	122.60074	122.6007404	122.6007404	121.9609327	114.9286032	108.1575065	101.8421372	95.94928319	90.44832273
120126A00006	1/26/2012	2.93	1/31/2022	1/26/2012	104.9157	104.9156963	104.9156963	104.9156963	104.1836356	102.3500329	100.5577014	98.80547345	97.09222196
120209A00012	2/9/2012	2.27	2/16/2021	2/9/2012	101.92336	101.9233649	101.9233649	101.9233649	101.6277554	100.738556	99.86488104	99.00632657	98.16250244

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
120228A00010	2/28/2012	2.34	3/2/2022	2/28/2012	104.32023	104.3202336	104.3202336	104.3202336	103.5464797	101.6262896	99.75126863	97.92008338	96.13144863
120517A00006	5/17/2012	1.88	6/1/2020	5/17/2012	100.30336	100.3033606	100.3033606	100.3033606	100.2869787	100.1149331	99.94347745	99.77260881	99.60232417
120517A00007	5/17/2012	2.42	5/31/2023	5/17/2012	107.37578	107.3757838	107.3757838	107.3757838	105.6600936	102.4974295	99.44615581	96.50169173	93.65967526
120801A00015	8/1/2012	2.08	8/17/2020	8/1/2012	100.70409	100.7040913	100.7040913	100.7040913	100.6289523	100.2443866	99.86276574	99.48405605	99.10822418
121101A00011	11/1/2012	2.03	11/1/2022	11/1/2012	105.0098	105.0098032	105.0098032	105.0098032	103.7992704	101.2271708	98.73187084	96.31061184	93.96075314
130117A00010	1/17/2013	1.98	1/31/2022	1/17/2013	103.4661	103.4660972	103.4660972	103.4660972	102.7364766	100.9109496	99.12665886	97.38243533	95.6771503
130513A00007	5/13/2013	2.54	5/15/2023	5/13/2013	107.07199	107.0719894	107.0719894	107.0719894	105.4068643	102.3036556	99.30832291	96.41649075	93.62398897
130530A00008	5/30/2013	2.29	6/1/2021	5/30/2013	102.38447	102.384469	102.384469	102.384469	101.948871	100.7767718	99.63153199	98.5122366	97.41801181
130531A00020	5/31/2013	2.5	5/30/2023	5/31/2013	107.62558	107.6255753	107.6255753	107.6255753	105.9106787	102.7466249	99.69390106	96.74793297	93.90436444
130612A00037	6/12/2013	2.16	6/15/2020	6/12/2013	100.43088	100.430876	100.430876	100.430876	100.4070434	100.1960997	99.98605608	99.77690674	99.56864589
130712A00004	7/12/2013	2.82	7/15/2021	7/12/2013	103.53146	103.5314617	103.5314617	103.5314617	103.0393518	101.7426786	100.4733155	99.2304026	98.01311638
130904A00036	9/4/2013	3.57	9/15/2023	9/4/2013	112.08325	112.0832463	112.0832463	112.0832463	110.0547962	106.5341564	103.1467895	99.8869332	96.74910638
131011A00006	10/11/2013	3.28	10/15/2021	10/11/2013	104.67173	104.6717283	104.6717283	104.6717283	104.0710583	102.5275043	101.0146553	99.53166642	98.07772335
131210A00003	12/10/2013	2.67	12/15/2020	12/10/2013	101.83505	101.8350471	101.8350471	101.8350471	101.6246334	100.9070871	100.1996691	99.50216576	98.81436956
131217A00024	12/17/2013	4.34	1/2/2029	12/17/2013	135.36421	135.3642095	135.3642095	132.3175434	122.946129	114.1207092	106.0296303	98.6071397	91.79372267
140131A00024	1/31/2014	2.71	2/1/2021	1/31/2014	102.08255	102.0825482	102.0825482	102.0825482	101.8092044	100.9616444	100.1281673	99.3084242	98.50207791
140307A00011	3/7/2014	3.19	3/15/2023	3/7/2014	109.18886	109.1888632	109.1888632	109.1888632	107.6533587	104.6648027	101.7756987	98.98219281	96.2806026
140410A00011	4/10/2014	2.17	4/10/2020	4/10/2014	100.05693	100.0569323	100.0569323	100.0569323	100.0552391	100.0274608	99.99971304	99.97199569	99.9443087
140411A00009	4/11/2014	3.1	4/11/2024	4/11/2014	112.16091	112.1609064	112.1609064	112.1609064	109.5392059	105.4692795	101.5751408	97.84825091	94.28053262
140416A00014	4/16/2014	2.66	4/30/2021	4/16/2014	102.61093	102.6109304	102.6109304	102.6109304	102.2150646	101.1274824	100.0629927	99.02086597	98.00040313
140929A00098	9/29/2014	2.62	9/29/2021	9/29/2014	103.53852	103.5385217	103.5385217	103.5385217	102.9600176	101.4679205	100.0050656	98.57066866	97.16397297
141009A00027	10/9/2014	2.69	10/11/2022	10/9/2014	106.12128	106.1212753	106.1212753	106.1212753	104.9525265	102.4305282	99.98240373	97.60555404	95.29748854
141016A00022	10/16/2014	2.13	10/18/2021	10/16/2014	103.15958	103.1595838	103.1595838	103.1595838	102.5575885	101.0138874	99.50107725	98.01830245	96.56473857
141016A00024	10/16/2014	1.85	10/16/2020	10/16/2014	100.957	100.9569953	100.9569953	100.9569953	100.8160672	100.2656384	99.72121751	99.18270635	98.65000889
141028A00012	10/28/2014	2.73	10/28/2022	10/28/2014	106.33785	106.3378546	106.3378546	106.3378546	105.1338459	102.5649044	100.0721205	97.65277635	95.30426937
150105A00027	1/5/2015	2.23	1/5/2022	1/5/2015	103.77922	103.7792152	103.7792152	103.7792152	103.0812944	101.3211435	99.59943036	97.91498806	96.26669702
150206A00017	2/6/2015	2.05	2/7/2022	2/6/2015	103.63369	103.633689	103.633689	103.633689	102.893966	101.0465546	99.24128021	97.47693654	95.75235946
150310A00019	3/10/2015	2.24	3/10/2021	3/10/2015	101.88299	101.882988	101.882988	101.882988	101.5566658	100.6101825	99.6812965	98.76952017	97.87438396
150316A00043	3/16/2015	2.37	3/16/2023	3/16/2015	106.74186	106.7418606	106.7418606	106.7418606	105.2191732	102.2644106	99.4083646	96.64720125	93.9772575
150317A00012	3/17/2015	2.46	3/18/2024	3/17/2015	109.39511	109.3951087	109.3951087	109.3951087	106.872059	102.9184815	99.13386994	95.51012061	92.03956161
131106A00002	11/6/2013	2.76	11/16/2020	11/6/2013	101.59856	101.5985554	101.5985554	101.5985554	101.4229441	100.7866486	100.1583339	99.53785032	98.92505206
140521A00019	5/21/2014	3.43	5/22/2028	5/21/2014	127.2219	127.2219037	127.2219037	124.9488597	116.3643963	108.2722231	100.8204434	93.95466233	87.62538329
140702A00034	7/2/2014	2.7	7/1/2022	7/2/2014	105.88592	105.8859239	105.8859239	105.8859239	104.9066792	102.646647	100.4465492	98.30435358	96.21811474

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
140710A00027	7/10/2014	2.8	7/17/2023	7/10/2014	108.94229	108.9422918	108.9422918	108.9422918	107.095411	103.7839801	100.5929792	97.51735785	94.55230794
140908A00058	9/8/2014	2.21	5/29/2020	9/8/2014	100.31691	100.3169086	100.3169086	100.3169086	100.3017761	100.1382823	99.97532139	99.81289085	99.6509881
140930A00030	9/30/2014	2.36	9/30/2020	9/30/2014	101.0688	101.0688006	101.0688006	101.0688006	100.9454186	100.4393209	99.93828134	99.44222441	98.95107618
141016A00026	10/16/2014	1.91	4/17/2020	10/16/2014	100.07412	100.0741156	100.0741156	100.0741156	100.0712445	100.0241461	99.97710752	99.93012855	99.88320911
141201A00024	12/1/2014	2.19	12/1/2020	12/1/2014	101.31502	101.3150233	101.3150233	101.3150233	101.1224879	100.4463708	99.77926707	99.12099749	98.47138758
150116A00039	1/16/2015	1.85	1/19/2021	1/16/2015	101.29291	101.292912	101.292912	101.292912	101.0382312	100.2294328	99.43354553	98.6502621	97.87928476
150203A00005	2/3/2015	2.11	2/3/2022	2/3/2015	103.40646	103.4064626	103.4064626	103.4064626	102.6754007	100.8474456	99.06086317	97.31447793	95.60715534
150206A00015	2/6/2015	1.87	2/8/2021	2/6/2015	101.52714	101.5271445	101.5271445	101.5271445	101.2436704	100.3780227	99.5271287	98.69061359	97.86811524
150303A00011	3/3/2015	2.06	3/3/2021	3/3/2015	101.81612	101.8161215	101.8161215	101.8161215	101.4989797	100.5697528	99.65748192	98.76170626	97.88198162
150601A00006	6/1/2015	4.71	6/27/2025	6/1/2015	123.9689	123.9688966	123.9688966	123.9688966	119.5635571	114.0770269	108.8838464	103.9666401	99.30916115
150601A00039	6/1/2015	5.76	6/12/2026	6/1/2015	134.82306	134.8230648	134.8230648	134.8230648	128.1962098	121.5164917	115.2462817	109.3580098	103.8261151
150601A00484	6/1/2015	2.45	6/23/2021	6/1/2015	102.85858	102.8585789	102.8585789	102.8585789	102.3939856	101.1568703	99.94956024	98.77098819	97.62013722
150601A00495	6/1/2015	2.99	6/27/2024	6/1/2015	112.13739	112.1373924	112.1373924	112.1373924	109.277413	105.0083697	100.9316219	97.03742163	93.31657427
150601A00523	6/1/2015	4.55	7/25/2031	6/1/2015	147.13977	147.1397691	147.1397691	138.9867015	126.7629026	115.5932037	105.5787173	96.5915624	88.51871215
150601A00609	6/1/2015	2.52	9/30/2021	6/1/2015	103.33547	103.3354671	103.3354671	103.3354671	102.7563159	101.2630943	99.7991908	98.36381792	96.9562157
150601A00613	6/1/2015	2.63	3/31/2022	6/1/2015	104.63994	104.6399354	104.6399354	104.6399354	103.8241996	101.8317264	99.88779867	97.9909297	96.13968882
150601A00616	6/1/2015	2.72	9/30/2022	6/1/2015	106.02457	106.0245669	106.0245669	106.0245669	104.8783947	102.3861842	99.9664047	97.61653222	95.33414672
150601A00668	6/1/2015	3.89	1/16/2037	6/1/2015	158.58046	158.5804584	153.5079564	135.5705628	118.8070755	104.367817	92.0253398	81.45533791	72.38564615
150601A00681	6/1/2015	2.7	2/7/2025	6/1/2015	111.56727	111.567273	111.567273	111.567273	107.9574478	103.1623149	98.61000091	94.2869777	90.18053742
150601A00733	6/1/2015	2.72	5/1/2025	6/1/2015	113.173	113.1729983	113.1729983	113.1729983	109.1858363	104.1144246	99.31101644	94.7600275	90.44686216
150601A00734	6/1/2015	2.92	5/1/2025	6/1/2015	113.15937	113.1593702	113.1593702	113.1593702	109.2027783	104.1629203	99.38847567	94.86405461	90.57524097
140626A00036	6/26/2014	3.55	6/26/2029	6/26/2014	131.98118	131.9811781	131.9811781	128.2096978	118.3942255	109.2608104	100.93251	93.33341098	86.39515325
140827A00038	8/27/2014	3.07	8/30/2024	8/27/2014	112.3473	112.347298	112.347298	112.347298	109.2959407	104.8848897	100.6791715	96.66816529	92.84185405
140908A00061	9/8/2014	2.39	2/26/2021	9/8/2014	101.95551	101.9555095	101.9555095	101.9555095	101.6460045	100.7314928	99.83339183	98.95126297	98.08468306
140908A00065	9/8/2014	2.63	2/28/2022	9/8/2014	104.51793	104.5179284	104.5179284	104.5179284	103.7492713	101.8387949	99.97301958	98.15063255	96.37036819
141009A00029	10/9/2014	3.5	10/9/2029	10/9/2014	130.41538	130.4153779	130.4153779	126.2586596	116.3456034	107.1527078	98.790772	91.17956214	84.24699981
141017A00020	10/17/2014	2.28	10/18/2021	10/17/2014	103.39519	103.3951857	103.3951857	103.3951857	102.792545	101.2469327	99.73224527	98.247626	96.79224958
141128A00002	11/28/2014	2.3	11/29/2021	11/28/2014	103.68055	103.6805452	103.6805452	103.6805452	103.0274583	101.3658524	99.73898672	98.14583695	96.58541915
150331A00004	3/31/2015	2.08	3/31/2022	3/31/2015	103.97237	103.9723682	103.9723682	103.9723682	103.156118	101.1636974	99.21997474	97.32345479	95.47269899
150401A00007	4/1/2015	1.72	4/1/2020	4/1/2015	100.00383	100.0038321	100.0038321	100.0038321	100.0036632	100.000892	99.99812316	99.99535659	99.9925923
150407A00009	4/7/2015	2.03	4/7/2022	4/7/2015	103.90815	103.9081474	103.9081474	103.9081474	103.080762	101.0700179	99.10871559	97.1953246	95.32837277
150413A00034	4/13/2015	2.25	4/13/2022	4/13/2015	104.02001	104.0200086	104.0200086	104.0200086	103.1855712	101.1644056	99.19306173	97.26999026	95.39370122
150601A00531	6/1/2015	3.28	7/24/2024	6/1/2015	112.77151	112.7715059	112.7715059	112.7715059	109.8361572	105.5081553	101.3773609	97.433754	93.66787663

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00594	6/1/2015	3.2	10/20/2026	6/1/2015	118.74752	118.7475234	118.7475234	118.4122299	111.7061236	105.2528846	99.22280883	93.58585098	88.31425066
150601A00632	6/1/2015	2.33	12/31/2020	6/1/2015	101.55391	101.5539142	101.5539142	101.5539142	101.3247488	100.566156	99.81888645	99.08268836	98.35731717
150601A00634	6/1/2015	2.39	3/31/2021	6/1/2015	102.10179	102.1017927	102.1017927	102.1017927	101.7457853	100.7417597	99.75748795	98.79239166	97.8459148
150601A00646	6/1/2015	2.68	9/30/2022	6/1/2015	105.92498	105.9249813	105.9249813	105.9249813	104.7793007	102.2883511	99.86980437	97.52113751	95.23993125
150601A00648	6/1/2015	2.71	12/30/2022	6/1/2015	106.59631	106.5963135	106.5963135	106.5963135	105.2573664	102.5193946	99.86672184	97.2961293	94.80454469
150601A00689	6/1/2015	2.81	2/28/2025	6/1/2015	112.23826	112.2382633	112.2382633	112.2382633	108.5398787	103.6727216	99.05469816	94.67177516	90.5107802
150601A00696	6/1/2015	2.83	3/13/2025	6/1/2015	112.37257	112.3725687	112.3725687	112.3725687	108.6232219	103.7230925	99.07539078	94.66580348	90.48090144
150601A00716	6/1/2015	1.66	4/1/2020	6/1/2015	100.00359	100.0035899	100.0035899	100.0035899	100.003421	100.00065	99.9978814	99.99511504	99.99235096
150610A00009	6/10/2015	3.03	6/10/2025	6/10/2015	115.29338	115.2933801	115.2933801	115.2933801	111.0981976	105.8754421	100.9328918	96.25398403	91.82322624
150617A00005	6/17/2015	1.88	6/17/2020	6/17/2015	100.38155	100.3815492	100.3815492	100.3815492	100.3566623	100.1402664	99.92481685	99.71030756	99.49673226
150618A00011	6/18/2015	1.84	6/18/2020	6/18/2015	100.37766	100.3776598	100.3776598	100.3776598	100.3522428	100.1330897	99.91490655	99.6976869	99.48142431
150720A00011	7/20/2015	2.69	7/20/2023	7/20/2015	108.59682	108.596815	108.596815	108.596815	106.7447304	103.4312815	100.2386555	97.16178634	94.19584975
141024A00009	10/24/2014	2.05	10/26/2020	10/24/2014	101.12118	101.121184	101.121184	101.121184	100.9692895	100.390971	99.81926632	99.25406247	98.69524898
150121A00004	1/21/2015	1.97	1/24/2022	1/21/2015	103.41152	103.4115155	103.4115155	103.4115155	102.6908759	100.884215	99.11800481	97.39107814	95.70231011
150123A00012	1/23/2015	2	1/29/2021	1/23/2015	101.46345	101.4634518	101.4634518	101.4634518	101.1950027	100.3584126	99.53560587	98.72624416	97.93000013
150130A00050	1/30/2015	1.87	1/31/2022	1/30/2015	103.26131	103.2613058	103.2613058	103.2613058	102.5323739	100.7087909	98.92640783	97.18405638	95.48060891
150220A00022	2/20/2015	2.8	2/20/2025	2/20/2015	112.28684	112.2868447	112.2868447	112.2868447	108.6194846	103.7740387	99.17545889	94.80990229	90.66437122
150417A00020	4/17/2015	1.67	4/13/2020	4/17/2015	100.04801	100.0480123	100.0480123	100.0480123	100.0458171	100.0098045	99.97383368	99.93790446	99.90201681
150417A00037	4/17/2015	1.5	4/17/2020	4/17/2015	100.06515	100.0651494	100.0651494	100.0651494	100.0622726	100.015083	99.96795434	99.92088647	99.87387927
150422A00017	4/22/2015	2.16	4/22/2022	4/22/2015	103.88106	103.8810554	103.8810554	103.8810554	103.0326146	100.9886637	98.99548946	97.05149654	95.15515164
150518A00016	5/18/2015	1.84	11/18/2020	5/18/2015	101.10916	101.1091582	101.1091582	101.1091582	100.9313139	100.2902078	99.65723294	99.03223521	98.41506439
150518A00020	5/18/2015	1.99	5/18/2021	5/18/2015	102.14535	102.1453508	102.1453508	102.1453508	101.7266172	100.5907657	99.48018086	98.3940268	97.33150411
150601A00182	6/1/2015	3.85	7/18/2022	6/1/2015	108.12305	108.1230497	108.1230497	108.1230497	107.1071033	104.7847251	102.5247201	100.3250223	98.1836492
150601A00222	6/1/2015	2.2	9/27/2022	6/1/2015	104.71449	104.7144857	104.7144857	104.7144857	103.5805576	101.112864	98.71677372	96.38979839	94.12955153
150601A00405	6/1/2015	4.63	1/17/2034	6/1/2015	158.34255	158.3425538	157.6930896	143.0256049	128.2601626	115.1166707	103.5773157	93.4327187	84.50206009
150601A00494	6/1/2015	2.37	6/25/2021	6/1/2015	102.77271	102.7727106	102.7727106	102.7727106	102.3058466	101.0639239	99.85205325	98.6691541	97.51419703
150601A00530	6/1/2015	3.08	7/24/2024	6/1/2015	112.73536	112.7353646	112.7353646	112.7353646	109.7817958	105.4317622	101.2805617	97.31806521	93.53471289
150601A00636	6/1/2015	2.45	6/30/2021	6/1/2015	102.68797	102.687974	102.687974	102.687974	102.2165256	100.9650537	99.74412999	98.55264651	97.38954834
150601A00640	6/1/2015	2.57	12/31/2021	6/1/2015	103.98275	103.9827485	103.9827485	103.9827485	103.2927237	101.549164	99.84333607	98.17408051	96.54028585
150601A00644	6/1/2015	2.64	6/30/2022	6/1/2015	105.23925	105.23925	105.23925	105.23925	104.268448	102.0265906	99.84401328	97.71870738	95.64875011
150601A00717	6/1/2015	2.13	4/1/2022	6/1/2015	103.64905	103.6490529	103.6490529	103.6490529	102.8353835	100.8503774	98.91382491	97.0242399	95.18019237
150601A00737	6/1/2015	2.68	12/31/2024	6/1/2015	112.12733	112.1273335	112.1273335	112.1273335	108.627483	103.8868409	99.38210848	95.10024568	91.02900894
150601A00789	6/1/2015	1.9	5/21/2020	6/1/2015	100.22273	100.2227305	100.2227305	100.2227305	100.2103806	100.069126	99.9282815	99.78784529	99.64781559

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00830	6/1/2015	6.743	7/31/2025	6/1/2015	135.199	135.1989954	135.1989954	135.1989954	130.4506598	124.5873123	119.0381757	113.7846066	108.8091645
150601A00839	6/1/2015	6.93	10/30/2020	6/1/2015	103.87864	103.8786415	103.8786415	103.8786415	103.7208146	103.1233222	102.5327398	101.9489479	101.3718298
150609A00006	6/9/2015	1.95	6/15/2020	6/9/2015	100.38655	100.3865507	100.3865507	100.3865507	100.3627247	100.1518483	99.94187181	99.73278936	99.52459519
130712A00005	7/12/2013	3.25	7/17/2023	7/12/2013	110.44299	110.442993	110.442993	110.442993	108.5851456	105.2489983	102.0339479	98.93492069	95.94708589
130904A00035	9/4/2013	2.85	9/15/2020	9/4/2013	101.27448	101.2744799	101.2744799	101.2744799	101.1674191	100.7010557	100.2389995	99.781191	99.3275715
131011A00005	10/11/2013	2.97	10/15/2020	10/11/2013	101.49174	101.491738	101.491738	101.491738	101.3518213	100.8033652	100.2608485	99.7241747	99.19324975
131217A00023	12/17/2013	3.74	1/2/2024	12/17/2013	113.05138	113.0513802	113.0513802	113.0513802	110.7273518	106.920798	103.267815	99.76131008	96.39456361
140402A00010	4/2/2014	2.62	4/2/2021	4/2/2014	102.54839	102.5483919	102.5483919	102.5483919	102.1882005	101.1740414	100.1799681	99.2053886	98.24973359
140701A00001	7/1/2014	3.22	7/1/2024	7/1/2014	112.53296	112.532964	112.532964	112.532964	109.6739547	105.4086016	101.3351225	97.44380058	93.72547
140815A00032	8/15/2014	3.59	10/15/2029	8/15/2014	131.32553	131.3255268	131.3255268	127.1352079	117.1715258	107.9277128	99.51968257	91.86667484	84.89614634
140827A00037	8/27/2014	2.55	8/30/2021	8/27/2014	103.24487	103.2448689	103.2448689	103.2448689	102.7022812	101.2936294	99.91113325	98.55412775	97.22196996
140911A00027	9/11/2014	3.18	9/16/2024	9/11/2014	112.97105	112.9710466	112.9710466	112.9710466	109.8554638	105.3874649	101.1293813	97.0702477	93.19972843
140922A00026	9/22/2014	3.02	9/30/2024	9/22/2014	113.2139	113.2138992	113.2138992	113.2138992	110.0276979	105.4942387	101.1761399	97.06202875	93.14119319
141009A00026	10/9/2014	2.23	10/9/2020	10/9/2014	101.05215	101.052149	101.052149	101.052149	100.9190094	100.3883419	99.86325063	99.34364803	98.82944825
141024A00008	10/24/2014	2.52	10/24/2022	10/24/2014	106.24075	106.2407528	106.2407528	106.2407528	105.0400908	102.4728209	99.98164803	97.56385887	95.21685519
150105A00026	1/5/2015	2.54	1/5/2024	1/5/2015	109.22759	109.2275877	109.2275877	109.2275877	106.9159364	103.1547169	99.54674385	96.08490334	92.76245593
150112A00014	1/12/2015	1.86	1/15/2021	1/12/2015	101.40258	101.4025807	101.4025807	101.4025807	101.152673	100.3526047	99.56516014	98.79004217	98.02696287
150116A00040	1/16/2015	2.07	1/18/2022	1/16/2015	103.25293	103.2529332	103.2529332	103.2529332	102.5427043	100.7587556	99.01435635	97.30834971	95.63962234
150319A00013	3/19/2015	3.25	3/19/2030	3/19/2015	129.31166	129.3116584	129.3116584	124.3921788	114.1296481	104.6787269	96.11930231	88.36180694	81.32612246
150406A00011	4/6/2015	1.66	4/6/2020	4/6/2015	100.02183	100.0218261	100.0218261	100.0218261	100.020813	100.0041907	99.98758446	99.97099421	99.95441993
150422A00019	4/22/2015	2.62	4/22/2025	4/22/2015	111.78593	111.7859319	111.7859319	111.7859319	107.8857318	102.9019776	98.1801297	93.70504625	89.46254003
150424A00035	4/24/2015	1.8	4/23/2021	4/24/2015	101.81085	101.8108524	101.8108524	101.8108524	101.4244409	100.3577694	99.31343515	98.29074235	97.28902381
150506A00014	5/6/2015	2.21	5/6/2022	5/6/2015	104.44417	104.444166	104.444166	104.444166	103.5672451	101.4727792	99.43108388	97.44047159	95.49932192
150601A00515	6/1/2015	2.95	1/16/2024	6/1/2015	110.71449	110.7144872	110.7144872	110.7144872	108.3582182	104.5410364	100.8801829	97.36840379	93.99882325
150601A00606	6/1/2015	2.39	3/31/2021	6/1/2015	102.10179	102.1017927	102.1017927	102.1017927	101.7457853	100.7417597	99.75748795	98.79239166	97.8459148
150601A00629	6/1/2015	2.22	6/30/2020	6/1/2015	100.48422	100.4842248	100.4842248	100.4842248	100.4524755	100.2004134	99.94960935	99.70005402	99.45173815
150601A00630	6/1/2015	2.27	9/30/2020	6/1/2015	101.00418	101.004183	101.004183	101.004183	100.8808357	100.3749281	99.87407727	99.37820772	98.88724553
010824A00028	8/24/2001	6.24	8/24/2021	8/24/2001	108.43371	108.4337066	108.4337066	108.4337066	107.8854116	106.454295	105.0494498	103.6702123	102.3159409
020627A00001	6/27/2002	6.07	6/27/2022	6/27/2002	113.07414	113.074139	113.074139	113.074139	112.0750361	109.7518631	107.4894456	105.2857394	103.1387871
050902A00032	9/2/2005	4.69	8/22/2025	9/2/2005	124.93426	124.9342619	124.9342619	124.9342619	120.2337367	114.5808367	109.2377687	104.1858485	99.40761385
061221A00005	12/21/2006	5.28	12/30/2021	12/21/2006	108.84164	108.841639	108.841639	108.841639	108.1374391	106.3525438	104.6060895	102.8968987	101.2238421
071231A00068	12/31/2007	4.93	12/30/2022	12/31/2007	113.39613	113.3961264	113.3961264	113.3961264	112.01284	109.1694723	106.4142156	103.74375	101.1549067
100824A00009	8/24/2010	3.91	9/2/2025	8/24/2010	119.66635	119.6663452	119.6663452	119.6663452	115.0314237	109.5244336	104.3217848	99.4050223	94.75690369

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
101006A00011	10/6/2010	2.9	10/15/2020	10/6/2010	101.52946	101.529465	101.529465	101.529465	101.3892708	100.8397639	100.2962198	99.75854141	99.22663404
101130A00010	11/30/2010	3.25	11/30/2020	11/30/2010	102.12167	102.1216747	102.1216747	102.1216747	101.9293119	101.2516632	100.583015	99.92318883	99.272011
110805A00013	8/5/2011	3.43	8/16/2021	8/5/2011	104.38393	104.3839341	104.3839341	104.3839341	103.8544716	102.4743527	101.1192749	99.78861436	98.48176762
110805A00014	8/5/2011	4.06	8/17/2026	8/5/2011	124.05759	124.0575925	124.0575925	123.9454373	117.2978996	110.8277777	104.7686665	99.0921862	93.77205805
120312A00009	3/12/2012	2.72	3/15/2024	3/12/2012	110.41675	110.4167528	110.4167528	110.4167528	107.8926356	103.926578	100.1294579	96.49319432	93.01013589
120503A00014	5/3/2012	2.4	5/16/2022	5/3/2012	104.91118	104.9111841	104.9111841	104.9111841	104.0155567	101.889788	99.81803553	97.79855308	95.82966477
120824A00023	8/24/2012	2.4	8/30/2022	8/24/2012	105.13639	105.1363854	105.1363854	105.1363854	104.0544104	101.6557419	99.32456899	97.0586187	94.85570817
120907A00022	9/7/2012	1.88	9/15/2021	9/7/2012	102.60571	102.6057063	102.6057063	102.6057063	102.0443105	100.593223	99.16994989	97.7737618	96.40395435
130117A00011	1/17/2013	2.18	1/30/2023	1/17/2013	105.91682	105.9168216	105.9168216	105.9168216	104.5057625	101.6862354	98.95723285	96.31537404	93.75742319
130211A00015	2/11/2013	1.88	2/16/2021	2/11/2013	101.44173	101.4417321	101.4417321	101.4417321	101.1473939	100.2623608	99.39276397	98.53820221	97.69828812
130425A00030	4/25/2013	1.52	4/30/2020	4/25/2013	100.11664	100.1166367	100.1166367	100.1166367	100.1115604	100.0283072	99.94519137	99.86221268	99.77937079
130531A00019	5/31/2013	2.09	6/1/2021	5/31/2013	102.33662	102.336624	102.336624	102.336624	101.8999687	100.7253273	99.577653	98.45602575	97.35956692
130606A00013	6/6/2013	2.94	6/15/2023	6/6/2013	108.55816	108.5581617	108.5581617	108.5581617	106.8050449	103.5977748	100.5042022	97.51961214	94.6395172
130614A00008	6/14/2013	2.39	6/15/2020	6/14/2013	100.4481	100.448102	100.448102	100.448102	100.4243053	100.2136672	100.003924	99.79506999	99.58709952
130821A00019	8/21/2013	3.81	8/29/2025	8/21/2013	120.20588	120.2058806	120.2058806	120.2058806	115.5455071	109.9991991	104.7597135	99.80843236	95.12796158
130904A00039	9/4/2013	4.19	9/15/2028	9/4/2013	134.76845	134.7684513	134.7684513	132.0738512	122.9237621	114.2865539	106.3501681	99.05344536	92.34087796
131024A00018	10/24/2013	2.8	11/1/2021	10/24/2013	104.31609	104.3160941	104.3160941	104.3160941	103.6941203	102.1037501	100.5456057	99.01877594	97.52238363
131107A00010	11/7/2013	2.84	11/8/2021	11/7/2013	104.43325	104.4332523	104.4332523	104.4332523	103.8026817	102.192117	100.6144386	99.06870655	97.55401626
130501A00006	5/1/2013	1.61	5/15/2020	5/1/2013	100.16285	100.1628535	100.1628535	100.1628535	100.1525878	100.0279879	99.90371246	99.77976037	99.65613027
130508A00013	5/8/2013	2.23	5/15/2023	5/8/2013	106.67328	106.6732783	106.6732783	106.6732783	105.0024932	101.891989	98.88996924	95.99202173	93.19394207
130517A00013	5/17/2013	2.07	5/17/2022	5/17/2013	104.20621	104.2062067	104.2062067	104.2062067	103.3117291	101.1910182	99.1242831	97.10977649	95.14582154
130702A00017	7/2/2013	2.5	7/15/2020	7/2/2013	100.70105	100.7010481	100.7010481	100.7010481	100.6569474	100.3626791	100.0701443	99.7793276	99.49021384
130926A00008	9/26/2013	2.91	9/30/2021	9/26/2013	104.2453	104.2452971	104.2452971	104.2452971	103.6619904	102.1573937	100.6823884	99.23617799	97.81799398
131003A00005	10/3/2013	2.65	10/15/2020	10/3/2013	101.39202	101.3920169	101.3920169	101.3920169	101.2519072	100.702836	100.159724	99.62247444	99.09099258
131107A00012	11/7/2013	3.14	11/7/2022	11/7/2013	107.96905	107.9690498	107.9690498	107.9690498	106.7305103	104.1033233	101.5546802	99.08174825	96.68181688
140307A00010	3/7/2014	2.63	3/15/2021	3/7/2014	102.43307	102.4330705	102.4330705	102.4330705	102.0981879	101.1333355	100.1866936	99.25775	98.34601145
140313A00030	3/13/2014	3.27	3/15/2024	3/13/2014	112.61904	112.6190393	112.6190393	112.6190393	110.0736341	106.0644543	102.2255502	98.54878853	95.02646767
140423A00035	4/23/2014	2.71	4/23/2021	4/23/2014	102.61859	102.6185946	102.6185946	102.6185946	102.2318254	101.1630197	100.1165265	99.09165219	98.08773192
140710A00026	7/10/2014	2.36	7/15/2021	7/10/2014	102.93012	102.9301249	102.9301249	102.9301249	102.4393202	101.1467696	99.88145881	98.64252997	97.42916148
140815A00029	8/15/2014	2.56	10/15/2021	8/15/2014	103.54838	103.5483778	103.5483778	103.5483778	102.9507589	101.4162537	99.91229434	98.43804015	96.99268098
140815A00030	8/15/2014	2.96	10/16/2023	8/15/2014	109.52452	109.5245158	109.5245158	109.5245158	107.4446592	103.9039981	100.5002198	97.22728441	94.07945308
140820A00025	8/20/2014	2.59	8/19/2022	8/20/2014	105.97084	105.9708449	105.9708449	105.9708449	104.9010846	102.5117875	100.1891013	97.93080188	95.73475267
140905A00017	9/5/2014	2.19	9/8/2020	9/5/2014	100.92636	100.9263598	100.9263598	100.9263598	100.8272318	100.381046	99.93881094	99.50047427	99.06598446

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
140908A00063	9/8/2014	2.5	8/31/2021	9/8/2014	103.17936	103.179359	103.179359	103.179359	102.6358018	101.2250122	99.84045979	98.48147665	97.14741697
141015A00025	10/15/2014	2.48	10/17/2022	10/15/2014	105.62059	105.6205944	105.6205944	105.6205944	104.442321	101.9111856	99.45455815	97.06980319	94.75439586
141017A00029	10/17/2014	2.02	10/19/2020	10/17/2014	101.06678	101.0667846	101.0667846	101.0667846	100.9225291	100.3635398	99.81074013	99.26402757	98.7233018
150220A00021	2/20/2015	2.72	2/20/2024	2/20/2015	109.51213	109.512133	109.512133	109.512133	107.0810645	103.2138356	99.50846735	95.95735482	92.55328963
150408A00004	4/8/2015	2.17	4/10/2023	4/8/2015	106.28494	106.2849445	106.2849445	106.2849445	104.7039213	101.6910336	98.78085377	95.96930852	93.2525104
150518A00021	5/18/2015	1.88	5/18/2020	5/18/2015	100.20975	100.2097514	100.2097514	100.2097514	100.1984427	100.065503	99.93292996	99.80072194	99.66887744
150601A00302	6/1/2015	1.66	4/17/2020	6/1/2015	100.06103	100.0610289	100.0610289	100.0610289	100.0581584	100.0110713	99.96404386	99.91707608	99.87016782
150601A00360	6/1/2015	2.82	10/2/2020	6/1/2015	101.29296	101.2929644	101.2929644	101.2929644	101.1672884	100.6550503	100.1479894	99.64602751	99.14908811
150601A00404	6/1/2015	4.29	1/17/2029	6/1/2015	134.53828	134.5382836	134.5382836	131.4385717	122.0571309	113.2336358	105.148196	97.73446378	90.93240051
000829A00072	8/29/2000	7.19	8/31/2020	8/29/2000	102.94545	102.9454471	102.9454471	102.9454471	102.8545451	102.4259117	102.0008549	101.57933	101.1612932
020619A00062	6/19/2002	5.86	6/20/2022	6/19/2002	112.91623	112.9162273	112.9162273	112.9162273	111.9264527	109.6163806	107.3664775	105.1747292	103.0392068
020916A00006	9/16/2002	5.38	9/16/2022	9/16/2002	112.64822	112.6482159	112.6482159	112.6482159	111.4971341	108.9596351	106.4942442	104.0984942	101.7700176
050916A00047	9/16/2005	4.98	9/21/2020	9/16/2005	102.28178	102.2817767	102.2817767	102.2817767	102.167747	101.6828361	101.2025404	100.726794	100.2555325
051107A00074	11/7/2005	5.24	11/16/2020	11/7/2005	103.2709	103.2709006	103.2709006	103.2709006	103.0936673	102.4502245	101.8148461	101.1873807	100.5676807
051230A00040	12/30/2005	5.16	12/30/2020	12/30/2005	103.72891	103.7289137	103.7289137	103.7289137	103.4988034	102.7338212	101.9801793	101.2376266	100.5059194
081219A00069	12/19/2008	4.26	12/22/2023	12/19/2008	114.90185	114.9018508	114.9018508	114.9018508	112.5924095	108.7799548	105.1199149	101.6052989	98.22948122
110104A00019	1/4/2011	3.78	1/15/2021	1/4/2011	102.94843	102.9484318	102.9484318	102.9484318	102.6968434	101.8899428	101.095742	100.3139423	99.54425451
110505A00021	5/5/2011	4.08	5/17/2021	5/5/2011	104.34573	104.3457296	104.3457296	104.3457296	103.9253597	102.7815788	101.6630468	100.568933	99.49844305
110824A00004	8/24/2011	3.11	8/30/2023	8/24/2011	110.34051	110.3405119	110.3405119	110.3405119	108.3683555	104.9201592	101.6011897	98.40592414	95.3291054
111006A00022	10/6/2011	3.08	10/15/2021	10/6/2011	104.35969	104.3596865	104.3596865	104.3596865	103.759864	102.2188236	100.7084439	99.22788134	97.7763227
111024A00010	10/24/2011	3.11	10/30/2023	10/24/2011	110.8453	110.845295	110.845295	110.845295	108.7053734	105.0886556	101.6130489	98.27226424	95.06032975
111201A00005	12/1/2011	3.16	12/15/2021	12/1/2011	104.95181	104.9518075	104.9518075	104.9518075	104.2779881	102.568204	100.8947161	99.25643268	97.65230612
111216A00001	12/16/2011	3.95	12/30/2031	12/16/2011	142.65251	142.6525105	142.6525105	133.4429356	121.0866117	109.8857641	99.88989427	90.96075705	82.97672028
120127A00019	1/27/2012	3.87	1/30/2032	1/27/2012	142.01257	142.0125737	142.0125737	132.5880675	120.1984426	108.9831757	98.98334491	90.05862995	82.08565534
120202A00020	2/2/2012	2.7	2/15/2022	2/2/2012	104.56804	104.5680366	104.5680366	104.5680366	103.8168679	101.9434538	100.1131039	98.32457495	96.57666749
120307A00002	3/7/2012	2.21	3/15/2021	3/7/2012	102.02616	102.026158	102.026158	102.026158	101.6918566	100.7291267	99.78457928	98.85770263	97.94800423
120411A00013	4/11/2012	3.59	4/15/2027	4/11/2012	123.19826	123.1982577	123.1982577	122.2594919	114.9616296	107.964097	101.4531076	95.39210046	89.74744719
120515A00020	5/15/2012	2.28	5/16/2022	5/15/2012	104.65286	104.6528605	104.6528605	104.6528605	103.7582703	101.6353138	99.56631667	97.54953427	95.58329234
121031A00004	10/31/2012	2.07	10/31/2022	10/31/2012	105.10924	105.1092362	105.1092362	105.1092362	103.9002795	101.3295573	98.83552295	96.41542459	94.06662783
121227A00024	12/27/2012	2.2	12/30/2021	12/27/2012	103.38914	103.3891372	103.3891372	103.3891372	102.7021934	100.9666571	99.26865405	97.60703215	95.98068683
121227A00026	12/27/2012	2	12/30/2020	12/27/2012	101.3264	101.3264035	101.3264035	101.3264035	101.0986779	100.3437514	99.60005952	98.86735296	98.14538987
130212A00015	2/12/2013	1.91	2/16/2021	2/12/2013	101.46853	101.4685305	101.4685305	101.4685305	101.1741583	100.2889954	99.41927026	98.56458179	97.72454252
130212A00017	2/12/2013	2.29	2/15/2023	2/12/2013	105.79617	105.7961718	105.7961718	105.7961718	104.355303	101.5041979	98.74576373	96.07650153	93.49306361

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150730A00055	7/30/2015	2.1	6/30/2020	7/30/2015	100.4631	100.4631004	100.4631004	100.4631004	100.4313548	100.1793281	99.92855937	99.67903918	99.43075833
150803A00049	8/3/2015	2.01	8/3/2020	8/3/2015	100.60878	100.6087768	100.6087768	100.6087768	100.5485416	100.2026333	99.85910092	99.51791993	99.17906629
150817A00005	8/17/2015	1.83	8/17/2020	8/17/2015	100.66083	100.6608297	100.6608297	100.6608297	100.5855798	100.2005054	99.81838777	99.43919268	99.06288658
150817A00007	8/17/2015	1.83	8/17/2020	8/17/2015	100.66083	100.6608297	100.6608297	100.6608297	100.5855798	100.2005054	99.81838777	99.43919268	99.06288658
150817A00073	8/17/2015	2.06	8/17/2021	8/17/2015	102.71582	102.7158229	102.7158229	102.7158229	102.1876066	100.8132284	99.46389579	98.13898313	96.83788524
150821A00016	8/21/2015	1.74	8/21/2020	8/21/2015	100.64412	100.6441212	100.6441212	100.6441212	100.5646221	100.1685951	99.7756927	99.38587783	98.99911411
150824A00040	8/24/2015	2.36	8/24/2022	8/24/2015	105.00451	105.0045062	105.0045062	105.0045062	103.9343177	101.5527391	99.23778892	96.98723626	94.7989381
150824A00049	8/24/2015	1.99	5/24/2021	8/24/2015	101.99121	101.9912096	101.9912096	101.9912096	101.5663327	100.4180782	99.29568304	98.19828122	97.12504515
150827A00004	8/27/2015	1.82	8/27/2020	8/27/2015	100.70427	100.7042699	100.7042699	100.7042699	100.6183667	100.2057095	99.79643434	99.39049966	98.98786469
150915A00048	9/15/2015	1.79	9/15/2020	9/15/2015	100.77998	100.7799759	100.7799759	100.7799759	100.6731506	100.2081532	99.74745378	99.29099289	98.83871204
150930A00011	9/30/2015	2.06	9/30/2021	9/30/2015	102.69448	102.6944772	102.6944772	102.6944772	102.1170166	100.6288466	99.1699063	97.73941062	96.33660193
151005A00012	10/5/2015	1.53	10/5/2020	10/5/2015	100.73701	100.7370087	100.7370087	100.7370087	100.6081553	100.0885054	99.57421323	99.06519627	98.56137356
151013A00099	10/15/2015	2.44	10/15/2020	10/15/2015	101.27656	101.2765605	101.2765605	101.2765605	101.1365218	100.5878165	100.0450675	99.5081782	98.97705376
151211A00055	12/11/2015	2.62	12/11/2024	12/11/2015	111.88988	111.8898791	111.8898791	111.8898791	108.465698	103.7799152	99.32510178	95.08861508	91.0585759
151223A00070	12/23/2015	2.57	12/26/2023	12/23/2015	109.27406	109.2740585	109.2740585	109.2740585	106.9900399	103.2533446	99.66793376	96.22680815	92.923337
160111A00037	1/11/2016	1.99	1/11/2021	1/11/2016	101.37662	101.3766186	101.3766186	101.3766186	101.1326766	100.3450374	99.56963584	98.8061883	98.05441981
160119A00029	1/19/2016	3.39	1/20/2032	1/19/2016	136.27231	136.2723114	136.2723114	127.0216962	114.9424481	104.0375749	94.32090691	85.6549667	77.91889625
160122A00022	1/22/2016	1.9	1/22/2021	1/22/2016	101.34732	101.3473209	101.3473209	101.3473209	101.0885069	100.2713577	99.46738002	98.67625722	97.89768281
160201A00011	2/1/2016	1.65	6/22/2020	2/1/2016	100.31876	100.3187566	100.3187566	100.3187566	100.2912715	100.0615281	99.83284407	99.6052121	99.37862488
160203A00014	2/3/2016	1.88	2/3/2022	2/3/2016	102.97705	102.9770531	102.9770531	102.9770531	102.24744	100.4235705	98.64099674	96.89854562	95.19508461
160210A00006	2/10/2016	1.61	12/10/2020	2/10/2016	100.95458	100.9545778	100.9545778	100.9545778	100.7514385	100.0522632	99.36276401	98.68274118	98.01200023
160211A00035	2/11/2016	2.25	2/11/2025	2/11/2016	109.58103	109.5810294	109.5810294	109.5810294	105.9826516	101.2239217	96.70737761	92.41947837	88.34750665
160212A00043	2/12/2016	1.8	2/14/2022	2/12/2016	102.87294	102.8729424	102.8729424	102.8729424	102.1288196	100.274334	98.46249052	96.69205944	94.96185419
160216A00002	2/16/2016	1.88	2/16/2022	2/16/2016	103.01437	103.0143739	103.0143739	103.0143739	102.26721	100.4059559	98.58760632	96.81092079	95.07470256
150406A00003	4/6/2015	1.9	4/6/2021	4/6/2015	101.67073	101.6707305	101.6707305	101.6707305	101.3075899	100.2897955	99.2923713	98.31471046	97.35623013
150428A00012	4/28/2015	1.76	6/15/2020	4/28/2015	100.31516	100.3151561	100.3151561	100.3151561	100.2913791	100.0809427	99.87140049	99.66274685	99.45497605
150512A00029	5/12/2015	3.03	5/12/2025	5/12/2015	114.02296	114.022962	114.022962	114.022962	110.0064337	104.9186566	100.0998142	95.53424602	91.20728728
150515A00057	5/15/2015	1.77	8/14/2020	5/15/2015	100.6239	100.623896	100.623896	100.623896	100.5518506	100.1751098	99.80120078	99.43009139	99.06175016
150519A00012	5/19/2015	2.44	5/19/2022	5/19/2015	104.62404	104.6240447	104.6240447	104.6240447	103.7279661	101.6049871	99.53597866	97.51919405	95.55295704
150601A00148	6/1/2015	3.45	7/30/2021	6/1/2015	104.42284	104.4228403	104.4228403	104.4228403	103.9111696	102.5719694	101.2567507	99.96491725	98.69589204
150601A00603	6/1/2015	2.26	9/30/2020	6/1/2015	100.99919	100.9991868	100.9991868	100.9991868	100.8758421	100.3699493	99.86911304	99.37325797	98.88231017
150601A00666	6/1/2015	3.88	1/16/2035	6/1/2015	151.619	151.6189975	149.3871835	133.8356309	118.7913537	105.5880165	94.11409533	84.12866472	75.42574084
150601A00694	6/1/2015	3.56	3/6/2030	6/1/2015	131.7734	131.7734009	131.7734009	126.9006489	116.5663476	107.0285105	98.38444506	90.54480727	83.42963717

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00729	6/1/2015	1.92	5/1/2020	6/1/2015	100.13334	100.1333358	100.1333358	100.1333358	100.1279234	100.0420728	99.95636894	99.8708115	99.78540011
150601A00930	6/1/2015	7.1	8/30/2030	6/1/2015	169.57475	169.5747461	169.5747461	163.3401485	150.9303065	139.3137762	128.7845353	119.2320927	110.5578366
150623A00025	6/23/2015	2.65	6/30/2022	6/23/2015	105.34961	105.3496107	105.3496107	105.3496107	104.3783524	102.1352709	99.95149487	97.82501475	95.75390706
150708A00003	7/8/2015	1.95	7/8/2020	7/8/2015	100.46269	100.4626913	100.4626913	100.4626913	100.4244242	100.1503602	99.87779805	99.60672528	99.33712969
150722A00014	7/22/2015	2.32	7/22/2021	7/22/2015	102.69525	102.6952505	102.6952505	102.6952505	102.198249	100.893971	99.61517451	98.36113047	97.13113786
150812A00039	8/12/2015	1.95	8/12/2020	8/12/2015	100.63037	100.6303658	100.6303658	100.6303658	100.5605624	100.1898913	99.821958	99.45673224	99.09418409
150817A00097	8/17/2015	3.1	8/17/2026	8/17/2015	117.90609	117.9060908	117.9060908	117.7940509	111.2799481	104.9969415	99.11636828	93.61032274	88.45297045
150817A00099	8/17/2015	3.19	8/17/2027	8/17/2015	121.34497	121.3449746	121.3449746	120.0055142	112.4254284	105.2171764	98.53282354	92.33142752	86.57544526
150821A00018	8/21/2015	2.6	8/21/2024	8/21/2015	111.02701	111.027015	111.027015	111.027015	108.0007058	103.6171136	99.43754913	95.451474	91.64894754
150824A00039	8/24/2015	1.93	1/25/2021	8/24/2015	101.39413	101.394131	101.394131	101.394131	101.1311533	100.3055753	99.49343351	98.69440187	97.90816491
150824A00093	8/24/2015	1.87	8/24/2021	8/24/2015	102.4841	102.4840976	102.4840976	102.4840976	101.9485226	100.5574214	99.1919647	97.85150511	96.5354167
150824A00095	8/24/2015	2.34	8/24/2023	8/24/2015	107.64201	107.6420076	107.6420076	107.6420076	105.7062507	102.319286	99.05915524	95.92045189	92.89802856
150825A00007	8/25/2015	2.46	8/25/2022	8/25/2015	105.25292	105.2529189	105.2529189	105.2529189	104.1797067	101.7925206	99.47216701	97.21640615	95.02308668
150826A00039	8/26/2015	3.22	8/27/2029	8/26/2015	129.4341	129.434102	129.434102	125.4080574	115.5338717	106.3857922	98.06034783	90.47867088	83.56984642
150904A00021	9/4/2015	2.52	9/5/2023	9/4/2015	108.34095	108.3409479	108.3409479	108.3409479	106.3683695	102.9385387	99.63817294	96.46170663	93.40384336
150601A00916	6/1/2015	7.27	4/5/2030	6/1/2015	168.60056	168.6005625	168.6005625	163.2539106	151.3052482	140.0532613	129.8191569	120.502812	112.0145423
150601A00940	6/1/2015	6.58	2/16/2021	6/1/2015	105.54605	105.5460499	105.5460499	105.5460499	105.2465057	104.3415759	103.4523262	102.5783503	101.7192561
150601A01024	6/1/2015	5.33	2/27/2026	6/1/2015	129.39417	129.3941689	129.3941689	129.3941689	123.5891275	117.3725945	111.5226066	106.0154637	100.8291196
150603A00018	6/3/2015	2.84	6/3/2025	6/3/2015	114.2428	114.2428035	114.2428035	114.2428035	110.0954921	104.9168248	100.0154849	95.37512172	90.98043757
150610A00017	6/10/2015	2.9	6/15/2023	6/10/2015	108.42869	108.4286907	108.4286907	108.4286907	106.6764801	103.4712832	100.379729	97.39710454	94.51892418
150701A00053	7/1/2015	1.92	7/1/2020	7/1/2015	100.4602	100.4601953	100.4601953	100.4601953	100.4275805	100.1723917	99.91849762	99.66588848	99.41455454
150715A00009	7/15/2015	2.67	7/15/2022	7/15/2015	105.49352	105.4935201	105.4935201	105.4935201	104.4946242	102.210842	99.98838271	97.82520603	95.71935474
150722A00013	7/22/2015	2.09	7/22/2020	7/22/2015	100.57532	100.5753192	100.5753192	100.5753192	100.5256131	100.2127688	99.90187757	99.59292103	99.28588114
150729A00012	7/29/2015	2.06	7/29/2020	7/29/2015	100.60104	100.6010383	100.6010383	100.6010383	100.5456231	100.2134735	99.88351289	99.55571981	99.23007297
150819A00012	8/19/2015	3.04	8/19/2025	8/19/2015	114.81484	114.81484	114.81484	114.81484	110.3274214	104.9807716	99.92961392	95.15608463	90.64348832
150824A00047	8/24/2015	1.88	11/24/2020	8/24/2015	101.07279	101.0727907	101.0727907	101.0727907	100.8884893	100.2323177	99.5846587	98.94534764	98.31422385
150824A00072	8/24/2015	2.14	8/24/2022	8/24/2015	104.91173	104.9117334	104.9117334	104.9117334	103.8375395	101.4481216	99.12573145	96.86811917	94.67312393
150824A00097	8/24/2015	2.67	8/25/2025	8/24/2015	113.93783	113.9378269	113.9378269	113.9378269	109.3982384	104.0260042	98.95292494	94.1608033	89.63263893
150904A00015	9/4/2015	1.79	10/15/2020	9/4/2015	100.9192	100.9191954	100.9191954	100.9191954	100.7793766	100.2318038	99.69017849	99.15440409	98.62438597
150914A00053	9/14/2015	1.77	9/14/2020	9/14/2015	100.76607	100.7660657	100.7660657	100.7660657	100.6603557	100.1981386	99.74016898	99.28638821	98.8367389
150923A00049	9/23/2015	1.97	9/23/2021	9/23/2015	102.77986	102.7798648	102.7798648	102.7798648	102.2086289	100.7345176	99.28906807	97.87151799	96.48113159
150924A00030	9/24/2015	1.67	9/24/2020	9/24/2015	100.76272	100.7627154	100.7627154	100.7627154	100.6459236	100.1563087	99.67145163	99.19128324	98.71573569
151008A00019	10/8/2015	1.58	10/15/2020	10/8/2015	100.80374	100.803739	100.803739	100.803739	100.6639912	100.1167843	99.57552203	99.04010784	98.51044715

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
151013A00030	10/13/2015	1.89	4/14/2021	10/13/2015	101.69611	101.6961076	101.6961076	101.6961076	101.3225445	100.2831475	99.2649948	98.26744003	97.28986293
151106A00011	11/6/2015	3.1	1/15/2026	11/6/2015	116.27709	116.2770912	116.2770912	116.2770912	110.9664068	105.2274165	99.82603807	94.74060393	89.95094903
151120A00016	11/20/2015	2.11	11/20/2020	11/20/2015	101.20418	101.2041821	101.2041821	101.2041821	101.024324	100.3785543	99.74102626	99.11158261	98.49007024
151221A00010	12/21/2015	2.1	12/21/2020	12/21/2015	101.35631	101.3563149	101.3563149	101.3563149	101.1394715	100.4088394	99.68874152	98.97895103	98.27924774
151223A00072	12/23/2015	2.81	12/23/2025	12/23/2015	115.59379	115.5937929	115.5937929	115.5937929	110.3811111	104.6764378	99.30563827	94.24735978	89.48173087
151223A00077	12/23/2015	3.57	12/24/2035	12/23/2015	154.56957	154.5695713	150.8860486	133.8763062	117.8260773	103.8987139	91.90554888	81.56156048	72.62536773
150707A00053	7/7/2015	1.92	7/7/2020	7/7/2015	100.45253	100.4525343	100.4525343	100.4525343	100.41508	100.1437586	99.87390841	99.60551744	99.33857384
150803A00053	8/3/2015	2.49	8/3/2022	8/3/2015	105.19228	105.192282	105.192282	105.192282	104.1603612	101.8308187	99.56507537	97.36103905	95.21669818
150817A00016	8/17/2015	2.24	8/17/2021	8/17/2015	102.73018	102.7301778	102.7301778	102.7301778	102.2034883	100.8327582	99.48695214	98.1654488	96.86764706
150824A00071	8/24/2015	2.86	8/25/2025	8/24/2015	113.88159	113.8815855	113.8815855	113.8815855	109.3794496	104.043005	99.00268125	94.24051716	89.73972963
150827A00005	8/27/2015	2.07	8/27/2021	8/27/2015	102.78399	102.7839865	102.7839865	102.7839865	102.2442955	100.8430817	99.46782188	98.11785784	96.79255326
150827A00029	8/27/2015	2.74	8/27/2024	8/27/2015	111.69261	111.6926137	111.6926137	111.6926137	108.6389396	104.225985	100.0189289	96.00710628	92.18045868
150923A00045	9/23/2015	1.97	9/23/2021	9/23/2015	102.77986	102.7798648	102.7798648	102.7798648	102.2086289	100.7345176	99.28906807	97.87151799	96.48113159
151002A00041	10/2/2015	1.76	10/4/2021	10/2/2015	102.51463	102.5146339	102.5146339	102.5146339	101.9311049	100.4295636	98.95769273	97.51468847	96.09977545
151002A00047	10/2/2015	1.64	9/2/2020	10/2/2015	100.59589	100.5958927	100.5958927	100.5958927	100.5037202	100.0755608	99.65103779	99.2301051	98.81271737
151002A00081	10/2/2015	2.29	10/2/2023	10/2/2015	107.70418	107.7041795	107.7041795	107.7041795	105.665259	102.1758341	98.82093833	95.59466382	92.49139523
151014A00030	10/14/2015	1.68	10/14/2020	10/14/2015	100.77886	100.7788557	100.7788557	100.7788557	100.6404599	100.096988	99.55937884	99.02753777	98.50137221
151015A00006	10/15/2015	1.68	10/15/2020	10/15/2015	100.78282	100.7828171	100.7828171	100.7828171	100.6433358	100.0971231	99.55683214	99.02236693	98.4936335
151102A00012	11/2/2015	2.4	11/2/2022	11/2/2015	105.50772	105.5077229	105.5077229	105.5077229	104.2978066	101.7265881	99.23195685	96.81116663	94.46158836
151116A00027	11/16/2015	2.02	11/16/2020	11/16/2015	101.12622	101.1262169	101.1262169	101.1262169	100.9509696	100.3163744	99.68974484	99.07093142	98.45978851
151211A00012	12/11/2015	1.89	12/11/2020	12/11/2015	101.25446	101.2544585	101.2544585	101.2544585	101.0494418	100.3451049	99.65056712	98.96562495	98.29008036
151221A00014	12/21/2015	2.94	12/22/2025	12/21/2015	115.1723	115.1723016	115.1723016	115.1723016	110.0170301	104.3640213	99.04069757	94.02603841	89.30047711
160113A00030	1/13/2016	2.52	1/13/2025	1/13/2016	111.63365	111.6336519	111.6336519	111.6336519	108.091577	103.3304746	98.80806288	94.51110936	90.42718682
160119A00028	1/19/2016	3.34	1/21/2031	1/19/2016	132.7225	132.7225029	132.7225029	125.9923109	114.8720528	104.7235293	95.6002309	87.39202023	80.00115324
160128A00058	1/28/2016	1.83	1/28/2021	1/28/2016	101.31573	101.3157258	101.3157258	101.3157258	101.0488047	100.215593	99.39606992	98.58990031	97.79675999
160129A00016	1/29/2016	1.76	1/29/2021	1/29/2016	101.26104	101.2610351	101.2610351	101.2610351	100.9928207	100.1571604	99.33527281	98.52681965	97.7314738
160210A00029	2/10/2016	1.56	8/10/2020	2/10/2016	100.47802	100.4780247	100.4780247	100.4780247	100.4103948	100.045559	99.68337784	99.32382227	98.96686375
160212A00029	2/12/2016	1.8	2/11/2022	2/12/2016	102.8606	102.8606016	102.8606016	102.8606016	102.120573	100.2748221	98.47133711	96.70890384	94.98635088
160212A00044	2/12/2016	1.93	2/13/2023	2/12/2016	104.74097	104.7409688	104.7409688	104.7409688	103.31104	100.4807989	97.74250298	95.09268494	92.52802735
160223A00014	2/23/2016	1.75	2/23/2021	2/23/2016	101.35394	101.3539357	101.3539357	101.3539357	101.0495706	100.1461225	99.25876347	98.38706672	97.53062055
150601A00704	6/1/2015	2.3	3/25/2022	6/1/2015	103.9499	103.9498994	103.9498994	103.9498994	103.1457205	101.1758742	99.25368818	97.37771408	95.54655746
150601A00756	6/1/2015	1.98	5/12/2020	6/1/2015	100.19131	100.1913097	100.1913097	100.1913097	100.1820805	100.0657378	99.94967922	99.83390368	99.71841014
150601A01022	6/1/2015	5.28	2/22/2021	6/1/2015	104.48514	104.4851435	104.4851435	104.4851435	104.1781472	103.2619606	102.361961	101.4777212	100.6088293

Classification | Public

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A01053	6/1/2015	5.28	2/26/2027	6/1/2015	135.49154	135.4915412	135.4915412	134.6969921	127.1524115	119.8080724	112.9599331	106.5715183	100.6092224
150603A00017	6/3/2015	2.84	6/3/2025	6/3/2015	114.2428	114.2428035	114.2428035	114.2428035	110.0954921	104.9168248	100.0154849	95.37512172	90.98043757
150610A00037	6/10/2015	2.48	6/10/2022	6/10/2015	105.247	105.2470018	105.2470018	105.2470018	104.3072431	102.1112834	99.97241542	97.8887422	95.85844617
150702A00009	7/2/2015	1.89	7/2/2020	7/2/2015	100.45746	100.4574551	100.4574551	100.4574551	100.424024	100.1660795	99.90946007	99.65415537	99.40015534
150710A00029	7/10/2015	2.07	7/10/2020	7/10/2015	100.50571	100.505714	100.505714	100.505714	100.4658079	100.1861582	99.90807321	99.63153957	99.35654431
150721A00027	7/21/2015	3.74	7/22/2030	7/21/2015	135.34543	135.3454262	135.3454262	129.6912612	118.8750571	108.9210993	99.92719046	91.79450335	84.434895
150722A00031	7/22/2015	2.09	7/22/2020	7/22/2015	100.57532	100.5753192	100.5753192	100.5753192	100.5256131	100.2127688	99.90187757	99.59292103	99.28588114
150814A00004	8/14/2015	2.32	8/15/2022	8/14/2015	105.29415	105.2941491	105.2941491	105.2941491	104.2350378	101.8643616	99.55956393	97.31845337	95.13892415
150817A00003	8/17/2015	1.83	8/17/2020	8/17/2015	100.66083	100.6608297	100.6608297	100.6608297	100.5855798	100.2005054	99.81838777	99.43919268	99.06288658
150817A00015	8/17/2015	2.01	8/17/2020	8/17/2015	100.67708	100.67708	100.67708	100.67708	100.6019505	100.2174486	99.83589122	99.45724466	99.08147555
150817A00077	8/17/2015	2.49	8/17/2023	8/17/2015	108.11205	108.1120452	108.1120452	108.1120452	106.1909211	102.8138494	99.5625304	96.43163108	93.41607315
150821A00017	8/21/2015	2.22	8/23/2022	8/21/2015	105.10028	105.1002834	105.1002834	105.1002834	104.0270791	101.6379574	99.31577403	97.05828452	94.86333306
150826A00038	8/26/2015	2.94	8/26/2026	8/26/2015	118.26074	118.2607405	118.2607405	118.1151792	111.5076152	105.1487993	99.20010754	93.63292389	88.42076914
150831A00002	8/31/2015	1.97	8/31/2020	8/31/2015	100.7284	100.7283953	100.7283953	100.7283953	100.6383827	100.215364	99.79588734	99.37990841	98.96738373
150909A00018	9/9/2015	2.28	9/9/2021	9/9/2015	102.91302	102.9130222	102.9130222	102.9130222	102.359568	100.9264066	99.52035241	98.1407036	96.7867821
150923A00012	9/23/2015	1.86	9/23/2020	9/23/2015	100.78376	100.7837569	100.7837569	100.7837569	100.6682669	100.1821374	99.70069617	99.22387567	98.75160954
150925A00023	9/25/2015	3.03	9/25/2025	9/25/2015	115.03583	115.0358347	115.0358347	115.0358347	110.3576175	104.9163525	99.78106238	94.93292393	90.35436712
151001A00048	10/1/2015	1.74	10/1/2020	10/1/2015	100.758	100.7580009	100.7580009	100.7580009	100.6337018	100.1257864	99.62297945	99.12520427	98.6323857
151001A00051	10/1/2015	1.75	10/1/2020	10/1/2015	100.76311	100.7631081	100.7631081	100.7631081	100.6388062	100.1308757	99.62805379	99.13026372	98.63743036
151002A00048	10/2/2015	1.68	11/2/2020	10/2/2015	100.85408	100.8540751	100.8540751	100.8540751	100.6949499	100.0994329	99.51093457	98.92933149	98.3545031
151008A00049	10/8/2015	1.75	10/8/2020	10/8/2015	100.7922	100.7921968	100.7921968	100.7921968	100.6602927	100.133156	99.61153138	99.09533267	98.58447547
140908A00059	9/8/2014	2.28	8/31/2020	9/8/2014	100.86006	100.8600593	100.8600593	100.8600593	100.7699939	100.3466418	99.92683369	99.5105254	99.09767337
141015A00020	10/15/2014	2.13	10/15/2021	10/15/2014	103.14284	103.1428352	103.1428352	103.1428352	102.5444742	101.0088424	99.50385472	98.02866614	96.58246243
141024A00010	10/24/2014	2.81	10/24/2024	10/24/2014	112.43613	112.4361262	112.4361262	112.4361262	109.1758951	104.5994853	100.243191	96.09525122	92.14459659
150115A00002	1/15/2015	1.72	1/15/2021	1/15/2015	101.28986	101.2898624	101.2898624	101.2898624	101.0400772	100.2405071	99.45355522	98.67892445	97.91632703
150202A00018	2/2/2015	1.89	2/2/2021	2/2/2015	101.38858	101.3885752	101.3885752	101.3885752	101.1145974	100.2675552	99.4346498	98.61552972	97.80985505
150213A00025	2/13/2015	2.37	2/14/2022	2/13/2015	103.95445	103.9544508	103.9544508	103.9544508	103.206606	101.3416695	99.51957319	97.73908153	95.99900267
150220A00020	2/20/2015	2.42	2/18/2022	2/20/2015	104.05343	104.0534346	104.0534346	104.0534346	103.2999689	101.4228773	99.58913272	97.79747873	96.04670328
150319A00012	3/19/2015	3.13	3/19/2029	3/19/2015	125.33677	125.3367713	125.3367713	122.0546588	112.8426952	104.2648395	96.4263628	89.25922511	82.70198514
150407A00010	4/7/2015	2.21	4/10/2023	4/7/2015	106.40749	106.4074931	106.4074931	106.4074931	104.8256797	101.8109297	98.89893483	96.08562018	93.36709681
150427A00021	4/27/2015	1.54	4/30/2020	4/27/2015	100.1183	100.1183032	100.1183032	100.1183032	100.1132269	100.0299722	99.94685501	99.86387495	99.78103167
150506A00010	5/6/2015	1.92	5/6/2020	5/6/2015	100.15912	100.1591235	100.1591235	100.1591235	100.1519767	100.0522709	99.95277185	99.853479	99.75439168
150511A00026	5/13/2015	3.34	5/14/2020	5/13/2015	100.37059	100.3705891	100.3705891	100.3705891	100.3606522	100.2385855	100.1168303	99.99538535	99.87424937

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150511A00060	5/11/2015	1.91	5/11/2020	5/11/2015	100.18133	100.1813324	100.1813324	100.1813324	100.1724514	100.0588941	99.9456076	99.83259083	99.71984282
150515A00003	5/15/2015	2.17	5/17/2021	5/15/2015	102.16355	102.1635454	102.1635454	102.1635454	101.7471203	100.6165513	99.51102733	98.42972312	97.37184919
150518A00014	5/18/2016	2.38	5/18/2021	5/18/2016	102.40931	102.4093105	102.4093105	102.4093105	101.9911864	100.8564474	99.74689477	98.66169684	97.60005808
150518A00026	5/18/2015	2.08	11/18/2021	5/18/2015	103.24962	103.2496174	103.2496174	103.2496174	102.6107092	100.9828007	99.38852838	97.82691597	96.29702487
150519A00013	5/19/2015	2.98	5/19/2025	5/19/2015	113.81688	113.8168779	113.8168779	113.8168779	109.7731861	104.6736518	99.84458772	95.27019336	90.93567621
150601A00470	6/1/2015	2.98	5/31/2024	6/1/2015	111.88535	111.8853548	111.8853548	111.8853548	109.1132763	104.9200112	100.9128343	97.08245681	93.42010797
150601A00512	6/1/2015	3.79	7/16/2029	6/1/2015	131.86654	131.8665434	131.8665434	128.0716476	118.3150632	109.2265757	100.9396931	93.37874905	86.47560839
150601A00514	6/1/2015	3.07	11/15/2024	6/1/2015	113.60627	113.6062693	113.6062693	113.6062693	110.2540125	105.5949469	101.1620529	96.94312422	92.92668112
150601A00522	6/1/2015	4.52	7/25/2030	6/1/2015	142.73563	142.7356287	142.7356287	136.9910409	125.8469585	115.5462283	106.2304508	97.798684	90.16086906
150601A00615	6/1/2015	2.67	6/30/2022	6/1/2015	105.30643	105.3064322	105.3064322	105.3064322	104.3353413	102.0927143	99.90938345	97.78333958	95.71265944
150601A00638	6/1/2015	2.51	9/30/2021	6/1/2015	103.32051	103.3205084	103.3205084	103.3205084	102.7413965	101.2482924	99.78450442	98.34924501	96.94175432
150601A00667	6/1/2015	3.88	1/16/2036	6/1/2015	155.02276	155.022759	151.3518341	134.6061205	118.6984301	104.8698664	92.95250657	82.66527498	73.77009127
150601A00513	6/1/2015	2.87	7/15/2022	6/1/2015	105.85942	105.8594192	105.8594192	105.8594192	104.8588933	102.5708046	100.3441297	98.17682565	96.06693267
150601A00548	6/1/2015	2.55	8/13/2021	6/1/2015	103.08447	103.0844712	103.0844712	103.0844712	102.5614544	101.1986491	99.86045785	98.54627081	97.25549771
150601A00608	6/1/2015	2.45	6/30/2021	6/1/2015	102.68797	102.687974	102.687974	102.687974	102.2165256	100.9650537	99.74412999	98.55264651	97.38954834
150601A00611	6/1/2015	2.58	12/31/2021	6/1/2015	104.00022	104.0002156	104.0002156	104.0002156	103.3101353	101.5664172	99.86043373	98.19102548	96.55708088
150601A00665	6/1/2015	3.82	1/14/2033	6/1/2015	144.0078	144.0078047	144.0078047	131.928173	118.7101021	106.8754342	96.41362183	87.15527134	78.95281028
150601A00731	6/1/2015	2.4	4/29/2022	6/1/2015	104.34732	104.3473161	104.3473161	104.3473161	103.4857499	101.4179808	99.40186079	97.43575487	95.5180922
150601A00773	6/1/2015	1.84	5/15/2020	6/1/2015	100.18782	100.1878245	100.1878245	100.1878245	100.1775566	100.0529288	99.92862558	99.80464575	99.68098799
150601A01470	6/1/2015	1.88	6/1/2020	6/1/2015	100.27622	100.2762197	100.2762197	100.2762197	100.2598684	100.0881421	99.91700155	99.74644373	99.57646573
150603A00015	6/3/2015	2.02	6/3/2020	6/3/2015	100.31173	100.3117329	100.3117329	100.3117329	100.2943156	100.117002	99.94031665	99.76425636	99.58881777
150603A00039	6/9/2015	2.02	6/15/2020	6/9/2015	100.37002	100.3700226	100.3700226	100.3700226	100.3462376	100.1357179	99.92609273	99.7173564	99.5095032
150630A00008	6/30/2015	2.41	6/30/2022	6/30/2015	105.21833	105.2183317	105.2183317	105.2183317	104.2437784	101.9940333	99.8039302	97.67144338	95.59463428
150710A00039	7/10/2015	2.07	7/10/2020	7/10/2015	100.50571	100.505714	100.505714	100.505714	100.4658079	100.1861582	99.90807321	99.63153957	99.35654431
150710A00040	7/10/2015	2.63	7/11/2022	7/10/2015	105.37515	105.3751469	105.3751469	105.3751469	104.3839705	102.1119666	99.90072527	97.74821517	95.65248892
150717A00009	7/17/2015	2.18	7/19/2021	7/17/2015	102.71771	102.717712	102.717712	102.717712	102.2227084	100.9219899	99.64756581	98.39864925	97.17448494
150807A00003	8/7/2015	1.9	8/7/2020	8/7/2015	100.63833	100.6383287	100.6383287	100.6383287	100.5737277	100.216206	99.86123067	99.50877453	99.15881071
150819A00013	8/19/2015	3.51	8/19/2030	8/19/2015	133.22009	133.2200938	133.2200938	127.425131	116.6361644	106.7310943	97.79049717	89.71431319	82.41337201
150825A00016	8/25/2015	1.9	8/25/2020	8/25/2015	100.67122	100.6712227	100.6712227	100.6712227	100.5876015	100.1811719	99.77802418	99.37811872	98.98141652
150828A00010	8/28/2015	1.96	8/28/2020	8/28/2015	100.70993	100.7099275	100.7099275	100.7099275	100.6231071	100.2083574	99.79701909	99.3890503	98.98440976
150901A00002	9/1/2015	1.98	9/1/2020	9/1/2015	100.73741	100.7374137	100.7374137	100.7374137	100.6462901	100.220508	99.79831616	99.37966951	98.96452356
150914A00052	9/14/2015	1.77	9/14/2020	9/14/2015	100.76607	100.7660657	100.7660657	100.7660657	100.6603557	100.1981386	99.74016898	99.28638821	98.8367389
150921A00051	9/21/2015	1.92	9/21/2020	9/21/2015	100.80386	100.803859	100.803859	100.803859	100.6905709	100.2098536	99.73372244	99.26211188	98.79495773

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150930A00052	9/30/2015	1.79	9/30/2020	9/30/2015	100.77927	100.7792705	100.7792705	100.7792705	100.6560439	100.150798	99.6506041	99.15538674	98.66507207
151005A00053	10/5/2015	1.99	10/5/2021	10/5/2015	102.6118	102.6117966	102.6117966	102.6117966	102.0286068	100.5279318	99.05686987	97.61461915	96.20040599
151007A00013	10/7/2015	1.74	10/7/2020	10/7/2015	100.78277	100.7827676	100.7827676	100.7827676	100.6519525	100.1275751	99.60865161	99.09509719	98.58682879
150914A00018	9/14/2015	3.05	9/15/2025	9/14/2015	115.07139	115.071391	115.071391	115.071391	110.4437607	105.0257222	99.91086952	95.08064211	90.51770911
150930A00035	9/30/2015	1.73	7/2/2020	9/30/2015	100.37777	100.3777662	100.3777662	100.3777662	100.3444055	100.0870135	99.8309389	99.57617166	99.3227018
151002A00075	10/2/2015	2.04	10/3/2022	10/2/2015	104.88154	104.8815415	104.8815415	104.8815415	103.7301159	101.2350603	98.81296543	96.46127471	94.17753739
151008A00024	10/8/2015	1.58	10/8/2020	10/8/2015	100.7753	100.7752989	100.7752989	100.7752989	100.6431667	100.1151928	99.59275168	99.07575653	98.56412243
151022A00011	10/22/2015	1.57	10/22/2020	10/22/2015	100.82649	100.8264868	100.8264868	100.8264868	100.6791281	100.1127142	99.55266388	98.99887028	98.45122889
151211A00002	12/11/2015	2.05	12/15/2021	12/11/2015	103.34452	103.3445161	103.3445161	103.3445161	102.6733591	100.9724163	99.30771284	97.67815592	96.08269703
151223A00066	12/23/2015	2.34	12/23/2022	12/23/2015	106.14209	106.1420895	106.1420895	106.1420895	104.8148386	102.090258	99.45036043	96.89196126	94.41201999
151229A00081	12/29/2015	3.76	12/31/2035	12/29/2015	153.87054	153.8705415	150.2658786	133.6164834	117.8125175	104.0740498	92.2324604	82.00919797	73.16825533
160107A00042	1/7/2016	2.05	1/7/2021	1/7/2016	101.39656	101.3965633	101.3965633	101.3965633	101.1580708	100.3812769	99.6163812	98.86311196	98.12120553
160114A00015	1/14/2016	1.92	1/14/2021	1/14/2016	101.33494	101.3349423	101.3349423	101.3349423	101.086969	100.2913953	99.5083116	98.73742537	97.97845317
160119A00019	1/19/2016	2.95	1/19/2027	1/19/2016	118.06102	118.0610176	118.0610176	117.4085563	110.4758755	103.8422167	97.65846736	91.89170155	86.51156685
160126A00053	1/26/2016	1.75	7/20/2020	1/26/2016	100.46034	100.4603356	100.4603356	100.4603356	100.4122873	100.1051738	99.79994624	99.4965872	99.19507951
160209A00047	2/9/2016	1.5	8/10/2020	2/9/2016	100.45604	100.4560376	100.4560376	100.4560376	100.3884147	100.0236288	99.66149712	99.30199082	98.94508131
160307A00028	3/7/2016	2.91	3/7/2028	3/7/2016	120.70669	120.7066911	120.7066911	118.7287482	110.6347804	103.0129775	95.98326737	89.49639859	83.50745654
160331A00023	3/31/2016	1.68	3/31/2021	3/31/2016	101.4211	101.4210962	101.4210962	101.4210962	101.0661248	100.0657902	99.08515858	98.12365274	97.1807178
160510A00012	5/10/2016	1.49	10/12/2021	5/10/2016	102.1315	102.131498	102.131498	102.131498	101.5394608	100.0198884	98.53057362	97.07068612	95.63942545
160601A00016	6/1/2016	1.74	6/1/2021	6/1/2016	101.73325	101.7332497	101.7332497	101.7332497	101.2988866	100.1308571	98.98962213	97.87426835	96.78392363
160606A00023	6/6/2016	1.51	6/10/2020	6/6/2016	100.24519	100.2451908	100.2451908	100.2451908	100.2240724	100.0275313	99.8317707	99.63678596	99.44257242
160614A00025	6/14/2016	1.83	6/14/2023	6/14/2016	104.96113	104.9611315	104.9611315	104.9611315	103.2356907	100.0886174	97.05354847	94.12583238	91.30104202
160614A00067	6/14/2016	1.51	2/16/2021	6/14/2016	101.11122	101.1112187	101.1112187	101.1112187	100.8172994	99.93386787	99.06585299	98.21285397	97.37448381
160615A00031	6/15/2016	2.51	6/17/2030	6/15/2016	124.62577	124.6257673	124.6257673	119.1776772	108.785939	99.29657805	90.73292597	82.99932719	76.01048341
160616A00006	6/16/2016	1.51	6/16/2021	6/16/2016	101.49982	101.499816	101.499816	101.499816	101.0477868	99.84144139	98.66373462	97.5136564	96.39024367
160616A00034	6/16/2016	1.97	6/17/2024	6/16/2016	107.11138	107.1113752	107.1113752	107.1113752	104.353917	100.2370741	96.30533176	92.54935263	88.96032578
160624A00026	6/24/2016	1.52	6/24/2021	6/24/2016	101.5393	101.5393034	101.5393034	101.5393034	101.0775046	99.8496179	98.65138567	97.48174428	96.33968044
160329A00044	3/29/2016	1.79	3/29/2022	3/29/2016	103.37577	103.3757715	103.3757715	103.3757715	102.5647488	100.5836518	98.65088201	96.76495951	94.92445986
160401A00016	4/1/2016	2.42	4/1/2025	4/1/2016	110.64626	110.646255	110.646255	110.646255	106.8470817	101.9432213	97.2950621	92.88794447	88.70812416
160404A00039	4/4/2016	1.45	4/6/2020	4/4/2016	100.01833	100.0183272	100.0183272	100.0183272	100.0173142	100.000695	99.9840917	99.96750445	99.95093316
160407A00004	4/7/2016	1.41	4/7/2021	4/7/2016	101.33356	101.3335597	101.3335597	101.3335597	100.9687319	99.94775877	98.9473228	97.96680946	97.00562849
160419A00004	4/19/2016	1.52	4/20/2020	4/19/2016	100.06609	100.0660901	100.0660901	100.0660901	100.0627131	100.0073202	99.95200222	99.896759	99.84159041
160422A00015	4/22/2016	1.61	4/22/2020	4/22/2016	100.0782	100.0781977	100.0781977	100.0781977	100.0744828	100.0135489	99.9527008	99.89193828	99.83126119

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160429A00041	4/29/2016	1.71	4/29/2021	4/29/2016	101.5663	101.566304	101.566304	101.566304	101.1735089	100.0946755	99.03873314	98.00495961	96.99266291
160503A00016	5/3/2016	1.48	5/5/2020	5/3/2016	100.11192	100.1119155	100.1119155	100.1119155	100.1051183	100.0082216	99.91151935	99.81501098	99.71869589
160504A00004	5/4/2016	2.3	5/4/2026	5/4/2016	113.43273	113.4327306	113.4327306	113.4327306	107.4847555	101.5299184	95.94485512	90.70467576	85.78629196
160510A00010	5/10/2016	1.6	5/3/2021	5/10/2016	101.46081	101.4608055	101.4608055	101.4608055	101.0631447	99.97423158	98.90865955	97.86568479	96.84459476
160526A00011	5/26/2016	1.58	5/26/2021	5/26/2016	101.70781	101.707813	101.707813	101.707813	101.2798403	100.1252065	98.99675188	97.89359444	96.81489138
160603A00021	6/3/2016	1.66	6/3/2021	6/3/2016	101.64617	101.6461661	101.6461661	101.6461661	101.2095406	100.0367196	98.89093284	97.77125443	96.67680036
160613A00047	6/15/2016	2.18	6/16/2025	6/15/2016	109.82716	109.827162	109.827162	109.827162	105.7192027	100.6520244	95.85856816	91.32259351	87.02891219
160615A00023	6/15/2016	1.38	6/15/2021	6/15/2016	101.54404	101.5440358	101.5440358	101.5440358	101.0918525	99.88474208	98.70627652	97.55544622	96.43128851
160616A00028	6/16/2016	1.81	6/16/2023	6/16/2016	104.90476	104.904758	104.904758	104.904758	103.1747187	100.0233495	96.98430682	94.05291829	91.22473758
160617A00002	6/17/2016	1.2	6/17/2020	6/17/2016	100.23424	100.234243	100.234243	100.234243	100.2093786	99.99321032	99.77798773	99.56370457	99.35035462
160624A00006	6/24/2016	1.52	6/24/2021	6/24/2016	101.5393	101.5393034	101.5393034	101.5393034	101.0775046	99.8496179	98.65138567	97.48174428	96.33968044
160624A00063	6/24/2016	1.52	6/24/2022	6/24/2016	103.16821	103.1682104	103.1682104	103.1682104	102.2128792	100.0027174	97.85093909	95.75557212	93.71472843
160628A00030	6/28/2016	1.48	6/28/2021	6/28/2016	101.50257	101.5025723	101.5025723	101.5025723	101.0360055	99.79772505	98.58960384	97.41055132	96.25952895
160628A00039	6/28/2016	2.01	6/29/2026	6/28/2016	111.93907	111.9390727	111.9390727	111.9390727	105.6810579	99.64318682	93.98931919	88.6930218	83.72981952
160701A00019	7/1/2016	1.73	7/3/2023	7/1/2016	104.71254	104.7125442	104.7125442	104.7125442	102.941374	99.74926323	96.67235855	93.70581866	90.84503844
160712A00023	7/12/2016	1.79	7/12/2023	7/12/2016	104.94684	104.946838	104.946838	104.946838	103.1512549	99.9327698	96.83118501	93.84159532	90.959332
160713A00007	7/13/2016	1.32	7/13/2021	7/13/2016	101.5639	101.5639046	101.5639046	101.5639046	101.0783818	99.79998046	98.54912118	97.32491567	96.12651406
160725A00010	7/25/2016	1.61	7/26/2021	7/25/2016	101.76914	101.7691423	101.7691423	101.7691423	101.2695679	99.96217935	98.67924865	97.42012075	96.18416404
160104A00014	1/4/2016	2.49	1/4/2023	1/4/2016	106.12434	106.1243365	106.1243365	106.1243365	104.7769217	102.032687	99.37436133	96.79870614	94.30262904
160119A00005	1/19/2016	1.89	1/19/2021	1/19/2016	101.32554	101.3255395	101.3255395	101.3255395	101.0708226	100.2618784	99.46584712	98.68242121	97.91130298
160119A00025	1/19/2016	3.05	1/19/2028	1/19/2016	121.46364	121.4636424	121.4636424	119.6326182	111.6429804	104.0973267	97.12807344	90.68799692	84.73397638
160119A00026	1/19/2016	3.14	1/19/2029	1/19/2016	124.97618	124.9761787	124.9761787	121.9113588	112.8657096	104.4245436	96.69883681	89.62381133	83.14087643
160120A00010	1/20/2016	1.99	10/20/2021	1/20/2016	102.68269	102.6826898	102.6826898	102.6826898	102.0814807	100.5408128	99.03097289	97.55110602	96.1003886
160122A00021	1/22/2016	1.71	1/22/2021	1/22/2016	101.31277	101.3127679	101.3127679	101.3127679	101.0534293	100.2347896	99.42937037	98.63685338	97.85693041
160218A00029	2/18/2016	1.81	4/15/2021	2/18/2016	101.61625	101.6162543	101.6162543	101.6162543	101.2415225	100.1998933	99.17961142	98.18002587	97.20051176
160301A00009	3/1/2016	2.06	3/1/2023	3/1/2016	105.19478	105.1947811	105.1947811	105.1947811	103.7250316	100.8436012	98.05710971	95.36192569	92.75457697
160329A00045	3/29/2016	2.12	3/29/2024	3/29/2016	108.0918	108.0918047	108.0918047	108.0918047	105.5492644	101.5938813	97.80904814	94.18651884	90.71849016
160408A00015	4/8/2016	2.01	4/7/2023	4/8/2016	105.22249	105.2224867	105.2224867	105.2224867	103.663375	100.6873356	97.812409	95.0346012	92.35009973
160415A00010	4/15/2016	1.66	4/15/2021	4/15/2016	101.45817	101.4581699	101.4581699	101.4581699	101.0836932	100.0429531	99.02354775	98.02482627	97.04616413
160502A00014	5/2/2016	1.5	5/4/2020	5/2/2016	100.11058	100.1105817	100.1105817	100.1105817	100.1041309	100.009999	99.91604938	99.82228158	99.72869504
160502A00018	5/2/2016	2.09	5/2/2023	5/2/2016	105.58945	105.5894486	105.5894486	105.5894486	103.9665317	100.9194547	97.97758041	95.13667849	92.39271491
160516A00019	5/16/2016	1.44	5/17/2021	5/16/2016	101.51117	101.5111672	101.5111672	101.5111672	101.0948396	99.96552212	98.86129306	97.78132388	96.72482218
160523A00047	5/23/2016	1.77	5/18/2021	5/23/2016	101.71069	101.7106936	101.7106936	101.7106936	101.2938367	100.1633367	99.05795756	97.97686928	96.91927795

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160606A00003	6/6/2016	1.66	6/7/2021	6/6/2016	101.66144	101.6614444	101.6614444	101.6614444	101.2199355	100.0363497	98.8802981	97.75082895	96.64703384
160628A00040	6/28/2016	1.56	6/28/2023	6/28/2016	104.73116	104.7311581	104.7311581	104.7311581	102.9633004	99.7693265	96.69052358	93.72204484	90.85928107
160630A00044	6/30/2016	1.42	10/30/2020	6/30/2016	100.68854	100.688539	100.688539	100.688539	100.5328837	99.94609428	99.36612585	98.79286014	98.22618159
160701A00007	7/1/2016	1.42	7/1/2021	7/1/2016	101.43646	101.4364595	101.4364595	101.4364595	100.9664557	99.72091741	98.50555379	97.31927775	96.16105385
160701A00027	7/1/2016	1.93	7/1/2024	7/1/2016	107.00408	107.0040844	107.0040844	107.0040844	104.2046981	100.054853	96.09309567	92.3098652	88.69614385
160701A00028	7/1/2016	2.16	7/1/2026	7/1/2016	111.64466	111.6446646	111.6446646	111.6429727	105.439013	99.44815291	93.83730056	88.5803542	83.65314133
160707A00005	7/7/2016	1.34	7/7/2020	7/7/2016	100.29472	100.2947187	100.2947187	100.2947187	100.2572964	99.9862587	99.71669099	99.44858134	99.18191788
160714A00053	7/14/2016	1.58	7/15/2021	7/14/2016	101.68951	101.68951	101.68951	101.68951	101.2028089	99.92218631	98.66853252	97.44099917	96.23877364
160801A00001	8/1/2016	1.97	8/1/2024	8/1/2016	107.31829	107.3182868	107.3182868	107.3182868	104.4179025	100.186009	96.14926935	92.29771558	88.62193813
151014A00024	10/14/2015	1.51	10/14/2020	10/14/2015	100.76138	100.7613849	100.7613849	100.7613849	100.6227484	100.0784094	99.53995491	99.00728966	98.48032052
151116A00015	11/16/2015	2.02	11/16/2020	11/16/2015	101.12622	101.1262169	101.1262169	101.1262169	100.9509696	100.3163744	99.68974484	99.07093142	98.45978851
151223A00065	12/23/2015	2.15	12/23/2021	12/23/2015	103.56276	103.5627603	103.5627603	103.5627603	102.881379	101.1574207	99.47052706	97.81956851	96.20346185
151223A00074	12/23/2015	3.01	12/23/2027	12/23/2015	122.56815	122.5681518	122.5681518	120.7952745	112.761831	105.1727942	98.16018187	91.67698129	85.68025545
151229A00079	12/29/2015	3	12/30/2025	12/29/2015	115.57679	115.5767873	115.5767873	115.5767873	110.3698259	104.6871758	99.33685225	94.29760304	89.5496506
160107A00039	1/7/2016	2.06	2/10/2021	1/7/2016	101.57309	101.5730862	101.5730862	101.5730862	101.2872827	100.4177921	99.56318634	98.72308572	97.8971232
160108A00020	1/8/2016	2.04	1/8/2021	1/8/2016	101.40143	101.4014261	101.4014261	101.4014261	101.1615352	100.3819097	99.61426993	98.85834092	98.1138562
160203A00001	2/3/2016	1.44	8/3/2020	2/3/2016	100.45884	100.4588391	100.4588391	100.4588391	100.3985483	100.0524223	99.70868087	99.36729931	99.02825337
160216A00028	2/16/2016	1.69	2/16/2022	2/16/2016	102.99542	102.995418	102.995418	102.995418	102.245647	100.3783662	98.55423565	96.77200476	95.0304673
160328A00014	3/28/2016	2.49	3/27/2026	3/28/2016	114.35428	114.3542806	114.3542806	114.3542806	108.616561	102.723554	97.19063255	91.99391765	87.11123273
160330A00054	3/30/2016	2.9	3/31/2031	3/30/2016	130.83094	130.8309406	130.8309406	123.5573775	112.2355808	101.9618273	92.7518722	84.48898478	77.06982675
160415A00014	4/15/2016	2.05	4/14/2023	4/15/2016	105.37808	105.3780757	105.3780757	105.3780757	103.8007754	100.8039936	97.90948156	95.11317941	92.41121272
160419A00005	4/19/2016	1.66	4/19/2021	4/19/2016	101.47346	101.4734557	101.4734557	101.4734557	101.0937708	100.0422338	99.01247208	98.00381481	97.01561839
160422A00026	4/22/2016	2.62	4/22/2026	4/22/2016	114.09189	114.0918868	114.0918868	114.0918868	108.2562564	102.3509185	96.80887258	91.60585692	86.71935259
160516A00027	5/16/2016	2.01	5/16/2023	5/16/2016	105.40643	105.4064311	105.4064311	105.4064311	103.7500364	100.6702961	97.69791914	94.82854319	92.05801104
160524A00027	5/24/2016	3.06	5/27/2031	5/24/2016	130.63341	130.6334089	130.6334089	123.11998	111.8165963	101.5607555	92.37446361	84.13939521	76.75091773
160606A00004	6/6/2016	2.43	6/8/2026	6/6/2016	113.20734	113.2073431	113.2073431	113.2073431	107.1078708	101.1226136	95.51272649	90.25268206	85.31882133
160610A00008	6/10/2016	1.75	6/10/2022	6/10/2016	103.22426	103.2242582	103.2242582	103.2242582	102.2965904	100.1311282	98.02194421	95.96717091	93.9650187
160614A00066	6/14/2016	1.35	6/14/2021	6/14/2016	101.5039	101.5039034	101.5039034	101.5039034	101.053016	99.84883608	98.67317049	97.52501632	96.40341722
160616A00027	6/16/2016	2.27	6/16/2026	6/16/2016	112.25532	112.2553166	112.2553166	112.2553166	106.1271688	100.151925	94.5531258	89.30507264	84.3839549
160624A00065	6/28/2016	2.08	6/28/2021	6/28/2016	102.25779	102.2577856	102.2577856	102.2577856	101.7896621	100.5463875	99.33335652	98.14947623	96.99370583
160630A00021	6/30/2016	1.59	6/30/2023	6/30/2016	104.83776	104.8377624	104.8377624	104.8377624	103.0641215	99.86320065	96.77784883	93.80319551	90.93460936
160630A00100	6/30/2016	1.18	6/30/2020	6/30/2016	100.26817	100.2681691	100.2681691	100.2681691	100.2364048	99.98429901	99.73345668	99.48386833	99.23552458
160706A00029	7/6/2016	2.49	7/8/2030	7/6/2016	122.39837	122.3983694	122.3983694	116.950154	106.7256554	97.39237742	88.97232889	81.37088693	74.50369687

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00670	6/1/2015	2.23	6/5/2020	6/1/2015	100.35143	100.3514264	100.3514264	100.3514264	100.332946	100.1500747	99.96787438	99.78634144	99.60547215
150601A00768	6/1/2015	2.34	5/13/2022	6/1/2015	104.301	104.3010045	104.3010045	104.3010045	103.4162465	101.3123827	99.26173495	97.26259197	95.31331094
150601A00819	6/1/2015	1.71	5/28/2020	6/1/2015	100.25188	100.251879	100.251879	100.251879	100.2370746	100.0761589	99.91576395	99.75588721	99.59652619
150601A01412	6/1/2015	1.88	6/1/2020	6/1/2015	100.27622	100.2762197	100.2762197	100.2762197	100.2598684	100.0881421	99.91700155	99.74644373	99.57646573
150601A01457	6/1/2015	1.88	6/1/2020	6/1/2015	100.27622	100.2762197	100.2762197	100.2762197	100.2598684	100.0881421	99.91700155	99.74644373	99.57646573
150618A00041	6/18/2015	2.02	6/18/2020	6/18/2015	100.3846	100.3845952	100.3845952	100.3845952	100.3592184	100.1404005	99.92254713	99.70565182	99.48970825
150626A00039	6/26/2015	3.23	6/26/2025	6/26/2015	115.41208	115.4120793	115.4120793	115.4120793	111.1748299	105.9417322	100.9904476	96.30424372	91.86747516
150813A00008	8/13/2015	3.03	8/13/2025	8/13/2015	114.71592	114.715921	114.715921	114.715921	110.2597067	104.929816	99.89371855	95.13370004	90.63320141
150819A00011	8/19/2015	2.53	8/19/2022	8/19/2015	105.38576	105.3857554	105.3857554	105.3857554	104.3231061	101.949818	99.642568	97.3991561	95.21746843
150824A00048	8/24/2015	1.93	2/24/2021	8/24/2015	101.52276	101.5227632	101.5227632	101.5227632	101.2167285	100.3097543	99.41897412	98.54395734	97.68428846
150921A00037	9/21/2015	1.92	9/21/2020	9/21/2015	100.80386	100.803859	100.803859	100.803859	100.6905709	100.2098536	99.73372244	99.26211188	98.79495773
151001A00028	10/1/2015	1.74	10/1/2020	10/1/2015	100.758	100.7580009	100.7580009	100.7580009	100.6337018	100.1257864	99.62297945	99.12520427	98.6323857
151001A00038	10/1/2015	1.75	10/1/2020	10/1/2015	100.76311	100.7631081	100.7631081	100.7631081	100.6388062	100.1308757	99.62805379	99.13026372	98.63743036
151102A00009	11/2/2015	1.89	11/2/2020	11/2/2015	100.97996	100.9799647	100.9799647	100.9799647	100.8207517	100.224807	99.6358845	99.05386085	98.47861538
151116A00025	11/16/2015	3.04	11/14/2025	11/16/2015	115.46451	115.4645081	115.4645081	115.4645081	110.5135563	104.9420382	99.69020683	94.73799996	90.0667196
151119A00030	11/19/2015	2.1	11/19/2020	11/19/2015	101.19259	101.1925863	101.1925863	101.1925863	101.0138748	100.3708704	99.73603854	99.1092241	98.4902758
151211A00004	12/11/2015	2.48	12/15/2023	12/11/2015	108.86169	108.8616933	108.8616933	108.8616933	106.6118753	102.910758	99.35856456	95.94845071	92.67392992
151211A00007	12/11/2015	2.73	12/15/2025	12/11/2015	115.07262	115.0726225	115.0726225	115.0726225	109.9142694	104.2427158	98.90223397	93.87171232	89.13149872
160119A00027	1/19/2016	3.25	1/18/2030	1/19/2016	128.83732	128.8373223	128.8373223	124.2172178	114.1224107	104.8070232	96.35710753	88.68698829	81.71990309
160129A00066	1/29/2016	3.04	1/29/2031	1/29/2016	131.89479	131.8947873	131.8947873	125.0015659	113.7718602	103.5515513	94.37256093	86.12234672	78.70108973
160129A00067	1/29/2016	2.53	1/29/2026	1/29/2016	114.21792	114.217922	114.217922	114.217922	108.8182939	103.0662084	97.65678393	92.56785542	87.77879939
160204A00024	2/4/2016	1.68	2/4/2021	2/4/2016	101.21684	101.2168389	101.2168389	101.2168389	100.9401661	100.0885329	99.25121058	98.42784087	97.6180774
160307A00026	3/7/2016	2.2	3/7/2023	3/7/2016	105.63863	105.6386312	105.6386312	105.6386312	104.1517423	101.2485941	98.44155275	95.72692272	93.10117151
160330A00034	3/30/2016	1.95	3/30/2022	3/30/2016	103.33901	103.3390137	103.3390137	103.3390137	102.5296182	100.5530948	98.62473128	96.74305408	94.90664511
151109A00020	11/9/2015	2.79	11/9/2023	11/9/2015	109.08138	109.0813775	109.0813775	109.0813775	106.9406801	103.3460997	99.89254655	96.57370361	93.38357449
151123A00014	11/23/2015	2.13	11/23/2020	11/23/2015	101.23273	101.2327252	101.2327252	101.2327252	101.0494319	100.3953898	99.74979686	99.11248997	98.48331038
151208A00019	12/8/2015	2.1	12/8/2020	12/8/2015	101.2897	101.2897016	101.2897016	101.2897016	101.0886904	100.3936357	99.70811866	99.03194404	98.36492169
151217A00014	12/17/2015	3	12/17/2025	12/17/2015	115.48101	115.4810101	115.4810101	115.4810101	110.3481053	104.6981599	99.37689967	94.3634153	89.6382403
151229A00080	12/29/2015	3.49	12/30/2030	12/29/2015	134.15154	134.151536	134.151536	127.5437556	116.4069596	106.2264921	97.06730708	88.82028603	81.38854057
160113A00005	1/13/2016	1.95	1/13/2021	1/13/2016	101.35429	101.3542911	101.3542911	101.3542911	101.1076554	100.3147019	99.53415441	98.76572339	98.00912821
160113A00006	1/13/2016	1.95	1/11/2021	1/13/2016	101.34488	101.3448766	101.3448766	101.3448766	101.1009683	100.3134675	99.53820272	98.7748905	98.02325587
160122A00044	1/22/2016	1.9	1/19/2021	1/22/2016	101.3337	101.3336964	101.3336964	101.3336964	101.0789704	100.2699898	99.47392251	98.69046099	97.91930753
160126A00046	1/26/2016	1.8	10/20/2020	1/26/2016	100.87023	100.8702346	100.8702346	100.8702346	100.7252833	100.1651504	99.61123849	99.06344438	98.52166702

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160129A00005	1/29/2016	1.96	1/28/2022	1/29/2016	103.09883	103.0988257	103.0988257	103.0988257	102.3766081	100.568029	98.80006773	97.07156659	95.38140854
160129A00068	1/29/2016	1.97	1/30/2023	1/29/2016	105.31413	105.3141287	105.3141287	105.3141287	103.9066083	101.0956885	98.37508457	95.74142269	93.19147351
160211A00033	2/11/2016	1.67	2/11/2022	2/11/2016	102.61502	102.6150191	102.6150191	102.6150191	101.8758312	100.0324436	98.23127716	96.47111909	94.75079913
160307A00027	3/7/2016	2.71	3/6/2026	3/7/2016	114.33171	114.3317093	114.3317093	114.3317093	108.7686751	102.963672	97.5088721	92.38133009	87.55971695
160330A00035	3/30/2016	2.32	4/1/2024	3/30/2016	108.17051	108.1705083	108.1705083	108.1705083	105.6336655	101.6891615	97.91452033	94.30153538	90.84244065
160330A00056	3/30/2016	2.26	3/31/2025	3/30/2016	110.82901	110.8290089	110.8290089	110.8290089	107.0024822	102.0664599	97.38852583	92.95384984	88.74852979
160331A00024	3/31/2016	1.91	3/31/2022	3/31/2016	103.26274	103.2627382	103.2627382	103.2627382	102.45213	100.4738056	98.54374996	96.66048415	94.8225851
160413A00002	4/13/2016	1.63	4/12/2021	4/13/2016	101.41534	101.415338	101.415338	101.415338	101.0448179	100.0123526	99.0008905	98.00979575	97.03845799
160429A00007	4/29/2016	1.52	4/29/2021	4/29/2016	101.53258	101.5325817	101.5325817	101.5325817	101.138835	100.0576535	98.99945516	97.96351382	96.94913355
160510A00011	5/10/2016	1.59	4/5/2021	5/10/2016	101.34812	101.3481217	101.3481217	101.3481217	100.9867795	99.97343888	98.98033532	98.00686751	97.05245776
160523A00018	5/23/2016	1.77	5/24/2021	5/23/2016	101.73559	101.7355947	101.7355947	101.7355947	101.3111906	100.1645072	99.04365843	97.94777909	96.87604215
160524A00011	5/24/2016	1.78	5/19/2021	5/24/2016	101.72632	101.7263242	101.7263242	101.7263242	101.3081884	100.1749209	99.06689401	97.98327179	96.92325485
160524A00035	5/24/2016	1.79	5/24/2021	5/24/2016	101.75883	101.7588324	101.7588324	101.7588324	101.3343853	100.1875591	99.06656976	97.97055201	96.89867879
160527A00026	5/27/2016	1.72	4/29/2021	5/27/2016	101.57723	101.5772307	101.5772307	101.5772307	101.184417	100.1055202	99.04951532	98.01568019	97.00332278
160603A00004	6/3/2016	1.65	6/3/2021	6/3/2016	101.63427	101.6342704	101.6342704	101.6342704	101.1976676	100.0249213	98.87920801	97.75960192	96.66521903
160628A00050	6/28/2016	1.56	6/28/2023	6/28/2016	104.73116	104.7311581	104.7311581	104.7311581	102.9633004	99.7693265	96.69052358	93.72204484	90.85928107
160629A00052	6/29/2016	1.29	6/29/2021	6/29/2016	101.47929	101.4792944	101.4792944	101.4792944	101.0102244	99.76616174	98.55251929	97.36819315	96.21213224
160629A00056	6/29/2016	1.36	6/29/2020	6/29/2016	100.2731	100.2731027	100.2731027	100.2731027	100.2419192	99.99296236	99.745237	99.49873404	99.2534445
160630A00019	6/30/2016	1.52	7/1/2021	6/30/2016	101.56316	101.5631587	101.5631587	101.5631587	101.0928916	99.84651067	98.63031875	97.44322828	96.28420346
160630A00042	6/30/2016	1.52	6/30/2021	6/30/2016	101.55973	101.5597297	101.5597297	101.5597297	101.0906245	99.84665228	98.63310086	97.44886591	96.29289596
160630A00049	6/30/2016	1.51	6/30/2021	6/30/2016	101.54709	101.5470874	101.5470874	101.5470874	101.0780084	99.83412012	98.62065118	97.43649732	96.28060712
160630A00091	6/30/2016	1.51	6/30/2021	6/30/2016	101.54709	101.5470874	101.5470874	101.5470874	101.0780084	99.83412012	98.62065118	97.43649732	96.28060712
160701A00034	7/1/2016	1.43	7/21/2021	7/1/2016	101.51273	101.5127312	101.5127312	101.5127312	101.0194933	99.72579414	98.45766593	97.21436585	95.99518012
160705A00006	7/5/2016	1.38	7/5/2022	7/5/2016	102.89015	102.8901483	102.8901483	102.8901483	101.9166555	99.68070657	97.50449851	95.38601267	93.32331573
160727A00015	7/27/2016	1.48	7/27/2020	7/27/2016	100.40099	100.400991	100.400991	100.400991	100.3472578	100.0210205	99.69690223	99.37488228	99.05494037
160810A00032	8/10/2016	1.32	8/10/2021	8/10/2016	101.65737	101.6573692	101.6573692	101.6573692	101.1395375	99.7912272	98.46720995	97.16688599	95.8896748
160812A00005	8/12/2016	1.69	8/12/2022	8/12/2016	103.33391	103.3339113	103.3339113	103.3339113	102.2937383	99.96322618	97.69726071	95.49370455	93.3505036
160815A00005	8/15/2016	2.23	8/17/2026	8/15/2016	112.33129	112.3312924	112.3312924	112.219357	105.8261796	99.71274625	93.99397303	88.64238398	83.63254731
160815A00007	8/15/2016	2.23	8/17/2026	8/15/2016	112.33129	112.3312924	112.3312924	112.219357	105.8261796	99.71274625	93.99397303	88.64238398	83.63254731
160825A00055	8/29/2016	2.32	8/30/2021	8/29/2016	102.91528	102.9152799	102.9152799	102.9152799	102.3734963	100.9672978	99.58721256	98.23257688	96.9027489
160830A00010	8/30/2016	1.65	8/30/2021	8/30/2016	101.95517	101.955173	101.955173	101.955173	101.4157315	100.0166795	98.6436175	97.29588522	95.97284408
160830A00030	8/30/2016	1.52	8/28/2020	8/30/2016	100.52671	100.5267123	100.5267123	100.5267123	100.4399634	100.0256716	99.61478834	99.20727189	98.80308098
160830A00032	8/30/2016	1.82	8/30/2022	8/30/2016	103.7207	103.7206968	103.7206968	103.7206968	102.6453955	100.2640681	97.94985888	95.70050627	93.51383837

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160926A00002	9/26/2016	1.6	9/27/2021	9/26/2016	101.98499	101.9849894	101.9849894	101.9849894	101.4128827	99.93833973	98.49261923	97.07495087	95.68459132
160926A00004	9/26/2016	1.66	9/26/2023	9/26/2016	105.44343	105.4434268	105.4434268	105.4434268	103.4384123	100.003836	96.70152285	93.52568144	90.47080583
160926A00022	9/26/2016	1.6	9/24/2021	9/26/2016	101.97412	101.9741207	101.9741207	101.9741207	101.4055361	99.93914071	98.50125707	97.0911271	95.7080191
160926A00074	9/26/2016	1.38	9/27/2021	9/26/2016	101.90803	101.9080316	101.9080316	101.9080316	101.3343775	99.85625758	98.4070953	96.98611527	95.59256926
160929A00004	9/29/2016	1.74	9/29/2022	9/29/2016	103.64455	103.6445539	103.6445539	103.6445539	102.5120628	100.0526431	97.66483112	95.34613133	93.094151
161006A00011	10/6/2016	1.64	10/6/2022	10/6/2016	103.878	103.8780048	103.8780048	103.8780048	102.7255459	100.2355011	97.81851761	95.47202723	93.19356858
160726A00024	7/26/2016	1.61	7/26/2021	7/26/2016	101.76914	101.7691423	101.7691423	101.7691423	101.2695679	99.96217935	98.67924865	97.42012075	96.18416404
160728A00022	7/28/2016	1.37	7/28/2021	7/28/2016	101.68114	101.6811421	101.6811421	101.6811421	101.1779883	99.8629122	98.57194371	97.30445962	96.05985812
160811A00011	8/11/2016	2.25	8/11/2026	8/11/2016	112.42759	112.4275905	112.4275905	112.3366501	105.9568793	99.85351079	94.14317495	88.79857346	83.79443427
160825A00054	8/29/2016	2.49	8/30/2021	8/29/2016	103.15889	103.1588892	103.1588892	103.1588892	102.6165112	101.2084994	99.8266322	98.47024492	97.1386949
160829A00037	8/31/2016	2.35	8/31/2021	8/31/2016	102.96399	102.9639947	102.9639947	102.9639947	102.4209642	101.0117803	99.62880588	98.27137388	96.93883916
160906A00017	9/6/2016	1.65	9/7/2021	9/6/2016	101.98529	101.9852886	101.9852886	101.9852886	101.436487	100.0157429	98.62178294	97.25391658	95.91147632
160928A00014	9/28/2016	1.37	9/28/2021	9/28/2016	101.89637	101.8963724	101.8963724	101.8963724	101.3215799	99.84085403	98.38918816	96.96580281	95.56994587
161013A00038	10/13/2016	1.52	10/13/2021	10/13/2016	102.18201	102.1820109	102.1820109	102.1820109	101.5886465	100.0660355	98.57376997	97.1110158	95.67696904
161014A00006	10/14/2016	1.74	10/14/2021	10/14/2016	102.26497	102.2649714	102.2649714	102.2649714	101.6720243	100.15048	98.65921897	97.19740913	95.76424847
161031A00042	10/31/2016	1.51	7/17/2020	10/31/2016	100.3759	100.3758968	100.3758968	100.3758968	100.3303122	100.031615	99.73470508	99.43956635	99.14618293
161102A00026	11/2/2016	1.54	10/30/2020	11/2/2016	100.75948	100.7594775	100.7594775	100.7594775	100.603774	100.0167465	99.43654208	98.86304229	98.2961316
161109A00018	11/9/2016	2.63	11/9/2026	11/9/2016	115.42611	115.42611	115.42611	115.0213074	108.3381736	101.944282	95.97461068	90.39876113	85.1886664
161208A00007	12/8/2016	2.6	12/8/2023	12/8/2016	108.57305	108.5730519	108.5730519	108.5730519	106.3577411	102.6973173	99.18317965	95.80865075	92.56739951
161208A00016	12/8/2016	2.24	12/8/2021	12/8/2016	103.32371	103.3237093	103.3237093	103.3237093	102.6632132	100.986203	99.34454722	97.73719213	96.16312604
161213A00017	12/13/2016	2.24	12/13/2022	12/13/2016	105.80682	105.8068172	105.8068172	105.8068172	104.503158	101.8090794	99.19810278	96.66712955	94.21319997
170110A00022	1/10/2017	2.27	1/10/2023	1/10/2017	106.05588	106.0558776	106.0558776	106.0558776	104.6891334	101.9191974	99.23666794	96.63825177	94.12080297
170111A00012	1/11/2017	3.31	1/11/2030	1/11/2017	129.36817	129.3681716	129.3681716	124.7783527	114.6784497	105.3524265	96.89070123	89.20787493	82.22742165
170117A00046	1/17/2017	2.55	1/17/2024	1/17/2017	108.63526	108.6352556	108.6352556	108.6352556	106.3085193	102.5464561	98.93853585	95.47761418	92.15691841
170215A00017	2/15/2017	3.26	2/16/2027	2/15/2017	120.40215	120.4021537	120.4021537	119.6565105	112.5882735	105.8139664	99.50258561	93.61999448	88.13474055
170216A00028	2/16/2017	1.97	2/16/2021	2/16/2017	101.65519	101.6551872	101.6551872	101.6551872	101.3599182	100.4720205	99.59963127	98.74234687	97.89977748
170217A00014	2/17/2017	2.27	2/14/2022	2/17/2017	103.76471	103.7647125	103.7647125	103.7647125	103.0175206	101.1544177	99.33412009	97.55539344	95.8170468
170310A00026	3/10/2017	2.15	9/8/2020	3/10/2017	100.84679	100.8467875	100.8467875	100.8467875	100.7478664	100.3026182	99.86130371	99.42387093	98.99026872
170313A00033	3/13/2017	3.31	3/15/2027	3/13/2017	120.96732	120.9673216	120.9673216	120.1326794	112.9755332	106.1209822	99.73930644	93.79529288	88.25652538
170329A00015	3/29/2017	2.11	3/29/2021	3/29/2017	101.84622	101.846221	101.846221	101.846221	101.4934026	100.4961392	99.51840355	98.55962668	97.61926137
160706A00067	7/6/2016	1.29	7/6/2020	7/6/2016	100.27823	100.2782324	100.2782324	100.2782324	100.2416279	99.97337105	99.70655329	99.44116301	99.17718875
160707A00001	7/7/2016	1.34	7/7/2020	7/7/2016	100.29472	100.2947187	100.2947187	100.2947187	100.2572964	99.9862587	99.71669099	99.44858134	99.18191788
160714A00020	9/6/2016	2.28	9/4/2026	9/6/2016	112.74862	112.7486185	112.7486185	112.573926	106.1248918	99.95957825	94.19486833	88.8026859	83.75705796

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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160718A00010	7/18/2016	1.65	7/18/2023	7/18/2016	105.11141	105.1114097	105.1114097	105.1114097	103.2899787	100.0391173	96.90716329	93.88911907	90.98022688
160727A00016	7/27/2016	1.78	7/27/2022	7/27/2016	103.48339	103.4833884	103.4833884	103.4833884	102.4719074	100.1806752	97.9518686	95.78343658	93.6734082
160728A00021	7/28/2016	1.23	7/28/2020	7/28/2016	100.36739	100.3673886	100.3673886	100.3673886	100.3127613	99.98333464	99.65607005	99.33094634	99.00794252
160729A00040	7/29/2016	1.19	7/29/2020	7/29/2016	100.35715	100.3571508	100.3571508	100.3571508	100.3017109	99.96955334	99.63959202	99.31180521	98.98617146
160829A00039	8/29/2016	1.61	3/26/2021	8/29/2016	101.33169	101.3316861	101.3316861	101.3316861	100.9838313	99.99738176	99.03011355	98.08147163	97.15092219
160830A00031	8/30/2016	1.65	8/31/2021	8/30/2016	101.95896	101.9589613	101.9589613	101.9589613	101.4183886	100.0166979	98.64108765	97.29089428	95.96547608
160830A00061	8/30/2018	1.89	8/30/2023	8/30/2018	105.49347	105.4934689	105.4934689	105.4934689	103.56903	100.2188704	96.99470764	93.89115495	90.9030844
160913A00021	9/13/2016	1.52	9/14/2020	9/13/2016	100.5862	100.5862012	100.5862012	100.5862012	100.4807604	100.0197942	99.56305536	99.11048588	98.66202875
160920A00004	9/20/2016	1.68	9/20/2021	9/20/2016	102.07892	102.0789153	102.0789153	102.0789153	101.514721	100.0582701	98.62993453	97.22897211	95.85466607
160922A00014	9/22/2016	2.06	9/22/2026	9/22/2016	112.70983	112.7098291	112.7098291	112.4698716	105.9119016	99.66274735	93.82428877	88.36743872	83.26531166
160926A00018	9/26/2016	1.47	9/28/2020	9/26/2016	100.61001	100.6100133	100.6100133	100.6100133	100.4890866	99.98979667	99.49545054	99.0059751	98.52129871
160926A00023	9/26/2016	1.74	9/26/2022	9/26/2016	103.63264	103.6326436	103.6326436	103.6326436	102.5059676	100.0545945	97.67436855	95.36281834	93.11757398
161006A00012	10/6/2016	1.98	10/7/2024	10/6/2016	108.51367	108.5136672	108.5136672	108.5136672	105.3591771	100.9123951	96.67892997	92.64744377	88.80726068
161020A00002	10/20/2016	1.96	8/15/2023	10/20/2016	105.66581	105.6658144	105.6658144	105.6658144	103.7784795	100.4629081	97.27067118	94.1965515	91.23557984
161031A00006	10/31/2016	1.76	11/1/2021	10/31/2016	102.36972	102.3697195	102.3697195	102.3697195	101.7551622	100.1854995	98.64761115	97.1406001	95.66360292
161031A00037	10/31/2016	1.47	4/17/2020	10/31/2016	100.05334	100.053344	100.053344	100.053344	100.0504739	100.0033933	99.95637252	99.90941132	99.86250963
161115A00011	11/15/2016	2.46	11/15/2023	11/15/2016	107.91548	107.9154828	107.9154828	107.9154828	105.768328	102.1790008	98.73123417	95.41865815	92.23522741
161117A00014	11/17/2016	1.88	11/17/2020	11/17/2016	101.04135	101.0413474	101.0413474	101.0413474	100.8650285	100.2280172	99.59903673	98.977936	98.36456746
161213A00016	12/13/2016	2.06	12/14/2020	12/13/2016	101.29181	101.2918089	101.2918089	101.2918089	101.083516	100.3721511	99.67077976	98.97919228	98.29718489
161214A00004	12/14/2016	1.91	5/14/2020	12/14/2016	100.19587	100.1958709	100.1958709	100.1958709	100.1859486	100.0640746	99.94251163	99.82125842	99.70031378
170110A00023	1/10/2017	2.08	1/10/2022	1/10/2017	103.53798	103.5379765	103.5379765	103.5379765	102.8345338	101.0634469	99.33129873	97.63692332	95.97920072
160809A00002	8/9/2016	1.6	8/9/2021	8/9/2016	101.80688	101.8068802	101.8068802	101.8068802	101.2913481	99.9482442	98.62924496	97.33375727	96.06120704
160830A00034	8/30/2016	1.9	8/30/2023	8/30/2016	105.52793	105.5279266	105.5279266	105.5279266	103.6032229	100.2524778	97.02774584	93.92363952	90.93503038
160907A00009	9/7/2016	1.36	9/8/2021	9/7/2016	101.81247	101.8124678	101.8124678	101.8124678	101.2612752	99.83517713	98.43607585	97.06327258	95.71609211
160922A00051	9/22/2016	2.5	9/22/2028	9/22/2016	118.63003	118.6300322	118.6300322	116.0095975	107.4809466	99.53064967	92.23797563	85.54494742	79.3989792
160923A00030	9/23/2016	1.41	9/23/2021	9/23/2016	101.9391	101.9391002	101.9391002	101.9391002	101.3700422	99.90247247	98.46345027	97.05221645	95.66803825
160923A00032	9/23/2016	1.67	9/25/2023	9/23/2016	105.47445	105.4744529	105.4744529	105.4744529	103.4718063	100.0392749	96.7388218	93.56466813	90.51131988
161013A00037	10/13/2016	1.52	10/13/2021	10/13/2016	102.18201	102.1820109	102.1820109	102.1820109	101.5886465	100.0660355	98.57376997	97.1110158	95.67696904
161031A00005	10/31/2016	1.56	11/2/2020	10/31/2016	100.78214	100.7821383	100.7821383	100.7821383	100.6230631	100.0277906	99.4395346	98.85817186	98.2835818
161206A00008	12/6/2016	2.6	12/6/2023	12/6/2016	108.56036	108.5603646	108.5603646	108.5603646	106.3506735	102.6955224	99.1862701	95.81626538	92.57920146
161213A00013	12/13/2016	1.85	12/14/2020	12/13/2016	101.24057	101.2405726	101.2405726	101.2405726	101.0319213	100.3194733	99.61705308	98.92444996	98.24145898
161222A00030	12/22/2016	3.09	12/22/2026	12/22/2016	120.19788	120.1978801	120.1978801	119.6348059	112.6585414	105.969089	99.72922357	93.90624928	88.47001937
170109A00031	1/9/2017	2.29	1/10/2022	1/9/2017	103.60953	103.6095337	103.6095337	103.6095337	102.9081614	101.1418215	99.41422438	97.72421227	96.07067294

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170119A00004	1/19/2017	2.36	1/18/2022	1/19/2017	103.78154	103.7815427	103.7815427	103.7815427	103.06958	101.2807117	99.53148425	97.8207384	96.14735829
170203A00012	2/3/2017	3.63	2/2/2035	2/3/2017	148.92029	148.9202874	146.621214	131.1247861	116.2207347	103.1619645	91.82445762	81.96732867	73.38475225
170213A00010	2/13/2017	2	8/13/2020	2/13/2017	100.65382	100.6538169	100.6538169	100.6538169	100.5829437	100.2094737	99.83878282	99.47084001	99.10561467
170215A00035	2/15/2017	2.51	5/7/2021	2/15/2017	102.49001	102.4900073	102.4900073	102.4900073	102.0855499	100.9798547	99.89805793	98.83939082	97.80311737
170216A00041	2/16/2017	2.37	2/16/2022	2/16/2017	103.94671	103.9467074	103.9467074	103.9467074	103.196324	101.326037	99.49882583	97.71344514	95.96869354
170303A00021	3/3/2017	2.2	3/3/2022	3/3/2017	104.05372	104.0537242	104.0537242	104.0537242	103.279405	101.3592359	99.48430763	97.65328267	95.86487198
170313A00035	3/13/2017	3.31	3/15/2027	3/13/2017	120.96732	120.9673216	120.9673216	120.1326794	112.9755332	106.1209822	99.73930644	93.79529288	88.25652538
170314A00005	3/14/2017	2.29	3/14/2022	3/14/2017	104.29527	104.2952705	104.2952705	104.2952705	103.5034762	101.5521351	99.64743464	97.78797502	95.97240791
170322A00010	3/22/2017	2.11	3/22/2022	3/22/2017	103.9834	103.9834033	103.9834033	103.9834033	103.1806755	101.2115971	99.29009206	97.41471701	95.58408234
170322A00011	3/22/2017	2.48	3/22/2024	3/22/2017	109.50149	109.5014944	109.5014944	109.5014944	106.9656682	102.9999712	99.20417277	95.5701034	92.09003021
170322A00024	3/22/2017	3.72	9/22/2036	3/22/2017	155.6465	155.6464971	151.0288573	133.5553555	117.1842593	103.053032	90.94773783	80.55940477	71.628028
170327A00070	3/29/2017	3.05	3/29/2027	3/29/2017	120.70896	120.7089623	120.7089623	119.8143467	112.5569957	105.6289107	99.18338182	93.18417038	87.59793924
160427A00019	4/27/2016	1.78	4/27/2021	4/27/2016	101.63448	101.6344829	101.6344829	101.6344829	101.2441637	100.1702874	99.1190853	98.08984533	97.0818851
160505A00007	5/5/2016	1.45	5/5/2021	5/5/2016	101.47821	101.4782105	101.4782105	101.4782105	101.0769866	99.98002995	98.90674653	97.85637685	96.82819364
160516A00017	5/16/2016	1.29	5/15/2020	5/16/2016	100.14636	100.1463644	100.1463644	100.1463644	100.1360802	100.0112605	99.88676861	99.76260319	99.63876291
160523A00013	5/23/2016	2.11	5/23/2023	5/23/2016	105.7569	105.7569019	105.7569019	105.7569019	104.0807943	100.9778292	97.9834961	95.09335973	92.30319457
160606A00005	6/6/2016	2.92	6/6/2031	6/6/2016	129.14649	129.1464904	129.1464904	121.5876444	110.3335122	100.1350722	91.00475384	82.82400719	75.48803951
160610A00009	6/10/2016	1.89	6/12/2023	6/10/2016	105.14643	105.146426	105.146426	105.146426	103.4246874	100.2798549	97.24675956	94.32076832	91.49747159
160610A00035	6/10/2016	1.26	6/10/2020	6/10/2016	100.22508	100.225085	100.225085	100.225085	100.2039354	100.0071157	99.81108125	99.61582719	99.42134884
160620A00026	6/20/2016	1.39	6/21/2021	6/20/2016	101.57741	101.5774074	101.5774074	101.5774074	101.1178604	99.89450491	98.70055886	97.53497232	96.39674485
160624A00010	6/24/2016	1.66	6/24/2022	6/24/2016	103.07722	103.0772204	103.0772204	103.0772204	102.1260531	99.92494447	97.78183824	95.69477941	93.66189612
160628A00068	6/28/2016	1.28	6/28/2021	6/28/2016	101.46345	101.4634488	101.4634488	101.4634488	100.9956263	99.75433622	98.54333639	97.36152983	96.20787193
160701A00009	7/1/2016	1.06	4/1/2020	7/1/2016	100.00261	100.0026102	100.0026102	100.0026102	100.002441	99.9996654	99.9968921	99.99412116	99.99135256
160701A00026	7/1/2016	1.43	7/1/2021	7/1/2016	101.44913	101.4491294	101.4491294	101.4491294	100.9790993	99.73347673	98.51803029	97.3316728	96.17336881
160706A00018	7/6/2016	1.29	7/6/2020	7/6/2016	100.27823	100.2782324	100.2782324	100.2782324	100.2416279	99.97337105	99.70655329	99.44116301	99.17718875
160706A00019	7/6/2016	1.41	7/6/2021	7/6/2016	101.43941	101.4394131	101.4394131	101.4394131	100.9636339	99.70615861	98.47769949	97.27725405	96.10386581
160707A00034	7/7/2016	1.25	7/7/2021	7/7/2016	101.45392	101.4539211	101.4539211	101.4539211	100.9755824	99.71227754	98.47789091	97.27143097	96.09195136
160714A00029	8/10/2016	2.27	8/10/2026	8/10/2016	112.55006	112.5500558	112.5500558	112.4626139	106.0827858	99.97786994	94.26586323	88.91948878	83.91349348
160714A00054	7/14/2016	2.03	7/15/2024	7/14/2016	107.49946	107.4994558	107.4994558	107.4994558	104.6506251	100.4562596	96.45340459	92.63230923	88.98377255
160726A00005	7/26/2016	2.28	7/27/2026	7/26/2016	112.53845	112.5384543	112.5384543	112.4927899	106.1565484	100.0823717	94.39698771	89.07353505	84.08713765
160728A00035	7/28/2016	1.23	7/28/2020	7/28/2016	100.36739	100.3673886	100.3673886	100.3673886	100.3127613	99.98333464	99.65607005	99.33094634	99.00794252
160804A00014	8/4/2016	1.99	8/5/2024	8/4/2016	107.42434	107.4243413	107.4243413	107.4243413	104.509879	100.266008	96.21825751	92.35658884	88.67152663
160815A00074	8/15/2016	1.57	8/13/2021	8/15/2016	101.7799	101.7798996	101.7798996	101.7798996	101.2599428	99.90657824	98.57766602	97.27260071	95.99079638

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160830A00035	8/30/2016	2.06	8/30/2024	8/30/2016	107.85235	107.8523475	107.8523475	107.8523475	104.8524675	100.5387254	96.42702785	92.50689295	88.7684354
160922A00049	9/22/2016	1.79	9/22/2022	9/22/2016	103.74198	103.7419766	103.7419766	103.7419766	102.6224443	100.1802327	97.80859053	95.50507762	93.26735323
160923A00033	9/23/2016	2.04	9/23/2026	9/23/2016	112.58419	112.5841929	112.5841929	112.3407531	105.7829177	99.5354119	93.69873598	88.24377866	83.14363312
161006A00013	10/6/2016	2.07	10/6/2025	10/6/2016	110.88642	110.8864162	110.8864162	110.8864162	106.1807753	100.7886563	95.70409914	90.90798146	86.38246612
161115A00010	11/15/2016	2.09	11/15/2021	11/15/2016	102.96976	102.9697582	102.9697582	102.9697582	102.3371801	100.7245646	99.14509029	97.59780134	96.08177848
161117A00015	11/17/2016	2.08	11/17/2021	11/17/2016	102.9467	102.9466977	102.9466977	102.9466977	102.3119731	100.6944113	99.11016195	97.55826151	96.03778341
170213A00011	2/13/2017	2.13	2/16/2021	2/13/2017	101.66505	101.665052	101.665052	101.665052	101.3704308	100.4843155	99.61364976	98.75803209	97.91707481
170215A00031	2/15/2017	2.13	7/24/2020	2/15/2017	100.59514	100.5951421	100.5951421	100.5951421	100.5438075	100.2254562	99.90912414	99.59479207	99.28244104
170215A00033	2/15/2017	2.24	11/9/2020	2/15/2017	101.22821	101.2282111	101.2282111	101.2282111	101.060853	100.4449695	99.83658168	99.23555323	98.64175112
170215A00040	2/15/2017	2.59	5/15/2023	2/15/2017	107.22956	107.2295639	107.2295639	107.2295639	105.5633786	102.4577099	99.45998105	96.56581418	93.77103711
170216A00010	2/16/2017	2.37	2/16/2022	2/16/2017	103.94671	103.9467074	103.9467074	103.9467074	103.196324	101.326037	99.49882583	97.71344514	95.96869354
170216A00044	2/16/2017	3.52	2/17/2032	2/16/2017	138.04151	138.0415133	138.0415133	128.559733	116.3309724	105.2916861	95.45976063	86.69487391	78.87374289
170228A00015	2/28/2017	2.87	5/28/2025	2/28/2017	113.3118	113.3117967	113.3117967	113.3117967	109.2368113	104.1282589	99.29192402	94.71183591	90.37304728
170322A00026	3/22/2017	3.22	3/22/2028	3/22/2017	123.29011	123.2901116	123.2901116	121.2580486	113.0455921	105.2971153	98.15129152	91.5578441	85.47093993
170323A00013	3/23/2017	2.1	3/23/2022	3/23/2017	103.9689	103.9688972	103.9688972	103.9688972	103.1647154	101.1931768	99.26933355	97.3917365	95.55899073
170328A00015	3/28/2017	2.75	11/29/2024	3/28/2017	111.48587	111.4858721	111.4858721	111.4858721	108.1342684	103.5146038	99.12066401	94.9401984	90.96168947
170419A00016	4/19/2017	1.57	4/20/2020	4/19/2017	100.08053	100.0805349	100.0805349	100.0805349	100.0771503	100.0216329	99.96619181	99.91082684	99.85553785
170425A00069	4/25/2017	2.06	4/26/2021	4/25/2017	101.93395	101.9339494	101.9339494	101.9339494	101.5444236	100.4714968	99.42115831	98.39270068	97.38544576
170504A00038	5/4/2017	2.09	5/4/2022	5/4/2017	104.17823	104.1782308	104.1782308	104.1782308	103.3057246	101.2193586	99.1854791	97.20241105	95.26854608
170517A00098	5/19/2017	2.32	5/19/2022	5/19/2017	104.36524	104.3652395	104.3652395	104.3652395	103.4702024	101.3500444	99.28379987	97.26972375	95.3061414
170518A00005	5/18/2017	1.6	5/18/2020	5/18/2017	100.19747	100.1974706	100.1974706	100.1974706	100.186141	100.0529602	99.92014953	99.7877074	99.65563223
170518A00011	5/18/2017	1.94	5/18/2022	5/18/2017	103.93105	103.9310484	103.9310484	103.9310484	103.0359984	100.9156736	98.84937885	96.83536289	94.87194528
170525A00059	5/25/2017	1.81	5/26/2020	5/25/2017	100.23702	100.2370243	100.2370243	100.2370243	100.2229402	100.0678458	99.91323686	99.75911116	99.60546643
170530A00002	5/30/2017	2.15	5/31/2022	5/30/2017	104.06019	104.0601859	104.0601859	104.0601859	103.146337	100.9983296	98.90554876	96.86618353	94.87849737
170530A00004	5/30/2017	1.81	5/29/2020	5/30/2017	100.25138	100.2513759	100.2513759	100.2513759	100.2362501	100.0728383	99.90995912	99.74761012	99.5857887
170602A00026	6/2/2017	2.25	6/3/2024	6/2/2017	109.00626	109.0062578	109.0062578	109.0062578	106.2549877	102.113217	98.15627953	94.37491497	90.76038121
170608A00021	6/8/2017	1.8	6/8/2021	6/8/2017	102.02552	102.0255235	102.0255235	102.0255235	101.5809191	100.3894557	99.22580526	98.08900288	96.97812795
160620A00003	6/20/2016	1.59	6/21/2021	6/20/2016	101.61584	101.6158432	101.6158432	101.6158432	101.1575232	99.93711767	98.74599451	97.58311009	96.44746979
160628A00031	6/28/2016	1.77	6/28/2023	6/28/2016	104.8237	104.8236989	104.8236989	104.8236989	103.0642958	99.88308179	96.81624497	93.85898401	91.00673233
160628A00038	6/28/2016	1.88	6/27/2025	6/28/2016	109.33528	109.3352774	109.3352774	109.3352774	105.1526035	100.0389479	95.20411575	90.63142555	86.30528599
160701A00018	7/1/2016	1.42	7/1/2021	7/1/2016	101.43646	101.4364595	101.4364595	101.4364595	100.9664557	99.72091741	98.50555379	97.31927775	96.16105385
160705A00005	7/5/2016	1.49	7/5/2023	7/5/2016	104.52798	104.5279787	104.5279787	104.5279787	102.7438437	99.53534625	96.44317208	93.46242185	90.58843524
160706A00006	7/6/2016	1.47	7/6/2023	7/6/2016	104.46569	104.46569	104.46569	104.46569	102.6794625	99.46946098	96.37593364	93.39397527	90.51891973

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160706A00014	7/6/2016	1.41	7/6/2021	7/6/2016	101.43941	101.4394131	101.4394131	101.4394131	100.9636339	99.70615861	98.47769949	97.27725405	96.10386581
160707A00032	7/7/2016	1.52	7/7/2023	7/7/2016	104.6348	104.6347963	104.6347963	104.6347963	102.8448077	99.62952335	96.5309654	93.54421934	90.66460977
160808A00011	8/8/2016	1.6	8/9/2021	8/8/2016	101.80688	101.8068802	101.8068802	101.8068802	101.2913481	99.9482442	98.62924496	97.33375727	96.06120704
160830A00037	8/30/2016	2.16	8/29/2025	8/30/2016	110.09796	110.0979556	110.0979556	110.0979556	105.6367694	100.3899426	95.43634959	90.7581252	86.33858003
160830A00038	8/30/2016	2.24	8/28/2026	8/30/2016	112.45348	112.4534785	112.4534785	112.3030641	105.8788692	99.737944	93.99508678	88.62247089	83.59434855
160909A00024	9/9/2016	1.7	9/9/2021	9/9/2016	102.06584	102.0658434	102.0658434	102.0658434	101.5145083	100.0877684	98.68802462	97.31457823	95.96675406
161004A00034	10/4/2016	1.67	10/4/2021	10/4/2016	102.11754	102.1175365	102.1175365	102.1175365	101.5368451	100.0427084	98.57803714	97.14203476	95.73393269
161006A00010	10/6/2016	1.35	10/6/2020	10/6/2016	100.64647	100.6464669	100.6464669	100.6464669	100.5165796	99.99446913	99.4777723	98.96640511	98.46028536
161213A00014	12/13/2016	2.07	12/13/2021	12/13/2016	103.36831	103.3683146	103.3683146	103.3683146	102.6994705	101.0035838	99.34374421	97.71886773	96.12791412
170111A00020	1/11/2017	2.27	1/11/2022	1/11/2017	103.57902	103.5790163	103.5790163	103.5790163	102.8764893	101.1078135	99.37798334	97.6858412	96.03027464
170117A00045	1/17/2017	2.21	1/18/2022	1/17/2017	103.50812	103.508124	103.508124	103.508124	102.797058	101.0107344	99.2640043	97.55570976	95.88473625
170130A00054	3/30/2017	2.33	4/29/2022	3/30/2017	104.27425	104.2742532	104.2742532	104.2742532	103.4129859	101.3460255	99.33069792	97.36536854	95.44846698
170215A00038	2/15/2017	2.71	8/22/2022	2/15/2017	105.83966	105.8396645	105.8396645	105.8396645	104.7693069	102.382745	100.0627547	97.80711199	95.61368041
170215A00039	2/15/2017	2.72	11/7/2022	2/15/2017	106.37859	106.3785902	106.3785902	106.3785902	105.1537313	102.5577187	100.03926	97.59556261	95.22395395
170215A00041	2/15/2017	2.6	10/16/2023	2/15/2017	108.23753	108.2375309	108.2375309	108.2375309	106.1681397	102.6501245	99.26834822	96.01679439	92.88974669
170224A00020	2/24/2017	3.08	2/24/2027	2/24/2017	119.21888	119.2188841	119.2188841	118.448388	111.3863024	104.6312666	98.34006186	92.4783499	87.01450216
170224A00021	2/24/2017	3.4	2/24/2032	2/24/2017	136.67905	136.6790511	136.6790511	127.1724647	114.997488	104.0175931	94.2426121	85.53215735	77.76292429
170224A00039	5/24/2017	3.17	5/24/2027	5/24/2017	120.53533	120.5353341	120.5353341	119.4703947	112.137239	105.1420896	98.64142967	92.59756676	86.97587376
170404A00007	4/4/2017	2.22	4/4/2022	4/4/2017	103.91059	103.9105901	103.9105901	103.9105901	103.0911103	101.0953515	99.1484196	97.24881198	95.3950828
170410A00007	4/10/2017	2.1	4/11/2022	4/10/2017	104.07321	104.0732145	104.0732145	104.0732145	103.2387058	101.2154007	99.24200701	97.31697257	95.4388048
170417A00057	4/17/2017	2.32	4/17/2023	4/17/2017	106.22262	106.2226223	106.2226223	106.2226223	104.6324765	101.6149409	98.70047505	95.88498021	93.1645456
170417A00069	4/17/2018	2.07	4/16/2021	4/17/2018	101.89522	101.8952241	101.8952241	101.8952241	101.5187437	100.4728614	99.44845881	98.44487921	97.46149252
170419A00024	4/19/2017	2.45	4/21/2025	4/19/2017	111.92487	111.9248674	111.9248674	111.9248674	107.9968885	102.9813564	98.23015005	93.72795223	89.46041353
170501A00003	5/1/2017	1.85	5/1/2020	5/1/2017	100.13002	100.1300193	100.1300193	100.1300193	100.1246071	100.0387594	99.95305837	99.86750377	99.7820952
170501A00008	5/1/2017	2.23	5/2/2022	5/1/2017	104.08014	104.0801373	104.0801373	104.0801373	103.2146673	101.1418732	99.12100493	97.15041307	95.22851311
170512A00035	5/15/2017	1.85	5/15/2020	5/15/2017	100.19284	100.1928432	100.1928432	100.1928432	100.1825749	100.0579415	99.93363273	99.80964733	99.68598401
170515A00038	5/15/2017	2.43	5/15/2023	5/15/2017	106.72533	106.7253255	106.7253255	106.7253255	105.062533	101.964736	98.974675	96.08797921	93.30048305
170515A00039	5/15/2017	2.58	5/15/2024	5/15/2017	109.49559	109.4955898	109.4955898	109.4955898	106.8140382	102.7311076	98.82786405	95.09542433	91.52539494
170516A00015	5/16/2017	1.88	5/17/2021	5/16/2017	102.01436	102.0143562	102.0143562	102.0143562	101.5971171	100.4647475	99.35751348	98.27458527	97.21516932
170517A00026	5/17/2017	1.63	5/18/2020	5/17/2017	100.20147	100.20147	100.20147	100.20147	100.1901401	100.0569547	99.9241394	99.79169269	99.65961293
170522A00044	5/22/2017	1.99	5/24/2021	5/22/2017	101.99121	101.9912096	101.9912096	101.9912096	101.5663327	100.4180782	99.29568304	98.19828122	97.12504515
170525A00028	5/25/2017	1.97	5/25/2022	5/25/2017	104.03175	104.0317451	104.0317451	104.0317451	103.1245341	100.9848193	98.89996507	96.86817991	94.88774539
170530A00005	5/30/2017	1.99	5/28/2021	5/30/2017	102.01025	102.0102468	102.0102468	102.0102468	101.5803288	100.4212609	99.28853137	98.18125069	97.09856883

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170530A00026	5/30/2017	1.81	6/1/2021	5/30/2017	102.00476	102.0047626	102.0047626	102.0047626	101.5687379	100.3961742	99.25054451	98.13092952	97.03645148
170530A00064	5/30/2017	2.32	3/27/2023	5/30/2017	106.10577	106.105766	106.105766	106.105766	104.5678648	101.607079	98.74596516	95.98062232	93.30732487
170601A00008	6/1/2017	1.81	6/1/2020	6/1/2017	100.26417	100.2641685	100.2641685	100.2641685	100.2478185	100.0761077	99.90498256	99.73444015	99.56447751
170606A00014	6/6/2017	1.9	6/6/2022	6/6/2017	103.93854	103.9385443	103.9385443	103.9385443	103.0112074	100.8406947	98.72646885	96.66666693	94.65950358
170609A00006	6/9/2017	1.89	12/9/2021	6/9/2017	103.03798	103.0379825	103.0379825	103.0379825	102.3749191	100.692477	99.04563858	97.43333905	95.85455622
170609A00007	6/9/2017	1.96	6/9/2022	6/9/2017	104.08649	104.0864868	104.0864868	104.0864868	103.1533165	100.9730674	98.84951605	96.78077967	94.76505418
170609A00025	6/9/2017	2.13	6/9/2022	6/9/2017	104.06183	104.0618285	104.0618285	104.0618285	103.1323998	100.9602451	98.84443612	96.78310602	94.77446568
170623A00028	6/23/2017	2.79	6/23/2027	6/23/2017	118.01325	118.0132489	118.0132489	116.8542036	109.508307	102.5323947	96.0564073	90.04178712	84.45314804
170629A00015	6/29/2017	1.92	10/26/2020	6/29/2017	100.96561	100.9656076	100.9656076	100.9656076	100.8140957	100.2372844	99.667058	99.1033043	98.54591354
170117A00037	1/17/2017	2	1/18/2022	1/17/2017	103.43546	103.4354605	103.4354605	103.4354605	102.7222858	100.9311403	99.17978926	97.46706646	95.79184948
170123A00039	1/23/2017	2.79	1/23/2026	1/23/2017	115.70655	115.7065493	115.7065493	115.7065493	110.314092	104.5340512	99.09674564	93.98006152	89.16342241
170130A00031	1/30/2017	2.96	7/30/2025	1/30/2017	114.2361	114.2360991	114.2360991	114.2360991	109.8563884	104.5720414	99.57728889	94.85477008	90.38825023
170215A00032	2/15/2017	2.33	7/30/2020	2/15/2017	100.69676	100.6967579	100.6967579	100.6967579	100.6405023	100.3054026	99.97252731	99.64185428	99.3133618
170215A00043	2/15/2017	2.7	8/28/2024	2/15/2017	110.68742	110.6874207	110.6874207	110.6874207	107.6615799	103.2913787	99.12483966	95.15142845	91.36120902
170216A00045	2/16/2017	3.73	2/17/2037	2/16/2017	157.14589	157.1458861	151.9650029	134.0108225	117.2940018	102.9165129	90.64052711	80.13916622	71.13837273
170224A00044	5/24/2017	3.29	5/24/2029	5/24/2017	127.3042	127.3041983	127.3041983	123.7535078	114.3035912	105.512839	97.49118853	90.16675777	83.47474858
170228A00014	2/28/2017	2.89	3/1/2027	2/28/2017	119.36475	119.3647454	119.3647454	118.5668823	111.4183857	104.5961912	98.24518741	92.33031865	86.81930834
170309A00024	3/9/2017	2.27	3/9/2021	3/9/2017	101.90605	101.9060506	101.9060506	101.9060506	101.5810978	100.6371903	99.71078088	98.80138616	97.90854051
170310A00032	3/10/2017	2.27	3/10/2022	3/10/2017	104.23184	104.2318358	104.2318358	104.2318358	103.4463107	101.5060646	99.61195278	97.76259812	95.95667388
170313A00027	3/13/2017	2.27	3/14/2022	3/13/2017	104.25571	104.2557078	104.2557078	104.2557078	103.4640567	101.5131133	99.60880292	97.74972588	95.93453406
170313A00032	3/13/2017	3.69	6/14/2032	3/13/2017	141.12186	141.1218586	141.1218586	130.7176343	118.0847701	106.7086327	96.60216514	87.61461414	79.61393745
170322A00015	3/22/2017	2.31	3/22/2022	3/22/2017	104.02113	104.0211326	104.0211326	104.0211326	103.2212032	101.2584436	99.34298577	97.47339773	95.64830089
170412A00045	4/12/2017	2.01	4/12/2022	4/12/2017	103.89344	103.8934357	103.8934357	103.8934357	103.0579849	101.0338447	99.05968812	97.13395894	95.25516066
170417A00099	4/17/2017	1.58	4/17/2020	4/17/2017	100.06893	100.0689268	100.0689268	100.0689268	100.0660498	100.018857	99.97172504	99.92465393	99.8776435
170424A00009	4/24/2017	2.04	4/25/2022	4/24/2017	104.02434	104.0243421	104.0243421	104.0243421	103.1672813	101.1065638	99.09729062	97.13783657	95.22663994
170426A00018	4/26/2017	1.89	4/27/2020	4/26/2017	100.11621	100.1162147	100.1162147	100.1162147	100.1116552	100.0368719	99.9622041	99.88765159	99.8132141
170427A00047	4/27/2017	3.18	4/27/2029	4/27/2017	126.08793	126.0879338	126.0879338	122.6519059	113.3141122	104.6270582	96.69595389	89.45056116	82.82752085
170504A00039	5/4/2017	1.7	5/4/2020	5/4/2017	100.14923	100.1492278	100.1492278	100.1492278	100.142761	100.0483964	99.95421672	99.8602214	99.76640986
170515A00043	5/15/2017	3.1	5/15/2028	5/15/2017	122.73992	122.7399172	122.7399172	120.5360531	112.2002923	104.3577067	97.13545901	90.48096872	84.34637642
170517A00027	5/17/2017	1.99	5/17/2022	5/17/2017	104.03377	104.0337693	104.0337693	104.0337693	103.1399852	101.0211537	98.95626013	96.94355801	94.98137164
170518A00023	5/18/2017	1.78	5/18/2020	5/18/2017	100.19642	100.1964228	100.1964228	100.1964228	100.1851153	100.052191	99.91963321	99.78744046	99.6556112
170518A00034	5/18/2017	2.15	5/18/2023	5/18/2017	106.43732	106.4373151	106.4373151	106.4373151	104.7606127	101.6461115	98.64048646	95.73929906	92.93832056
170524A00064	5/24/2017	1.65	5/26/2020	5/24/2017	100.23821	100.2382109	100.2382109	100.2382109	100.2241017	100.0687357	99.91385901	99.75946944	99.60556463

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170404A00033	4/4/2017	2.22	4/4/2022	4/4/2017	103.91059	103.9105901	103.9105901	103.9105901	103.0911103	101.0953515	99.1484196	97.24881198	95.3950828
170425A00068	4/25/2017	1.86	4/27/2020	4/25/2017	100.11397	100.1139654	100.1139654	100.1139654	100.109406	100.0346246	99.95995873	99.88540814	99.81097257
170427A00058	4/27/2017	1.86	4/27/2020	4/27/2017	100.11397	100.1139654	100.1139654	100.1139654	100.109406	100.0346246	99.95995873	99.88540814	99.81097257
170428A00030	4/28/2017	2.25	4/28/2022	4/28/2017	104.10075	104.1007489	104.1007489	104.1007489	103.2417718	101.1793469	99.16840708	97.20732417	95.29453376
170428A00031	4/28/2017	1.86	4/28/2020	4/28/2017	100.11819	100.1181865	100.1181865	100.1181865	100.1134582	100.0359091	99.95848191	99.88117639	99.80399227
170501A00006	5/1/2017	1.85	5/1/2020	5/1/2017	100.13002	100.1300193	100.1300193	100.1300193	100.1246071	100.0387594	99.95305837	99.86750377	99.7820952
170511A00004	5/11/2017	1.71	5/11/2020	5/11/2017	100.18115	100.1811537	100.1811537	100.1811537	100.1722547	100.0584703	99.94495972	99.83172192	99.71875586
170515A00010	5/15/2017	2.58	5/15/2024	5/15/2017	109.49559	109.4955898	109.4955898	109.4955898	106.8140382	102.7311076	98.82786405	95.09542433	91.52539494
170515A00022	5/15/2017	2.04	5/17/2021	5/15/2017	102.01502	102.0150198	102.0150198	102.0150198	101.5988631	100.4691934	99.3645548	98.28412245	97.2271072
170524A00046	5/24/2017	1.84	5/24/2021	5/24/2017	102.00208	102.0020803	102.0020803	102.0020803	101.5760705	100.4249836	99.29986518	98.19984426	97.12408853
170530A00058	5/30/2017	1.96	3/26/2021	5/30/2017	101.68116	101.681163	101.681163	101.681163	101.3327876	100.344468	99.37535508	98.42489332	97.49254829
170531A00003	5/31/2017	1.94	5/31/2022	5/31/2017	103.99673	103.9967319	103.9967319	103.9967319	103.0795916	100.9246011	98.82516067	96.77944459	94.78570237
170531A00004	5/31/2017	1.79	6/1/2021	5/31/2017	101.98106	101.9810582	101.9810582	101.9810582	101.5450785	100.3726633	99.22717962	98.10770836	97.0133718
170531A00080	5/31/2017	2.3	5/31/2024	5/31/2017	109.19945	109.19945	109.19945	109.19945	106.455535	102.3175324	98.36383169	94.5852168	90.97298603
170602A00015	6/2/2017	1.76	6/2/2021	6/2/2017	101.95005	101.9500497	101.9500497	101.9500497	101.5129091	100.3380069	99.1901579	98.06843671	96.97195958
170602A00034	6/2/2017	1.76	6/2/2021	6/2/2017	101.95005	101.9500497	101.9500497	101.9500497	101.5129091	100.3380069	99.1901579	98.06843671	96.97195958
170609A00026	6/9/2017	2.3	6/9/2023	6/9/2017	106.45362	106.4536169	106.4536169	106.4536169	104.7302954	101.5724452	98.52636225	95.58742683	92.75124118
170613A00033	6/13/2017	2.3	6/13/2024	6/13/2017	109.27776	109.2777623	109.2777623	109.2777623	106.4923564	102.3191856	98.33323762	94.52507959	90.88580977
170615A00034	6/15/2017	2.13	6/15/2022	6/15/2017	104.09212	104.0921216	104.0921216	104.0921216	103.1521894	100.9636235	98.83216231	96.75590111	94.73301508
170616A00017	6/16/2017	2.11	6/16/2023	6/16/2017	106.47037	106.4703693	106.4703693	106.4703693	104.7204329	101.5298721	98.45311836	95.48543092	92.62229863
170622A00016	6/22/2017	2.11	6/22/2022	6/22/2017	104.08245	104.0824533	104.0824533	104.0824533	103.1304608	100.9232691	98.77406351	96.68089472	94.64189621
170622A00037	6/22/2017	3.27	6/22/2033	6/22/2017	138.97075	138.9707463	138.9707463	125.8201258	112.5727625	100.8028334	90.45014518	81.3339251	73.29741866
170622A00038	6/22/2017	3.32	6/22/2034	6/22/2017	142.55643	142.5564343	141.2228997	126.5965342	112.4789086	100.0588602	89.22846072	79.77221872	71.50502471
170626A00042	6/26/2017	1.92	6/27/2022	6/26/2017	104.08746	104.0874647	104.0874647	104.0874647	103.1229946	100.8942854	98.72456206	96.61182657	94.55416638
170612A00003	6/12/2017	1.97	6/13/2022	6/12/2017	104.12918	104.1291762	104.1291762	104.1291762	103.188869	100.9973639	98.86307103	96.78408203	94.7585687
170612A00039	6/12/2017	2.29	6/12/2024	6/12/2017	109.22924	109.2292367	109.2292367	109.2292367	106.4474729	102.2778861	98.29526803	94.49020379	90.8538082
170613A00007	6/13/2017	2.01	6/11/2021	6/13/2017	102.10082	102.1008233	102.1008233	102.1008233	101.6536002	100.4565426	99.28756555	98.14568987	97.02998147
170615A00031	6/15/2017	1.85	6/15/2020	6/15/2017	100.33415	100.3341484	100.3341484	100.3341484	100.3103686	100.0999033	99.89033242	99.68165016	99.47385083
170628A00008	6/28/2017	2.04	9/15/2021	6/28/2017	102.5915	102.5915037	102.5915037	102.5915037	102.0318378	100.584916	99.16566767	97.77336858	96.40731922
170630A00039	6/30/2017	1.86	6/29/2020	6/30/2017	100.39805	100.3980464	100.3980464	100.3980464	100.3668412	100.1176749	99.86974089	99.6230301	99.37753352
170705A00034	7/5/2017	1.75	7/6/2020	7/5/2017	100.43944	100.4394402	100.4394402	100.4394402	100.4027462	100.133796	99.86629295	99.60022543	99.33558182
170706A00013	7/6/2017	2.27	7/6/2022	7/6/2017	104.51879	104.518785	104.518785	104.518785	103.5403258	101.2912035	99.10197563	96.97062714	94.89522742
170714A00018	7/14/2017	1.67	7/14/2020	7/14/2017	100.4524	100.4524011	100.4524011	100.4524011	100.4091739	100.118139	99.82880344	99.54115213	99.25517032

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170721A00017	7/21/2017	1.8	7/21/2021	7/21/2017	102.22608	102.2260787	102.2260787	102.2260787	101.7298305	100.4277107	99.15136787	97.900052	96.67304247
170724A00015	7/24/2017	2.32	7/24/2023	7/24/2017	106.76867	106.7686696	106.7686696	106.7686696	104.9294074	101.6507868	98.49201815	95.44808526	92.51420982
170803A00020	8/3/2017	2.84	8/3/2027	8/3/2017	118.65838	118.6583841	118.6583841	117.3666959	109.8972654	102.8117985	96.24079806	90.1441666	84.48512444
170803A00027	8/3/2017	1.67	8/3/2020	8/3/2017	100.53868	100.5386797	100.5386797	100.5386797	100.4783657	100.1320673	99.78815435	99.44660215	99.10738645
170810A00001	8/11/2017	1.66	8/11/2020	8/11/2017	100.56949	100.5694946	100.5694946	100.5694946	100.5006589	100.1322912	99.76663118	99.40364904	99.04331529
170818A00004	8/18/2017	1.95	8/18/2021	8/18/2017	102.32966	102.3296563	102.3296563	102.3296563	101.8027892	100.4323549	99.08688336	97.76575159	96.46835672
170824A00038	8/24/2017	2.23	8/24/2023	8/24/2017	106.63303	106.6330344	106.6330344	106.6330344	104.7152545	101.3608016	98.13177693	95.02284403	92.02892177
170825A00025	8/25/2017	2.12	8/25/2022	8/25/2017	104.42772	104.4277207	104.4277207	104.4277207	103.3583708	100.9812405	98.67072462	96.42459002	94.24069164
170829A00022	8/29/2017	1.72	8/30/2021	8/29/2017	102.29805	102.2980529	102.2980529	102.2980529	101.756158	100.350673	98.97135181	97.61752826	96.2885582
170829A00035	8/29/2017	1.58	8/31/2020	8/29/2017	100.62122	100.6212208	100.6212208	100.6212208	100.5310966	100.1076655	99.68778913	99.27142291	98.85852301
170830A00044	8/30/2017	1.94	8/30/2021	8/30/2017	102.37074	102.3707417	102.3707417	102.3707417	101.8302864	100.4281411	99.05203924	97.70131893	96.3753402
170831A00010	8/31/2017	2.05	8/30/2022	8/31/2017	104.28209	104.2820905	104.2820905	104.2820905	103.2041428	100.8159388	98.49500255	96.23906809	94.04595916
170906A00033	9/6/2017	1.75	9/8/2020	9/6/2017	100.66802	100.6680212	100.6680212	100.6680212	100.5691792	100.1244062	99.68356385	99.24660015	98.81346401
170929A00057	9/29/2017	2.16	9/29/2023	9/29/2017	107.226	107.2260046	107.2260046	107.2260046	105.1988994	101.7255147	98.3858712	95.17410538	92.08464365
171011A00013	10/11/2017	2.77	10/13/2026	10/11/2017	116.17397	116.1739719	116.1739719	115.8636461	109.2346354	102.8770955	96.93692038	91.38449048	86.19243615
170530A00003	5/30/2017	1.99	5/28/2021	5/30/2017	102.01025	102.0102468	102.0102468	102.0102468	101.5803288	100.4212609	99.28853137	98.18125069	97.09856883
170531A00039	5/31/2017	1.61	5/29/2020	5/31/2017	100.24443	100.2444343	100.2444343	100.2444343	100.2292837	100.0656112	99.90247524	99.73987329	99.57780269
170608A00020	6/8/2017	2.27	6/10/2024	6/8/2017	109.13235	109.1323513	109.1323513	109.1323513	106.3578673	102.1954427	98.21947936	94.42059811	90.78994695
170613A00032	6/13/2017	2.45	6/13/2025	6/13/2017	112.26607	112.2660689	112.2660689	112.2660689	108.102586	102.9488938	98.07323762	93.45912536	89.09113356
170614A00012	6/14/2017	1.9	6/14/2022	6/14/2017	103.97799	103.9779878	103.9779878	103.9779878	103.0365769	100.844082	98.70889059	96.62908907	94.60284423
170621A00014	6/21/2017	1.82	6/21/2021	6/21/2017	102.1109	102.1109047	102.1109047	102.1109047	101.6502775	100.4234352	99.22606047	98.05710187	96.91555734
170622A00014	6/22/2017	1.84	6/22/2020	6/22/2017	100.36254	100.3625433	100.3625433	100.3625433	100.3350511	100.1052375	99.87648351	99.64878183	99.42212516
170622A00039	6/22/2017	3.36	6/22/2035	6/22/2017	146.0792	146.0791966	143.2389814	127.4570258	112.4879563	99.44367352	88.16516929	78.39918884	69.93021297
170626A00017	6/26/2017	1.8	6/28/2021	6/26/2017	102.1187	102.1187041	102.1187041	102.1187041	101.6495282	100.4038962	99.18862809	98.00262467	96.84483935
170628A00056	6/28/2017	1.97	6/28/2022	6/28/2017	104.20604	104.2060417	104.2060417	104.2060417	103.2393246	101.0065689	98.8329558	96.71647996	94.65522188
170629A00017	6/29/2017	2	4/26/2021	6/29/2017	101.86889	101.8688879	101.8688879	101.8688879	101.4794713	100.4069199	99.35695118	98.32885802	97.32196232
170629A00022	6/29/2017	2.2	6/29/2023	6/29/2017	106.8376	106.8376003	106.8376003	106.8376003	105.0521842	101.8214029	98.70688154	95.70373029	92.80729919
170630A00008	6/30/2017	2.35	7/1/2024	6/30/2017	109.60134	109.6013402	109.6013402	109.6013402	106.7561151	102.5299098	98.49515443	94.64210933	90.96158898
170724A00016	7/24/2017	2.5	7/24/2024	7/24/2017	109.58642	109.5864215	109.5864215	109.5864215	106.6862283	102.4257266	98.36019511	94.47970689	90.77489216
170731A00028	7/31/2017	2.16	8/1/2022	7/31/2017	104.40106	104.4010637	104.4010637	104.4010637	103.3764457	101.0614765	98.80983493	96.61944798	94.48832223
170802A00027	8/2/2017	2.16	8/2/2022	8/2/2017	104.40622	104.4062194	104.4062194	104.4062194	103.3797179	101.0621069	98.80796011	96.61519788	94.48182059
170811A00018	8/11/2017	1.63	8/11/2020	8/11/2017	100.55841	100.5584143	100.5584143	100.5584143	100.4895822	100.1212398	99.75560494	99.39264783	99.03233897
170818A00003	8/18/2017	2.23	8/20/2024	8/18/2017	109.37705	109.3770461	109.3770461	109.3770461	106.3728053	102.0273246	97.88444108	93.93368439	90.16517825

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170818A00025	8/18/2017	1.77	8/18/2021	8/18/2017	102.31477	102.3147655	102.3147655	102.3147655	101.7863706	100.4122881	99.06329006	97.73874925	96.43805872
170822A00012	8/22/2017	2.11	8/22/2022	8/22/2017	104.3884	104.3883962	104.3883962	104.3883962	103.3248017	100.9558688	98.65312607	96.41436102	94.2374482
170828A00029	8/28/2017	1.75	4/1/2020	8/28/2017	100.00392	100.0039154	100.0039154	100.0039154	100.0037465	100.0009752	99.99820632	99.99543968	99.99267532
170828A00030	8/28/2017	1.96	9/1/2021	8/28/2017	102.40867	102.4086659	102.4086659	102.4086659	101.8658242	100.4580799	99.07657368	97.72063639	96.38962121
170829A00021	8/29/2017	1.58	8/31/2020	8/29/2017	100.62122	100.6212208	100.6212208	100.6212208	100.5310966	100.1076655	99.68778913	99.27142291	98.85852301
170830A00033	8/30/2017	1.93	8/30/2021	8/30/2017	102.35641	102.3564117	102.3564117	102.3564117	101.8159914	100.4139528	99.03795573	97.68733845	96.36146102
170630A00009	6/30/2017	2.53	6/30/2025	6/30/2017	112.80003	112.8000329	112.8000329	112.8000329	108.5509566	103.3416044	98.41531051	93.75515836	89.3453368
170630A00036	6/30/2017	2.01	6/30/2022	6/30/2017	104.30739	104.3073861	104.3073861	104.3073861	103.3367574	101.0974663	98.91759869	96.79513557	94.72814453
170713A00033	7/13/2017	1.72	7/13/2020	7/13/2017	100.46253	100.4625283	100.4625283	100.4625283	100.420115	100.1318177	99.84518781	99.56021066	99.2768719
170714A00006	7/14/2017	1.67	7/14/2020	7/14/2017	100.4524	100.4524011	100.4524011	100.4524011	100.4091739	100.118139	99.82880344	99.54115213	99.25517032
170725A00001	7/25/2017	1.88	7/27/2020	7/25/2017	100.53203	100.5320323	100.5320323	100.5320323	100.4782644	100.1517569	99.82736954	99.50508188	99.18487355
170728A00030	7/28/2017	2.18	7/27/2022	7/28/2017	104.42222	104.4222193	104.4222193	104.4222193	103.4065322	101.1042169	98.86456253	96.68551122	94.56508525
170728A00032	7/28/2017	2.36	7/27/2023	7/28/2017	106.91951	106.9195064	106.9195064	106.9195064	105.0715145	101.7828237	98.61459298	95.56178274	92.61959137
170731A00027	7/31/2017	2	7/30/2021	7/31/2017	102.30928	102.309278	102.309278	102.309278	101.8038703	100.483155	99.18605058	97.91197169	96.66035209
170803A00005	8/3/2017	1.67	8/3/2020	8/3/2017	100.53868	100.5386797	100.5386797	100.5386797	100.4783657	100.1320673	99.78815435	99.44660215	99.10738645
170803A00019	8/3/2017	2.14	8/3/2022	8/3/2017	104.36405	104.3640475	104.3640475	104.3640475	103.3358768	101.0161872	98.76008655	96.56548885	94.43038862
170808A00037	8/8/2017	2.19	12/15/2022	8/8/2017	105.18242	105.1824195	105.1824195	105.1824195	103.8837237	101.2038024	98.60652228	96.08880263	93.64770084
170809A00005	8/9/2017	2.61	8/11/2025	8/9/2017	112.4347	112.4346968	112.4346968	112.4346968	108.0243509	102.7583829	97.78333206	93.08164569	88.63691574
170809A00023	8/9/2017	2.86	8/9/2027	8/9/2017	118.84732	118.847322	118.847322	117.5362018	110.0460644	102.9413308	96.35337136	90.24183452	84.56971379
170811A00015	8/11/2017	1.81	8/11/2020	8/11/2017	100.57396	100.5739617	100.5739617	100.5739617	100.5052389	100.1374413	99.77234012	99.40990567	99.05010871
170815A00027	8/15/2017	1.85	8/17/2020	8/15/2017	100.61534	100.6153399	100.6153399	100.6153399	100.540232	100.155876	99.77446377	99.39596148	99.02033583
170830A00030	8/30/2017	2	3/30/2022	8/30/2017	103.43995	103.4399486	103.4399486	103.4399486	102.6301791	100.6526224	98.72324574	96.84057505	95.00319165
170830A00047	8/30/2017	1.61	8/31/2020	8/30/2017	100.63397	100.633967	100.633967	100.633967	100.5438376	100.1203742	99.7004657	99.28406755	98.87113592
170831A00008	8/31/2017	1.78	8/31/2020	8/31/2017	100.6477	100.647698	100.647698	100.647698	100.5577178	100.1349035	99.7156299	99.29985284	98.88752879
170831A00022	8/31/2017	2.27	2/29/2024	8/31/2017	107.79485	107.7948537	107.7948537	107.7948537	105.3543856	101.4963465	97.80113505	94.26104729	90.86878375
170831A00047	8/31/2017	1.6	8/31/2020	8/31/2017	100.62972	100.6297183	100.6297183	100.6297183	100.5395906	100.116138	99.69624018	99.27985267	98.86693161
170831A00049	8/31/2017	1.68	3/1/2021	8/31/2017	101.45194	101.4519374	101.4519374	101.4519374	101.1380951	100.2161014	99.31084039	98.42185998	97.54872433
170831A00054	8/31/2017	1.85	6/30/2022	8/31/2017	103.94301	103.9430079	103.9430079	103.9430079	102.973949	100.7388394	98.56306608	96.44461245	94.38154863
170911A00023	9/11/2017	1.77	9/11/2020	9/11/2017	100.68953	100.6895254	100.6895254	100.6895254	100.5873546	100.1343133	99.6853515	99.24041419	98.79944736
170913A00025	9/13/2017	1.94	8/16/2021	9/13/2017	102.30648	102.3064779	102.3064779	102.3064779	101.7819147	100.4168871	99.07664195	97.76056273	96.46805268
170706A00028	7/6/2017	2.09	7/6/2022	7/6/2017	104.52238	104.5223772	104.5223772	104.5223772	103.5399902	101.2825933	99.08546452	96.94657171	94.86396805
170712A00019	7/12/2017	2.18	7/12/2022	7/12/2017	104.34403	104.3440348	104.3440348	104.3440348	103.3555747	101.0929417	98.89095226	96.74758061	94.6608843
170717A00033	7/17/2017	2.19	7/18/2022	7/17/2017	104.39853	104.3985309	104.3985309	104.3985309	103.3990757	101.1202927	98.90296239	96.7450464	94.64458829

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170724A00013	7/24/2017	1.99	7/26/2021	7/24/2017	102.27689	102.2768863	102.2768863	102.2768863	101.7761791	100.4652444	99.17882796	97.9162731	96.67694657
170726A00011	7/26/2017	2.2	7/26/2022	7/26/2017	104.46389	104.4638933	104.4638933	104.4638933	103.4498111	101.149587	98.91190007	96.73469444	94.61599444
170728A00029	7/28/2017	2.1	1/27/2022	7/28/2017	103.35286	103.352858	103.352858	103.352858	102.6310428	100.8226752	99.05486013	97.32643885	95.6362936
170731A00012	7/31/2017	1.82	8/2/2021	7/31/2017	102.30925	102.3092536	102.3092536	102.3092536	101.7989429	100.4669964	99.15872147	97.87354091	96.61089579
170731A00029	7/31/2017	2.34	7/31/2023	7/31/2017	106.87501	106.8750099	106.8750099	106.8750099	105.0171863	101.7191397	98.54225526	95.48146552	92.53194147
170801A00018	8/1/2017	1.87	8/3/2020	8/1/2017	100.56019	100.5601928	100.5601928	100.5601928	100.4999716	100.1541681	99.81073991	99.46966261	99.13091213
170801A00020	8/1/2017	2.02	8/2/2021	8/1/2017	102.35066	102.3506586	102.3506586	102.3506586	101.8417474	100.5131043	99.20802225	97.92592769	96.66626538
170808A00036	8/8/2017	2.04	11/15/2021	8/8/2017	102.88746	102.8874624	102.8874624	102.8874624	102.255123	100.6432041	99.06441389	97.51779693	96.00243425
170822A00020	8/22/2017	2.59	8/22/2025	8/22/2017	112.39558	112.3955816	112.3955816	112.3955816	107.9318853	102.6412468	97.64438876	92.92349736	88.46192647
170824A00031	8/24/2017	1.98	8/24/2021	8/24/2017	102.39986	102.3998556	102.3998556	102.3998556	101.866074	100.4794145	99.11826205	97.7819741	96.46992924
170831A00050	8/31/2017	1.72	6/14/2021	8/31/2017	101.95578	101.9557755	101.9557755	101.9557755	101.5039924	100.2969013	99.11837234	97.9674014	96.84303084
170831A00051	8/31/2017	1.75	8/31/2021	8/31/2017	102.34563	102.3456278	102.3456278	102.3456278	101.8024877	100.3940221	99.01181706	97.65520279	96.32353192
170905A00072	9/5/2017	1.84	3/5/2021	9/5/2017	101.47943	101.4794285	101.4794285	101.4794285	101.1606648	100.2296999	99.31580376	98.4185104	97.53737058
170906A00005	9/6/2017	1.69	9/7/2021	9/6/2017	102.28984	102.2898406	102.2898406	102.2898406	101.7386268	100.311617	98.91156541	97.53777546	96.18957401
170906A00028	9/6/2017	1.57	9/8/2020	9/6/2017	100.64917	100.6491699	100.6491699	100.6491699	100.5501647	100.1047168	99.6632149	99.22560661	98.7918405
170912A00009	9/12/2017	2.11	12/15/2022	9/12/2017	104.96356	104.9635595	104.9635595	104.9635595	103.6660672	100.9891332	98.39477036	95.87990025	93.44158235
170913A00003	9/13/2017	2.08	9/13/2022	9/13/2017	104.42404	104.4240449	104.4240449	104.4240449	103.3185162	100.8915558	98.53399056	96.24344561	94.01764186
170914A00052	9/14/2017	1.85	9/14/2020	9/14/2017	100.73918	100.7391762	100.7391762	100.7391762	100.6336634	100.1722773	99.71512144	99.26213771	98.81326908
170926A00002	9/26/2017	1.73	12/3/2020	9/26/2017	101.10535	101.1053517	101.1053517	101.1053517	100.9101919	100.2282159	99.55542858	98.8916451	98.23668569
171002A00011	10/2/2017	1.9	8/31/2020	10/2/2017	100.69866	100.6986647	100.6986647	100.6986647	100.608664	100.1857207	99.76631881	99.35041425	98.93796349
171002A00013	10/2/2017	2.23	11/30/2022	10/2/2017	105.2117	105.2116978	105.2116978	105.2116978	103.9451719	101.3033665	98.74204611	96.2582504	93.84914961
160328A00013	3/28/2016	2.17	3/28/2024	3/28/2016	108.28827	108.2882702	108.2882702	108.2882702	105.7467239	101.7899464	98.00362346	94.37951992	90.90984275
160330A00042	3/30/2016	1.53	3/30/2021	3/30/2016	101.42618	101.426179	101.426179	101.426179	101.0717129	100.0717421	99.09145224	98.13026727	97.18763331
160401A00055	4/1/2016	1.66	4/1/2021	4/1/2016	101.40467	101.4046705	101.4046705	101.4046705	101.0484271	100.0454998	99.06238191	98.09849146	97.153269
160407A00007	4/7/2016	1.6	3/25/2021	4/7/2016	101.31802	101.3180198	101.3180198	101.3180198	100.9715816	99.98788611	99.02326834	98.07717768	97.14908448
160420A00005	4/20/2016	1.48	4/20/2021	4/20/2016	101.45488	101.4548842	101.4548842	101.4548842	101.0729639	100.0163905	98.98179175	97.96848788	96.97582688
160422A00021	4/22/2016	2.17	4/21/2023	4/22/2016	105.78204	105.7820419	105.7820419	105.7820419	104.1849236	101.1635894	98.24578669	95.42738543	92.70444566
160429A00027	4/29/2016	1.33	4/29/2020	4/29/2016	100.09744	100.0974444	100.0974444	100.0974444	100.0925379	100.012068	99.93172873	99.85151977	99.77144081
160502A00002	5/2/2016	1.68	5/3/2021	5/2/2016	101.5491	101.549105	101.549105	101.549105	101.1512923	100.0618616	98.99577981	97.9523028	96.93071787
160509A00020	5/9/2016	2.01	5/9/2023	5/9/2016	105.37331	105.3733109	105.3733109	105.3733109	103.7344769	100.6729865	97.71772672	94.86440307	92.10892185
160526A00010	5/26/2016	1.58	5/26/2021	5/26/2016	101.70781	101.707813	101.707813	101.707813	101.2798403	100.1252065	98.99675188	97.89359444	96.81489138
160527A00024	5/27/2016	1.57	5/14/2020	5/27/2016	100.15433	100.1543295	100.1543295	100.1543295	100.1444107	100.0225825	99.90106522	99.7798576	99.65895847
160606A00040	6/8/2016	1.98	12/15/2020	6/8/2016	101.23933	101.2393259	101.2393259	101.2393259	101.0298682	100.315997	99.61219362	98.91824611	98.23394838

Classification | Public

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160609A00010	6/9/2016	1.58	6/9/2022	6/9/2016	103.2432	103.2431954	103.2431954	103.2431954	102.3135428	100.1427407	98.02844187	95.96876935	93.96192451
160614A00064	6/14/2016	1.21	6/15/2020	6/14/2016	100.23036	100.2303568	100.2303568	100.2303568	100.2065539	99.99591483	99.78617486	99.57732814	99.3693689
160615A00043	6/15/2016	1.59	6/15/2021	6/15/2016	101.59426	101.5942564	101.5942564	101.5942564	101.1432512	99.93895879	98.76318917	97.61493857	96.4932499
160615A00045	6/15/2016	1.59	6/15/2021	6/15/2016	101.59426	101.5942564	101.5942564	101.5942564	101.1432512	99.93895879	98.76318917	97.61493857	96.4932499
160616A00044	6/20/2016	2.31	6/18/2021	6/20/2016	102.49138	102.4913783	102.4913783	102.4913783	102.0349408	100.8168446	99.6277456	98.46661742	97.33248175
160624A00005	6/24/2016	1.52	6/24/2021	6/24/2016	101.5393	101.5393034	101.5393034	101.5393034	101.0775046	99.8496179	98.65138567	97.48174428	96.33968044
160624A00011	6/24/2016	1.83	6/26/2023	6/24/2016	105.01163	105.0116339	105.0116339	105.0116339	103.2558841	100.0768213	97.01186757	94.05624069	91.20539173
160627A00023	6/27/2016	1.49	6/28/2021	6/27/2016	101.51516	101.5151592	101.5151592	101.5151592	101.0485664	99.81020276	98.60199972	97.42286673	96.27176523
160627A00025	6/27/2016	1.65	6/27/2022	6/27/2016	103.06583	103.0658338	103.0658338	103.0658338	102.109551	99.90058925	97.75000733	95.65583113	93.61617076
160627A00040	6/27/2016	1.28	6/28/2021	6/27/2016	101.46345	101.4634488	101.4634488	101.4634488	100.9956263	99.75433622	98.54333639	97.36152983	96.20787193
160628A00049	6/28/2016	1.88	6/27/2025	6/28/2016	109.33528	109.3352774	109.3352774	109.3352774	105.1526035	100.0389479	95.20411575	90.63142555	86.30528599
160629A00004	6/29/2016	1.36	6/29/2020	6/29/2016	100.2731	100.2731027	100.2731027	100.2731027	100.2419192	99.99296236	99.745237	99.49873404	99.2534445
170303A00023	3/3/2017	2	3/3/2021	3/3/2017	101.75999	101.7599887	101.7599887	101.7599887	101.4429229	100.5139793	99.60198814	98.70648863	97.82703667
170313A00034	3/13/2017	3.31	3/15/2027	3/13/2017	120.96732	120.9673216	120.9673216	120.1326794	112.9755332	106.1209822	99.73930644	93.79529288	88.25652538
170314A00006	3/14/2017	2.67	3/14/2024	3/14/2017	110.20949	110.2094856	110.2094856	110.2094856	107.6903167	103.730837	99.93995194	96.30960128	92.83215297
170317A00060	3/17/2017	2.04	3/17/2021	3/17/2017	101.87213	101.8721294	101.8721294	101.8721294	101.5352388	100.567914	99.61896489	98.68787154	97.77413343
170322A00025	3/22/2017	3.58	3/22/2033	3/22/2017	142.24276	142.2427572	142.2427572	129.700883	116.4446919	104.6133864	94.17628154	84.95888515	76.80948053
170417A00043	4/17/2017	2.14	4/18/2022	4/17/2017	103.8191	103.8190955	103.8190955	103.8190955	102.9773488	100.9448152	98.96260689	97.02914979	95.14293064
170417A00094	4/17/2017	1.95	4/19/2022	4/17/2017	103.80542	103.8054159	103.8054159	103.8054159	102.9589386	100.9167707	98.92533682	96.98304453	95.08836338
170419A00023	4/19/2017	2.11	4/19/2023	4/19/2017	106.15068	106.1506816	106.1506816	106.1506816	104.5482097	101.5134752	98.58282974	95.75211775	93.01737498
170505A00003	5/5/2017	2.09	5/5/2021	5/5/2017	102.01171	102.0117117	102.0117117	102.0117117	101.6105961	100.5130921	99.43921029	98.38819447	97.35932029
170505A00009	5/5/2017	1.9	5/15/2020	5/5/2017	100.19909	100.1990911	100.1990911	100.1990911	100.1888222	100.0641818	99.93986611	99.81587378	99.69220353
170512A00027	5/12/2017	1.85	5/12/2020	5/12/2017	100.17993	100.1799337	100.1799337	100.1799337	100.1707055	100.054375	99.93832856	99.8225652	99.7070838
170515A00054	5/15/2017	3.2	5/17/2032	5/15/2017	137.64263	137.6426342	137.6426342	127.316253	114.7701174	103.504322	93.50225508	84.61369691	76.70706266
170524A00011	5/24/2017	2.54	5/24/2024	5/24/2017	109.38485	109.3848493	109.3848493	109.3848493	106.6771463	102.574086	98.65249493	94.90335707	91.31815639
170530A00027	5/30/2017	1.97	5/31/2022	5/30/2017	104.06256	104.0625596	104.0625596	104.0625596	103.1451487	100.9894288	98.88927394	96.84285788	94.84842975
170601A00018	6/1/2017	1.96	6/1/2022	6/1/2017	104.04571	104.0457136	104.0457136	104.0457136	103.1266317	100.9684017	98.86585761	96.81716706	94.82057344
170602A00033	6/2/2017	2.09	6/2/2022	6/2/2017	103.93867	103.9386731	103.9386731	103.9386731	103.0218624	100.869837	98.77325838	96.73030394	94.73922634
170605A00022	6/5/2017	1.62	6/5/2020	6/5/2017	100.27525	100.2752488	100.2752488	100.2752488	100.2567463	100.0736751	99.89127922	99.70955486	99.5284983
170609A00043	6/9/2017	3.07	6/9/2032	6/9/2017	136.24046	136.2404617	136.2404617	125.7693587	113.2494078	102.024063	92.06618083	83.2242687	75.36572162
170612A00013	6/12/2017	1.83	6/14/2021	6/12/2017	102.09012	102.0901159	102.0901159	102.0901159	101.6380664	100.4301098	99.25072965	98.09892129	96.97372678
170613A00021	6/13/2017	1.68	6/12/2020	6/13/2017	100.31657	100.3165668	100.3165668	100.3165668	100.2943433	100.0918633	99.89021398	99.68939024	99.48938692
170615A00015	6/15/2017	2.25	6/14/2024	6/15/2017	109.071	109.0710021	109.0710021	109.0710021	106.2846687	102.1132076	98.12905118	94.32275565	90.68540936

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170615A00037	6/15/2017	1.85	6/15/2020	6/15/2017	100.33415	100.3341484	100.3341484	100.3341484	100.3103686	100.0999033	99.89033242	99.68165016	99.47385083
170616A00016	6/16/2017	1.82	6/16/2021	6/16/2017	102.08733	102.0873322	102.0873322	102.0873322	101.6328491	100.419552	99.23508431	98.07842821	96.94861318
170622A00030	6/22/2017	1.66	6/22/2020	6/22/2017	100.35527	100.3552706	100.3552706	100.3552706	100.3277346	100.0975671	99.86846514	99.64042126	99.41342809
171012A00020	10/12/2017	1.93	10/13/2020	10/12/2017	100.9109	100.9108953	100.9108953	100.9108953	100.7735027	100.2323453	99.69699491	99.16735839	98.64334446
171012A00026	10/12/2017	2.09	10/12/2021	10/12/2017	102.80007	102.8000713	102.8000713	102.8000713	102.2080529	100.6874656	99.19707644	97.73605827	96.30361373
171017A00024	10/17/2017	2.04	4/19/2021	10/17/2017	101.87815	101.8781455	101.8781455	101.8781455	101.497798	100.443963	99.41193655	98.4010469	97.41064969
171024A00069	10/24/2017	1.99	10/26/2020	10/24/2017	101.00621	101.0062119	101.0062119	101.0062119	100.8546729	100.2777274	99.70736781	99.14348202	98.58596023
171026A00010	10/26/2017	2.84	10/26/2026	10/26/2017	116.72325	116.7232469	116.7232469	116.3669491	109.6913145	103.2880728	97.30677496	91.71735959	86.49205808
171030A00020	10/30/2017	2.16	1/14/2022	10/30/2017	103.39621	103.3962143	103.3962143	103.3962143	102.6905227	100.9156906	99.17999765	97.48228703	95.82144614
171031A00037	10/31/2017	1.98	10/30/2020	10/31/2017	101.01959	101.0195855	101.0195855	101.0195855	100.8637049	100.2758048	99.69473492	99.12037687	98.55261498
171102A00001	11/3/2017	1.84	11/3/2020	11/3/2017	101.03756	101.0375584	101.0375584	101.0375584	100.876869	100.2769636	99.68417474	99.09837626	98.51944511
171115A00006	11/15/2017	2.14	11/16/2020	11/15/2017	101.20281	101.2028123	101.2028123	101.2028123	101.027506	100.3926351	99.76573224	99.146648	98.53523665
171116A00021	11/16/2017	2.16	11/16/2022	11/16/2017	105.43522	105.4352242	105.4352242	105.4352242	104.1910984	101.5731943	99.03435699	96.57170773	94.18249311
171204A00020	12/4/2017	2.48	12/5/2022	12/4/2017	105.91547	105.9154651	105.9154651	105.9154651	104.6343426	101.9701763	99.38743518	96.883112	94.45433282
171205A00012	12/5/2017	2.28	12/7/2020	12/5/2017	101.40995	101.4099518	101.4099518	101.4099518	101.210049	100.5172458	99.83390939	99.15984672	98.49486985
171219A00051	12/19/2017	2.34	1/21/2021	12/19/2017	101.70412	101.7041209	101.7041209	101.7041209	101.4462657	100.6302159	99.8272697	99.03711329	98.25944273
171221A00003	12/21/2017	2.35	12/21/2020	12/21/2017	101.54015	101.5401491	101.5401491	101.5401491	101.3231312	100.5917505	99.87091162	99.16038766	98.45995828
180103A00018	1/3/2018	2.29	1/4/2021	1/3/2018	101.57514	101.5751364	101.5751364	101.5751364	101.340506	100.5709747	99.81310129	99.06662245	98.33128263
180110A00005	1/10/2018	2.22	1/11/2021	1/10/2018	101.66908	101.6690772	101.6690772	101.6690772	101.4243343	100.6339533	99.8558682	99.08979347	98.33545246
180116A00039	1/16/2018	2.37	1/19/2021	1/16/2018	101.71707	101.7170696	101.7170696	101.7170696	101.4619192	100.6512264	99.85346616	99.06833058	98.29552161
180117A00016	1/17/2018	2.46	7/19/2021	1/17/2018	102.86267	102.8626739	102.8626739	102.8626739	102.3687861	101.0705409	99.79848358	98.55183161	97.32983408
180118A00039	1/18/2018	3.09	1/19/2027	1/18/2018	119.01716	119.0171627	119.0171627	118.3644241	111.4084868	104.7440064	98.53092804	92.73623896	87.32950573
180123A00025	1/23/2018	2.44	3/1/2021	1/23/2018	102.01952	102.0195171	102.0195171	102.0195171	101.7056287	100.7827196	99.87651493	98.9865643	98.11243351
180129A00006	1/29/2018	2.49	11/30/2020	1/29/2018	101.51278	101.5127849	101.5127849	101.5127849	101.3212988	100.6471559	99.981959	99.32553096	98.6776994
180202A00012	2/2/2018	2.57	2/2/2022	2/2/2018	104.57805	104.5780549	104.5780549	104.5780549	103.8419571	102.0000479	100.1998223	98.440095	96.71972217
180222A00023	2/22/2018	2.84	2/22/2022	2/22/2018	104.88272	104.8827196	104.8827196	104.8827196	104.1209345	102.2242064	100.3714848	98.56148745	96.79297778
180222A00025	2/22/2018	3.48	2/22/2033	2/22/2018	143.64751	143.6475118	143.6475118	131.0329054	117.5887453	105.5946416	95.01270192	85.66656402	77.40282409
170913A00027	9/13/2017	2.08	9/13/2022	9/13/2017	104.42404	104.4240449	104.4240449	104.4240449	103.3185162	100.8915558	98.53399056	96.24344561	94.01764186
171003A00005	10/3/2017	1.92	10/5/2020	10/3/2017	100.86844	100.8684388	100.8684388	100.8684388	100.7397426	100.2205682	99.70673403	99.19815804	98.69475981
171004A00017	10/4/2017	1.89	10/5/2020	10/4/2017	100.85278	100.8527843	100.8527843	100.8527843	100.724097	100.2049698	99.6911826	99.1826532	98.67930121
171013A00021	10/13/2017	2	10/17/2022	10/13/2017	104.85295	104.8529479	104.8529479	104.8529479	103.6734788	101.1424154	98.68612191	96.3019462	93.98734786
171025A00026	10/25/2017	2.64	10/25/2024	10/25/2017	110.79336	110.7933647	110.7933647	110.7933647	107.5710867	103.0538055	98.75369977	94.65917792	90.75932912
171025A00027	10/25/2017	2.36	10/25/2022	10/25/2017	105.35745	105.3574505	105.3574505	105.3574505	104.1644848	101.6160587	99.14310721	96.74294236	94.41298979

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171026A00004	10/26/2017	2	10/26/2020	10/26/2017	101.01201	101.0120125	101.0120125	101.0120125	100.8604697	100.2835049	99.71312636	99.1492217	98.59168119
171026A00006	10/26/2017	2.32	10/26/2022	10/26/2017	105.25924	105.2592361	105.2592361	105.2592361	104.0647714	101.5150382	99.04088187	96.63960812	94.30863701
171026A00008	10/26/2017	2.6	10/25/2024	10/26/2017	110.60921	110.6092088	110.6092088	110.6092088	107.3891584	102.8759936	98.57986132	94.48917606	90.59303292
171030A00029	10/30/2017	1.9	4/30/2020	10/30/2017	100.12996	100.1299625	100.1299625	100.1299625	100.1248967	100.041814	99.95886656	99.87605403	99.79337612
171031A00007	10/31/2017	2.15	12/27/2021	10/31/2017	103.28512	103.2851235	103.2851235	103.2851235	102.6020665	100.875321	99.18579365	97.53234629	95.91388763
171031A00027	10/31/2017	1.98	10/30/2020	10/31/2017	101.01959	101.0195855	101.0195855	101.0195855	100.8637049	100.2758048	99.69473492	99.12037687	98.55261498
171031A00029	10/31/2017	2.43	10/31/2023	10/31/2017	107.71799	107.7179875	107.7179875	107.7179875	105.6129995	102.0662642	98.65815865	95.38250404	92.23343317
171101A00022	11/1/2017	2.65	11/1/2024	11/1/2017	110.88463	110.8846332	110.8846332	110.8846332	107.6372692	103.1006833	98.78289951	94.67220171	90.75756448
171115A00028	11/15/2017	2.25	8/18/2021	11/15/2017	102.7496	102.7495959	102.7495959	102.7495959	102.2217335	100.8482375	99.49975694	98.17566713	96.87536389
171120A00017	11/20/2017	2.41	11/21/2022	11/20/2017	105.64436	105.6443634	105.6443634	105.6443634	104.3942103	101.7705309	99.2261774	96.75825616	94.36399952
171122A00012	11/22/2017	2.22	11/23/2020	11/22/2017	101.29192	101.2919188	101.2919188	101.2919188	101.1085778	100.4543172	99.80850773	99.1709863	98.54159412
171130A00003	11/30/2017	2.22	11/30/2020	11/30/2017	101.32996	101.3299633	101.3299633	101.3299633	101.1386298	100.4651771	99.80066385	99.14491303	98.49775239
171206A00010	12/6/2017	2.45	12/6/2022	12/6/2017	105.84017	105.8401686	105.8401686	105.8401686	104.5572937	101.8915684	99.30738904	96.80174109	94.37174381
171208A00007	12/8/2017	2.47	12/9/2024	12/8/2017	111.16393	111.1639289	111.1639289	111.1639289	107.7562193	103.0920699	98.65782401	94.44090353	90.42948947
171214A00005	12/14/2017	2.29	12/14/2022	12/14/2017	105.94969	105.9496892	105.9496892	105.9496892	104.6430704	101.9444491	99.3291222	96.79398153	94.33605822
171228A00089	12/28/2017	2.13	12/28/2020	12/28/2017	101.51938	101.5193823	101.5193823	101.5193823	101.2934452	100.5417621	99.80120518	99.07152884	98.35249465
180102A00004	1/2/2018	2.28	1/8/2021	1/2/2018	101.58988	101.5898824	101.5898824	101.5898824	101.3497945	100.5693557	99.80091147	99.0441867	98.29891472
180104A00018	1/4/2018	2.97	1/4/2027	1/4/2018	118.0887	118.0886969	118.0886969	117.4884531	110.5944113	103.9925014	97.83586759	92.09204524	86.73110517
171004A00034	10/4/2017	1.73	10/5/2020	10/4/2017	100.84142	100.8414155	100.8414155	100.8414155	100.7125031	100.1925374	99.67793185	99.16860377	98.66447224
171010A00024	10/10/2017	2.38	10/10/2023	10/10/2017	107.41659	107.4165861	107.4165861	107.4165861	105.3697952	101.881375	98.52773083	95.30292921	92.20133144
171016A00005	10/16/2017	2.2	10/17/2022	10/16/2017	104.90011	104.9001073	104.9001073	104.9001073	103.7254787	101.2036232	98.75606672	96.38018027	94.07344522
171016A00033	10/16/2017	2.2	10/17/2022	10/16/2017	104.90011	104.9001073	104.9001073	104.9001073	103.7254787	101.2036232	98.75606672	96.38018027	94.07344522
171018A00003	10/18/2017	2.23	10/18/2023	10/18/2017	107.58484	107.5848416	107.5848416	107.5848416	105.5040413	101.975938	98.5851337	95.32554014	92.19137393
171025A00020	10/25/2017	2.02	10/26/2020	10/25/2017	101.02361	101.0236137	101.0236137	101.0236137	100.8720632	100.2950601	99.72464345	99.16070104	98.6031231
171027A00005	10/27/2017	1.88	10/27/2020	10/27/2017	101.02742	101.0274242	101.0274242	101.0274242	100.8745063	100.2937643	99.71969459	99.15218262	98.59111648
171030A00095	10/30/2017	2.28	10/31/2022	10/30/2017	105.18274	105.1827391	105.1827391	105.1827391	103.9786618	101.4170259	98.93159964	96.51965506	94.17858016
171031A00012	10/31/2017	2.28	10/31/2022	10/31/2017	105.18274	105.1827391	105.1827391	105.1827391	103.9786618	101.4170259	98.93159964	96.51965506	94.17858016
171116A00013	11/16/2017	2.2	1/15/2021	11/16/2017	101.56486	101.5648647	101.5648647	101.5648647	101.3152835	100.5159904	99.72928363	98.95486746	98.19245536
171122A00009	11/22/2017	2.2	11/22/2022	11/22/2017	105.57627	105.576269	105.576269	105.576269	104.3188436	101.6829829	99.12709703	96.64825893	94.24366955
171130A00048	11/30/2017	2.15	5/15/2020	11/30/2017	100.23033	100.2303303	100.2303303	100.2303303	100.2200588	100.0953835	99.97103305	99.84700603	99.72330117
171130A00053	11/30/2017	2.19	8/17/2020	11/30/2017	100.74654	100.7465376	100.7465376	100.7465376	100.6713838	100.2867177	99.90499712	99.52618824	99.15025773
171205A00004	12/6/2017	2.07	12/7/2020	12/6/2017	101.36021	101.3602108	101.3602108	101.3602108	101.1599655	100.4661105	99.78175491	99.10670464	98.44077073
171206A00008	12/6/2017	2.36	12/6/2021	12/6/2017	103.51739	103.5173926	103.5173926	103.5173926	102.8586869	101.1852306	99.54696656	97.9428488	96.37187302

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171206A00041	12/6/2017	2.44	12/6/2024	12/6/2017	111.00225	111.0022514	111.0022514	111.0022514	107.6074673	102.9544236	98.53044598	94.32301949	90.32038343
171206A00042	12/6/2017	2.24	12/7/2020	12/6/2017	101.38209	101.3820909	101.3820909	101.3820909	101.1822124	100.4895173	99.80628796	99.13233131	98.46745943
171207A00019	12/7/2017	2.41	6/16/2022	12/7/2017	104.72268	104.7226829	104.7226829	104.7226829	103.7783686	101.5800195	99.4390475	97.35353729	95.32165397
171211A00024	12/11/2017	2.26	12/11/2020	12/11/2017	101.41829	101.418292	101.418292	101.418292	101.2135251	100.5098118	99.8158684	99.13149244	98.4564869
171212A00023	12/12/2017	2.3	2/12/2021	12/12/2017	101.79463	101.7946253	101.7946253	101.7946253	101.5056454	100.6296991	99.76883632	98.92266996	98.09082593
171212A00024	12/12/2017	2.29	12/12/2022	12/12/2017	105.93765	105.9376532	105.9376532	105.9376532	104.6354488	101.9421749	99.33189828	96.8015273	94.34810858
171213A00019	12/13/2017	2.17	12/13/2021	12/13/2017	103.54091	103.540907	103.540907	103.540907	102.8715325	101.1741181	99.51277864	97.88642936	96.29402926
171213A00032	12/13/2017	2.17	12/13/2021	12/13/2017	103.54091	103.540907	103.540907	103.540907	102.8715325	101.1741181	99.51277864	97.88642936	96.29402926
180103A00011	1/3/2018	2.35	1/3/2023	1/3/2018	106.23776	106.2377612	106.2377612	106.2377612	104.8857987	102.1314161	99.46340373	96.87849631	94.37357678
170831A00009	8/31/2017	1.93	8/30/2021	8/31/2017	102.35641	102.3564117	102.3564117	102.3564117	101.8159914	100.4139528	99.03795573	97.68733845	96.36146102
170831A00052	8/31/2017	1.78	11/30/2021	8/31/2017	102.80785	102.8078466	102.8078466	102.8078466	102.1561998	100.499442	98.87738201	97.28899509	95.733297
170831A00053	8/31/2017	1.81	3/1/2022	8/31/2017	103.28475	103.2847531	103.2847531	103.2847531	102.5161738	100.6088304	98.74633782	96.92737372	95.1506634
170906A00006	9/6/2017	1.81	9/6/2022	9/6/2017	104.17085	104.1708455	104.1708455	104.1708455	103.0754333	100.6609926	98.3152627	96.03590478	93.82067395
170906A00034	9/6/2017	1.87	9/7/2021	9/6/2017	102.30542	102.3054154	102.3054154	102.3054154	101.755817	100.332655	98.93631907	97.56611731	96.22138118
170907A00059	9/7/2017	1.99	9/7/2022	9/7/2017	104.17294	104.1729408	104.1729408	104.1729408	103.0801707	100.6722044	98.33266217	96.05921787	93.84963867
170912A00031	9/12/2017	1.89	9/12/2022	9/12/2017	104.39751	104.39751	104.39751	104.39751	103.289385	100.8561538	98.4926043	96.19634866	93.9650956
170914A00039	9/14/2017	2.23	9/16/2024	9/14/2017	109.53455	109.53455	109.53455	109.53455	106.4388426	102.022167	97.81462227	93.80523017	89.98364526
170915A00005	9/15/2017	1.81	9/15/2021	9/15/2017	102.50216	102.5021635	102.5021635	102.5021635	101.941031	100.4907383	99.06824615	97.6728256	96.30377262
170915A00031	9/15/2017	2.1	9/15/2023	9/15/2017	106.93696	106.9369606	106.9369606	106.9369606	104.9489736	101.5170835	98.21598259	95.0399983	91.98373531
170918A00007	9/18/2017	2.8	9/20/2027	9/18/2017	118.68906	118.6890643	118.6890643	117.2452764	109.6500398	102.4609263	95.80244351	89.63255693	83.91276739
170919A00073	9/19/2017	2.28	9/19/2024	9/19/2017	109.77822	109.7782222	109.7782222	109.7782222	106.6696024	102.2399671	98.02037962	93.99979524	90.16780725
170921A00062	9/21/2017	1.95	9/21/2020	9/21/2017	100.81835	100.8183484	100.8183484	100.8183484	100.705053	100.2242946	99.74812261	99.27647151	98.80927709
170928A00026	9/28/2017	1.73	9/28/2020	9/28/2017	100.81008	100.810081	100.810081	100.810081	100.6888322	100.1881233	99.69238137	99.20153296	98.71550586
171005A00006	10/5/2017	2.32	10/7/2024	10/5/2017	110.06864	110.068638	110.068638	110.068638	106.895597	102.4143042	98.14751949	94.08385373	90.21258251
171010A00005	10/10/2017	2.06	10/11/2022	10/10/2017	104.97541	104.9754095	104.9754095	104.9754095	103.8074009	101.2903458	98.84731392	96.47569344	94.17298163
171016A00060	10/16/2017	1.93	10/16/2020	10/16/2017	100.92486	100.9248597	100.9248597	100.9248597	100.7842075	100.2348153	99.69140745	99.15388655	98.62215718
171017A00023	10/17/2017	1.97	10/19/2020	10/17/2017	100.96125	100.96125	100.96125	100.96125	100.8173243	100.2596266	99.70809255	99.16262035	98.62311033
171026A00007	10/26/2017	2.47	10/26/2023	10/26/2017	107.83268	107.8326834	107.8326834	107.8326834	105.7400219	102.2038605	98.80550096	95.53881998	92.39800188
171026A00011	10/26/2017	2.94	10/26/2027	10/26/2017	119.99562	119.9956181	119.9956181	118.4359803	110.7103028	103.3984448	96.63148432	90.36581898	84.56155255
171026A00023	10/26/2017	2	10/26/2020	10/26/2017	101.01201	101.0120125	101.0120125	101.0120125	100.8604697	100.2835049	99.71312636	99.1492217	98.59168118
171027A00029	10/27/2017	2.04	10/27/2020	10/27/2017	101.04017	101.0401748	101.0401748	101.0401748	100.88753	100.3077438	99.73460537	99.16800081	98.60781891
171030A00019	10/30/2017	2.04	3/16/2021	10/30/2017	101.71204	101.7120433	101.7120433	101.7120433	101.3776111	100.4159997	99.47257592	98.54682737	97.6382607
171031A00006	10/31/2017	2.02	1/25/2021	10/31/2017	101.46904	101.4690429	101.4690429	101.4690429	101.2059799	100.3800615	99.56758314	98.76821879	97.98165288

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170622A00040	6/22/2017	3.41	6/23/2036	6/22/2017	149.84789	149.8478873	145.5981546	128.6507663	112.8249714	99.15980168	87.44214297	77.37765193	68.71816891
170623A00007	6/23/2017	1.64	6/23/2020	6/23/2017	100.35488	100.3548807	100.3548807	100.3548807	100.3268142	100.0938856	99.86204679	99.63129012	99.40160796
170629A00016	6/29/2017	1.94	12/21/2020	6/29/2017	101.23866	101.2386611	101.2386611	101.2386611	101.0219293	100.2917763	99.57215265	98.86283159	98.163593
170629A00020	6/29/2017	2.03	6/29/2021	6/29/2017	102.19967	102.1996671	102.1996671	102.1996671	101.7304491	100.4848923	99.26970042	98.08377398	96.92606594
170629A00073	6/29/2017	2.2	6/29/2023	6/29/2017	106.8376	106.8376003	106.8376003	106.8376003	105.0521842	101.8214029	98.70688154	95.70373029	92.80729919
170706A00090	7/6/2017	2.48	7/6/2023	7/6/2017	107.19533	107.1953263	107.1953263	107.1953263	105.3987412	102.158688	99.03545123	96.02413182	93.1200686
170719A00006	7/19/2017	1.93	1/19/2021	7/19/2017	101.35817	101.358167	101.358167	101.358167	101.103414	100.2943241	99.4981487	98.71458032	97.94332119
170724A00014	7/24/2017	2.14	7/25/2022	7/24/2017	104.31813	104.3181322	104.3181322	104.3181322	103.3064929	101.0105692	98.77701232	96.60376958	94.48886876
170725A00002	7/25/2017	2.03	7/26/2021	7/25/2017	102.33033	102.330333	102.330333	102.330333	101.8295066	100.5181986	99.23141526	97.96849966	96.72881842
170725A00047	7/25/2017	2.19	7/25/2022	7/25/2017	104.43521	104.4352102	104.4352102	104.4352102	103.423048	101.1257451	98.89083834	96.71627409	94.60007931
170731A00026	7/31/2017	1.85	7/30/2020	7/31/2017	100.53551	100.5355118	100.5355118	100.5355118	100.4793	100.1445382	99.81199903	99.4816605	99.15350087
170803A00018	8/3/2017	1.85	8/3/2020	8/3/2017	100.55325	100.5532522	100.5532522	100.5532522	100.493033	100.1472445	99.8038312	99.46276871	99.12403297
170803A00021	8/3/2017	2.5	8/5/2024	8/3/2017	109.65912	109.6591184	109.6591184	109.6591184	106.7196884	102.4281396	98.33430229	94.42807115	90.69990774
170814A00084	8/14/2017	1.91	8/15/2022	8/14/2017	104.30819	104.3081896	104.3081896	104.3081896	103.2536375	100.8948771	98.6017382	96.37203704	94.20367532
170818A00035	8/18/2017	1.77	8/18/2021	8/18/2017	102.31477	102.3147655	102.3147655	102.3147655	101.7863706	100.4122881	99.06329006	97.73874925	96.43805872
170829A00023	8/29/2017	1.83	8/29/2022	8/29/2017	104.18226	104.1822562	104.1822562	104.1822562	103.1021481	100.7087117	98.38280598	96.12215275	93.92456417
170830A00009	8/30/2017	1.94	3/2/2023	8/30/2017	105.38355	105.3835509	105.3835509	105.3835509	103.9032049	101.004324	98.20127769	95.49038834	92.86814001
170831A00048	8/31/2017	1.64	11/16/2020	8/31/2017	100.97189	100.9718886	100.9718886	100.9718886	100.79643	100.1612758	99.53411148	98.91478693	98.30315567
170905A00071	9/5/2017	1.78	9/8/2020	9/5/2017	100.68143	100.6814287	100.6814287	100.6814287	100.5825807	100.1377721	99.69689434	99.25989546	98.82672437
170906A00039	9/6/2017	1.99	9/6/2022	9/6/2017	104.16828	104.1682818	104.1682818	104.1682818	103.0774593	100.672197	98.33520745	96.06417244	93.85686647
170907A00050	9/7/2017	1.69	9/7/2021	9/7/2017	102.28984	102.2898406	102.2898406	102.2898406	101.7386268	100.311617	98.91156541	97.53777546	96.18957401
170911A00032	9/11/2017	1.85	9/12/2022	9/11/2017	104.29822	104.2982169	104.2982169	104.2982169	103.1905705	100.7585758	98.39623562	96.10116288	93.87106713
170922A00006	9/22/2017	2.09	9/22/2021	9/22/2017	102.70021	102.7002124	102.7002124	102.7002124	102.1320848	100.6654375	99.22719453	97.81660312	96.43293674
170926A00031	9/26/2017	1.94	9/28/2020	9/26/2017	100.84614	100.8461407	100.8461407	100.8461407	100.7250888	100.2251086	99.73007714	99.23992127	98.75456928
180222A00027	2/22/2018	3.24	2/22/2028	2/22/2018	124.88712	124.8871186	124.8871186	122.914612	114.645974	106.8378179	99.63268285	92.98061984	86.83606271
180223A00026	2/23/2018	2.92	12/15/2022	2/23/2018	107.17952	107.1795173	107.1795173	107.1795173	105.8698397	103.1626592	100.5387585	97.99503683	95.52853203
180227A00005	2/27/2018	2.59	9/22/2020	2/27/2018	101.13392	101.1339188	101.1339188	101.1339188	101.0193576	100.5349646	100.0552154	99.5800435	99.10938353
180308A00011	3/8/2018	2.9	9/15/2022	3/8/2018	106.47152	106.4715224	106.4715224	106.4715224	105.3522536	102.8944831	100.5069715	98.18731108	95.93319146
180323A00005	3/23/2018	2.79	3/23/2021	3/23/2018	102.48899	102.4889901	102.4889901	102.4889901	102.14362	101.1590663	100.1934694	99.24628547	98.3169913
180326A00010	3/26/2018	2.6	3/26/2021	3/26/2018	102.4798	102.4798036	102.4798036	102.4798036	102.1293686	101.1345089	100.1589935	99.20226212	98.26377608
180327A00024	3/27/2018	2.79	5/26/2023	3/27/2018	108.52458	108.5245843	108.5245843	108.5245843	106.813581	103.6456219	100.5887055	97.63828475	94.79002872
180328A00018	3/28/2018	2.73	3/28/2023	3/28/2018	107.9067	107.9066973	107.9066973	107.9066973	106.3474907	103.3444843	100.4427011	97.63817008	94.92709934
180406A00005	4/6/2018	2.76	4/6/2021	4/6/2018	102.55565	102.5556464	102.5556464	102.5556464	102.1911277	101.1684662	100.1662428	99.18384917	98.22070097

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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180425A00007	4/25/2018	2.98	4/25/2023	4/25/2018	108.88527	108.88527	108.88527	108.88527	107.24995	104.157218	101.1706147	98.28589145	95.49899635
180426A00016	4/26/2018	2.77	4/26/2021	4/26/2018	102.87763	102.8776299	102.8776299	102.8776299	102.48552	101.404617	100.3464763	99.3103844	98.2956574
180430A00010	4/30/2018	2.88	1/15/2021	4/30/2018	102.11202	102.1120178	102.1120178	102.1120178	101.8618427	101.060135	100.2710405	99.49426286	98.72951516
180507A00005	5/7/2018	3.06	5/5/2023	5/7/2018	108.63456	108.6345592	108.6345592	108.6345592	106.9839778	103.8821448	100.8872038	97.99485476	95.20099759
180507A00039	5/7/2018	2.97	11/8/2021	5/7/2018	104.36631	104.3663062	104.3663062	104.3663062	103.7378998	102.1325805	100.559968	99.01912913	97.50916599
180522A00017	5/22/2018	2.98	5/24/2021	5/22/2018	103.14148	103.1414765	103.1414765	103.1414765	102.7144724	101.5591481	100.4297938	99.32554079	98.24555862
180529A00014	5/29/2018	2.83	5/30/2023	5/29/2018	108.68226	108.6822626	108.6822626	108.6822626	106.9600992	103.7793026	100.7102747	97.74842593	94.8893859
180530A00028	5/30/2018	3.67	5/31/2033	5/30/2018	144.03223	144.0322286	144.0322286	130.9112282	117.4203428	105.3964353	94.80467952	85.46380084	77.21645871
180530A00043	5/30/2018	2.76	6/1/2021	5/30/2018	102.94097	102.9409655	102.9409655	102.9409655	102.5043122	101.3287352	100.1800731	99.05740948	97.95986898
180530A00044	5/30/2018	2.87	5/31/2022	5/30/2018	105.63686	105.6368623	105.6368623	105.6368623	104.7165491	102.5511135	100.4412602	98.38516761	96.38108943
180530A00067	5/30/2018	2.76	5/28/2021	5/30/2018	102.91343	102.9134265	102.9134265	102.9134265	102.4818172	101.317152	100.1789137	99.0662103	97.97818963
180530A00069	5/30/2018	2.87	5/31/2022	5/30/2018	105.63686	105.6368623	105.6368623	105.6368623	104.7165491	102.5511135	100.4412602	98.38516761	96.38108943
180530A00074	5/30/2018	2.87	5/31/2022	5/30/2018	105.63686	105.6368623	105.6368623	105.6368623	104.7165491	102.5511135	100.4412602	98.38516761	96.38108943
180531A00069	5/31/2018	2.67	6/1/2020	5/31/2018	100.41223	100.4122266	100.4122266	100.4122266	100.3958606	100.2239594	100.0526444	99.88191268	99.71176127
180601A00007	6/1/2018	2.74	6/1/2020	6/1/2018	100.42428	100.4242779	100.4242779	100.4242779	100.4079105	100.2359938	100.0646634	99.89391626	99.72374949
180125A00022	1/25/2018	2.69	1/25/2023	1/25/2018	106.8213	106.8212973	106.8212973	106.8212973	105.422723	102.6147341	99.89617595	97.26371146	94.71414773
180205A00019	2/5/2018	2.88	2/5/2025	2/5/2018	113.55291	113.5529082	113.5529082	113.5529082	109.8988492	105.0346613	100.4166442	96.03107932	91.86508091
180215A00044	2/15/2018	2.64	2/1/2021	2/15/2018	102.02293	102.022928	102.022928	102.022928	101.7496544	100.9023706	100.0691665	99.24969323	98.44361368
180220A00027	2/20/2018	2.69	2/19/2021	2/20/2018	102.18524	102.1852437	102.1852437	102.1852437	101.8856033	100.9888577	100.1078746	99.24224081	98.39155769
180226A00043	2/26/2018	2.73	9/27/2021	2/26/2018	103.69178	103.6917815	103.6917815	103.6917815	103.115224	101.6273418	100.168515	98.73796686	97.33494802
180307A00010	3/7/2018	2.68	2/16/2021	3/7/2018	102.15636	102.1563558	102.1563558	102.1563558	101.8611118	100.9726158	100.0995985	99.24165785	98.39840554
180308A00016	3/8/2018	2.88	6/1/2022	3/8/2018	105.66588	105.6658786	105.6658786	105.6658786	104.7437047	102.5752439	100.4624964	98.40363427	96.39690516
180313A00022	3/13/2018	2.54	3/12/2021	3/13/2018	102.3257	102.3257021	102.3257021	102.3257021	101.9951958	101.039022	100.1007459	99.17986827	98.27590829
180328A00006	3/28/2018	2.73	3/26/2021	3/28/2018	102.45001	102.4500123	102.4500123	102.4500123	102.1004913	101.1080576	100.1348865	99.18042104	98.24412571
180328A00008	3/28/2018	2.85	3/25/2022	3/28/2018	105.1205	105.1205045	105.1205045	105.1205045	104.3120344	102.3303065	100.3964702	98.50907034	96.66670624
180329A00003	3/29/2018	3.08	3/29/2028	3/29/2018	123.90485	123.9048512	123.9048512	121.8174598	113.4834739	105.6341423	98.39889446	91.72623871	85.56925653
180329A00010	3/29/2018	2.76	3/29/2021	3/29/2018	102.50065	102.5006512	102.5006512	102.5006512	102.1468468	101.1460569	100.164843	99.202635	98.25888466
180403A00005	4/3/2018	2.72	4/3/2023	4/3/2018	107.91962	107.9196244	107.9196244	107.9196244	106.3455329	103.3265683	100.4098275	97.59128103	94.86708188
180418A00021	4/18/2018	2.85	4/19/2021	4/18/2018	102.74077	102.7407738	102.7407738	102.7407738	102.3590138	101.3002806	100.2634266	99.24777846	98.2526901
180425A00023	4/25/2018	2.97	4/23/2021	4/25/2018	102.89837	102.8983678	102.8983678	102.8983678	102.5111338	101.4407249	100.3926517	99.36622036	98.36076523
180427A00011	4/27/2018	3.03	4/27/2022	4/27/2018	105.73024	105.7302403	105.7302403	105.7302403	104.866551	102.7895312	100.7642303	98.78901549	96.86231783
180427A00017	4/27/2018	2.94	4/27/2021	4/27/2018	102.89555	102.8955512	102.8955512	102.8955512	102.5031082	101.4219407	100.3635545	99.32723518	98.31229768
180510A00024	5/10/2018	2.77	5/10/2021	5/10/2018	102.98064	102.9806438	102.9806438	102.9806438	102.5704938	101.4511622	100.3562264	99.2848947	98.23640981

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180514A00004	5/14/2018	2.64	5/14/2020	5/14/2018	100.30808	100.3080831	100.3080831	100.3080831	100.2981323	100.1759017	100.0539856	99.93238263	99.81109166
180514A00030	5/14/2018	2.9	5/16/2022	5/14/2018	105.98753	105.9875328	105.9875328	105.9875328	105.0875834	102.950097	100.8668641	98.83613143	96.85621652
180514A00035	5/14/2018	3.07	5/14/2024	5/14/2018	112.30775	112.3077538	112.3077538	112.3077538	109.5837873	105.4251127	101.449225	97.64708595	94.01015628
180515A00035	5/16/2018	2.98	5/17/2021	5/16/2018	103.08897	103.0889743	103.0889743	103.0889743	102.6708763	101.5347043	100.4236639	99.33692733	98.27370313
180517A00036	5/17/2018	2.74	9/17/2020	5/17/2018	101.23771	101.237709	101.237709	101.237709	101.1284444	100.6566867	100.1893369	99.72633338	99.26761552
180521A00025	5/21/2018	3.24	5/21/2025	5/21/2018	116.22411	116.224114	116.224114	116.224114	112.104993	106.9086265	101.9881793	97.3274989	92.91146605
180109A00028	1/9/2018	2.6	1/9/2025	1/9/2018	111.99375	111.9937464	111.9937464	111.9937464	108.4619103	103.7022047	99.18051011	94.88364558	90.79923312
180110A00029	1/10/2018	3.13	1/10/2028	1/10/2018	122.02025	122.0202465	122.0202465	120.2169493	112.233657	104.6866416	97.71403502	91.26889719	85.3083613
180123A00023	1/23/2018	2.43	1/29/2021	1/23/2018	101.82612	101.8261152	101.8261152	101.8261152	101.5572456	100.7189895	99.89453594	99.08354641	98.28569313
180123A00045	1/23/2018	2.43	1/25/2021	1/23/2018	101.81031	101.8103082	101.8103082	101.8103082	101.5468565	100.7193873	99.90537587	99.10449587	98.3164314
180124A00018	1/24/2018	2.3	1/25/2021	1/24/2018	101.81743	101.8174347	101.8174347	101.8174347	101.5534379	100.7243761	99.90882098	99.10644439	98.31692876
180126A00028	1/26/2018	2.69	1/26/2023	1/26/2018	106.82791	106.8279065	106.8279065	106.8279065	105.4270472	102.6163947	99.89533316	97.26052109	94.7087609
180126A00029	1/26/2018	2.88	1/27/2025	1/26/2018	112.51327	112.5132689	112.5132689	112.5132689	108.9335564	104.1460435	99.59916775	95.27959557	91.1747994
180130A00084	1/30/2018	2.59	1/30/2023	1/30/2018	107.09351	107.0935076	107.0935076	107.0935076	105.6755397	102.8392081	100.0938081	97.43594573	94.86237257
180207A00003	2/7/2018	3.28	2/7/2028	2/7/2018	123.41549	123.4154928	123.4154928	121.5210319	113.4220633	105.7642635	98.69347418	92.16141952	86.12402963
180226A00004	2/26/2018	2.63	2/25/2022	2/26/2018	104.84952	104.8495205	104.8495205	104.8495205	104.0810163	102.1695467	100.3027176	98.47922001	96.69779206
180306A00005	3/6/2018	2.65	3/4/2022	3/6/2018	104.93719	104.9371889	104.9371889	104.9371889	104.1582178	102.2266714	100.3406565	98.49882536	96.6998791
180316A00010	3/16/2018	2.58	3/16/2021	3/16/2018	102.39146	102.3914638	102.3914638	102.3914638	102.0552328	101.0878911	100.1388591	99.20762029	98.29367755
180406A00014	4/6/2018	2.95	4/6/2023	4/6/2018	108.0793	108.0792957	108.0792957	108.0792957	106.5043693	103.4878074	100.5732914	97.75679999	95.03449438
180412A00034	4/12/2018	3.23	4/15/2030	4/12/2018	131.50186	131.5018621	131.5018621	126.335844	115.7996746	106.1110994	97.344653	89.40689308	82.21431926
180416A00016	4/16/2018	2.85	4/17/2023	4/16/2018	108.42115	108.4211535	108.4211535	108.4211535	106.8088637	103.7447233	100.7852373	97.92623915	95.16375346
180425A00020	4/25/2018	3.11	10/25/2022	4/25/2018	107.30386	107.3038645	107.3038645	107.3038645	106.1009404	103.5272435	101.0295933	98.60528412	96.25172456
180430A00012	4/30/2018	2.95	7/15/2021	4/30/2018	103.47836	103.4783613	103.4783613	103.4783613	102.9877858	101.6949241	100.4292393	99.18987705	97.97601928
180430A00069	4/30/2018	2.75	3/30/2021	4/30/2018	102.65894	102.6589353	102.6589353	102.6589353	102.3026014	101.2959602	100.3090917	99.34141762	98.39238208
180514A00034	5/14/2018	3.07	5/14/2024	5/14/2018	112.30775	112.3077538	112.3077538	112.3077538	109.5837873	105.4251127	101.449225	97.64708595	94.01015628
180516A00019	5/16/2018	3.19	5/16/2023	5/16/2018	109.12844	109.1284362	109.1284362	109.1284362	107.4469654	104.3090727	101.2800495	98.35548229	95.53116461
180522A00004	5/22/2018	2.98	5/21/2021	5/22/2018	103.11898	103.1189755	103.1189755	103.1189755	102.6957881	101.5486708	100.4271634	99.33041482	98.25761133
180522A00019	5/22/2018	3.16	5/22/2023	5/22/2018	109.08118	109.0811832	109.0811832	109.0811832	107.3849859	104.2323597	101.1895614	98.252119	95.41577173
180522A00035	5/22/2018	2.83	5/21/2021	5/22/2018	103.1309	103.1308964	103.1308964	103.1308964	102.7065828	101.5566411	100.4324172	99.33305527	98.25773696
180522A00038	5/22/2018	3.23	5/22/2025	5/22/2018	116.18073	116.1807339	116.1807339	116.1807339	112.057866	106.8601226	101.9385099	97.27685567	92.86002243
170928A00044	9/28/2017	1.9	9/28/2021	9/28/2017	102.69944	102.6994438	102.6994438	102.6994438	102.122548	100.6355226	99.17766762	97.74820041	96.34636598
171003A00008	10/3/2017	2.88	10/4/2027	10/3/2017	119.38621	119.3862134	119.3862134	117.8976069	110.2459269	103.0022508	96.29523787	90.0821981	84.32404806
171006A00034	10/6/2017	2.27	10/6/2022	10/6/2017	105.02021	105.0202086	105.0202086	105.0202086	103.8669939	101.3720167	98.94995402	96.59825054	94.3144567

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171012A00027	10/12/2017	2.21	10/12/2022	10/12/2017	104.89938	104.8993838	104.8993838	104.8993838	103.7347619	101.2258228	98.79053589	96.42630613	94.13064692
171013A00020	10/13/2017	1.9	10/15/2020	10/13/2017	100.90372	100.9037184	100.9037184	100.9037184	100.7641628	100.2175675	99.67689694	99.14205508	98.61294789
171026A00005	10/26/2017	2.16	10/26/2021	10/26/2017	102.98145	102.9814536	102.9814536	102.9814536	102.3722871	100.8134165	99.28590769	97.78888312	96.32149778
171027A00049	10/27/2017	2.04	10/27/2020	10/27/2017	101.04017	101.0401748	101.0401748	101.0401748	100.88753	100.3077438	99.73460537	99.16800081	98.60781891
171031A00060	10/31/2017	1.98	10/30/2020	10/31/2017	101.01959	101.0195855	101.0195855	101.0195855	100.8637049	100.2758048	99.69473492	99.12037687	98.55261498
171101A00021	11/1/2017	2.51	11/1/2023	11/1/2017	108.01335	108.0133532	108.0133532	108.0133532	105.9032167	102.3486186	98.93298878	95.65013055	92.49415982
171116A00009	11/16/2017	2.17	10/20/2020	11/16/2017	101.0787	101.0786996	101.0786996	101.0786996	100.9336154	100.3728089	99.8182288	99.26977179	98.72733675
171116A00022	11/16/2017	1.92	11/16/2020	11/16/2017	101.1507	101.1507007	101.1507007	101.1507007	100.975104	100.3393051	99.71150195	99.09154422	98.47928539
171206A00029	12/6/2017	2.21	9/16/2020	12/6/2017	100.91688	100.9168766	100.9168766	100.9168766	100.8090659	100.341715	99.87869832	99.41995555	98.96542763
171211A00033	12/11/2017	2.26	12/12/2022	12/11/2017	105.85562	105.8556239	105.8556239	105.8556239	104.5538698	101.8617152	99.2525316	96.72322823	94.27085253
171211A00045	12/11/2017	2.32	6/11/2021	12/11/2017	102.47646	102.476455	102.476455	102.476455	102.0284958	100.829038	99.65769994	98.51350131	97.395507
171227A00018	12/27/2017	2.83	12/27/2024	12/27/2017	112.10553	112.1055272	112.1055272	112.1055272	108.6441771	103.9402633	99.46923484	95.2182782	91.17535856
180104A00017	1/4/2018	2.77	1/3/2025	1/4/2018	111.86647	111.8664703	111.8664703	111.8664703	108.3827033	103.6672538	99.18615911	94.92648955	90.87610246
180109A00025	1/9/2018	2.33	1/11/2021	1/9/2018	101.64643	101.6464256	101.6464256	101.6464256	101.4021967	100.6133818	99.83681735	99.0722196	98.3193133
180116A00048	1/16/2018	2.37	1/19/2021	1/16/2018	101.71707	101.7170696	101.7170696	101.7170696	101.4619192	100.6512264	99.85346616	99.06833058	98.29552161
180117A00017	1/17/2018	2.45	6/17/2021	1/17/2018	102.65774	102.6577419	102.6577419	102.6577419	102.2021896	100.9856912	99.79808115	98.63833933	97.5054932
180123A00024	1/23/2018	2.44	2/16/2021	1/23/2018	101.94197	101.9419687	101.9419687	101.9419687	101.6469964	100.7595393	99.88754815	99.03062115	98.18837032
180124A00020	1/24/2018	2.53	1/24/2023	1/24/2018	106.88122	106.8812184	106.8812184	106.8812184	105.4780679	102.6602876	99.9324078	97.2910644	94.73303926
180124A00038	1/24/2018	2.51	9/1/2021	1/24/2018	103.19986	103.1998561	103.1998561	103.1998561	102.6550746	101.2414204	99.854106	98.49245963	97.15583172
180125A00023	1/25/2018	2.57	1/25/2022	1/25/2018	104.20861	104.2086066	104.2086066	104.2086066	103.4864509	101.6752594	99.90455067	98.17316222	96.47997321
180202A00011	2/2/2018	2.45	2/2/2021	2/2/2018	101.9941	101.9941035	101.9941035	101.9941035	101.7188041	100.8672167	100.0298539	99.20636137	98.39639684
180607A00026	6/7/2018	2.92	6/7/2021	6/7/2018	103.17425	103.174255	103.174255	103.174255	102.729819	101.5366505	100.3711712	99.23242498	98.11949957
180612A00005	6/12/2018	3.09	6/12/2023	6/12/2018	109.02065	109.0206548	109.0206548	109.0206548	107.2718997	104.065183	100.9718336	97.98716225	95.10670549
180614A00008	6/14/2018	2.94	6/14/2021	6/14/2018	103.24981	103.2498068	103.2498068	103.2498068	102.7966636	101.5842043	100.4003241	99.24402081	98.11433862
180619A00020	6/19/2018	3.1	6/19/2025	6/19/2018	115.7351	115.7350987	115.7350987	115.7350987	111.4918453	106.2352466	101.2616847	96.55436424	92.09758021
180621A00017	6/21/2018	3.42	6/21/2028	6/21/2018	125.65601	125.6560097	125.6560097	123.3237218	114.7974055	106.7658756	99.37408394	92.56733856	86.29590565
180621A00052	6/25/2018	3.35	6/23/2023	6/25/2018	109.95236	109.9523575	109.9523575	109.9523575	108.169162	104.9182678	101.7830724	98.75875268	95.84072001
180622A00003	6/22/2018	2.87	6/22/2022	6/22/2018	106.20498	106.2049767	106.2049767	106.2049767	105.2401816	103.0008346	100.8203337	98.69669861	96.62803293
180622A00009	6/22/2018	2.82	6/22/2020	6/22/2018	100.58839	100.5883905	100.5883905	100.5883905	100.5608616	100.3306859	100.1015711	99.87350991	99.64649501
180625A00039	6/25/2018	2.93	6/25/2021	6/25/2018	103.30575	103.3057514	103.3057514	103.3057514	102.8391312	101.5969711	100.3847876	99.2015048	98.04609787
180625A00040	6/25/2018	3	6/24/2022	6/25/2018	106.10032	106.1003211	106.1003211	106.1003211	105.1362778	102.9007871	100.7240124	98.60397764	96.53879073
180626A00033	6/26/2018	2.79	6/26/2020	6/26/2018	100.60946	100.6094568	100.6094568	100.6094568	100.5798043	100.3385582	100.0984707	99.85953376	99.62173902
180627A00014	6/27/2018	2.8	6/26/2020	6/27/2018	100.61187	100.6118724	100.6118724	100.6118724	100.5822195	100.3409694	100.100878	99.86193707	99.62413839

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180628A00027	6/28/2018	2.72	6/28/2021	6/28/2018	103.278	103.278002	103.278002	103.278002	102.8064314	101.5531178	100.330298	99.13686938	97.9717817
180629A00004	6/29/2018	2.65	6/29/2020	6/29/2018	100.63265	100.6326522	100.6326522	100.6326522	100.6013541	100.3513932	100.1026728	99.85518358	99.60891657
180629A00071	6/29/2018	3.02	6/29/2023	6/29/2018	108.92185	108.9218523	108.9218523	108.9218523	107.130768	103.8806077	100.746766	97.72436916	94.80878146
180705A00061	7/5/2018	3	7/6/2022	7/5/2018	106.18987	106.1898654	106.1898654	106.1898654	105.2041555	102.9357659	100.727674	98.57785262	96.48435976
180719A00011	7/19/2018	3	11/12/2021	7/19/2018	104.44507	104.4450676	104.4450676	104.4450676	103.8117351	102.194826	100.6110038	99.05931879	97.5388574
180720A00029	7/20/2018	2.71	7/20/2020	7/20/2018	100.79888	100.7988759	100.7988759	100.7988759	100.7506673	100.44241	100.1360504	99.83157078	99.52895384
180720A00049	7/20/2018	2.93	7/20/2021	7/20/2018	103.4889	103.4889001	103.4889001	103.4889001	102.9924761	101.6875072	100.4085706	99.15489959	97.92575758
180720A00068	7/20/2018	2.89	7/20/2023	7/20/2018	109.26545	109.2654533	109.2654533	109.2654533	107.4084644	104.0839772	100.8806114	97.79329025	94.81717955
180723A00030	6/21/2019	3.24	6/21/2024	6/21/2019	112.53802	112.5380237	112.5380237	112.5380237	109.7103346	105.4706897	101.420693	97.5507911	93.85196911
180731A00002	7/31/2018	2.83	2/16/2021	7/31/2018	102.42396	102.4239633	102.4239633	102.4239633	102.1277181	101.2360889	100.360014	99.49908869	98.65292237
180731A00004	7/31/2018	2.97	7/31/2023	7/31/2018	109.61976	109.6197559	109.6197559	109.6197559	107.7317433	104.3730396	101.1376344	98.02036639	95.01631705
180731A00046	7/31/2018	2.84	3/26/2021	7/31/2018	102.71965	102.7196496	102.7196496	102.7196496	102.3688565	101.3727111	100.3959274	99.43794488	98.49822439
171031A00028	10/31/2017	2.13	10/29/2021	10/31/2017	102.94908	102.9490754	102.9490754	102.9490754	102.3364323	100.7699447	99.23506135	97.73089413	96.25658792
171101A00023	11/1/2017	2.78	11/3/2025	11/1/2017	113.91996	113.9199563	113.9199563	113.9199563	109.0550722	103.5517943	98.36349227	93.47046803	88.85435756
171130A00005	11/30/2017	2.45	11/30/2022	11/30/2017	105.80447	105.8044716	105.8044716	105.8044716	104.5347552	101.8849768	99.31586828	96.82446363	94.40792744
171205A00018	12/5/2017	2.2	5/11/2020	12/5/2017	100.21435	100.214349	100.214349	100.214349	100.2054654	100.0918731	99.9785517	99.86550009	99.75271731
171207A00029	12/7/2017	2.04	12/7/2020	12/7/2017	101.3393	101.3393038	101.3393038	101.3393038	101.1390769	100.4453031	99.76102794	99.08605734	98.42020234
171208A00008	12/8/2017	2.25	12/8/2022	12/8/2017	105.80465	105.8046518	105.8046518	105.8046518	104.5118715	101.8307754	99.23204936	96.71263564	94.26961282
171212A00027	12/12/2017	2.21	12/13/2021	12/12/2017	103.60994	103.609944	103.609944	103.609944	102.9403573	101.2423318	99.58039241	97.953454	96.36047531
171218A00020	12/18/2017	2.99	12/20/2027	12/18/2017	120.7756	120.7755967	120.7755967	119.0416498	111.1494931	103.6916335	96.7986281	90.42454019	84.52740369
171219A00063	12/19/2017	2.8	12/20/2027	12/19/2017	120.90695	120.9069546	120.9069546	119.146737	111.1708008	103.6483732	96.69808507	90.27326024	84.33126813
171229A00007	12/29/2017	2.12	12/30/2020	12/29/2017	101.52295	101.5229519	101.5229519	101.5229519	101.2945796	100.5374401	99.79158446	99.05676205	98.33272949
180103A00007	1/3/2018	2.44	1/7/2022	1/3/2018	103.86174	103.8617383	103.8617383	103.8617383	103.1633171	101.4025201	99.68018501	97.99515302	96.34631161
180104A00013	1/4/2018	2.39	1/4/2023	1/4/2018	106.35586	106.3558643	106.3558643	106.3558643	105.0009717	102.242355	99.57030409	96.98154821	94.47296474
180111A00007	1/11/2018	2.66	1/14/2025	1/11/2018	112.31886	112.3188553	112.3188553	112.3188553	108.7640631	103.9844487	99.44435227	95.13049898	91.03042139
180111A00016	1/11/2018	2.57	1/11/2023	1/11/2018	106.39155	106.3915542	106.3915542	106.3915542	105.0269035	102.2609517	99.58208689	96.98703796	94.47267938
180116A00010	1/16/2018	2.58	1/17/2023	1/16/2018	106.45749	106.4574923	106.4574923	106.4574923	105.0789903	102.2966967	99.60245097	96.99295537	94.4650571
180116A00031	1/16/2018	2.58	1/17/2023	1/16/2018	106.45749	106.4574923	106.4574923	106.4574923	105.0789903	102.2966967	99.60245097	96.99295537	94.4650571
180123A00026	1/23/2018	2.57	1/14/2022	1/23/2018	104.13903	104.1390274	104.1390274	104.1390274	103.4309171	101.6492107	99.90677118	98.20243786	96.53509475
180202A00004	2/2/2018	2.57	2/2/2022	2/2/2018	104.57805	104.5780549	104.5780549	104.5780549	103.8419571	102.0000479	100.1998223	98.440095	96.71972217
180205A00018	2/5/2018	2.66	2/3/2023	2/5/2018	107.32247	107.3224663	107.3224663	107.3224663	105.893833	103.0430514	100.2839733	97.61316842	95.02735327
180207A00002	2/7/2018	3.13	2/6/2026	2/7/2018	116.62113	116.6211324	116.6211324	116.6211324	111.1780347	105.3773156	99.92098843	94.7868069	89.95407057
180214A00003	2/14/2018	2.45	2/16/2021	2/14/2018	102.08427	102.0842715	102.0842715	102.0842715	101.7884577	100.8984773	100.0240309	99.16471439	98.32013742

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180216A00001	2/16/2018	2.5	2/16/2021	2/16/2018	102.12897	102.1289678	102.1289678	102.1289678	101.8330972	100.9428998	100.0682392	99.20871101	98.36392491
180220A00035	2/20/2018	2.69	2/19/2021	2/20/2018	102.18524	102.1852437	102.1852437	102.1852437	101.8856033	100.9888577	100.1078746	99.24224081	98.39155769
180222A00014	2/22/2018	2.68	2/19/2021	2/22/2018	102.17623	102.1762278	102.1762278	102.1762278	101.8765989	100.9798974	100.0989578	99.233367	98.38272633
160926A00046	9/26/2016	1.66	9/26/2023	9/26/2016	105.44343	105.4434268	105.4434268	105.4434268	103.4384123	100.003836	96.70152285	93.52568144	90.47080583
161004A00040	10/4/2016	1.45	10/4/2021	10/4/2016	102.03976	102.0397558	102.0397558	102.0397558	101.4574876	99.95970886	98.49153461	97.05216275	95.64081967
161027A00013	10/28/2016	1.66	3/15/2021	10/28/2016	101.3489	101.3489047	101.3489047	101.3489047	101.0163387	100.0591719	99.12007111	98.19852846	97.29405502
161031A00007	10/31/2016	1.91	10/31/2022	10/31/2016	104.21639	104.2163889	104.2163889	104.2163889	103.017297	100.4682806	97.99518713	95.59529734	93.26600787
161123A00008	11/23/2016	2.2	11/23/2021	11/23/2016	103.17636	103.1763614	103.1763614	103.1763614	102.5339701	100.898189	99.29631369	97.72735493	96.19036179
161214A00023	12/14/2016	3.3	12/15/2031	12/14/2016	137.5227	137.5226983	137.5226983	128.3376166	116.1245213	105.0996734	95.27215876	86.50397326	78.67373867
170111A00016	1/11/2017	3.51	1/11/2033	1/11/2017	140.74244	140.7424413	140.7424413	128.7636836	115.7300012	104.0777707	93.78223506	84.67569343	76.61207036
170119A00006	1/19/2017	2.85	1/21/2025	1/19/2017	112.37626	112.3762558	112.3762558	112.3762558	108.8191877	104.0479957	99.51597209	95.20987823	91.11727701
170203A00013	2/3/2017	3.67	2/1/2036	2/3/2017	152.75217	152.7521676	149.0257569	132.3382992	116.5556742	102.8545358	91.05709668	80.88228732	72.09216485
170203A00031	2/3/2017	2.09	2/3/2022	2/3/2017	103.68719	103.6871941	103.6871941	103.6871941	102.9527403	101.1164129	99.32173363	97.56751668	95.85261753
170215A00009	2/15/2017	2.21	2/16/2021	2/15/2017	101.73651	101.7365144	101.7365144	101.7365144	101.4418025	100.555341	99.68433322	98.82837766	97.98708656
170215A00036	2/15/2017	2.61	7/30/2021	2/15/2017	103.13109	103.1310924	103.1310924	103.1310924	102.6238326	101.2973365	99.99454992	98.71488485	97.45777237
170215A00037	2/15/2017	2.71	5/23/2022	2/15/2017	105.23307	105.2330669	105.2330669	105.2330669	104.3278264	102.1877502	100.1022392	98.06952026	96.08789207
170224A00011	2/24/2017	1.83	2/24/2021	2/24/2017	101.5678	101.5677998	101.5677998	101.5677998	101.2610133	100.3519261	99.45909825	98.58209662	97.72050339
170228A00018	2/28/2017	2.25	2/28/2022	2/28/2017	103.7823	103.7822997	103.7822997	103.7822997	103.0162337	101.1129964	99.25432184	97.43890106	95.66547223
170303A00020	3/3/2017	2	3/3/2021	3/3/2017	101.75999	101.7599887	101.7599887	101.7599887	101.4429229	100.5139793	99.60198814	98.70648863	97.82703667
170317A00059	3/17/2017	2.47	3/17/2023	3/17/2017	107.04783	107.0478274	107.0478274	107.0478274	105.5207994	102.5589189	99.69604035	96.92831575	94.25206901
170320A00014	3/20/2017	2.22	3/21/2022	3/20/2017	104.19761	104.1976072	104.1976072	104.1976072	103.3956025	101.4269588	99.50580614	97.63070562	95.8002719
170322A00023	3/22/2017	3.82	9/22/2039	3/22/2017	167.38454	167.3845419	158.377159	137.3448612	118.4482527	102.5557895	89.25888549	78.10453377	68.72185192
170327A00072	3/29/2017	3.09	3/29/2027	3/29/2017	120.99154	120.9915365	120.9915365	120.0967782	112.8321963	105.8947405	99.44030685	93.43262881	87.83834339
170327A00075	3/27/2019	2.47	3/28/2022	3/27/2019	104.3767	104.3766999	104.3766999	104.3766999	103.5664605	101.5845062	99.65066967	97.763483	95.92153324
170420A00004	4/20/2017	1.59	4/20/2020	4/20/2017	100.08165	100.0816459	100.0816459	100.0816459	100.0782612	100.0227429	99.96730084	99.91193492	99.85664498
170501A00007	5/1/2017	2.04	5/3/2021	5/1/2017	101.94645	101.9464524	101.9464524	101.9464524	101.5479563	100.4561968	99.38782101	98.34208387	97.31827186
170508A00010	5/8/2017	2.43	5/8/2024	5/8/2017	109.60058	109.6005804	109.6005804	109.6005804	106.9228823	102.8343721	98.92563907	95.1878071	91.6124886
180523A00002	5/23/2018	2.66	5/26/2020	5/23/2018	100.3953	100.3952989	100.3952989	100.3952989	100.3811741	100.2256149	100.0705455	99.9159638	99.76186733
180523A00025	5/23/2018	2.86	12/15/2021	5/23/2018	104.74701	104.7470051	104.7470051	104.7470051	104.0715214	102.3581271	100.6811994	99.039639	97.43239144
180524A00024	5/24/2018	3	3/21/2022	5/24/2018	105.39131	105.3913118	105.3913118	105.3913118	104.5878773	102.6138435	100.6872569	98.80668349	96.97074272
180525A00001	5/25/2018	3.04	5/25/2023	5/25/2018	108.72339	108.7233898	108.7233898	108.7233898	107.0221115	103.8673871	100.8228343	97.88395628	95.04646961
180529A00026	5/29/2018	2.67	6/1/2021	5/29/2018	103.02405	103.0240513	103.0240513	103.0240513	102.5860898	101.4071444	100.2552349	99.12943937	98.02887747
180529A00043	5/29/2018	2.99	5/30/2023	5/29/2018	108.60158	108.6015814	108.6015814	108.6015814	106.8886262	103.7229798	100.6682731	97.71996159	94.87371705

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180530A00002	5/30/2018	2.75	11/30/2022	5/30/2018	107.10794	107.1079385	107.1079385	107.1079385	105.8255194	103.147593	100.5512818	98.03357991	95.59161428
180530A00024	5/30/2018	3.44	5/30/2029	5/30/2018	128.72742	128.727422	128.727422	125.1446803	115.6265187	106.7645173	98.67757014	91.29320419	84.5460946
180530A00025	5/30/2018	3.49	5/30/2030	5/30/2018	132.31842	132.3184247	132.3184247	126.9901392	116.4302607	106.7117278	97.9222286	89.96705777	82.76165419
180530A00038	5/30/2018	2.77	5/28/2021	5/30/2018	102.92516	102.9251561	102.9251561	102.9251561	102.4935249	101.3287869	100.1904771	99.07770328	97.98961328
180530A00041	5/30/2018	2.64	6/1/2020	5/30/2018	100.40706	100.4070618	100.4070618	100.4070618	100.3906963	100.2188018	100.0474934	99.87676829	99.70662347
180531A00031	5/31/2018	2.67	5/29/2020	5/31/2018	100.39227	100.3922713	100.3922713	100.3922713	100.377131	100.2135429	100.050488	99.88796368	99.72596741
180601A00018	6/1/2018	2.87	6/1/2023	6/1/2018	108.82557	108.8255747	108.8255747	108.8255747	107.0973489	103.9090203	100.8328595	97.8642545	94.9988133
180601A00023	6/1/2018	3.3	6/1/2028	6/1/2018	126.24081	126.2408135	126.2408135	123.9369748	115.3577215	107.2813383	99.84680532	92.99941309	86.68939485
180604A00048	6/4/2018	3.01	6/5/2023	6/4/2018	108.71019	108.7101924	108.7101924	108.7101924	106.9813229	103.798124	100.7269409	97.76316443	94.90240565
180612A00018	6/12/2018	2.88	6/10/2022	6/12/2018	106.13579	106.1357851	106.1357851	106.1357851	105.192313	102.9863848	100.8377535	98.74451629	96.70484973
180615A00061	6/15/2018	3.28	6/15/2028	6/15/2018	126.19752	126.1975212	126.1975212	123.8475468	115.2317056	107.1261485	99.66753181	92.80048163	86.47464834
180618A00011	6/18/2018	3.02	6/20/2022	6/18/2018	106.11542	106.1154241	106.1154241	106.1154241	105.1582822	102.9334257	100.7667785	98.65638997	96.60039218
180618A00012	6/18/2018	2.9	6/19/2023	6/18/2018	109.06025	109.060249	109.060249	109.060249	107.2844533	104.0442654	100.9195184	97.90540022	94.99733226
180618A00032	6/18/2018	2.93	6/18/2021	6/18/2018	103.25461	103.2546057	103.2546057	103.2546057	102.7966398	101.5735955	100.3796301	99.21371521	98.07487033
180619A00019	6/19/2018	2.89	6/18/2021	6/19/2018	103.20537	103.2053652	103.2053652	103.2053652	102.747498	101.5247728	100.3311214	99.16551536	98.02697429
180620A00015	6/20/2018	3.04	6/20/2023	6/20/2018	108.91952	108.919524	108.919524	108.919524	107.1512216	103.9249161	100.8133391	97.81171601	94.91550341
180620A00044	6/20/2018	2.89	6/20/2023	6/20/2018	109.03534	109.0353386	109.0353386	109.0353386	107.2571681	104.0147117	100.8878633	97.87179993	94.96193315
180622A00005	6/22/2018	3.5	7/2/2029	6/22/2018	129.56156	129.5615631	129.5615631	125.839808	116.2059355	107.2422706	99.06865721	91.61062827	84.80112137
180802A00006	8/2/2018	2.99	8/2/2023	8/2/2018	109.70313	109.7031277	109.7031277	109.7031277	107.8092482	104.4439942	101.202446	98.07941774	95.06996837
180809A00016	8/9/2018	3.1	8/9/2023	8/9/2018	109.50064	109.5006356	109.5006356	109.5006356	107.5999424	104.2352773	100.9946073	97.87272092	94.86465345
180814A00032	8/14/2018	3.1	8/14/2025	8/14/2018	116.19614	116.1961378	116.1961378	116.1961378	111.6755047	106.270552	101.164135	96.33821138	91.77591834
180820A00002	8/20/2018	2.91	8/20/2021	8/20/2018	103.68801	103.6880103	103.6880103	103.6880103	103.1556587	101.7700487	100.4097501	99.07412857	97.76257078
180821A00014	8/21/2018	2.68	8/21/2020	8/21/2018	101.0174	101.0174025	101.0174025	101.0174025	100.9377668	100.5408369	100.1470369	99.75632961	99.36867866
180823A00033	8/23/2018	2.85	8/23/2023	8/23/2018	109.38885	109.3888545	109.3888545	109.3888545	107.4423394	104.0283142	100.7417541	97.57723506	94.52959265
180823A00035	8/23/2018	3.05	8/22/2025	8/23/2018	115.9893	115.9892982	115.9892982	115.9892982	111.4318433	106.0130478	100.8947413	96.05869541	91.48787824
180827A00034	8/27/2018	2.99	8/28/2023	8/27/2018	109.26898	109.2689767	109.2689767	109.2689767	107.3207022	103.9114807	100.6296583	97.46980798	94.42676308
180831A00019	8/31/2018	3.21	9/2/2025	8/31/2018	115.8471	115.8470959	115.8470959	115.8470959	111.2735974	105.8667295	100.7601994	95.935748	91.37631736
180905A00024	9/5/2018	2.9	9/5/2023	9/5/2018	109.66077	109.6607691	109.6607691	109.6607691	107.6779388	104.2255194	100.9031934	97.70537263	94.62673902
180910A00032	9/10/2018	3.22	9/10/2024	9/10/2018	113.10292	113.1029162	113.1029162	113.1029162	110.0059707	105.5504438	101.303465	97.254181	93.39235909
180911A00012	9/11/2018	3.06	9/9/2022	9/11/2018	106.82346	106.8234609	106.8234609	106.8234609	105.714154	103.2680751	100.8914397	98.58188445	96.33714078
180913A00040	9/13/2018	2.89	9/13/2021	9/13/2018	104.08432	104.0843214	104.0843214	104.0843214	103.5215311	102.0645533	100.6353817	99.23328962	97.85757501
180914A00012	9/14/2018	2.97	10/13/2020	9/14/2018	101.47666	101.4766594	101.4766594	101.4766594	101.3389247	100.7959927	100.2588814	99.72749741	99.20174942
180920A00027	9/20/2018	3.04	9/20/2022	9/20/2018	107.31688	107.3168764	107.3168764	107.3168764	106.1790124	103.6878233	101.2683475	98.9181087	96.63473167

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180920A00062	9/20/2018	3.12	9/20/2023	9/20/2018	110.54934	110.5493411	110.5493411	110.5493411	108.519632	105.0121823	101.6382779	98.39211667	95.26818085
180924A00056	9/24/2018	3.14	9/23/2022	9/24/2018	107.13055	107.1305489	107.1305489	107.1305489	105.9925415	103.5051137	101.0893498	98.74277282	96.46300694
181005A00010	10/5/2018	2.95	10/5/2020	10/5/2018	101.4783	101.4782972	101.4782972	101.4782972	101.349025	100.827133	100.3106154	99.7993895	99.29337414
181009A00024	10/9/2018	3.06	10/9/2020	10/9/2018	101.49446	101.494464	101.494464	101.494464	101.3610658	100.8290361	100.302593	99.7816487	99.26611731
181009A00035	10/9/2018	3.12	10/11/2022	10/9/2018	107.69181	107.6918069	107.6918069	107.6918069	106.5101387	103.9582242	101.481116	99.07617828	96.74088503
181010A00020	10/10/2018	3.27	12/1/2022	10/10/2018	108.02211	108.0221099	108.0221099	108.0221099	106.7382786	104.0560639	101.4553561	98.93315918	96.48660939
181015A00008	10/15/2018	3.15	9/15/2021	10/15/2018	104.23125	104.2312482	104.2312482	104.2312482	103.6674212	102.2079386	100.7763474	99.37191739	97.99394324
181018A00014	10/18/2018	3.21	10/18/2021	10/18/2018	104.58681	104.5868124	104.5868124	104.5868124	103.9827741	102.4319464	100.9120561	99.42224793	97.96169782
181022A00026	10/22/2018	3.18	10/15/2021	10/22/2018	104.51571	104.5157074	104.5157074	104.5157074	103.9154612	102.3731639	100.8615496	99.37977388	97.92702303
180226A00034	2/26/2018	2.82	6/27/2022	2/26/2018	105.71509	105.715091	105.715091	105.715091	104.7474735	102.5082794	100.3280939	98.20492449	96.13686331
180227A00016	2/27/2018	2.66	2/26/2021	2/27/2018	102.20418	102.2041763	102.2041763	102.2041763	101.894342	100.9785929	100.0792701	99.19593457	98.328163
180402A00005	4/2/2018	2.94	4/3/2023	4/2/2018	108.02706	108.0270579	108.0270579	108.0270579	106.4599055	103.4521268	100.5459012	97.73723584	95.02231808
180403A00041	4/3/2018	2.91	4/3/2025	4/3/2018	114.13901	114.1390083	114.1390083	114.1390083	110.2535572	105.2291822	100.4666712	95.95099148	91.66805119
180417A00005	4/17/2018	2.67	4/19/2021	4/17/2018	102.71958	102.7195797	102.7195797	102.7195797	102.3368843	101.2758018	100.2366874	99.21886387	98.22168153
180420A00012	4/20/2018	2.91	4/20/2021	4/20/2018	102.81196	102.8119553	102.8119553	102.8119553	102.4287751	101.3669431	100.3271068	99.3085876	98.31073463
180425A00004	4/25/2018	2.97	4/26/2021	4/25/2018	102.92072	102.9207157	102.9207157	102.9207157	102.5295337	101.4509141	100.3949664	99.36098106	98.34827798
180430A00015	4/30/2018	3.02	4/15/2022	4/30/2018	105.61918	105.6191817	105.6191817	105.6191817	104.7754221	102.7321494	100.7392464	98.79514399	96.89833324
180507A00015	5/7/2018	2.77	5/7/2020	5/7/2018	100.2509	100.2508997	100.2508997	100.2508997	100.2434001	100.1408393	100.038498	99.93637535	99.83447076
180522A00008	5/22/2018	2.98	5/24/2021	5/22/2018	103.14148	103.1414765	103.1414765	103.1414765	102.7144724	101.5591481	100.4297938	99.32554079	98.24555862
180522A00016	5/22/2018	2.83	5/22/2020	5/22/2018	100.3659	100.365896	100.365896	100.365896	100.3531862	100.2089992	100.0652374	99.92189897	99.77898202
180522A00039	5/22/2018	3.43	5/22/2028	5/22/2018	127.2219	127.2219037	127.2219037	124.9488597	116.3643963	108.2722231	100.8204434	93.95466233	87.62538329
180523A00012	5/23/2018	2.8	5/22/2020	5/23/2018	100.36156	100.3615642	100.3615642	100.3615642	100.3488548	100.204673	100.0609163	99.91758305	99.77467122
180524A00029	5/24/2018	2.74	5/24/2021	5/24/2018	103.04881	103.048806	103.048806	103.048806	102.6208565	101.4633243	100.3318617	99.22559506	98.14368965
180525A00005	5/25/2018	3.32	5/25/2028	5/25/2018	126.3441	126.344096	126.344096	124.0633733	115.4993061	107.4340124	100.0082906	93.16773631	86.86285073
180529A00007	5/29/2018	2.83	6/1/2021	5/29/2018	103.02385	103.023848	103.023848	103.023848	102.5870374	101.4109425	100.2617708	99.13860544	98.04057112
180529A00066	5/29/2018	2.99	5/26/2023	5/29/2018	108.57187	108.5718676	108.5718676	108.5718676	106.8691202	103.7142116	100.6695756	97.73070813	94.89331822
180530A00003	5/30/2018	2.49	5/29/2020	5/30/2018	100.38863	100.3886349	100.3886349	100.3886349	100.3734696	100.2096163	100.0463002	99.88351854	99.72126873
180530A00012	5/30/2018	2.64	5/29/2020	5/30/2018	100.38736	100.3873563	100.3873563	100.3873563	100.3722166	100.2086346	100.0455858	99.88306763	99.72107746
180530A00118	5/30/2018	2.9	11/30/2022	5/30/2018	107.01696	107.0169635	107.0169635	107.0169635	105.740721	103.0746341	100.4895955	97.98262706	95.55088208
180604A00027	6/4/2018	2.87	6/4/2021	6/4/2018	103.09272	103.0927161	103.0927161	103.0927161	102.6521058	101.4675155	100.3102299	99.1793129	98.07387064
180604A00044	6/4/2018	2.74	6/4/2020	6/4/2018	100.44476	100.4447624	100.4447624	100.4447624	100.4268011	100.2465659	100.0669807	99.88804179	99.70974585
180605A00010	6/5/2018	2.87	6/5/2023	6/5/2018	108.85601	108.8560084	108.8560084	108.8560084	107.1173624	103.9178526	100.8312249	97.85282341	94.97821536
180615A00066	6/15/2018	3	6/14/2024	6/15/2018	112.26277	112.262766	112.262766	112.262766	109.4424836	105.2048256	101.1566286	97.28836037	93.59102545

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180521A00072	5/21/2018	2.96	5/23/2022	5/21/2018	106.17184	106.171844	106.171844	106.171844	105.2593023	103.1013179	100.9984404	98.94887575	96.9509028
180529A00060	5/29/2018	2.83	6/1/2021	5/29/2018	103.02385	103.023848	103.023848	103.023848	102.5870374	101.4109425	100.2617708	99.13860544	98.04057112
180530A00006	5/30/2018	2.87	5/31/2022	5/30/2018	105.63686	105.6368623	105.6368623	105.6368623	104.7165491	102.5511135	100.4412602	98.38516761	96.38108943
180530A00084	5/30/2018	2.61	6/1/2021	5/30/2018	102.95294	102.9529381	102.9529381	102.9529381	102.5151117	101.3366116	100.1851402	99.0597759	97.95963845
180604A00026	6/4/2018	2.74	6/4/2020	6/4/2018	100.44476	100.4447624	100.4447624	100.4447624	100.4268011	100.2465659	100.0669807	99.88804179	99.70974585
180604A00045	6/4/2018	2.87	6/4/2021	6/4/2018	103.09272	103.0927161	103.0927161	103.0927161	102.6521058	101.4675155	100.3102299	99.1793129	98.07387064
180604A00047	6/4/2018	2.97	6/3/2022	6/4/2018	105.87794	105.8779442	105.8779442	105.8779442	104.9514134	102.7751921	100.6549816	98.58894008	96.57530217
180604A00050	6/4/2018	3.15	6/4/2024	6/4/2018	112.02188	112.0218846	112.0218846	112.0218846	109.2528923	105.0680158	101.0686791	97.24562386	93.5901082
180614A00006	6/14/2018	2.94	6/14/2021	6/14/2018	103.24981	103.2498068	103.2498068	103.2498068	102.7966636	101.5842043	100.4003241	99.24402081	98.11433862
180615A00069	6/15/2018	2.86	6/15/2022	6/15/2018	106.1293	106.1292954	106.1292954	106.1292954	105.1770863	102.9576278	100.796101	98.69057123	96.639185
180619A00031	6/19/2018	2.74	6/21/2021	6/19/2018	103.25234	103.2523406	103.2523406	103.2523406	102.7894024	101.5550999	100.3503895	99.17421624	98.02557477
180625A00009	6/25/2018	3	6/27/2022	6/25/2018	106.12267	106.1226691	106.1226691	106.1226691	105.1533078	102.9094625	100.7247227	98.5970927	96.52466217
180626A00045	6/26/2018	2.91	6/25/2021	6/26/2018	103.28074	103.2807437	103.2807437	103.2807437	102.8141746	101.5721789	100.3601571	99.17703325	98.02178268
180627A00017	6/27/2018	2.9	6/25/2021	6/27/2018	103.26824	103.2682399	103.2682399	103.2682399	102.8016962	101.5597829	100.3478418	99.16479747	98.00962508
180628A00018	6/28/2018	2.76	6/29/2020	6/28/2018	100.62295	100.6229452	100.6229452	100.6229452	100.5917007	100.3421574	100.0938479	99.846763	99.60089376
180628A00081	6/28/2018	2.72	6/21/2021	6/28/2018	103.22753	103.2275268	103.2275268	103.2275268	102.7646388	101.5304985	100.3259476	99.14993114	98.00144396
180629A00039	6/29/2018	2.91	6/29/2021	6/29/2018	103.30975	103.3097489	103.3097489	103.3097489	102.8382365	101.5853249	100.3629028	99.16986716	98.00516752
180703A00015	7/3/2018	3.06	7/3/2023	7/3/2018	109.08331	109.0833096	109.0833096	109.0833096	107.2808518	104.0177476	100.8717442	97.83793422	94.91164933
180719A00064	7/19/2018	3.3	7/21/2025	7/19/2018	115.98582	115.9858156	115.9858156	115.9858156	111.6216141	106.3136363	101.2946423	96.5473652	92.0556588
180720A00030	7/20/2018	2.79	7/20/2021	7/20/2018	103.52932	103.5293187	103.5293187	103.5293187	103.0313644	101.7226231	100.4400424	99.18285012	97.95030505
180723A00027	1/23/2019	3.13	1/24/2022	1/23/2019	105.23233	105.2323282	105.2323282	105.2323282	104.5080345	102.6898562	100.9122301	99.1739887	97.47400683
180723A00029	6/21/2019	3.17	6/21/2022	6/21/2019	106.46009	106.4600938	106.4600938	106.4600938	105.4997488	103.2682837	101.095236	98.97864661	96.91663908
180724A00075	7/24/2018	2.98	7/24/2023	7/24/2018	109.59803	109.5980316	109.5980316	109.5980316	107.7282658	104.3879653	101.1696674	98.0682617	95.07888036
180725A00027	7/25/2018	2.95	12/17/2020	7/25/2018	101.95143	101.9514287	101.9514287	101.9514287	101.7388843	101.0167215	100.3048086	99.6029283	98.91086937
170515A00056	5/15/2017	3.2	5/17/2032	5/15/2017	137.64263	137.6426342	137.6426342	127.316253	114.7701174	103.504322	93.50225508	84.61369691	76.70706266
170519A00034	5/19/2017	1.97	5/19/2022	5/19/2017	104.00093	104.0009312	104.0009312	104.0009312	103.1039202	100.9802192	98.91067886	96.89354169	94.92712157
170524A00047	5/24/2017	2.22	5/24/2023	5/24/2017	106.69406	106.694064	106.694064	106.694064	105.0005946	101.8666742	98.84271376	95.92421196	93.10688118
170530A00060	5/30/2017	2.12	3/25/2022	5/30/2017	103.65693	103.6569323	103.6569323	103.6569323	102.8538433	100.8870058	98.9677699	97.09468883	95.26636977
170531A00005	5/31/2017	1.94	5/31/2022	5/31/2017	103.99673	103.9967319	103.9967319	103.9967319	103.0795916	100.9246011	98.82516067	96.77944459	94.78570237
170602A00023	6/2/2017	2.09	6/2/2023	6/2/2017	106.32908	106.3290837	106.3290837	106.3290837	104.6155407	101.4641909	98.42414357	95.49081154	92.6598271
170612A00012	6/12/2017	1.67	6/12/2020	6/12/2017	100.31454	100.3145394	100.3145394	100.3145394	100.2923162	100.0898391	99.88819283	99.68737206	99.4873717
170615A00033	6/15/2017	2.01	6/15/2021	6/15/2017	102.10779	102.1077941	102.1077941	102.1077941	101.6557699	100.4481687	99.26914459	98.1176925	96.99285382
170616A00018	6/16/2017	2.4	6/16/2025	6/16/2017	112.0219	112.021895	112.021895	112.021895	107.8484157	102.6934809	97.81713266	93.20282023	88.83506708

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170616A00019	6/16/2017	2.64	6/16/2027	6/16/2017	118.36115	118.3611492	118.3611492	117.2073922	109.7983961	102.7723652	96.25051361	90.19393338	84.56691768
170619A00067	6/19/2017	1.84	9/20/2021	6/19/2017	102.57038	102.5703817	102.5703817	102.5703817	102.0032081	100.5388489	99.10281318	97.6943515	96.31274046
170619A00084	6/19/2017	1.95	6/20/2022	6/19/2017	104.12005	104.1200535	104.1200535	104.1200535	103.1676115	100.9573614	98.80520976	96.70920367	94.66747285
170621A00013	6/21/2017	1.68	6/22/2020	6/21/2017	100.35988	100.3598809	100.3598809	100.3598809	100.3323441	100.1021692	99.87305984	99.64500861	99.41800812
170622A00015	6/22/2017	1.99	6/22/2021	6/22/2017	102.11627	102.1162741	102.1162741	102.1162741	101.6557284	100.4293907	99.23251669	98.06405446	96.92300167
170622A00036	6/22/2017	3.23	6/22/2032	6/22/2017	135.59514	135.595138	135.595138	125.2436326	112.8830549	101.7869988	91.94054453	83.19449438	75.41824375
170629A00067	6/29/2017	2.19	6/29/2022	6/29/2017	104.299	104.2989974	104.2989974	104.2989974	103.333981	101.1055963	98.93613933	96.82361442	94.76611123
170630A00010	6/30/2017	2.63	6/30/2026	6/30/2017	115.85948	115.8594776	115.8594776	115.8594776	109.5132509	103.3556635	97.58768013	92.18254772	87.1154922
170630A00027	6/30/2017	2.35	6/28/2024	6/30/2017	109.58284	109.5828417	109.5828417	109.5828417	106.7472704	102.5290851	98.50166738	94.65532455	90.98091497
170706A00027	7/6/2017	1.75	7/6/2020	7/6/2017	100.43944	100.4394402	100.4394402	100.4394402	100.4027462	100.133796	99.86629295	99.60022543	99.33558182
170706A00073	7/6/2017	1.93	7/6/2020	7/6/2017	100.4506	100.4505974	100.4505974	100.4505974	100.4139587	100.1453948	99.87827127	99.61257648	99.34829896
170719A00004	7/19/2017	1.67	7/20/2020	7/19/2017	100.47829	100.478285	100.478285	100.478285	100.4301552	100.1225339	99.81680731	99.51295781	99.21096807
170724A00025	7/24/2017	1.66	7/24/2020	7/24/2017	100.49235	100.4923474	100.4923474	100.4923474	100.4409501	100.1222805	99.8056388	99.49100563	99.17836186
170728A00027	7/28/2017	1.87	7/28/2020	7/28/2017	100.53325	100.5332476	100.5332476	100.5332476	100.4786651	100.1494058	99.82230065	99.49732873	99.17446919
170731A00069	7/31/2017	1.75	1/29/2021	7/31/2017	101.37748	101.3774839	101.3774839	101.3774839	101.1085454	100.2706532	99.44659301	98.63602464	97.83861897
180628A00034	6/28/2018	2.72	6/28/2021	6/28/2018	103.278	103.278002	103.278002	103.278002	102.8064314	101.5531178	100.330298	99.13686938	97.9717817
180705A00058	7/5/2018	2.93	7/6/2021	7/5/2018	103.38627	103.3862708	103.3862708	103.3862708	102.9063831	101.6358246	100.3945042	99.18141336	97.99558951
180716A00037	7/16/2018	3.01	7/18/2022	7/16/2018	106.30278	106.3027773	106.3027773	106.3027773	105.2949045	102.9938627	100.7547434	98.5754942	96.45414524
180719A00059	7/19/2018	2.98	7/19/2021	7/19/2018	103.54741	103.5474094	103.5474094	103.5474094	103.0520221	101.7490561	100.4723582	99.22114378	97.9946597
180719A00060	7/19/2018	3.05	7/19/2022	7/19/2018	106.40328	106.4032795	106.4032795	106.4032795	105.3931566	103.0883289	100.8455825	98.6628621	96.53819481
180720A00008	7/20/2018	3	7/20/2022	7/20/2018	106.2945	106.2945031	106.2945031	106.2945031	105.2830571	102.9768929	100.7329173	98.54907348	96.42338709
180720A00011	7/20/2018	2.93	7/20/2021	7/20/2018	103.4889	103.4889001	103.4889001	103.4889001	102.9924761	101.6875072	100.4085706	99.15489959	97.92575758
180723A00024	10/23/2018	3.1	10/22/2021	10/23/2018	104.44546	104.4454588	104.4454588	104.4454588	103.8370133	102.2767325	100.7476963	99.24903599	97.77991435
180731A00009	7/31/2018	2.97	7/31/2023	7/31/2018	109.61976	109.6197559	109.6197559	109.6197559	107.7317433	104.3730396	101.1376344	98.02036639	95.01631705
180801A00012	8/1/2018	3.03	8/16/2021	8/1/2018	103.82623	103.8262278	103.8262278	103.8262278	103.2980805	101.9220129	100.570917	99.24417097	97.94117301
180801A00020	8/1/2018	3.02	8/1/2023	8/1/2018	109.79647	109.7964698	109.7964698	109.7964698	107.9045191	104.5402908	101.2996259	98.17734851	95.16852689
180806A00009	8/6/2018	2.9	8/6/2020	8/6/2018	100.93968	100.9396776	100.9396776	100.9396776	100.8761541	100.5212758	100.1688963	99.81898946	99.47152916
180813A00013	8/13/2018	2.99	12/5/2022	8/13/2018	107.29665	107.2966477	107.2966477	107.2966477	106.008037	103.3252006	100.7242239	98.20208601	95.75589978
180813A00016	8/13/2018	2.92	8/13/2021	8/13/2018	103.65095	103.6509548	103.6509548	103.6509548	103.1266192	101.759737	100.4175386	99.09941201	97.80476525
180813A00037	8/13/2018	2.95	2/14/2022	8/13/2018	105.05493	105.0549331	105.0549331	105.0549331	104.3033009	102.4277303	100.5952012	98.80447243	97.05434674
180815A00010	8/15/2018	3.02	8/15/2023	8/15/2018	109.27462	109.2746214	109.2746214	109.2746214	107.3600383	103.9838409	100.7326393	97.60115695	94.58436826
180816A00032	8/16/2018	3.02	8/16/2023	8/16/2018	109.28213	109.2821263	109.2821263	109.2821263	107.3648899	103.986016	100.7323257	97.59853091	94.57959507
180816A00038	8/16/2018	3.38	8/16/2028	8/16/2018	125.79312	125.7931229	125.7931229	123.2725246	114.5971228	106.4437082	98.95056887	92.06043691	85.72129382

Classification | Public

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180820A00036	8/20/2018	3	8/21/2023	8/20/2018	109.25123	109.25123	109.25123	109.25123	107.3212497	103.9301517	100.6651465	97.52088904	94.49228902
180827A00030	8/27/2018	2.84	8/27/2020	8/27/2018	101.06918	101.069176	101.069176	101.069176	100.983278	100.570376	100.1608476	99.75465162	99.35174758
180829A00044	8/29/2018	2.98	8/26/2022	8/29/2018	106.5224	106.5224039	106.5224039	106.5224039	105.4413786	103.0361234	100.6981753	98.42527765	96.21526285
180904A00014	9/4/2018	3.37	9/1/2028	9/4/2018	125.84213	125.8421318	125.8421318	123.2670853	114.5489326	106.3606255	98.83851981	91.92456756	85.56606612
180911A00042	9/11/2018	2.99	9/11/2023	9/11/2018	110.02099	110.0209868	110.0209868	110.0209868	108.0193913	104.5449069	101.2018936	97.98467792	94.88786252
180913A00029	9/13/2018	3.11	9/13/2023	9/13/2018	109.80548	109.8054772	109.8054772	109.8054772	107.8109834	104.3508506	101.0215108	97.81732443	94.732926
181115A00036	11/15/2018	3.2	11/15/2021	11/15/2018	104.79672	104.7967242	104.7967242	104.7967242	104.1588472	102.5307677	100.9361062	99.37389927	97.84322019
181115A00054	11/15/2018	2.87	5/15/2020	11/15/2018	100.34384	100.343838	100.343838	100.343838	100.3335369	100.2084965	100.0837844	99.95939927	99.8353398
181126A00050	11/26/2018	3.29	11/24/2023	11/26/2018	111.02505	111.0250456	111.0250456	111.0250456	108.8271419	105.1581434	101.6340539	98.24832833	94.99475682
181130A00019	11/30/2018	3.06	6/1/2020	11/30/2018	100.47937	100.4793693	100.4793693	100.4793693	100.4629959	100.2910084	100.1196073	99.94878976	99.77855275
181206A00011	12/6/2018	3.11	12/6/2022	12/6/2018	107.6294	107.6293996	107.6293996	107.6293996	106.3368102	103.6468752	101.03905	98.51030226	96.05773412
181206A00027	12/6/2018	2.98	6/8/2020	12/6/2018	100.51806	100.5180571	100.5180571	100.5180571	100.4979648	100.3065754	100.115923	99.92600356	99.73681266
181211A00018	12/11/2018	3.14	12/11/2023	12/11/2018	110.60564	110.605643	110.605643	110.605643	108.3644365	104.6592311	101.1019768	97.68591605	94.40464249
181212A00019	12/12/2018	3.19	12/12/2023	12/12/2018	110.80005	110.8000479	110.8000479	110.8000479	108.554379	104.843066	101.280001	97.85840949	94.57186906
181213A00025	12/13/2018	3.05	12/11/2020	12/13/2018	101.97731	101.9773063	101.9773063	101.9773063	101.7720379	101.0661238	100.3700013	99.68346756	99.00632519
181214A00023	12/14/2018	3.07	12/14/2021	12/14/2018	104.78855	104.7885454	104.7885454	104.7885454	104.1164244	102.4107266	100.7412008	99.10676031	97.50636249
181218A00077	12/18/2018	3.09	12/18/2023	12/18/2018	110.47303	110.4730294	110.4730294	110.4730294	108.2135689	104.4929995	100.9216571	97.49269482	94.19962349
181220A00009	12/20/2018	2.95	12/21/2020	12/20/2018	101.98135	101.9813512	101.9813512	101.9813512	101.7639145	101.0307371	100.3081199	99.59583558	98.89366357
181224A00038	12/24/2018	3.04	12/22/2023	12/24/2018	110.31584	110.3158366	110.3158366	110.3158366	108.0466745	104.3188489	100.7409368	97.30604198	94.00762907
190102A00058	1/2/2019	2.91	1/2/2024	1/2/2019	109.90631	109.9063101	109.9063101	109.9063101	107.6102453	103.862166	100.2659185	96.81447643	93.50118294
190103A00005	1/3/2019	2.61	1/4/2021	1/3/2019	101.93031	101.9303101	101.9303101	101.9303101	101.6948488	100.9223808	100.1616292	99.41232873	98.67422233
190107A00010	1/7/2019	2.66	1/9/2023	1/7/2019	107.14653	107.1465297	107.1465297	107.1465297	105.7758188	102.9931859	100.2981674	97.68746267	95.15791895
190107A00019	1/7/2019	2.92	1/5/2024	1/7/2019	109.96586	109.9658649	109.9658649	109.9658649	107.6608307	103.9040613	100.2997603	96.84087099	93.52070744
190110A00002	1/10/2019	2.93	1/10/2023	1/10/2019	107.39593	107.3959297	107.3959297	107.3959297	106.0278004	103.2503705	100.5602065	97.95403081	95.42871201
190110A00009	1/10/2019	2.97	1/16/2024	1/10/2019	110.23668	110.2366783	110.2366783	110.2366783	107.8982727	104.1086506	100.4738707	96.98676403	93.6405346
190110A00075	1/10/2019	2.67	4/7/2021	1/10/2019	102.6347	102.6346981	102.6346981	102.6346981	102.267832	101.2396708	100.2321478	99.24464591	98.27657265
190110A00087	1/10/2019	2.89	8/7/2020	1/10/2019	100.94344	100.9434447	100.9434447	100.9434447	100.8788561	100.521218	100.1661189	99.81353196	99.46343039
190115A00028	1/15/2019	2.86	11/8/2021	1/15/2019	104.18738	104.187384	104.187384	104.187384	103.5594891	101.9556675	100.3845259	98.84513205	97.33658865
190122A00042	1/22/2019	2.79	1/23/2023	1/22/2019	107.61569	107.6156894	107.6156894	107.6156894	106.2105284	103.3849126	100.6492895	98.00029119	95.43469654
190123A00005	1/23/2019	2.94	1/24/2022	1/23/2019	104.88285	104.882848	104.882848	104.882848	104.1597128	102.3448142	100.5704064	98.8353239	97.13844301
180618A00024	6/18/2018	2.91	4/13/2021	6/18/2018	102.76097	102.7609736	102.7609736	102.7609736	102.3870031	101.3443272	100.3228708	99.32199072	98.34106932
180621A00051	6/25/2018	3.63	6/23/2023	6/25/2018	110.86482	110.8648166	110.8648166	110.8648166	109.0751697	105.8095709	102.6600609	99.62180313	96.69019597
180622A00018	6/22/2018	2.92	6/22/2023	6/22/2018	109.14864	109.1486378	109.1486378	109.1486378	107.3645644	104.1149407	100.9813292	97.95888315	95.04299182

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180705A00003	7/5/2018	3.04	7/5/2023	7/5/2018	109.03271	109.0327071	109.0327071	109.0327071	107.2254827	103.9580747	100.8081039	97.77064984	94.84103156
180705A00059	7/5/2018	2.93	7/6/2021	7/5/2018	103.38627	103.3862708	103.3862708	103.3862708	102.9063831	101.6358246	100.3945042	99.18141336	97.99558951
180705A00062	7/5/2018	3.04	7/6/2023	7/5/2018	109.04027	109.0402688	109.0402688	109.0402688	107.230426	103.9603327	100.8078591	97.76807805	94.83630144
180719A00061	7/19/2018	3.07	7/19/2023	7/19/2018	109.23848	109.2384797	109.2384797	109.2384797	107.393878	104.0872557	100.900682	97.82913692	94.86784017
180723A00028	1/23/2019	3.22	1/23/2024	1/23/2019	111.24991	111.2499123	111.2499123	111.2499123	108.8826018	105.0562013	101.3866403	97.86665856	94.48937175
180724A00025	7/24/2018	2.93	7/25/2022	7/24/2018	106.59741	106.5974058	106.5974058	106.5974058	105.5714524	103.2401095	100.9720973	98.76532828	96.61779688
180730A00002	7/30/2018	3.03	7/30/2021	7/30/2018	103.69693	103.6969318	103.6969318	103.6969318	103.1883967	101.8579205	100.5512216	99.2677103	98.00681584
180730A00004	7/30/2018	3.14	7/28/2023	7/30/2018	109.54213	109.5421312	109.5421312	109.5421312	107.6722341	104.337571	101.1247262	98.02861148	95.04437838
180801A00010	8/1/2018	2.99	4/15/2021	8/1/2018	102.85985	102.8598514	102.8598514	102.8598514	102.4831134	101.4344891	100.4073123	99.40092935	98.41471317
180801A00015	8/1/2018	3.16	8/1/2023	8/1/2018	109.6408	109.6408004	109.6408004	109.6408004	107.7598768	104.4133472	101.1894094	98.08294081	95.08905958
180808A00009	8/8/2018	3.12	8/7/2023	8/8/2018	109.55284	109.5528369	109.5528369	109.5528369	107.6569543	104.2965311	101.0597593	97.9414497	94.93665793
180809A00030	8/9/2018	2.94	2/9/2021	8/9/2018	102.3372	102.3371978	102.3371978	102.3371978	102.0519081	101.1814862	100.3259001	99.48477247	98.65773903
180814A00033	8/14/2018	3.25	8/13/2027	8/14/2018	123.30341	123.3034104	123.3034104	121.9551823	114.2561254	106.9325486	100.1413832	93.84100056	87.99323056
180815A00009	8/15/2018	2.93	8/16/2021	8/15/2018	103.6868	103.6868012	103.6868012	103.6868012	103.1589827	101.783928	100.4338276	99.10806012	97.80602435
180815A00024	8/15/2018	2.71	8/17/2020	8/15/2018	101.00051	101.0005118	101.0005118	101.0005118	100.9251425	100.5392642	100.1563471	99.7763571	99.39926059
180816A00024	8/16/2018	3.01	8/16/2023	8/16/2018	109.24805	109.2480534	109.2480534	109.2480534	107.3310747	103.9527736	100.6996404	97.56638762	94.54797916
180821A00021	8/21/2018	2.68	8/21/2020	8/21/2018	101.0174	101.0174025	101.0174025	101.0174025	100.9377668	100.5408369	100.1470369	99.75632961	99.36867866
180823A00020	8/23/2018	2.96	4/20/2023	8/23/2018	108.21222	108.2122245	108.2122245	108.2122245	106.6017331	103.5458773	100.594341	97.74297185	94.98780791
180824A00023	8/24/2018	2.79	8/24/2021	8/24/2018	103.78882	103.7888235	103.7888235	103.7888235	103.2501034	101.8493694	100.4744459	99.12468085	97.79944394
180827A00031	8/27/2018	2.9	8/27/2021	8/27/2018	103.72468	103.7246787	103.7246787	103.7246787	103.1843148	101.779991	100.4016126	99.04852282	97.72008639
180905A00011	9/5/2018	2.85	9/8/2020	9/5/2018	101.15963	101.1596285	101.1596285	101.1596285	101.0605689	100.6144892	100.1723485	99.73409479	99.29967695
180222A00026	2/22/2018	2.98	2/21/2025	2/22/2018	114.16964	114.169644	114.169644	114.169644	110.4456238	105.5231526	100.8518283	96.41753823	92.20703368
180306A00009	3/6/2018	2.68	1/15/2021	3/6/2018	101.95109	101.9510904	101.9510904	101.9510904	101.70109	100.9000925	100.1117002	99.33561716	98.57155639
180306A00038	3/6/2018	2.7	3/5/2021	3/6/2018	102.28816	102.2881579	102.2881579	102.2881579	101.9682911	101.0332278	100.1152859	99.2139982	98.32891442
180308A00010	3/8/2018	2.72	4/8/2021	3/8/2018	102.528	102.5280012	102.5280012	102.5280012	102.1609188	101.1330182	100.1257715	99.13856063	98.17079194
180308A00014	3/8/2018	2.79	9/15/2021	3/8/2018	103.69944	103.6994392	103.6994392	103.6994392	103.1369617	101.6815529	100.2539648	98.85346913	97.47936248
180328A00010	3/28/2018	3.1	3/28/2025	3/28/2018	114.03959	114.039588	114.039588	114.039588	110.2086472	105.2320316	100.5131844	96.03739126	91.79085379
180328A00019	3/28/2018	2.55	3/29/2021	3/28/2018	102.45009	102.450092	102.450092	102.450092	102.0954811	101.0926722	100.1095165	99.14544047	98.19989291
180328A00035	3/28/2018	2.73	3/29/2021	3/28/2018	102.47045	102.4704467	102.4704467	102.4704467	102.1166878	101.1160607	100.1350073	99.17295769	98.22936358
180402A00041	4/2/2018	2.77	4/6/2021	4/2/2018	102.56594	102.5659361	102.5659361	102.5659361	102.2014014	101.1786833	100.1764041	99.19395543	98.23075296
180409A00003	4/9/2018	2.62	4/9/2020	4/9/2018	100.05673	100.0567321	100.0567321	100.0567321	100.0552111	100.0302591	100.0053331	99.98043318	99.95555931
180410A00017	4/10/2018	3.02	10/10/2023	4/10/2018	109.69401	109.6940068	109.6940068	109.6940068	107.6288274	104.1005097	100.7080986	97.44561941	94.30739393
180411A00014	4/11/2018	2.88	6/27/2022	4/11/2018	105.85095	105.8509504	105.8509504	105.8509504	104.8827516	102.6420071	100.4603035	98.33564723	96.2661296

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180430A00016	4/30/2018	3.07	12/15/2022	4/30/2018	107.58988	107.5898799	107.5898799	107.5898799	106.2779457	103.565164	100.9357934	98.38672879	95.91500419
180430A00066	4/30/2018	2.84	3/30/2022	4/30/2018	105.50401	105.5040056	105.5040056	105.5040056	104.6835723	102.6780396	100.7213874	98.81211766	96.94878879
180510A00003	5/10/2018	2.77	5/11/2020	5/10/2018	100.27924	100.2792438	100.2792438	100.2792438	100.270355	100.156694	100.0433039	99.9301838	99.81733269
180514A00032	5/14/2018	3.27	5/14/2026	5/14/2018	119.49263	119.4926266	119.4926266	119.4926266	113.3619046	107.2063845	101.4313604	96.01123532	90.92226745
180515A00018	5/15/2018	2.98	5/14/2021	5/15/2018	103.06647	103.0664734	103.0664734	103.0664734	102.6521928	101.5242318	100.4210449	99.34182208	98.28578814
180518A00020	5/21/2018	3.08	3/15/2022	5/21/2018	105.5046	105.5046046	105.5046046	105.5046046	104.7098114	102.7503254	100.8375653	98.97013015	97.14667091
180524A00020	5/24/2018	2.74	5/24/2021	5/24/2018	103.04881	103.048806	103.048806	103.048806	102.6208565	101.4633243	100.3318617	99.22559506	98.14368965
180529A00037	5/29/2018	2.83	5/28/2021	5/29/2018	102.99553	102.9955337	102.9955337	102.9955337	102.5637707	101.3985966	100.2598575	99.14666118	98.05815516
180529A00044	5/29/2018	3.11	5/29/2024	5/29/2018	111.80711	111.8071112	111.8071112	111.8071112	109.0590045	104.893934	100.9129649	97.10694052	93.4672131
180529A00056	5/29/2018	3	5/26/2023	5/29/2018	108.60369	108.6036852	108.6036852	108.6036852	106.9007207	103.7453108	100.7001868	97.76084375	94.92299051
180601A00022	6/1/2018	3.03	6/1/2023	6/1/2018	108.74434	108.7443405	108.7443405	108.7443405	107.0253676	103.8522433	100.7904541	97.8354332	94.98283111
180614A00034	6/15/2018	2.89	1/11/2021	6/15/2018	102.09081	102.0908135	102.0908135	102.0908135	101.8461123	101.0553608	100.276881	99.51038879	98.75560847
180725A00029	7/25/2018	2.98	4/16/2021	7/25/2018	102.85679	102.8567894	102.8567894	102.8567894	102.4787519	101.4274481	100.3977016	99.38885393	98.40027324
180727A00037	7/27/2018	3.13	7/27/2023	7/27/2018	109.50077	109.5007715	109.5007715	109.5007715	107.6337426	104.3023229	101.0925209	97.99925593	95.0176875
180727A00039	7/27/2018	3.48	7/27/2028	7/27/2018	126.45995	126.4599456	126.4599456	124.0050861	115.3590391	107.221282	99.73804865	92.85291186	86.51458886
180730A00023	7/30/2018	3.13	7/30/2024	7/30/2018	113.19893	113.1989253	113.1989253	113.1989253	110.2207955	105.8457843	101.6713091	97.68714707	93.88364811
180730A00033	7/30/2018	3.11	7/29/2022	7/30/2018	106.62056	106.620557	106.620557	106.620557	105.5914103	103.2579246	100.9879217	98.77932277	96.63012941
180730A00041	7/30/2018	3.14	7/31/2023	7/30/2018	109.56564	109.5656448	109.5656448	109.5656448	107.6878819	104.3451621	101.1248174	98.02173759	95.03105264
180730A00081	7/30/2018	3.5	7/28/2028	7/30/2018	126.63531	126.6353145	126.6353145	124.1765378	115.5221184	107.375534	99.88422472	92.99169232	86.64658975
180801A00009	8/1/2018	2.98	3/15/2021	8/1/2018	102.62678	102.626778	102.626778	102.626778	102.2923897	101.3285687	100.3829015	99.45487835	98.54400835
180801A00011	8/1/2018	3	5/14/2021	8/1/2018	103.08916	103.0891574	103.0891574	103.0891574	102.6748362	101.5467387	100.4434175	99.3640624	98.30789816
180814A00010	8/14/2018	3.1	8/14/2025	8/14/2018	116.19614	116.1961378	116.1961378	116.1961378	111.6755047	106.270552	101.164135	96.33821138	91.77591834
180815A00008	8/15/2018	2.85	8/14/2020	8/15/2018	100.97959	100.9795868	100.9795868	100.9795868	100.907541	100.5305697	100.1564228	99.78506841	99.41647539
180815A00021	8/15/2018	3.01	8/15/2023	8/15/2018	109.24058	109.2405761	109.2405761	109.2405761	107.32625	103.9506246	100.6999792	97.56903803	94.55277592
180817A00022	8/17/2018	2.87	8/17/2023	8/17/2018	109.41189	109.4118935	109.4118935	109.4118935	107.4809012	104.0819	100.8092544	97.65761001	94.62186803
180820A00017	8/20/2018	3	8/18/2023	8/20/2018	109.22888	109.2288803	109.2288803	109.2288803	107.3068552	103.9237783	100.6662294	97.52889849	94.50672807
180820A00055	8/20/2018	3.37	8/21/2028	8/20/2018	125.75077	125.750767	125.750767	123.2133364	114.5265134	106.3644284	98.86433508	91.9687323	85.62539704
180823A00053	8/23/2018	3.2	8/23/2028	8/23/2018	126.11958	126.1195846	126.1195846	123.5345723	114.7395868	106.4905097	98.91364078	91.95037554	85.54750692
180827A00020	8/27/2018	3.21	8/27/2025	8/27/2018	115.79946	115.799459	115.799459	115.799459	111.2567975	105.8655184	100.7728924	95.96081229	91.41235893
180830A00033	8/30/2018	2.87	8/31/2020	8/30/2018	101.11065	101.1106456	101.1106456	101.1106456	101.0204797	100.5964929	100.1760542	99.75911903	99.34564399
180904A00004	9/4/2018	2.89	9/5/2023	9/4/2018	109.62604	109.626037	109.626037	109.626037	107.6434765	104.1916515	100.8699034	97.67264458	94.59455756
180904A00012	9/4/2018	3.35	9/4/2030	9/4/2018	133.97611	133.9761076	133.9761076	127.9765115	116.9928809	106.9301077	97.85528795	89.6652044	82.26794636
180906A00004	9/6/2018	2.92	9/7/2021	9/6/2018	103.83329	103.8332932	103.8332932	103.8332932	103.2798918	101.8451903	100.4375142	99.05616625	97.70047255

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180913A00030	9/13/2018	3.33	9/12/2025	9/13/2018	116.58429	116.5842906	116.5842906	116.5842906	111.9474728	106.4968482	101.350163	96.48885732	91.89559817
180914A00008	9/14/2018	3.15	9/14/2023	9/14/2018	109.95268	109.9526812	109.9526812	109.9526812	107.9543977	104.4891104	101.1548863	97.94607032	94.85728225
180914A00046	9/14/2018	2.93	9/14/2021	9/14/2018	104.15106	104.1510578	104.1510578	104.1510578	103.5869152	102.126696	100.6943947	99.28928018	97.91064635
170803A00013	8/3/2017	2.14	8/3/2022	8/3/2017	104.36405	104.3640475	104.3640475	104.3640475	103.3358768	101.0161872	98.76008655	96.56548885	94.43038862
170803A00032	8/3/2017	2.12	8/3/2023	8/3/2017	106.7688	106.7688032	106.7688032	106.7688032	104.8941944	101.5753278	98.37901666	95.30011096	92.33370418
170808A00014	8/8/2017	1.67	8/10/2020	8/8/2017	100.56887	100.5688745	100.5688745	100.5688745	100.5011029	100.1354859	99.77253591	99.41222366	99.05452037
170815A00006	8/15/2017	2.5	8/15/2024	8/15/2017	109.71969	109.7196874	109.7196874	109.7196874	106.747095	102.4296892	98.31229241	94.38462591	90.63699068
170822A00011	8/22/2017	1.83	8/24/2020	8/22/2017	100.63828	100.6382781	100.6382781	100.6382781	100.5557309	100.1521237	99.75175527	99.35458671	98.96057972
170828A00031	8/28/2017	2.07	8/1/2022	8/28/2017	104.18859	104.1885855	104.1885855	104.1885855	103.1649266	100.8524793	98.60330591	96.415335	94.28657469
170829A00017	8/29/2017	1.76	8/31/2020	8/29/2017	100.6392	100.6392036	100.6392036	100.6392036	100.5492267	100.1264339	99.70718175	99.29142593	98.879123
170829A00018	8/29/2017	1.9	8/30/2021	8/29/2017	102.31342	102.3134219	102.3134219	102.3134219	101.7731064	100.3713878	98.99570521	97.64539704	96.31982349
170829A00025	8/29/2017	1.9	8/30/2021	8/29/2017	102.31342	102.3134219	102.3134219	102.3134219	101.7731064	100.3713878	98.99570521	97.64539704	96.31982349
170829A00044	8/29/2017	2.01	8/29/2022	8/29/2017	104.17971	104.1797143	104.1797143	104.1797143	103.1041042	100.7197218	98.40244124	96.15000426	93.96024186
170830A00034	8/30/2017	2.05	8/30/2022	8/30/2017	104.28209	104.2820905	104.2820905	104.2820905	103.2041428	100.8159388	98.49500255	96.23906809	94.04595916
170831A00029	8/31/2017	1.87	8/31/2022	8/31/2017	104.28971	104.289713	104.289713	104.289713	103.2053626	100.8054404	98.47335671	96.2068186	94.00362434
170911A00044	9/11/2017	1.73	9/13/2021	9/11/2017	102.3749	102.3749018	102.3749018	102.3749018	101.8164382	100.3725362	98.95621349	97.56674938	96.20344794
170912A00007	9/12/2017	1.84	12/15/2020	9/12/2017	101.13871	101.1387076	101.1387076	101.1387076	100.9293423	100.2158727	99.51246706	98.8189133	98.13500542
170912A00008	9/12/2017	1.98	12/15/2021	9/12/2017	102.91196	102.9119621	102.9119621	102.9119621	102.2444206	100.5527059	98.8969585	97.27609576	95.68907885
170915A00001	9/15/2017	2.43	9/16/2024	9/15/2017	109.59827	109.5982702	109.5982702	109.5982702	106.5219732	102.127717	97.94086335	93.95055357	90.14655358
170918A00108	9/18/2017	1.97	9/20/2022	9/18/2017	104.63708	104.6370789	104.6370789	104.6370789	103.5122855	101.0547496	98.66818188	96.35012892	94.09823732
170921A00063	9/21/2017	2.23	9/21/2022	9/21/2017	104.83853	104.8385274	104.8385274	104.8385274	103.7155736	101.2622467	98.87964155	96.56531655	94.31692959
170928A00020	9/29/2017	2.29	9/29/2022	9/29/2017	105.03251	105.0325079	105.0325079	105.0325079	103.8931784	101.4162116	99.0112425	96.6757639	94.40737153
171002A00012	10/2/2017	2.08	10/1/2021	10/2/2017	102.72983	102.7298269	102.7298269	102.7298269	102.1510833	100.6600026	99.19823531	97.76499257	96.35951345
171003A00007	10/3/2017	2.22	10/3/2022	10/3/2017	104.87711	104.8771106	104.8771106	104.8771106	103.7306141	101.2452134	98.83230248	96.48934716	94.21391811
171005A00003	10/5/2017	2.02	10/5/2022	10/5/2017	104.84127	104.8412748	104.8412748	104.8412748	103.6860214	101.1862785	98.75974301	96.40384507	94.11612153
171010A00004	10/10/2017	1.92	10/12/2021	10/10/2017	102.79974	102.7997373	102.7997373	102.7997373	102.2058931	100.6809534	99.18636582	97.72129747	96.28494539
171012A00025	10/12/2017	1.93	10/13/2020	10/12/2017	100.9109	100.9108953	100.9108953	100.9108953	100.7735027	100.2323453	99.69699491	99.16735839	98.64334446
180914A00026	9/14/2018	3.15	9/14/2023	9/14/2018	109.95268	109.9526812	109.9526812	109.9526812	107.9543977	104.4891104	101.1548863	97.94607032	94.85728225
180914A00029	9/14/2018	3.48	9/14/2028	9/14/2018	126.88123	126.8812256	126.8812256	124.258671	115.4712066	107.2149143	99.63210544	92.66390452	86.25687721
180919A00018	9/19/2018	3.12	6/20/2022	9/19/2018	106.33993	106.339925	106.339925	106.339925	105.3818327	103.1544346	100.9852983	98.87247184	96.81408562
180920A00014	9/20/2018	3.59	9/20/2028	9/20/2018	127.86594	127.8659423	127.8659423	125.2196328	116.3829535	108.0754615	100.4459851	93.43518392	86.98921009
180924A00021	9/24/2018	2.88	9/24/2020	9/24/2018	101.35743	101.3574281	101.3574281	101.3574281	101.24033	100.7490027	100.2624454	99.78058858	99.30336446
180927A00017	9/27/2018	3	9/29/2020	9/27/2018	101.38628	101.3862842	101.3862842	101.3862842	101.263838	100.759539	100.2602523	99.76590369	99.27642014

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
181001A00020	10/1/2018	3.16	10/3/2022	10/1/2018	107.25962	107.2596156	107.2596156	107.2596156	106.1013116	103.5856661	101.1431844	98.77131194	96.46759937
181002A00018	10/2/2018	3.1	10/4/2021	10/2/2018	104.30514	104.3051414	104.3051414	104.3051414	103.7186547	102.2072207	100.725555	99.27285277	97.84833738
181003A00021	10/3/2018	3.1	4/5/2021	10/3/2018	102.89769	102.8976876	102.8976876	102.8976876	102.5339423	101.5121009	100.510615	99.52888049	98.56631716
181005A00037	10/9/2018	3.4	10/3/2025	10/9/2018	118.27854	118.278539	118.278539	118.278539	113.4660829	107.8836849	102.6160918	97.64385399	92.94882373
181015A00069	10/15/2018	2.97	4/15/2020	10/15/2018	100.10955	100.1095498	100.1095498	100.1095498	100.107014	100.0654167	100.0238699	99.98237339	99.94092721
181016A00011	10/16/2018	3.06	10/15/2021	10/16/2018	104.59583	104.5958322	104.5958322	104.5958322	103.993516	102.4461556	100.9296462	99.44313716	97.98580876
181017A00023	10/17/2018	3.07	10/14/2020	10/17/2018	101.53888	101.5388765	101.5388765	101.5388765	101.4000174	100.854151	100.3141659	99.77996717	99.2514621
181023A00036	10/23/2018	2.98	10/23/2020	10/23/2018	101.63704	101.6370406	101.6370406	101.6370406	101.4880685	100.9162679	100.3509127	99.79189438	99.23910654
181026A00002	10/26/2018	3.28	10/26/2023	10/26/2018	110.75066	110.7506586	110.7506586	110.7506586	108.6339931	105.0461151	101.5975184	98.28202543	95.0937684
181029A00081	10/29/2018	3.27	4/28/2023	10/29/2018	109.23325	109.2332499	109.2332499	109.2332499	107.5962223	104.5033868	101.5165552	98.63148617	95.84413455
181101A00020	11/1/2018	3.26	11/1/2021	11/1/2018	104.78054	104.7805412	104.7805412	104.7805412	104.159197	102.5695863	101.0121041	99.48584396	97.9899329
181107A00008	11/7/2018	3.42	11/7/2023	11/7/2018	111.35801	111.3580053	111.3580053	111.3580053	109.203742	105.5737022	102.0854827	98.7327486	95.50948529
181108A00025	11/8/2018	3.44	7/31/2023	11/8/2018	110.57463	110.5746329	110.5746329	110.5746329	108.6893927	105.3299205	102.0932782	98.97433961	95.96821933
181109A00023	11/9/2018	3.39	11/9/2022	11/9/2018	108.15842	108.1584204	108.1584204	108.1584204	106.9200839	104.2952577	101.7488056	99.27790296	96.87984674
181114A00021	11/14/2018	3.17	11/14/2023	11/14/2018	111.18934	111.1893418	111.1893418	111.1893418	109.0052678	105.3424732	101.8238445	98.44289561	95.19347137
181121A00014	11/21/2018	3.18	11/19/2021	11/21/2018	104.77905	104.7790503	104.7790503	104.7790503	104.1366383	102.4980541	100.8932477	99.32123956	97.781088
181123A00016	11/23/2018	3.19	11/23/2022	11/23/2018	107.7426	107.7425978	107.7425978	107.7425978	106.4770998	103.8200571	101.2432746	98.74382263	96.31889928
181123A00021	11/23/2018	3.25	11/22/2023	11/23/2018	110.86155	110.8615519	110.8615519	110.8615519	108.6704928	105.009725	101.493395	98.11498648	94.8683166
190123A00033	1/23/2019	2.8	1/23/2023	1/23/2019	107.6442	107.6441953	107.6441953	107.6441953	106.2388684	103.4128481	100.6768301	98.0274465	95.46147561
190123A00035	1/23/2019	3.18	1/22/2027	1/23/2019	121.07129	121.0712869	121.0712869	120.3980201	113.3168715	106.5299501	100.2038066	94.30466107	88.80137839
190131A00053	1/31/2019	2.67	1/31/2023	1/31/2019	107.33017	107.3301746	107.3301746	107.3301746	105.9085502	103.0662492	100.3151211	97.65176491	95.07292479
190205A00013	2/5/2019	2.85	2/5/2021	2/5/2019	102.23017	102.2301684	102.2301684	102.2301684	101.9508294	101.0917474	100.2471245	99.41659794	98.59981685
190215A00004	2/15/2019	2.84	2/15/2023	2/15/2019	107.39475	107.3947548	107.3947548	107.3947548	105.9443175	103.0701031	100.289124	97.59786295	94.99295448
190215A00006	2/15/2019	2.89	2/15/2024	2/15/2019	110.14377	110.1437676	110.1437676	110.1437676	107.7210799	103.8551149	100.1502793	96.59903041	93.1942174
190219A00020	2/19/2019	2.88	2/16/2024	2/19/2019	110.11172	110.1117212	110.1117212	110.1117212	107.6864704	103.818438	100.1117365	96.55880862	93.15248996
190219A00026	2/19/2019	2.8	2/22/2022	2/19/2019	104.80595	104.8059479	104.8059479	104.8059479	104.0444307	102.1484524	100.2964663	98.48719069	96.71938921
190220A00007	2/20/2019	2.87	2/20/2024	2/20/2019	110.1007	110.1007001	110.1007001	110.1007001	107.6641062	103.7855654	100.069231	96.50748448	93.09310481
190225A00026	2/25/2019	3.43	2/27/2034	2/25/2019	146.34699	146.3469873	145.5009183	130.7825744	116.4626333	103.8248059	92.77553642	83.10324899	74.6256852
190308A00007	3/8/2019	2.8	3/8/2024	3/8/2019	109.94266	109.9426559	109.9426559	109.9426559	107.4584724	103.538915	99.78516663	96.18935085	92.74400678
190313A00019	3/13/2019	2.73	7/15/2022	3/13/2019	105.63236	105.6323587	105.6323587	105.6323587	104.6328519	102.3474523	100.1234096	97.9586826	95.85131306
190313A00029	3/13/2019	2.56	3/13/2023	3/13/2019	107.29053	107.2905298	107.2905298	107.2905298	105.7717213	102.8165147	99.9597136	97.1975075	94.52625535
190321A00020	3/21/2019	2.62	3/22/2021	3/21/2019	102.31415	102.3141502	102.3141502	102.3141502	101.9704399	100.9895097	100.0274213	99.08363535	98.15763318
190327A00012	3/27/2019	2.55	6/15/2020	3/27/2019	100.48187	100.481866	100.481866	100.481866	100.4580644	100.247375	100.0375807	99.82867587	99.62065469

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190327A00031	3/27/2019	2.53	3/27/2024	3/27/2019	108.98743	108.9874258	108.9874258	108.9874258	106.4571556	102.50901	98.73016812	95.11248075	91.6482344
190328A00007	3/28/2019	2.38	3/26/2021	3/28/2019	102.25994	102.2599448	102.2599448	102.2599448	101.9098381	100.916157	99.94180408	98.9862196	98.04886513
190328A00011	3/28/2019	2.37	3/28/2024	3/28/2019	109.09629	109.0962892	109.0962892	109.0962892	106.546824	102.5740918	98.77231284	95.13323239	91.64903856
190328A00030	4/25/2019	2.48	4/26/2021	4/25/2019	102.38938	102.38938	102.38938	102.38938	101.9990898	100.9235356	99.87060819	98.83959932	97.82982986
190328A00031	4/25/2019	2.56	4/25/2024	4/25/2019	109.28805	109.2880486	109.2880486	109.2880486	106.6689719	102.6404694	98.78742132	95.10124655	91.57383115
190329A00016	3/29/2019	2.56	3/29/2022	3/29/2019	104.56415	104.5641532	104.5641532	104.5641532	103.7517193	101.7652524	99.82706542	97.93568373	96.0896879
190404A00023	4/5/2019	2.62	5/16/2022	4/5/2019	104.99297	104.992965	104.992965	104.992965	104.1004319	101.9812701	99.9158169	97.90233973	95.93917597
190408A00004	4/8/2019	2.6	10/8/2021	4/8/2019	103.5659	103.565896	103.565896	103.565896	102.9765886	101.4604285	99.97425332	98.51724704	97.08862266
190409A00009	4/9/2019	2.57	4/9/2021	4/9/2019	102.37917	102.3791661	102.3791661	102.3791661	102.011015	100.9812443	99.9722251	98.98333457	98.01397469
180906A00013	9/6/2018	2.81	9/7/2021	9/6/2018	103.92168	103.9216818	103.9216818	103.9216818	103.3663974	101.9270376	100.5148498	99.12913166	97.7692043
180906A00020	9/6/2018	2.81	9/7/2021	9/6/2018	103.92168	103.9216818	103.9216818	103.9216818	103.3663974	101.9270376	100.5148498	99.12913166	97.7692043
180910A00007	9/10/2018	2.96	9/8/2023	9/10/2018	109.89273	109.8927272	109.8927272	109.8927272	107.9001141	104.4357779	101.1022477	97.8938921	94.80535249
180910A00033	9/10/2018	3.43	9/8/2028	9/10/2018	126.40718	126.4071835	126.4071835	123.8065551	115.0509321	106.8258257	99.27084872	92.32750772	85.94270607
180911A00011	9/11/2018	3	9/10/2021	9/11/2018	103.97219	103.9721872	103.9721872	103.9721872	103.4149057	101.9709969	100.5544357	99.16451246	97.8005417
180918A00012	9/18/2018	3.06	9/17/2021	9/18/2018	104.11362	104.1136174	104.1136174	104.1136174	103.5477329	102.0837146	100.6477769	99.23918198	97.85721743
180918A00023	9/18/2018	3.17	9/18/2023	9/18/2018	110.05398	110.0539758	110.0539758	110.0539758	108.0443435	104.5668084	101.2211855	98.00176551	94.90311762
180924A00043	9/24/2018	2.99	9/24/2020	9/24/2018	101.34337	101.3433666	101.3433666	101.3433666	101.226483	100.7360103	100.2502888	99.76924956	99.29282519
180924A00055	9/24/2018	3.1	9/24/2021	9/24/2018	104.22733	104.2273283	104.2273283	104.2273283	103.6529069	102.1689877	100.7138857	99.28683458	97.88709449
180925A00045	9/25/2018	3.31	9/25/2025	9/25/2018	117.70678	117.7067773	117.7067773	117.7067773	112.9460415	107.3984948	102.1628972	97.22003718	92.55198451
181002A00019	10/2/2018	2.98	10/4/2021	10/2/2018	104.38351	104.3835092	104.3835092	104.3835092	103.7950182	102.2786692	100.7922505	99.33495098	97.90598852
181004A00049	10/4/2018	3.06	11/4/2020	10/4/2018	101.69688	101.6968771	101.6968771	101.6968771	101.5348811	100.9310286	100.3343518	99.74472311	99.1620183
181009A00008	10/9/2018	3.24	10/7/2022	10/9/2018	107.4949	107.4949019	107.4949019	107.4949019	106.3273464	103.7982355	101.3428728	98.95867432	96.64316353
181009A00036	10/9/2018	3.07	10/8/2021	10/9/2018	104.55413	104.5541329	104.5541329	104.5541329	103.9603659	102.4319968	100.9339039	99.46526132	98.02527309
181022A00051	10/22/2018	3.11	10/22/2020	10/22/2018	101.62417	101.6241687	101.6241687	101.6241687	101.476564	100.9085201	100.3468369	99.79140786	99.24212885
181025A00021	10/25/2018	2.97	10/26/2020	10/25/2018	101.65508	101.6550845	101.6550845	101.6550845	101.5028349	100.9227482	100.3492898	99.78234656	99.22180778
181026A00021	10/29/2018	3.11	1/15/2021	10/29/2018	102.29708	102.2970843	102.2970843	102.2970843	102.0467083	101.2441839	100.4542818	99.67670543	98.91116773
181030A00012	10/30/2018	3.32	10/30/2023	10/30/2018	110.92806	110.9280604	110.9280604	110.9280604	108.7992012	105.1979314	101.7367505	98.40943101	95.21005887
181030A00019	10/30/2018	3.06	4/30/2020	10/30/2018	100.2266	100.2266017	100.2266017	100.2266017	100.2215311	100.1383682	100.0553407	99.97244826	99.88969055
181109A00027	11/13/2018	3.48	4/15/2024	11/13/2018	112.97479	112.9747917	112.9747917	112.9747917	110.3486772	106.272517	102.3720723	98.63881571	95.06468082
181114A00010	11/14/2018	3.08	11/15/2021	11/14/2018	104.88162	104.881624	104.881624	104.881624	104.2414894	102.6079166	101.0079485	99.44061458	97.90498124
181115A00061	11/15/2018	2.95	11/16/2020	11/15/2018	101.80847	101.8084735	101.8084735	101.8084735	101.6323692	100.9941988	100.3640455	99.74175854	99.12719116
181121A00015	11/21/2018	3.24	11/21/2022	11/21/2018	107.86015	107.860152	107.860152	107.860152	106.5982173	103.9449867	101.3717635	98.87563257	96.45380574
181127A00026	11/27/2018	3.2	11/26/2021	11/27/2018	104.86829	104.8682929	104.8682929	104.8682929	104.2173888	102.5589164	100.9348933	99.34431053	97.7861983

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180615A00006	6/15/2018	3.01	6/15/2022	6/15/2018	106.05559	106.0555898	106.0555898	106.0555898	105.1074098	102.8967438	100.7436381	98.64617471	96.60251595
180615A00031	6/15/2018	2.92	6/15/2021	6/15/2018	103.22046	103.2204591	103.2204591	103.2204591	102.7662271	101.5514567	100.3653814	99.20699268	98.07532899
180618A00023	6/18/2018	2.79	4/13/2020	6/18/2018	100.08844	100.0884449	100.0884449	100.0884449	100.0862476	100.0502003	100.0141948	99.97823103	99.94230881
180618A00026	6/18/2018	3.05	4/13/2023	6/18/2018	108.43669	108.4366894	108.4366894	108.4366894	106.8421009	103.8014661	100.8641226	98.02598013	95.28313506
180620A00038	6/20/2018	3.4	6/20/2028	6/20/2018	125.48289	125.4828857	125.4828857	123.1543361	114.6363061	106.6135274	99.22974694	92.43034554	86.16565421
180702A00034	7/2/2018	2.86	7/3/2023	7/2/2018	109.03611	109.0361148	109.0361148	109.0361148	107.2246961	103.9478203	100.7888761	97.74290903	94.80520649
180712A00033	7/12/2018	2.86	7/13/2020	7/12/2018	100.74888	100.7488789	100.7488789	100.7488789	100.7064735	100.4181057	100.1313994	99.84633994	99.56291326
180716A00016	7/16/2018	3.03	7/14/2023	7/16/2018	109.0676	109.0675969	109.0675969	109.0675969	107.2370516	103.9460289	100.774076	97.71621076	94.76768988
180716A00056	7/16/2018	3.1	7/16/2025	7/16/2018	115.95733	115.957335	115.957335	115.957335	111.5829568	106.2542259	101.2159736	96.45081379	91.94249234
180718A00026	7/18/2018	3.03	7/18/2023	7/18/2018	109.09773	109.0977338	109.0977338	109.0977338	107.2567216	103.9549719	100.7730275	97.70587779	94.74875139
180719A00063	7/19/2018	3.21	7/19/2024	7/19/2018	112.6342	112.6341968	112.6341968	112.6341968	109.7163741	105.4038078	101.2872246	97.35667383	93.602764
180723A00026	10/23/2018	3.2	10/23/2023	10/23/2018	110.43848	110.4384761	110.4384761	110.4384761	108.3324185	104.7577491	101.3216666	98.01803396	94.84102124
180731A00022	7/31/2018	3.47	7/31/2028	7/31/2018	126.41092	126.4109231	126.4109231	123.9427376	115.2880415	107.1439122	99.6556443	92.76664014	86.42546505
180816A00044	8/16/2018	2.83	8/17/2020	8/16/2018	100.9935	100.9934981	100.9934981	100.9934981	100.9182577	100.5330079	100.150707	99.77132097	99.3948166
180821A00028	8/21/2018	2.99	8/21/2023	8/21/2018	109.21702	109.2170197	109.2170197	109.2170197	107.2872996	103.8967789	100.6323352	97.48862389	94.46055526
180823A00055	8/23/2018	3.44	8/23/2033	8/23/2018	144.78115	144.7811526	144.7705738	130.71455	116.8485174	104.5452412	93.73908341	84.23694707	75.87166859
180830A00039	8/30/2018	3.03	8/30/2023	8/30/2018	109.42165	109.4216544	109.4216544	109.4216544	107.4670201	104.0501202	100.761063	97.59439537	94.54492634
180831A00018	8/31/2018	2.95	8/31/2022	8/31/2018	106.48618	106.486184	106.486184	106.486184	105.3959737	102.9781759	100.6283725	98.34427282	96.12367716
180910A00028	9/10/2018	3.56	9/9/2033	9/10/2018	146.55892	146.5589223	146.5030239	132.3086116	118.3066963	105.8798609	94.96654576	85.37116549	76.92446382
180911A00080	9/11/2018	2.94	9/9/2022	9/11/2018	106.98053	106.9805272	106.9805272	106.9805272	105.8658205	103.4085175	101.021145	98.70131748	96.44674545
180918A00038	9/18/2018	3.11	9/16/2022	9/18/2018	107.00111	107.0011099	107.0011099	107.0011099	105.8773393	103.4102887	101.0137948	98.68543737	96.42289449
180924A00047	9/24/2018	3.14	9/23/2022	9/24/2018	107.13055	107.1305489	107.1305489	107.1305489	105.9925415	103.5051137	101.0893498	98.74277282	96.46300694
180925A00095	9/25/2018	3.01	9/25/2020	9/25/2018	101.36082	101.3608213	101.3608213	101.3608213	101.2428205	100.7495566	100.2610961	99.77736883	99.2983064
180927A00042	9/27/2018	3.02	9/27/2022	9/27/2018	107.323	107.3230018	107.3230018	107.3230018	106.1714089	103.6612615	101.2239136	98.85683202	96.55758785
180918A00011	9/18/2018	3.17	9/18/2023	9/18/2018	110.05398	110.0539758	110.0539758	110.0539758	108.0443435	104.5668084	101.2211855	98.00176551	94.90311762
180918A00013	9/18/2018	3.11	9/16/2022	9/18/2018	107.00111	107.0011099	107.0011099	107.0011099	105.8773393	103.4102887	101.0137948	98.68543737	96.42289449
180920A00035	9/20/2018	3.16	9/20/2022	9/20/2018	107.15703	107.1570346	107.1570346	107.1570346	106.0247305	103.5450094	101.1364994	98.79674731	96.52339984
180921A00039	9/21/2018	3.15	9/21/2022	9/21/2018	107.1399	107.1399045	107.1399045	107.1399045	106.0057394	103.5235528	101.1127259	98.77079752	96.495407
180924A00044	9/24/2018	3.1	9/24/2021	9/24/2018	104.22733	104.2273283	104.2273283	104.2273283	103.6529069	102.1689877	100.7138857	99.28683458	97.88709449
180927A00030	9/27/2018	3.01	10/27/2020	9/27/2018	101.60552	101.6055237	101.6055237	101.6055237	101.452501	100.8708384	100.2958389	99.72738852	99.16537577
181001A00024	10/1/2018	2.95	4/15/2020	10/1/2018	100.10872	100.1087167	100.1087167	100.1087167	100.106181	100.0645844	100.0230382	99.98154249	99.94009702
181010A00018	10/10/2018	3.17	6/1/2021	10/10/2018	103.42642	103.4264199	103.4264199	103.4264199	102.9888459	101.8102352	100.6585878	99.53298582	98.4325529
181026A00019	10/29/2018	3.09	10/16/2020	10/29/2018	101.56556	101.5655563	101.5655563	101.5655563	101.4245075	100.8730791	100.3276511	99.78812577	99.25440747

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
181109A00028	11/9/2018	3.72	11/9/2026	11/9/2018	122.65986	122.6598607	122.6598607	122.2541404	115.4036906	108.7826149	102.5964924	96.81431484	91.40744468
181113A00066	11/13/2018	3.25	11/15/2021	11/13/2018	104.87902	104.8790199	104.8790199	104.8790199	104.2409043	102.6121282	101.0167826	99.45390368	97.92256442
181114A00026	11/14/2018	3.32	12/14/2022	11/14/2018	108.26547	108.2654711	108.2654711	108.2654711	106.9519996	104.2326014	101.5966837	99.04114252	96.56301303
181115A00034	11/15/2018	3.05	5/15/2020	11/15/2018	100.34279	100.3427915	100.3427915	100.3427915	100.3325104	100.2077097	100.083234	99.95908213	99.83525267
181120A00024	11/20/2018	3.25	11/20/2023	11/20/2018	110.84534	110.845343	110.845343	110.845343	108.6598758	105.0046746	101.4935181	98.11991572	94.87770888
181121A00016	11/21/2018	3.29	11/21/2023	11/21/2018	111.0004	111.0004024	111.0004024	111.0004024	108.8108932	105.1502549	101.6339349	98.25542678	95.00855717
181123A00015	11/23/2018	3.14	11/23/2021	11/23/2018	104.74417	104.7441743	104.7441743	104.7441743	104.0971628	102.4479492	100.8328831	99.25096831	97.70124765
181126A00048	11/26/2018	3.24	11/25/2022	11/26/2018	107.89256	107.8925573	107.8925573	107.8925573	106.62207	103.9576415	101.3738092	98.86762602	96.436274
181128A00010	11/28/2018	2.95	11/30/2020	11/28/2018	101.91843	101.918433	101.918433	101.918433	101.7262402	101.04936	100.3814729	99.72240067	99.07196978
181203A00053	12/4/2018	3.23	12/1/2023	12/4/2018	110.8605	110.8604956	110.8604956	110.8604956	108.6448613	104.9604966	101.4223026	98.02364718	94.75823976
181212A00033	12/12/2018	2.99	12/12/2023	12/12/2018	110.75166	110.7516563	110.7516563	110.7516563	108.4937097	104.7654844	101.1866268	97.75029359	94.4499983
181214A00012	12/14/2018	3.07	12/14/2021	12/14/2018	104.78855	104.7885454	104.7885454	104.7885454	104.1164244	102.4107266	100.7412008	99.10676031	97.50636249
181217A00052	12/17/2018	3.04	12/17/2021	12/17/2018	104.77705	104.7770461	104.7770461	104.7770461	104.1012454	102.3874284	100.7100871	99.06812112	97.46047476
181226A00034	12/26/2018	2.9	12/27/2021	12/26/2018	104.60662	104.6066246	104.6066246	104.6066246	103.9194077	102.1807493	100.4795276	98.81459835	97.18486445
181227A00026	12/27/2018	3.03	12/27/2023	12/27/2018	110.31587	110.3158707	110.3158707	110.3158707	108.0328693	104.2923671	100.7027458	97.25704297	93.94866158
171018A00002	10/18/2017	1.82	10/19/2020	10/18/2017	100.95461	100.9546054	100.9546054	100.9546054	100.810421	100.2517933	99.69935228	99.15299554	98.61262279
171026A00045	10/30/2017	2.73	10/28/2022	10/30/2017	106.33785	106.3378546	106.3378546	106.3378546	105.1338459	102.5649044	100.0721205	97.65277635	95.30426937
171030A00094	10/30/2017	2.13	11/1/2021	10/30/2017	102.96439	102.9643889	102.9643889	102.9643889	102.3481574	100.7735743	99.23085275	97.71909358	96.23743098
171031A00061	10/31/2017	2.28	10/31/2022	10/31/2017	105.18274	105.1827391	105.1827391	105.1827391	103.9786618	101.4170259	98.93159964	96.51965506	94.17858016
171116A00012	11/16/2017	2.14	7/15/2020	11/16/2017	100.55141	100.5514115	100.5514115	100.5514115	100.5074203	100.2139195	99.92214237	99.63207368	99.3436984
171128A00028	11/28/2017	2.13	5/20/2020	11/28/2017	100.25461	100.2546058	100.2546058	100.2546058	100.2425992	100.1040692	99.96593481	99.82819429	99.69084597
171129A00010	11/29/2017	2.32	11/29/2021	11/29/2017	103.41001	103.4100057	103.4100057	103.4100057	102.7599235	101.1058652	99.48631264	97.90025054	96.34670331
171201A00025	12/1/2017	2.08	5/3/2021	12/1/2017	102.16682	102.1668212	102.1668212	102.1668212	101.7669189	100.6712828	99.59914689	98.54976149	97.52240853
171205A00005	12/6/2017	2.27	12/6/2022	12/6/2017	105.84719	105.8471913	105.8471913	105.8471913	104.5585273	101.8820379	99.28764033	96.77229281	94.3330887
171206A00040	12/6/2017	2.23	12/6/2022	12/6/2017	105.73848	105.7384833	105.7384833	105.7384833	104.4504111	101.7753963	99.18243895	96.66849828	94.23066874
171207A00017	12/7/2017	2.23	10/16/2020	12/7/2017	101.09056	101.0905571	101.0905571	101.0905571	100.9498024	100.3998835	99.85595322	99.31791394	98.78567018
171213A00034	12/13/2017	2.05	12/15/2020	12/13/2017	101.3892	101.3892042	101.3892042	101.3892042	101.1792006	100.463437	99.75778379	99.06202776	98.37596156
171220A00003	12/20/2017	2.36	12/21/2020	12/20/2017	101.5475	101.5475025	101.5475025	101.5475025	101.3304776	100.599067	99.87819843	99.16764513	98.4671867
180102A00020	1/2/2018	2.5	1/3/2023	1/2/2018	106.14616	106.1461593	106.1461593	106.1461593	104.8008664	102.058898	99.40269089	96.82901032	94.33476801
180102A00021	1/2/2018	2.82	1/2/2026	1/2/2018	114.55685	114.5568501	114.5568501	114.5568501	109.3511643	103.6898508	98.3605051	93.34186354	88.61413926
180110A00027	1/10/2018	2.6	1/10/2023	1/10/2018	106.4695	106.4694968	106.4694968	106.4694968	105.1066478	102.3421761	99.6646614	97.07083596	94.55757788
180110A00028	1/10/2018	2.85	1/10/2025	1/10/2018	112.24884	112.2488428	112.2488428	112.2488428	108.7355273	103.9955946	99.49192171	95.21146103	91.14195734
180117A00011	1/17/2018	2.4	1/14/2021	1/17/2018	101.71984	101.7198376	101.7198376	101.7198376	101.4714486	100.6741817	99.88942341	99.11688104	98.35627075

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180118A00004	1/18/2018	2.88	1/17/2025	1/18/2018	112.49324	112.4932438	112.4932438	112.4932438	108.9494573	104.1852698	99.65937162	95.35858464	91.27052949
180118A00010	1/18/2018	2.51	8/18/2021	1/18/2018	103.11354	103.1135436	103.1135436	103.1135436	102.5848185	101.2086692	99.85758071	98.53092728	97.22810344
180124A00019	1/24/2018	2.41	1/24/2022	1/24/2018	104.22214	104.2221445	104.2221445	104.2221445	103.4988116	101.6845271	99.91083601	98.17656712	96.48059167
180129A00004	1/29/2018	2.63	1/31/2022	1/29/2018	104.35808	104.358083	104.358083	104.358083	103.6278931	101.7995726	100.0124242	98.26528308	96.55702478
180130A00085	1/30/2018	2.79	1/30/2025	1/30/2018	113.06709	113.0670927	113.0670927	113.0670927	109.442518	104.6059093	100.0134255	95.65149791	91.50737958
180201A00003	2/1/2018	2.54	2/1/2021	2/1/2018	101.93776	101.9377563	101.9377563	101.9377563	101.6645828	100.8176937	99.98487958	99.16579184	98.36009334
181126A00047	11/26/2018	3.19	11/26/2021	11/26/2018	104.85153	104.8515312	104.8515312	104.8515312	104.2006767	102.5423485	100.9184671	99.32802347	97.77004791
181127A00027	11/27/2018	3.25	11/28/2022	11/27/2018	107.94375	107.9437505	107.9437505	107.9437505	106.6667051	103.9935198	101.401382	98.88732052	96.44849455
181129A00027	11/29/2018	3.16	11/29/2021	11/29/2018	104.82496	104.8249601	104.8249601	104.8249601	104.1706597	102.5043705	100.872808	99.27495056	97.70981684
181211A00031	12/11/2018	2.95	12/11/2023	12/11/2018	110.59405	110.5940501	110.5940501	110.5940501	108.3402733	104.6175092	101.0438333	97.61241895	94.31679489
181212A00036	12/12/2018	2.86	6/12/2020	12/12/2018	100.5558	100.5558024	100.5558024	100.5558024	100.5335452	100.3307118	100.1287102	99.92753535	99.72718205
181217A00010	12/17/2018	3.11	12/15/2023	12/17/2018	110.52476	110.5247566	110.5247566	110.5247566	108.2731599	104.5592631	100.9940432	97.5706919	94.28275549
181218A00072	12/18/2018	3.04	12/19/2022	12/18/2018	107.53811	107.5381074	107.5381074	107.5381074	106.2177717	103.4953188	100.8568476	98.29922051	95.81944136
181219A00006	12/19/2018	3.06	12/19/2023	12/19/2018	110.3682	110.3681954	110.3681954	110.3681954	108.1068816	104.3857029	100.813887	97.38457627	94.09127116
181220A00027	12/20/2018	2.97	2/28/2022	12/20/2018	105.17612	105.1761225	105.1761225	105.1761225	104.405147	102.4881935	100.6160649	98.78744494	97.00106457
181221A00018	12/21/2018	2.98	12/21/2021	12/21/2018	104.70282	104.7028244	104.7028244	104.7028244	104.0224722	102.298763	100.6119115	98.9607998	97.34435586
181226A00024	12/26/2018	2.9	12/27/2021	12/26/2018	104.60662	104.6066246	104.6066246	104.6066246	103.9194077	102.1807493	100.4795276	98.81459835	97.18486445
190103A00010	1/3/2019	2.7	1/3/2024	1/3/2019	109.823	109.8229999	109.8229999	109.8229999	107.511689	103.7444359	100.1303552	96.66233975	93.33365701
190107A00006	1/7/2019	2.82	3/29/2021	1/7/2019	102.56106	102.5610601	102.5610601	102.5610601	102.2071647	101.2060493	100.2245143	99.26198961	98.31792681
190107A00021	1/7/2019	2.79	1/7/2021	1/7/2019	101.97556	101.975561	101.975561	101.975561	101.7364665	100.9571826	100.1898239	99.434118	98.6898009
190107A00024	1/7/2019	2.91	1/5/2024	1/7/2019	109.92789	109.9278901	109.9278901	109.9278901	107.6231947	103.8671329	100.2635183	96.80529517	93.48577828
190110A00004	1/10/2019	3.09	1/10/2025	1/10/2019	113.40411	113.4041109	113.4041109	113.4041109	109.8757632	105.1088999	100.5792664	96.27377202	92.18012041
190110A00005	1/10/2019	3.2	1/9/2026	1/10/2019	116.81208	116.8120818	116.8120818	116.8120818	111.5260045	105.7859953	100.3825422	95.29408508	90.50055917
190110A00010	1/10/2019	2.97	1/16/2024	1/10/2019	110.23668	110.2366783	110.2366783	110.2366783	107.8982727	104.1086506	100.4738707	96.98676403	93.6405346
190110A00073	1/10/2019	2.68	8/6/2021	1/10/2019	103.50486	103.5048591	103.5048591	103.5048591	102.9872761	101.6362572	100.3094059	99.00612867	97.72585082
190110A00078	1/10/2019	2.69	12/7/2021	1/10/2019	104.39558	104.3955835	104.3955835	104.3955835	103.7307807	102.0416933	100.3882317	98.76933366	97.18397954
190110A00079	1/10/2019	2.68	10/7/2021	1/10/2019	103.94527	103.9452728	103.9452728	103.9452728	103.3543392	101.8334858	100.3427427	98.88128982	97.44833679
190110A00090	1/10/2019	2.88	10/7/2020	1/10/2019	101.38396	101.3839609	101.3839609	101.3839609	101.2528005	100.7265893	100.2058458	99.69048489	99.18042347
190115A00034	1/15/2019	2.91	1/17/2023	1/15/2019	107.39029	107.3902875	107.3902875	107.3902875	106.0064176	103.2109914	100.5039277	97.88191868	95.34180169
190131A00027	1/31/2019	2.86	1/31/2023	1/31/2019	107.34804	107.3480406	107.3480406	107.3480406	105.9328997	103.1019918	100.3616456	97.70849111	95.13930202
190416A00026	4/16/2019	2.63	10/14/2021	4/16/2019	103.6511	103.6510966	103.6510966	103.6510966	103.054393	101.5217014	100.0194892	98.546919	97.10318358
190426A00012	5/1/2019	2.57	7/15/2022	5/1/2019	105.26212	105.2621224	105.2621224	105.2621224	104.2642448	101.9831583	99.76333791	97.60274509	95.49942419
190429A00012	4/29/2019	2.59	4/29/2020	4/29/2019	100.1812	100.1811959	100.1811959	100.1811959	100.1762957	100.0959286	100.0156901	99.93557981	99.85559757

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190430A00002	4/30/2019	2.4	11/2/2022	4/30/2019	105.98581	105.9858084	105.9858084	105.9858084	104.7681214	102.1805392	99.6701902	97.23429901	94.87020904
190506A00016	5/6/2019	2.56	5/6/2020	5/6/2019	100.2231	100.2231029	100.2231029	100.2231029	100.2159518	100.1161838	100.0166226	99.91726779	99.81811859
190507A00014	5/7/2019	2.6	5/7/2024	5/7/2019	109.52804	109.5280444	109.5280444	109.5280444	106.8704477	102.8067936	98.92120635	95.20492142	91.64965505
190510A00005	5/10/2019	2.47	5/10/2021	5/10/2019	102.46368	102.4636792	102.4636792	102.4636792	102.0554997	100.9419027	99.85255335	98.78666613	97.74348887
190513A00076	5/13/2019	2.42	11/12/2021	5/13/2019	103.49525	103.4952467	103.4952467	103.4952467	102.864652	101.2557445	99.67978103	98.13581568	96.62293869
190514A00013	5/14/2019	2.49	11/16/2020	5/14/2019	101.42622	101.4262157	101.4262157	101.4262157	101.2507372	100.6150621	99.98736218	99.36748802	98.75529373
190514A00015	5/14/2019	2.43	5/14/2021	5/14/2019	102.44266	102.4426642	102.4426642	102.4426642	102.0294998	100.9052904	99.80579771	98.73021304	97.67776269
190515A00055	5/15/2019	2.26	5/15/2023	5/15/2019	106.7681	106.7680955	106.7680955	106.7680955	105.0966706	101.9846823	98.98121692	96.081861	93.28240887
190515A00057	5/15/2019	2.25	5/16/2022	5/15/2019	104.58828	104.5882795	104.5882795	104.5882795	103.6939487	101.5716952	99.50338695	97.48727957	95.52169924
190516A00010	5/16/2019	2.43	5/17/2021	5/16/2019	102.4606	102.4605966	102.4605966	102.4605966	102.0436345	100.9112671	99.80397239	98.72092447	97.66133317
190517A00019	5/17/2019	2.41	5/17/2021	5/17/2019	102.43775	102.4377465	102.4377465	102.4377465	102.0208258	100.8885966	99.78143815	98.69852437	97.63906517
190520A00024	5/20/2019	2.32	5/20/2021	5/20/2019	102.53588	102.5358833	102.5358833	102.5358833	102.113921	100.9703114	99.85224361	98.75886898	97.68937617
190521A00044	5/21/2019	2.47	5/17/2021	5/21/2019	102.5063	102.5062968	102.5062968	102.5062968	102.0892521	100.9566079	99.84904086	98.76572468	97.70586917
190522A00019	5/23/2019	2.55	5/15/2024	5/23/2019	109.37088	109.3708786	109.3708786	109.3708786	106.6906086	102.6102095	98.70941655	94.97934965	91.41161847
190522A00021	5/23/2019	2.47	10/15/2021	5/23/2019	103.40796	103.407959	103.407959	103.407959	102.8107214	101.2773474	99.77449923	98.30133686	96.85705069
190523A00008	5/23/2019	2.29	5/23/2023	5/23/2019	106.91103	106.9110326	106.9110326	106.9110326	105.2185882	102.0838135	99.05892433	96.13942635	93.32103827
190524A00002	5/24/2019	2.39	5/24/2021	5/24/2019	102.45596	102.4559639	102.4559639	102.4559639	102.0302275	100.8791166	99.75390961	98.65373963	97.57777786
190524A00013	5/24/2019	2.39	5/24/2021	5/24/2019	102.45596	102.4559639	102.4559639	102.4559639	102.0302275	100.8791166	99.75390961	98.65373963	97.57777786
190524A00015	5/24/2019	2.24	5/24/2022	5/24/2019	104.61382	104.6138221	104.6138221	104.6138221	103.7059232	101.5624229	99.47379753	97.4382575	95.45408609
190524A00026	5/28/2019	2.45	6/15/2023	5/28/2019	106.97214	106.9721413	106.9721413	106.9721413	105.2301266	102.0482524	98.9794055	96.018894	93.16225271
190529A00005	5/29/2019	2.31	11/29/2021	5/29/2019	103.39316	103.393161	103.393161	103.393161	102.743129	101.0892163	99.46980674	97.88388506	96.33047577
181129A00023	11/29/2018	3.16	11/29/2021	11/29/2018	104.82496	104.8249601	104.8249601	104.8249601	104.1706597	102.5043705	100.872808	99.27495056	97.70981684
181130A00025	11/30/2018	3	6/1/2022	11/30/2018	106.33062	106.3306206	106.3306206	106.3306206	105.4021313	103.2185531	101.0911795	99.01816299	96.99773249
181206A00012	12/6/2018	3.14	12/6/2023	12/6/2018	110.56651	110.5665085	110.5665085	110.5665085	108.3395148	104.647755	101.1029661	97.6984567	94.4278817
181213A00024	12/13/2018	3.05	12/11/2020	12/13/2018	101.97731	101.9773063	101.9773063	101.9773063	101.7720379	101.0661238	100.3700013	99.68346756	99.00632519
181218A00033	12/18/2018	2.96	12/18/2020	12/18/2018	101.96618	101.9661795	101.9661795	101.9661795	101.7524052	101.0274592	100.3128407	99.60832996	98.91371344
181221A00015	12/21/2018	2.96	12/21/2020	12/21/2018	101.9887	101.9887045	101.9887045	101.9887045	101.7712609	101.0380536	100.3154067	99.60309304	98.90089199
181221A00022	12/21/2018	2.95	6/26/2020	12/21/2018	100.64811	100.6481063	100.6481063	100.6481063	100.6184474	100.3771375	100.1369867	99.8979866	99.66012893
181226A00035	12/26/2018	2.95	12/27/2022	12/26/2018	107.34951	107.3495149	107.3495149	107.3495149	106.0128704	103.2722859	100.6168014	98.04321539	95.54847141
181227A00029	12/27/2018	2.91	12/27/2021	12/27/2018	104.62424	104.6242447	104.6242447	104.6242447	103.9369723	102.198155	100.4967773	98.83169504	97.20181081
181231A00007	12/31/2018	2.86	12/31/2021	12/31/2018	104.56466	104.5646595	104.5646595	104.5646595	103.8728011	102.1239922	100.4130113	98.73869651	97.09993362
190102A00050	1/2/2019	3.38	1/3/2034	1/2/2019	145.15775	145.1577547	144.5582323	130.0493504	115.9077739	103.4112301	92.47182525	82.88401174	74.47048443
190103A00014	1/3/2019	2.8	1/4/2021	1/3/2019	101.96995	101.9699517	101.9699517	101.9699517	101.7349177	100.9637055	100.2041693	99.45604522	98.71907757

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190107A00020	1/7/2019	2.8	1/7/2021	1/7/2019	101.98339	101.9833853	101.9833853	101.9833853	101.7442827	100.9649651	100.1975731	99.4418343	98.69748462
190110A00001	1/10/2019	2.88	1/10/2022	1/10/2019	104.67194	104.671939	104.671939	104.671939	103.967133	102.1910179	100.4538264	98.75439568	97.09160867
190122A00008	1/22/2019	2.98	1/20/2023	1/22/2019	107.61038	107.6103768	107.6103768	107.6103768	106.2184784	103.412205	100.6948413	98.06306367	95.51369386
190123A00034	1/23/2019	2.98	1/23/2025	1/23/2019	113.94104	113.9410381	113.9410381	113.9410381	110.3311361	105.4911911	100.8943777	96.52721051	92.37702172
190130A00010	1/30/2019	2.89	7/30/2020	1/30/2019	100.88488	100.8848783	100.8848783	100.8848783	100.8285717	100.4930778	100.1598103	99.82874701	99.49986621
190130A00019	1/30/2019	3.01	1/30/2024	1/30/2019	110.49434	110.4943403	110.4943403	110.4943403	108.1142216	104.2844096	100.6124369	97.09099022	93.71313236
190131A00017	1/31/2019	2.83	3/25/2022	1/31/2019	105.08041	105.0804067	105.0804067	105.0804067	104.2720839	102.290764	100.3573277	98.47032016	96.62834085
190201A00016	2/1/2019	2.8	2/1/2022	2/1/2019	104.68094	104.6809397	104.6809397	104.6809397	103.9483034	102.1140235	100.3210966	98.56835107	96.8546561
190204A00036	2/4/2019	2.86	11/4/2021	2/4/2019	104.15897	104.1589676	104.1589676	104.1589676	103.53585	101.9431874	100.382835	98.85387643	97.35542999
190208A00009	2/8/2019	2.67	2/8/2024	2/8/2019	109.96286	109.9628551	109.9628551	109.9628551	107.5478593	103.6851739	99.98323641	96.43453669	93.03195383
190214A00008	2/14/2019	2.64	2/14/2023	2/14/2019	107.34131	107.3413067	107.3413067	107.3413067	105.8867093	103.0041886	100.2153451	97.51663906	94.90468413
190215A00003	2/15/2019	2.82	2/15/2022	2/15/2019	104.79603	104.7960318	104.7960318	104.7960318	104.0440771	102.1684571	100.3359431	98.54529068	96.79529921
180205A00049	2/5/2018	2.55	2/5/2021	2/5/2018	101.97133	101.9713283	101.9713283	101.9713283	101.6923002	100.8344327	99.99100997	99.16166939	98.34606046
180205A00050	2/5/2018	2.81	2/6/2023	2/5/2018	107.24589	107.2458915	107.2458915	107.2458915	105.8173422	102.9708339	100.2159106	97.54914527	94.96725758
180207A00022	2/7/2018	2.79	2/7/2023	2/7/2018	107.19505	107.1950537	107.1950537	107.1950537	105.7644716	102.9158516	100.158976	97.49040825	94.90685954
180215A00029	2/15/2018	2.65	2/16/2021	2/15/2018	102.12956	102.1295574	102.1295574	102.1295574	101.8343474	100.9459812	100.0730922	99.21527826	98.37215114
180216A00004	2/16/2018	2.75	2/16/2023	2/16/2018	107.67608	107.6760812	107.6760812	107.6760812	106.2147736	103.3216804	100.522743	97.81439777	95.1932356
180223A00022	2/23/2018	2.93	2/23/2023	2/23/2018	107.7138	107.7138009	107.7138009	107.7138009	106.2427742	103.3412151	100.5344364	97.81883713	95.19097304
180226A00040	2/26/2018	2.79	2/28/2022	2/26/2018	104.82767	104.8276668	104.8276668	104.8276668	104.0579187	102.1443942	100.2756292	98.45030897	96.66716648
180227A00004	2/27/2018	2.67	3/26/2021	2/27/2018	102.3901	102.390102	102.390102	102.390102	102.0406702	101.0485571	100.0757022	99.12154875	98.18556123
180302A00020	3/2/2018	2.79	3/17/2022	3/2/2018	104.945	104.9449963	104.9449963	104.9449963	104.1492147	102.1901309	100.2779112	98.41114667	96.58848057
180321A00005	3/21/2018	2.65	3/22/2021	3/21/2018	102.50165	102.5016536	102.5016536	102.5016536	102.1568161	101.1726586	100.2074339	99.26059939	98.33163302
180327A00013	3/27/2018	2.77	3/26/2021	3/27/2018	102.48995	102.4899526	102.4899526	102.4899526	102.140372	101.1477246	100.1743426	99.21966923	98.28316869
180327A00027	3/27/2018	2.88	3/28/2022	3/27/2018	105.2021	105.2021024	105.2021024	105.2021024	104.3888136	102.39843	100.4563286	98.56103693	96.71113749
180402A00028	4/2/2018	2.58	4/1/2021	4/2/2018	102.50082	102.500817	102.500817	102.500817	102.1420065	101.1308122	100.1395916	99.16775729	98.2147449
180402A00047	4/2/2018	2.63	4/2/2020	4/2/2018	100.01272	100.0127182	100.0127182	100.0127182	100.0123801	100.0068337	100.0012919	99.99575488	99.99022258
180410A00016	4/10/2018	2.89	4/11/2022	4/10/2018	105.32241	105.3224117	105.3224117	105.3224117	104.4862791	102.4569621	100.4775166	98.54639584	96.66211222
180412A00036	4/12/2018	3.54	4/15/2038	4/12/2018	161.94562	161.9456197	154.9147499	135.1530089	117.1794767	101.9149963	89.02090212	78.10600065	68.84606888
180416A00015	4/16/2018	2.79	4/14/2022	4/16/2018	105.51386	105.5138555	105.5138555	105.5138555	104.6689803	102.6224672	100.6264921	98.67947876	96.77991166
180424A00035	4/24/2018	2.8	4/24/2020	4/24/2018	100.16395	100.1639506	100.1639506	100.1639506	100.1598944	100.0933633	100.0269295	99.96059282	99.89435296
180426A00011	4/26/2018	2.94	4/26/2023	4/26/2018	108.76886	108.7688646	108.7688646	108.7688646	107.1318106	104.0381867	101.0508078	98.16541732	95.37795586
180430A00013	4/30/2018	3.01	2/15/2022	4/30/2018	105.15702	105.1570241	105.1570241	105.1570241	104.4038251	102.5247124	100.6887719	98.89475724	97.14146611
180430A00014	4/30/2018	3.01	3/15/2022	4/30/2018	105.36619	105.3661948	105.3661948	105.3661948	104.5719022	102.6138063	100.7024095	98.8363115	97.01416407

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180430A00078	10/30/2018	3.24	10/30/2023	10/30/2018	110.63899	110.6389859	110.6389859	110.6389859	108.5125155	104.9163835	101.4601931	98.13772225	94.94306198
180514A00033	5/14/2018	3.36	5/15/2028	5/14/2018	126.58402	126.5840215	126.5840215	124.3361585	115.7907788	107.7378361	100.3214274	93.48756712	87.18712307
180517A00059	5/17/2018	3.13	5/17/2022	5/17/2018	106.0965	106.0965016	106.0965016	106.0965016	105.1978646	103.0640898	100.9843804	98.95699136	96.98024789
190131A00048	1/31/2019	2.8	7/31/2020	1/31/2019	100.86172	100.8617173	100.8617173	100.8617173	100.8046007	100.4664036	100.130467	99.79676833	99.46528549
190201A00009	2/1/2019	2.8	2/4/2022	2/1/2019	104.70157	104.7015671	104.7015671	104.7015671	103.9647726	102.1215954	100.3201464	98.55923851	96.837726
190201A00011	2/1/2019	2.8	2/4/2022	2/1/2019	104.70157	104.7015671	104.7015671	104.7015671	103.9647726	102.1215954	100.3201464	98.55923851	96.837726
190208A00008	2/8/2019	2.86	2/8/2024	2/8/2019	109.97747	109.9774716	109.9774716	109.9774716	107.576371	103.7323612	100.047847	96.51539574	93.12795926
190211A00002	2/11/2019	2.88	2/12/2024	2/11/2019	110.0835	110.0835047	110.0835047	110.0835047	107.6699675	103.8132022	100.1168716	96.57348001	93.17592041
190211A00011	2/11/2019	2.8	2/11/2022	2/11/2019	104.7497	104.749698	104.749698	104.749698	104.0032022	102.1392725	100.3179521	98.53801733	96.79828738
190214A00013	2/14/2019	2.64	2/14/2023	2/14/2019	107.34131	107.3413067	107.3413067	107.3413067	105.8867093	103.0041886	100.2153451	97.51663906	94.90468413
190222A00029	2/22/2019	2.62	2/22/2021	2/22/2019	102.27771	102.2777126	102.2777126	102.2777126	101.9729068	101.065719	100.1746445	99.29925651	98.4391436
190225A00039	2/25/2019	2.62	2/25/2022	2/25/2019	104.83021	104.8302102	104.8302102	104.8302102	104.0617739	102.1504941	100.2838512	98.46053623	96.67928748
190228A00035	2/28/2019	2.8	2/26/2021	2/28/2019	102.33311	102.3331146	102.3331146	102.3331146	102.0231096	101.1067189	100.2067625	99.32280133	98.45441185
190228A00036	2/28/2019	2.81	2/28/2022	2/28/2019	104.86638	104.8663841	104.8663841	104.8663841	104.0964996	102.1825941	100.3134554	98.48776852	96.70426627
190301A00012	3/1/2019	3.41	3/1/2029	3/1/2019	127.69738	127.6973789	127.6973789	124.4732392	115.2201016	106.5809483	98.68031401	91.45069659	84.8310999
190311A00003	3/11/2019	2.68	9/10/2021	3/11/2019	103.50389	103.5038932	103.5038932	103.5038932	102.9477859	101.5074331	100.0943662	98.70787756	97.34728315
190314A00027	3/22/2019	2.92	3/21/2025	3/22/2019	113.13765	113.1376485	113.1376485	113.1376485	109.3450611	104.405616	99.72145633	95.27805163	91.06177251
190318A00024	3/18/2019	2.57	3/18/2024	3/18/2019	109.83648	109.8364782	109.8364782	109.8364782	107.3091484	103.3469117	99.55391007	95.92202931	92.4435874
190319A00008	3/19/2019	2.72	3/21/2022	3/19/2019	104.83303	104.8330341	104.8330341	104.8330341	104.0316389	102.0632561	100.1422108	98.26707223	96.43646267
190321A00003	3/21/2019	2.67	3/21/2024	3/21/2019	109.5114	109.511402	109.511402	109.511402	106.9934789	103.0499368	99.27472896	95.65978728	92.19747347
190321A00029	3/21/2019	2.62	3/22/2021	3/21/2019	102.31415	102.3141502	102.3141502	102.3141502	101.9704399	100.9895097	100.0274213	99.08363535	98.15763318
190328A00033	4/25/2019	2.56	4/25/2024	4/25/2019	109.28805	109.2880486	109.2880486	109.2880486	106.6689719	102.6404694	98.78742132	95.10124655	91.57383115
190328A00053	3/28/2019	2.33	3/28/2022	3/28/2019	104.46028	104.4602757	104.4602757	104.4602757	103.6467394	101.6571382	99.71595633	97.82171312	95.97298375
190329A00018	3/29/2019	2.6	3/29/2024	3/29/2019	109.28169	109.2816864	109.2816864	109.2816864	106.742732	102.7838369	98.99485679	95.36760384	91.89432862
190401A00006	4/1/2019	2.58	4/1/2022	4/1/2019	104.62341	104.6234106	104.6234106	104.6234106	103.8061294	101.8111495	99.86481807	97.96564352	96.1121905
190401A00007	4/1/2019	2.6	4/3/2023	4/1/2019	106.99485	106.994849	106.994849	106.994849	105.4342712	102.4420418	99.55097376	96.75708717	94.05658202
190401A00023	4/1/2019	2.54	4/1/2021	4/1/2019	102.29798	102.2979807	102.2979807	102.2979807	101.9403752	100.9325988	99.94469867	98.97609133	98.02621582
181001A00049	10/1/2018	3.01	10/1/2020	10/1/2018	101.40662	101.4066168	101.4066168	101.4066168	101.2819659	100.7721319	100.2674203	99.76775418	99.27305834
181001A00074	10/1/2018	3.03	10/3/2022	10/1/2018	107.39662	107.3966225	107.3966225	107.3966225	106.232699	103.7056365	101.25225	98.86996063	96.55629674
181005A00005	10/5/2018	3.31	10/5/2023	10/5/2018	110.68447	110.6844732	110.6844732	110.6844732	108.6247311	105.0919102	101.6946034	98.4268748	95.28308196
181005A00016	10/5/2018	3.26	1/10/2023	10/5/2018	108.32236	108.3223626	108.3223626	108.3223626	106.9489529	104.1585648	101.4557516	98.83722566	96.29984614
181009A00060	10/9/2018	3.07	10/12/2021	10/9/2018	104.58689	104.5868889	104.5868889	104.5868889	103.9882121	102.4489179	100.9402287	99.46130455	98.01133594
181010A00021	10/10/2018	3.29	3/15/2023	10/10/2018	108.93282	108.9328158	108.9328158	108.9328158	107.4062256	104.4339842	101.5604146	98.7817018	96.09420057

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
181016A00004	10/16/2018	3.07	10/16/2020	10/16/2018	101.55451	101.5545098	101.5545098	101.5545098	101.4134679	100.8620746	100.3166814	99.77719061	99.2435066
181016A00087	10/16/2018	3.31	10/16/2023	10/16/2018	110.77575	110.7757511	110.7757511	110.7757511	108.6857198	105.1230418	101.6978727	98.40414971	95.23611206
181022A00029	10/22/2018	3.22	10/24/2022	10/22/2018	107.58126	107.5812635	107.5812635	107.5812635	106.3789385	103.8042522	101.3055623	98.88016734	96.5254802
181023A00025	10/23/2018	3.27	10/23/2023	10/23/2018	110.69007	110.6900697	110.6900697	110.6900697	108.5819495	105.0028306	101.5624256	98.25459284	95.07349797
181023A00052	10/23/2018	3.15	10/23/2023	10/23/2018	110.93157	110.9315739	110.9315739	110.9315739	108.8098756	105.2097018	101.7494162	98.42281043	95.22398751
181102A00023	11/2/2018	3.09	5/1/2020	11/2/2018	100.23677	100.2367659	100.2367659	100.2367659	100.2313479	100.1454086	100.0596163	99.97397045	99.88847083
181109A00029	11/9/2018	3.72	11/9/2026	11/9/2018	122.65986	122.6598607	122.6598607	122.2541404	115.4036906	108.7826149	102.5964924	96.81431484	91.40744468
181115A00012	11/15/2018	3.14	11/16/2020	11/15/2018	101.84111	101.8411076	101.8411076	101.8411076	101.6653093	101.0281407	100.3989606	99.77761948	99.16397118
181115A00028	11/15/2018	2.95	11/16/2020	11/15/2018	101.80847	101.8084735	101.8084735	101.8084735	101.6323692	100.9941988	100.3640455	99.74175854	99.12719116
181115A00055	11/15/2018	3.01	11/15/2021	11/15/2018	104.76624	104.7662427	104.7662427	104.7662427	104.1264435	102.4938493	100.8948423	99.32845244	97.79374654
181116A00010	11/16/2018	3.04	5/15/2020	11/16/2018	100.34154	100.341542	100.341542	100.341542	100.3312609	100.2064616	100.0819874	99.95783684	99.83400876
181120A00023	11/20/2018	3.15	11/19/2021	11/20/2018	104.72935	104.7293454	104.7293454	104.7293454	104.0870787	102.4489177	100.844527	99.27292723	97.73317678
181206A00010	12/6/2018	3.09	12/6/2021	12/6/2018	104.76118	104.7611765	104.7611765	104.7611765	104.0987103	102.4143863	100.7654514	99.15085407	97.56958482
181207A00004	12/7/2018	3.05	12/7/2020	12/7/2018	101.94628	101.9462751	101.9462751	101.9462751	101.7459028	101.0510188	100.3656218	99.68951844	99.02252038
181211A00019	12/11/2018	3.04	12/11/2020	12/11/2018	101.97023	101.9702302	101.9702302	101.9702302	101.7649681	101.0590819	100.362987	99.67648054	98.99936521
181213A00031	12/13/2018	2.97	12/13/2023	12/13/2018	110.68466	110.6846623	110.6846623	110.6846623	108.424502	104.6949424	101.1149084	97.67754501	94.37635458
181219A00005	12/19/2018	3.06	12/19/2023	12/19/2018	110.3682	110.3681954	110.3681954	110.3681954	108.1068816	104.3857029	100.813887	97.38457627	94.09127116
181226A00033	12/26/2018	2.87	12/28/2020	12/26/2018	101.97334	101.9733363	101.9733363	101.9733363	101.7473987	100.995204	100.2541152	99.52388745	98.80428341
181227A00028	12/27/2018	3.46	12/27/2028	12/27/2018	127.59937	127.5993749	127.5993749	124.6082184	115.5270697	107.026229	99.23871265	92.10040319	85.55327801
181228A00006	12/28/2018	2.86	11/13/2020	12/28/2018	101.64076	101.6407569	101.6407569	101.6407569	101.4685335	100.8402778	100.2198002	99.60695689	99.00160741
190102A00026	1/2/2019	2.62	1/4/2022	1/2/2019	104.47025	104.4702501	104.4702501	104.4702501	103.771377	102.0075436	100.2821564	98.59404539	96.94208811
190102A00041	1/2/2019	2.91	1/2/2024	1/2/2019	109.90631	109.9063101	109.9063101	109.9063101	107.6102453	103.862166	100.2659185	96.81447643	93.50118294
190107A00028	1/7/2019	2.62	1/7/2022	1/7/2019	104.49107	104.4910679	104.4910679	104.4910679	103.7883324	102.0163815	100.2832056	98.58763465	96.92854504
190107A00035	1/7/2019	2.82	10/15/2021	1/7/2019	103.95403	103.9540321	103.9540321	103.9540321	103.3553114	101.8175386	100.3103691	98.83296075	97.38450184
190108A00023	1/8/2019	2.77	1/9/2023	1/8/2019	107.45583	107.4558311	107.4558311	107.4558311	106.0833549	103.2963888	100.5971405	97.98230624	95.44872992
190109A00010	1/9/2019	2.98	1/9/2023	1/9/2019	107.52889	107.5288905	107.5288905	107.5288905	106.1622585	103.3855546	100.6960044	98.09033315	95.56541253
190110A00012	1/10/2019	2.97	1/18/2024	1/10/2019	110.25139	110.2513946	110.2513946	110.2513946	107.9072311	104.1122825	100.4725901	96.98096505	93.63059185
190110A00014	1/10/2019	2.97	1/17/2024	1/10/2019	110.24404	110.2440365	110.2440365	110.2440365	107.9027518	104.1104663	100.47323	96.9838639	93.63556229
190110A00080	1/10/2019	2.68	6/7/2021	1/10/2019	103.0785	103.0785021	103.0785021	103.0785021	102.6330761	101.4376109	100.2699411	99.12910563	98.01418716
190111A00010	1/11/2019	2.87	1/7/2022	1/11/2019	104.63247	104.6324695	104.6324695	104.6324695	103.9315712	102.1637138	100.4344487	98.74261337	97.08709184
190111A00037	1/11/2019	2.68	1/11/2022	1/11/2019	104.6272	104.6272034	104.6272034	104.6272034	103.9189666	102.1351938	100.3906551	98.68417909	97.01464057
190114A00040	1/14/2019	2.89	1/14/2025	1/14/2019	113.43364	113.4336413	113.4336413	113.4336413	109.8642331	105.0584906	100.4932115	96.15507874	92.0315847
190114A00043	1/14/2019	2.88	1/14/2022	1/14/2019	104.70067	104.7006665	104.7006665	104.7006665	103.9907274	102.2038236	100.4562829	98.74694214	97.07468271

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190117A00043	1/17/2019	2.88	7/17/2020	1/17/2019	100.78669	100.7866906	100.7866906	100.7866906	100.741009	100.4415138	100.1438095	99.84787991	99.55370924
190122A00007	1/22/2019	3.03	1/22/2024	1/22/2019	110.51148	110.5114771	110.5114771	110.5114771	108.153702	104.3437558	100.6900263	97.18527925	93.82265536
190122A00045	1/22/2019	3.17	1/22/2027	1/22/2019	121.00246	121.0024614	121.0024614	120.3292153	113.2497523	106.4650604	100.141038	94.24391151	88.74255168
190130A00012	1/30/2019	2.92	1/31/2022	1/30/2019	104.89711	104.8971092	104.8971092	104.8971092	104.1651108	102.3316842	100.5395255	98.7874671	97.07438205
190130A00018	1/30/2019	2.95	10/17/2022	1/30/2019	106.82998	106.8299834	106.8299834	106.8299834	105.6455918	103.0988796	100.6270259	98.22738451	95.89742015
190131A00018	1/31/2019	2.83	3/25/2022	1/31/2019	105.08041	105.0804067	105.0804067	105.0804067	104.2720839	102.290764	100.3573277	98.47032016	96.62834085
190213A00023	2/13/2019	2.93	2/13/2024	2/13/2019	110.28579	110.285787	110.285787	110.285787	107.8675023	104.0041851	100.3016401	96.75235185	93.34919484
190226A00020	2/26/2019	2.64	2/26/2024	2/26/2019	109.97091	109.9709055	109.9709055	109.9709055	107.5039001	103.592435	99.84572784	96.25598946	92.81583941
190227A00005	2/27/2019	2.87	2/27/2024	2/27/2019	110.14989	110.1498874	110.1498874	110.1498874	107.6928082	103.7945765	100.0601283	96.48173635	93.05207785
190529A00014	5/29/2019	2.47	5/29/2020	5/29/2019	100.3595	100.3595049	100.3595049	100.3595049	100.344368	100.1808209	100.0178069	99.85532332	99.69336771
190529A00028	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190529A00049	5/29/2019	2.32	6/29/2021	5/29/2019	102.56549	102.5654895	102.5654895	102.5654895	102.0955154	100.8475349	99.6299603	98.44169105	97.28167896
190529A00080	5/29/2019	2.31	11/29/2021	5/29/2019	103.39316	103.393161	103.393161	103.393161	102.743129	101.0892163	99.46980674	97.88388506	96.33047577
190530A00026	5/30/2019	2.36	5/26/2021	5/30/2019	102.43267	102.4326748	102.4326748	102.4326748	102.0044734	100.8481459	99.71795894	98.61303368	97.53253028
190530A00047	5/30/2019	2.36	5/28/2021	5/30/2019	102.44424	102.4442423	102.4442423	102.4442423	102.0135115	100.851754	99.71637742	98.60649102	97.52124376
190603A00003	6/3/2019	2.05	6/3/2024	6/3/2019	108.1612	108.1612006	108.1612006	108.1612006	105.4188165	101.2944527	97.35435827	93.58929595	89.99054547
190603A00005	6/3/2019	2.25	6/3/2024	6/3/2019	108.22582	108.2258234	108.2258234	108.2258234	105.4997448	101.3954279	97.47391179	93.726057	90.1432341
190603A00019	6/3/2019	2.19	6/3/2021	6/3/2019	102.27664	102.2766388	102.2766388	102.2766388	101.8388096	100.6620305	99.51234904	98.38883769	97.29061077
190603A00032	6/3/2019	1.98	6/3/2022	6/3/2019	104.09996	104.0999583	104.0999583	104.0999583	103.177172	101.0129462	98.90466842	96.85049351	94.84865275
190604A00047	6/4/2019	2.31	12/4/2020	6/4/2019	101.41373	101.4137288	101.4137288	101.4137288	101.2174661	100.5328099	99.85739513	99.19103549	98.53354982
190605A00012	6/5/2019	1.92	6/6/2022	6/5/2019	103.98276	103.9827618	103.9827618	103.9827618	103.0552414	100.8842352	98.76952586	96.70925035	94.70162298
190605A00020	6/5/2019	2.19	2/5/2024	6/5/2019	107.35513	107.3551309	107.3551309	107.3551309	104.9868357	101.200772	97.57203504	94.09329591	90.75760418
190607A00009	6/7/2019	2.14	6/7/2022	6/7/2019	104.07382	104.0738223	104.0738223	104.0738223	103.1478036	100.9808747	98.87004476	96.81345925	94.80934075
190610A00017	6/10/2019	2.29	6/10/2024	6/10/2019	108.43239	108.4323914	108.4323914	108.4323914	105.6825107	101.5561153	97.61418153	93.84745041	90.24718213
190613A00051	6/13/2019	2.29	12/14/2020	6/13/2019	101.45647	101.4564729	101.4564729	101.4564729	101.2480296	100.5360096	99.83398958	99.14175991	98.45911662
190614A00013	6/14/2019	2.15	6/15/2020	6/14/2019	100.42877	100.4287652	100.4287652	100.4287652	100.404933	100.1939925	99.98395206	99.77480591	99.56654824
190614A00018	6/14/2019	2.21	6/14/2021	6/14/2019	102.35919	102.3591925	102.3591925	102.3591925	101.9078113	100.7010791	99.522832	98.37207041	97.24784094
190620A00057	6/25/2019	2.09	5/15/2023	6/25/2019	105.65382	105.6538188	105.6538188	105.6538188	103.9982361	100.9171663	97.94339965	95.07257989	92.30055566
190621A00019	6/21/2019	2.12	6/21/2021	6/21/2019	102.27268	102.2726801	102.2726801	102.2726801	101.8130331	100.5883431	99.39300691	98.22597881	97.0862623
190621A00021	6/21/2019	2.12	6/21/2022	6/21/2019	104.09994	104.0999372	104.0999372	104.0999372	103.1495989	100.9448844	98.79803345	96.70710304	94.67023253
190621A00040	6/21/2019	2.12	6/21/2021	6/21/2019	102.27268	102.2726801	102.2726801	102.2726801	101.8130331	100.5883431	99.39300691	98.22597881	97.0862623
190625A00008	6/25/2019	2.04	6/27/2022	6/25/2019	103.94892	103.9489195	103.9489195	103.9489195	102.9888585	100.7698193	98.60936953	96.50552891	94.45640161
190625A00016	6/25/2019	2.13	6/25/2024	6/25/2019	107.83113	107.8311337	107.8311337	107.8311337	105.0413768	100.8893487	96.92465756	93.1378146	89.51986831

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190222A00028	2/22/2019	2.62	2/22/2022	2/22/2019	104.8095	104.8094983	104.8094983	104.8094983	104.0452381	102.142885	100.2847808	98.46963305	96.69619568
190313A00011	3/13/2019	2.53	3/11/2022	3/13/2019	104.74996	104.7499574	104.7499574	104.7499574	103.9610567	102.0130076	100.1113163	98.25459719	96.44151558
190321A00021	3/21/2019	2.67	3/21/2024	3/21/2019	109.5114	109.511402	109.511402	109.511402	106.9934789	103.0499368	99.27472896	95.65978728	92.19747347
190326A00004	3/26/2019	2.58	9/26/2023	3/26/2019	108.04029	108.0402892	108.0402892	108.0402892	106.0255484	102.5619365	99.23086221	96.02654612	92.9434927
190326A00014	3/26/2019	2.56	9/28/2020	3/26/2019	101.15763	101.1576279	101.1576279	101.1576279	101.0364108	100.5355201	100.0395846	99.54853111	99.06228792
190328A00019	3/28/2019	2.56	3/28/2024	3/28/2019	109.11433	109.1143329	109.1143329	109.1143329	106.5799193	102.6267975	98.84327262	95.22117649	91.75277816
190328A00024	3/28/2019	2.5	4/23/2021	3/28/2019	102.39262	102.392624	102.392624	102.392624	102.0062301	100.9387194	99.89350221	98.8698856	97.86720501
190328A00032	4/25/2019	2.48	4/26/2021	4/25/2019	102.38938	102.38938	102.38938	102.38938	101.9990898	100.9235356	99.87060819	98.83959932	97.82982986
190329A00017	3/29/2019	2.59	3/29/2023	3/29/2019	106.93292	106.9329208	106.9329208	106.9329208	105.3849766	102.4067184	99.52878586	96.74724727	94.05834804
190410A00005	4/10/2019	2.49	10/13/2020	4/10/2019	101.29087	101.2908724	101.2908724	101.2908724	101.1530005	100.6097321	100.0723021	99.54061643	99.01458323
190423A00049	4/23/2019	2.6	4/23/2021	4/23/2019	102.50023	102.5002291	102.5002291	102.5002291	102.1136565	101.0455291	99.99970423	98.97548874	97.97221782
190424A00004	4/24/2019	2.55	4/23/2021	4/24/2019	102.44643	102.4464265	102.4464265	102.4464265	102.0599433	100.9921242	99.94660322	98.92268717	97.91971141
190424A00009	4/24/2019	2.48	4/24/2020	4/24/2019	100.1573	100.1573023	100.1573023	100.1573023	100.1532377	100.0865697	100.0200008	99.95353057	99.88715894
190424A00022	4/24/2019	2.62	4/24/2023	4/24/2019	107.18965	107.1896476	107.1896476	107.1896476	105.5759413	102.5251332	99.57888396	96.73301698	93.98354836
190430A00013	4/30/2019	2.52	4/30/2021	4/30/2019	102.45757	102.4575693	102.4575693	102.4575693	102.0619642	100.9752742	99.91166347	98.8704028	97.85079346
190502A00009	5/2/2019	2.56	5/3/2021	5/2/2019	102.5204	102.5203988	102.5203988	102.5203988	102.1209154	101.0257922	99.95410273	98.90510096	97.87807208
190502A00027	5/2/2019	2.42	5/2/2022	5/2/2019	104.86488	104.8648848	104.8648848	104.8648848	103.9930489	101.904579	99.8685164	97.88319301	95.94700671
190507A00023	5/7/2019	2.52	5/7/2021	5/7/2019	102.50116	102.5011555	102.5011555	102.5011555	102.0966786	100.9909175	99.9090557	98.85032458	97.81398807
190509A00030	5/9/2019	2.48	11/9/2021	5/9/2019	103.57534	103.575343	103.575343	103.575343	102.9480273	101.3466073	99.77786772	98.24087449	96.73472907
190510A00004	5/10/2019	2.54	11/10/2020	5/10/2019	101.4202	101.4201985	101.4201985	101.4201985	101.2515598	100.6322746	100.0205582	99.41627236	98.81928207
190514A00021	5/14/2019	2.72	11/14/2025	5/14/2019	113.65479	113.6547873	113.6547873	113.6547873	108.73487	103.2124079	98.00761083	93.10051805	88.4725272
190515A00011	5/15/2019	2.38	5/17/2021	5/15/2019	102.40347	102.4034714	102.4034714	102.4034714	101.9866126	100.8545909	99.7476368	98.66492421	97.60566318
190516A00027	5/16/2019	2.43	5/17/2021	5/16/2019	102.4606	102.4605966	102.4605966	102.4605966	102.0436345	100.9112671	99.80397239	98.72092447	97.66133317
190520A00036	5/20/2019	2.43	11/19/2021	5/20/2019	103.53643	103.5364275	103.5364275	103.5364275	102.8976484	101.2696461	99.67523178	98.11343118	96.58330756
180522A00005	5/22/2018	3.16	5/22/2023	5/22/2018	109.08118	109.0811832	109.0811832	109.0811832	107.3849859	104.2323597	101.1895614	98.252119	95.41577173
180522A00018	5/22/2018	3.1	5/23/2022	5/22/2018	106.07849	106.0784892	106.0784892	106.0784892	105.1698249	103.0204896	100.9259075	98.88429975	96.89396001
180522A00037	5/22/2018	3.01	5/22/2023	5/22/2018	109.19458	109.1945777	109.1945777	109.1945777	107.4890917	104.3209346	101.2634366	98.31208101	95.46256513
180525A00016	5/25/2018	2.72	5/25/2021	5/25/2018	103.03277	103.0327677	103.0327677	103.0327677	102.6035861	101.4434559	100.3095139	99.20088058	98.11671548
180530A00026	5/30/2018	3.55	5/30/2031	5/30/2018	136.10926	136.109261	136.109261	128.4994458	116.9299286	106.3999035	96.96063599	88.49185608	80.88718574
180530A00039	5/30/2018	2.93	5/30/2023	5/30/2018	108.41002	108.4100156	108.4100156	108.4100156	106.6983739	103.5357548	100.4839962	97.53855641	94.69510977
180530A00077	5/30/2018	2.93	5/30/2023	5/30/2018	108.41002	108.4100156	108.4100156	108.4100156	106.6983739	103.5357548	100.4839962	97.53855641	94.69510977
180614A00033	6/15/2018	2.82	7/10/2020	6/15/2018	100.71603	100.7160266	100.7160266	100.7160266	100.6760756	100.3960382	100.117567	99.84064888	99.56527077
180615A00063	6/15/2018	3.2	6/15/2026	6/15/2018	119.33156	119.3315643	119.3315643	119.3315643	113.0058524	106.7798796	100.9436469	95.47061249	90.33618335

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180618A00025	6/18/2018	3.01	4/13/2022	6/18/2018	105.58359	105.5835919	105.5835919	105.5835919	104.7432192	102.7057515	100.7184272	98.77968761	96.88803404
180619A00021	6/19/2018	3.24	6/19/2028	6/19/2018	125.90039	125.9003865	125.9003865	123.5380629	114.9210968	106.8181212	99.36292005	92.49997115	86.17879662
180619A00023	6/19/2018	3.04	6/19/2023	6/19/2018	108.91199	108.9119871	108.9119871	108.9119871	107.1462684	103.9227329	100.8137468	97.81454644	94.92059881
180620A00014	6/20/2018	3.4	6/20/2028	6/20/2018	125.48289	125.4828857	125.4828857	123.1543361	114.6363061	106.6135274	99.22974694	92.43034554	86.16565421
180620A00017	6/20/2018	3.24	6/20/2028	6/20/2018	125.90897	125.9089669	125.9089669	123.5433194	114.92337	106.8178749	99.36054361	92.49580473	86.1731369
180620A00026	6/20/2018	2.91	6/18/2021	6/20/2018	103.22999	103.2299854	103.2299854	103.2299854	102.7720689	101.5491841	100.3553758	99.18961529	98.05092231
180622A00004	6/22/2018	3.47	12/22/2028	6/22/2018	127.64402	127.6440191	127.6440191	124.6708362	115.6007865	107.1082994	99.32741272	92.19425154	85.65100457
180627A00057	6/27/2018	2.98	6/27/2022	6/27/2018	106.07738	106.0773826	106.0773826	106.0773826	105.1082151	102.8648866	100.6806528	98.55351846	96.4815734
180705A00057	7/5/2018	2.81	7/6/2020	7/5/2018	100.6876	100.6875994	100.6875994	100.6875994	100.6509135	100.3819275	100.1143835	99.84827	99.58357549
180705A00060	7/5/2018	3	7/6/2022	7/5/2018	106.18987	106.1898654	106.1898654	106.1898654	105.2041555	102.9357659	100.727674	98.57785262	96.48435976
180716A00034	7/16/2018	2.89	7/14/2023	7/16/2018	109.21941	109.2194108	109.2194108	109.2194108	107.3782522	104.069993	100.8817405	97.80846084	94.84536286
180717A00076	7/17/2018	3.03	7/17/2023	7/17/2018	109.0902	109.0901995	109.0901995	109.0901995	107.2518039	103.9527356	100.7732885	97.70845917	94.75348328
180719A00058	7/19/2018	2.9	7/20/2020	7/19/2018	100.81474	100.8147376	100.8147376	100.8147376	100.7666024	100.4587868	100.1528604	99.84880579	99.5466057
180720A00006	7/20/2018	3.03	7/17/2023	7/20/2018	109.0902	109.0901995	109.0901995	109.0901995	107.2518039	103.9527356	100.7732885	97.70845917	94.75348328
180720A00010	7/20/2018	2.86	7/20/2020	7/20/2018	100.80241	100.8024105	100.8024105	100.8024105	100.7542784	100.4464872	100.1405852	99.83655471	99.5343787
190402A00004	4/2/2019	2.9	4/2/2029	4/2/2019	125.27376	125.2737648	125.2737648	121.884363	112.5402109	103.8618098	95.93809231	88.69909437	82.08168406
190404A00003	4/4/2019	2.47	4/4/2024	4/4/2019	109.5458	109.5458	109.5458	109.5458	106.9711176	102.9715582	99.14470365	95.48218251	91.9760744
190416A00019	4/16/2019	2.7	4/14/2023	4/16/2019	107.37109	107.3710939	107.3710939	107.3710939	105.7809116	102.7538176	99.82976264	97.00466097	94.27461345
190422A00084	4/22/2019	2.6	4/22/2021	4/22/2019	102.4938	102.4938044	102.4938044	102.4938044	102.1085439	101.0431427	99.9999326	98.97822544	97.9773613
190426A00016	5/1/2019	2.58	4/14/2023	5/1/2019	107.00315	107.0031521	107.0031521	107.0031521	105.415348	102.3938501	99.47524921	96.65546437	93.93060101
190426A00033	6/27/2019	2.55	6/27/2022	6/27/2019	105.10372	105.103724	105.103724	105.103724	104.1387222	101.9065047	99.73315087	97.61667218	95.55516503
190501A00003	5/1/2019	2.61	5/1/2024	5/1/2019	109.53122	109.5312164	109.5312164	109.5312164	106.8918157	102.8430677	98.97116224	95.26742389	91.72365111
190506A00034	5/6/2019	2.56	5/6/2020	5/6/2019	100.2231	100.2231029	100.2231029	100.2231029	100.2159518	100.1161838	100.0166226	99.91726779	99.81811859
190507A00022	5/7/2019	2.56	5/7/2020	5/7/2019	100.22932	100.2293234	100.2293234	100.2293234	100.2218253	100.1192859	100.016966	99.91486468	99.81298136
190510A00009	5/10/2019	2.47	11/10/2021	5/10/2019	103.56508	103.5650758	103.5650758	103.5650758	102.9366195	101.3325646	99.7612803	98.2218286	96.7133071
190513A00010	5/13/2019	2.41	5/13/2020	5/13/2019	100.27361	100.2736057	100.2736057	100.2736057	100.264005	100.1445822	100.0254601	99.90663767	99.78811363
190514A00023	5/14/2019	2.43	5/14/2021	5/14/2019	102.44266	102.4426642	102.4426642	102.4426642	102.0294998	100.9052904	99.80579771	98.73021304	97.67776269
190514A00024	5/14/2019	2.34	5/14/2024	5/14/2019	109.26365	109.2636477	109.2636477	109.2636477	106.5710374	102.4742971	98.5583585	94.81426372	91.23354964
190515A00008	5/15/2019	2.41	11/15/2021	5/15/2019	103.49645	103.4964511	103.4964511	103.4964511	102.8623454	101.2452718	99.66141921	98.10982957	96.58958149
190515A00013	5/15/2019	2.45	11/16/2020	5/15/2019	101.40068	101.4006839	101.4006839	101.4006839	101.225225	100.5896418	99.96203305	99.34224916	98.73014435
190515A00014	5/15/2019	2.26	5/14/2021	5/15/2019	102.43109	102.4310898	102.4310898	102.4310898	102.0168734	100.8900513	99.78804784	98.71004972	97.6552789
190515A00046	5/15/2019	2.4	5/14/2021	5/15/2019	102.40864	102.4086382	102.4086382	102.4086382	101.9955347	100.87153	99.77223877	98.69685255	97.64459766
190516A00012	5/16/2019	2.43	11/16/2021	5/16/2019	103.51877	103.5187667	103.5187667	103.5187667	102.8835451	101.2638438	99.67744942	98.12339994	96.60077042

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190521A00025	5/21/2019	2.47	5/21/2021	5/21/2019	102.53065	102.5306499	102.5306499	102.5306499	102.1085401	100.9650159	99.84704564	98.75377973	97.68440585
190521A00026	5/21/2019	2.54	5/19/2023	5/21/2019	107.09675	107.0967485	107.0967485	107.0967485	105.4214935	102.3076828	99.30240411	96.40124252	93.59999119
190522A00005	5/22/2019	2.47	5/24/2021	5/22/2019	102.54891	102.5489147	102.5489147	102.5489147	102.1230065	100.9713242	99.84555493	98.74483132	97.66832441
190523A00006	5/23/2019	2.31	5/24/2021	5/23/2019	102.5487	102.5487037	102.5487037	102.5487037	102.121681	100.9672282	99.83879668	98.73551412	97.65654689
190523A00024	5/23/2019	2.47	10/31/2022	5/23/2019	105.67897	105.6789729	105.6789729	105.6789729	104.4723356	101.9042194	99.41246012	96.99432523	94.64719836
190523A00034	5/23/2019	2.31	5/21/2021	5/23/2019	102.53045	102.5304489	102.5304489	102.5304489	102.1072373	100.9609694	99.84036214	98.74456102	97.67274916
181228A00008	12/28/2018	2.9	12/28/2021	12/28/2018	104.61386	104.6138636	104.6138636	104.6138636	103.9254303	102.1840729	100.480253	98.81282196	97.18067813
190102A00037	1/2/2019	2.8	7/2/2021	1/2/2019	103.19188	103.1918797	103.1918797	103.1918797	102.7170619	101.4574407	100.2279605	99.02754553	97.85517074
190104A00027	1/4/2019	2.76	1/4/2021	1/4/2019	101.93899	101.9389858	101.9389858	101.9389858	101.7039835	100.9329031	100.1734973	99.42550226	98.68866228
190107A00034	1/7/2019	2.8	4/15/2021	1/7/2019	102.65961	102.6596112	102.6596112	102.6596112	102.2831962	101.2356983	100.2096316	99.20434319	98.21920617
190110A00013	1/10/2019	2.97	1/17/2024	1/10/2019	110.24404	110.2440365	110.2440365	110.2440365	107.9027518	104.1104663	100.47323	96.9838639	93.63556229
190114A00030	1/14/2019	2.85	1/14/2021	1/14/2019	102.08068	102.0806769	102.0806769	102.0806769	101.8318983	101.0330439	100.2467157	99.47262073	98.71047474
190114A00042	1/14/2019	2.92	1/13/2023	1/14/2019	107.38958	107.3895837	107.3895837	107.3895837	106.0147295	103.2296394	100.5322831	97.91937011	95.38775589
190115A00029	1/15/2019	2.86	11/8/2021	1/15/2019	104.18738	104.187384	104.187384	104.187384	103.5594891	101.9556675	100.3845259	98.84513205	97.33658865
190118A00020	1/18/2019	2.89	7/15/2020	1/18/2019	100.77213	100.7721314	100.7721314	100.7721314	100.7280895	100.4341658	100.1419678	99.85148001	99.56268753
190122A00043	1/22/2019	2.96	1/22/2025	1/22/2019	113.83575	113.8357499	113.8357499	113.8357499	110.2309973	105.3960075	100.8038102	96.44094076	92.29475096
190129A00028	1/30/2019	2.92	2/1/2022	1/30/2019	104.90432	104.9043165	104.9043165	104.9043165	104.1709294	102.3345303	100.5395241	98.78473788	97.06903982
190130A00020	1/30/2019	2.97	4/17/2023	1/30/2019	108.22101	108.2210072	108.2210072	108.2210072	106.6178939	103.5698866	100.6257238	97.78128073	95.03262172
190131A00036	1/31/2019	2.69	7/31/2023	1/31/2019	108.67514	108.6751409	108.6751409	108.6751409	106.7941496	103.4511719	100.2310648	97.12868198	94.13911944
190211A00010	2/11/2019	2.79	2/11/2021	2/11/2019	102.21997	102.2199728	102.2199728	102.2199728	101.9319179	101.0566397	100.1963765	99.35074416	98.51937168
190212A00017	2/12/2019	2.86	6/30/2023	2/12/2019	108.40485	108.4048519	108.4048519	108.4048519	106.6149284	103.3705111	100.2423654	97.22561413	94.31561898
190221A00002	2/21/2019	2.81	2/22/2022	2/21/2019	104.82514	104.8251409	104.8251409	104.8251409	104.0635566	102.1673909	100.315221	98.50576488	96.73778635
190227A00002	2/27/2019	2.61	2/28/2022	2/27/2019	104.83153	104.8315313	104.8315313	104.8315313	104.0589953	102.1390005	100.2640271	98.43274998	96.64389168
190228A00037	2/28/2019	2.85	2/28/2023	2/28/2019	107.51434	107.5143365	107.5143365	107.5143365	106.0328694	103.120057	100.3028517	97.57760443	94.94082576
190313A00018	3/13/2019	2.68	3/12/2021	3/13/2019	102.30667	102.3066678	102.3066678	102.3066678	101.9769971	101.0230724	100.0869707	99.16819573	98.26626941
190318A00008	3/18/2019	2.76	3/18/2024	3/18/2019	109.85162	109.851619	109.851619	109.851619	107.339141	103.396406	99.62156746	96.00659624	92.54388962
190318A00021	3/18/2019	2.76	3/18/2024	3/18/2019	109.85162	109.851619	109.851619	109.851619	107.339141	103.396406	99.62156746	96.00659624	92.54388962
190321A00044	3/21/2019	2.45	3/21/2022	3/21/2019	104.65704	104.6570397	104.6570397	104.6570397	103.8533526	101.8800476	99.95432432	98.07474129	96.23991067
190322A00022	3/22/2019	2.56	7/22/2021	3/22/2019	103.01327	103.0132745	103.0132745	103.0132745	102.515571	101.2090881	99.92812416	98.67194922	97.4398612
190326A00021	3/26/2019	2.52	3/26/2021	3/26/2019	102.24033	102.2403262	102.2403262	102.2403262	101.8911175	100.8998059	99.92774154	98.97436802	98.03915005
190228A00039	2/28/2019	2.88	2/28/2024	2/28/2019	110.19637	110.1963716	110.1963716	110.1963716	107.7359928	103.834187	100.096414	96.51492981	93.0823964
190308A00014	3/8/2019	2.69	3/8/2021	3/8/2019	102.29894	102.2989377	102.2989377	102.2989377	101.9748431	101.0316225	100.1058252	99.19697176	98.30459984
190311A00009	3/11/2019	2.54	3/11/2022	3/11/2019	104.76966	104.7696556	104.7696556	104.7696556	103.980684	102.0324376	100.1305529	98.27364406	96.46037631

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190321A00018	3/21/2019	2.45	3/21/2022	3/21/2019	104.65704	104.6570397	104.6570397	104.6570397	103.8533526	101.8800476	99.95432432	98.07474129	96.23991067
190325A00014	3/25/2019	2.43	9/25/2020	3/25/2019	101.14267	101.1426662	101.1426662	101.1426662	101.0245691	100.5311163	100.0424809	99.5585927	99.0793826
190326A00001	3/26/2019	2.55	3/28/2022	3/26/2019	104.53775	104.537754	104.537754	104.537754	103.7269197	101.7433206	99.80787142	97.91910328	96.07560236
190326A00007	3/26/2019	2.5	3/26/2021	3/26/2019	102.22036	102.2203561	102.2203561	102.2203561	101.8711772	100.8799724	99.90801345	98.95474393	98.01962856
190327A00062	3/27/2019	2.44	3/26/2021	3/27/2019	102.16045	102.1604457	102.1604457	102.1604457	101.8113561	100.8204719	99.84882919	98.89587164	97.96106408
190328A00018	3/28/2019	2.5	3/29/2021	3/28/2019	102.23888	102.2388791	102.2388791	102.2388791	101.8854691	100.8860898	99.90626721	98.94543167	98.00303534
190328A00027	3/28/2019	2.51	9/21/2021	3/28/2019	103.32265	103.3226477	103.3226477	103.3226477	102.7540877	101.2853216	99.84494085	98.43219453	97.04635768
190328A00046	3/28/2019	2.7	3/4/2025	3/28/2019	111.92415	111.9241541	111.9241541	111.9241541	108.2144542	103.3451748	98.72576765	94.34212489	90.1810062
190328A00065	3/28/2019	2.56	3/28/2024	3/28/2019	109.11433	109.1143329	109.1143329	109.1143329	106.5799193	102.6267975	98.84327262	95.22117649	91.75277816
190329A00033	3/29/2019	2.52	3/29/2021	3/29/2019	102.25902	102.2590154	102.2590154	102.2590154	101.9055751	100.9060872	99.92615765	98.96521654	98.02271606
190401A00035	4/1/2019	2.53	10/1/2021	4/1/2019	103.4145	103.4145012	103.4145012	103.4145012	102.8339567	101.3374907	99.8704323	98.43199005	97.02140051
190409A00014	4/9/2019	2.59	10/12/2021	4/9/2019	103.57603	103.5760283	103.5760283	103.5760283	102.9819163	101.4551094	99.95860989	98.49158775	97.05324269
190409A00019	4/9/2019	2.91	4/9/2029	4/9/2019	125.41828	125.4182843	125.4182843	122.0007063	112.6331308	103.9342836	95.99316318	88.73940622	82.10953202
190411A00020	5/1/2019	2.63	5/2/2022	5/1/2019	104.92406	104.9240552	104.9240552	104.9240552	104.0552822	101.973481	99.94378582	97.96454191	96.03415982
190411A00037	4/11/2019	2.59	4/9/2021	4/11/2019	102.39991	102.3999117	102.3999117	102.3999117	102.0317279	101.0018422	99.99270966	99.00370735	98.03423724
190416A00021	4/16/2019	2.73	4/16/2024	4/16/2019	109.92541	109.92541	109.92541	109.92541	107.3266877	103.3086792	99.46467884	95.78622074	92.26529748
190423A00002	4/23/2019	2.52	4/23/2024	4/23/2019	109.87481	109.8748059	109.8748059	109.8748059	107.2398373	103.1841557	99.30531558	95.59465828	92.0439971
190423A00004	4/23/2019	2.62	4/23/2020	4/23/2019	100.14562	100.1456226	100.1456226	100.1456226	100.1417359	100.0779853	100.0143261	99.9507581	99.88728121
190424A00015	4/24/2019	2.55	4/26/2021	4/24/2019	102.46529	102.4652851	102.4652851	102.4652851	102.0748675	100.9988754	99.94551651	98.91408242	97.90389388
190424A00021	4/24/2019	2.6	4/22/2022	4/24/2019	104.79722	104.7972192	104.7972192	104.7972192	103.9452492	101.8916379	99.88899513	97.93572	96.03027394
190424A00027	4/24/2019	2.55	4/23/2021	4/24/2019	102.44643	102.4464265	102.4464265	102.4464265	102.0599433	100.9921242	99.94660322	98.92268717	97.91971141
190701A00024	7/1/2019	2.24	7/1/2020	7/1/2019	100.50396	100.5039645	100.5039645	100.5039645	100.4713962	100.2165443	99.9629806	99.71069534	99.45967891
190702A00002	7/2/2019	2.16	7/2/2024	7/2/2019	107.99498	107.9949797	107.9949797	107.9949797	105.1817503	101.0087538	97.02474368	93.22011848	89.58582189
190703A00021	7/3/2019	2.11	7/2/2021	7/3/2019	102.31575	102.3157458	102.3157458	102.3157458	101.8427547	100.5889725	99.36523226	98.17046101	97.00363632
190716A00046	7/16/2019	2.19	7/18/2022	7/16/2019	104.39853	104.3985309	104.3985309	104.3985309	103.3990757	101.1202927	98.90296239	96.7450464	94.64458829
190717A00007	7/17/2019	2.18	10/14/2022	7/17/2019	104.83302	104.8330189	104.8330189	104.8330189	103.6647296	101.1514788	98.71211923	96.34404304	94.04475133
190726A00005	7/26/2019	1.97	7/26/2022	7/26/2019	104.34979	104.3497913	104.3497913	104.3497913	103.3321025	101.0247029	98.78020482	96.59653517	94.47170224
190729A00009	7/29/2019	2.19	7/29/2024	7/29/2019	108.26427	108.2642701	108.2642701	108.2642701	105.3629038	101.1181974	97.06864638	93.20429768	89.51575583
190729A00017	7/29/2019	1.97	7/29/2021	7/29/2019	102.49227	102.4922672	102.4922672	102.4922672	101.9861282	100.6629554	99.36375918	98.08793154	96.83488495
190801A00007	8/1/2019	2.17	8/2/2021	8/1/2019	102.55399	102.5539891	102.5539891	102.5539891	102.0446159	100.7145343	99.40803831	98.12455368	96.8635245
190802A00029	8/2/2019	2	8/2/2022	8/2/2019	104.02804	104.0280392	104.0280392	104.0280392	103.0032473	100.6901301	98.44038131	96.25192407	94.12276154
190805A00037	8/5/2019	2.17	8/6/2029	8/5/2019	119.35094	119.3509422	119.3509422	115.4802761	106.049519	97.37355933	89.48444082	82.30658272	75.77201921
190806A00027	8/6/2019	1.71	8/7/2023	8/6/2019	105.39985	105.3998489	105.3998489	105.3998489	103.5251254	100.2190135	97.03556363	93.96960253	91.01620219

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190807A00014	8/7/2019	1.75	8/7/2023	8/7/2019	104.91876	104.9187576	104.9187576	104.9187576	103.0575211	99.77446585	96.61295248	93.56786634	90.63433469
190807A00022	8/7/2019	1.76	1/17/2023	8/7/2019	104.13964	104.1396376	104.1396376	104.1396376	102.7744742	100.0248129	97.36241777	94.78401622	92.28647963
190807A00036	8/7/2019	1.75	8/7/2023	8/7/2019	104.91876	104.9187576	104.9187576	104.9187576	103.0575211	99.77446585	96.61295248	93.56786634	90.63433469
190807A00060	8/7/2019	1.95	2/8/2021	8/7/2019	101.46745	101.4674517	101.4674517	101.4674517	101.1846783	100.3210835	99.47218237	98.63760221	97.81698297
190808A00012	8/8/2019	1.89	8/8/2024	8/8/2019	106.9993	106.9993039	106.9993039	106.9993039	104.0799342	99.83786126	95.79227521	91.93309885	88.25082175
190809A00012	8/9/2019	1.69	8/9/2024	8/9/2019	106.93117	106.9311697	106.9311697	106.9311697	103.9904718	99.7246491	95.65715551	91.77778658	88.07691363
190814A00003	8/14/2019	2.01	8/14/2029	8/14/2019	117.88334	117.8833449	117.8833449	113.9874325	104.5947531	95.9667538	88.12460169	80.9925707	74.50258513
190814A00005	8/14/2019	1.65	8/14/2024	8/14/2019	106.77594	106.7759402	106.7759402	106.7759402	103.8207645	99.54606932	95.47072045	91.58443168	87.87749887
190815A00008	8/15/2019	1.82	8/15/2022	8/15/2019	103.65742	103.6574224	103.6574224	103.6574224	102.6102038	100.2681046	97.99104464	95.77686414	93.62348766
190816A00014	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190816A00039	8/16/2019	1.91	2/16/2021	8/16/2019	101.46853	101.4685305	101.4685305	101.4685305	101.1741583	100.2889954	99.41927026	98.56458179	97.72454252
190819A00001	8/19/2019	1.82	8/19/2021	8/19/2019	102.15194	102.1519407	102.1519407	102.1519407	101.6243714	100.2526163	98.90589068	97.58356884	96.28504551
190522A00017	5/23/2019	2.53	3/1/2023	5/23/2019	106.57896	106.5789618	106.5789618	106.5789618	105.1007744	102.1990873	99.39283834	96.67837986	94.05222389
190523A00017	5/23/2019	2.51	3/15/2024	5/23/2019	108.83387	108.8338699	108.8338699	108.8338699	106.3399442	102.4245597	98.67581272	95.08574481	91.64681958
190523A00020	5/23/2019	2.5	2/9/2024	5/23/2019	108.58278	108.582781	108.582781	108.582781	106.1917539	102.37167	98.71049276	95.20080553	91.8355758
190528A00007	5/28/2019	2.44	11/15/2023	5/28/2019	107.84234	107.842335	107.842335	107.842335	105.6957962	102.1077842	98.66129478	95.34995931	92.16773382
190529A00002	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190529A00016	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190529A00022	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190530A00009	5/30/2019	2.25	5/30/2024	5/30/2019	108.9827	108.9827026	108.9827026	108.9827026	106.244115	102.1130643	98.16596298	94.39361612	90.78734181
190530A00021	5/30/2019	2.21	5/27/2022	5/30/2019	104.56598	104.565978	104.565978	104.565978	103.6532269	101.5023964	99.40677893	97.3645679	95.37403078
190530A00030	5/30/2019	2.36	5/28/2021	5/30/2019	102.44424	102.4442423	102.4442423	102.4442423	102.0135115	100.851754	99.71637742	98.60649102	97.52124376
190530A00064	5/30/2019	2.51	6/1/2020	5/30/2019	100.38468	100.3846809	100.3846809	100.3846809	100.3683179	100.1964521	100.0251724	99.85447593	99.68435964
190531A00009	6/5/2019	2.1	6/3/2022	6/5/2019	104.36427	104.3642662	104.3642662	104.3642662	103.4403882	101.273223	99.16206598	97.10507037	95.1004657
190531A00049	5/31/2019	2.29	6/1/2022	5/31/2019	104.37225	104.3722521	104.3722521	104.3722521	103.4553908	101.3012472	99.20252441	97.15740333	95.16413961
190604A00033	6/4/2019	2.23	6/4/2021	6/4/2019	102.32962	102.329619	102.329619	102.329619	101.8904706	100.7106818	99.55812065	98.43185305	97.33098712
190604A00048	6/4/2019	2.23	6/4/2021	6/4/2019	102.32962	102.329619	102.329619	102.329619	101.8904706	100.7106818	99.55812065	98.43185305	97.33098712
190606A00027	6/6/2019	2.51	6/5/2026	6/6/2019	113.68673	113.6867346	113.6867346	113.6867346	107.5955962	101.6030242	95.98557814	90.717786	85.77603753
190607A00011	6/7/2019	1.94	6/7/2021	6/7/2019	102.18913	102.189125	102.189125	102.189125	101.7454232	100.5556021	99.39348509	98.2581134	97.14857213
190610A00018	6/10/2019	2.52	6/10/2026	6/10/2019	113.77893	113.7789278	113.7789278	113.7789278	107.655654	101.6489074	96.01887207	90.73991991	85.78829971
190611A00006	6/11/2019	2.26	6/11/2021	6/11/2019	102.40375	102.4037521	102.4037521	102.4037521	101.9559354	100.7569422	99.58606102	98.442312	97.32476013
190611A00047	6/11/2019	2.26	6/11/2021	6/11/2019	102.40375	102.4037521	102.4037521	102.4037521	101.9559354	100.7569422	99.58606102	98.442312	97.32476013
190618A00002	6/18/2019	2.11	6/18/2025	6/18/2019	110.50477	110.504775	110.504775	110.504775	106.3450919	101.2236996	96.37992714	91.79724818	87.46021076

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190620A00027	6/20/2019	2.14	6/20/2024	6/20/2019	107.8486	107.8485981	107.8485981	107.8485981	105.0740563	100.9343339	96.98086485	93.20424235	89.5955906
190620A00044	6/20/2019	2.04	6/20/2022	6/20/2019	103.91532	103.9153152	103.9153152	103.9153152	102.967487	100.7675386	98.62528389	96.53878768	94.50619649
190625A00013	6/25/2019	2.01	6/24/2022	6/25/2019	103.86684	103.8668363	103.8668363	103.8668363	102.9123058	100.7022168	98.55031657	96.45464462	94.41332382
190327A00011	3/27/2019	2.51	9/28/2020	3/27/2019	101.13251	101.132508	101.132508	101.132508	101.0113042	100.5104869	100.0146243	99.52364322	99.0374719
190327A00032	3/27/2019	2.53	1/26/2024	3/27/2019	108.614	108.6139967	108.6139967	108.6139967	106.2622981	102.4781127	98.84987845	95.37036312	92.0327079
190328A00009	3/28/2019	2.33	3/28/2022	3/28/2019	104.46028	104.4602757	104.4602757	104.4602757	103.6467394	101.6571382	99.71595633	97.82171312	95.97298375
190328A00079	3/28/2019	2.37	3/28/2024	3/28/2019	109.09629	109.0962892	109.0962892	109.0962892	106.546824	102.5740918	98.77231284	95.13323239	91.64903856
190401A00009	4/1/2019	2.39	4/1/2022	4/1/2019	104.60648	104.6064829	104.6064829	104.6064829	103.7862428	101.784585	99.83186068	97.92656596	96.06725395
190401A00010	4/1/2019	2.62	4/1/2024	4/1/2019	109.3814	109.3814036	109.3814036	109.3814036	106.8326822	102.8642771	99.06648168	95.43105989	91.95021761
190402A00010	4/2/2019	2.4	4/6/2022	4/2/2019	104.65835	104.6583472	104.6583472	104.6583472	103.8297649	101.8139626	99.84764639	97.92928652	96.05741154
190408A00047	4/8/2019	2.43	4/7/2023	4/8/2019	107.06233	107.0623338	107.0623338	107.0623338	105.4837627	102.4670668	99.5529016	96.73721162	94.01612581
190409A00031	4/9/2019	2.64	4/9/2024	4/9/2019	109.51349	109.5134936	109.5134936	109.5134936	106.9396827	102.9479719	99.12857984	95.47315249	91.97378608
190416A00027	4/16/2019	2.64	4/16/2020	4/16/2019	100.10219	100.1021908	100.1021908	100.1021908	100.0994868	100.05513	100.0108283	99.96658145	99.92238949
190426A00011	5/1/2019	2.56	3/15/2022	5/1/2019	104.47642	104.4764179	104.4764179	104.4764179	103.6853429	101.7361837	99.83355064	97.97604879	96.16233438
190430A00003	4/30/2019	2.43	8/2/2023	4/30/2019	107.8108	107.8107993	107.8107993	107.8107993	105.9310212	102.5973212	99.38646716	96.29330367	93.3129188
190430A00021	4/30/2019	2.52	10/29/2021	4/30/2019	103.57265	103.5726541	103.5726541	103.5726541	102.9582667	101.3866435	99.84671579	98.3375929	96.85841726
190506A00011	5/6/2019	2.45	11/6/2020	5/6/2019	101.4245	101.4245023	101.4245023	101.4245023	101.2601133	100.6506744	100.0485635	99.45364883	98.8658019
190508A00008	5/8/2019	2.36	5/9/2022	5/8/2019	104.78156	104.7815632	104.7815632	104.7815632	103.8982523	101.7922757	99.73948449	97.73817237	95.78670121
190509A00029	5/9/2019	2.34	6/9/2022	5/9/2019	104.92978	104.9297783	104.9297783	104.9297783	103.9930902	101.8033942	99.67059024	97.59278999	95.56818385
190513A00015	5/13/2019	2.51	5/13/2020	5/13/2019	100.26304	100.2630436	100.2630436	100.2630436	100.2534622	100.1342781	100.0153917	99.89680176	99.77850721
190514A00014	5/14/2019	2.43	5/14/2021	5/14/2019	102.44266	102.4426642	102.4426642	102.4426642	102.0294998	100.9052904	99.80579771	98.73021304	97.67776269
190514A00056	5/14/2019	2.32	5/15/2023	5/14/2019	106.95773	106.95773	106.95773	106.95773	105.2850254	102.1700688	99.16371227	96.26153954	93.45934247
190516A00006	5/16/2019	2.43	5/13/2021	5/16/2019	102.43669	102.4366867	102.4366867	102.4366867	102.0247883	100.9032986	99.80640723	98.73331119	97.68324225
190520A00006	5/20/2019	2.44	5/20/2020	5/20/2019	100.32236	100.3223618	100.3223618	100.3223618	100.3103266	100.1714642	100.0330011	99.89493566	99.75726603
190521A00024	5/21/2019	2.53	1/20/2023	5/21/2019	106.33467	106.3346651	106.3346651	106.3346651	104.9501379	102.1618743	99.46208806	96.84746959	94.31485391
190521A00047	5/21/2019	2.54	5/19/2023	5/21/2019	107.09675	107.0967485	107.0967485	107.0967485	105.4214935	102.3076828	99.30240411	96.40124252	93.59999119
190523A00005	5/23/2019	2.42	5/26/2020	5/23/2019	100.35797	100.3579711	100.3579711	100.3579711	100.34385	100.1883366	100.0333131	99.87877702	99.72472609
190429A00076	4/29/2019	2.52	4/29/2021	4/29/2019	102.45136	102.451364	102.451364	102.451364	102.0570683	100.9730955	99.91208962	98.87332669	97.85611288
190501A00017	5/1/2019	2.61	5/1/2024	5/1/2019	109.53122	109.5312164	109.5312164	109.5312164	106.8918157	102.8430677	98.97116224	95.26742389	91.72365111
190513A00013	5/13/2019	2.52	5/13/2024	5/13/2019	109.23393	109.2339347	109.2339347	109.2339347	106.5611362	102.4884907	98.59495177	94.87167301	91.31029514
190514A00020	5/14/2019	2.66	5/14/2025	5/14/2019	112.13136	112.1313614	112.1313614	112.1313614	108.1337753	103.0881776	98.31021714	93.78427482	89.49572631
190515A00023	5/15/2019	2.25	5/16/2022	5/15/2019	104.58828	104.5882795	104.5882795	104.5882795	103.6939487	101.5716952	99.50338695	97.48727957	95.52169924
190515A00038	5/15/2019	2.38	5/14/2021	5/15/2019	102.38595	102.3859542	102.3859542	102.3859542	101.9728914	100.849023	99.74986614	98.67461222	97.62248764

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190515A00041	5/15/2019	2.41	11/15/2021	5/15/2019	103.49645	103.4964511	103.4964511	103.4964511	102.8623454	101.2452718	99.66141921	98.10982957	96.58958149
190515A00060	5/15/2019	2.38	5/14/2021	5/15/2019	102.38595	102.3859542	102.3859542	102.3859542	101.9728914	100.849023	99.74986614	98.67461222	97.62248764
190520A00007	5/20/2019	2.52	5/20/2024	5/20/2019	109.27675	109.2767491	109.2767491	109.2767491	106.5822887	102.4913709	98.58102658	94.84230299	91.26674268
190521A00023	5/21/2019	2.47	11/22/2021	5/21/2019	103.62069	103.6206932	103.6206932	103.6206932	102.9781611	101.3412896	99.73829886	98.16820178	96.63004957
190522A00004	5/22/2019	2.52	5/23/2022	5/22/2019	104.82119	104.8211945	104.8211945	104.8211945	103.917622	101.7820566	99.70096496	97.6725764	95.69519231
190523A00018	5/23/2019	2.51	3/15/2024	5/23/2019	108.83387	108.8338699	108.8338699	108.8338699	106.3399442	102.4245597	98.67581272	95.08574481	91.64681958
190524A00040	5/24/2019	2.47	5/24/2024	5/24/2019	109.09213	109.0921282	109.0921282	109.0921282	106.3874615	102.2903765	98.37456851	94.63102953	91.05125086
190528A00014	5/28/2019	2.41	5/28/2020	5/28/2019	100.36916	100.3691558	100.3691558	100.3691558	100.3543394	100.1932777	100.032737	99.87271498	99.71320905
190528A00028	5/28/2019	2.42	5/30/2023	5/28/2019	106.78171	106.7817066	106.7817066	106.7817066	105.0812297	101.9443422	98.91764258	95.99661235	93.17694791
190529A00023	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190529A00065	5/29/2019	2.47	5/29/2020	5/29/2019	100.3595	100.3595049	100.3595049	100.3595049	100.344368	100.1808209	100.0178069	99.85532332	99.69336771
190530A00006	5/30/2019	2.25	5/30/2024	5/30/2019	108.9827	108.9827026	108.9827026	108.9827026	106.244115	102.1130643	98.16596298	94.39361612	90.78734181
190530A00008	5/30/2019	2.38	5/30/2025	5/30/2019	111.81046	111.8104573	111.8104573	111.8104573	107.7173799	102.6097964	97.77614445	93.20027577	88.86708137
190530A00016	5/30/2019	2.51	6/1/2020	5/30/2019	100.38468	100.3846809	100.3846809	100.3846809	100.3683179	100.1964521	100.0251724	99.85447593	99.68435964
190530A00029	5/30/2019	2.25	5/30/2024	5/30/2019	108.9827	108.9827026	108.9827026	108.9827026	106.244115	102.1130643	98.16596298	94.39361612	90.78734181
190531A00008	5/31/2019	2.14	6/1/2021	5/31/2019	102.39589	102.395885	102.395885	102.395885	101.9591171	100.7841046	99.63606523	98.51407865	97.4172661
190603A00047	6/3/2019	2.22	6/2/2023	6/3/2019	106.15903	106.1590266	106.1590266	106.1590266	104.4553165	101.3204928	98.29610557	95.37761402	92.56069406
190607A00019	6/7/2019	2.04	12/7/2020	6/7/2019	101.3393	101.3393038	101.3393038	101.3393038	101.1390769	100.4453031	99.76102794	99.08605734	98.42020234
190819A00020	8/19/2019	1.79	8/19/2022	8/19/2019	103.60198	103.60198	103.60198	103.60198	102.5476067	100.1959173	97.9097998	95.68706809	93.52562185
190819A00027	8/19/2019	2.03	8/19/2020	8/19/2019	100.69467	100.6946662	100.6946662	100.6946662	100.6174065	100.2273753	99.84037234	99.45636246	99.07531092
190820A00012	8/20/2019	1.76	8/19/2022	8/20/2019	103.52966	103.5296648	103.5296648	103.5296648	102.475627	100.1248132	97.83955244	95.61765912	93.45703347
190820A00019	8/20/2019	1.76	8/21/2023	8/20/2019	105.00915	105.009151	105.009151	105.009151	103.1114337	99.79192693	96.59654423	93.52001052	90.55730276
190820A00020	8/20/2019	1.76	8/20/2024	8/20/2019	106.47693	106.4769273	106.4769273	106.4769273	103.5248806	99.2650073	95.20392769	91.33137508	87.6376642
190820A00030	8/20/2019	1.76	4/16/2024	8/20/2019	105.97026	105.9702581	105.9702581	105.9702581	103.4109656	99.47178868	95.70413653	92.09964209	88.65039203
190821A00009	8/21/2019	1.79	8/22/2022	8/21/2019	103.61439	103.6143865	103.6143865	103.6143865	102.554399	100.1948682	97.90132414	95.67156051	93.50345769
190821A00027	8/21/2019	1.79	8/22/2022	8/21/2019	103.61439	103.6143865	103.6143865	103.6143865	102.554399	100.1948682	97.90132414	95.67156051	93.50345769
190823A00002	8/23/2019	1.89	8/24/2020	8/23/2019	100.71846	100.7184604	100.7184604	100.7184604	100.6357427	100.2312918	99.83009419	99.43211057	99.03730239
190826A00030	8/26/2019	1.72	8/26/2026	8/26/2019	110.36496	110.3649581	110.3649581	110.2195946	103.7853295	97.66841847	91.9504736	86.60349924	81.60159719
190826A00057	8/26/2019	1.87	8/26/2025	8/26/2019	108.506	108.5059976	108.5059976	108.5059976	104.0848634	98.88653701	93.97899762	89.34453278	84.96659497
190828A00019	8/28/2019	2	3/28/2028	8/28/2019	113.56822	113.5682191	113.5682191	111.5393284	103.6152016	96.21564949	89.40077153	83.12134593	77.33252878
190905A00035	9/5/2019	1.82	9/7/2021	9/5/2019	102.23266	102.2326593	102.2326593	102.2326593	101.683242	100.2606295	98.86483359	97.4951626	96.15094826
190906A00004	9/6/2019	1.78	9/6/2022	9/6/2019	103.65165	103.6516519	103.6516519	103.6516519	102.563291	100.1644053	97.83365298	95.56871995	93.36738481
190910A00009	9/10/2019	1.86	9/10/2020	9/10/2019	100.78848	100.7884828	100.7884828	100.7884828	100.6871978	100.2358912	99.78863223	99.34536648	98.90604052

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190912A00028	9/12/2019	1.94	9/12/2024	9/12/2019	107.37675	107.3767463	107.3767463	107.3767463	104.3395109	100.0037722	95.87282179	91.93594786	88.18305349
190912A00033	9/12/2019	1.77	9/12/2023	9/12/2019	105.76798	105.7679817	105.7679817	105.7679817	103.797045	100.3930915	97.11876614	93.96845625	90.93682259
190913A00012	9/13/2019	2.04	9/13/2023	9/13/2019	106.07732	106.0773192	106.0773192	106.0773192	104.1119789	100.7158678	97.44876434	94.30509344	91.27955108
190916A00008	9/16/2019	2.05	9/16/2021	9/16/2019	102.61114	102.6111436	102.6111436	102.6111436	102.0502587	100.6004877	99.1784947	97.7835514	96.41495443
190917A00022	9/17/2019	2.02	9/16/2022	9/17/2019	104.2895	104.2895039	104.2895039	104.2895039	103.1788476	100.7456246	98.38221333	96.08621626	93.85533316
190920A00018	9/20/2019	1.98	9/20/2022	9/20/2019	104.20852	104.2085217	104.2085217	104.2085217	103.0905606	100.6477762	98.27538711	95.97096497	93.73218031
190926A00007	9/26/2019	1.88	9/26/2022	9/26/2019	103.98478	103.984783	103.984783	103.984783	102.8563793	100.4005677	98.01600167	95.70020685	93.45081046
190926A00015	9/26/2019	2.32	11/26/2030	9/26/2019	121.41948	121.4194797	121.4194797	115.1692279	104.6825726	95.16350774	86.60902859	78.91587695	71.99234894
190926A00017	9/26/2019	2.23	9/26/2029	9/26/2019	118.25568	118.2556808	118.2556808	114.2385301	104.8348472	96.19095049	88.33920127	81.20267181	74.71227208
190626A00009	6/26/2019	2.08	6/25/2021	6/26/2019	102.24292	102.2429235	102.2429235	102.2429235	101.7784755	100.5433033	99.33799011	98.16146361	97.01270207
190626A00019	6/26/2019	2.1	6/24/2022	6/26/2019	104.06988	104.0698803	104.0698803	104.0698803	103.1144851	100.9020868	98.74792528	96.65003853	94.60654808
190627A00052	6/27/2019	2.1	6/27/2022	6/27/2019	104.08478	104.0847789	104.0847789	104.0847789	103.1241366	100.903547	98.7415791	96.63625165	94.5856679
190703A00022	7/3/2019	2.08	7/5/2022	7/3/2019	104.07891	104.0789099	104.0789099	104.0789099	103.1041511	100.8626857	98.68087733	96.55671595	94.48827615
190708A00001	7/8/2019	1.99	7/8/2022	7/8/2019	104.30336	104.3033588	104.3033588	104.3033588	103.3183179	101.0582479	98.85865833	96.71751435	94.63286633
190711A00016	7/11/2019	2.17	7/11/2022	7/11/2019	104.31579	104.3157931	104.3157931	104.3157931	103.3292494	101.0695306	98.87031633	96.72958299	94.64539055
190722A00027	7/22/2019	2.25	7/22/2020	7/22/2019	100.62552	100.6255154	100.6255154	100.6255154	100.5757967	100.2628518	99.95186034	99.64280408	99.33566493
190724A00005	7/24/2019	2.12	7/26/2021	7/24/2019	102.45059	102.4505882	102.4505882	102.4505882	101.9494935	100.6373456	99.34973668	98.08600943	96.84553007
190729A00006	7/29/2019	2.14	7/29/2022	7/29/2019	104.33854	104.3385408	104.3385408	104.3385408	103.3196474	101.0131592	98.76957937	96.58684629	94.46297799
190730A00007	7/30/2019	2.19	7/30/2024	7/30/2019	108.26948	108.2694793	108.2694793	108.2694793	105.364902	101.1176447	97.06576946	93.19931024	89.50885885
190802A00016	8/2/2019	2.01	7/12/2023	8/2/2019	105.67527	105.6752669	105.6752669	105.6752669	103.8744096	100.6440067	97.530824	94.52994505	91.63669036
190802A00032	8/2/2019	2.01	8/2/2024	8/2/2019	107.49784	107.4978385	107.4978385	107.4978385	104.5922307	100.3540841	96.31144147	92.45431252	88.77326702
190805A00029	8/5/2019	1.93	8/5/2022	8/5/2019	103.87615	103.8761497	103.8761497	103.8761497	102.8464759	100.5274454	98.27215047	96.07849585	93.94446718
190807A00005	8/7/2019	1.77	8/7/2024	8/7/2019	106.46843	106.4684314	106.4684314	106.4684314	103.5582233	99.32991265	95.29748714	91.45090236	87.78067867
190808A00011	8/8/2019	1.86	8/8/2023	8/8/2019	105.29515	105.2951524	105.2951524	105.2951524	103.4285405	100.1366993	96.9667522	93.9135673	90.97225548
190808A00023	8/8/2019	1.68	11/8/2023	8/8/2019	105.69989	105.6998905	105.6998905	105.6998905	103.5783419	100.0300298	96.62187908	93.34758614	90.20116818
190809A00005	8/9/2019	1.88	7/11/2022	8/9/2019	103.64794	103.6479396	103.6479396	103.6479396	102.6643166	100.4123427	98.22071069	96.08740183	94.0104807
190809A00010	8/9/2019	1.88	8/8/2024	8/9/2019	106.9554	106.9554025	106.9554025	106.9554025	104.0365248	99.79539013	95.75071102	91.89241156	88.21098256
190813A00022	8/13/2019	1.88	8/13/2024	8/13/2019	106.97719	106.9771894	106.9771894	106.9771894	104.0419803	99.78827286	95.73215326	91.86345967	88.17260344
190815A00012	8/15/2019	1.81	8/15/2024	8/15/2019	106.67725	106.6772512	106.6772512	106.6772512	103.738994	99.48688357	95.43259253	91.56593389	87.87729595
190816A00013	8/16/2019	2.2	8/16/2029	8/16/2019	117.76167	117.7616719	117.7616719	113.9216587	104.6330018	96.0853005	88.31281956	81.24107401	74.80308583
190816A00031	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190819A00026	8/19/2019	1.62	8/19/2024	8/19/2019	106.66399	106.6639861	106.6639861	106.6639861	103.6938638	99.40939115	95.32531494	91.43126551	87.71746169
190822A00016	8/22/2019	1.84	8/22/2022	8/22/2019	103.73533	103.7353255	103.7353255	103.7353255	102.6747744	100.3137745	98.01879319	95.78762309	93.61814371

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190611A00046	6/11/2019	2.25	6/13/2022	6/11/2019	104.34911	104.3491074	104.3491074	104.3491074	103.4115577	101.2254622	99.0962796	97.02211604	95.0011569
190617A00026	6/17/2019	2.17	6/17/2022	6/17/2019	104.19169	104.1916886	104.1916886	104.1916886	103.2478787	101.0528347	98.9151705	96.83296784	94.80438941
190620A00045	6/20/2019	2.14	6/20/2024	6/20/2019	107.8486	107.8485981	107.8485981	107.8485981	105.0740563	100.9343339	96.98086485	93.20424235	89.5955906
190625A00021	6/25/2019	1.88	6/26/2023	6/25/2019	105.77176	105.7717634	105.7717634	105.7717634	104.0015223	100.7959169	97.70557966	94.72567017	91.8515848
190626A00020	6/26/2019	2.08	6/25/2021	6/26/2019	102.24292	102.2429235	102.2429235	102.2429235	101.7784755	100.5433033	99.33799011	98.16146361	97.01270207
190628A00017	6/28/2019	2.25	6/30/2020	6/28/2019	100.501	100.501	100.501	100.501	100.4692478	100.2171576	99.96632551	99.71674227	99.4683986
190701A00007	7/2/2019	2.09	7/1/2022	7/2/2019	104.08192	104.0819181	104.0819181	104.0819181	103.1143149	100.8831594	98.71113766	96.59624718	94.53657101
190703A00017	7/3/2019	2.33	5/4/2026	7/3/2019	112.39224	112.3922398	112.3922398	112.3922398	106.518915	100.635661	95.11688502	89.93810842	85.07662037
190711A00019	7/11/2019	2.19	7/11/2023	7/11/2019	106.26603	106.2660301	106.2660301	106.2660301	104.4634327	101.2258878	98.10564428	95.09778334	92.19762363
190711A00025	7/11/2019	2.18	7/12/2021	7/11/2019	102.45718	102.4571824	102.4571824	102.4571824	101.9722966	100.6936057	99.44266293	98.21856538	97.02044949
190715A00014	7/15/2019	2.16	3/30/2022	7/15/2019	103.76294	103.7629406	103.7629406	103.7629406	102.9519739	100.9711106	99.03849201	97.15264215	95.3121406
190719A00006	7/19/2019	2.17	7/19/2024	7/19/2019	108.12548	108.1254779	108.1254779	108.1254779	105.2571796	101.0398428	97.01533883	93.1738477	89.50610205
190722A00035	7/22/2019	2.18	4/13/2021	7/22/2019	101.99567	101.9956728	101.9956728	101.9956728	101.6229276	100.5845356	99.56730218	98.57058551	97.59376946
190724A00025	7/24/2019	1.96	7/24/2023	7/24/2019	106.17669	106.1766883	106.1766883	106.1766883	104.3321396	101.0484962	97.88532003	94.83755455	91.90038393
190730A00016	7/30/2019	2	7/30/2024	7/30/2019	108.24636	108.2463572	108.2463572	108.2463572	105.3234106	101.0539954	96.98159441	93.09613169	89.388097
190731A00029	7/31/2019	1.93	7/29/2022	7/31/2019	104.27089	104.2708877	104.2708877	104.2708877	103.2481504	100.9338991	98.68293486	96.4931786	94.36263183
190801A00010	8/1/2019	1.97	8/1/2023	8/1/2019	106.25126	106.2512587	106.2512587	106.2512587	104.385693	101.080533	97.89732774	94.83095831	91.87654742
190802A00017	8/2/2019	2.01	11/15/2023	8/2/2019	106.26966	106.2696574	106.2696574	106.2696574	104.1363617	100.5766277	97.15759793	93.87293421	90.71662156
190805A00009	8/5/2019	1.91	8/5/2024	8/5/2019	107.07379	107.073788	107.073788	107.073788	104.1632423	99.92685004	95.88632892	92.03165044	88.3533492
190806A00010	8/6/2019	1.7	8/5/2022	8/6/2019	103.75932	103.7593232	103.7593232	103.7593232	102.7259634	100.3996741	98.13749298	95.9373073	93.79708619
190806A00012	8/6/2019	1.93	8/6/2021	8/6/2019	102.24691	102.2469102	102.2469102	102.2469102	101.7337338	100.3953371	99.08083669	97.78964729	96.52120221
190807A00053	8/7/2019	1.66	8/6/2021	8/7/2019	102.10923	102.1092283	102.1092283	102.1092283	101.5948586	100.2538105	98.93675953	97.64311667	96.37231187
190807A00055	8/7/2019	1.76	8/8/2022	8/7/2019	103.48508	103.4850848	103.4850848	103.4850848	102.4516281	100.1295609	97.87153591	95.67544109	93.53924628
190808A00019	8/8/2019	1.87	8/8/2022	8/8/2019	103.7469	103.7469038	103.7469038	103.7469038	102.7122524	100.3870529	98.12596272	95.9268678	93.78773604
160630A00012	6/30/2016	2.11	6/30/2025	6/30/2016	109.52903	109.5290254	109.5290254	109.5290254	105.3630089	100.2696047	95.4532486	90.8973924	86.58656766
160701A00020	7/1/2016	2.13	7/1/2026	7/1/2016	111.45627	111.4562703	111.4562703	111.4545785	105.2545509	99.26931601	93.66383547	88.41202128	83.48971386
160701A00039	7/1/2016	1.92	7/1/2026	7/1/2016	111.38092	111.3809218	111.3809218	111.3792068	105.1223888	99.09676508	93.45497934	88.17058215	83.21908466
160706A00010	7/6/2016	1.99	7/7/2025	7/6/2016	108.9276	108.9275975	108.9275975	108.9275975	104.738021	99.64370542	94.82764241	90.27317812	85.96474473
160706A00028	7/6/2016	2.39	7/6/2029	7/6/2016	119.31185	119.3118505	119.3118505	115.6335126	106.3801797	97.84142744	90.0669138	82.98399887	76.52730332
160714A00023	8/10/2016	2.49	8/10/2028	8/10/2016	118.29093	118.290928	118.290928	115.8148931	107.4046246	99.55366768	92.3440408	85.71991282	79.63057839
160727A00002	7/27/2016	1.87	7/27/2023	7/27/2016	105.27688	105.2768832	105.2768832	105.2768832	103.4410058	100.179506	97.03772979	94.01066343	91.09353019
160727A00017	7/27/2016	2.03	7/29/2024	7/27/2016	107.56623	107.566234	107.566234	107.566234	104.6726112	100.4427352	96.40752148	92.55703745	88.88190719
160802A00003	8/2/2016	2.53	8/1/2031	8/2/2016	127.54272	127.5427241	127.5427241	119.4841235	108.0539059	97.7461858	88.54040515	80.31222042	72.95191906

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160816A00003	8/16/2016	1.63	8/16/2023	8/16/2016	105.1661	105.1660958	105.1660958	105.1660958	103.2699148	99.94505978	96.74440697	93.66268379	90.69486933
160921A00020	9/21/2016	1.97	9/21/2023	9/21/2016	105.87014	105.8701424	105.8701424	105.8701424	103.8856257	100.4724919	97.18984672	94.0320145	90.99359759
160923A00002	9/23/2016	1.5	9/23/2020	9/23/2016	100.60789	100.6078869	100.6078869	100.6078869	100.4924866	100.0068605	99.52591924	99.04959519	98.57782209
160926A00016	9/26/2016	1.47	9/28/2020	9/26/2016	100.61001	100.6100133	100.6100133	100.6100133	100.4890866	99.98979667	99.49545054	99.0059751	98.52129871
160930A00005	9/30/2016	2.03	9/30/2024	9/30/2016	107.86583	107.8658321	107.8658321	107.8658321	104.7635243	100.3723119	96.19058625	92.20727374	88.41194376
161003A00004	10/3/2016	1.91	10/3/2023	10/3/2016	105.71295	105.7129504	105.7129504	105.7129504	103.6983887	100.2573512	96.94902984	93.7676003	90.70752619
161208A00017	12/8/2016	2.6	12/8/2023	12/8/2016	108.57305	108.5730519	108.5730519	108.5730519	106.3577411	102.6973173	99.18317965	95.80865075	92.56739951
161215A00001	12/15/2016	2.5	12/15/2021	12/15/2016	103.81088	103.810877	103.810877	103.810877	103.140569	101.4408915	99.77732625	98.14878661	96.55422985
161215A00014	12/15/2016	2.66	12/15/2022	12/15/2016	106.46822	106.4682222	106.4682222	106.4682222	105.1624559	102.4649842	99.85056479	97.3161041	94.85864695
161223A00028	12/23/2016	2.23	12/23/2021	12/23/2016	103.70305	103.7030517	103.7030517	103.7030517	103.0212311	101.2960126	99.60788186	97.9557087	96.33840927
170110A00021	1/10/2017	1.89	1/11/2021	1/10/2017	101.40705	101.4070471	101.4070471	101.4070471	101.1625831	100.3733458	99.59639172	98.83143573	98.07820136
170111A00009	1/11/2017	3.16	1/11/2028	1/11/2017	122.26189	122.261888	122.261888	120.4549433	112.4618141	104.9039216	97.92125849	91.4668144	85.49765845
170111A00011	1/11/2017	3.24	1/11/2029	1/11/2017	125.79375	125.7937505	125.7937505	122.7549735	113.7001137	105.2418343	97.49804651	90.40421537	83.90196097
170111A00013	1/11/2017	3.4	1/10/2031	1/11/2017	133.27793	133.277928	133.277928	126.6107603	115.4893481	105.33235	96.19806343	87.976906	80.57160312
170120A00008	1/20/2017	3.63	1/20/2034	1/20/2017	145.58188	145.58188	144.9200179	130.6432532	116.6244765	104.2144968	93.34411945	83.81052281	75.43871524
190523A00007	5/23/2019	2.28	5/23/2022	5/23/2019	104.69482	104.694822	104.694822	104.694822	103.7882771	101.6465074	99.55951494	97.525515	95.54279581
190523A00022	5/23/2019	2.47	10/12/2022	5/23/2019	105.56482	105.5648243	105.5648243	105.5648243	104.3968602	101.879394	99.43577104	97.06339069	94.75976061
190528A00002	5/28/2019	2.45	11/30/2020	5/28/2019	101.4857	101.4857002	101.4857002	101.4857002	101.2942367	100.6201961	99.95510046	99.29877275	98.65104058
190528A00003	5/28/2019	2.42	5/31/2022	5/28/2019	104.65144	104.6514396	104.6514396	104.6514396	103.7351666	101.5806236	99.48144053	97.43580256	95.44196939
190528A00009	5/28/2019	2.45	5/15/2024	5/28/2019	108.95517	108.9551745	108.9551745	108.9551745	106.2791767	102.207216	98.31459152	94.59243404	91.03236358
190529A00013	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190529A00020	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190529A00050	5/29/2019	2.31	11/29/2021	5/29/2019	103.39316	103.393161	103.393161	103.393161	102.743129	101.0892163	99.46980674	97.88388506	96.33047577
190529A00069	5/29/2019	2.34	11/29/2021	5/29/2019	103.4437	103.4436951	103.4436951	103.4436951	102.7935125	101.1391629	99.51932443	97.93298149	96.37915839
190530A00007	5/30/2019	2.35	11/30/2021	5/30/2019	103.46621	103.4662079	103.4662079	103.4662079	102.8147925	101.1575419	99.53489966	97.94584597	96.38940113
190530A00031	5/30/2019	2.21	5/31/2022	5/30/2019	104.58918	104.5891809	104.5891809	104.5891809	103.6696055	101.5080506	99.40218009	97.35016423	95.35024879
190530A00062	5/30/2019	2.5	6/15/2020	5/30/2019	100.47131	100.4713147	100.4713147	100.4713147	100.4475147	100.2368413	100.027063	99.81817404	99.6101687
190531A00007	6/5/2019	2.14	6/4/2021	6/5/2019	102.41269	102.4126911	102.4126911	102.4126911	101.9722231	100.7890429	99.63321302	98.50379367	97.39988777
190603A00033	6/3/2019	2.05	6/3/2024	6/3/2019	108.1612	108.1612006	108.1612006	108.1612006	105.4188165	101.2944527	97.35435827	93.58929595	89.99054547
190603A00046	6/3/2019	2.17	6/3/2022	6/3/2019	104.11946	104.1194599	104.1194599	104.1194599	103.2001746	101.0434634	98.94236389	96.89504622	94.89975604
190604A00007	6/4/2019	2.23	7/8/2021	6/4/2019	102.50048	102.500479	102.500479	102.500479	102.0201401	100.7507399	99.51001482	98.29699327	97.11074728
190611A00004	6/11/2019	2.33	6/11/2020	6/11/2019	100.41257	100.4125683	100.4125683	100.4125683	100.3908971	100.1913533	99.99261308	99.79467171	99.59752429
190612A00011	6/12/2019	2.2	6/30/2022	6/12/2019	104.32694	104.3269403	104.3269403	104.3269403	103.3600766	101.1287031	98.95639096	96.84113804	94.78102774

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190613A00046	6/13/2019	2.2	6/14/2021	6/13/2019	102.34699	102.3469923	102.3469923	102.3469923	101.8956353	100.6889815	99.51081156	98.36012589	97.2359711
190614A00005	6/14/2019	1.99	6/14/2022	6/14/2019	104.17896	104.1789613	104.1789613	104.1789613	103.2367054	101.0419456	98.90453619	96.82256201	94.79418858
190617A00027	6/17/2019	2.21	6/16/2023	6/17/2019	106.20057	106.2005688	106.2005688	106.2005688	104.4614474	101.2893124	98.23005238	95.27897593	92.43161857
190621A00041	6/21/2019	2.12	6/21/2022	6/21/2019	104.09994	104.0999372	104.0999372	104.0999372	103.1495989	100.9448844	98.79803345	96.70710304	94.67023253
190625A00007	6/25/2019	2.06	6/25/2021	6/25/2019	102.21792	102.2179158	102.2179158	102.2179158	101.7535189	100.5185111	99.31335958	98.13699206	96.98838687
190625A00027	6/25/2019	2.04	6/24/2022	6/25/2019	103.93452	103.9345176	103.9345176	103.9345176	102.9796989	100.7688401	98.61618614	96.51977592	94.47773191
190930A00008	9/30/2019	1.9	10/10/2023	9/30/2019	105.70852	105.7085206	105.7085206	105.7085206	103.6755211	100.217024	96.89245499	93.69591157	90.62178457
191003A00033	10/3/2019	1.54	10/3/2022	10/3/2019	103.6113	103.6112985	103.6112985	103.6112985	102.4661851	99.98729448	97.58100355	95.24476668	92.97614378
191004A00001	10/4/2019	2.47	10/4/2034	10/4/2019	131.15473	131.154734	129.3784845	114.8747946	101.280725	89.42472783	79.13889419	70.20475571	62.43532866
191009A00028	10/9/2019	1.76	10/9/2024	10/9/2019	106.67751	106.6775106	106.6775106	106.6775106	103.5588968	99.17215201	94.99592856	91.01904181	87.2309598
191010A00013	10/10/2019	1.59	10/7/2022	10/10/2019	103.75465	103.7546459	103.7546459	103.7546459	102.6007972	100.1097428	97.69184326	95.34452468	93.06532036
191015A00013	10/15/2019	1.72	10/15/2024	10/15/2019	107.36001	107.3600127	107.3600127	107.3600127	104.1920109	99.7512971	95.52476462	91.50097769	87.66917148
191017A00026	10/17/2019	2.3	7/17/2029	10/17/2019	118.53736	118.5373566	118.5373566	114.8180195	105.5687494	97.04258707	89.28265855	82.21591528	75.77662392
191021A00033	10/22/2019	1.9	7/18/2022	10/22/2019	103.72508	103.7250779	103.7250779	103.7250779	102.7285997	100.4576887	98.24806423	96.09769291	94.00462303
191025A00013	10/25/2019	1.98	10/25/2024	10/25/2019	107.75479	107.7547916	107.7547916	107.7547916	104.5692706	100.1199098	95.88536526	91.85414725	88.01544177
191101A00006	11/1/2019	1.69	11/2/2020	11/1/2019	100.94282	100.9428216	100.9428216	100.9428216	100.7833388	100.1864875	99.59668364	99.01380293	98.43772408
191104A00009	11/4/2019	1.91	11/6/2023	11/4/2019	105.86411	105.8641116	105.8641116	105.8641116	103.7583635	100.2291187	96.83867812	93.58082362	90.44965224
191104A00018	11/5/2019	1.96	11/5/2024	11/5/2019	107.7129	107.7128961	107.7128961	107.7128961	104.4902954	100.0149048	95.75675544	91.70416564	87.84614489
191104A00025	11/4/2019	2.33	8/2/2030	11/4/2019	120.89425	120.8942526	120.8942526	115.3212791	105.1080173	95.8030325	87.41606323	79.85138402	73.02370431
191106A00004	11/6/2019	2.01	11/6/2024	11/6/2019	107.94928	107.9492814	107.9492814	107.9492814	104.7203235	100.2371209	95.97157544	91.91197926	88.04731731
191108A00014	11/8/2019	2.25	11/8/2029	11/8/2019	120.65592	120.655922	120.655922	116.3601998	106.6542418	97.746278	89.66478793	82.3285391	75.66467568
191113A00020	11/13/2019	1.88	11/13/2020	11/13/2019	101.02338	101.02338	101.02338	101.02338	100.8516231	100.2255644	99.60726444	98.9965796	98.39336971
191126A00026	11/26/2019	1.91	11/25/2026	11/26/2019	112.04387	112.0438713	112.0438713	111.5780541	104.8669959	98.49717018	92.55621569	87.01305492	81.83901822
191210A00011	12/10/2019	1.92	12/12/2022	12/10/2019	104.4303	104.4302985	104.4302985	104.4302985	103.1421838	100.4801943	97.90017127	95.39906603	92.97396601
191212A00019	12/13/2019	1.93	12/19/2022	12/13/2019	104.48919	104.4891925	104.4891925	104.4891925	103.1857154	100.505037	97.90735864	95.3895742	92.94871728
191218A00014	12/18/2019	2.04	12/18/2024	12/18/2019	108.24029	108.2402857	108.2402857	108.2402857	104.8618332	100.2703852	95.90642458	91.75745875	87.81175177
191219A00047	12/19/2019	1.76	12/17/2021	12/19/2019	102.8515	102.8515026	102.8515026	102.8515026	102.1794867	100.4776685	98.81220588	97.18199952	95.58599465
191226A00020	12/26/2019	2.44	12/21/2029	12/26/2019	120.74304	120.7430371	120.7430371	116.3200226	106.6189754	97.71107282	89.63433204	82.30649778	75.6538605
200106A00019	1/6/2020	1.89	7/16/2024	1/6/2020	106.89843	106.8984342	106.8984342	106.8984342	104.0530372	99.86890536	95.87608664	92.06483467	88.42595274
200115A00014	1/17/2020	1.88	9/15/2022	1/17/2020	103.93687	103.9368684	103.9368684	103.9368684	102.82984	100.4036565	98.04703671	95.75759406	93.53303854
190826A00006	8/26/2019	1.72	8/26/2024	8/26/2019	106.32352	106.3235191	106.3235191	106.3235191	103.3539706	99.08294869	95.01195442	91.13062226	87.42917581
190829A00011	8/30/2019	1.98	12/15/2020	8/30/2019	101.23933	101.2393259	101.2393259	101.2393259	101.0298682	100.315997	99.61219362	98.91824611	98.23394838
190830A00023	8/30/2019	1.78	9/15/2022	8/30/2019	103.68837	103.6883729	103.6883729	103.6883729	102.5825446	100.1594578	97.80586663	95.51938651	93.29772943

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190906A00012	9/6/2019	1.76	9/6/2024	9/6/2019	106.54525	106.545248	106.545248	106.545248	103.5373888	99.23465567	95.13466274	91.22683809	87.50121453
190909A00029	9/9/2019	1.83	9/8/2023	9/9/2019	105.3246	105.3245982	105.3245982	105.3245982	103.3781225	100.007777	96.76509695	93.64458447	90.64100815
190909A00030	9/9/2019	1.83	9/9/2024	9/9/2019	106.8707	106.8707002	106.8707002	106.8707002	103.8492106	99.53195494	95.41839532	91.4978928	87.76041813
190910A00017	9/16/2019	1.86	9/16/2024	9/16/2019	107.03496	107.0349602	107.0349602	107.0349602	103.9885203	99.65030865	95.51758968	91.57958603	87.82614069
190910A00027	9/10/2019	1.86	9/9/2022	9/10/2019	103.86137	103.8613652	103.8613652	103.8613652	102.7662361	100.3568361	98.01607585	95.74161644	93.53121272
190917A00029	9/17/2019	2.02	12/6/2022	9/17/2019	104.67446	104.6744575	104.6744575	104.6744575	103.3979118	100.7479594	98.17918568	95.68858761	93.27329557
190919A00007	9/19/2019	2.04	9/19/2024	9/19/2019	107.85873	107.8587312	107.8587312	107.8587312	104.7927934	100.4290975	96.27222957	92.31132869	88.53616003
190923A00020	9/23/2019	2.05	9/24/2029	9/23/2019	118.479	118.4789987	118.4789987	114.4018987	104.8883792	96.15838697	88.23175192	81.03023706	74.48359502
190925A00011	9/25/2019	1.89	9/25/2024	9/25/2019	107.20909	107.209086	107.209086	107.209086	104.1309833	99.76662911	95.61006033	91.65032129	87.87709049
190926A00006	9/26/2019	1.7	9/26/2022	9/26/2019	103.98712	103.9871188	103.9871188	103.9871188	102.8538929	100.3885926	97.99499907	95.6706161	93.41305001
190927A00036	9/27/2019	1.94	9/6/2024	9/27/2019	107.34978	107.3497815	107.3497815	107.3497815	104.3326435	100.0124219	95.89553345	91.97138118	88.22997401
190930A00041	9/30/2019	1.94	10/25/2021	9/30/2019	102.62693	102.6269282	102.6269282	102.6269282	102.0199346	100.4665945	98.94448257	97.45272635	95.99048556
191002A00013	10/2/2019	1.78	10/3/2022	10/2/2019	103.7619	103.7618954	103.7618954	103.7618954	102.620926	100.1496824	97.75061306	95.42119344	93.15900347
191007A00018	10/8/2019	1.77	7/16/2021	10/8/2019	101.94172	101.9417198	101.9417198	101.9417198	101.4533164	100.1685809	98.91061379	97.67858317	96.47169194
191010A00012	10/10/2019	1.61	10/8/2021	10/10/2019	102.30142	102.3014188	102.3014188	102.3014188	101.7136884	100.2032917	98.72285514	97.27156178	95.84862383
191018A00006	10/18/2019	1.89	6/1/2022	10/18/2019	103.49522	103.4952172	103.4952172	103.4952172	102.5819576	100.4375205	98.34830614	96.312501	94.32836636
191025A00005	10/28/2019	1.98	10/28/2024	10/28/2019	107.76868	107.7686795	107.7686795	107.7686795	104.5728588	100.1159326	95.87448769	91.83698274	87.99255635
191025A00010	10/25/2019	2.24	7/25/2028	10/25/2019	116.11361	116.1136074	116.1136074	113.6976668	105.398656	97.66325598	90.5587328	84.03031224	78.0282356
191104A00019	11/5/2019	1.9	2/1/2022	11/5/2019	103.00561	103.0056136	103.0056136	103.0056136	102.278609	100.4602223	98.68289035	96.94544994	95.24677822
191104A00024	11/4/2019	2.26	8/3/2029	11/4/2019	118.25548	118.2554786	118.2554786	114.4672536	105.189578	96.64444356	88.87106558	81.79556925	75.35149873
191120A00002	11/20/2019	1.73	11/20/2020	11/20/2019	101.04724	101.047236	101.047236	101.047236	100.8671614	100.2208259	99.58275713	98.95279698	98.33079155
190808A00039	8/8/2019	1.84	8/8/2023	8/8/2019	105.22745	105.2274467	105.2274467	105.2274467	103.3613415	100.0706316	96.9017849	93.84967064	90.90940071
190808A00045	8/8/2019	1.86	8/8/2023	8/8/2019	105.29515	105.2951524	105.2951524	105.2951524	103.4285405	100.1366993	96.9667522	93.9135673	90.97225548
190808A00047	8/8/2019	1.89	8/8/2024	8/8/2019	106.9993	106.9993039	106.9993039	106.9993039	104.0799342	99.83786126	95.79227521	91.93309885	88.25082175
190809A00011	8/9/2019	1.69	8/9/2024	8/9/2019	106.93117	106.9311697	106.9311697	106.9311697	103.9904718	99.7246491	95.65715551	91.77778658	88.07691363
190809A00021	8/9/2019	2.12	8/9/2029	8/9/2019	118.89582	118.8958248	118.8958248	115.0150666	105.5948515	96.93277113	89.05742307	81.89315222	75.37193332
190812A00006	8/12/2019	1.86	8/12/2024	8/12/2019	106.88481	106.8848099	106.8848099	106.8848099	103.9538572	99.70454949	95.65253981	91.78768618	88.10041839
190813A00021	8/13/2019	1.89	8/14/2023	8/13/2019	105.4231	105.423099	105.423099	105.423099	103.5401579	100.231165	97.0452131	93.97710021	91.02187159
190813A00030	8/13/2019	1.71	8/15/2022	8/13/2019	103.82723	103.8272337	103.8272337	103.8272337	102.7749056	100.4219578	98.13450613	95.91037054	93.74745638
190816A00011	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190820A00029	8/20/2019	1.76	8/20/2024	8/20/2019	106.47693	106.4769273	106.4769273	106.4769273	103.5248806	99.2650073	95.20392769	91.33137508	87.6376642
190821A00002	8/21/2019	1.61	8/21/2024	8/21/2019	106.62786	106.6278596	106.6278596	106.6278596	103.6516651	99.36310096	95.27536014	91.3780392	87.66132582
190821A00030	8/21/2019	1.8	8/21/2024	8/21/2019	106.65799	106.6579867	106.6579867	106.6579867	103.7006753	99.43449126	95.36745607	91.48928033	87.79025765

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190821A00035	8/21/2019	2.03	8/21/2020	8/21/2019	100.70453	100.7045349	100.7045349	100.7045349	100.6251479	100.2296062	99.83717712	99.44782381	99.06151018
190826A00018	8/26/2019	1.9	8/27/2029	8/26/2019	116.90703	116.9070342	116.9070342	112.9615535	103.576525	94.96655742	87.1446476	80.03454368	73.56772646
190826A00065	8/26/2019	2.09	8/28/2029	8/26/2019	116.78829	116.7882896	116.7882896	112.9039352	103.6254779	95.09774561	87.34700435	80.29831145	73.88430389
190827A00002	8/27/2019	1.74	8/27/2024	8/27/2019	106.41628	106.4162825	106.4162825	106.4162825	103.4424685	99.16703475	95.09192074	91.20674085	87.5017
190829A00012	8/29/2019	1.54	8/29/2024	8/29/2019	106.34828	106.3482777	106.3482777	106.3482777	103.3493703	99.04740547	94.94787517	91.04024462	87.31458029
190830A00010	9/3/2019	1.75	9/1/2023	9/3/2019	105.01906	105.0190594	105.0190594	105.0190594	103.093116	99.74596044	96.52495674	93.42470175	90.44005252
190830A00012	8/30/2019	1.76	8/30/2024	8/30/2019	106.51721	106.5172137	106.5172137	106.5172137	103.532624	99.24778549	95.16401489	91.27087146	87.55850907
190906A00018	9/6/2019	1.76	9/6/2024	9/6/2019	106.54525	106.545248	106.545248	106.545248	103.5373888	99.23465567	95.13466274	91.22683809	87.50121453
190909A00028	9/9/2019	1.84	9/9/2022	9/9/2019	103.812	103.811997	103.811997	103.811997	102.7171041	100.3083154	97.96815312	95.69427864	93.48444725
190913A00001	9/13/2019	1.96	9/14/2020	9/13/2019	100.85418	100.8541757	100.8541757	100.8541757	100.7484241	100.2859649	99.82775475	99.37373504	98.92384837
190917A00035	9/19/2019	2.02	10/16/2023	9/19/2019	106.16406	106.1640552	106.1640552	106.1640552	104.1115249	100.6299949	97.28366626	94.06656046	90.97299752
190917A00045	9/17/2019	1.86	9/17/2021	9/17/2019	102.58577	102.5857706	102.5857706	102.5857706	102.0220781	100.5657252	99.13738915	97.73633262	96.36184364
190627A00009	6/27/2019	1.93	6/27/2023	6/27/2019	105.94061	105.9406104	105.9406104	105.9406104	104.1666454	100.9556781	97.86022836	94.87544226	91.99670341
190627A00038	6/27/2019	2.12	6/27/2023	6/27/2019	105.96408	105.9640803	105.9640803	105.9640803	104.1990681	101.0020116	97.91964815	94.94717027	92.08000525
190628A00024	6/28/2019	2.09	6/28/2022	6/28/2019	104.06707	104.0670742	104.0670742	104.0670742	103.1047802	100.8817196	98.71740393	96.60984559	94.55714191
190701A00006	7/1/2019	2.11	7/1/2021	7/1/2019	102.31068	102.3106842	102.3106842	102.3106842	101.8388632	100.5875109	99.36643195	98.17453639	97.01078616
190701A00023	7/1/2019	1.95	7/1/2024	7/1/2019	107.88027	107.8802734	107.8802734	107.8802734	105.0536714	100.8635286	96.86365063	93.0443468	89.39647806
190711A00022	7/11/2019	2	7/11/2023	7/11/2019	106.24311	106.24311	106.24311	106.24311	104.4312884	101.1795559	98.04597295	95.02557278	92.11362907
190731A00028	7/31/2019	1.93	7/29/2022	7/31/2019	104.27089	104.2708877	104.2708877	104.2708877	103.2481504	100.9338991	98.68293486	96.4931786	94.36263183
190805A00008	8/5/2019	1.88	8/4/2023	8/5/2019	105.34538	105.3453764	105.3453764	105.3453764	103.4886369	100.205969	97.04449492	93.9991269	91.06501724
190807A00023	8/7/2019	1.77	8/7/2024	8/7/2019	106.46843	106.4684314	106.4684314	106.4684314	103.5582233	99.32991265	95.29748714	91.45090236	87.78067867
190809A00013	8/9/2019	1.91	8/10/2020	8/9/2019	100.65685	100.6568507	100.6568507	100.6568507	100.5890508	100.2232342	99.86008568	99.499576	99.14167634
190809A00020	8/9/2019	2.44	8/9/2034	8/9/2019	133.52477	133.5247709	131.9408139	117.1933649	103.3628344	91.29144895	80.80915638	71.69635896	63.76488273
190813A00016	8/13/2019	1.88	8/13/2024	8/13/2019	106.97719	106.9771894	106.9771894	106.9771894	104.0419803	99.78827286	95.73215326	91.86345967	88.17260344
190813A00020	8/13/2019	1.89	8/12/2022	8/13/2019	103.81215	103.812152	103.812152	103.812152	102.7697832	100.4335243	98.16193543	95.9528756	93.80428716
190815A00015	8/15/2019	1.82	8/15/2022	8/15/2019	103.65742	103.6574224	103.6574224	103.6574224	102.6102038	100.2681046	97.99104464	95.77686414	93.62348766
190816A00025	8/16/2019	1.89	3/16/2021	8/16/2019	101.56642	101.5664225	101.5664225	101.5664225	101.2321988	100.2713475	99.32867385	98.40366558	97.49582957
190820A00021	8/20/2019	2.13	8/20/2029	8/20/2019	117.12512	117.1251186	117.1251186	113.2722645	103.9990507	95.47129391	87.71849876	80.66609177	74.24702526
190820A00038	8/20/2019	1.76	8/20/2024	8/20/2019	106.47693	106.4769273	106.4769273	106.4769273	103.5248806	99.2650073	95.20392769	91.33137508	87.6376642
190821A00028	8/21/2019	1.8	8/21/2023	8/21/2019	105.14599	105.1459923	105.1459923	105.1459923	103.2472342	99.92541805	96.72778947	93.64907112	90.6842378
190826A00029	8/26/2019	1.53	8/26/2024	8/26/2019	106.2919	106.2919024	106.2919024	106.2919024	103.3033503	99.00989332	94.91814819	91.01763453	87.29846905
190826A00034	8/26/2019	1.9	8/24/2029	8/26/2019	116.89234	116.8923378	116.8923378	112.9598069	103.5823353	94.978477	87.1615072	80.05534541	73.59162053
190826A00063	8/26/2019	2.05	8/28/2028	8/26/2019	114.69194	114.691943	114.691943	112.1678362	103.8341241	96.08738186	88.98019222	82.45643682	76.46518459

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190828A00020	8/28/2019	1.95	5/28/2027	8/28/2019	111.80665	111.806648	111.806648	110.7348826	103.6220515	96.91260488	90.68402418	84.89937326	79.52473562
190829A00031	8/29/2019	1.54	8/29/2024	8/29/2019	106.34828	106.3482777	106.3482777	106.3482777	103.3493703	99.04740547	94.94787517	91.04024462	87.31458029
190829A00045	8/29/2019	1.9	8/28/2026	8/29/2019	110.26464	110.2646376	110.2646376	110.1142805	103.7379787	97.66391655	91.9848449	86.67310792	81.70311775
170120A00011	1/20/2017	3.75	1/20/2037	1/20/2017	157.22644	157.2264394	152.1454145	134.2661573	117.5912833	103.2373686	90.9725804	80.47331335	71.46804719
170130A00011	1/30/2017	2.15	2/1/2021	1/30/2017	101.60559	101.6055867	101.6055867	101.6055867	101.3328039	100.4874538	99.65616078	98.83857645	98.03436404
170130A00052	3/30/2017	2.02	4/30/2020	3/30/2017	100.13996	100.1399596	100.1399596	100.1399596	100.1348934	100.0518024	99.96884665	99.88602585	99.80333968
170206A00012	2/6/2017	2.04	2/5/2021	2/6/2017	101.5313	101.5313001	101.5313001	101.5313001	101.2528007	100.3969978	99.55561524	98.72829086	97.91467461
170217A00035	2/17/2017	1.9	2/17/2021	2/17/2017	101.59753	101.5975269	101.5975269	101.5975269	101.3008771	100.4105561	99.53583419	98.67630414	97.83157271
170307A00033	3/7/2017	2.2	3/7/2022	3/7/2017	104.07682	104.0768203	104.0768203	104.0768203	103.2963803	101.3655244	99.48040394	97.63965923	95.84198015
170316A00018	3/16/2017	2.8	3/18/2024	3/16/2017	110.01153	110.0115347	110.0115347	110.0115347	107.497511	103.5516476	99.77377772	96.15586834	92.69031314
170321A00013	3/21/2017	2.18	3/21/2022	3/21/2017	104.11771	104.1177059	104.1177059	104.1177059	103.3159938	101.3481607	99.42780297	97.55348203	95.72381298
170323A00009	3/23/2017	2.1	3/23/2022	3/23/2017	103.9689	103.9688972	103.9688972	103.9688972	103.1647154	101.1931768	99.26933355	97.3917365	95.55899073
170330A00012	3/30/2017	2.11	3/30/2021	3/30/2017	101.85132	101.8513151	101.8513151	101.8513151	101.4970903	100.497113	99.51676717	98.55547941	97.61269825
170331A00004	3/31/2017	2.12	3/31/2021	3/31/2017	101.86653	101.8665328	101.8665328	101.8665328	101.5108851	100.5081391	99.52512923	98.56127756	97.61602843
170405A00013	4/5/2017	2.07	4/5/2022	4/5/2017	103.97913	103.9791281	103.9791281	103.9791281	103.1547254	101.1486693	99.19185256	97.28275441	95.41991209
170417A00041	4/17/2017	1.77	4/17/2020	4/17/2017	100.06751	100.0675065	100.0675065	100.0675065	100.0646357	100.017543	99.97051002	99.92353671	99.87662291
170417A00068	4/17/2019	2.59	4/17/2024	4/17/2019	109.36085	109.3608467	109.3608467	109.3608467	106.7647832	102.755447	98.91996924	95.24988357	91.73718254
170419A00022	4/19/2017	1.75	4/19/2021	4/19/2017	101.73892	101.7389156	101.7389156	101.7389156	101.3578291	100.3023252	99.26870877	98.25630443	97.26446445
170419A00025	4/19/2017	2.72	4/19/2027	4/19/2017	118.52811	118.5281148	118.5281148	117.565286	110.3066514	103.403381	96.9858376	91.01723832	85.46376863
170425A00056	4/25/2017	1.86	4/27/2020	4/25/2017	100.11397	100.1139654	100.1139654	100.1139654	100.109406	100.0346246	99.95995873	99.88540814	99.81097257
170427A00044	4/27/2017	3.02	4/27/2027	4/27/2017	119.26049	119.2604901	119.2604901	118.2850765	111.0562492	104.1626583	97.7529079	91.79039938	86.24148604
170427A00046	4/27/2017	3.1	4/27/2028	4/27/2017	122.60349	122.6034908	122.6034908	120.4585555	112.1732894	104.3734347	97.1874259	90.56348945	84.45447714
170502A00028	5/2/2017	2.84	5/3/2027	5/2/2017	119.48768	119.4876823	119.4876823	118.4781062	111.1565404	104.1896076	97.71452535	91.69390625	86.09339273
170509A00005	5/9/2017	1.9	5/11/2020	5/9/2017	100.18019	100.1801939	100.1801939	100.1801939	100.171313	100.0577569	99.9444716	99.83145603	99.71870922
170515A00005	5/15/2017	2.04	5/16/2022	5/15/2017	104.13621	104.1362131	104.1362131	104.1362131	103.2436975	101.1263654	99.06287895	97.05149666	95.0905475
170515A00007	5/15/2017	2.04	5/14/2021	5/15/2017	102.00033	102.0003267	102.0003267	102.0003267	101.5879539	100.4664047	99.36953151	98.29652663	97.24661736
170515A00019	5/15/2017	1.84	5/15/2020	5/15/2017	100.19159	100.1915936	100.1915936	100.1915936	100.1813255	100.0566934	99.93238605	99.80840204	99.6847401
200115A00018	1/15/2020	1.9	1/16/2024	1/15/2020	106.14106	106.1410556	106.1410556	106.1410556	103.8396461	100.1269115	96.5667149	93.15197521	89.87598046
200122A00003	1/22/2020	1.88	1/22/2021	1/22/2020	101.33084	101.3308408	101.3308408	101.3308408	101.0720454	100.2549704	99.45106614	98.66001592	97.88151328
200122A00010	1/22/2020	1.84	1/24/2022	1/22/2020	102.85954	102.8595415	102.8595415	102.8595415	102.1431136	100.3472024	98.59142737	96.87463295	95.19570509
200127A00013	1/27/2020	1.56	1/27/2023	1/27/2020	104.12545	104.1254529	104.1254529	104.1254529	102.731633	99.94534172	97.24848027	94.63770165	92.10980328
200130A00048	1/30/2020	1.74	1/31/2022	1/30/2020	102.70383	102.7038301	102.7038301	102.7038301	101.9791907	100.1665405	98.39476857	96.6627183	94.96927315
200131A00006	1/31/2020	1.52	1/31/2022	1/31/2020	102.6097	102.6096965	102.6096965	102.6096965	101.882956	100.065559	98.28924546	96.55285062	94.85524993

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200207A00004	2/7/2020	1.53	2/7/2023	2/7/2020	104.08241	104.082407	104.082407	104.082407	102.6636076	99.84799442	97.12366288	94.48718006	91.9352609
200207A00006	2/7/2020	1.76	2/8/2021	2/7/2020	101.30194	101.3019402	101.3019402	101.3019402	101.0193688	100.1565577	99.30843087	98.47461586	97.65475276
200207A00009	2/7/2020	1.58	2/7/2025	2/7/2020	107.18098	107.1809764	107.1809764	107.1809764	103.6046386	98.88625415	94.40905812	90.15953637	86.12499795
200214A00007	2/14/2020	1.59	2/14/2025	2/14/2020	107.25835	107.2583522	107.2583522	107.2583522	103.6545796	98.91585872	94.42029245	90.15420485	86.10475614
200214A00016	2/14/2020	1.57	2/14/2024	2/14/2020	105.69174	105.6917413	105.6917413	105.6917413	103.2993901	99.50247554	95.86513597	92.37986597	89.03955137
200218A00023	2/18/2020	1.55	2/21/2023	2/18/2020	104.19532	104.1953235	104.1953235	104.1953235	102.7433213	99.88664376	97.12377781	94.45115017	91.86534355
200219A00006	2/19/2020	1.76	2/18/2022	2/19/2020	102.79399	102.7939929	102.7939929	102.7939929	102.0448914	100.180035	98.35829339	96.57841658	94.83919882
200224A00002	2/24/2020	1.56	2/24/2023	2/24/2020	103.70511	103.7051082	103.7051082	103.7051082	102.2560299	99.41004863	96.6575919	93.99509565	91.41915139
200224A00004	2/24/2020	1.68	2/24/2021	2/24/2020	101.2939	101.2939016	101.2939016	101.2939016	100.9881674	100.0823263	99.19266496	98.31875315	97.46017565
200224A00015	2/24/2020	1.57	1/10/2024	2/24/2020	104.85684	104.856837	104.856837	104.856837	102.5835833	98.90970428	95.38644856	92.0068201	88.76418935
200224A00020	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200224A00035	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200226A00005	2/26/2020	1.53	2/27/2023	2/26/2020	103.62715	103.6271523	103.6271523	103.6271523	102.1716422	99.31843809	96.55926374	93.89052598	91.30878896
200226A00013	2/26/2020	1.35	2/26/2024	2/26/2020	104.86974	104.8697352	104.8697352	104.8697352	102.4510842	98.6383286	94.98729699	91.49031847	88.14012536
200227A00052	2/27/2020	1.41	2/27/2023	2/27/2020	103.27441	103.2744056	103.2744056	103.2744056	101.8210406	98.97299044	96.21884315	93.55500972	90.97805826
200228A00013	3/3/2020	1.33	1/14/2022	3/3/2020	101.89247	101.8924708	101.8924708	101.8924708	101.1916757	99.43075947	97.70872439	96.02442073	94.37674287
200228A00020	2/28/2020	1.32	2/24/2023	2/28/2020	103.0016	103.0015973	103.0015973	103.0015973	101.5567804	98.72105115	95.9785945	93.32585465	90.75943102
200228A00061	2/28/2020	1.13	7/20/2022	2/28/2020	102.35946	102.3594621	102.3594621	102.3594621	101.3614319	99.09299122	96.88614904	94.73886021	92.64916155
190918A00003	9/18/2019	1.95	9/19/2022	9/18/2019	104.12901	104.1290106	104.1290106	104.1290106	103.0133597	100.5742127	98.20528741	95.90416403	93.66852121
190923A00078	9/23/2019	1.96	6/28/2024	9/23/2019	107.11898	107.1189767	107.1189767	107.1189767	104.3276388	100.1828669	96.22560449	92.44633305	88.83607425
190926A00012	9/26/2019	1.93	9/27/2021	9/26/2019	102.48343	102.4834331	102.4834331	102.4834331	101.9100266	100.4315881	98.9820401	97.56061041	96.1665539
190927A00012	10/1/2019	1.96	10/1/2024	10/1/2019	107.55293	107.5529282	107.5529282	107.5529282	104.4509325	100.0641896	95.88691187	91.9080193	88.11707555
190930A00075	9/30/2019	2.19	9/29/2027	9/30/2019	114.16458	114.1645806	114.1645806	112.6985914	105.2082776	98.15873684	91.63457216	85.59389376	79.99835353
191001A00005	10/1/2019	1.8	4/18/2023	10/1/2019	104.62804	104.6280424	104.6280424	104.6280424	103.0457953	100.0499594	97.15673229	94.36202676	91.66194332
191003A00002	10/3/2019	1.58	10/4/2021	10/3/2019	102.2389	102.2388982	102.2388982	102.2388982	101.6561013	100.1567447	98.68702028	97.24612514	95.833285
191004A00004	10/4/2019	1.54	10/4/2024	10/4/2019	106.48955	106.4895535	106.4895535	106.4895535	103.3694126	98.97485223	94.7914065	90.80785463	87.01363063
191004A00011	10/4/2019	1.77	10/5/2020	10/4/2019	100.8623	100.8622969	100.8622969	100.8622969	100.7333727	100.2133438	99.69867557	99.18928527	98.68509197
191004A00013	10/4/2019	1.53	10/22/2021	10/4/2019	102.23285	102.2328533	102.2328533	102.2328533	101.6286354	100.081925	98.56629956	97.08089279	95.62487025
191007A00020	10/7/2019	1.69	10/7/2022	10/7/2019	103.54921	103.5492141	103.5492141	103.5492141	102.4013306	99.9225198	97.5163329	95.18022054	92.9117392
191008A00031	10/8/2019	1.52	10/8/2024	10/8/2019	106.41376	106.4137608	106.4137608	106.4137608	103.2809236	98.87831541	94.68763276	90.69758998	86.89756139
191015A00001	10/15/2019	1.87	10/15/2021	10/15/2019	102.47183	102.4718335	102.4718335	102.4718335	101.8771385	100.3513053	98.85586513	97.38998163	95.95284871
191018A00015	10/18/2019	1.89	10/18/2021	10/18/2019	102.51639	102.5163869	102.5163869	102.5163869	101.9180087	100.3839406	98.88051424	97.40688257	95.96222928
191031A00041	10/31/2019	1.72	10/31/2023	10/31/2019	105.81051	105.8105058	105.8105058	105.8105058	103.7096612	100.180161	96.78937004	93.53108282	90.39940776

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191105A00008	11/5/2019	1.83	11/5/2024	11/5/2019	107.96488	107.964881	107.964881	107.964881	104.7174773	100.2115583	95.92497614	91.84590745	87.96323005
191107A00011	11/8/2019	2.02	2/24/2023	11/8/2019	105.0535	105.0535043	105.0535043	105.0535043	103.5962581	100.7306271	97.95900359	95.27780758	92.68361542
191113A00016	11/15/2019	2.02	8/15/2024	11/15/2019	107.60321	107.6032101	107.6032101	107.6032101	104.654503	100.3825201	96.30902293	92.42379668	88.71720304
191113A00017	11/15/2019	1.93	12/6/2021	11/15/2019	102.78475	102.7847527	102.7847527	102.7847527	102.1282621	100.4612074	98.82922892	97.23128406	95.66637155
191115A00028	11/15/2019	2.34	9/28/2029	11/15/2019	119.31013	119.3101252	119.3101252	115.2774196	105.8276169	97.13459652	89.23743032	82.0588502	75.52946095
191120A00005	11/20/2019	2.63	11/20/2034	11/20/2019	133.74797	133.747968	131.772765	117.0520621	103.2216276	91.16051468	80.70304229	71.62486859	63.73417785
191122A00007	11/22/2019	1.87	11/21/2025	11/22/2019	109.99308	109.9930752	109.9930752	109.9930752	105.0566979	99.58075345	94.42353359	89.56484136	84.98586458
191129A00010	11/29/2019	1.94	8/27/2021	11/29/2019	102.35697	102.3569705	102.3569705	102.3569705	101.8199199	100.4257253	99.05730173	97.71399714	96.39518096
191129A00012	11/29/2019	1.99	11/29/2024	11/29/2019	107.91489	107.9148895	107.9148895	107.9148895	104.6079425	100.0696472	95.75420288	91.64948465	87.74409459
190829A00050	8/29/2019	1.73	8/29/2024	8/29/2019	106.37975	106.3797535	106.3797535	106.3797535	103.3999442	99.12048697	95.04177224	91.15338087	87.4454868
190904A00001	9/4/2019	1.5	9/4/2024	9/4/2019	106.19254	106.1925446	106.1925446	106.1925446	103.1756852	98.86225378	94.75255703	90.83595375	87.1024123
190905A00003	9/5/2019	1.76	9/5/2024	9/5/2019	106.54125	106.5412472	106.5412472	106.5412472	103.5367232	99.23655624	95.13888842	91.23316681	87.50944171
190910A00030	9/10/2019	1.86	9/10/2024	9/10/2019	107.00931	107.0093106	107.0093106	107.0093106	103.9829242	99.66016666	95.54144657	91.61610169	87.87408117
190913A00011	9/13/2019	2.02	9/13/2022	9/13/2019	104.27528	104.2752785	104.2752785	104.2752785	103.1704661	100.7453557	98.3895998	96.1008248	93.87675276
190916A00009	9/16/2019	2.04	9/16/2022	9/16/2019	104.33926	104.3392581	104.3392581	104.3392581	103.2283612	100.7945176	98.43049923	96.13390839	93.90244438
190924A00026	9/24/2019	1.9	7/22/2022	9/24/2019	103.74284	103.7428378	103.7428378	103.7428378	102.7391302	100.4577077	98.23810812	96.07828938	93.97629047
190924A00033	9/24/2019	1.84	9/30/2022	9/24/2019	103.90116	103.9011569	103.9011569	103.9011569	102.7654825	100.3001891	97.90672771	95.58259259	93.32538137
190925A00018	9/25/2019	1.7	9/25/2024	9/25/2019	107.18066	107.180655	107.180655	107.180655	104.0825425	99.6949449	95.51690192	91.53733528	87.74580965
191001A00006	10/1/2019	1.83	6/18/2024	10/1/2019	106.52091	106.5209132	106.5209132	106.5209132	103.766666	99.65953671	95.73732726	91.99070038	88.41084552
191001A00023	10/1/2019	1.85	9/27/2024	10/1/2019	107.03671	107.0367132	107.0367132	107.0367132	103.9540573	99.58853652	95.4311531	91.47091829	87.69748029
191002A00015	10/2/2019	1.78	10/3/2022	10/2/2019	103.7619	103.7618954	103.7618954	103.7618954	102.620926	100.1496824	97.75061306	95.42119344	93.15900347
191003A00019	10/3/2019	1.71	9/27/2024	10/3/2019	106.40291	106.402908	106.402908	106.402908	103.3277135	98.97613735	94.83222076	90.88499537	87.12412876
191003A00022	10/3/2019	1.72	2/3/2023	10/3/2019	104.09325	104.0932505	104.0932505	104.0932505	102.6902659	99.89735839	97.19441393	94.57807001	92.04510798
191004A00012	10/4/2019	1.78	10/4/2024	10/4/2019	106.74831	106.7483059	106.7483059	106.7483059	103.6457031	99.2694573	95.10271151	91.134362	87.35395133
191011A00013	10/11/2019	1.88	10/11/2022	10/11/2019	104.0504	104.0504047	104.0504047	104.0504047	102.8920417	100.3965531	97.97434409	95.62283397	93.33954968
191015A00029	10/15/2019	1.91	10/15/2024	10/15/2019	107.38814	107.3881442	107.3881442	107.3881442	104.2408047	99.82380143	95.61915924	91.61556955	87.8023856
191023A00006	10/23/2019	1.95	10/23/2024	10/23/2019	107.60758	107.6075805	107.6075805	107.6075805	104.4305923	99.98935678	95.76238787	91.73823471	87.90611924
191024A00016	10/25/2019	1.91	2/16/2021	10/25/2019	101.46853	101.4685305	101.4685305	101.4685305	101.1741583	100.2889954	99.41927026	98.56458179	97.72454252
191106A00012	11/6/2019	2.02	10/11/2024	11/6/2019	107.8726	107.8726041	107.8726041	107.8726041	104.7329888	100.3149174	96.10871251	92.10311676	88.28753014
191114A00009	11/18/2019	1.94	8/16/2023	11/18/2019	105.60226	105.6022592	105.6022592	105.6022592	103.7128415	100.3958347	97.20231533	94.12705558	91.16507661
191121A00009	11/21/2019	2.55	11/21/2036	11/21/2019	140.64886	140.6488619	135.7364185	118.4860554	102.8428257	89.47870187	78.10293924	68.4047128	60.12340938
191206A00008	12/6/2019	2.44	12/6/2030	12/6/2019	122.75285	122.7528532	122.7528532	116.4269842	105.858957	96.26058582	87.63517439	79.87844302	72.89779914
191209A00009	12/9/2019	1.91	12/9/2021	12/9/2019	102.7641	102.7641024	102.7641024	102.7641024	102.1041206	100.4294001	98.79004157	97.18498935	95.61323004

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191121A00010	11/21/2019	2.59	11/20/2037	11/21/2019	143.76536	143.7653643	137.4547496	119.1241396	102.7188952	88.82957902	77.10647399	67.19430144	58.79796246
191122A00018	11/26/2019	3.11	11/22/2039	11/26/2019	154.21838	154.2183757	145.1385026	124.8376308	106.9029288	91.91751131	79.43905888	69.02268782	60.30522821
191126A00023	11/26/2019	1.81	5/27/2025	11/26/2019	108.81966	108.8196615	108.8196615	108.8196615	104.7838307	99.75851288	95.00349176	90.50282059	86.24157865
191210A00009	12/10/2019	1.92	12/10/2020	12/10/2019	101.17308	101.1730784	101.1730784	101.1730784	100.9697443	100.2697118	99.57936395	98.89850066	98.2269274
191212A00028	12/13/2019	1.93	1/17/2023	12/13/2019	104.62017	104.6201684	104.6201684	104.6201684	103.2522398	100.4958132	97.8268149	95.24196702	92.73813594
191218A00013	12/18/2019	1.94	12/19/2022	12/18/2019	104.51666	104.5166602	104.5166602	104.5166602	103.2130312	100.5319765	97.93393061	95.41578723	92.97457966
191223A00009	12/23/2019	1.95	12/23/2022	12/23/2019	104.56242	104.5624166	104.5624166	104.5624166	103.2499414	100.5580422	97.94974937	95.42192328	92.97156616
200108A00018	1/8/2020	1.68	1/18/2022	1/8/2020	102.85123	102.8512336	102.8512336	102.8512336	102.1399796	100.354283	98.60827932	96.90080518	95.23074092
200109A00014	1/14/2020	1.93	8/15/2022	1/14/2020	103.92136	103.9213648	103.9213648	103.9213648	102.8729289	100.5276476	98.24747397	96.03024627	93.87388706
200110A00013	1/10/2020	1.76	1/10/2024	1/10/2020	106.27803	106.278025	106.278025	106.278025	103.9787845	100.2601846	96.69419086	93.27370388	89.99199683
200127A00019	1/27/2020	1.8	1/27/2025	1/27/2020	107.26432	107.2643215	107.2643215	107.2643215	103.7539912	99.08994583	94.66205443	90.45718481	86.46300015
200127A00030	1/27/2020	1.8	1/27/2025	1/27/2020	107.26432	107.2643215	107.2643215	107.2643215	103.7539912	99.08994583	94.66205443	90.45718481	86.46300015
200129A00017	2/3/2020	1.75	8/15/2022	2/3/2020	103.48946	103.489459	103.489459	103.489459	102.4430151	100.1029409	97.82786234	95.61562096	93.46414259
200130A00012	1/30/2020	1.72	1/30/2023	1/30/2020	104.07776	104.0777604	104.0777604	104.0777604	102.6840192	99.90226802	97.20979451	94.60326964	92.07950673
200130A00021	1/30/2020	1.54	1/30/2023	1/30/2020	104.08004	104.0800434	104.0800434	104.0800434	102.6797688	99.88647327	97.18306666	94.56618897	92.03262416
200131A00007	1/31/2020	1.68	1/31/2023	1/31/2020	103.96709	103.9670901	103.9670901	103.9670901	102.5717716	99.78906618	97.09575691	94.48851159	91.96414014
200131A00010	2/3/2020	1.68	2/3/2023	2/3/2020	103.97831	103.9783115	103.9783115	103.9783115	102.5760037	99.78473955	97.0833986	94.46861966	91.93718533
200131A00017	1/31/2020	1.51	1/31/2024	1/31/2020	105.40284	105.4028363	105.4028363	105.4028363	103.0529536	99.29863633	95.70067359	92.25177827	88.94503963
200203A00001	2/3/2020	1.7	2/3/2023	2/3/2020	104.03578	104.035781	104.035781	104.035781	102.6331348	99.84104897	97.13890627	94.52334483	91.99114665
200207A00017	2/7/2020	1.96	2/8/2027	2/7/2020	111.38928	111.3892844	111.3892844	110.6720963	103.8494529	97.38717708	91.37076692	85.76723171	80.54617686
200214A00020	2/18/2020	1.78	1/15/2025	2/18/2020	107.11852	107.1185211	107.1185211	107.1185211	103.6537627	99.02156572	94.6225168	90.44368132	86.47291068
200218A00004	2/18/2020	1.73	2/21/2023	2/18/2020	104.19179	104.1917935	104.1917935	104.1917935	102.746686	99.9019962	97.15047256	94.4885751	91.91291801
200218A00024	2/20/2020	1.73	7/17/2023	2/20/2020	104.76797	104.7679709	104.7679709	104.7679709	102.9610665	99.73299354	96.62263068	93.62504141	90.73552568
200224A00007	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200228A00062	2/28/2020	1.32	2/28/2023	2/28/2020	103.0126	103.0125986	103.0125986	103.0125986	101.5585355	98.7115433	95.95853676	93.29591995	90.72025459
200228A00064	2/28/2020	1.35	2/28/2024	2/28/2020	104.15939	104.1593857	104.1593857	104.1593857	101.7561675	97.97099752	94.34628018	90.87441089	87.54818445
200302A00035	3/2/2020	1.22	7/3/2023	3/2/2020	103.03654	103.0365364	103.0365364	103.0365364	101.2773638	98.11247601	95.06206783	92.12132322	89.28566134
200304A00007	3/4/2020	1.01	3/15/2022	3/4/2020	101.41163	101.4116306	101.4116306	101.4116306	100.6316389	98.71326107	96.84081475	95.01292168	93.22825433
200304A00010	3/4/2020	1.2	3/4/2027	3/4/2020	107.56528	107.5652801	107.5652801	106.7620982	99.90265764	93.4617318	87.47385141	81.90497884	76.72379207
200304A00040	3/4/2020	1.12	3/1/2024	3/4/2020	103.25637	103.2563671	103.2563671	103.2563671	100.8560625	97.08334291	93.4709648	90.0113142	86.69717768
200305A00008	3/10/2020	1.01	6/19/2023	3/10/2020	102.31899	102.318995	102.318995	102.318995	100.5996597	97.48203441	94.47615628	91.57735864	88.78120143
200305A00029	3/5/2020	1.14	3/5/2025	3/5/2020	104.18909	104.1890946	104.1890946	104.1890946	100.58132	95.89517195	91.45229621	87.23887556	83.24194541
200306A00039	3/6/2020	0.88	3/6/2023	3/6/2020	101.72772	101.7277194	101.7277194	101.7277194	100.2672411	97.42412396	94.67552338	92.0178005	89.44747697

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200309A00021	3/9/2020	1.05	3/9/2026	3/9/2020	104.4427	104.4426996	104.4426996	104.4426996	99.04940959	93.51946573	88.3284289	83.45390346	78.87508007
200310A00073	3/12/2020	2.12	3/11/2027	3/12/2020	112.64236	112.6423552	112.6423552	111.824939	104.8879248	98.31537904	92.20094946	86.51036639	81.21208778
200312A00017	3/16/2020	1.09	2/15/2023	3/16/2020	102.30835	102.3083546	102.3083546	102.3083546	100.8883623	98.08767748	95.37843217	92.75716754	90.22057445
170519A00002	5/19/2017	2.15	5/19/2022	5/19/2017	103.9986	103.9985987	103.9985987	103.9985987	103.1050372	100.9888755	98.92654658	96.9163075	94.9564859
170530A00006	5/30/2017	2.15	5/31/2022	5/30/2017	104.06019	104.0601859	104.0601859	104.0601859	103.146337	100.9983296	98.90554876	96.86618353	94.87849737
170530A00025	5/30/2017	1.63	6/1/2020	5/30/2017	100.26031	100.2603117	100.2603117	100.2603117	100.2439345	100.0719443	99.90054392	99.72973041	99.55950074
170531A00018	5/31/2017	1.97	5/28/2021	5/31/2017	101.98679	101.9867876	101.9867876	101.9867876	101.5569135	100.397991	99.26540456	98.15826473	97.07572154
170606A00017	6/6/2017	1.9	6/6/2022	6/6/2017	103.93854	103.9385443	103.9385443	103.9385443	103.0112074	100.8406947	98.72646885	96.66666693	94.65950358
170608A00003	6/8/2017	1.97	6/8/2021	6/8/2017	102.03832	102.0383215	102.0383215	102.0383215	101.5948677	100.4062228	99.24527592	98.11106758	97.00268233
170615A00004	6/15/2017	2.01	6/11/2021	6/15/2017	102.10082	102.1008233	102.1008233	102.1008233	101.6536002	100.4565426	99.28756555	98.14568987	97.02998147
170626A00016	6/26/2017	1.64	6/26/2020	6/26/2017	100.36754	100.3675418	100.3675418	100.3675418	100.3378815	100.0966481	99.85657828	99.61766373	99.37989605
170629A00014	6/29/2017	1.89	8/25/2020	6/29/2017	100.66714	100.6671419	100.6671419	100.6671419	100.5835223	100.1771028	99.77396504	99.37406952	98.97737719
170726A00034	7/26/2017	2.05	7/26/2021	7/26/2017	102.35706	102.3570564	102.3570564	102.3570564	101.8561704	100.5446757	99.25770891	97.99461295	96.75475434
170728A00031	7/28/2017	2.27	1/27/2023	7/28/2017	105.63575	105.635754	105.635754	105.635754	104.2396012	101.443316	98.73637151	96.11543489	93.5773166
170728A00033	7/28/2017	2.46	1/29/2024	7/28/2017	108.36201	108.3620109	108.3620109	108.3620109	106.0042409	102.21733	98.58683491	95.10549909	91.76643993
170728A00040	7/28/2017	2.44	1/27/2025	7/28/2017	111.33596	111.3359617	111.3359617	111.3359617	107.745596	102.9572267	98.41074799	94.09270854	89.99047242
170731A00004	7/31/2017	2.16	7/29/2022	7/31/2017	104.38559	104.3855926	104.3855926	104.3855926	103.3664879	101.059443	98.81531838	96.63205199	94.50766152
170731A00006	7/31/2017	2.16	8/1/2022	7/31/2017	104.40106	104.4010637	104.4010637	104.4010637	103.3764457	101.0614765	98.80983493	96.61944798	94.48832223
170804A00020	8/4/2017	2.13	8/1/2022	8/4/2017	104.33024	104.3302376	104.3302376	104.3302376	103.3059394	100.9918107	98.74099192	96.55141032	94.42107305
170818A00037	8/18/2017	2.08	8/18/2022	8/18/2017	104.29609	104.2960919	104.2960919	104.2960919	103.2403554	100.8828346	98.59092985	96.36245634	94.19531483
170821A00038	8/23/2017	2.39	8/23/2024	8/23/2017	110.10643	110.1064253	110.1064253	110.1064253	107.0840435	102.7153806	98.55053381	94.5789579	90.79070642
170822A00017	8/22/2017	2.11	8/22/2022	8/22/2017	104.3884	104.3883962	104.3883962	104.3883962	103.3248017	100.9558688	98.65312607	96.41436102	94.2374482
170822A00019	8/22/2017	2.44	8/22/2024	8/22/2017	109.49638	109.4963751	109.4963751	109.4963751	106.5035981	102.1738352	98.0455038	94.10821082	90.3521516
170831A00021	8/31/2017	1.99	2/25/2022	8/31/2017	103.26515	103.2651456	103.2651456	103.2651456	102.5049493	100.6154021	98.76994021	96.96727362	95.20615857
170906A00037	9/6/2017	1.99	9/6/2022	9/6/2017	104.16828	104.1682818	104.1682818	104.1682818	103.0774593	100.672197	98.33520745	96.06417244	93.85686647
170908A00016	9/10/2018	1.94	9/10/2021	9/10/2018	102.42096	102.4209633	102.4209633	102.4209633	101.8675714	100.4354417	99.03045563	97.65190936	96.29912275
170913A00024	9/13/2017	1.8	8/17/2020	9/13/2017	100.59605	100.5960461	100.5960461	100.5960461	100.520945	100.1366346	99.75526768	99.37681048	99.00122967
191203A00004	12/4/2019	1.87	12/4/2024	12/4/2019	107.37251	107.3725122	107.3725122	107.3725122	104.0547151	99.51672857	95.20230272	91.09923897	87.19607213
191204A00013	12/4/2019	1.72	12/4/2024	12/4/2019	107.58118	107.5811813	107.5811813	107.5811813	104.2367999	99.66710503	95.32322289	91.19279938	87.26422513
191212A00027	12/13/2019	1.93	10/17/2022	12/13/2019	104.20535	104.2053519	104.2053519	104.2053519	103.034238	100.5213309	98.08252141	95.71518675	93.41681424
191212A00029	12/13/2019	1.94	5/16/2023	12/13/2019	105.18563	105.1856342	105.1856342	105.1856342	103.530727	100.4544365	97.48541988	94.61931799	91.85197651
191216A00042	12/16/2019	1.95	12/16/2022	12/16/2019	104.53041	104.5304115	104.5304115	104.5304115	103.2331522	100.5595746	97.96857454	95.45706997	93.02211697
191219A00036	12/20/2019	2.1	12/20/2024	12/20/2019	108.53518	108.5351793	108.5351793	108.5351793	105.145862	100.5428187	96.16796751	92.00876732	88.05343729

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191223A00019	12/23/2019	1.92	12/30/2020	12/23/2019	101.26558	101.2655805	101.2655805	101.2655805	101.0379153	100.2832434	99.53980333	98.80734603	98.08562962
191230A00031	12/30/2019	1.85	12/30/2024	12/30/2019	108.32105	108.3210525	108.3210525	108.3210525	104.8739918	100.2242812	95.80706585	91.60946664	87.61939185
191231A00006	12/31/2019	1.88	12/31/2021	12/31/2019	102.82706	102.8270639	102.8270639	102.8270639	102.1407149	100.4076571	98.71213793	97.05300323	95.4291468
200110A00014	1/10/2020	1.73	1/10/2023	1/10/2020	104.53599	104.535994	104.535994	104.535994	103.1779366	100.4293138	97.76758812	95.18948278	92.6918676
200110A00022	1/13/2020	2	1/6/2025	1/13/2020	108.18788	108.1878848	108.1878848	108.1878848	104.7407038	100.1035273	95.69835583	91.51234902	87.53344848
200121A00009	1/24/2020	1.94	1/24/2025	1/24/2020	107.93128	107.9312776	107.9312776	107.9312776	104.4230678	99.7504634	95.31385885	91.10014476	87.09700614
200127A00018	1/27/2020	1.8	1/27/2025	1/27/2020	107.26432	107.2643215	107.2643215	107.2643215	103.7539912	99.08994583	94.66205443	90.45718481	86.46300015
200128A00015	1/28/2020	1.81	1/28/2025	1/28/2020	107.31705	107.3170548	107.3170548	107.3170548	103.8023899	99.13473608	94.70352216	90.49559785	86.49860903
200128A00028	1/28/2020	1.81	1/28/2025	1/28/2020	107.31705	107.3170548	107.3170548	107.3170548	103.8023899	99.13473608	94.70352216	90.49559785	86.49860903
200203A00009	2/3/2020	1.52	2/3/2023	2/3/2020	104.03808	104.0380826	104.0380826	104.0380826	102.6288411	99.82513815	97.1119955	94.48601986	91.94396352
200203A00022	2/3/2020	1.75	2/3/2025	2/3/2020	107.04882	107.0488233	107.0488233	107.0488233	103.5156142	98.83933953	94.4007972	90.18673234	86.18469341
200207A00016	2/7/2020	1.74	2/7/2024	2/7/2020	105.61581	105.6158091	105.6158091	105.6158091	103.2579381	99.49971321	95.89824377	92.44620948	89.136669
200210A00009	2/10/2020	1.57	2/10/2025	2/10/2020	107.14378	107.1437836	107.1437836	107.1437836	103.5566339	98.83120565	94.34774634	90.09267538	86.05324077
200212A00003	2/12/2020	1.63	2/12/2025	2/12/2020	107.44736	107.4473617	107.4473617	107.4473617	103.8485841	99.1106482	94.61548874	90.34946776	86.29978018
200214A00013	2/18/2020	1.78	11/10/2021	2/18/2020	102.43893	102.4389312	102.4389312	102.4389312	101.8137074	100.2191094	98.65711316	97.12678538	95.62722813
200218A00015	2/18/2020	1.77	2/18/2021	2/18/2020	101.35168	101.3516764	101.3516764	101.3516764	101.0545553	100.1645742	99.29021124	98.43105821	97.58672084
200220A00019	2/20/2020	1.59	2/22/2021	2/20/2020	101.33982	101.3398215	101.3398215	101.3398215	101.0362389	100.1336781	99.24717266	98.37629736	97.52064173
200220A00029	2/20/2020	1.72	2/21/2023	2/20/2020	104.16256	104.1625632	104.1625632	104.1625632	102.717632	99.87336705	97.12225782	94.46076471	91.8855022
191223A00043	12/23/2019	1.77	3/23/2021	12/23/2019	101.63657	101.6365724	101.6365724	101.6365724	101.2916038	100.3093451	99.34606	98.40120307	97.47424937
191223A00056	12/23/2019	2.46	12/14/2029	12/23/2019	120.89665	120.8966531	120.8966531	116.5053721	106.8140264	97.91179614	89.83856596	82.51244299	75.86002733
200108A00021	1/13/2020	1.97	1/13/2025	1/13/2020	108.02657	108.0265686	108.0265686	108.0265686	104.5572397	99.90858302	95.49336034	91.29863465	87.31225525
200109A00012	1/14/2020	1.94	12/15/2022	1/14/2020	104.49848	104.4984819	104.4984819	104.4984819	103.203547	100.5329611	97.94479754	95.4359827	93.00358057
200114A00006	1/15/2020	1.99	1/15/2025	1/15/2020	108.13225	108.1322539	108.1322539	108.1322539	104.654243	99.99835127	95.57646312	91.3756057	87.38359418
200115A00015	1/17/2020	1.88	1/17/2023	1/17/2020	104.47884	104.4788358	104.4788358	104.4788358	103.1117205	100.3572837	97.69022751	95.10727561	92.60529585
200116A00005	1/16/2020	1.92	7/16/2021	1/16/2020	102.13799	102.1379945	102.1379945	102.1379945	101.6491648	100.3630839	99.1037941	97.87046311	96.66229313
200117A00002	1/17/2020	1.72	1/19/2021	1/17/2020	101.30766	101.307663	101.307663	101.307663	101.0524132	100.241924	99.44439645	98.65952159	97.88699995
200122A00034	1/22/2020	1.87	1/22/2024	1/22/2020	106.05225	106.0522508	106.0522508	106.0522508	103.7350233	100.0091305	96.43692665	93.01127462	89.72540727
200130A00028	1/30/2020	1.54	2/7/2023	1/30/2020	104.11133	104.1113281	104.1113281	104.1113281	102.692357	99.87632771	97.15159019	94.5147112	91.96240536
200131A00005	1/31/2020	1.64	2/1/2021	1/31/2020	101.2973	101.2972955	101.2972955	101.2972955	101.0242752	100.1786355	99.34709034	98.52928971	97.72489527
200131A00038	1/31/2020	1.73	1/30/2025	1/31/2020	106.93585	106.9358522	106.9358522	106.9358522	103.4189658	98.75556063	94.3287509	90.12536867	86.13304297
200203A00006	2/3/2020	1.76	2/3/2025	2/3/2020	107.09762	107.0976162	107.0976162	107.0976162	103.563758	98.88633133	94.44667902	90.23154425	86.22847369
200203A00011	2/3/2020	1.7	2/15/2023	2/3/2020	104.08133	104.0813283	104.0813283	104.0813283	102.6507239	99.82440868	97.09015905	94.44449565	91.88408978
200204A00001	2/4/2020	1.79	2/4/2025	2/4/2020	107.24798	107.2479829	107.2479829	107.2479829	103.7083924	99.02479851	94.57937523	90.35883775	86.35070683

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200204A00012	2/4/2020	1.98	2/4/2027	2/4/2020	111.50905	111.5090451	111.5090451	110.8043793	103.9898907	97.53302878	91.52086741	85.92055647	80.70182675
200214A00015	2/18/2020	1.76	8/6/2024	2/18/2020	106.42053	106.420529	106.420529	106.420529	103.5140693	99.28919775	95.25995465	91.41631401	87.74881323
200219A00007	2/19/2020	1.81	8/19/2021	2/19/2020	102.13792	102.1379151	102.1379151	102.1379151	101.6103791	100.2387264	98.89210147	97.5698786	96.27145258
200221A00031	2/21/2020	1.69	2/21/2025	2/21/2020	106.87315	106.8731499	106.8731499	106.8731499	103.273825	98.55322393	94.07514436	89.82592661	85.79274738
200224A00001	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200224A00016	2/24/2020	1.56	2/24/2023	2/24/2020	103.70511	103.7051082	103.7051082	103.7051082	102.2560299	99.41004863	96.6575919	93.99509565	91.41915139
200224A00021	2/24/2020	1.58	9/24/2024	2/24/2020	105.80385	105.8038515	105.8038515	105.8038515	102.7455361	98.41452682	94.29000625	90.36108298	86.61749605
200225A00045	2/25/2020	1.54	2/24/2023	2/25/2020	103.64648	103.6464823	103.6464823	103.6464823	102.1977591	99.35263217	96.60100878	93.93932557	91.36417469
200226A00014	2/26/2020	1.53	2/27/2023	2/26/2020	103.62715	103.6271523	103.6271523	103.6271523	102.1716422	99.31843809	96.55926374	93.89052598	91.30878896
200224A00046	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200225A00050	2/25/2020	1.57	2/25/2025	2/25/2020	106.29525	106.2952482	106.2952482	106.2952482	102.6888789	97.97166083	93.49753307	89.25276853	85.22448264
200226A00006	2/26/2020	1.57	2/26/2025	2/26/2020	106.29867	106.2986654	106.2986654	106.2986654	102.6885344	97.96863735	93.49210268	89.24518049	85.21496527
200226A00012	2/26/2020	1.54	2/28/2022	2/26/2020	102.40784	102.4078355	102.4078355	102.4078355	101.646611	99.75689932	97.91149186	96.10908696	94.34842979
200227A00016	2/27/2020	1.47	2/27/2025	2/27/2020	105.80746	105.807465	105.807465	105.807465	102.2003017	97.48955369	93.02200448	88.7839012	84.76233614
200227A00023	2/27/2020	1.47	2/27/2025	2/27/2020	105.80746	105.807465	105.807465	105.807465	102.2003017	97.48955369	93.02200448	88.7839012	84.76233614
200227A00027	2/27/2020	1.47	2/27/2025	2/27/2020	105.80746	105.807465	105.807465	105.807465	102.2003017	97.48955369	93.02200448	88.7839012	84.76233614
200227A00030	2/27/2020	1.59	2/27/2026	2/27/2020	107.63093	107.6309298	107.6309298	107.6309298	102.2347221	96.63584395	91.37696694	86.4357749	81.79152301
200228A00023	2/28/2020	1.31	2/28/2022	2/28/2020	101.96259	101.9625865	101.9625865	101.9625865	101.2029304	99.31760026	97.4764906	95.67830211	93.92178223
200228A00043	2/28/2020	1.21	2/28/2025	2/28/2020	105.4258	105.4258005	105.4258005	105.4258005	101.7943284	97.06266148	92.5763398	88.32144054	84.28489942
200302A00036	3/2/2020	1.45	3/2/2026	3/2/2020	106.8084	106.8083964	106.8083964	106.8083964	101.4105115	95.82825615	90.58586023	85.66097354	81.03282237
200303A00012	3/3/2020	1.71	3/1/2030	3/3/2020	113.91226	113.9122635	113.9122635	109.2128466	99.63021546	90.89989633	83.00783703	75.86922202	69.40820601
200304A00034	3/4/2020	1.12	3/4/2024	3/4/2020	103.2632	103.2631977	103.2631977	103.2631977	100.8542787	97.07418583	93.45506341	89.98925208	86.66949631
200304A00038	3/4/2020	1.01	3/1/2022	3/4/2020	101.38381	101.3838139	101.3838139	101.3838139	100.624711	98.74251043	96.90454154	95.10950275	93.35613933
200305A00007	3/5/2020	1.14	3/5/2025	3/5/2020	104.18909	104.1890946	104.1890946	104.1890946	100.58132	95.89517195	91.45229621	87.23887556	83.24194541
200305A00040	3/10/2020	0.99	3/10/2023	3/10/2020	102.06089	102.0608942	102.0608942	102.0608942	100.588871	97.73090285	94.96823795	92.29719442	89.71425334
200306A00046	3/6/2020	1.01	3/3/2025	3/6/2020	103.54002	103.5400188	103.5400188	103.5400188	99.94868533	95.28270455	90.85892883	86.66360979	82.6838467
200309A00020	3/9/2020	0.96	3/10/2025	3/9/2020	103.25517	103.2551715	103.2551715	103.2551715	99.64273288	94.96903835	90.53889601	86.33842874	82.35461827
200309A00046	3/9/2020	0.78	3/11/2025	3/9/2020	103.30836	103.3083568	103.3083568	103.3083568	99.66383498	94.9574765	90.49732427	86.26930337	82.26021279
200310A00025	3/10/2020	0.87	3/11/2024	3/10/2020	103.00073	103.0007282	103.0007282	103.0007282	100.5597766	96.7486399	93.10108807	89.60927902	86.26578737
200310A00037	3/10/2020	0.84	3/7/2022	3/10/2020	101.06335	101.0633524	101.0633524	101.0633524	100.2964815	98.40207459	96.55256136	94.74660943	92.98293485
200311A00022	3/11/2020	1.23	3/11/2026	3/11/2020	106.67851	106.6785053	106.6785053	106.6785053	101.1820929	95.545091	90.25398692	85.28587369	80.61947122
200311A00040	3/12/2020	1.3	3/11/2025	3/12/2020	104.94942	104.9494181	104.9494181	104.9494181	101.3099048	96.59315876	92.12172066	87.88162306	83.8597628
200313A00032	3/18/2020	1.46	3/18/2025	3/18/2020	105.81873	105.8187321	105.8187321	105.8187321	102.1391616	97.38369893	92.87618646	88.6024608	84.54923826

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200221A00004	2/21/2020	1.69	2/21/2025	2/21/2020	106.87315	106.8731499	106.8731499	106.8731499	103.273825	98.55322393	94.07514436	89.82592661	85.79274738
200221A00006	2/21/2020	1.5	2/21/2025	2/21/2020	106.84093	106.8409315	106.8409315	106.8409315	103.2164439	98.46922551	93.96669938	89.69504628	85.64129537
200221A00016	2/21/2020	1.69	2/21/2025	2/21/2020	106.87315	106.8731499	106.8731499	106.8731499	103.273825	98.55322393	94.07514436	89.82592661	85.79274738
200225A00015	2/25/2020	1.54	2/26/2024	2/25/2020	104.90233	104.9023256	104.9023256	104.9023256	102.4976868	98.70338389	95.06953855	91.58855953	88.2532537
200225A00042	2/25/2020	1.39	2/25/2022	2/25/2020	102.45505	102.4550503	102.4550503	102.4550503	101.6949629	99.80702727	97.96328198	96.16243075	94.40322394
200225A00044	2/25/2020	1.57	2/25/2022	2/25/2020	102.45556	102.4555631	102.4555631	102.4555631	101.6982056	99.81659709	97.97892235	96.18389568	94.43027741
200226A00025	2/26/2020	1.38	2/26/2025	2/26/2020	106.26399	106.2639865	106.2639865	106.2639865	102.6285583	97.88201129	93.38100865	89.11163967	85.06085014
200227A00005	2/27/2020	1.43	2/27/2024	2/27/2020	104.47197	104.4719715	104.4719715	104.4719715	102.0685961	98.27999175	94.6518078	91.17644773	87.84671364
200227A00026	2/27/2020	1.41	2/27/2023	2/27/2020	103.27441	103.2744056	103.2744056	103.2744056	101.8210406	98.97299044	96.21884315	93.55500972	90.97805826
200227A00031	2/27/2020	1.43	2/27/2024	2/27/2020	104.47197	104.4719715	104.4719715	104.4719715	102.0685961	98.27999175	94.6518078	91.17644773	87.84671364
200228A00027	2/28/2020	1.31	2/28/2022	2/28/2020	101.96259	101.9625865	101.9625865	101.9625865	101.2029304	99.31760026	97.4764906	95.67830211	93.92178223
200228A00029	2/28/2020	1.31	2/28/2022	2/28/2020	101.96259	101.9625865	101.9625865	101.9625865	101.2029304	99.31760026	97.4764906	95.67830211	93.92178223
200228A00031	2/28/2020	1.35	2/28/2024	2/28/2020	104.15939	104.1593857	104.1593857	104.1593857	101.7561675	97.97099752	94.34628018	90.87441089	87.54818445
200228A00039	2/28/2020	1.33	4/28/2023	2/28/2020	103.21011	103.2101086	103.2101086	103.2101086	101.612718	98.6125749	95.71606159	92.91901699	90.21747277
200303A00007	3/3/2020	1.11	3/4/2024	3/3/2020	103.93984	103.9398438	103.9398438	103.9398438	101.5100188	97.69763021	94.0479141	90.55311366	87.20588205
200304A00052	3/6/2020	2.11	3/8/2027	3/6/2020	112.55791	112.5579139	112.5579139	111.7506129	104.8232656	98.25974652	92.15326606	86.46967095	81.17752329
200305A00012	3/5/2020	1.14	3/5/2025	3/5/2020	104.18909	104.1890946	104.1890946	104.1890946	100.58132	95.89517195	91.45229621	87.23887556	83.24194541
200306A00002	3/6/2020	0.64	3/7/2022	3/6/2020	101.02119	101.0211905	101.0211905	101.0211905	100.251676	98.35125247	96.49597848	94.68451092	92.91555566
200306A00012	3/6/2020	0.95	3/6/2024	3/6/2020	102.59371	102.5937087	102.5937087	102.5937087	100.1854783	96.41355368	92.80261631	89.34499224	86.0334128
200306A00063	3/6/2020	0.64	3/16/2022	3/6/2020	101.03425	101.0342504	101.0342504	101.0342504	100.2512782	98.32758008	96.4501335	94.61754533	92.82847399
200306A00101	3/10/2020	1.93	3/8/2030	3/10/2020	116.12247	116.1224742	116.1224742	111.3696366	101.6803307	92.83958906	84.84635618	77.61487678	71.06847199
200309A00005	3/9/2020	0.77	3/7/2025	3/9/2020	103.25112	103.2511222	103.2511222	103.2511222	99.62265247	94.92694311	90.47639167	86.2570123	82.2556856
200311A00006	3/13/2020	1.12	3/10/2025	3/13/2020	104.05118	104.051177	104.051177	104.051177	100.427801	95.73496643	91.2863926	87.06816998	83.06724969
200311A00036	3/16/2020	1.03	4/15/2022	3/16/2020	101.51408	101.5140757	101.5140757	101.5140757	100.6859507	98.68558721	96.73474575	94.83188134	92.97550852
200317A00026	3/17/2020	1.22	3/15/2024	3/17/2020	103.68721	103.6872097	103.6872097	103.6872097	101.2428706	97.42797237	93.77660045	90.2809184	86.93350612
200319A00024	3/19/2020	1.12	3/15/2022	3/19/2020	101.62913	101.6291316	101.6291316	101.6291316	100.8483534	98.92779106	97.05320246	95.22320812	93.43647937
200324A00020	3/24/2020	1.23	3/24/2022	3/24/2020	101.86998	101.8699826	101.8699826	101.8699826	101.0749503	99.12885962	97.22989332	95.37662029	93.56766277
200327A00074	3/31/2020	1.76	3/29/2024	3/31/2020	105.8981	105.898096	105.898096	105.898096	103.3922275	99.49999228	95.77559215	92.2109213	88.79830854
200330A00045	3/30/2020	1.47	3/30/2027	3/30/2020	108.1734	108.1734023	108.1734023	107.2944521	100.4236142	93.95922964	87.95161278	82.36623859	77.17135527
170915A00009	9/15/2017	1.86	9/15/2020	9/15/2017	100.74825	100.7482501	100.7482501	100.7482501	100.6416267	100.1774793	99.71761256	99.2619673	98.81048548
170926A00036	9/26/2017	1.7	9/25/2020	9/26/2017	100.78185	100.781846	100.781846	100.781846	100.6639362	100.1715268	99.68392737	99.2010678	98.72287913
170928A00025	9/28/2017	1.73	9/28/2020	9/28/2017	100.81008	100.810081	100.810081	100.810081	100.6888322	100.1881233	99.69238137	99.20153296	98.71550586
171010A00037	10/10/2017	2.09	10/12/2021	10/10/2017	102.80007	102.8000713	102.8000713	102.8000713	102.2080529	100.6874656	99.19707644	97.73605827	96.30361373

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171016A00045	10/16/2017	2.2	10/17/2022	10/16/2017	104.90011	104.9001073	104.9001073	104.9001073	103.7254787	101.2036232	98.75606672	96.38018027	94.07344522
171018A00001	10/18/2017	1.96	10/18/2021	10/18/2017	102.89257	102.8925682	102.8925682	102.8925682	102.2913046	100.7497693	99.23908683	97.75840244	96.30689274
171018A00011	10/18/2017	2.68	10/18/2027	10/18/2017	119.52715	119.5271514	119.5271514	117.9708639	110.2019821	102.8659919	96.07808559	89.79435079	83.97461029
171026A00009	10/26/2017	2.75	10/27/2025	10/26/2017	113.70446	113.704459	113.704459	113.704459	108.8805123	103.3995354	98.23145243	93.35674705	88.75722077
171030A00022	10/30/2017	2.28	10/31/2022	10/30/2017	105.18274	105.1827391	105.1827391	105.1827391	103.9786618	101.4170259	98.93159964	96.51965506	94.17858016
171121A00013	11/21/2017	1.98	11/23/2020	11/21/2017	101.22515	101.2251509	101.2251509	101.2251509	101.0415152	100.3863427	99.73964997	99.10127322	98.47105267
171129A00020	11/29/2017	2.89	11/30/2026	11/29/2017	117.29901	117.2990135	117.2990135	116.8216621	110.0382948	103.5380066	97.47116068	91.80650964	86.51521904
171205A00014	12/5/2017	2.49	12/5/2022	12/5/2017	105.94255	105.9425472	105.9425472	105.9425472	104.6612778	101.9967454	99.41364672	96.90897423	94.47985374
171206A00038	12/6/2017	2.69	12/6/2027	12/6/2017	119.95016	119.95016	119.95016	118.2369931	110.3259318	102.8679181	95.97542506	89.60248122	83.70708382
171207A00036	12/7/2017	2.23	12/7/2022	12/7/2017	105.74434	105.7443351	105.7443351	105.7443351	104.4540576	101.7763722	99.18089177	96.66456745	94.22448597
171208A00006	12/8/2017	2.67	12/8/2026	12/8/2017	117.24458	117.244577	117.244577	116.7319851	109.8636641	103.2997429	97.17656067	91.46215472	86.12704482
171220A00004	12/20/2017	2.52	12/20/2021	12/20/2017	103.89374	103.8937428	103.8937428	103.8937428	103.2170998	101.5032489	99.82602504	98.18431861	96.57706518
180111A00044	1/11/2018	2.34	1/11/2021	1/11/2018	101.65436	101.6543611	101.6543611	101.6543611	101.4101238	100.6212743	99.84467563	99.08004404	98.32710429
180112A00025	1/12/2018	2.39	1/12/2021	1/12/2018	101.69997	101.6999653	101.6999653	101.6999653	101.4543189	100.6625599	99.88313866	99.11576842	98.36017107
180116A00009	1/16/2018	2.49	1/14/2022	1/16/2018	103.99409	103.9940882	103.9940882	103.9940882	103.2864499	101.5060849	99.76496171	98.06192062	96.39584624
180116A00012	1/16/2018	2.4	1/15/2021	1/16/2018	101.83735	101.8373513	101.8373513	101.8373513	101.5869709	100.784981	99.99563627	99.21863907	98.45370115
180116A00014	1/16/2018	3.01	1/19/2027	1/16/2018	118.47079	118.4707941	118.4707941	117.8182139	110.8755661	104.228698	98.03237908	92.25364615	86.86211209
180116A00046	1/16/2018	2.58	1/11/2023	1/16/2018	106.41966	106.4196554	106.4196554	106.4196554	105.0548443	102.2884992	99.6092503	97.01382641	94.49910167
180118A00037	1/18/2018	2.88	1/21/2025	1/18/2018	112.5216	112.5216027	112.5216027	112.5216027	108.9626236	104.1880228	99.65271392	95.34345268	91.24779674
180130A00091	1/30/2018	2.74	1/25/2023	1/30/2018	106.96373	106.9637316	106.9637316	106.9637316	105.5643288	102.75432	100.0337905	97.39940183	94.84795947
200226A00019	2/26/2020	1.38	2/26/2025	2/26/2020	106.26399	106.2639865	106.2639865	106.2639865	102.6285583	97.88201129	93.38100865	89.11163967	85.06085014
200227A00004	2/27/2020	1.65	2/27/2030	2/27/2020	115.3077	115.3077029	115.3077029	110.5253596	100.777837	91.90409738	83.88452833	76.63253257	70.07068817
200228A00012	3/3/2020	1.4	3/3/2025	3/3/2020	105.4733	105.4732977	105.4732977	105.4732977	101.8555669	97.14326263	92.6748729	88.43657154	84.4153841
200228A00030	2/28/2020	1.32	2/28/2023	2/28/2020	103.0126	103.0125986	103.0125986	103.0125986	101.5585355	98.7115433	95.95853676	93.29591995	90.72025459
200228A00060	2/28/2020	1.31	2/28/2022	2/28/2020	101.96259	101.9625865	101.9625865	101.9625865	101.2029304	99.31760026	97.4764906	95.67830211	93.92178223
200228A00063	2/28/2020	1.32	2/28/2023	2/28/2020	103.0126	103.0125986	103.0125986	103.0125986	101.5585355	98.7115433	95.95853676	93.29591995	90.72025459
200302A00008	3/2/2020	1.2	3/9/2023	3/2/2020	102.68206	102.6820568	102.6820568	102.6820568	101.2085801	98.34394323	95.57467004	92.89708087	90.30765883
200302A00011	3/2/2020	1.31	2/27/2025	3/2/2020	105.01608	105.0160768	105.0160768	105.0160768	101.4196804	96.72785651	92.27853434	88.05799262	84.05335369
200302A00034	3/2/2020	1.25	3/1/2024	3/2/2020	103.77003	103.7700276	103.7700276	103.7700276	101.3648494	97.58219343	93.96018433	90.49119613	87.16800406
200303A00010	3/3/2020	1.34	3/3/2025	3/3/2020	105.17587	105.1758701	105.1758701	105.1758701	101.5622005	96.85702293	92.39549689	88.1638082	84.14899373
200304A00008	3/4/2020	1.03	11/15/2021	3/4/2020	101.22509	101.225088	101.225088	101.225088	100.5975701	98.99972194	97.43475074	95.90170783	94.39968098
200304A00053	3/6/2020	2.33	3/6/2025	3/6/2020	110.10017	110.1001674	110.1001674	110.1001674	106.4076669	101.5773523	96.99579913	92.64892983	88.52353393
200304A00054	3/6/2020	2.35	3/8/2027	3/6/2020	114.22834	114.2283417	114.2283417	113.4203188	106.4510123	99.83271691	93.67415649	87.94101864	82.60171698

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200305A00002	3/5/2020	1.14	3/5/2025	3/5/2020	104.18909	104.1890946	104.1890946	104.1890946	100.58132	95.89517195	91.45229621	87.23887556	83.24194541
200305A00009	3/10/2020	1.04	10/18/2023	3/10/2020	102.66472	102.6647162	102.6647162	102.6647162	100.6354256	97.21054571	93.9194614	90.75623591	87.71522959
200305A00011	3/5/2020	0.95	3/7/2022	3/5/2020	101.27842	101.2784236	101.2784236	101.2784236	100.5107857	98.61424167	96.76263243	94.95462439	93.18893248
200305A00036	3/5/2020	1.36	3/5/2027	3/5/2020	107.32918	107.3291842	107.3291842	106.5341701	99.74544822	93.35946408	87.42115594	81.89697514	76.75604358
200306A00014	3/6/2020	1.38	3/6/2030	3/6/2020	110.65757	110.6575739	110.6575739	105.9601709	96.50188868	87.90900882	80.14647275	73.12993944	66.7840135
200306A00099	3/10/2020	1.92	3/10/2031	3/10/2020	117.61623	117.616231	117.616231	110.7790528	100.2478156	90.74747052	82.23944444	74.61470023	67.77668791
200306A00100	3/10/2020	1.82	3/10/2031	3/10/2020	116.52498	116.5249848	116.5249848	109.7018088	99.22121155	89.77372248	81.31469275	73.73541514	66.93963832
200309A00064	3/9/2020	0.55	3/9/2022	3/9/2020	100.84731	100.8473075	100.8473075	100.8473075	100.0754366	98.17160521	96.31313337	94.49866784	92.72690495
200310A00019	3/10/2020	0.95	3/10/2023	3/10/2020	101.9421	101.9421005	101.9421005	101.9421005	100.4708105	97.61459503	94.85363935	92.18426301	89.60294846
200311A00058	3/16/2020	1.1	10/14/2022	3/16/2020	102.06293	102.0629277	102.0629277	102.0629277	100.9085916	98.43091078	96.02632226	93.69224274	91.42619701
200313A00022	3/13/2020	1.11	3/8/2022	3/13/2020	101.59352	101.5935175	101.5935175	101.5935175	100.8232695	98.92102747	97.06390142	95.25055059	93.47968309
180207A00012	2/7/2018	2.53	2/7/2022	2/7/2018	104.53664	104.5366362	104.5366362	104.5366362	103.7938371	101.9377667	100.1239969	98.35131667	96.61855751
180212A00042	2/12/2018	2.57	2/11/2022	2/12/2018	104.63894	104.6389434	104.6389434	104.6389434	103.8903223	102.0216275	100.1957544	98.41147048	96.66758657
180215A00043	2/15/2018	2.63	1/7/2021	2/15/2018	101.85037	101.8503723	101.8503723	101.8503723	101.611408	100.8326624	100.0658363	99.31065723	98.56686136
180226A00015	2/26/2018	2.85	9/28/2022	2/26/2018	106.43867	106.4386667	106.4386667	106.4386667	105.2943469	102.8022687	100.3824298	98.03231873	95.74952729
180308A00015	3/8/2018	2.82	12/15/2021	3/8/2018	104.36406	104.3640555	104.3640555	104.3640555	103.6920449	101.9874673	100.319091	98.68582713	97.08663047
180314A00005	3/14/2018	2.74	3/15/2021	3/14/2018	102.39444	102.3944374	102.3944374	102.3944374	102.0603804	101.0977693	100.153296	99.22645109	98.31674411
180315A00017	3/15/2018	2.72	3/15/2021	3/15/2018	102.37508	102.3750757	102.3750757	102.3750757	102.0410463	101.078536	100.1341622	99.20741549	98.29780542
180326A00012	3/26/2018	2.74	12/28/2020	3/26/2018	101.87522	101.8752197	101.8752197	101.8752197	101.6493785	100.8975921	100.1569073	99.42707936	98.70787101
180328A00014	3/28/2018	2.55	3/29/2021	3/28/2018	102.45009	102.450092	102.450092	102.450092	102.0954811	101.0926722	100.1095165	99.14544047	98.19989291
180329A00034	4/2/2018	2.67	4/1/2020	4/2/2018	100.00647	100.0064702	100.0064702	100.0064702	100.0063011	100.0035277	100.0007566	99.99798778	99.99522124
180403A00009	4/3/2018	2.91	4/3/2025	4/3/2018	114.13901	114.1390083	114.1390083	114.1390083	110.2535572	105.2291822	100.4666712	95.95099148	91.66805119
180425A00019	4/25/2018	3.02	10/25/2021	4/25/2018	104.34182	104.3418164	104.3418164	104.3418164	103.7300647	102.1626881	100.6267883	99.12148596	97.6459342
180426A00018	4/26/2018	2.94	4/26/2023	4/26/2018	108.76886	108.7688646	108.7688646	108.7688646	107.1318106	104.0381867	101.0508078	98.16541732	95.37795586
180427A00010	4/27/2018	2.95	4/27/2023	4/27/2018	108.80778	108.8077759	108.8077759	108.8077759	107.1679664	104.0710595	101.0805752	98.19224714	95.4020063
180430A00070	4/30/2018	2.91	3/30/2023	4/30/2018	108.46716	108.4671551	108.4671551	108.4671551	106.8995152	103.8829295	100.9681267	98.15110815	95.42805581
180503A00040	5/3/2018	3.3	5/5/2025	5/3/2018	115.35533	115.3553303	115.3553303	115.3553303	111.3497454	106.2459245	101.410563	96.82809024	92.48392201
180507A00025	5/7/2018	2.92	5/7/2021	5/7/2018	102.94708	102.9470826	102.9470826	102.9470826	102.5418273	101.4334273	100.3489665	99.28767514	98.24881617
180514A00036	5/14/2018	2.64	5/14/2020	5/14/2018	100.30808	100.3080831	100.3080831	100.3080831	100.2981323	100.1759017	100.0539856	99.93238263	99.81109166
180518A00012	5/18/2018	3.1	5/18/2022	5/18/2018	106.03972	106.0397198	106.0397198	106.0397198	105.1396271	103.0038432	100.9222272	98.89302864	96.91456801
180518A00014	5/18/2018	3.17	5/18/2023	5/18/2018	109.0812	109.0811978	109.0811978	109.0811978	107.3950293	104.2527156	101.2195776	98.29118283	95.46330716
180521A00005	5/21/2018	3.02	5/22/2023	5/21/2018	109.22638	109.2263772	109.2263772	109.2263772	107.5206746	104.3520169	101.2940313	98.34220079	95.49222212
180521A00022	5/21/2018	2.99	5/21/2021	5/21/2018	103.13051	103.1305113	103.1305113	103.1305113	102.7073027	101.560115	100.4385383	99.34172139	98.26885065

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180522A00022	5/22/2018	2.69	5/22/2020	5/22/2018	100.37137	100.3713744	100.3713744	100.3713744	100.3586403	100.2141828	100.0701542	99.92655266	99.78337626
180523A00014	5/23/2018	2.79	5/24/2021	5/23/2018	103.10696	103.1069574	103.1069574	103.1069574	102.6789002	101.5210099	100.3891948	99.28258122	98.20033415
190524A00032	5/24/2019	2.45	5/24/2023	5/24/2019	106.84183	106.8418347	106.8418347	106.8418347	105.1558652	102.0333034	99.01997927	96.11143258	93.30341413
190528A00004	5/28/2019	2.38	8/13/2021	5/28/2019	102.90253	102.9025327	102.9025327	102.9025327	102.3799486	101.0184735	99.68158954	98.36868749	97.0791777
190528A00005	5/28/2019	2.42	6/15/2023	5/28/2019	106.87504	106.875038	106.875038	106.875038	105.133703	101.9533837	98.8860506	95.9270133	93.07180794
190528A00039	5/28/2019	2.38	11/29/2021	5/28/2019	103.51107	103.5110739	103.5110739	103.5110739	102.8606904	101.2057584	99.58534802	97.99844339	96.44406856
190529A00009	5/29/2019	2.35	5/31/2022	5/29/2019	104.49815	104.4981516	104.4981516	104.4981516	103.5825071	101.4296585	99.33213525	97.28812355	95.29588405
190529A00032	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190529A00059	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190529A00062	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190530A00002	5/30/2019	2.24	5/28/2021	5/30/2019	102.49085	102.4908549	102.4908549	102.4908549	102.0589052	100.8940517	99.75569418	98.64293658	97.55492294
190530A00005	5/30/2019	2.36	5/28/2021	5/30/2019	102.44424	102.4442423	102.4442423	102.4442423	102.0135115	100.851754	99.71637742	98.60649102	97.52124376
190530A00045	5/30/2019	2.44	5/30/2024	5/30/2019	109.00206	109.0020597	109.0020597	109.0020597	106.2801708	102.1700579	98.24240221	94.48810698	90.89858181
190531A00003	5/31/2019	2.31	10/29/2021	5/31/2019	103.23688	103.2368809	103.2368809	103.2368809	102.6234328	101.0545749	99.5173634	98.01090894	96.53435531
190603A00012	6/3/2019	2.44	6/3/2020	6/3/2019	100.38637	100.386373	100.386373	100.386373	100.3689471	100.1915346	100.0147506	99.838592	99.66305536
190603A00048	6/3/2019	2.24	6/3/2024	6/3/2019	108.18373	108.1837318	108.1837318	108.1837318	105.4580943	101.3546419	97.43396233	93.68691729	90.10487843
190604A00009	6/4/2019	2.23	6/4/2021	6/4/2019	102.32962	102.329619	102.329619	102.329619	101.8904706	100.7106818	99.55812065	98.43185305	97.33098712
190605A00035	6/5/2019	2.18	6/5/2023	6/5/2019	106.0465	106.0464995	106.0464995	106.0464995	104.336038	101.1951422	98.16515268	95.24149836	92.4198269
190606A00028	6/6/2019	2.74	6/6/2029	6/6/2019	122.35771	122.3577089	122.3577089	118.7823914	109.4863024	100.8770485	93.02880679	85.86995702	79.33597615
190611A00015	6/11/2019	2.32	6/11/2024	6/11/2019	108.56478	108.5647819	108.5647819	108.5647819	105.8104121	101.6787378	97.73183187	93.96041546	90.35573024
190620A00010	6/20/2019	2.04	6/20/2022	6/20/2019	103.91532	103.9153152	103.9153152	103.9153152	102.967487	100.7675386	98.62528389	96.53878768	94.50619649
190620A00024	6/20/2019	2.05	6/21/2021	6/20/2019	102.18593	102.1859281	102.1859281	102.1859281	101.7264564	100.5023322	99.30755244	98.14107162	97.00189348
190624A00008	6/24/2019	2.08	6/24/2022	6/24/2019	104.02476	104.0247594	104.0247594	104.0247594	103.0695564	100.8576713	98.70401223	96.60661766	94.56360936
190624A00052	6/24/2019	1.89	6/24/2022	6/24/2019	104.00468	104.0046849	104.0046849	104.0046849	103.0457818	100.8260839	98.66496786	96.56045567	94.51065362
190625A00017	6/25/2019	2.02	12/15/2022	6/25/2019	104.71734	104.7173419	104.7173419	104.7173419	103.4212036	100.7476303	98.15654946	95.64488507	93.20969906
190625A00024	6/25/2019	2.26	6/25/2025	6/25/2019	110.29456	110.2945603	110.2945603	110.2945603	106.1392825	101.0384945	96.21421528	91.64997572	87.33037855
200312A00042	3/16/2020	1.38	3/16/2023	3/16/2020	103.23713	103.2371293	103.2371293	103.2371293	101.7435427	98.85320703	96.05961089	93.35899893	90.74778303
200318A00043	3/18/2020	1.06	3/20/2023	3/18/2020	102.82948	102.8294813	102.8294813	102.8294813	101.3216164	98.41498542	95.60629682	92.89172456	90.26761411
200323A00007	3/23/2020	1.05	9/23/2021	3/23/2020	101.14584	101.1458428	101.1458428	101.1458428	100.5805637	99.12328761	97.69430835	96.29287501	94.91826271
200323A00010	3/23/2020	1.19	3/23/2022	3/23/2020	101.78741	101.7874133	101.7874133	101.7874133	100.9941703	99.0514842	97.15578306	95.30564184	93.49968858
200327A00075	3/31/2020	1.75	3/29/2024	3/31/2020	105.85782	105.8578151	105.8578151	105.8578151	103.3523405	99.46089889	95.73726757	92.17334175	88.76145116
180524A00005	5/24/2018	2.86	5/24/2022	5/24/2018	105.96224	105.9622363	105.9622363	105.9622363	105.0488543	102.8905336	100.7873896	98.73762378	96.739511
180530A00005	5/30/2018	2.78	5/30/2023	5/30/2018	108.52216	108.5221584	108.5221584	108.5221584	106.8010961	103.6228363	100.5562787	97.59683609	94.74014023

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180530A00014	5/30/2018	2.93	5/30/2023	5/30/2018	108.41002	108.4100156	108.4100156	108.4100156	106.6983739	103.5357548	100.4839962	97.53855641	94.69510977
180530A00016	5/30/2018	2.76	5/28/2021	5/30/2018	102.91343	102.9134265	102.9134265	102.9134265	102.4818172	101.317152	100.1789137	99.0662103	97.97818963
180530A00030	5/30/2018	3.68	5/30/2034	5/30/2018	147.43285	147.4328468	146.1971296	131.4717003	117.1006883	104.4211417	93.34759256	83.66394391	75.18438169
180530A00057	5/30/2018	2.76	5/28/2021	5/30/2018	102.91343	102.9134265	102.9134265	102.9134265	102.4818172	101.317152	100.1789137	99.0662103	97.97818963
180530A00072	5/30/2018	3.06	5/30/2024	5/30/2018	111.60494	111.6049376	111.6049376	111.6049376	108.8558855	104.692447	100.7131851	96.90893348	93.27103519
180531A00014	5/31/2018	2.8	5/31/2023	5/31/2018	108.59363	108.5936268	108.5936268	108.5936268	106.869551	103.6875755	100.6174966	97.65471605	94.79485521
180531A00065	5/31/2018	2.65	6/1/2021	5/31/2018	103.00035	103.0003469	103.0003469	103.0003469	102.5624304	101.3836334	100.23187	99.10621821	98.0057978
180601A00003	6/1/2018	2.65	12/1/2020	6/1/2018	101.72222	101.7222229	101.7222229	101.7222229	101.5289748	100.8501033	100.1802929	99.51936304	98.86713804
180612A00050	6/12/2018	2.8	6/12/2020	6/12/2018	100.51155	100.5115497	100.5115497	100.5115497	100.4893369	100.2869076	100.0853047	99.8845231	99.68455772
180614A00038	6/14/2018	3.08	6/14/2023	6/14/2018	109.00366	109.0036634	109.0036634	109.0036634	107.2499608	104.0382095	100.9401686	97.95112752	95.06660276
180627A00016	6/27/2018	2.8	6/26/2020	6/27/2018	100.61187	100.6118724	100.6118724	100.6118724	100.5822195	100.3409694	100.100878	99.86193707	99.62413839
180627A00027	6/27/2018	2.87	6/27/2023	6/27/2018	109.02339	109.0233939	109.0233939	109.0233939	107.2274606	103.9665223	100.8224338	97.79029456	94.8654438
180627A00030	6/27/2018	3.02	6/27/2023	6/27/2018	108.90689	108.9068872	108.9068872	108.9068872	107.1209663	103.8763353	100.7476626	97.7300966	94.81902256
180629A00008	6/29/2018	3.02	6/29/2023	6/29/2018	108.92185	108.9218523	108.9218523	108.9218523	107.130768	103.8806077	100.746766	97.72436916	94.80878146
180702A00012	7/2/2018	3.01	7/3/2023	7/2/2018	108.919	108.9189951	108.9189951	108.9189951	107.1177135	103.8572782	100.7138725	97.68259153	94.75876922
180706A00010	7/6/2018	2.92	7/6/2021	7/6/2018	103.37346	103.3734625	103.3734625	103.3734625	102.8936019	101.6231294	100.3818937	99.16888599	97.98314396
180712A00002	7/12/2018	3.06	7/12/2023	7/12/2018	109.15186	109.1518597	109.1518597	109.1518597	107.3258294	104.0385464	100.8700101	97.81525055	94.86953712
180713A00027	7/13/2018	3.23	7/13/2028	7/13/2018	126.02281	126.0228137	126.0228137	123.5792798	114.8946109	106.7354465	99.23317263	92.33113598	85.97785531
180713A00035	7/13/2018	3.02	7/13/2022	7/13/2018	106.28835	106.2883533	106.2883533	106.2883533	105.2895712	103.0017525	100.7751849	98.60782653	96.49771908
180719A00004	7/19/2018	3.07	7/19/2023	7/19/2018	109.23848	109.2384797	109.2384797	109.2384797	107.393878	104.0872557	100.900682	97.82913692	94.86784017
180719A00065	7/19/2018	3.36	7/20/2026	7/19/2018	119.33879	119.3387895	119.3387895	119.3049297	112.8550387	106.5914759	100.7239421	95.22525569	90.07023815
180727A00002	7/27/2018	2.93	7/28/2020	7/27/2018	100.88345	100.8834489	100.8834489	100.8834489	100.828773	100.4987874	100.1709596	99.84526844	99.52169321
180727A00028	7/27/2018	3.25	7/27/2026	7/27/2018	120.00791	120.0079107	120.0079107	119.9615702	113.405325	107.0614964	101.1210869	95.55628732	90.341343
180727A00038	7/27/2018	3.36	7/25/2025	7/27/2018	116.33957	116.3395736	116.3395736	116.3395736	111.9508411	106.6241898	101.5879416	96.82473286	92.31832582
180803A00009	8/3/2018	2.93	10/30/2020	8/3/2018	101.58118	101.5811823	101.5811823	101.5811823	101.4249194	100.8351351	100.2521967	99.67598562	99.10638591
180807A00016	8/7/2018	2.86	8/6/2021	8/7/2018	103.75115	103.7511469	103.7511469	103.7511469	103.2329968	101.8802183	100.5516376	99.24666019	97.96471064
180813A00026	8/13/2018	2.87	8/11/2023	8/13/2018	109.36619	109.3661876	109.3661876	109.3661876	107.4512468	104.0684429	100.8108575	97.67320672	94.65045765
180817A00013	8/17/2018	2.94	2/15/2022	8/17/2018	105.02403	105.0240269	105.0240269	105.0240269	104.2712863	102.3934604	100.5587823	98.7660064	97.01393094
180820A00054	8/20/2018	3	8/18/2023	8/20/2018	109.22888	109.2288803	109.2288803	109.2288803	107.3068552	103.9237783	100.6662294	97.52889849	94.50672807
180823A00044	8/23/2018	2.69	8/21/2020	8/23/2018	101.02137	101.0213736	101.0213736	101.0213736	100.9417364	100.544797	100.1509874	99.76027059	99.3726102
180829A00008	8/29/2018	3.23	8/30/2027	8/29/2018	123.30031	123.3003069	123.3003069	121.896413	114.1518039	106.7909956	99.96837748	93.64163392	87.77198449
180830A00005	8/30/2018	2.88	8/28/2020	8/30/2018	101.09301	101.0930139	101.0930139	101.0930139	101.0060439	100.5903369	100.178047	99.76913242	99.36355174
180906A00047	9/6/2018	2.81	9/7/2021	9/6/2018	103.92168	103.9216818	103.9216818	103.9216818	103.3663974	101.9270376	100.5148498	99.12913166	97.7692043

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180912A00011	9/12/2018	3.41	9/11/2026	9/12/2018	120.10391	120.1039053	120.1039053	119.9048107	113.2744616	106.8676917	100.8741422	95.26492083	90.01329906
180914A00011	9/14/2018	3.01	4/12/2021	9/14/2018	102.85825	102.8582493	102.8582493	102.8582493	102.4854278	101.4449055	100.4255006	99.42657461	98.44751466
180917A00054	9/17/2018	3.17	9/15/2023	9/17/2018	110.03031	110.03031	110.03031	110.03031	108.0287796	104.559531	101.2215829	98.00926547	94.91718521
180918A00037	9/18/2018	3.06	9/17/2021	9/18/2018	104.11362	104.1136174	104.1136174	104.1136174	103.5477329	102.0837146	100.6477769	99.23918198	97.85721743
180920A00030	9/20/2018	3.12	9/20/2023	9/20/2018	110.54934	110.5493411	110.5493411	110.5493411	108.519632	105.0121823	101.6382779	98.39211667	95.26818085
180921A00024	9/21/2018	2.99	9/21/2021	9/21/2018	104.29534	104.2953429	104.2953429	104.2953429	103.7225479	102.2421046	100.7903211	99.36643771	97.9697209
180925A00060	9/25/2018	3.23	8/25/2023	9/25/2018	110.0704	110.0703963	110.0703963	110.0703963	108.1237786	104.7086274	101.4206923	98.25456794	95.20510766
180927A00008	9/27/2018	3.14	9/27/2022	9/27/2018	107.16187	107.1618677	107.1618677	107.1618677	106.0159328	103.5173979	101.0911511	98.7346827	96.44558632
180928A00011	9/28/2018	3.12	7/15/2022	9/28/2018	106.53481	106.5348095	106.5348095	106.5348095	105.5313317	103.2354188	101.0010843	98.82628027	96.7090422
181002A00055	10/2/2018	3.14	10/3/2022	10/2/2018	107.20892	107.208924	107.208924	107.208924	106.0508712	103.5358692	101.0940167	98.7227595	96.41964871
181004A00029	10/4/2018	3.7	10/4/2028	10/4/2018	128.92771	128.9277108	128.9277108	126.2296064	117.3199231	108.941247	101.2482724	94.18078485	87.68416335
181005A00012	10/5/2018	3.33	10/4/2024	10/5/2018	114.66118	114.6611829	114.6611829	114.6611829	111.443843	106.8682361	102.509984	98.35759799	94.40025783
181010A00017	10/10/2018	3.08	10/1/2020	10/10/2018	101.44237	101.4423673	101.4423673	101.4423673	101.317697	100.8077572	100.3029406	99.80317032	99.30837101
181010A00019	10/10/2018	3.21	9/15/2021	10/10/2018	104.31988	104.319883	104.319883	104.319883	103.7558311	102.2956696	100.8634112	99.45832543	98.0797067
181015A00024	10/15/2018	3.29	10/16/2023	10/15/2018	110.70425	110.7042519	110.7042519	110.7042519	108.6148021	105.0533821	101.6294354	98.33690026	95.17001726
181023A00020	10/23/2018	3.15	10/22/2021	10/23/2018	104.52444	104.524437	104.524437	104.524437	103.9157738	102.3548495	100.8251813	99.32590003	97.85616818
181102A00007	11/2/2018	3.01	11/2/2020	11/2/2018	101.7345	101.7345006	101.7345006	101.7345006	101.5744653	100.97492	100.3824449	99.79691537	99.21820989
181106A00003	11/6/2018	3.31	11/5/2021	11/6/2018	104.89429	104.894294	104.894294	104.894294	104.2679139	102.6663955	101.0973874	99.55996652	98.05324424
181115A00076	11/15/2018	3.22	12/31/2021	11/15/2018	105.20296	105.2029599	105.2029599	105.2029599	104.5090777	102.7544826	101.037822	99.35793078	97.71369205
181120A00006	11/20/2018	3.08	11/16/2020	11/20/2018	101.80281	101.8028099	101.8028099	101.8028099	101.6270411	100.9900103	100.3609669	99.73976119	99.1262471
181123A00007	11/23/2018	3.08	11/23/2020	11/23/2018	101.85755	101.8575458	101.8575458	101.8575458	101.6737499	101.0174012	100.3695227	99.72995123	99.09852763
181211A00009	12/11/2018	3.14	12/11/2023	12/11/2018	110.60564	110.605643	110.605643	110.605643	108.3644365	104.6592311	101.1019768	97.68591605	94.40464249
181211A00020	12/11/2018	3.04	12/11/2020	12/11/2018	101.97023	101.9702302	101.9702302	101.9702302	101.7649681	101.0590819	100.362987	99.67648054	98.99936521
181211A00043	12/11/2018	3.14	12/11/2023	12/11/2018	110.60564	110.605643	110.605643	110.605643	108.3644365	104.6592311	101.1019768	97.68591605	94.40464249
181219A00022	12/19/2018	2.94	12/18/2020	12/19/2018	101.95164	101.9516391	101.9516391	101.9516391	101.7378784	101.012991	100.2984306	99.59397729	98.89941767
181220A00020	12/20/2018	2.78	12/20/2021	12/20/2018	104.64541	104.6454051	104.6454051	104.6454051	103.9642329	102.2384936	100.549699	98.89672794	97.2785053
181221A00024	12/21/2018	2.96	12/28/2020	12/21/2018	102.04126	102.0412632	102.0412632	102.0412632	101.8152588	101.0627815	100.321413	99.59090844	98.87103046
181226A00061	12/26/2018	2.95	12/27/2022	12/26/2018	107.34951	107.3495149	107.3495149	107.3495149	106.0128704	103.2722859	100.6168014	98.04321539	95.54847141
181227A00027	12/27/2018	3.24	12/26/2025	12/27/2018	116.93211	116.932114	116.932114	116.932114	111.7233014	106.0124599	100.634426	95.56797143	90.79333781
190102A00004	1/2/2019	2.8	2/24/2021	1/2/2019	102.3192	102.3192015	102.3192015	102.3192015	102.0121212	101.1012039	100.20653	99.32766791	98.46420107
190107A00029	1/7/2019	2.59	1/7/2021	1/7/2019	101.93541	101.9354111	101.9354111	101.9354111	101.6958468	100.915189	100.1465007	99.38950804	98.64394537
190107A00036	1/7/2019	2.84	4/15/2022	1/7/2019	105.24787	105.2478656	105.2478656	105.2478656	104.4055202	102.3661287	100.3770303	98.43665792	96.54350488
190108A00002	1/8/2019	2.89	1/8/2021	1/8/2019	102.06888	102.0688755	102.0688755	102.0688755	101.8282867	101.0457809	100.2752921	99.51654471	98.76927179

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190108A00039	1/8/2019	3.04	4/30/2024	1/8/2019	111.29469	111.2946871	111.2946871	111.2946871	108.6404883	104.5587798	100.6548354	96.91994908	93.34589026
190109A00023	1/9/2019	2.92	10/9/2020	1/9/2019	101.41986	101.4198567	101.4198567	101.4198567	101.2865021	100.7547021	100.228487	99.70776907	99.19246229
190110A00015	1/10/2019	2.88	1/18/2022	1/10/2019	104.72939	104.7293942	104.7293942	104.7293942	104.0143225	102.2166328	100.4587481	98.73950433	97.05778137
190110A00022	1/10/2019	2.86	5/10/2021	1/10/2019	102.9017	102.9016975	102.9016975	102.9016975	102.4927451	101.3765377	100.2846177	99.21619844	98.17052676
180720A00050	7/20/2018	2.86	7/20/2020	7/20/2018	100.80241	100.8024105	100.8024105	100.8024105	100.7542784	100.4464872	100.1405852	99.83655471	99.5343787
180730A00036	7/30/2018	3.14	7/31/2023	7/30/2018	109.56564	109.5656448	109.5656448	109.5656448	107.6878819	104.3451621	101.1248174	98.02173759	95.03105264
180730A00078	7/30/2018	3.14	7/28/2023	7/30/2018	109.54213	109.5421312	109.5421312	109.5421312	107.6722341	104.337571	101.1247262	98.02861148	95.04437838
180801A00013	8/1/2018	3.04	10/15/2021	8/1/2018	104.29728	104.2972781	104.2972781	104.2972781	103.6976252	102.1570874	100.6472016	99.16712433	97.71604256
180801A00014	8/1/2018	3.03	8/2/2021	8/1/2018	103.71975	103.7197507	103.7197507	103.7197507	103.2077284	101.8693997	100.5547971	99.26334267	97.99447676
180806A00008	8/6/2018	2.95	8/7/2023	8/6/2018	109.60716	109.6071561	109.6071561	109.6071561	107.7008826	104.3243374	101.0723795	97.93976704	94.92150679
180810A00028	8/10/2018	2.91	8/10/2023	8/10/2018	109.49462	109.4946215	109.4946215	109.4946215	107.5813322	104.1989457	100.9416512	97.80417416	94.78149059
180813A00059	8/13/2018	3.01	8/11/2023	8/13/2018	109.21067	109.2106667	109.2106667	109.2106667	107.3069524	103.9420321	100.7013418	97.57965211	94.57198127
180815A00011	8/15/2018	2.97	8/15/2022	8/15/2018	106.41682	106.4168205	106.4168205	106.4168205	105.3568752	102.9815083	100.6718967	98.42585912	96.24129953
180816A00043	8/16/2018	2.83	8/16/2022	8/16/2018	106.5281	106.5281027	106.5281027	106.5281027	105.4614014	103.0731936	100.7513252	98.4935882	96.29786109
180817A00026	8/17/2018	2.83	8/17/2020	8/17/2018	100.9935	100.9934981	100.9934981	100.9934981	100.9182577	100.5330079	100.150707	99.77132097	99.3948166
180821A00002	8/22/2018	2.89	8/23/2021	8/22/2018	103.68156	103.6815585	103.6815585	103.6815585	103.1458259	101.7523574	100.3844684	99.04151508	97.72287482
180821A00011	8/21/2018	2.98	8/21/2023	8/21/2018	109.18281	109.1828094	109.1828094	109.1828094	107.2533495	103.8634061	100.5995239	97.45635874	94.4288215
180821A00024	8/21/2018	2.85	8/21/2023	8/21/2018	109.37373	109.3737298	109.3737298	109.3737298	107.4325618	104.0239284	100.7423792	97.58251374	94.53918997
180823A00001	8/23/2018	2.88	8/23/2021	8/23/2018	103.66742	103.6674222	103.6674222	103.6674222	103.1317235	101.738359	100.3705722	99.02771931	97.70917781
180827A00010	8/27/2018	2.99	8/25/2023	8/27/2018	109.24671	109.2467093	109.2467093	109.2467093	107.3063861	103.9051777	100.630801	97.4778645	94.44123449
180827A00032	8/27/2018	2.96	8/29/2022	8/27/2018	106.49589	106.4958946	106.4958946	106.4958946	105.4093815	102.9966567	100.6516502	98.37208504	96.15577434
180904A00036	9/4/2018	2.83	9/4/2020	9/4/2018	101.12217	101.1221734	101.1221734	101.1221734	101.0275658	100.5925645	100.1613054	99.73374025	99.30982178
180914A00028	9/14/2018	3.37	9/12/2025	9/14/2018	116.80363	116.8036257	116.8036257	116.8036257	112.1632488	106.7068471	101.5546168	96.6879867	92.08961291
180914A00034	9/14/2018	2.85	9/15/2020	9/14/2018	101.27448	101.2744799	101.2744799	101.2744799	101.1674191	100.7010557	100.2389995	99.78119099	99.3275715
180917A00032	9/17/2018	3.17	9/15/2023	9/17/2018	110.03031	110.03031	110.03031	110.03031	108.0287796	104.559531	101.2215829	98.00926547	94.91718521
180917A00078	9/17/2018	3.05	9/15/2023	9/17/2018	110.26279	110.2627915	110.2627915	110.2627915	108.2486548	104.7594095	101.4025585	98.1723712	95.06339688
180920A00011	9/20/2018	2.89	9/18/2020	9/20/2018	101.31621	101.316208	101.316208	101.316208	101.2057945	100.7310693	100.2608045	99.79493733	99.33340611
180921A00021	9/21/2018	2.99	9/21/2021	9/21/2018	104.29534	104.2953429	104.2953429	104.2953429	103.7225479	102.2421046	100.7903211	99.36643771	97.9697209
190110A00071	1/10/2019	2.67	2/8/2021	1/10/2019	102.22453	102.2245271	102.2245271	102.2245271	101.9402007	101.0712454	100.2170833	99.37733905	98.5516496
190114A00061	1/14/2019	2.98	1/31/2024	1/14/2019	110.38574	110.3857435	110.3857435	110.3857435	108.0038073	104.1735355	100.5012446	96.97961335	93.60169737
190115A00063	1/15/2019	2.96	1/16/2024	1/15/2019	110.1984	110.1984014	110.1984014	110.1984014	107.8603416	104.071438	100.4373552	96.95092488	93.60535185
190117A00002	1/17/2019	2.87	1/7/2021	1/17/2019	102.03816	102.0381554	102.0381554	102.0381554	101.7989958	101.0194427	100.2518177	99.49584838	98.75127067
190117A00004	1/17/2019	2.9	1/18/2022	1/17/2019	104.76585	104.76585	104.76585	104.76585	104.0506588	102.2526298	100.4944121	98.77484148	97.09279764

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190118A00023	1/18/2019	2.9	1/19/2021	1/18/2019	102.14938	102.1493841	102.1493841	102.1493841	101.8937551	101.0811315	100.2814622	99.49443884	98.71976301
190122A00046	1/22/2019	3.29	1/22/2029	1/22/2019	128.20794	128.2079354	128.2079354	125.0683997	115.802485	107.1507551	99.23324189	91.98334761	85.34084774
190131A00019	1/31/2019	3.44	1/30/2034	1/31/2019	146.23365	146.2336513	145.5057746	130.882221	116.6271625	104.0349012	93.01713669	83.36526396	74.89943445
190211A00016	2/11/2019	3.01	2/11/2025	2/11/2019	113.30684	113.3068414	113.3068414	113.3068414	109.6585104	104.8114271	100.2097604	95.8398234	91.68876041
190214A00004	2/14/2019	2.6	2/14/2022	2/14/2019	104.71626	104.7162557	104.7162557	104.7162557	103.9632642	102.0850921	100.2501345	98.45714261	96.70491171
190214A00006	2/14/2019	2.67	2/14/2024	2/14/2019	110.00508	110.0050825	110.0050825	110.0050825	107.5723716	103.6926515	99.97503466	96.41191741	92.99609215
190215A00017	2/15/2019	2.89	2/15/2024	2/15/2019	110.14377	110.1437676	110.1437676	110.1437676	107.7210799	103.8551149	100.1502793	96.59903041	93.1942174
190226A00006	2/26/2019	2.64	2/26/2024	2/26/2019	109.97091	109.9709055	109.9709055	109.9709055	107.5039001	103.592435	99.84572784	96.25598946	92.81583941
190326A00002	3/26/2019	2.56	9/26/2022	3/26/2019	105.69517	105.6951746	105.6951746	105.6951746	104.5583791	102.0810089	99.67536252	97.33895106	95.06938767
190326A00039	3/26/2019	2.56	9/28/2020	3/26/2019	101.15763	101.1576279	101.1576279	101.1576279	101.0364108	100.5355201	100.0395846	99.54853111	99.06228792
190327A00006	3/27/2019	2.53	3/27/2024	3/27/2019	108.98743	108.9874258	108.9874258	108.9874258	106.4571556	102.50901	98.73016812	95.11248075	91.6482344
190328A00003	3/28/2019	2.64	9/30/2024	3/28/2019	110.63243	110.6324283	110.6324283	110.6324283	107.4974586	103.0452775	98.80467512	94.76448858	90.91420224
190328A00022	3/28/2019	2.53	11/20/2020	3/28/2019	101.47692	101.4769247	101.4769247	101.4769247	101.296851	100.650085	100.0115697	99.38114767	98.75866574
190328A00083	3/28/2019	2.37	3/28/2024	3/28/2019	109.09629	109.0962892	109.0962892	109.0962892	106.546824	102.5740918	98.77231284	95.13323239	91.64903856
190329A00034	3/29/2019	2.56	3/29/2022	3/29/2019	104.56415	104.5641532	104.5641532	104.5641532	103.7517193	101.7652524	99.82706542	97.93568373	96.0896879
190403A00006	4/3/2019	2.48	4/3/2024	4/3/2019	109.57987	109.5798717	109.5798717	109.5798717	107.0078542	103.0102298	99.18512601	95.52418504	92.01949915
190403A00024	4/3/2019	2.61	7/29/2022	4/3/2019	105.44426	105.44426	105.44426	105.44426	104.4203985	102.100829	99.84444626	97.64918025	95.51304105
190417A00005	4/17/2019	2.64	4/17/2020	4/17/2019	100.10858	100.1085778	100.1085778	100.1085778	100.1057048	100.0585769	100.0115088	99.96450032	99.91755143
190426A00008	4/26/2019	2.57	4/26/2022	4/26/2019	104.75982	104.7598177	104.7598177	104.7598177	103.9015151	101.8374911	99.82487001	97.86203005	95.94741298
180924A00052	9/24/2018	3.22	9/22/2023	9/24/2018	110.26098	110.2609803	110.2609803	110.2609803	108.2391603	104.7475469	101.3887486	98.15699954	95.04681626
180927A00015	9/27/2018	3.02	9/27/2022	9/27/2018	107.323	107.3230018	107.3230018	107.3230018	106.1714089	103.6612615	101.2239136	98.85683202	96.55758785
180927A00029	9/27/2018	3.01	10/27/2020	9/27/2018	101.60552	101.6055237	101.6055237	101.6055237	101.452501	100.8708384	100.2958389	99.72738852	99.16537577
180928A00033	9/28/2018	2.87	9/28/2020	9/28/2018	101.38305	101.3830479	101.3830479	101.3830479	101.2614949	100.7591085	100.2617012	99.76919933	99.28153056
181001A00019	10/1/2018	3.02	10/1/2020	10/1/2018	101.41172	101.411724	101.411724	101.411724	101.2870703	100.7772212	100.2724946	99.77281363	99.27810301
181005A00017	10/5/2018	3.27	4/11/2023	10/5/2018	109.0943	109.0942966	109.0942966	109.0942966	107.5004379	104.4551606	101.5131097	98.67020502	95.92255202
181010A00023	10/10/2018	3.41	4/1/2024	10/10/2018	112.57009	112.5700946	112.5700946	112.5700946	109.990093	105.9587482	102.0999799	98.40547444	94.8673636
181016A00084	10/16/2018	3.21	10/17/2022	10/16/2018	107.49901	107.4990071	107.4990071	107.4990071	106.3112311	103.7559018	101.2756251	98.86774864	96.52973146
181114A00012	11/14/2018	3.13	11/14/2022	11/14/2018	108.00101	108.0010115	108.0010115	108.0010115	106.7475231	104.1009079	101.533856	99.04347969	96.62701676
181121A00013	11/21/2018	3.11	11/20/2020	11/21/2018	101.85357	101.8535691	101.8535691	101.8535691	101.6731979	101.025056	100.3851773	99.75340419	99.12958333
181123A00013	11/23/2018	3.14	11/23/2021	11/23/2018	104.74417	104.7441743	104.7441743	104.7441743	104.0971628	102.4479492	100.8328831	99.25096831	97.70124765
181126A00046	11/26/2018	3.13	11/25/2020	11/26/2018	101.90635	101.9063473	101.9063473	101.9063473	101.7202312	101.0582414	100.4048622	99.75992654	99.12327132
181204A00023	12/4/2018	3.16	12/3/2021	12/4/2018	104.85666	104.8566556	104.8566556	104.8566556	104.1974936	102.5202701	100.8781609	99.27012717	97.69517121
181206A00009	12/6/2018	3.03	12/4/2020	12/6/2018	101.90924	101.9092375	101.9092375	101.9092375	101.7125495	101.0259928	100.3486957	99.68047163	99.02113922

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
181214A00016	12/14/2018	3.03	12/14/2020	12/14/2018	101.98626	101.9862612	101.9862612	101.9862612	101.7773342	101.0632063	100.3590995	99.66480357	98.98011437
181219A00023	12/19/2018	2.97	12/20/2021	12/19/2018	104.67794	104.6779378	104.6779378	104.6779378	103.9988579	102.2780082	100.5939134	98.94546029	97.331581
181224A00015	12/24/2018	2.72	6/24/2020	12/24/2018	100.61405	100.6140516	100.6140516	100.6140516	100.5854114	100.3492993	100.1143031	99.88041472	99.64762636
181226A00036	12/26/2018	3.02	12/26/2023	12/26/2018	110.27065	110.2706456	110.2706456	110.2706456	107.9908105	104.2536794	100.6672108	97.22445631	93.91883225
181231A00052	12/31/2018	2.64	6/30/2020	12/31/2018	100.63715	100.6371507	100.6371507	100.6371507	100.6053217	100.3525964	100.1011369	99.85093378	99.60197765
190104A00012	1/4/2019	2.76	1/4/2021	1/4/2019	101.93899	101.9389858	101.9389858	101.9389858	101.7039835	100.9329031	100.1734973	99.42550226	98.68866228
190104A00033	1/4/2019	3.37	1/31/2029	1/4/2019	127.10237	127.1023678	127.1023678	123.9834564	114.8318612	106.2807662	98.45480174	91.28823526	84.72161682
190107A00022	1/7/2019	2.83	1/7/2022	1/7/2019	104.56077	104.5607735	104.5607735	104.5607735	103.8601057	102.0929051	100.3642846	98.67308217	97.01818205
190107A00023	1/7/2019	2.87	1/6/2023	1/7/2019	107.19907	107.199068	107.199068	107.199068	105.8410721	103.0767238	100.398951	97.80449544	95.29024513
190110A00003	1/10/2019	2.97	1/10/2024	1/10/2019	110.19253	110.1925294	110.1925294	110.1925294	107.8714004	104.0977644	100.4777314	97.00419175	93.67040765
190429A00004	4/29/2019	2.65	4/15/2024	4/29/2019	109.59276	109.5927639	109.5927639	109.5927639	107.00033	102.9915352	99.15633487	95.48628598	91.97340248
190508A00003	5/8/2019	2.55	11/2/2020	5/8/2019	101.37562	101.3756176	101.3756176	101.3756176	101.2161289	100.6188398	100.0285843	99.44523882	98.86868255
190509A00019	5/9/2019	2.5	10/12/2021	5/9/2019	103.43636	103.4363561	103.4363561	103.4363561	102.8426209	101.3169335	99.82153387	98.35559245	96.91830948
190515A00024	5/15/2019	2.38	5/17/2021	5/15/2019	102.40347	102.4034714	102.4034714	102.4034714	101.9866126	100.8545909	99.7476368	98.66492421	97.60566318
190515A00059	5/15/2019	2.38	5/14/2021	5/15/2019	102.38595	102.3859542	102.3859542	102.3859542	101.9728914	100.849023	99.74986614	98.67461222	97.62248764
190516A00016	5/16/2019	2.53	6/29/2020	5/16/2019	100.56547	100.565471	100.565471	100.565471	100.5342366	100.2847897	100.0365761	99.78958681	99.54381281
190521A00068	5/21/2019	2.47	9/15/2021	5/21/2019	103.22672	103.22672	103.22672	103.22672	102.6654422	101.2136545	99.78962469	98.39262623	97.02195736
190522A00003	5/22/2019	2.55	5/22/2024	5/22/2019	109.41427	109.4142692	109.4142692	109.4142692	106.7123241	102.6136338	98.69601914	94.95049366	91.36856851
190523A00014	5/23/2019	2.5	11/15/2023	5/23/2019	108.06178	108.0617784	108.0617784	108.0617784	105.9133917	102.3214339	98.87111294	95.55605584	92.3702146
190523A00016	5/23/2019	2.48	2/15/2023	5/23/2019	106.34841	106.3484096	106.3484096	106.3484096	104.9042353	102.0451469	99.27892456	96.60206275	94.01120773
190524A00004	5/24/2019	2.27	5/24/2021	5/24/2019	102.50218	102.5021826	102.5021826	102.5021826	102.0752461	100.9210797	99.79293017	98.6899252	97.61123129
190528A00015	5/28/2019	2.42	5/27/2022	5/28/2019	104.62793	104.6279287	104.6279287	104.6279287	103.7184453	101.574575	99.48559679	97.4497186	95.46522171
190528A00042	5/28/2019	2.38	11/29/2021	5/28/2019	103.51107	103.5110739	103.5110739	103.5110739	102.8606904	101.2057584	99.58534802	97.99844339	96.44406856
190529A00012	5/29/2019	2.34	11/29/2021	5/29/2019	103.4437	103.4436951	103.4436951	103.4436951	102.7935125	101.1391629	99.51932443	97.93298149	96.37915839
190530A00024	5/30/2019	2.25	5/30/2024	5/30/2019	108.9827	108.9827026	108.9827026	108.9827026	106.244115	102.1130643	98.16596298	94.39361612	90.78734181
190530A00034	5/30/2019	2.44	5/30/2024	5/30/2019	109.00206	109.0020597	109.0020597	109.0020597	106.2801708	102.1700579	98.24240221	94.48810698	90.89858181
190530A00074	5/30/2019	2.4	5/31/2022	5/30/2019	104.60764	104.607643	104.607643	104.607643	103.6915496	101.5374907	99.43878188	97.39360856	95.40023073
190531A00035	5/31/2019	2.29	5/31/2022	5/31/2019	104.36676	104.3667619	104.3667619	104.3667619	103.451656	101.3002598	99.2041593	97.16154154	95.17066805
190531A00037	5/31/2019	2.61	5/31/2029	5/31/2019	123.04264	123.0426383	123.0426383	119.4295273	110.0205954	101.3171697	93.38486234	86.15099946	79.55011655
190603A00002	6/3/2019	2.03	6/2/2023	6/3/2019	106.13646	106.1364607	106.1364607	106.1364607	104.4242475	101.2759573	98.23888925	95.30845897	92.48030141
190603A00041	6/3/2019	2.01	6/3/2021	6/3/2019	102.25229	102.2522894	102.2522894	102.2522894	101.8133509	100.6338668	99.48159142	98.35559204	97.25497805
190604A00031	6/4/2019	2.25	6/5/2023	6/4/2019	106.27115	106.2711483	106.2711483	106.2711483	104.5591343	101.4146708	98.38120711	95.45416899	92.62920101
190605A00004	6/5/2019	2.11	1/12/2022	6/5/2019	103.29552	103.2955187	103.2955187	103.2955187	102.592658	100.8239819	99.09421113	97.40218946	95.74680539

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190605A00055	6/5/2019	2.11	6/6/2022	6/5/2019	104.00255	104.0025544	104.0025544	104.0025544	103.078561	100.9151062	98.80760944	96.754223	94.75317575
190606A00009	6/6/2019	2	6/4/2021	6/6/2019	102.2456	102.2455955	102.2455955	102.2455955	101.8054482	100.6233214	99.4685279	98.34012846	97.23722642
190606A00023	6/6/2019	2.23	6/6/2024	6/6/2019	108.15752	108.1575186	108.1575186	108.1575186	105.4228901	101.3123401	97.38519735	93.63227539	90.04490171
190606A00025	6/6/2019	2.18	6/4/2021	6/6/2019	102.27	102.270002	102.270002	102.270002	101.8309679	100.6515542	99.49936211	98.37345774	97.27294934
190607A00003	6/7/2019	1.92	6/7/2022	6/7/2019	103.98775	103.9877476	103.9877476	103.9877476	103.0584673	100.8847114	98.76737907	96.70460084	94.69458511
190607A00005	6/7/2019	1.92	6/7/2022	6/7/2019	103.98775	103.9877476	103.9877476	103.9877476	103.0584673	100.8847114	98.76737907	96.70460084	94.69458511
190607A00018	6/7/2019	2.19	6/7/2024	6/7/2019	107.99401	107.9940061	107.9940061	107.9940061	105.2580105	101.1482827	97.22207055	93.47017591	89.88391543
190613A00022	6/13/2019	2.2	6/14/2021	6/13/2019	102.34699	102.3469923	102.3469923	102.3469923	101.8956353	100.6889815	99.51081156	98.36012589	97.2359711
190617A00004	6/17/2019	2.2	6/15/2021	6/17/2019	102.34011	102.3401087	102.3401087	102.3401087	101.8876236	100.6785255	99.49802919	98.3451288	97.21886512
190619A00007	6/19/2019	2.21	6/20/2022	6/19/2019	104.29697	104.2969667	104.2969667	104.2969667	103.3475229	101.1432537	98.99676764	96.90612685	94.86947533
190619A00009	6/19/2019	2.26	6/19/2024	6/19/2019	108.35392	108.353917	108.353917	108.353917	105.5770724	101.4294036	97.46811083	93.68378982	90.06756661
190620A00055	6/25/2019	2.08	4/17/2023	6/25/2019	105.48476	105.484757	105.484757	105.484757	103.8993992	100.8931148	97.98961398	95.18480771	92.47479441
190621A00015	6/21/2019	2.2	6/21/2024	6/21/2019	108.10916	108.1091558	108.1091558	108.1091558	105.3287512	101.181083	97.22006345	93.43626209	89.82078104
190621A00023	6/21/2019	1.93	6/21/2022	6/21/2019	104.08007	104.0800739	104.0800739	104.0800739	103.1260632	100.9135761	98.75930548	96.66129229	94.61766049
190701A00028	7/1/2019	2.11	7/1/2021	7/1/2019	102.31068	102.3106842	102.3106842	102.3106842	101.8388632	100.5875109	99.36643195	98.17453639	97.01078616
190703A00014	7/3/2019	2.23	10/5/2020	7/3/2019	101.0302	101.0302016	101.0302016	101.0302016	100.9014142	100.3817512	99.8674321	99.35837478	98.85449876
190708A00021	7/8/2019	1.99	7/8/2022	7/8/2019	104.30336	104.3033588	104.3033588	104.3033588	103.3183179	101.0582479	98.85865833	96.71751435	94.63286633
190711A00026	7/11/2019	2.17	7/11/2022	7/11/2019	104.31579	104.3157931	104.3157931	104.3157931	103.3292494	101.0695306	98.87031633	96.72958299	94.64539055
190711A00028	7/11/2019	2.22	7/11/2024	7/11/2019	108.29992	108.2999174	108.2999174	108.2999174	105.4549606	101.2535246	97.24327038	93.41447471	89.75796372
190712A00018	7/12/2019	2.25	7/12/2024	7/12/2019	108.43469	108.4346915	108.4346915	108.4346915	105.5851066	101.3783864	97.36316258	93.52969548	89.86879533
190719A00003	7/19/2019	2.07	7/20/2020	7/19/2019	100.60159	100.6015892	100.6015892	100.6015892	100.5534291	100.2455632	99.93959311	99.63550126	99.33327029
190724A00021	7/24/2019	2.33	7/23/2027	7/24/2019	116.32913	116.32913	116.32913	115.0567342	107.6058137	100.5691305	94.04531238	87.99431018	82.37939564
190805A00048	8/5/2019	1.88	8/5/2022	8/5/2019	103.75755	103.7575547	103.7575547	103.7575547	102.7284196	100.4108031	98.15689201	95.96459189	93.83188926
190805A00050	8/5/2019	1.91	8/5/2024	8/5/2019	107.07379	107.073788	107.073788	107.073788	104.1632423	99.92685004	95.88632892	92.03165044	88.35334921
190807A00020	8/7/2019	1.57	2/7/2024	8/7/2019	105.66376	105.6637642	105.6637642	105.6637642	103.2915718	99.51373475	95.89392628	92.42474797	89.0991853
190626A00015	6/26/2019	2.15	6/26/2024	6/26/2019	107.9216	107.9215972	107.9215972	107.9215972	105.1277901	100.9713452	97.00251838	93.21180166	89.59022592
190701A00008	7/3/2019	2.1	7/3/2023	7/3/2019	105.92847	105.9284714	105.9284714	105.9284714	104.1485972	100.9367363	97.84060869	94.85535457	91.97635125
190701A00017	7/1/2019	1.9	7/1/2022	7/1/2019	104.06182	104.0618168	104.0618168	104.0618168	103.0904436	100.8513697	98.67179204	96.54969154	94.48313531
190703A00004	7/3/2019	2.08	7/5/2022	7/3/2019	104.07891	104.0789099	104.0789099	104.0789099	103.1041511	100.8626857	98.68087733	96.55671595	94.48827615
190712A00001	7/12/2019	2.05	7/12/2024	7/12/2019	108.36932	108.3693167	108.3693167	108.3693167	105.502342	101.2747357	97.24018575	93.38884709	89.71143199
190712A00009	7/12/2019	2.19	7/12/2023	7/12/2019	106.27125	106.2712543	106.2712543	106.2712543	104.4660815	101.2259278	98.10325591	95.09314028	92.19089266
190715A00022	7/15/2019	2.27	7/15/2020	7/15/2019	100.58967	100.5896696	100.5896696	100.5896696	100.5456697	100.2520955	99.96024543	99.67010411	99.38165651
190715A00027	7/15/2019	1.99	7/15/2021	7/15/2019	102.44644	102.446441	102.446441	102.446441	101.9566861	100.6674515	99.40540015	98.1696759	96.95945863

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190715A00028	7/17/2019	2.17	1/18/2022	7/17/2019	103.43521	103.4352123	103.4352123	103.4352123	102.7243855	100.9387405	99.19267631	97.48503546	95.8147037
190719A00012	7/19/2019	2.07	7/20/2020	7/19/2019	100.60159	100.6015892	100.6015892	100.6015892	100.5534291	100.2455632	99.93959311	99.63550126	99.33327029
190724A00024	7/24/2019	2.49	7/24/2029	7/24/2019	122.28459	122.2845941	122.2845941	118.451466	108.9383111	100.1615719	92.17471599	84.9022702	78.27633627
190729A00007	7/29/2019	2.17	7/28/2023	7/29/2019	106.28774	106.2877401	106.2877401	106.2877401	104.4418731	101.1611226	98.000729	94.95565566	92.02110348
190729A00019	7/29/2019	2.16	7/29/2021	7/29/2019	102.51964	102.5196355	102.5196355	102.5196355	102.0149119	100.6951078	99.39916731	98.12648653	96.8764817
190731A00004	7/31/2019	2.18	7/31/2024	7/31/2019	108.23101	108.231007	108.231007	108.231007	105.3237014	101.0748239	97.02152379	93.15382317	89.46230249
190802A00004	8/2/2019	2	8/2/2022	8/2/2019	104.02804	104.0280392	104.0280392	104.0280392	103.0032473	100.6901301	98.44038131	96.25192407	94.12276154
190806A00007	8/6/2019	1.88	8/5/2022	8/6/2019	103.75755	103.7575547	103.7575547	103.7575547	102.7284196	100.4108031	98.15689201	95.96459189	93.83188926
190807A00012	8/7/2019	1.76	2/7/2023	8/7/2019	104.22403	104.2240325	104.2240325	104.2240325	102.8110407	100.0050571	97.28978199	94.66181273	92.11789272
190807A00045	8/7/2019	1.77	8/7/2024	8/7/2019	106.46843	106.4684314	106.4684314	106.4684314	103.5582233	99.32991265	95.29748714	91.45090236	87.78067867
190808A00024	8/8/2019	1.69	2/8/2024	8/8/2019	106.13632	106.1363166	106.1363166	106.1363166	103.7568889	99.96736689	96.33636662	92.85646385	89.52061984
190809A00001	8/9/2019	1.88	8/9/2022	8/9/2019	103.77509	103.7750891	103.7750891	103.7750891	102.7384543	100.4103479	98.14649381	95.94477123	93.80314155
190809A00022	8/9/2019	1.88	8/9/2024	8/9/2019	106.95976	106.9597599	106.9597599	106.9597599	104.0376156	99.79396579	95.7469978	91.88661854	88.20330296
190813A00008	8/13/2019	1.88	8/13/2024	8/13/2019	106.97719	106.9771894	106.9771894	106.9771894	104.0419803	99.78827286	95.73215326	91.86345967	88.17260344
190814A00006	8/14/2019	1.84	8/14/2023	8/14/2019	105.25301	105.2530097	105.2530097	105.2530097	103.3713513	100.0652136	96.88203874	93.81662746	90.86402771
190814A00009	8/14/2019	1.84	8/14/2024	8/14/2019	106.80528	106.8052833	106.8052833	106.8052833	103.8687957	99.61635517	95.56160257	91.69436415	88.00504034
190807A00054	8/7/2019	1.66	8/6/2021	8/7/2019	102.10923	102.1092283	102.1092283	102.1092283	101.5948586	100.2538105	98.93675953	97.64311667	96.37231187
190808A00050	8/8/2019	1.7	8/8/2024	8/8/2019	106.9709	106.9708983	106.9708983	106.9708983	104.0330012	99.76877028	95.70267149	91.8245164	88.12469111
190808A00052	8/8/2019	1.7	8/8/2024	8/8/2019	106.9709	106.9708983	106.9708983	106.9708983	104.0330012	99.76877028	95.70267149	91.8245164	88.12469111
190814A00010	8/14/2019	1.84	4/5/2023	8/14/2019	104.69603	104.6960348	104.6960348	104.6960348	103.1451963	100.1823552	97.32011415	94.55450409	91.881736
190815A00004	8/15/2019	1.82	8/15/2022	8/15/2019	103.65742	103.6574224	103.6574224	103.6574224	102.6102038	100.2681046	97.99104464	95.77686414	93.62348766
190816A00020	8/16/2019	1.79	8/16/2024	8/16/2019	106.59318	106.5931754	106.5931754	106.5931754	103.6526552	99.39993446	95.34519624	91.47823889	87.78943731
190816A00022	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190816A00033	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190816A00035	8/16/2019	1.77	8/16/2023	8/16/2019	105.02302	105.0230208	105.0230208	105.0230208	103.137982	99.83071361	96.64666555	93.58061964	90.62760611
190819A00007	8/19/2019	1.62	8/19/2024	8/19/2019	106.66399	106.6639861	106.6639861	106.6639861	103.6938638	99.40939115	95.32531494	91.43126551	87.71746169
190819A00022	8/19/2019	1.8	8/19/2024	8/19/2019	106.64971	106.6497105	106.6497105	106.6497105	103.6989157	99.43773714	95.3752533	91.50120939	87.80593105
190820A00054	8/20/2019	1.76	8/18/2022	8/20/2019	103.52561	103.525612	103.525612	103.525612	102.473445	100.1252434	97.84245692	95.62290666	93.4644992
190821A00017	8/21/2019	1.8	8/21/2024	8/21/2019	106.65799	106.6579867	106.6579867	106.6579867	103.7006753	99.43449126	95.36745607	91.48928033	87.79025765
190821A00021	8/21/2019	1.79	8/18/2022	8/21/2019	103.59784	103.5978445	103.5978445	103.5978445	102.5453428	100.1962676	97.91262626	95.69223944	93.53301316
190822A00002	8/22/2019	1.89	8/20/2021	8/22/2019	102.25457	102.2545722	102.2545722	102.2545722	101.7256351	100.3505129	99.00052212	97.67503343	96.3734382
190826A00004	8/26/2019	1.74	8/26/2022	8/26/2019	103.50944	103.5094381	103.5094381	103.5094381	102.4425352	100.0740342	97.77204274	95.53432823	93.35874622
190826A00028	8/26/2019	1.56	8/26/2022	8/26/2019	103.5105	103.5105005	103.5105005	103.5105005	102.4391485	100.0616774	97.75114019	95.50528466	93.32194771

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190827A00001	8/27/2019	1.74	8/27/2024	8/27/2019	106.41628	106.4162825	106.4162825	106.4162825	103.4424685	99.16703475	95.09192074	91.20674085	87.5017
190827A00022	8/27/2019	1.83	8/27/2021	8/27/2019	102.20025	102.2002539	102.2002539	102.2002539	101.663583	100.270549	98.9032661	97.56108273	96.24336888
190827A00039	8/27/2019	1.78	8/26/2022	8/27/2019	103.60663	103.6066305	103.6066305	103.6066305	102.539272	100.1695854	97.86643411	95.62758466	93.45089192
190828A00009	8/28/2019	1.71	8/28/2024	8/28/2019	106.28691	106.2869073	106.2869073	106.2869073	103.3113652	99.03632121	94.96172718	91.0771842	87.37288495
190829A00029	8/29/2019	1.75	7/14/2023	8/29/2019	104.82242	104.8224245	104.8224245	104.8224245	103.0226942	99.80123638	96.69697937	93.70500621	90.82063646
190903A00004	9/3/2019	1.77	9/6/2022	9/3/2019	103.62705	103.6270505	103.6270505	103.6270505	102.5388068	100.1402248	97.80976943	95.54512697	93.34407616
190910A00013	9/10/2019	1.9	9/9/2022	9/10/2019	103.9601	103.9601018	103.9601018	103.9601018	102.8645	100.4538774	98.11192132	95.83629204	93.62474365
190912A00026	9/12/2019	1.94	9/12/2022	9/12/2019	104.0724	104.072402	104.072402	104.072402	102.9704903	100.5505458	98.19974979	95.91573798	93.69624152
190912A00031	9/12/2019	1.75	9/12/2024	9/12/2019	107.34913	107.3491344	107.3491344	107.3491344	104.2922827	99.93357067	95.78138267	91.82488742	88.05387708
190913A00014	9/13/2019	2.08	9/13/2024	9/13/2019	108.00967	108.0096744	108.0096744	108.0096744	104.9617916	100.6097514	96.46320907	92.51141385	88.74423227
190913A00025	9/13/2019	2.04	3/15/2022	9/13/2019	103.44823	103.4482312	103.4482312	103.4482312	102.6608745	100.7220419	98.82953602	96.98196744	95.17799784
190919A00017	9/19/2019	1.8	9/19/2022	9/19/2019	104.20666	104.2066647	104.2066647	104.2066647	103.0859063	100.6364339	98.25765732	95.94713455	93.70252334
190920A00021	9/20/2019	1.96	9/18/2026	9/20/2019	112.03491	112.0349094	112.0349094	111.8089431	105.2767963	99.05747916	93.24662633	87.81534194	82.73691426
190923A00012	9/23/2019	2.43	9/25/2034	9/23/2019	133.67695	133.6769494	131.8873259	117.0071498	103.0877139	90.95597529	80.43411382	71.29787216	63.35534049
190923A00081	9/23/2019	1.96	9/20/2024	9/23/2019	107.50286	107.5028597	107.5028597	107.5028597	104.4377829	100.0793954	95.92781034	91.97215894	88.20219941
190924A00010	9/24/2019	1.95	9/24/2021	9/24/2019	102.49987	102.4998692	102.4998692	102.4998692	101.9299226	100.4594383	99.01753709	97.60345884	96.21647002
190930A00011	9/30/2019	1.89	10/24/2022	9/30/2019	104.13329	104.1332886	104.1332886	104.1332886	102.9485798	100.4186153	97.96363544	95.58097023	93.26806249
190930A00069	9/30/2019	1.9	9/29/2023	9/30/2019	105.65989	105.6598881	105.6598881	105.6598881	103.6562634	100.2262285	96.92816713	93.75630222	90.70514166
190930A00077	9/30/2019	2.23	9/28/2029	9/30/2019	118.26604	118.2660373	118.2660373	114.2403065	104.8315138	96.18349427	88.32842356	81.18925441	74.69679377
191002A00006	10/2/2019	1.84	10/2/2024	10/2/2019	107.0126	107.0125965	107.0125965	107.0125965	103.913611	99.53636372	95.36838739	91.39860284	87.61657508
191002A00017	10/2/2019	1.84	10/2/2024	10/2/2019	107.0126	107.0125965	107.0125965	107.0125965	103.913611	99.53636372	95.36838739	91.39860284	87.61657508
191003A00014	10/3/2019	1.71	9/20/2024	10/3/2019	106.37586	106.3758605	106.3758605	106.3758605	103.3239621	98.99027194	94.86254103	90.92993638	87.18225034
191003A00020	10/3/2019	1.72	10/3/2022	10/3/2019	103.60982	103.6098207	103.6098207	103.6098207	102.4696049	100.0002918	97.60310996	95.27553611	93.01515148
191004A00003	10/4/2019	1.89	10/5/2026	10/4/2019	110.36392	110.3639236	110.3639236	110.0822746	103.6051857	97.44533976	91.69214136	86.31668536	81.29226187
191004A00005	10/4/2019	1.54	10/4/2024	10/4/2019	106.48955	106.4895535	106.4895535	106.4895535	103.3694126	98.97485223	94.7914065	90.80785463	87.01363063
191007A00027	10/7/2019	1.69	10/7/2022	10/7/2019	103.54921	103.5492141	103.5492141	103.5492141	102.4013306	99.9225198	97.5163329	95.18022054	92.9117392
191008A00006	10/8/2019	1.73	10/8/2021	10/8/2019	102.22535	102.2253532	102.2253532	102.2253532	101.6396301	100.1341429	98.65845334	97.2117506	95.79325261
191009A00017	10/9/2019	1.76	10/4/2024	10/9/2019	106.65738	106.6573786	106.6573786	106.6573786	103.5558536	99.18161626	95.01680988	91.05033369	87.27173304
191009A00026	10/9/2019	1.74	10/7/2022	10/9/2019	103.67649	103.6764943	103.6764943	103.6764943	102.5279762	100.0475429	97.63976967	95.30210614	93.03210773
191015A00026	10/15/2019	1.69	10/15/2021	10/15/2019	102.4554	102.4553958	102.4553958	102.4553958	101.858906	100.3288233	98.82928672	97.35945405	95.91851363
191017A00022	10/17/2019	2.25	7/17/2028	10/17/2019	116.15468	116.1546806	116.1546806	113.7650016	105.4839866	97.76270848	90.6696086	84.15025038	78.15517695
200325A00029	3/25/2020	1.15	3/24/2023	3/25/2020	103.11143	103.1114286	103.1114286	103.1114286	101.5922015	98.67130328	95.84913304	93.12182085	90.48567092
200325A00030	3/25/2020	1.5	3/25/2025	3/25/2020	106.96295	106.9629487	106.9629487	106.9629487	103.2139232	98.3863083	93.81172293	89.47563344	85.3644141

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200326A00026	3/26/2020	1.32	3/26/2024	3/26/2020	104.11726	104.1172607	104.1172607	104.1172607	101.6373681	97.78746557	94.10366867	90.57796135	87.20275671
200326A00030	3/26/2020	1.13	3/24/2023	3/26/2020	102.50903	102.5090308	102.5090308	102.5090308	101.0009571	98.10149592	95.29984971	92.59219241	89.97486973
200327A00026	3/27/2020	0.57	3/29/2021	3/27/2020	100.45488	100.4548825	100.4548825	100.4548825	100.1032837	99.1112458	98.13871345	97.18511657	96.24990711
190814A00015	8/14/2019	1.84	8/14/2024	8/14/2019	106.80528	106.8052833	106.8052833	106.8052833	103.8687957	99.61635517	95.56160257	91.69436415	88.00504034
190815A00025	8/15/2019	1.97	8/15/2029	8/15/2019	117.51026	117.510256	117.510256	113.6124031	104.2318818	95.61801951	87.78935783	80.67019192	74.19246843
190816A00007	8/16/2019	1.77	8/16/2023	8/16/2019	105.02302	105.0230208	105.0230208	105.0230208	103.137982	99.83071361	96.64666555	93.58061964	90.62760611
190816A00016	8/16/2019	2.2	8/16/2029	8/16/2019	117.76167	117.7616719	117.7616719	113.9216587	104.6330018	96.0853005	88.31281956	81.24107401	74.80308583
190819A00004	8/20/2019	1.81	5/24/2024	8/20/2019	106.33219	106.3321864	106.3321864	106.3321864	103.6561477	99.61540041	95.75411947	92.06336995	88.53471295
190820A00005	8/21/2019	1.76	2/27/2023	8/21/2019	104.30325	104.3032502	104.3032502	104.3032502	102.8436287	99.9805461	97.21173652	94.53359883	91.94268948
190829A00015	8/30/2019	2.06	8/30/2022	8/30/2019	104.3065	104.306499	104.306499	104.306499	103.2284361	100.8399331	98.51870445	96.26248382	94.06909484
190830A00002	8/30/2019	1.93	8/28/2026	8/30/2019	110.45777	110.4577706	110.4577706	110.3074085	103.9268808	97.84691897	92.16221918	86.84511053	81.86999106
190904A00007	9/4/2019	1.69	9/1/2023	9/4/2019	104.81198	104.8119828	104.8119828	104.8119828	102.8876352	99.54400314	96.32642542	93.22950236	90.24809436
190904A00019	9/4/2019	1.69	9/4/2024	9/4/2019	106.22476	106.2247559	106.2247559	106.2247559	103.227164	98.93634832	94.84756096	90.95027771	87.23457564
190904A00020	9/4/2019	1.69	9/1/2023	9/4/2019	104.81198	104.8119828	104.8119828	104.8119828	102.8876352	99.54400314	96.32642542	93.22950236	90.24809436
190905A00002	9/5/2019	1.78	9/6/2022	9/5/2019	103.65165	103.6516519	103.6516519	103.6516519	102.563291	100.1644053	97.83365298	95.56871995	93.36738481
190909A00025	9/9/2019	1.88	9/9/2024	9/9/2019	107.09459	107.0945928	107.0945928	107.0945928	104.0705132	99.74838221	95.63011275	91.70505893	87.96318482
190910A00004	9/11/2019	1.86	9/11/2024	9/11/2019	107.01359	107.0135855	107.0135855	107.0135855	103.9838565	99.65852249	95.53746823	91.61001229	87.86608616
190917A00044	9/17/2019	1.86	9/17/2021	9/17/2019	102.58577	102.5857706	102.5857706	102.5857706	102.0220781	100.5657252	99.13738915	97.73633262	96.36184364
190918A00007	9/20/2019	1.95	12/15/2022	9/20/2019	104.52584	104.5258394	104.5258394	104.5258394	103.2307541	100.5597947	97.97126653	95.46209549	93.02934538
190923A00017	9/23/2019	1.74	9/23/2024	9/23/2019	107.35332	107.3533165	107.3533165	107.3533165	104.259819	99.87342666	95.69623241	91.71719148	87.92589921
190924A00035	9/24/2019	1.88	9/13/2024	9/24/2019	107.11191	107.1119116	107.1119116	107.1119116	104.0744551	99.74200972	95.61439553	91.68089002	87.93138663
190925A00004	9/25/2019	1.7	9/24/2024	9/25/2019	107.17629	107.1762905	107.1762905	107.1762905	104.0815527	99.69655454	95.5208642	91.54342311	87.75381406
190925A00019	9/27/2019	1.93	9/27/2023	9/27/2019	105.75677	105.756774	105.756774	105.756774	103.7575697	100.3309835	97.0360207	93.86692899	90.81823916
190926A00019	9/26/2019	1.94	9/26/2024	9/26/2019	107.43967	107.4396652	107.4396652	107.4396652	104.3555593	99.98365512	95.81995094	91.85346431	88.07384893
190930A00014	9/30/2019	1.89	9/30/2022	9/30/2019	104.02747	104.0274724	104.0274724	104.0274724	102.8911749	100.4242831	98.02925883	95.70359533	93.44488916
191002A00005	10/2/2019	1.83	10/2/2020	10/2/2019	100.87935	100.8793485	100.8793485	100.8793485	100.7536741	100.2418092	99.73513236	99.23356504	98.73703026
191002A00014	10/2/2019	1.78	10/3/2022	10/2/2019	103.7619	103.7618954	103.7618954	103.7618954	102.620926	100.1496824	97.75061306	95.42119344	93.15900347
191021A00002	10/21/2019	1.9	10/21/2020	10/21/2019	100.93115	100.9311481	100.9311481	100.9311481	100.7850747	100.2220163	99.66524036	99.11464217	98.57011923
191021A00021	10/21/2019	2.22	12/21/2027	10/21/2019	114.82152	114.8215217	114.8215217	113.0947088	105.3770108	98.13185862	91.44029614	85.25709125	79.54093322
191025A00002	10/25/2019	1.75	10/26/2020	10/25/2019	100.94709	100.9470861	100.9470861	100.9470861	100.7953073	100.2175654	99.64643258	99.08179592	98.52354503
191031A00019	10/31/2019	1.88	10/31/2022	10/31/2019	104.13804	104.1380362	104.1380362	104.1380362	102.9393485	100.3913553	97.91926179	95.52034942	93.19201553
191101A00002	11/1/2019	1.85	11/1/2022	11/1/2019	104.06395	104.0639544	104.0639544	104.0639544	102.8635787	100.3139029	97.84024461	95.43987834	93.110195
191105A00007	11/5/2019	1.98	11/5/2026	11/5/2019	112.41197	112.4119681	112.4119681	112.015786	105.3493929	99.0127206	93.09935669	87.5788511	82.42309535

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191106A00022	11/6/2019	2.34	1/2/2030	11/6/2019	119.8372	119.8371963	119.8371963	115.3644903	105.6730533	96.78391276	88.72777269	81.42190444	74.79220122
191115A00015	11/18/2019	2.61	11/18/2024	11/18/2019	110.80727	110.8072705	110.8072705	110.8072705	107.5013476	102.9234844	98.56832668	94.42384627	90.47873084
191115A00030	11/15/2019	2.35	11/9/2029	11/15/2019	119.6369	119.6369003	119.6369003	115.4149176	105.8553562	97.07191196	89.10067954	81.86203197	75.28453461
191120A00031	11/20/2019	1.69	11/21/2022	11/20/2019	104.20566	104.2056643	104.2056643	104.2056643	102.9576381	100.3427817	97.80733204	95.34838333	92.96315671
191121A00004	11/21/2019	1.77	11/21/2024	11/21/2019	107.75858	107.7585803	107.7585803	107.7585803	104.4577539	99.91626277	95.59768557	91.48990733	87.58153809
191122A00020	11/26/2019	3.2	11/23/2037	11/26/2019	150.4275	150.4275036	144.2421789	125.92189	109.2595308	95.07827725	83.07023479	72.8825622	64.22177787
191206A00019	12/6/2019	1.96	11/15/2023	12/6/2019	106.08679	106.0867879	106.0867879	106.0867879	103.9550321	100.3985862	96.98274946	93.70118711	90.54788757
191212A00026	12/13/2019	1.92	6/16/2022	12/13/2019	103.62804	103.6280361	103.6280361	103.6280361	102.6883273	100.5023136	98.37342248	96.29974612	94.27945677
191226A00019	12/26/2019	2.4	12/22/2028	12/26/2019	118.29683	118.2968321	118.2968321	115.3631834	106.6227751	98.50531757	91.07695298	84.27540365	78.04432876
200113A00003	1/13/2020	1.72	1/13/2022	1/13/2020	102.90204	102.902038	102.902038	102.902038	102.1968905	100.4238101	98.68988559	96.99395396	95.33489715
200115A00022	1/15/2020	1.88	10/14/2022	1/15/2020	104.06355	104.0635491	104.0635491	104.0635491	102.8991357	100.3957654	97.96606452	95.60743184	93.31737513
200115A00024	1/15/2020	1.88	1/17/2023	1/15/2020	104.47884	104.4788358	104.4788358	104.4788358	103.1117205	100.3572837	97.69022751	95.10727561	92.60529585
200117A00026	1/17/2020	1.69	1/18/2022	1/17/2020	102.86949	102.8694907	102.8694907	102.8694907	102.1581767	100.3723098	98.62613901	96.91850085	95.24827556
200121A00008	1/24/2020	1.84	1/20/2022	1/24/2020	102.84231	102.8423079	102.8423079	102.8423079	102.1309293	100.3455936	98.59995395	96.89285544	95.22318581
200123A00005	1/23/2020	1.81	1/24/2022	1/23/2020	102.80436	102.8043604	102.8043604	102.8043604	102.0881155	100.292722	98.53745522	96.82115956	95.14272133
200123A00013	1/27/2020	1.89	1/27/2025	1/27/2020	107.70173	107.7017338	107.7017338	107.7017338	104.1856216	99.5112873	95.07348054	90.85905237	86.85565008
200129A00008	1/29/2020	1.76	1/31/2022	1/29/2020	102.741	102.7410043	102.7410043	102.7410043	102.0162402	100.2032379	98.43112038	96.69873099	95.00495296
200129A00010	1/29/2020	1.76	1/31/2022	1/29/2020	102.741	102.7410043	102.7410043	102.7410043	102.0162402	100.2032379	98.43112038	96.69873099	95.00495296
191007A00029	10/7/2019	1.88	10/9/2029	10/7/2019	116.92518	116.9251764	116.9251764	112.7918625	103.304704	94.61446058	86.72887551	79.56919707	73.06475164
191008A00018	10/8/2019	1.74	10/11/2022	10/8/2019	103.69248	103.6924765	103.6924765	103.6924765	102.5359085	100.0450019	97.62727206	95.28014161	93.0011405
191008A00022	10/8/2019	1.55	10/8/2021	10/8/2019	102.20884	102.2088415	102.2088415	102.2088415	101.6213591	100.111701	98.63199013	97.18140974	95.75917249
191009A00006	10/9/2019	1.53	10/7/2022	10/9/2019	103.60155	103.6015522	103.6015522	103.6015522	102.4484688	99.95937088	97.54338398	95.19793558	92.92056025
191010A00011	10/10/2019	1.6	10/10/2023	10/10/2019	105.28896	105.2889579	105.2889579	105.2889579	103.2481645	99.78076188	96.44809444	93.24420742	90.16344291
191017A00003	10/17/2019	1.9	12/10/2021	10/17/2019	102.75143	102.751429	102.751429	102.751429	102.0903016	100.4130777	98.77131029	97.1639395	95.58994781
191018A00005	10/18/2019	1.89	5/2/2022	10/18/2019	103.36281	103.3628072	103.3628072	103.3628072	102.5001447	100.4350065	98.42164118	96.45840355	94.54371341
191024A00017	10/25/2019	1.9	7/15/2021	10/25/2019	102.10734	102.1073439	102.1073439	102.1073439	101.6197378	100.3362565	99.07979249	97.84949619	96.64455364
191025A00009	10/25/2019	2.26	5/25/2029	10/25/2019	117.886	117.8859977	117.8859977	114.383238	105.2839792	96.88468895	89.23027418	82.25061444	75.88253072
191104A00023	11/4/2019	2.24	8/4/2028	11/4/2019	116.16612	116.166119	116.166119	113.7169066	105.391938	97.63491209	90.51236913	83.96908255	77.95489229
191105A00018	11/5/2019	1.78	11/6/2023	11/5/2019	106.05573	106.0557333	106.0557333	106.0557333	103.9366147	100.3871222	96.97759698	93.70175384	90.55362685
191114A00008	11/18/2019	1.93	4/17/2023	11/18/2019	105.02359	105.0235913	105.0235913	105.0235913	103.441226	100.4419735	97.54532581	94.7471999	92.04369992
191114A00020	11/18/2019	1.91	2/15/2022	11/18/2019	103.06707	103.0670685	103.0670685	103.0670685	102.3210738	100.4621819	98.64607907	96.87152975	95.13734198
191120A00006	11/20/2019	2.67	11/20/2035	11/20/2019	136.61556	136.6155572	133.2153186	117.4375574	102.8420809	90.233409	79.39585314	70.06758617	62.02685078
191120A00010	11/20/2019	1.88	1/20/2022	11/20/2019	102.91544	102.9154406	102.9154406	102.9154406	102.2038212	100.417803	98.67149356	96.96373759	95.29342251

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191122A00006	11/22/2019	1.74	11/22/2023	11/22/2019	105.98162	105.9816183	105.9816183	105.9816183	103.8198596	100.2301233	96.78335701	93.47307396	90.29312084
191126A00015	11/27/2019	1.88	10/14/2022	11/27/2019	104.06355	104.0635491	104.0635491	104.0635491	102.8991357	100.3957654	97.96606452	95.60743184	93.31737513
191202A00005	12/2/2019	2.03	12/2/2024	12/2/2019	108.11702	108.1170181	108.1170181	108.1170181	104.7969752	100.2467861	95.92030114	91.80533253	87.89042426
191206A00013	12/6/2019	3.05	12/6/2044	12/6/2019	166.16006	166.1600613	148.5671557	123.5791993	102.7912976	86.1522853	72.83477334	62.13053904	53.48766882
191206A00021	12/6/2019	2.02	12/6/2024	12/6/2019	108.08878	108.0887799	108.0887799	108.0887799	104.7548752	100.1957169	95.86115783	91.73893656	87.81752948
191206A00044	12/10/2019	2.01	10/31/2024	12/10/2019	107.92118	107.9211799	107.9211799	107.9211799	104.713372	100.2457805	95.99444365	91.94776409	88.09482842
191220A00001	12/20/2019	2.62	12/19/2031	12/20/2019	127.01852	127.0185193	127.0185193	118.1559016	106.6049616	96.22064302	86.97475876	78.73550003	71.38697507
191223A00008	12/23/2019	1.93	12/23/2021	12/23/2019	102.87925	102.8792504	102.8792504	102.8792504	102.2022071	100.4895701	98.81368933	97.17344655	95.56776915
191223A00055	12/23/2019	2.46	12/7/2029	12/23/2019	120.85591	120.8559063	120.8559063	116.4978347	106.8240701	97.93608105	89.87436992	82.55744879	75.91226647
200130A00016	1/30/2020	1.58	1/30/2025	1/30/2020	107.14888	107.1488831	107.1488831	107.1488831	103.6030533	98.90632874	94.44862885	90.21661495	86.19775778
200131A00032	1/31/2020	2.1	1/31/2030	1/31/2020	117.63772	117.6377187	117.6377187	113.042739	103.3766666	94.53480036	86.53037053	79.27955212	72.70730155
200131A00048	1/31/2020	1.69	1/31/2024	1/31/2020	105.39489	105.3948941	105.3948941	105.3948941	103.0587845	99.32314733	95.74263099	92.31002437	89.01848782
200203A00051	2/3/2020	1.58	11/3/2021	2/3/2020	102.3606	102.3606043	102.3606043	102.3606043	101.7418113	100.1622189	98.61474529	97.09847934	95.61254394
200204A00015	2/4/2020	1.72	2/6/2023	2/4/2020	104.1048	104.1048024	104.1048024	104.1048024	102.6948246	99.89335141	97.18237002	94.55848875	92.01846145
200207A00015	2/7/2020	1.73	2/7/2022	2/7/2020	102.71268	102.7126841	102.7126841	102.7126841	101.9785617	100.1457182	98.35461731	96.60406635	94.89291449
200210A00021	2/10/2020	1.76	2/10/2025	2/10/2020	107.17492	107.1749241	107.1749241	107.1749241	103.6125364	98.91347924	94.45425358	90.22143501	86.20241608
200214A00014	2/18/2020	1.8	2/18/2025	2/18/2020	107.35302	107.3530176	107.3530176	107.3530176	103.7598003	99.03711159	94.55643591	90.30417105	86.26754605
200219A00015	2/19/2020	1.77	2/19/2027	2/19/2020	111.4938	111.4938	111.4938	110.7312425	103.808313	97.26779442	91.18230944	85.51794165	80.24346242
200220A00007	2/20/2020	1.72	2/21/2023	2/20/2020	104.16256	104.1625632	104.1625632	104.1625632	102.717632	99.87336705	97.12225782	94.46076471	91.8855022
200221A00001	2/21/2020	1.57	2/22/2021	2/21/2020	101.32161	101.3216101	101.3216101	101.3216101	101.0180512	100.1155802	99.2291635	98.35837583	97.50280674
200221A00003	2/25/2020	1.69	2/25/2025	2/25/2020	106.88813	106.8881324	106.8881324	106.8881324	103.2737115	98.5423306	94.05456128	89.79665275	85.75569803
200224A00017	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200225A00004	2/25/2020	1.54	2/26/2024	2/25/2020	104.90233	104.9023256	104.9023256	104.9023256	102.4976868	98.70338389	95.06953855	91.58855953	88.2532537
200225A00006	2/25/2020	1.57	2/25/2022	2/25/2020	102.45556	102.4555631	102.4555631	102.4555631	101.6982056	99.81659709	97.97892235	96.18389568	94.43027741
200225A00012	2/25/2020	1.57	2/25/2025	2/25/2020	106.29525	106.2952482	106.2952482	106.2952482	102.6888789	97.97166083	93.49753307	89.25276853	85.22448264
200225A00014	2/25/2020	1.57	2/25/2022	2/25/2020	102.45556	102.4555631	102.4555631	102.4555631	101.6982056	99.81659709	97.97892235	96.18389568	94.43027741
200226A00009	2/26/2020	1.75	2/26/2030	2/26/2020	116.30279	116.3027919	116.3027919	111.5169107	101.7304424	92.81396213	84.75423295	77.46448668	70.86714185
200227A00009	2/27/2020	1.47	2/27/2025	2/27/2020	105.80746	105.807465	105.807465	105.807465	102.2003017	97.48955369	93.02200448	88.7839012	84.76233614
200227A00012	2/27/2020	1.41	2/27/2023	2/27/2020	103.27441	103.2744056	103.2744056	103.2744056	101.8210406	98.97299044	96.21884315	93.55500972	90.97805826
200228A00041	2/28/2020	1.14	2/28/2023	2/28/2020	103.01326	103.0132641	103.0132641	103.0132641	101.5522287	98.69319651	95.92880331	93.25541923	90.66957393
200228A00059	2/28/2020	1.79	2/28/2030	2/28/2020	114.70079	114.7007919	114.7007919	109.9998826	100.3867408	91.62282767	83.69916424	76.53080821	70.04179525
200302A00031	3/2/2020	1.02	11/18/2022	3/2/2020	102.40516	102.4051571	102.4051571	102.4051571	101.1729362	98.59006847	96.0856235	93.65673617	91.30066641
200302A00054	3/2/2020	1.31	3/3/2025	3/2/2020	105.02716	105.0271564	105.0271564	105.0271564	101.4155173	96.71390308	92.25580888	88.02742652	84.01579855

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191230A00012	12/30/2019	1.77	12/1/2023	12/30/2019	106.13336	106.133361	106.133361	106.133361	103.9459338	100.3301778	96.85919443	93.52637789	90.32546449
200108A00017	1/8/2020	2.55	1/8/2035	1/8/2020	136.1223	136.1223007	133.878745	118.6247972	104.3780293	91.98494707	81.25955464	71.96604201	63.90313256
200110A00005	1/10/2020	1.7	1/10/2022	1/10/2020	102.85263	102.852633	102.852633	102.852633	102.1514105	100.3866429	98.66069691	96.97240982	95.32066484
200122A00028	1/22/2020	1.84	1/21/2022	1/22/2020	102.84662	102.8466163	102.8466163	102.8466163	102.1339753	100.3459954	98.59782151	96.88829837	95.21631337
200123A00049	1/23/2020	1.63	1/23/2023	1/23/2020	104.30901	104.3090079	104.3090079	104.3090079	102.9230837	100.144397	97.45457157	94.85027616	92.32832466
200129A00018	2/3/2020	1.74	12/15/2022	2/3/2020	103.95133	103.9513318	103.9513318	103.9513318	102.6594056	99.99628801	97.41541775	94.91372675	92.48828435
200130A00005	1/30/2020	1.73	1/30/2024	1/30/2020	105.5457	105.5456951	105.5456951	105.5456951	103.2109654	99.47492738	95.89389601	92.46066672	89.16840629
200130A00006	1/30/2020	1.77	1/30/2025	1/30/2020	107.13059	107.1305861	107.1305861	107.1305861	103.6111186	98.94312573	94.51189513	90.30425134	86.30781629
200130A00010	1/30/2020	1.56	1/31/2022	1/30/2020	102.68417	102.6841662	102.6841662	102.6841662	101.9571752	100.1390712	98.36206402	96.62498843	94.92671953
200131A00016	1/31/2020	1.73	1/31/2025	1/31/2020	106.93977	106.9397663	106.9397663	106.9397663	103.4191932	98.75333606	94.32431804	90.11895493	86.12486028
200203A00004	2/3/2020	1.7	2/3/2023	2/3/2020	104.03578	104.035781	104.035781	104.035781	102.6331348	99.84104897	97.13890627	94.52334483	91.99114665
200203A00050	2/3/2020	1.54	2/3/2022	2/3/2020	102.65866	102.658664	102.658664	102.658664	101.9276886	100.101168	98.31611091	96.57133663	94.86570567
200204A00020	2/4/2020	1.6	2/4/2025	2/4/2020	107.26705	107.2670524	107.2670524	107.2670524	103.7008783	98.98838576	94.51634437	90.2713044	86.2406339
200205A00013	2/5/2020	1.77	2/6/2023	2/5/2020	104.24889	104.248889	104.248889	104.248889	102.8380593	100.0345203	97.32152326	94.69567482	92.15372733
200214A00005	2/14/2020	1.59	2/14/2025	2/14/2020	107.25835	107.2583522	107.2583522	107.2583522	103.6545796	98.91585872	94.42029245	90.15420485	86.10475614
200219A00016	2/19/2020	1.57	10/19/2022	2/19/2020	103.75192	103.7519195	103.7519195	103.7519195	102.5740268	100.052018	97.60471883	95.22947341	92.92373787
200220A00001	2/20/2020	1.74	2/22/2022	2/20/2020	102.7715	102.7714984	102.7714984	102.7714984	102.017079	100.1409714	98.30847766	96.51832654	94.76929211
200221A00009	2/21/2020	1.69	2/22/2022	2/21/2020	102.67553	102.6755338	102.6755338	102.6755338	101.9214492	100.0462789	98.21470461	96.42545559	94.6773064
200221A00013	2/21/2020	1.69	2/21/2025	2/21/2020	106.87315	106.8731499	106.8731499	106.8731499	103.273825	98.55322393	94.07514436	89.82592661	85.79274738
200224A00019	2/24/2020	1.59	2/18/2025	2/24/2020	106.31975	106.3197494	106.3197494	106.3197494	102.7404724	98.04237257	93.58538387	89.35594492	85.34132345
200224A00024	2/24/2020	1.59	2/24/2025	2/24/2020	106.39059	106.3905903	106.3905903	106.3905903	102.786643	98.06974624	93.59575465	89.35095994	85.32249472
200225A00018	2/25/2020	1.94	2/25/2030	2/25/2020	116.1734	116.1734006	116.1734006	111.4742276	101.8073839	92.9832889	85.00261697	77.78027225	71.24013965
200226A00002	2/26/2020	1.53	2/27/2023	2/26/2020	103.62715	103.6271523	103.6271523	103.6271523	102.1716422	99.31843809	96.55926374	93.89052598	91.30878896
200226A00016	2/26/2020	1.57	2/26/2025	2/26/2020	106.29867	106.2986654	106.2986654	106.2986654	102.6885344	97.96863735	93.49210268	89.24518049	85.21496527
200226A00017	2/26/2020	1.53	2/27/2023	2/26/2020	103.62715	103.6271523	103.6271523	103.6271523	102.1716422	99.31843809	96.55926374	93.89052598	91.30878896
200228A00014	2/28/2020	1.4	2/28/2025	2/28/2020	105.46419	105.464189	105.464189	105.464189	101.8580016	97.15288872	92.69093981	88.45839319	84.44233345
200228A00026	2/28/2020	2.14	2/28/2035	2/28/2020	127.11922	127.1192152	124.7539568	110.0292727	96.45459216	84.6916598	74.53548604	65.75638	58.15858306
200228A00066	2/28/2020	1.35	2/28/2024	2/28/2020	104.15939	104.1593857	104.1593857	104.1593857	101.7561675	97.97099752	94.34628018	90.87441089	87.54818445
200228A00073	2/28/2020	1.32	2/28/2023	2/28/2020	103.0126	103.0125986	103.0125986	103.0125986	101.5585355	98.7115433	95.95853676	93.29591995	90.72025459
200302A00033	3/2/2020	1.31	3/3/2025	3/2/2020	105.02716	105.0271564	105.0271564	105.0271564	101.4155173	96.71390308	92.25580888	88.02742652	84.01579855
200303A00001	3/3/2020	1.15	3/3/2025	3/3/2020	105.13609	105.1360928	105.1360928	105.1360928	101.4970556	96.76531128	92.27940577	88.02536309	83.99007056
200303A00002	3/3/2020	1.06	3/3/2023	3/3/2020	102.78508	102.7850803	102.7850803	102.7850803	101.3182433	98.45500677	95.686829	93.01005348	90.42118486
200304A00021	3/4/2020	0.94	3/4/2024	3/4/2020	103.26431	103.2643066	103.2643066	103.2643066	100.8409335	97.04167651	93.40468683	89.92222354	86.58695491

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200305A00020	3/5/2020	0.95	3/5/2025	3/5/2020	104.14481	104.144807	104.144807	104.144807	100.511699	95.7991218	91.33200097	87.09635746	83.07907707
200305A00035	3/5/2020	1.25	3/5/2026	3/5/2020	105.62616	105.6261615	105.6261615	105.6261615	100.2333543	94.67825571	89.4624056	84.56344494	79.96059471
200305A00043	3/5/2020	0.95	3/7/2022	3/5/2020	101.27842	101.2784236	101.2784236	101.2784236	100.5107857	98.61424167	96.76263243	94.95462439	93.18893248
200306A00098	3/10/2020	1.59	3/8/2030	3/10/2020	112.74777	112.7477677	112.7477677	108.023029	98.47380881	89.78414616	81.93184637	74.83195481	68.40852305
200309A00027	3/9/2020	0.97	3/10/2025	3/9/2020	103.30492	103.3049218	103.3049218	103.3049218	99.69179963	95.01690885	90.58561455	86.38403757	82.39915773
200311A00021	3/11/2020	1.09	3/11/2024	3/11/2020	103.87921	103.8792101	103.8792101	103.8792101	101.4298035	97.60151064	93.93733396	90.42941053	87.0702951
200312A00004	3/13/2020	1.23	1/24/2025	3/13/2020	104.48641	104.4864093	104.4864093	104.4864093	101.0236104	96.43191013	92.07327623	87.93473086	84.00408373
200303A00004	3/3/2020	1.06	3/3/2022	3/3/2020	101.8334	101.8334002	101.8334002	101.8334002	101.0669637	99.16878638	97.31542775	95.50556219	93.73791214
200303A00018	3/3/2020	1.27	3/3/2025	3/3/2020	104.82887	104.8288714	104.8288714	104.8288714	101.2199397	96.52307661	92.06955821	87.84558429	83.83820497
200306A00001	3/6/2020	1.11	3/6/2026	3/6/2020	104.79422	104.7942213	104.7942213	104.7942213	99.41140767	93.87784304	88.68278489	83.80389934	79.22043204
200306A00037	3/6/2020	1.11	3/6/2026	3/6/2020	104.79422	104.7942213	104.7942213	104.7942213	99.41140767	93.87784304	88.68278489	83.80389934	79.22043204
200309A00004	3/9/2020	0.71	3/8/2024	3/9/2020	102.35691	102.356909	102.356909	102.356909	99.93074514	96.13944232	92.5107033	89.03674732	85.71020624
200309A00041	3/9/2020	0.73	3/9/2022	3/9/2020	100.85071	100.8507087	100.8507087	100.8507087	100.0816333	98.18422537	96.33191225	94.52335172	92.75725055
200310A00042	3/10/2020	1.41	3/11/2030	3/10/2020	110.97013	110.9701251	110.9701251	106.2452825	96.76358388	88.1486834	80.36690544	73.33354025	66.97287298
200311A00016	3/11/2020	0.87	5/11/2021	3/11/2020	100.66834	100.6683393	100.6683393	100.6683393	100.2620834	99.15652491	98.07516858	97.01722712	95.98194701
200312A00016	3/16/2020	1.09	2/15/2023	3/16/2020	102.30835	102.3083546	102.3083546	102.3083546	100.8883623	98.08767748	95.37843217	92.75716754	90.22057445
200316A00013	3/16/2020	1	4/15/2022	3/16/2020	101.45219	101.4521897	101.4521897	101.4521897	100.6243004	98.62458376	96.67437639	94.77213366	92.91637046
200316A00064	3/16/2020	0.99	3/16/2022	3/16/2020	101.37402	101.3740167	101.3740167	101.3740167	100.5926767	98.67211449	96.79759842	94.96774493	93.18122142
200317A00065	3/19/2020	2.05	3/19/2025	3/19/2020	108.77247	108.7724679	108.7724679	108.7724679	105.0481622	100.2190108	95.640712	91.2989593	87.18033397
200326A00028	3/26/2020	1.54	3/26/2025	3/26/2020	106.19495	106.1949521	106.1949521	106.1949521	102.4811831	97.69958648	93.16815162	88.87253488	84.79928705
200331A00060	3/31/2020	1.09	3/31/2025	3/31/2020	103.9473	103.9472991	103.9472991	103.9472991	100.2459761	95.50740284	91.01820188	86.76401417	82.73137937
190110A00006	1/10/2019	2.73	11/15/2022	1/10/2019	106.94552	106.945523	106.945523	106.945523	105.6955039	103.0602046	100.5042904	98.02487612	95.61920163
190110A00028	1/10/2019	2.78	1/10/2024	1/10/2019	110.17896	110.1789622	110.1789622	110.1789622	107.8446079	104.0528692	100.4159267	96.92659717	93.57807413
190110A00077	1/10/2019	2.68	12/8/2020	1/10/2019	101.79243	101.7924342	101.7924342	101.7924342	101.5905908	100.8923249	100.2036506	99.52437124	98.85429523
190111A00013	1/11/2019	2.87	1/7/2022	1/11/2019	104.63247	104.6324695	104.6324695	104.6324695	103.9315712	102.1637138	100.4344487	98.74261337	97.08709184
190111A00026	1/11/2019	3.48	1/11/2034	1/11/2019	146.61583	146.6158265	145.9781385	131.3994274	117.1567367	104.565728	93.54291137	83.88122101	75.40205542
190114A00045	1/14/2019	2.84	1/14/2021	1/14/2019	102.07266	102.0726582	102.0726582	102.0726582	101.8238883	101.0250691	100.2387759	99.4647154	98.70260354
190123A00036	1/23/2019	3.32	1/23/2029	1/23/2019	128.48356	128.483561	128.483561	125.3389836	116.0605992	107.3956217	99.46592269	92.20480566	85.55195712
190129A00061	1/30/2019	2.92	2/1/2022	1/30/2019	104.90432	104.9043165	104.9043165	104.9043165	104.1709294	102.3345303	100.5395241	98.78473788	97.06903982
190130A00007	1/30/2019	2.89	5/14/2021	1/30/2019	102.9644	102.9643955	102.9643955	102.9643955	102.5502976	101.4229505	100.3203681	99.2417406	98.18629307
190130A00011	1/30/2019	2.88	1/29/2021	1/30/2019	102.20565	102.2056465	102.2056465	102.2056465	101.9363371	101.0963373	100.2701604	99.45746737	98.65793
190131A00011	1/31/2019	3.13	1/30/2026	1/31/2019	116.56763	116.5676306	116.5676306	116.5676306	111.1661264	105.3844751	99.94500142	94.82566729	90.00596192
190131A00049	1/31/2019	2.79	1/29/2021	1/31/2019	102.12974	102.1297403	102.1297403	102.1297403	101.8605188	101.0208677	100.1950355	99.38268318	98.58348262

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190201A00013	2/1/2019	2.89	2/1/2024	2/1/2019	110.04463	110.0446262	110.0446262	110.0446262	107.6629563	103.8364652	100.1679776	96.65016501	93.27607603
190205A00047	2/5/2019	2.85	2/5/2021	2/5/2019	102.23017	102.2301684	102.2301684	102.2301684	101.9508294	101.0917474	100.2471245	99.41659794	98.59981685
190206A00013	2/6/2019	2.68	2/6/2023	2/6/2019	107.40127	107.4012723	107.4012723	107.4012723	105.9651192	103.1046178	100.3363823	97.65695174	95.06301393
190208A00010	2/8/2019	2.77	2/8/2021	2/8/2019	102.18176	102.1817643	102.1817643	102.1817643	101.8981195	101.0311424	100.1788994	99.34101701	98.51713441
190212A00024	2/12/2019	2.79	2/12/2021	2/12/2019	102.2269	102.2269015	102.2269015	102.2269015	101.9373838	101.0593664	100.1964576	99.34826983	98.51442842
190214A00012	2/14/2019	2.6	2/14/2022	2/14/2019	104.71626	104.7162557	104.7162557	104.7162557	103.9632642	102.0850921	100.2501345	98.45714261	96.70491171
190219A00045	2/19/2019	2.8	2/28/2022	2/19/2019	104.84703	104.8470254	104.8470254	104.8470254	104.0772091	102.1634942	100.2945423	98.46903874	96.68571638
190222A00031	2/22/2019	2.63	8/21/2020	2/22/2019	100.99755	100.9975472	100.9975472	100.9975472	100.9179187	100.5210368	100.1272845	99.73662473	99.34902097
190301A00009	3/1/2019	2.83	3/1/2022	3/1/2019	104.91211	104.9121135	104.9121135	104.9121135	104.14056	102.2235899	100.3515165	98.52301945	96.73682604
190305A00010	3/5/2019	2.84	3/7/2022	3/5/2019	104.97374	104.9737384	104.9737384	104.9737384	104.1929202	102.2596578	100.3720354	98.52869969	96.72834628
190308A00003	3/8/2019	2.69	3/8/2021	3/8/2019	102.29894	102.2989377	102.2989377	102.2989377	101.9748431	101.0316225	100.1058252	99.19697176	98.30459984
190313A00017	3/13/2019	2.73	7/15/2022	3/13/2019	105.63236	105.6323587	105.6323587	105.6323587	104.6328519	102.3474523	100.1234096	97.9586826	95.85131306
190318A00015	3/18/2019	2.66	3/18/2021	3/18/2019	102.32718	102.3271776	102.3271776	102.3271776	101.9890587	101.0188424	100.06706	99.13318937	98.2167282
190319A00013	3/19/2019	2.72	3/18/2022	3/19/2019	104.81291	104.8129085	104.8129085	104.8129085	104.0161012	102.0557406	100.1423419	98.2744915	96.45082781
190321A00004	3/21/2019	2.62	3/22/2021	3/21/2019	102.31415	102.3141502	102.3141502	102.3141502	101.9704399	100.9895097	100.0274213	99.08363535	98.15763318
190321A00038	3/21/2019	2.64	9/21/2020	3/21/2019	101.1516	101.1516043	101.1516043	101.1516043	101.0381417	100.5564377	100.0793267	99.60674297	99.13862237
190326A00024	3/26/2019	2.59	3/26/2024	3/26/2019	109.22247	109.2224698	109.2224698	109.2224698	106.6928125	102.7425229	98.96146613	95.34150274	91.87492844
190326A00032	3/26/2019	2.4	3/26/2024	3/26/2019	109.20487	109.2048659	109.2048659	109.2048659	106.6601996	102.6903265	98.89103874	95.25411062	91.7717573
190327A00024	3/27/2019	2.48	3/25/2022	3/27/2019	104.37869	104.3786939	104.3786939	104.3786939	103.5729512	101.5987705	99.67233443	97.79219204	95.95694666
190327A00041	3/27/2019	2.44	3/26/2021	3/27/2019	102.16045	102.1604457	102.1604457	102.1604457	101.8113561	100.8204719	99.84882919	98.89587164	97.96106408
190328A00025	3/28/2019	2.51	7/23/2021	3/28/2019	102.95319	102.9531881	102.9531881	102.9531881	102.4544558	101.145991	99.86280969	98.60419958	97.3694754
190401A00005	4/1/2019	2.54	4/1/2021	4/1/2019	102.29798	102.2979807	102.2979807	102.2979807	101.9403752	100.9325988	99.94469867	98.97609133	98.02621582
190401A00008	4/1/2019	2.62	4/1/2024	4/1/2019	109.3814	109.3814036	109.3814036	109.3814036	106.8326822	102.8642771	99.06648168	95.43105989	91.95021761
190402A00003	4/2/2019	2.49	4/2/2020	4/2/2019	100.01316	100.0131641	100.0131641	100.0131641	100.0128253	100.0072673	100.0017141	99.99616583	99.99062239
190402A00045	4/2/2019	2.49	4/2/2020	4/2/2019	100.01316	100.0131641	100.0131641	100.0131641	100.0128253	100.0072673	100.0017141	99.99616583	99.99062239
190411A00017	4/15/2019	2.65	4/15/2024	4/15/2019	109.59276	109.5927639	109.5927639	109.5927639	107.00033	102.9915352	99.15633487	95.48628598	91.97340248
190411A00029	4/11/2019	2.46	4/11/2024	4/11/2019	109.55048	109.550478	109.550478	109.550478	106.9547493	102.9368359	99.09307206	95.41498401	91.89455667
190412A00005	4/12/2019	2.54	4/13/2020	4/12/2019	100.08737	100.0873718	100.0873718	100.0873718	100.0851699	100.0490487	100.0129702	99.97693418	99.94094067
190415A00020	4/15/2019	2.65	5/1/2020	4/15/2019	100.19889	100.1988881	100.1988881	100.1988881	100.1934721	100.1075653	100.0218054	99.93619195	99.85072464
190416A00018	4/16/2019	2.63	4/16/2021	4/16/2019	102.48696	102.4869566	102.4869566	102.4869566	102.109518	101.0602994	100.0326082	99.02578673	98.03920373
190422A00008	4/22/2019	2.6	4/22/2021	4/22/2019	102.4938	102.4938044	102.4938044	102.4938044	102.1085439	101.0431427	99.9999326	98.97822544	97.9773613
190424A00007	4/24/2019	2.66	4/24/2024	4/24/2019	109.69179	109.6917902	109.6917902	109.6917902	107.0716213	103.0376066	99.17909652	95.48751443	91.95475023
190426A00032	6/27/2019	2.55	6/27/2022	6/27/2019	105.10372	105.103724	105.103724	105.103724	104.1387222	101.9065047	99.73315087	97.61667218	95.55516503

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190426A00055	4/26/2019	2.59	4/27/2020	4/26/2019	100.1687	100.1686994	100.1686994	100.1686994	100.1641371	100.0893088	100.0145961	99.93999867	99.86551638
190429A00003	4/29/2019	2.62	10/13/2023	4/29/2019	108.28982	108.2898244	108.2898244	108.2898244	106.2279943	102.7166656	99.3410737	96.09523526	92.97346481
190430A00014	4/30/2019	2.59	4/30/2020	4/30/2019	100.18745	100.1874462	100.1874462	100.1874462	100.1823775	100.0992471	100.0162521	99.93339198	99.8506666
190501A00021	5/1/2019	2.57	5/1/2020	5/1/2019	100.192	100.1920012	100.1920012	100.1920012	100.1865856	100.1006848	100.0149307	99.92932314	99.84386169
190501A00028	5/1/2019	2.42	5/1/2024	5/1/2019	109.51448	109.514477	109.514477	109.514477	106.8591116	102.7899573	98.8990783	95.1777059	91.61755199
190503A00009	5/3/2019	2.57	5/3/2021	5/3/2019	102.53144	102.5314362	102.5314362	102.5314362	102.1319338	101.0367459	99.96499276	98.91592821	97.88883747
190506A00027	5/6/2019	2.38	5/6/2022	5/6/2019	104.80541	104.8054146	104.8054146	104.8054146	103.9270667	101.8287164	99.78321482	97.78887202	95.84406548
190507A00004	5/7/2019	2.88	5/7/2029	5/7/2019	125.3575	125.3575039	125.3575039	121.8294034	112.3925728	103.6391943	95.65404127	88.36526724	81.70810306
190510A00017	5/10/2019	2.47	5/10/2021	5/10/2019	102.46368	102.4636792	102.4636792	102.4636792	102.0554997	100.9419027	99.85255335	98.78666613	97.74348887
190510A00018	5/10/2019	2.54	5/10/2023	5/10/2019	107.04104	107.0410406	107.0410406	107.0410406	105.3885803	102.2986296	99.31573793	96.4355786	93.65402714
190513A00003	5/13/2019	2.41	5/13/2020	5/13/2019	100.27361	100.2736057	100.2736057	100.2736057	100.264005	100.1445822	100.0254601	99.90663767	99.78811363
190514A00022	5/14/2019	2.49	11/16/2020	5/14/2019	101.42622	101.4262157	101.4262157	101.4262157	101.2507372	100.6150621	99.98736218	99.36748802	98.75529373
190514A00025	5/14/2019	2.43	5/14/2021	5/14/2019	102.44266	102.4426642	102.4426642	102.4426642	102.0294998	100.9052904	99.80579771	98.73021304	97.67776269
190514A00045	5/14/2019	2.49	5/13/2022	5/14/2019	104.69546	104.6954578	104.6954578	104.6954578	103.8091418	101.7010414	99.64624229	97.64303057	95.68976114
190515A00002	5/15/2019	2.44	5/16/2022	5/15/2019	104.60625	104.6062474	104.6062474	104.6062474	103.7152632	101.6003015	99.53896349	97.52951922	95.57030836
190515A00003	5/15/2019	2.45	11/16/2020	5/15/2019	101.40068	101.4006839	101.4006839	101.4006839	101.225225	100.5896418	99.96203305	99.34224916	98.73014435
190515A00015	5/15/2019	2.25	5/16/2022	5/15/2019	104.58828	104.5882795	104.5882795	104.5882795	103.6939487	101.5716952	99.50338695	97.48727957	95.52169924
190515A00044	5/15/2019	2.38	5/17/2021	5/15/2019	102.40347	102.4034714	102.4034714	102.4034714	101.9866126	100.8545909	99.7476368	98.66492421	97.60566318
190517A00017	5/17/2019	2.33	2/22/2021	5/17/2019	102.01365	102.0136462	102.0136462	102.0136462	101.7091848	100.8032997	99.91351161	99.03939423	98.18053628
190520A00034	5/20/2019	2.44	5/20/2021	5/20/2019	102.49004	102.4900373	102.4900373	102.4900373	102.0692567	100.9286627	99.81349987	98.72292467	97.65613041
190520A00054	5/20/2019	2.46	5/20/2021	5/20/2019	102.51305	102.5130535	102.5130535	102.5130535	102.0922309	100.9514966	99.83619571	98.74548456	97.67855639
190521A00005	5/21/2019	2.56	5/21/2024	5/21/2019	109.44981	109.4498055	109.4498055	109.4498055	106.7505248	102.6535964	98.7375606	94.99344512	91.41277415
190521A00027	5/21/2019	2.56	5/21/2024	5/21/2019	109.44981	109.4498055	109.4498055	109.4498055	106.7505248	102.6535964	98.7375606	94.99344512	91.41277415
190521A00028	5/21/2019	2.47	11/22/2021	5/21/2019	103.62069	103.6206932	103.6206932	103.6206932	102.9781611	101.3412896	99.73829886	98.16820178	96.63004957
190521A00043	5/21/2019	2.54	5/22/2023	5/21/2019	107.11532	107.1153179	107.1153179	107.1153179	105.4324665	102.310707	99.29797271	96.3898192	93.58201196
190523A00023	5/23/2019	2.48	3/22/2023	5/23/2019	106.55829	106.5582896	106.5582896	106.5582896	105.029579	102.0747225	99.21885361	96.45811609	93.78882644
190524A00031	5/24/2019	2.43	5/24/2022	5/24/2019	104.632	104.6320019	104.6320019	104.6320019	103.7275219	101.5914227	99.50987017	97.48108941	95.50337764
190528A00006	5/28/2019	2.43	9/15/2023	5/28/2019	107.44789	107.4478896	107.4478896	107.4478896	105.4666018	102.0417665	98.74699152	95.57665211	92.52539736
190529A00031	5/29/2019	2.36	5/30/2023	5/29/2019	106.59014	106.5901408	106.5901408	106.5901408	104.8909775	101.7571172	98.73336568	95.81520716	92.99834063
190529A00034	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190529A00060	5/29/2019	2.31	11/29/2021	5/29/2019	103.39316	103.393161	103.393161	103.393161	102.743129	101.0892163	99.46980674	97.88388506	96.33047577
190529A00067	5/29/2019	2.32	6/1/2021	5/29/2019	102.41999	102.4199901	102.4199901	102.4199901	101.9843247	100.8120035	99.66654525	98.54703487	97.45259844
190529A00079	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190530A00003	5/30/2019	2.21	5/27/2022	5/30/2019	104.56598	104.565978	104.565978	104.565978	103.6532269	101.5023964	99.40677893	97.3645679	95.37403078
190530A00004	5/30/2019	2.24	5/30/2023	5/30/2019	106.79303	106.7930338	106.7930338	106.7930338	105.0838624	101.933	98.89312187	95.95966578	93.12828692
190531A00047	5/31/2019	2.32	5/28/2021	5/31/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190603A00009	6/3/2019	2.17	7/6/2022	6/3/2019	104.28987	104.2898699	104.2898699	104.2898699	103.3124039	101.0659209	98.87927723	96.75045926	94.67753806
190603A00050	6/3/2019	2.19	6/3/2021	6/3/2019	102.27664	102.2766388	102.2766388	102.2766388	101.8388096	100.6620305	99.51234904	98.38883769	97.29061077
190604A00008	6/4/2019	2.23	6/4/2021	6/4/2019	102.32962	102.329619	102.329619	102.329619	101.8904706	100.7106818	99.55812065	98.43185305	97.33098712
190604A00028	6/4/2019	2.2	6/3/2022	6/4/2019	104.1854	104.1854031	104.1854031	104.1854031	103.2658461	101.1084032	99.00658705	96.95856724	94.96258902
190605A00034	6/5/2019	2.11	6/6/2022	6/5/2019	104.00255	104.0025544	104.0025544	104.0025544	103.078561	100.9151062	98.80760944	96.754223	94.75317575
190606A00026	6/6/2019	2.23	6/6/2023	6/6/2019	106.21227	106.2122717	106.2122717	106.2122717	104.4981548	101.3520067	98.3170064	95.38856984	92.56233245
190606A00029	6/6/2019	2.96	6/6/2034	6/6/2019	137.36132	137.3613239	136.0989845	121.6955655	107.920621	95.82550829	85.28521959	76.0887447	68.05481533
190607A00012	6/7/2019	2.13	6/7/2022	6/7/2019	104.05173	104.0517309	104.0517309	104.0517309	103.1258038	100.9591212	98.84853251	96.79218334	94.78829642
190607A00023	6/7/2019	1.92	6/7/2022	6/7/2019	103.98775	103.9877476	103.9877476	103.9877476	103.0584673	100.8847114	98.76737907	96.70460084	94.69458511
190610A00016	6/10/2019	2.21	6/10/2022	6/10/2019	104.24427	104.2442708	104.2442708	104.2442708	103.3123521	101.1354768	99.01511407	96.94938971	94.93650748
190611A00007	6/11/2019	2.25	6/10/2022	6/11/2019	104.33297	104.3329676	104.3329676	104.3329676	103.4006792	101.2228114	99.10147667	97.03480004	95.02098477
190613A00011	6/13/2019	2.26	6/13/2024	6/13/2019	108.32167	108.321666	108.321666	108.321666	105.5636888	101.4319441	97.48524152	93.71427604	90.11026549
190619A00024	6/19/2019	2.21	7/19/2022	6/19/2019	104.45027	104.450271	104.450271	104.450271	103.4487945	101.1668209	98.94644607	96.78562888	94.68241031
190620A00025	6/20/2019	2.04	6/20/2022	6/20/2019	103.91532	103.9153152	103.9153152	103.9153152	102.967487	100.7675386	98.62528389	96.53878768	94.50619649
190620A00026	6/20/2019	2.09	6/20/2023	6/20/2019	105.83152	105.8315204	105.8315204	105.8315204	104.08497	100.9083101	97.84506436	94.89050359	92.04012809
190624A00036	6/24/2019	1.95	12/28/2020	6/24/2019	101.38345	101.3834499	101.3834499	101.3834499	101.1576467	100.4065301	99.66653368	98.93741207	98.21892687
190625A00003	6/25/2019	2.03	6/27/2022	6/25/2019	103.92628	103.9262763	103.9262763	103.9262763	102.9663122	100.7475313	98.58733461	96.48374179	94.43485723
190625A00023	6/25/2019	2.47	6/25/2027	6/25/2019	115.70471	115.7047119	115.7047119	114.5412736	107.25216	100.3504495	93.94530961	87.99835079	82.47434678
190627A00010	6/27/2019	1.97	6/27/2024	6/27/2019	107.94587	107.9458669	107.9458669	107.9458669	105.1310645	100.9496754	96.95770813	93.14553321	89.50406848
190627A00037	6/27/2019	1.93	6/27/2023	6/27/2019	105.94061	105.9406104	105.9406104	105.9406104	104.1666454	100.9556781	97.86022836	94.87544226	91.99670341
190628A00004	6/28/2019	2.12	6/28/2023	6/28/2019	105.96909	105.9690866	105.9690866	105.9690866	104.2015356	101.0017903	97.91691531	94.94209218	92.07273789
190701A00009	7/3/2019	2.14	7/2/2024	7/3/2019	107.90921	107.9092058	107.9092058	107.9092058	105.0969023	100.925699	96.94342306	93.14047575	89.50780297
190703A00019	7/3/2019	2.08	7/5/2022	7/3/2019	104.07891	104.0789099	104.0789099	104.0789099	103.1041511	100.8626857	98.68087733	96.55671595	94.48827615
190709A00018	7/9/2019	2.24	7/9/2024	7/9/2019	108.37549	108.3754938	108.3754938	108.3754938	105.5360323	101.33791	97.3305796	93.50434088	89.8500424
190710A00012	7/10/2019	2.18	7/10/2023	7/10/2019	106.22775	106.2277506	106.2277506	106.2277506	104.4279673	101.1935715	98.07628217	95.0711879	92.17361469
190711A00020	7/11/2019	1.98	7/11/2022	7/11/2019	104.29585	104.2958505	104.2958505	104.2958505	103.3054333	101.0376466	98.83073719	96.68266428	94.59147159
190715A00010	7/15/2019	2.23	7/15/2024	7/15/2019	108.36432	108.3643236	108.3643236	108.3643236	105.5060313	101.2934423	97.27296556	93.43482513	89.76979639
190715A00024	7/15/2019	2.17	7/15/2021	7/15/2019	102.45989	102.4598912	102.4598912	102.4598912	101.9715216	100.6856281	99.42679309	98.19416556	96.98693052
190715A00029	7/17/2019	2.16	4/18/2022	7/17/2019	103.86052	103.8605185	103.8605185	103.8605185	103.0186133	100.985645	99.00301069	97.06913594	95.18250726
190724A00023	7/24/2019	2.13	7/24/2025	7/24/2019	110.81023	110.8102292	110.8102292	110.8102292	106.477568	101.2623474	96.33451579	91.67677838	87.2729675

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190726A00017	7/26/2019	2.44	7/24/2026	7/26/2019	113.53707	113.5370685	113.5370685	113.4964705	107.1520737	101.0543206	95.34585	89.99980631	84.99131788
190729A00008	7/29/2019	2.18	1/29/2024	7/29/2019	107.28026	107.2802637	107.2802637	107.2802637	104.9324048	101.165979	97.5553506	94.09328674	90.7729275
190802A00003	8/2/2019	2.01	8/2/2024	8/2/2019	107.49784	107.4978385	107.4978385	107.4978385	104.5922307	100.3540841	96.31144147	92.45431252	88.77326702
190802A00015	8/2/2019	2	2/15/2023	8/2/2019	104.95328	104.9532827	104.9532827	104.9532827	103.517459	100.6785388	97.93199194	95.27432915	92.70221206
190805A00004	8/5/2019	1.7	8/5/2022	8/5/2019	103.75932	103.7593232	103.7593232	103.7593232	102.7259634	100.3996741	98.13749298	95.9373073	93.79708619
190805A00007	8/5/2019	1.88	8/5/2022	8/5/2019	103.75755	103.7575547	103.7575547	103.7575547	102.7284196	100.4108031	98.15689201	95.96459189	93.83188926
190805A00011	8/5/2019	1.91	8/5/2024	8/5/2019	107.07379	107.073788	107.073788	107.073788	104.1632423	99.92685004	95.88632892	92.03165044	88.3533492
190806A00026	8/6/2019	1.71	8/7/2023	8/6/2019	105.39985	105.3998489	105.3998489	105.3998489	103.5251254	100.2190135	97.03556363	93.96960253	91.01620219
190807A00027	8/7/2019	1.77	8/7/2024	8/7/2019	106.46843	106.4684314	106.4684314	106.4684314	103.5582233	99.32991265	95.29748714	91.45090236	87.78067867
190808A00025	8/8/2019	1.7	8/8/2024	8/8/2019	106.9709	106.9708983	106.9708983	106.9708983	104.0330012	99.76877028	95.70267149	91.8245164	88.12469111
190808A00041	8/8/2019	1.74	8/6/2021	8/8/2019	102.21869	102.2186896	102.2186896	102.2186896	101.7040678	100.3622377	99.04441807	97.75001957	96.47847179
190809A00024	8/9/2019	2.07	8/10/2020	8/9/2019	100.66492	100.6649154	100.6649154	100.6649154	100.5972253	100.2319662	99.86936394	99.50938955	99.15201445
190812A00003	8/12/2019	1.67	8/12/2024	8/12/2019	106.85584	106.8558395	106.8558395	106.8558395	103.9062511	99.6347188	95.5621386	91.67825651	87.97339808
190812A00008	8/12/2019	1.67	8/12/2022	8/12/2019	103.71813	103.7181329	103.7181329	103.7181329	102.6719037	100.3280209	98.04919352	95.83326245	93.67815294
190813A00007	8/13/2019	1.89	8/15/2022	8/13/2019	103.82539	103.8253857	103.8253857	103.8253857	102.7773925	100.4332683	98.15422694	95.93810731	93.78283273
190814A00008	8/14/2019	1.84	8/14/2024	8/14/2019	106.80528	106.8052833	106.8052833	106.8052833	103.8687957	99.61635517	95.56160257	91.69436415	88.00504034
190816A00006	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190816A00009	8/16/2019	2.01	8/17/2020	8/16/2019	100.67708	100.67708	100.67708	100.67708	100.6019505	100.2174486	99.83589122	99.45724466	99.08147555
190816A00015	8/16/2019	2.2	8/16/2029	8/16/2019	117.76167	117.7616719	117.7616719	113.9216587	104.6330018	96.0853005	88.31281956	81.24107401	74.80308583
190819A00005	8/19/2019	1.62	8/21/2023	8/19/2019	105.15272	105.1527154	105.1527154	105.1527154	103.2437474	99.90654357	96.69445486	93.60215112	90.62455757
190820A00008	8/20/2019	1.76	8/20/2024	8/20/2019	106.47693	106.4769273	106.4769273	106.4769273	103.5248806	99.2650073	95.20392769	91.33137508	87.6376642
190820A00013	8/20/2019	1.76	8/21/2023	8/20/2019	105.00915	105.009151	105.009151	105.009151	103.1114337	99.79192693	96.59654423	93.52001052	90.55730276
190826A00014	8/26/2019	1.86	8/26/2020	8/26/2019	100.71598	100.7159795	100.7159795	100.7159795	100.6311353	100.2211959	99.81459551	99.41129343	99.01124959
190826A00038	8/26/2019	1.74	8/26/2022	8/26/2019	103.50944	103.5094381	103.5094381	103.5094381	102.4425352	100.0740342	97.77204274	95.53432823	93.35874622
190826A00058	8/26/2019	1.91	8/26/2026	8/26/2019	110.32025	110.3202473	110.3202473	110.1768799	103.8044416	97.73294863	92.05593958	86.74581609	81.77704193
190826A00060	8/26/2019	2.02	8/26/2027	8/26/2019	112.72878	112.7287839	112.7287839	111.370062	104.0067325	97.07863284	90.66183396	84.71600703	79.20419414
190828A00015	8/28/2019	2.04	8/28/2029	8/28/2019	116.31788	116.3178849	116.3178849	112.4365336	103.1763479	94.66873746	86.93682906	79.90577725	73.50830812
190829A00005	8/30/2019	2.06	8/30/2023	8/30/2019	106.07925	106.0792509	106.0792509	106.0792509	104.1503092	100.7901971	97.55635711	94.44339256	91.44616609
190829A00021	8/30/2019	2.18	8/30/2021	8/30/2019	102.71466	102.7146606	102.7146606	102.7146606	102.1733663	100.7686611	99.39004344	98.03685027	96.70844043
190904A00008	9/4/2019	1.69	9/3/2024	9/4/2019	106.22095	106.220947	106.220947	106.220947	103.2266847	98.93842766	94.85195847	90.95677185	87.24296237
190905A00015	9/5/2019	1.78	9/6/2022	9/5/2019	103.65165	103.6516519	103.6516519	103.6516519	102.563291	100.1644053	97.83365298	95.56871995	93.36738481
190917A00021	9/17/2019	2.13	9/17/2020	9/17/2019	100.88454	100.8845352	100.8845352	100.8845352	100.7756332	100.3056344	99.84001964	99.37872772	98.92169854
190917A00028	9/17/2019	2.02	3/1/2023	9/17/2019	105.07698	105.0769785	105.0769785	105.0769785	103.6079471	100.7282407	97.94343068	95.24988704	92.64413894

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190919A00025	9/19/2019	1.8	9/19/2024	9/19/2019	107.60684	107.6068391	107.6068391	107.6068391	104.5236743	100.1417395	95.9682206	91.99214244	88.20316443
190923A00032	9/23/2019	1.72	9/22/2023	9/23/2019	105.6376	105.6376043	105.6376043	105.6376043	103.64151	100.2139056	96.91785911	93.74762866	90.69775451
190926A00004	9/26/2019	1.93	9/21/2021	9/26/2019	102.45622	102.4562197	102.4562197	102.4562197	101.889889	100.427828	98.99403558	97.58776409	96.20829166
190930A00012	9/30/2019	1.93	9/30/2024	9/30/2019	107.41229	107.4122918	107.4122918	107.4122918	104.3153384	99.93412087	95.76204709	91.7880582	88.00173745
190930A00035	9/30/2019	1.93	9/30/2024	9/30/2019	107.41229	107.4122918	107.4122918	107.4122918	104.3153384	99.93412087	95.76204709	91.7880582	88.00173745
190930A00040	9/30/2019	1.92	2/25/2022	9/30/2019	103.13022	103.1302152	103.1302152	103.1302152	102.370492	100.4822679	98.6381039	96.83671063	95.07684504
190930A00070	9/30/2019	1.93	9/27/2024	9/30/2019	107.39889	107.3988876	107.3988876	107.3988876	104.311968	99.9384789	95.77340015	91.80573139	88.02510973
190930A00071	9/30/2019	2.05	9/29/2025	9/30/2019	109.64634	109.6463415	109.6463415	109.6463415	105.0364339	99.72859071	94.72206965	89.99822667	85.53966434
191004A00009	10/4/2019	1.71	10/4/2021	10/4/2019	102.17873	102.1787282	102.1787282	102.1787282	101.5978748	100.1032542	98.63810757	97.20163806	95.79307687
191004A00032	10/4/2019	2.01	1/3/2028	10/4/2019	113.25598	113.2559756	113.2559756	111.490926	103.788004	96.5731841	89.91315919	83.76237462	78.07924147
191009A00021	10/9/2019	1.71	10/7/2022	10/9/2019	103.60013	103.6001262	103.6001262	103.6001262	102.4519888	99.97252904	97.56570761	95.22897478	92.95988661
191018A00007	10/18/2019	1.89	7/1/2022	10/18/2019	103.62685	103.6268463	103.6268463	103.6268463	102.6612017	100.4352623	98.26834786	96.15845912	94.10368223
191031A00033	10/31/2019	2.2	5/31/2028	10/31/2019	115.49832	115.4983196	115.4983196	113.2619291	105.1187584	97.51738671	90.52632236	84.09332524	78.17088263
191104A00022	11/4/2019	2.17	8/4/2027	11/4/2019	113.7308	113.7308017	113.7308017	112.44093	105.1046147	98.18704291	91.77547582	85.83031981	80.31526556
191105A00014	11/5/2019	1.96	11/6/2023	11/5/2019	106.04574	106.0457448	106.0457448	106.0457448	103.9384832	100.4059937	97.01240173	93.75148585	90.61733974
191108A00013	11/8/2019	2.25	11/8/2029	11/8/2019	120.65592	120.655922	120.655922	116.3601998	106.6542418	97.746278	89.66478793	82.3285391	75.66467568
191113A00019	11/15/2019	1.93	3/15/2021	11/15/2019	101.61029	101.6102879	101.6102879	101.6102879	101.2773491	100.3188213	99.37837734	98.45550912	97.54972729
191114A00021	11/18/2019	1.91	6/15/2022	11/18/2019	103.60125	103.6012545	103.6012545	103.6012545	102.6633842	100.4803434	98.35429336	96.28333271	94.26563986
191120A00011	11/20/2019	1.88	1/20/2023	11/20/2019	104.49197	104.4919704	104.4919704	104.4919704	103.1180905	100.3558411	97.68144456	95.09161148	92.5831962
191120A00024	11/20/2019	2.23	11/16/2029	11/20/2019	118.52053	118.5205339	118.5205339	114.2751083	104.7437036	95.99600324	88.05998649	80.85587328	74.31211013
191122A00005	11/22/2019	2.03	11/22/2027	11/22/2019	114.75612	114.7561157	114.7561157	113.0958837	105.3746861	98.13351938	91.44307465	85.25860445	79.5392166
191126A00022	11/26/2019	1.72	5/26/2023	11/26/2019	105.1102	105.1101998	105.1101998	105.1101998	103.4225607	100.308529	97.3041309	94.40486764	91.60645458
191206A00020	12/9/2019	1.91	12/15/2021	12/9/2019	102.79095	102.7909543	102.7909543	102.7909543	102.1237852	100.4331425	98.77844746	97.15861814	95.57261622
191212A00032	12/12/2019	1.99	12/12/2023	12/12/2019	106.32217	106.3221743	106.3221743	106.3221743	104.1153939	100.4861423	97.00272722	93.65846484	90.44701927
191220A00002	12/20/2019	3.02	12/20/2038	12/20/2019	150.08481	150.0848093	142.408954	123.1570008	105.9760208	91.51235909	79.38286742	69.18879932	60.6018988
191223A00006	12/23/2019	1.92	12/23/2020	12/23/2019	101.2332	101.2332046	101.2332046	101.2332046	101.0140538	100.2784975	99.55362513	98.83920515	98.13501264
191223A00007	12/23/2019	1.95	6/23/2021	12/23/2019	102.07118	102.071185	102.071185	102.071185	101.6095164	100.3808063	99.18168207	98.01108512	96.86800693
191230A00013	12/30/2019	1.84	12/2/2024	12/30/2019	108.1397	108.1396991	108.1396991	108.1396991	104.7954568	100.2178163	95.86597853	91.72760722	87.79110877
200103A00009	1/3/2020	1.9	1/3/2024	1/3/2020	106.0836	106.0835966	106.0835966	106.0835966	103.8187465	100.1392632	96.60969674	93.22309128	89.97285744
200106A00015	1/6/2020	1.87	2/15/2024	1/6/2020	106.15551	106.1555124	106.1555124	106.1555124	103.7700628	99.98049548	96.34972958	92.87031243	89.53517916
200110A00004	1/10/2020	1.7	1/10/2022	1/10/2020	102.85263	102.852633	102.852633	102.852633	102.1514105	100.3866429	98.66069691	96.97240982	95.32066484
200123A00048	1/23/2020	1.7	1/23/2025	1/23/2020	107.7052	107.7051977	107.7051977	107.7051977	104.177739	99.48464856	95.02935319	90.79860722	86.7799701
200127A00023	1/27/2020	1.8	1/27/2025	1/27/2020	107.26432	107.2643215	107.2643215	107.2643215	103.7539912	99.08994583	94.66205443	90.45718481	86.46300015

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200130A00011	1/30/2020	1.54	1/30/2023	1/30/2020	104.08004	104.0800434	104.0800434	104.0800434	102.6797688	99.88647327	97.18306666	94.56618897	92.03262416
200131A00014	2/5/2020	1.7	2/22/2022	2/5/2020	102.69473	102.6947267	102.6947267	102.6947267	101.9405752	100.0652174	98.23345922	96.44402978	94.69570354
200131A00015	2/5/2020	1.73	2/5/2025	2/5/2020	106.95889	106.9588851	106.9588851	106.9588851	103.4194169	98.74003869	94.29884913	90.08255237	86.07865936
200203A00005	2/3/2020	1.7	5/3/2023	2/3/2020	104.3782	104.3781959	104.3781959	104.3781959	102.7608212	99.72992228	96.80390414	93.97854305	91.24981175
200205A00011	2/7/2020	2.31	2/7/2024	2/7/2020	107.83202	107.8320217	107.8320217	107.8320217	105.45364	101.6531902	98.01077684	94.51903024	91.17096193
200210A00005	2/10/2020	1.77	2/10/2027	2/10/2020	111.45311	111.4531108	111.4531108	110.719245	103.8226463	97.3046406	91.23849843	85.59065682	80.33020331
200214A00019	2/14/2020	1.81	2/16/2021	2/14/2020	101.3792	101.3792026	101.3792026	101.3792026	101.0849436	100.2002135	99.33091594	98.47664984	97.63702784
200220A00002	2/20/2020	1.76	2/20/2025	2/20/2020	107.16402	107.1640166	107.1640166	107.1640166	103.5658976	98.84248796	94.36146395	90.1091858	86.07284821
200220A00015	2/20/2020	1.57	2/20/2025	2/20/2020	107.18358	107.1835801	107.1835801	107.1835801	103.5582063	98.80543188	94.29737894	90.02023752	85.96104482
200221A00014	2/21/2020	1.49	2/21/2023	2/21/2020	104.01947	104.0194717	104.0194717	104.0194717	102.5685335	99.71441845	96.95405195	94.28386284	91.7004358
200224A00005	2/24/2020	1.59	2/24/2022	2/24/2020	102.49061	102.4906113	102.4906113	102.4906113	101.7344778	99.85538798	98.0201121	96.22736966	94.47592593
200224A00025	2/24/2020	1.59	1/23/2025	2/24/2020	106.2788	106.2787996	106.2787996	106.2787996	102.7946472	98.16173757	93.76329725	89.58628758	85.61846088
200224A00029	2/24/2020	1.56	2/24/2023	2/24/2020	103.70511	103.7051082	103.7051082	103.7051082	102.2560299	99.41004863	96.6575919	93.99509565	91.41915139
200225A00017	2/25/2020	1.94	2/25/2030	2/25/2020	116.1734	116.1734006	116.1734006	111.4742276	101.8073839	92.9832889	85.00261697	77.78027225	71.24013965
200225A00046	2/25/2020	1.54	2/23/2024	2/25/2020	104.8922	104.8921988	104.8921988	104.8921988	102.4960776	98.70980385	95.08332898	91.60910773	88.27998974
200226A00008	2/26/2020	1.38	2/26/2025	2/26/2020	106.26399	106.2639865	106.2639865	106.2639865	102.6285583	97.88201129	93.38100865	89.11163967	85.06085014
200226A00015	2/26/2020	1.53	2/26/2024	2/26/2020	104.86292	104.8629231	104.8629231	104.8629231	102.4586565	98.66511394	95.03200556	91.5517411	88.21712829
200226A00018	2/26/2020	1.38	2/26/2025	2/26/2020	106.26399	106.2639865	106.2639865	106.2639865	102.6285583	97.88201129	93.38100865	89.11163967	85.06085014
200228A00015	3/3/2020	1.34	10/16/2023	3/3/2020	103.73308	103.7330837	103.7330837	103.7330837	101.7003214	98.26156714	94.95679775	91.78007931	88.72577435
200228A00016	2/28/2020	1.35	2/22/2024	2/28/2020	104.14226	104.1422618	104.1422618	104.1422618	101.7560037	97.98677422	94.37668481	90.91822255	87.60426758
200228A00025	2/28/2020	1.57	3/2/2027	2/28/2020	108.77874	108.778741	108.778741	107.9931586	101.1754589	94.74812305	88.76987111	83.20712364	78.0289694
200228A00067	2/28/2020	1.4	2/28/2025	2/28/2020	105.46419	105.464189	105.464189	105.464189	101.8580016	97.15288872	92.69093981	88.45839319	84.44233345
200302A00045	3/4/2020	1.31	3/4/2025	3/4/2020	105.02995	105.0299463	105.0299463	105.0299463	101.414469	96.71046976	92.25024037	88.0199511	84.00662482
200303A00034	3/3/2020	1.21	3/3/2025	3/3/2020	104.53144	104.5314438	104.5314438	104.5314438	100.9265733	96.2368369	91.7901822	87.57282095	83.5718146
200304A00017	3/4/2020	0.83	3/16/2022	3/4/2020	101.41115	101.411149	101.411149	101.411149	100.6268081	98.69931086	96.81813873	94.98189656	93.18924074
200306A00009	3/6/2020	0.82	3/7/2022	3/6/2020	101.02425	101.0242485	101.0242485	101.0242485	100.2575172	98.36349876	96.51436662	94.70878853	92.94548073
200306A00030	3/6/2020	0.88	3/6/2023	3/6/2020	101.72772	101.7277194	101.7277194	101.7277194	100.2672411	97.42412396	94.67552338	92.0178005	89.44747697
200309A00016	3/9/2020	0.77	9/12/2022	3/9/2020	101.17468	101.1746817	101.1746817	101.1746817	100.0867019	97.70275451	95.38716501	93.13759328	90.95179351
200309A00019	3/9/2020	0.89	3/11/2024	3/9/2020	102.36404	102.3640395	102.3640395	102.3640395	99.94380341	96.16433514	92.54675828	89.08332853	85.76671212
200309A00033	3/9/2020	1.06	3/9/2026	3/9/2020	104.50239	104.5023907	104.5023907	104.5023907	99.10796981	93.57632495	88.38366052	83.50757701	78.92726149
200310A00065	3/13/2020	1.1	3/13/2025	3/13/2020	103.95824	103.9582398	103.9582398	103.9582398	100.3247942	95.62729292	91.17471056	86.95307709	82.94928828
200311A00056	3/13/2020	1.27	4/10/2024	3/13/2020	103.95633	103.9563265	103.9563265	103.9563265	101.4345911	97.55063088	93.83572893	90.28165405	86.8806201
200327A00036	3/27/2020	0.77	9/27/2023	3/27/2020	102.30237	102.3023657	102.3023657	102.3023657	100.3197851	96.93727668	93.68569101	90.55927925	87.55257669

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200330A00027	3/30/2020	0.62	3/30/2022	3/30/2020	101.01412	101.0141167	101.0141167	101.0141167	100.2103656	98.25090468	96.33942177	94.47444451	92.65455609
130314A00027	3/14/2013	2.38	3/15/2023	3/14/2013	106.76554	106.7655406	106.7655406	106.7655406	105.2451349	102.2925846	99.43858843	96.67932202	94.01113158
130501A00013	5/1/2013	1.82	5/3/2021	5/1/2013	101.70363	101.703629	101.703629	101.703629	101.3055505	100.2152142	99.14824028	98.10388433	97.08143331
130513A00006	5/13/2013	1.8	5/15/2020	5/13/2013	100.1866	100.1865954	100.1865954	100.1865954	100.1763276	100.0517012	99.92739934	99.80342088	99.67976448
130523A00038	5/28/2013	2.58	5/23/2023	5/28/2013	107.24845	107.2484478	107.2484478	107.2484478	105.5622017	102.4357982	99.41863667	96.50626078	93.69442512
130529A00014	5/29/2013	2.05	6/1/2020	5/29/2013	100.30549	100.305487	100.305487	100.305487	100.2891326	100.1173686	99.94619052	99.77559527	99.60557996
130530A00007	5/30/2013	2.04	6/1/2020	5/30/2013	100.30377	100.3037654	100.3037654	100.3037654	100.2874112	100.1156494	99.94447352	99.77388048	99.60386736
130531A00010	5/31/2013	2.04	6/1/2020	5/31/2013	100.30377	100.3037654	100.3037654	100.3037654	100.2874112	100.1156494	99.94447352	99.77388048	99.60386736
130531A00021	5/31/2013	3.22	5/30/2028	5/31/2013	125.56392	125.5639175	125.5639175	123.2686008	114.7166138	106.6703051	99.26365995	92.44216047	86.15621288
130702A00018	7/2/2013	3.17	7/17/2023	7/2/2013	110.1762	110.1762017	110.1762017	110.1762017	108.3203039	104.9885506	101.7777757	98.68290952	95.69912537
131029A00011	10/29/2013	2.47	10/30/2020	10/29/2013	101.39105	101.3910547	101.3910547	101.3910547	101.2346321	100.6444681	100.0611701	99.4846191	98.91469846
131106A00003	11/6/2013	3.57	11/15/2023	11/6/2013	111.97519	111.9751854	111.9751854	111.9751854	109.793845	106.1315211	102.6128702	99.23144387	95.98112185
131107A00008	11/7/2013	2.52	11/9/2020	11/7/2013	101.48724	101.4872445	101.4872445	101.4872445	101.3193827	100.7015161	100.0911808	99.4882397	98.89255878
140131A00025	1/31/2014	3.28	1/30/2023	1/31/2014	108.54319	108.5431944	108.5431944	108.5431944	107.1233078	104.2779479	101.523403	98.85629441	96.27338759
140701A00002	7/1/2014	2.84	7/1/2022	7/1/2014	105.78844	105.7884376	105.7884376	105.7884376	104.8134891	102.5627735	100.3715994	98.23795241	96.15990391
140701A00004	7/1/2014	2.3	7/1/2020	7/1/2014	100.51929	100.5192909	100.5192909	100.5192909	100.4867198	100.231842	99.97825236	99.72594132	99.47489922
140908A00064	9/8/2014	2.57	11/30/2021	9/8/2014	103.8374	103.8373995	103.8373995	103.8373995	103.1848755	101.5244122	99.89861524	98.3064632	96.74697485
141009A00028	10/9/2014	3.02	10/9/2024	10/9/2014	112.42319	112.4231883	112.4231883	112.4231883	109.2361343	104.7221101	100.4229938	96.32741249	92.42465548
141128A00003	11/28/2014	2.62	11/30/2023	11/28/2014	109.2832	109.2832016	109.2832016	109.2832016	107.0714669	103.4008295	99.87645407	96.49168509	93.24021072
141202A00012	12/2/2014	2.32	12/2/2021	12/2/2014	103.7326	103.7326034	103.7326034	103.7326034	103.0757951	101.4057302	99.77070106	98.16967024	96.60164144
141208A00008	12/8/2014	3.02	12/16/2024	12/8/2014	112.88105	112.8810515	112.8810515	112.8810515	109.4507178	104.757333	100.2947737	96.05041736	92.01240362
150123A00010	1/23/2015	2.02	1/31/2022	1/23/2015	103.54057	103.5405668	103.5405668	103.5405668	102.8106958	100.9844618	99.19947742	97.45457313	95.7486199
150317A00013	3/17/2015	2.58	3/17/2025	3/17/2015	112.35194	112.3519359	112.3519359	112.3519359	108.558971	103.6197481	98.93638397	94.4942987	90.27981743
150401A00008	4/1/2015	2.62	4/1/2025	4/1/2015	111.6533	111.6532962	111.6532962	111.6532962	107.8400073	102.9116591	98.23992763	93.81011122	89.60842569
150406A00006	4/6/2015	1.66	4/6/2020	4/6/2015	100.02183	100.0218261	100.0218261	100.0218261	100.020813	100.0041907	99.98758446	99.97099421	99.95441993
150407A00008	4/7/2015	1.78	4/7/2021	4/7/2015	101.71564	101.71564	101.71564	101.71564	101.3502137	100.3271298	99.32461268	98.34204715	97.37884225
150416A00014	4/16/2015	1.68	4/8/2020	4/16/2015	100.02955	100.0295459	100.0295459	100.0295459	100.028195	100.0060327	99.98389304	99.96177589	99.93968125
150601A00147	6/1/2015	3.45	7/30/2021	6/1/2015	104.42284	104.4228403	104.4228403	104.4228403	103.9111696	102.5719694	101.2567507	99.96491725	98.69589204
150601A00149	6/1/2015	3.45	7/30/2021	6/1/2015	104.42284	104.4228403	104.4228403	104.4228403	103.9111696	102.5719694	101.2567507	99.96491725	98.69589204
150601A00485	6/1/2015	3.09	6/21/2024	6/1/2015	112.51193	112.5119318	112.5119318	112.5119318	109.6668679	105.4056808	101.3356944	97.44725199	93.73124261
150601A00490	6/1/2015	3.19	7/2/2024	6/1/2015	112.21403	112.214026	112.214026	112.214026	109.3552491	105.0940208	101.024671	97.13747956	93.42327682
150601A00532	6/1/2015	2.48	9/24/2020	6/1/2015	101.07283	101.0728283	101.0728283	101.0728283	100.9560838	100.4663889	99.98143975	99.5011675	99.02550473
150601A00547	6/1/2015	2.29	8/13/2020	6/1/2015	100.74843	100.7484327	100.7484327	100.7484327	100.6775278	100.3038394	99.93293125	99.5647724	99.19933222

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00601	6/1/2015	2.2	6/30/2020	6/1/2015	100.47925	100.4792544	100.4792544	100.4792544	100.4475059	100.1954522	99.94465641	99.69510935	99.44680172
150601A00604	6/1/2015	2.33	12/31/2020	6/1/2015	101.55391	101.5539142	101.5539142	101.5539142	101.3247488	100.566156	99.81888645	99.08268836	98.35731717
150601A00642	6/1/2015	2.6	3/31/2022	6/1/2015	104.58018	104.5801842	104.5801842	104.5801842	103.7646704	101.77281	99.82948312	97.93320334	96.08254034
150601A00650	6/1/2015	2.75	3/31/2023	6/1/2015	107.31028	107.3102781	107.3102781	107.3102781	105.7550842	102.7660112	99.87775104	97.08634681	94.38802026
150601A00664	6/1/2015	3.78	1/16/2032	6/1/2015	140.18444	140.1844354	140.1844354	130.8937398	118.6253154	107.5249835	97.62691557	88.79249765	80.89983362
150601A00688	6/1/2015	2.61	2/21/2025	6/1/2015	112.14792	112.1479174	112.1479174	112.1479174	108.4513905	103.5772787	98.95253037	94.56311417	90.39585814
150601A00825	6/1/2015	2.87	5/29/2025	6/1/2015	113.10095	113.1009489	113.1009489	113.1009489	109.0248035	103.9191336	99.08572478	94.50859444	90.17278483
150601A00833	6/1/2015	7.14	8/28/2020	6/1/2015	102.87625	102.8762504	102.8762504	102.8762504	102.7884345	102.3675951	101.950214	101.5362484	101.1256566
150610A00008	6/10/2015	3.58	6/10/2030	6/10/2015	135.57738	135.5773815	135.5773815	130.0643469	119.2176349	109.2377654	100.2154491	92.05267901	84.66199081
150720A00012	7/20/2015	2.99	7/21/2025	7/20/2015	115.40826	115.4082571	115.4082571	115.4082571	111.0183384	105.691659	100.6562428	95.89462976	91.39049607
150727A00013	7/27/2015	3.04	7/28/2025	7/27/2015	114.65018	114.6501801	114.6501801	114.6501801	110.2734819	104.9831907	99.98238583	95.2537263	90.78099577
150804A00002	8/4/2015	2.84	8/5/2024	8/4/2015	111.14897	111.1489699	111.1489699	111.1489699	108.1928947	103.8695607	99.74499881	95.80905935	92.05216181
150807A00027	8/7/2015	2.06	6/30/2020	8/7/2015	100.45299	100.4529939	100.4529939	100.4529939	100.42125	100.1692403	99.9184884	99.66898503	99.42072092
150817A00012	8/17/2015	2.01	8/17/2020	8/17/2015	100.67708	100.67708	100.67708	100.67708	100.6019505	100.2174486	99.83589122	99.45724466	99.08147555
150825A00011	8/25/2015	1.9	8/25/2020	8/25/2015	100.67122	100.6712227	100.6712227	100.6712227	100.5876015	100.1811719	99.77802418	99.37811872	98.98141652
150902A00002	9/2/2015	2.25	9/2/2021	9/2/2015	102.83126	102.8312594	102.8312594	102.8312594	102.2862097	100.8726025	99.4853878	98.12389111	96.78746052
150910A00039	9/10/2015	1.81	9/10/2020	9/10/2015	100.76585	100.7658512	100.7658512	100.7658512	100.6645764	100.2133307	99.76613227	99.32292665	98.88366042
150921A00031	9/21/2015	1.92	9/21/2020	9/21/2015	100.80386	100.803859	100.803859	100.803859	100.6905709	100.2098536	99.73372244	99.26211188	98.79495773
150923A00041	9/23/2015	2.23	9/23/2022	9/23/2015	105.30577	105.3057733	105.3057733	105.3057733	104.1718887	101.6979393	99.29560496	96.96240244	94.69595009
150930A00083	9/30/2015	2.06	9/30/2021	9/30/2015	102.69448	102.6944772	102.6944772	102.6944772	102.1170166	100.6288466	99.1699063	97.73941062	96.33660193
151015A00063	10/15/2015	1.68	10/15/2020	10/15/2015	100.78282	100.7828171	100.7828171	100.7828171	100.6433358	100.0971231	99.55683214	99.02236693	98.4936335
151020A00008	10/20/2015	1.76	10/20/2020	10/20/2015	100.8477	100.8476979	100.8476979	100.8476979	100.702761	100.1427008	99.58886116	99.04113872	98.49943245
151120A00017	11/20/2015	2.11	11/20/2020	11/20/2015	101.20418	101.2041821	101.2041821	101.2041821	101.024324	100.3785543	99.74102626	99.11158261	98.49007024
160114A00007	1/14/2016	1.92	1/14/2021	1/14/2016	101.33494	101.3349423	101.3349423	101.3349423	101.086969	100.2913953	99.5083116	98.73742537	97.97845317
160119A00030	1/19/2016	3.44	1/18/2033	1/19/2016	139.91112	139.9111191	139.9111191	127.8991406	114.8976798	103.2816633	93.02146211	83.94917808	75.91859385
160122A00029	1/22/2016	2.48	1/22/2025	1/22/2016	111.49864	111.4986353	111.4986353	111.4986353	107.924753	103.1447735	98.60558837	94.29382272	90.19691343
160328A00012	3/28/2016	1.85	3/28/2022	3/28/2016	103.49215	103.4921492	103.4921492	103.4921492	102.6821986	100.7025073	98.77104144	96.88632598	95.04694138
160328A00045	3/28/2016	2.49	3/27/2026	3/28/2016	114.35428	114.3542806	114.3542806	114.3542806	108.616561	102.723554	97.19063255	91.99391765	87.11123273
160329A00004	3/29/2016	1.78	3/25/2021	3/29/2016	101.49725	101.4972522	101.4972522	101.4972522	101.150548	100.1658957	99.2003341	98.25331227	97.32430029
160329A00006	3/29/2016	2.12	3/29/2023	3/29/2016	105.51251	105.5125124	105.5125124	105.5125124	103.973555	101.0166017	98.15943882	95.39815258	92.72900543
160420A00002	4/20/2016	1.96	11/16/2022	4/20/2016	104.42016	104.4201617	104.4201617	104.4201617	103.1868692	100.5927582	98.07688525	95.63640706	93.26860376
160519A00026	5/19/2016	1.66	5/19/2020	5/19/2016	100.1842	100.1842042	100.1842042	100.1842042	100.1725516	100.0368796	99.90158844	99.76667643	99.63214199
160606A00043	6/8/2016	2.23	12/15/2021	6/8/2016	103.34413	103.3441327	103.3441327	103.3441327	102.6752612	100.9797182	99.32021223	97.69565866	96.10501683

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160609A00009	6/9/2016	1.49	6/9/2020	6/9/2016	100.23786	100.2378616	100.2378616	100.2378616	100.2172739	100.0235019	99.83048808	99.63822808	99.44671741
160609A00011	6/9/2016	1.58	6/9/2022	6/9/2016	103.2432	103.2431954	103.2431954	103.2431954	102.3135428	100.1427407	98.02844187	95.96876935	93.9619245
160610A00036	6/10/2016	1.42	6/10/2021	6/10/2016	101.57497	101.5749725	101.5749725	101.5749725	101.1288107	99.93486524	98.76893745	97.63005065	96.51727312
160614A00009	6/14/2016	1.55	6/14/2021	6/14/2016	101.55398	101.5539796	101.5539796	101.5539796	101.1041914	99.90263714	98.72948301	97.5837317	96.46443207
160617A00045	6/17/2016	1.55	6/17/2021	6/17/2016	101.55232	101.5523222	101.5523222	101.5523222	101.0989767	99.88963038	98.70905427	97.55623153	96.43019272
160620A00015	6/20/2016	1.71	6/20/2023	6/20/2016	105.18832	105.1883162	105.1883162	105.1883162	103.4373244	100.2568818	97.19040121	94.23311709	91.38049564
160627A00070	6/27/2016	1.52	9/27/2021	6/27/2016	101.86415	101.8641546	101.8641546	101.8641546	101.2923629	99.81876437	98.37397174	96.95721523	95.56775191
160628A00054	6/28/2016	1.28	6/28/2021	6/28/2016	101.46345	101.4634488	101.4634488	101.4634488	100.9956263	99.75433622	98.54333639	97.36152983	96.20787193
160629A00050	6/29/2016	1.16	6/29/2020	6/29/2016	100.26023	100.2602268	100.2602268	100.2602268	100.2289938	99.97965812	99.7315605	99.48469174	99.23904275
160630A00011	6/30/2016	1.8	6/30/2023	6/30/2016	104.93013	104.93013	104.93013	104.93013	103.1649836	99.97686726	96.90352258	93.94012479	91.08208547
160630A00034	6/30/2016	1.51	6/28/2021	6/30/2016	101.54033	101.540333	101.540333	101.540333	101.0736883	99.83515817	98.62679147	97.44749756	96.2962378
160705A00009	7/5/2016	1.21	7/6/2021	7/5/2016	101.39949	101.3994854	101.3994854	101.3994854	100.9224198	99.66187312	98.43047048	97.22720336	96.0511096
160705A00104	7/5/2016	2.1	7/6/2026	7/5/2016	111.29239	111.2923882	111.2923882	111.2822384	105.0638574	99.0726721	93.46246826	88.20703798	83.28211088
160706A00011	7/6/2016	1.41	7/6/2021	7/6/2016	101.43941	101.4394131	101.4394131	101.4394131	100.9636339	99.70615861	98.47769949	97.27725405	96.10386581
160706A00026	7/6/2016	2.19	7/6/2027	7/6/2016	113.72928	113.7292803	113.7292803	112.5324625	105.2685582	98.4109399	92.0499997	86.14716243	80.66704156
160706A00027	7/6/2016	2.29	7/6/2028	7/6/2016	116.42776	116.4277608	116.4277608	114.0735789	105.8102752	98.10018806	91.01504806	84.50084861	78.50851615
160706A00030	7/6/2016	2.59	7/7/2031	7/6/2016	125.65722	125.6572171	125.6572171	117.9430704	106.7903885	96.7163139	87.70995658	79.65171797	72.43598749
160708A00002	7/8/2016	1.46	7/8/2021	7/8/2016	101.50998	101.5099806	101.5099806	101.5099806	101.0317444	99.7690277	98.53487275	97.328311	96.1484176
160712A00016	7/12/2016	1.32	7/12/2021	7/12/2016	101.56057	101.5605665	101.5605665	101.5605665	101.0762091	99.80022242	98.55200843	97.33066156	96.13531571
160727A00018	7/27/2016	2.27	7/27/2026	7/27/2016	112.47495	112.474948	112.474948	112.429284	106.0943969	100.0221361	94.33858082	89.01687453	84.03214563
160808A00012	8/8/2016	1.6	8/9/2021	8/8/2016	101.80688	101.8068802	101.8068802	101.8068802	101.2913481	99.9482442	98.62924496	97.33375727	96.06120704
160811A00014	8/11/2016	1.18	8/11/2020	8/11/2016	100.39221	100.3922095	100.3922095	100.3922095	100.3234317	99.95546877	99.59021137	99.22762962	98.8676941
160815A00006	8/15/2016	2.23	8/17/2026	8/15/2016	112.33129	112.3312924	112.3312924	112.219357	105.8261796	99.71274625	93.99397303	88.64238398	83.63254731
160826A00008	8/26/2016	1.48	8/26/2020	8/26/2016	100.50324	100.5032399	100.5032399	100.5032399	100.4186217	100.0098666	99.60443372	99.20228273	98.80337389
160830A00007	8/30/2016	1.65	8/30/2021	8/30/2016	101.95517	101.955173	101.955173	101.955173	101.4157315	100.0166795	98.6436175	97.29588522	95.97284408
160916A00014	9/16/2016	1.66	9/16/2021	9/16/2016	102.03394	102.0339386	102.0339386	102.0339386	101.4745218	100.0291799	98.61153921	97.2208734	95.85648119
160916A00016	9/16/2016	1.66	9/16/2021	9/16/2016	102.03394	102.0339386	102.0339386	102.0339386	101.4745218	100.0291799	98.61153921	97.2208734	95.85648119
160921A00021	9/21/2016	1.45	9/21/2021	9/21/2016	101.99178	101.9917805	101.9917805	101.9917805	101.4249257	99.96234564	98.52811395	97.12147933	95.74171656
160922A00009	9/22/2016	1.55	9/22/2022	9/22/2016	103.59312	103.5931151	103.5931151	103.5931151	102.4695511	100.0198255	97.64108336	95.33086407	93.08680764
160922A00050	9/22/2016	2.24	9/22/2025	9/22/2016	110.66011	110.6601107	110.6601107	110.6601107	106.068867	100.7506319	95.7328539	90.99701911	86.52584687
160930A00010	9/30/2016	1.47	9/30/2022	9/30/2016	103.42222	103.4222191	103.4222191	103.4222191	102.2840561	99.81531613	97.41873805	95.09179808	92.83207669
161014A00024	10/18/2016	2.34	10/16/2020	10/18/2016	101.15131	101.1513128	101.1513128	101.1513128	101.0105205	100.4604085	99.91628667	99.37805731	98.84562495
161212A00040	12/12/2016	2.45	12/12/2023	12/12/2016	108.72976	108.7297571	108.7297571	108.7297571	106.4894254	102.7983574	99.25556246	95.85423862	92.58793871

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170110A00020	1/10/2017	2.4	1/10/2024	1/10/2017	108.72567	108.7256719	108.7256719	108.7256719	106.4043992	102.6399083	99.02939765	95.56571536	92.24208455
170111A00014	1/11/2017	3.47	1/12/2032	1/11/2017	137.14519	137.1451858	137.1451858	127.9368781	115.8300163	104.8920676	95.14252733	86.44418627	78.67639621
170120A00009	1/20/2017	3.67	1/22/2035	1/20/2017	149.41072	149.41072	147.1561975	131.6724238	116.7568295	103.6808389	92.32412773	82.44658859	73.84299913
170120A00010	1/20/2017	3.71	1/22/2036	1/20/2017	153.2892	153.2892002	149.5999599	132.9159075	117.1140737	103.3893137	91.56731172	81.36765167	72.55287755
170130A00008	1/30/2017	2.58	1/30/2023	1/30/2017	106.53947	106.539474	106.539474	106.539474	105.1313193	102.3145018	99.58780945	96.94788586	94.39151797
170130A00010	1/30/2017	2.92	1/30/2025	1/30/2017	112.72918	112.7291845	112.7291845	112.7291845	109.1355115	104.3356225	99.77729173	95.44712812	91.33254929
170207A00013	2/7/2017	2.05	2/7/2022	2/7/2017	103.63369	103.633689	103.633689	103.633689	102.893966	101.0465546	99.24128021	97.47693654	95.75235946
170207A00023	2/7/2017	2.26	2/7/2022	2/7/2017	103.70805	103.7080491	103.7080491	103.7080491	102.9705436	101.1281755	99.32772939	97.5680077	95.84785468
170215A00034	2/15/2017	2.69	12/18/2020	2/15/2017	101.76988	101.7698842	101.7698842	101.7698842	101.5562932	100.8321388	100.1183039	99.41456897	98.72072048
170216A00043	2/16/2017	3.17	2/16/2027	2/16/2017	119.78064	119.7806369	119.7806369	119.0352239	111.9823935	105.2283234	98.93619019	93.07191524	87.60410027
170223A00003	2/23/2017	2.05	2/23/2022	2/23/2017	103.71888	103.7188777	103.7188777	103.7188777	102.9570704	101.0625002	99.21210243	97.40458518	95.63870265
170224A00019	2/24/2017	2.21	2/24/2022	2/24/2017	103.684	103.683997	103.683997	103.683997	102.9236859	101.0329092	99.18616939	97.38217961	95.6196991
170322A00022	3/22/2017	3.89	9/23/2041	3/22/2017	175.5662	175.5661975	163.1399543	139.7652961	119.2727571	102.3190971	88.3452216	76.78928447	67.19953013
170404A00049	4/6/2017	2.42	4/6/2022	4/6/2017	104.32879	104.3287943	104.3287943	104.3287943	103.5045132	101.4990386	99.54269081	97.63395461	95.77137222
170417A00012	4/17/2017	1.58	4/17/2020	4/17/2017	100.06893	100.0689268	100.0689268	100.0689268	100.0660498	100.018857	99.97172504	99.92465393	99.8776435
170417A00014	4/17/2017	1.95	4/18/2022	4/17/2017	103.80035	103.800346	103.800346	103.800346	102.9555108	100.9161019	98.92731568	96.98756514	95.09532473
170418A00017	4/18/2017	1.75	4/15/2020	4/18/2017	100.05873	100.0587313	100.0587313	100.0587313	100.0561982	100.0146445	99.97314119	99.9316882	99.89028546
170509A00006	5/9/2017	2.3	5/9/2022	5/9/2017	104.26664	104.2666448	104.2666448	104.2666448	103.3887297	101.295692	99.2554086	97.26619049	95.32641596
170515A00006	5/15/2017	1.84	5/15/2020	5/15/2017	100.19159	100.1915936	100.1915936	100.1915936	100.1813255	100.0566934	99.93238605	99.80840204	99.6847401
170515A00041	5/15/2017	3.02	5/17/2027	5/15/2017	119.40821	119.4082058	119.4082058	118.3670735	111.0819024	104.1398379	97.68814497	91.68949785	86.10960096
170516A00006	5/16/2017	1.85	5/18/2020	5/16/2017	100.20575	100.2057528	100.2057528	100.2057528	100.1944445	100.0615094	99.92894094	99.79673749	99.66489757
170519A00010	5/19/2017	1.61	4/20/2020	5/19/2017	100.08276	100.0827569	100.0827569	100.0827569	100.0793722	100.0238529	99.96840987	99.913043	99.8577521
170602A00007	6/2/2017	1.94	6/2/2021	6/2/2017	101.97465	101.9746514	101.9746514	101.9746514	101.5386146	100.3664038	99.22113578	98.10189033	97.0077886
170608A00017	6/8/2017	1.95	6/8/2022	6/8/2017	104.05923	104.059226	104.059226	104.059226	103.1279089	100.9506595	98.82997579	96.76398146	94.75087854
170609A00009	6/9/2017	1.82	6/9/2021	6/9/2017	102.05433	102.0543307	102.0543307	102.0543307	101.6084503	100.4141231	99.2477376	98.10832228	96.9949503
170615A00017	6/15/2017	1.67	6/15/2020	6/15/2017	100.32745	100.3274503	100.3274503	100.3274503	100.303633	100.0928465	99.88295945	99.6739662	99.46586092
170623A00001	6/23/2017	1.64	6/23/2020	6/23/2017	100.35488	100.3548807	100.3548807	100.3548807	100.3268142	100.0938856	99.86204679	99.63129012	99.40160796
170629A00013	6/29/2017	1.83	4/27/2020	6/29/2017	100.11172	100.111716	100.111716	100.111716	100.1071567	100.0323773	99.95771336	99.88316469	99.80873104
170630A00083	6/30/2017	1.86	6/30/2020	6/30/2017	100.40246	100.4024611	100.4024611	100.4024611	100.3707261	100.1188011	99.86813356	99.61871425	99.37053388
170720A00009	7/20/2017	2.14	7/20/2022	7/20/2017	104.29262	104.2926223	104.2926223	104.2926223	103.2900522	101.0073402	98.78632109	96.62495289	94.52127538
170721A00007	7/21/2017	1.8	7/21/2021	7/21/2017	102.22608	102.2260787	102.2260787	102.2260787	101.7298305	100.4277107	99.15136787	97.900052	96.67304247
170726A00033	7/26/2017	1.89	7/27/2020	7/26/2017	100.53531	100.5353083	100.5353083	100.5353083	100.4815396	100.1550253	99.83063123	99.50833687	99.18812188
170822A00018	8/22/2017	2.25	8/22/2023	8/22/2017	106.69084	106.6908443	106.6908443	106.6908443	104.7777654	101.4273629	98.20204844	95.09650753	92.10567979

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170824A00037	8/24/2017	1.98	8/24/2021	8/24/2017	102.39986	102.3998556	102.3998556	102.3998556	101.866074	100.4794145	99.11826205	97.7819741	96.46992924
170830A00029	8/30/2017	1.87	3/30/2021	8/30/2017	101.60901	101.6090145	101.6090145	101.6090145	101.2551561	100.2564875	99.27743243	98.31741787	97.37589277
170831A00004	8/31/2017	2	8/31/2023	8/31/2017	106.50888	106.5088786	106.5088786	106.5088786	104.563675	101.1782298	97.92038749	94.78467816	91.76589591
170831A00006	8/31/2017	1.87	8/31/2022	8/31/2017	104.28971	104.289713	104.289713	104.289713	103.2053626	100.8054404	98.47335671	96.2068186	94.00362434
170831A00020	8/31/2017	1.86	2/26/2021	8/31/2017	101.46739	101.4673859	101.4673859	101.4673859	101.158527	100.2464444	99.35074198	98.47098166	97.60674097
170906A00020	9/6/2017	2.14	9/6/2023	9/6/2017	106.39034	106.3903435	106.3903435	106.3903435	104.4407972	101.0573858	97.80175334	94.66840956	91.65212958
170906A00036	9/6/2017	1.81	9/6/2022	9/6/2017	104.17085	104.1708455	104.1708455	104.1708455	103.0754333	100.6609926	98.3152627	96.03590478	93.82067395
170907A00002	9/7/2017	1.69	9/7/2021	9/7/2017	102.28984	102.2898406	102.2898406	102.2898406	101.7386268	100.311617	98.91156541	97.53777546	96.18957401
170908A00017	9/9/2019	2.32	9/9/2024	9/9/2019	109.06485	109.0648476	109.0648476	109.0648476	106.0179767	101.6529422	97.49322612	93.52812081	89.74753169
170914A00054	9/14/2017	1.99	9/14/2021	9/14/2017	102.51294	102.5129399	102.5129399	102.5129399	101.954642	100.5110197	99.09495882	97.70573921	96.34266546
170919A00076	9/19/2017	1.97	9/19/2022	9/19/2017	104.63196	104.6319561	104.6319561	104.6319561	103.5091263	101.0543187	98.6703248	96.35469917	94.10509607
170920A00028	9/21/2017	2.16	9/21/2022	9/21/2017	104.66342	104.6634227	104.6634227	104.6634227	103.5413218	101.0901908	98.70973296	96.39750822	94.15117587
170929A00023	9/29/2017	1.95	9/29/2020	9/29/2017	100.85585	100.8558528	100.8558528	100.8558528	100.7336898	100.2309476	99.73320655	99.24039244	98.75243246
171010A00038	10/10/2017	2.23	10/11/2022	10/10/2017	104.94523	104.9452253	104.9452253	104.9452253	103.7823746	101.2754313	98.84202418	96.47956486	94.18557265
171016A00021	10/16/2017	2.2	10/17/2022	10/16/2017	104.90011	104.9001073	104.9001073	104.9001073	103.7254787	101.2036232	98.75606672	96.38018027	94.07344522
171030A00021	10/30/2017	2.29	11/30/2022	10/30/2017	105.37336	105.3733634	105.3733634	105.3733634	104.1059674	101.4619875	98.89854306	96.41267219	94.00154356
171030A00023	10/30/2017	2.9	11/1/2027	10/30/2017	119.73431	119.7343145	119.7343145	118.1559961	110.4223963	103.1070649	96.33809279	90.07167589	84.26774034
171103A00017	11/3/2017	2.09	11/3/2022	11/3/2017	105.17796	105.1779588	105.1779588	105.1779588	103.9623717	101.3827067	98.88017494	96.4520008	94.09552775
171127A00016	11/27/2017	2.28	11/27/2023	11/27/2017	108.00352	108.0035158	108.0035158	108.0035158	105.8109343	102.1714591	98.67698494	95.32092052	92.09701454
171128A00002	11/28/2017	2.06	11/29/2021	11/28/2017	103.27564	103.2756372	103.2756372	103.2756372	102.6237604	100.9656623	99.34224098	97.75247386	96.19537871
171205A00013	12/5/2017	2.4	12/6/2021	12/5/2017	103.58555	103.5855451	103.5855451	103.5855451	102.9266334	101.2525816	99.61373285	98.00904087	96.43750107
171206A00048	12/6/2017	3.04	12/6/2032	12/6/2017	137.31131	137.3113086	137.3113086	125.4512099	112.5132391	100.9764797	90.78841844	81.78231647	73.81290959
171208A00021	12/8/2017	2.24	12/8/2020	12/8/2017	101.3876	101.3876031	101.3876031	101.3876031	101.1865056	100.4910696	99.80517509	99.12862659	98.46123396
171215A00004	12/15/2017	2.29	12/15/2020	12/15/2017	101.46212	101.4621237	101.4621237	101.4621237	101.2524614	100.5377007	99.83301671	99.13819736	98.45303636
171219A00025	12/19/2017	2.33	12/19/2022	12/19/2017	106.08993	106.0899269	106.0899269	106.0899269	104.7716626	102.0581633	99.42873919	96.88023938	94.409655
180103A00019	1/3/2018	2.51	1/3/2023	1/3/2018	106.17404	106.1740402	106.1740402	106.1740402	104.82859	102.0862342	99.42964888	96.85559901	94.36099602
180103A00027	1/3/2018	2.51	1/3/2023	1/3/2018	106.17404	106.1740402	106.1740402	106.1740402	104.82859	102.0862342	99.42964888	96.85559901	94.36099602
180108A00006	1/8/2018	2.18	1/8/2021	1/8/2018	101.62014	101.6201361	101.6201361	101.6201361	101.3795363	100.5975192	99.82754134	99.06932617	98.32260556
180109A00006	1/9/2018	2.18	1/8/2021	1/9/2018	101.62014	101.6201361	101.6201361	101.6201361	101.3795363	100.5975192	99.82754134	99.06932617	98.32260556
180110A00048	1/10/2018	2.37	1/7/2021	1/10/2018	101.64694	101.6469407	101.6469407	101.6469407	101.4081879	100.6303172	99.86435641	99.11003349	98.36708461
180116A00008	1/16/2018	2.37	1/15/2021	1/16/2018	101.70165	101.701653	101.701653	101.701653	101.4519233	100.6520266	99.86472285	99.08971631	98.32672031
180116A00015	1/16/2018	3.06	1/18/2028	1/16/2018	121.53437	121.5343666	121.5343666	119.7064025	111.7171922	104.1710562	97.20111729	90.76018218	84.80515728
180116A00045	1/16/2018	2.49	1/11/2022	1/16/2018	103.97578	103.9757753	103.9757753	103.9757753	103.2719635	101.4996319	99.7662135	98.07054893	96.4115239

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180119A00026	1/19/2018	2.87	1/21/2025	1/19/2018	112.47315	112.4731537	112.4731537	112.4731537	108.9148116	104.1413471	99.60713331	95.29892786	91.20429016
180125A00026	1/26/2018	2.46	1/25/2021	1/26/2018	101.83528	101.8352788	101.8352788	101.8352788	101.5717987	100.744216	99.93009241	99.12910151	98.34092739
180130A00070	1/30/2018	3.14	1/29/2027	1/30/2018	119.43588	119.4358778	119.4358778	118.7481922	111.7557103	105.0558948	98.81127675	92.98849202	87.55678452
180201A00033	2/1/2018	2.53	2/1/2022	2/1/2018	104.49671	104.4967091	104.4967091	104.4967091	103.7622541	101.9240312	100.1273527	98.37103922	96.65395212
180206A00013	2/6/2018	2.72	2/6/2024	2/6/2018	110.14373	110.1437343	110.1437343	110.1437343	107.7328364	103.8721088	100.1717917	96.62440149	93.22284185
180214A00004	2/14/2018	2.71	2/14/2023	2/14/2018	107.54511	107.5451107	107.5451107	107.5451107	106.0892917	103.2038198	100.4120974	97.71058229	95.09588583
180215A00016	2/15/2018	2.51	5/15/2020	2/15/2018	100.27531	100.2753148	100.2753148	100.2753148	100.2650394	100.140314	100.0159135	99.89183647	99.76808177
180215A00018	2/15/2018	2.57	9/15/2020	2/15/2018	101.07935	101.0793478	101.0793478	101.0793478	100.9725669	100.5075063	100.0467324	99.59018613	99.13780927
180306A00010	3/6/2018	2.8	2/15/2022	3/6/2018	104.75803	104.7580326	104.7580326	104.7580326	104.0062089	102.1309565	100.2988033	98.50850472	96.75886059
180313A00026	3/13/2018	3.34	3/13/2028	3/13/2018	124.17495	124.1749467	124.1749467	122.1699864	113.953237	106.1907482	99.02955164	92.41965924	86.31548654
180320A00007	3/20/2018	2.92	3/21/2022	3/20/2018	105.2318	105.2318039	105.2318039	105.2318039	104.428952	102.4565329	100.5315295	98.65250884	96.81809128
180323A00013	3/23/2018	3.18	3/23/2028	3/23/2018	124.66146	124.661464	124.661464	122.5920418	114.2500445	106.3851939	99.13383757	92.44465884	86.2708883
180329A00033	4/2/2018	2.79	4/1/2021	4/2/2018	102.55176	102.551762	102.551762	102.551762	102.1937696	101.1846155	100.1953568	99.22540947	98.27421208
180403A00006	4/3/2018	3.07	4/3/2028	4/3/2018	123.86473	123.86473	123.86473	121.7611718	113.4151073	105.5564279	98.31353685	91.63472161	85.4728692
180406A00009	4/6/2018	2.58	4/6/2021	4/6/2018	102.53494	102.5349359	102.5349359	102.5349359	102.1695336	101.1446277	100.1402428	99.15576714	98.19061293
180411A00001	4/11/2018	2.84	1/25/2022	4/11/2018	104.70598	104.7059824	104.7059824	104.7059824	103.9821751	102.1663096	100.3910143	98.65512424	96.95751612
180412A00016	4/12/2018	2.79	4/12/2021	4/12/2018	102.62822	102.62822	102.62822	102.62822	102.2557654	101.2165275	100.1983888	99.20071131	98.22288244
180416A00027	4/16/2018	2.86	4/16/2021	4/16/2018	102.72999	102.7299896	102.7299896	102.7299896	102.3521574	101.3015685	100.2725267	99.26437375	98.27647798
180425A00008	4/25/2018	2.89	4/25/2022	4/25/2018	105.80468	105.804679	105.804679	105.804679	104.9407101	102.8611067	100.8333245	98.85572723	96.92674286
180426A00017	4/26/2018	2.85	4/26/2022	4/26/2018	105.72846	105.7284622	105.7284622	105.7284622	104.8631552	102.7816321	100.752026	98.77269588	96.842065
180426A00053	4/26/2018	2.94	4/26/2023	4/26/2018	108.76886	108.7688646	108.7688646	108.7688646	107.1318106	104.0381867	101.0508078	98.16541732	95.37795586
180427A00030	4/27/2018	2.62	4/27/2020	4/27/2018	100.18746	100.187464	100.187464	100.187464	100.1828909	100.1078846	100.032996	99.95822472	99.8835705
180507A00019	5/7/2018	2.77	5/7/2020	5/7/2018	100.2509	100.2508997	100.2508997	100.2508997	100.2434001	100.1408393	100.038498	99.93637535	99.83447076
180511A00035	5/11/2018	2.93	5/11/2023	5/11/2018	108.85454	108.8545363	108.8545363	108.8545363	107.1791313	104.0448708	101.0193267	98.09809575	95.27698154
180514A00011	5/14/2018	2.8	5/14/2020	5/14/2018	100.30461	100.3046116	100.3046116	100.3046116	100.2946802	100.1726863	100.0510037	99.92963113	99.8085674
180516A00002	5/16/2018	2.84	5/17/2021	5/16/2018	103.11222	103.1122231	103.1122231	103.1122231	102.6929955	101.5539666	100.4401762	99.35079194	98.28501762
180524A00006	5/24/2018	2.71	2/16/2021	5/24/2018	102.31669	102.3166922	102.3166922	102.3166922	102.0205832	101.1294747	100.253914	99.3934968	98.54783239
180524A00050	5/24/2018	2.9	5/24/2021	5/24/2018	103.04853	103.0485256	103.0485256	103.0485256	102.6216934	101.4669404	100.3381485	99.23444911	98.15501208
180529A00042	5/29/2018	3.42	5/30/2028	5/29/2018	125.47073	125.4707317	125.4707317	123.210376	114.748518	106.7714685	99.42578474	92.65783162	86.41880473
180529A00059	5/29/2018	2.7	5/29/2020	5/29/2018	100.39719	100.3971862	100.3971862	100.3971862	100.3820455	100.2184512	100.0553902	99.89285974	99.73085737
180529A00063	5/29/2018	2.95	5/31/2022	5/29/2018	105.81205	105.8120485	105.8120485	105.8120485	104.8910172	102.7236451	100.6118948	98.55394362	96.54804411
180530A00007	5/30/2018	2.66	11/30/2021	5/30/2018	104.29495	104.2949488	104.2949488	104.2949488	103.6388503	101.9691927	100.3344662	98.73363962	97.16572252
180530A00027	5/30/2018	3.61	6/1/2032	5/30/2018	140.03511	140.0351091	140.0351091	129.7486051	117.1995598	105.9001679	95.86030935	86.93070701	78.98057262

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180531A00015	5/31/2018	2.95	5/31/2023	5/31/2018	108.48119	108.48119	108.48119	108.48119	106.7665575	103.6002503	100.544996	97.59624217	94.74965284
180531A00032	5/31/2018	2.8	6/1/2021	5/31/2018	102.98833	102.9883269	102.9883269	102.9883269	102.5515837	101.3757108	100.2267575	99.10380717	98.00598449
180601A00006	6/1/2018	2.59	6/1/2020	6/1/2018	100.42562	100.4256196	100.4256196	100.4256196	100.4092244	100.2370213	100.0654087	99.89438348	99.72394272
180611A00030	6/11/2018	2.91	6/12/2023	6/11/2018	109.03879	109.0387895	109.0387895	109.0387895	107.2810055	104.0598635	100.9529134	97.95542053	95.06287838
180622A00006	6/22/2018	3.53	12/21/2029	6/22/2018	131.33583	131.3358347	131.3358347	126.8331988	116.7036758	107.329953	98.81809758	91.08347363	84.05019614
180625A00041	6/25/2018	3.06	6/20/2023	6/25/2018	108.98453	108.9845346	108.9845346	108.9845346	107.2157743	103.9884236	100.8758291	97.87321522	94.97603762
180627A00026	6/27/2018	2.87	6/27/2023	6/27/2018	109.02339	109.0233939	109.0233939	109.0233939	107.2274606	103.9665223	100.8224338	97.79029456	94.8654438
180706A00013	7/6/2018	3.01	7/6/2023	7/6/2018	108.94143	108.9414326	108.9414326	108.9414326	107.1323	103.8638161	100.7129087	97.67465235	94.7443604
180713A00011	7/13/2018	2.95	7/13/2021	7/13/2018	103.46359	103.4635893	103.4635893	103.4635893	102.9753766	101.6874318	100.4271215	99.19355685	97.98588727
180713A00013	7/13/2018	2.88	7/13/2023	7/13/2018	109.1785	109.1784988	109.1784988	109.1784988	107.3402205	104.0352126	100.8500111	97.77959026	94.81916622
180713A00030	7/13/2018	2.8	7/13/2021	7/13/2018	103.49043	103.4904313	103.4904313	103.4904313	103.0007504	101.7091929	100.4454015	99.20848155	97.99757712
180716A00054	7/16/2018	3.59	7/16/2040	7/16/2018	170.60618	170.6061824	159.9170658	137.4548048	117.6234106	101.1047606	87.39686666	75.9898075	66.46960023
180717A00047	7/17/2018	3.3	9/17/2025	7/17/2018	116.46061	116.460613	116.460613	116.460613	111.8001018	106.3405492	101.1862229	96.31843691	91.71974402
180726A00032	7/26/2018	2.95	10/26/2020	7/26/2018	101.56307	101.5630697	101.5630697	101.5630697	101.4111611	100.832374	100.2601881	99.69449071	99.13517202
180807A00017	8/7/2018	2.77	8/7/2020	8/7/2018	100.95	100.9499962	100.9499962	100.9499962	100.8852988	100.5270842	100.1714196	99.81827791	99.46763211
180809A00029	8/9/2018	2.99	9/9/2021	8/9/2018	103.95009	103.9500859	103.9500859	103.9500859	103.3940377	101.9530155	100.5392364	99.15199501	97.79060952
180810A00006	8/10/2018	2.73	8/10/2020	8/10/2018	100.95744	100.9574362	100.9574362	100.9574362	100.8895393	100.5230408	100.1592141	99.79802983	99.43945925
180821A00016	8/21/2018	2.76	8/20/2021	8/21/2018	103.71695	103.7169541	103.7169541	103.7169541	103.1829543	101.7933345	100.4291549	99.08977689	97.77458276
180823A00013	8/23/2018	2.97	8/23/2023	8/23/2018	109.16333	109.1633339	109.1633339	109.1633339	107.2288344	103.8341277	100.5658432	97.41861392	94.38732941
180827A00060	8/27/2018	2.9	8/27/2021	8/27/2018	103.72468	103.7246787	103.7246787	103.7246787	103.1843148	101.779991	100.4016126	99.04852282	97.72008639
180828A00032	8/28/2018	3.49	8/29/2033	8/28/2018	145.51059	145.5105881	145.4972494	131.3762607	117.4565785	105.1040274	94.25483982	84.71500263	76.31657854
180830A00006	8/30/2018	2.99	8/30/2022	8/30/2018	106.57648	106.5764823	106.5764823	106.5764823	105.4877187	103.0714101	100.722981	98.44014686	96.22071366
180831A00016	8/31/2018	2.99	8/31/2023	8/31/2018	109.29125	109.291247	109.291247	109.291247	107.335019	103.9177936	100.6285348	97.46178025	94.41232996
180905A00015	9/5/2018	2.85	9/1/2022	9/5/2018	106.69739	106.6973861	106.6973861	106.6973861	105.5996828	103.1674677	100.8038885	98.50662493	96.27344908
180910A00013	9/10/2018	3.08	9/11/2023	9/10/2018	109.68567	109.685667	109.685667	109.685667	107.6973832	104.2445556	100.9220648	97.72429944	94.64592037
180912A00028	9/12/2018	2.93	9/14/2020	9/12/2018	101.23982	101.2398217	101.2398217	101.2398217	101.134073	100.6713129	100.2127923	99.75845281	99.30823742
180912A00030	9/12/2018	3	9/13/2021	9/12/2018	103.99467	103.9946715	103.9946715	103.9946715	103.4338	101.9815648	100.5569854	99.1593403	97.78793262
180914A00013	9/14/2018	3.48	9/14/2028	9/14/2018	126.88123	126.8812256	126.8812256	124.258671	115.4712066	107.2149143	99.63210544	92.66390452	86.25687721
180918A00041	9/18/2018	3.18	9/18/2024	9/18/2018	113.84111	113.8411122	113.8411122	113.8411122	110.6882643	106.1719655	101.8685199	97.76677245	93.85621072
180920A00028	9/20/2018	3.12	9/20/2023	9/20/2018	110.54934	110.5493411	110.5493411	110.5493411	108.519632	105.0121823	101.6382779	98.39211667	95.26818085
180920A00063	9/20/2018	3	9/20/2021	9/20/2018	104.30232	104.3023161	104.3023161	104.3023161	103.7306866	102.2529194	100.8037094	99.38230064	97.98796365
180926A00004	9/26/2018	3.04	9/26/2022	9/26/2018	107.36539	107.3653931	107.3653931	107.3653931	106.2155481	103.7075612	101.2722304	98.90703022	96.60953921
180926A00031	9/26/2018	3.24	9/26/2023	9/26/2018	110.36348	110.3634845	110.3634845	110.3634845	108.3302956	104.8264024	101.456179	98.213805	95.09374552

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180928A00029	9/28/2018	2.87	9/28/2020	9/28/2018	101.38305	101.3830479	101.3830479	101.3830479	101.2614949	100.7591085	100.2617012	99.76919933	99.28153056
180928A00050	9/28/2018	2.98	9/28/2020	9/28/2018	101.36864	101.3686353	101.3686353	101.3686353	101.2473064	100.7457988	100.2492509	99.75758939	99.27074247
181001A00059	10/1/2018	3.02	11/2/2020	10/1/2018	101.65737	101.6573704	101.6573704	101.6573704	101.4976854	100.8994389	100.3082342	99.72394737	99.14645765
181004A00028	10/4/2018	3.31	10/4/2023	10/4/2018	110.67618	110.6761753	110.6761753	110.6761753	108.6191874	105.0890824	101.6943109	98.42894845	95.28736336
181005A00011	10/5/2018	3.2	10/5/2023	10/5/2018	110.95835	110.9583535	110.9583535	110.9583535	108.8851951	105.3311616	101.9137985	98.6271052	95.46537841
181005A00041	10/5/2018	3.06	10/5/2020	10/5/2018	101.46331	101.4633084	101.4633084	101.4633084	101.3342767	100.8133057	100.2976883	99.78734218	99.28218689
181012A00012	10/12/2018	3.05	10/9/2020	10/12/2018	101.48913	101.4891349	101.4891349	101.4891349	101.3557399	100.8237265	100.2972997	99.77637159	99.26085624
181018A00011	10/18/2018	3.35	10/18/2023	10/18/2018	110.93557	110.9355653	110.9355653	110.9355653	108.8388611	105.2682342	101.8355524	98.53472709	95.3599733
181023A00021	10/23/2018	3.28	10/23/2023	10/23/2018	110.72601	110.7260116	110.7260116	110.7260116	108.6175968	105.0378422	101.5968198	98.28838697	95.10670893
181025A00010	10/25/2018	3.07	10/25/2022	10/25/2018	107.67818	107.6781829	107.6781829	107.6781829	106.4681256	103.8795357	101.3675997	98.92958409	96.56287145
181102A00006	11/2/2018	3.07	11/2/2021	11/2/2018	104.75884	104.758835	104.758835	104.758835	104.1344288	102.5376357	100.9732254	99.44028069	97.93791903
181114A00014	11/14/2018	3.17	11/14/2023	11/14/2018	111.18934	111.1893418	111.1893418	111.1893418	109.0052678	105.3424732	101.8238445	98.44289561	95.19347137
181114A00024	11/14/2018	3.27	12/14/2021	11/14/2018	105.13373	105.1337293	105.1337293	105.1337293	104.460548	102.751797	101.0792736	99.44188951	97.83860061
181115A00051	11/15/2018	2.98	5/17/2021	11/15/2018	103.27233	103.2723287	103.2723287	103.2723287	102.8528111	101.7128111	100.5980646	99.50773875	98.44103717
181116A00015	11/19/2018	3.29	2/15/2024	11/19/2018	111.70779	111.7077893	111.7077893	111.7077893	109.2704984	105.3745735	101.640691	98.06127276	94.62913436
181119A00018	11/19/2018	3.28	11/17/2023	11/19/2018	110.93092	110.9309161	110.9309161	110.9309161	108.7529103	105.1040825	101.5987679	98.23051261	94.99319214
181120A00007	11/20/2018	3.15	11/15/2021	11/20/2018	104.71443	104.7144284	104.7144284	104.7144284	104.0767901	102.4494072	100.8554298	99.29389486	97.76387597
181128A00031	11/28/2018	3.29	11/28/2023	11/28/2018	111.0579	111.0579032	111.0579032	111.0579032	108.8488086	105.1686669	101.6342241	98.23888261	94.97638419
181130A00037	11/30/2018	3.05	11/30/2023	11/30/2018	110.87896	110.8789636	110.8789636	110.8789636	108.653519	104.9538056	101.401205	97.98902969	94.7109374
181207A00018	12/7/2018	3.21	7/15/2024	12/7/2018	112.60218	112.602176	112.602176	112.602176	109.6975213	105.3956378	101.2888143	97.36715302	93.62131323
181210A00015	12/10/2018	3.12	12/11/2023	12/10/2018	110.53107	110.5310667	110.5310667	110.5310667	108.2905071	104.5866674	101.0307387	97.61596502	94.33594131
181212A00027	12/12/2018	2.99	12/12/2023	12/12/2018	110.75166	110.7516563	110.7516563	110.7516563	108.4937097	104.7654844	101.1866268	97.75029359	94.4499983
181226A00045	12/26/2018	2.87	12/28/2020	12/26/2018	101.97334	101.9733363	101.9733363	101.9733363	101.7473987	100.995204	100.2541152	99.52388745	98.80428341
181226A00059	12/26/2018	2.87	12/28/2020	12/26/2018	101.97334	101.9733363	101.9733363	101.9733363	101.7473987	100.995204	100.2541152	99.52388745	98.80428341
181226A00060	12/26/2018	2.9	12/27/2021	12/26/2018	104.60662	104.6066246	104.6066246	104.6066246	103.9194077	102.1807493	100.4795276	98.81459835	97.18486445
181226A00062	12/26/2018	3.02	12/26/2023	12/26/2018	110.27065	110.2706456	110.2706456	110.2706456	107.9908105	104.2536794	100.6672108	97.22445631	93.91883225
181227A00022	12/27/2019	2.91	12/27/2022	12/27/2019	107.23876	107.2387625	107.2387625	107.2387625	105.9027371	103.1636814	100.5096896	97.93756136	95.44424127
190102A00003	1/2/2019	2.8	1/27/2021	1/2/2019	102.1241	102.1241025	102.1241025	102.1241025	101.8576094	101.0234042	100.2028433	99.39559406	98.60133432
190102A00043	1/2/2019	2.79	1/4/2021	1/2/2019	101.96221	101.9622102	101.9622102	101.9622102	101.7271842	100.9560049	100.1965013	99.44840948	98.71147375
190104A00003	1/4/2019	2.81	1/4/2022	1/4/2019	104.50396	104.5039603	104.5039603	104.5039603	103.807254	102.0484665	100.3279263	98.64447147	96.99698746
190104A00021	1/4/2019	2.58	1/4/2021	1/4/2019	101.90707	101.9070719	101.9070719	101.9070719	101.6716344	100.8992655	100.1386119	99.38940843	98.65139799
190110A00016	1/10/2019	2.88	1/25/2022	1/10/2019	104.77967	104.7796677	104.7796677	104.7796677	104.0556157	102.2390578	100.463083	98.72652602	97.02826321
190115A00025	1/15/2019	2.96	1/12/2024	1/15/2019	110.16908	110.1690786	110.1690786	110.1690786	107.8425335	104.0642823	100.4400253	96.96263399	93.62535197

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190122A00041	1/22/2019	2.71	1/22/2021	1/22/2019	102.13732	102.1373236	102.1373236	102.1373236	101.8770573	101.0546965	100.2455985	99.44944418	98.66592465
190128A00035	1/28/2019	3.04	1/26/2024	1/28/2019	110.58012	110.5801205	110.5801205	110.5801205	108.210466	104.3891214	100.724848	97.21037039	93.83878893
190131A00007	1/31/2019	2.67	1/31/2023	1/31/2019	107.33017	107.3301746	107.3301746	107.3301746	105.9085502	103.0662492	100.3151211	97.65176491	95.07292479
190131A00014	1/31/2019	2.79	1/29/2021	1/31/2019	102.12974	102.1297403	102.1297403	102.1297403	101.8605188	101.0208677	100.1950355	99.38268318	98.58348262
190208A00005	2/8/2019	2.63	2/8/2023	2/8/2019	107.27065	107.2706518	107.2706518	107.2706518	105.8305732	102.9662285	100.1944609	97.5117914	94.91489062
190211A00017	2/11/2019	3.12	2/11/2026	2/11/2019	116.6003	116.6003003	116.6003003	116.6003003	111.12852	105.3156787	99.84876501	94.70538217	89.8646932
190215A00005	2/15/2019	2.89	2/15/2024	2/15/2019	110.14377	110.1437676	110.1437676	110.1437676	107.7210799	103.8551149	100.1502793	96.59903041	93.1942174
190215A00046	2/15/2019	2.7	2/15/2024	2/15/2019	110.12984	110.1298399	110.1298399	110.1298399	107.6930741	103.8082545	100.0858334	96.51818915	93.09809692
190222A00021	2/22/2019	2.95	8/21/2024	2/22/2019	111.74763	111.7476277	111.7476277	111.7476277	108.732536	104.3567366	100.1837732	96.20320133	92.40516732
190314A00018	3/14/2019	2.53	3/14/2022	3/14/2019	104.77002	104.7700228	104.7700228	104.7700228	103.9765103	102.0203963	100.1110153	98.2469648	96.42689406
190315A00014	3/15/2019	2.74	3/15/2024	3/15/2019	109.75149	109.7514915	109.7514915	109.7514915	107.2487247	103.3154241	99.54931568	95.94241928	92.48717779
190315A00026	3/15/2019	2.66	1/19/2021	3/15/2019	101.95362	101.9536191	101.9536191	101.9536191	101.6982068	100.8864575	100.0876527	99.30148416	98.52765369
190320A00005	3/20/2019	2.75	3/20/2024	3/20/2019	109.82514	109.8251415	109.8251415	109.8251415	107.3070902	103.3598897	99.58099942	95.96235944	92.49633878
190326A00003	3/26/2019	2.57	3/27/2023	3/26/2019	106.85993	106.8599259	106.8599259	106.8599259	105.3172652	102.3451867	99.47306331	96.69698481	94.01321652
190327A00013	3/27/2019	2.53	3/27/2024	3/27/2019	108.98743	108.9874258	108.9874258	108.9874258	106.4571556	102.50901	98.73016812	95.11248075	91.6482344
190328A00023	3/28/2019	2.51	2/24/2021	3/28/2019	102.05372	102.0537221	102.0537221	102.0537221	101.7469903	100.8373874	99.94401139	99.06643105	98.2042302
190402A00014	4/2/2019	2.64	4/2/2024	4/2/2019	109.46855	109.4685504	109.4685504	109.4685504	106.9159994	102.9432859	99.14143872	95.50220556	92.01777694
190404A00024	4/5/2019	2.61	2/15/2022	4/5/2019	104.39704	104.3970402	104.3970402	104.3970402	103.646461	101.7747013	99.9459745	98.15903816	96.4126937
190409A00020	4/9/2019	2.41	4/8/2022	4/9/2019	104.69145	104.6914549	104.6914549	104.6914549	103.8594891	101.8379011	99.86602388	97.94231714	96.06529948
190409A00033	4/9/2019	2.62	6/9/2023	4/9/2019	107.4841	107.4841038	107.4841038	107.4841038	105.753624	102.5793539	99.51728285	96.56277619	93.71142192
190409A00041	4/9/2019	2.57	4/5/2021	4/9/2019	102.3538	102.3538002	102.3538002	102.3538002	101.9908984	100.9720407	99.97349693	98.99466402	98.03496253
190411A00019	5/1/2019	2.63	5/2/2022	5/1/2019	104.92406	104.9240552	104.9240552	104.9240552	104.0552822	101.973481	99.94378582	97.96454191	96.03415982
190412A00014	4/12/2019	2.63	4/12/2021	4/12/2019	102.46093	102.4609259	102.4609259	102.4609259	102.0887381	101.0504344	100.0332166	99.0364471	98.05951355
190424A00019	4/24/2019	2.67	4/24/2024	4/24/2019	109.73278	109.7327845	109.7327845	109.7327845	107.1122035	103.0773675	99.21806223	95.52570985	91.99219931
190424A00023	4/24/2019	2.43	4/24/2023	4/24/2019	107.171	107.1710023	107.1710023	107.1710023	105.5494397	102.4857564	99.52736457	96.67004807	93.90978559
190426A00009	4/26/2019	2.63	4/26/2024	4/26/2019	109.58159	109.5815937	109.5815937	109.5815937	106.9565938	102.9196281	99.0585092	95.36463373	91.8298671
190430A00001	4/30/2019	2.47	5/2/2024	4/30/2019	109.72769	109.7276861	109.7276861	109.7276861	107.067087	102.9911108	99.09375319	95.36622506	91.80021918
190506A00017	5/6/2019	2.56	5/6/2020	5/6/2019	100.2231	100.2231029	100.2231029	100.2231029	100.2159518	100.1161838	100.0166226	99.91726779	99.81811859
190507A00006	5/7/2019	2.57	5/8/2023	5/7/2019	107.12263	107.1226281	107.1226281	107.1226281	105.4746079	102.3885038	99.40917039	96.5322992	93.7537827
190507A00027	5/7/2019	2.59	5/7/2024	5/7/2019	109.48669	109.4866935	109.4866935	109.4866935	106.8295182	102.7666992	98.88192051	95.1664186	91.61191073
190514A00073	5/14/2019	2.53	5/14/2024	5/14/2019	109.28159	109.281594	109.281594	109.281594	106.605274	102.5291746	98.63241791	94.9061413	91.34197045
190517A00005	5/17/2019	2.31	5/17/2024	5/17/2019	109.15674	109.1567365	109.1567365	109.1567365	106.4560538	102.3539686	98.43323806	94.68486164	91.10033679
190520A00025	5/20/2019	2.32	5/20/2021	5/20/2019	102.53588	102.5358833	102.5358833	102.5358833	102.113921	100.9703114	99.85224361	98.75886898	97.68937617

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190523A00009	5/23/2019	2.43	5/21/2021	5/23/2019	102.48451	102.4845067	102.4845067	102.4845067	102.0624814	100.919239	99.80154621	98.70855345	97.63944855
190523A00015	5/23/2019	2.51	4/1/2024	5/23/2019	108.93741	108.9374087	108.9374087	108.9374087	106.3930428	102.4334014	98.64409585	95.0169009	91.54403272
190524A00005	5/24/2019	2.34	11/24/2020	5/24/2019	101.46821	101.4682075	101.4682075	101.4682075	101.2832349	100.6244325	99.97418766	99.33233435	98.69871084
190524A00014	5/24/2019	2.24	5/24/2022	5/24/2019	104.61382	104.6138221	104.6138221	104.6138221	103.7059232	101.5624229	99.47379753	97.4382575	95.45408609
190524A00017	5/28/2019	2.52	5/28/2020	5/28/2019	100.36145	100.3614523	100.3614523	100.3614523	100.3466615	100.1858739	100.0256036	99.86584803	99.70660483
190524A00044	5/24/2019	2.27	5/24/2021	5/24/2019	102.50218	102.5021826	102.5021826	102.5021826	102.0752461	100.9210797	99.79293017	98.6899252	97.61123129
190529A00006	5/29/2019	2.32	5/28/2021	5/29/2019	102.39732	102.3973238	102.3973238	102.3973238	101.966681	100.8052142	99.67012379	98.5605191	97.47554917
190529A00011	5/29/2019	2.36	5/30/2023	5/29/2019	106.59014	106.5901408	106.5901408	106.5901408	104.8909775	101.7571172	98.73336568	95.81520716	92.99834063
190529A00089	5/29/2019	2.38	5/29/2024	5/29/2019	108.74444	108.7444352	108.7444352	108.7444352	106.0282578	101.9258954	98.00561334	94.25833709	90.67549681
190530A00025	5/30/2019	2.36	6/1/2021	5/30/2019	102.46735	102.4673515	102.4673515	102.4673515	102.0315963	100.8589791	99.7132296	98.59343256	97.49871394
190530A00042	5/30/2019	2.3	11/30/2020	5/30/2019	101.47808	101.478076	101.478076	101.478076	101.2862516	100.6110362	99.94479821	99.28735964	98.63854711
190531A00013	5/31/2019	2.31	12/6/2022	5/31/2019	105.46063	105.4606348	105.4606348	105.4606348	104.1798205	101.5192306	98.94006701	96.43931903	94.0141095
190531A00038	5/31/2019	2.82	5/31/2034	5/31/2019	138.49591	138.4959072	137.224153	122.4962739	108.4814837	96.19334343	85.49186678	76.16113761	68.01573458
190603A00018	6/3/2019	2.44	6/3/2020	6/3/2019	100.38637	100.386373	100.386373	100.386373	100.3689471	100.1915346	100.0147506	99.838592	99.66305536
190603A00031	6/3/2019	1.98	6/3/2022	6/3/2019	104.09996	104.0999583	104.0999583	104.0999583	103.177172	101.0129462	98.90466842	96.85049351	94.84865275
190603A00040	6/3/2019	2.11	6/3/2022	6/3/2019	103.98757	103.9875736	103.9875736	103.9875736	103.0688317	100.9135837	98.81391756	96.76800418	94.77409008
190604A00030	6/4/2019	2.2	6/3/2022	6/4/2019	104.1854	104.1854031	104.1854031	104.1854031	103.2658461	101.1084032	99.00658705	96.95856724	94.96258902
190605A00005	6/5/2019	2.01	6/5/2024	6/5/2019	108.00263	108.0026344	108.0026344	108.0026344	105.2556877	101.1294582	97.18783115	93.42154071	89.82184041
190605A00017	6/5/2019	2.12	6/4/2021	6/5/2019	102.19846	102.1984617	102.1984617	102.1984617	101.7595646	100.580601	99.42885187	98.30338338	97.20330401
190605A00058	6/5/2019	2.14	12/5/2022	6/5/2019	104.99468	104.9946768	104.9946768	104.9946768	103.7185464	101.0668268	98.4962427	96.00379599	93.58662151
190620A00056	6/25/2019	2.07	1/17/2023	6/25/2019	105.0159	105.0158997	105.0158997	105.0158997	103.6456937	100.8836958	98.20925959	95.61910297	93.11008819
190621A00003	6/21/2019	2.08	6/22/2020	6/21/2019	100.45209	100.4520854	100.4520854	100.4520854	100.4245336	100.1942107	99.96495381	99.73675559	99.50960863
190621A00061	6/21/2019	2.12	6/21/2021	6/21/2019	102.27268	102.2726801	102.2726801	102.2726801	101.8130331	100.5883431	99.39300691	98.22597881	97.0862623
190624A00026	6/24/2019	2.08	6/24/2022	6/24/2019	104.02476	104.0247594	104.0247594	104.0247594	103.0695564	100.8576713	98.70401223	96.60661766	94.56360936
190625A00012	6/25/2019	2.12	6/25/2024	6/25/2019	107.78844	107.7884387	107.7884387	107.7884387	104.9991395	100.8480002	96.88416883	93.09815778	89.48101668
190626A00004	6/26/2019	2.15	6/26/2024	6/26/2019	107.9216	107.9215972	107.9215972	107.9215972	105.1277901	100.9713452	97.00251838	93.21180166	89.59022592
190626A00010	6/26/2019	2.1	6/26/2023	6/26/2019	105.89373	105.8937333	105.8937333	105.8937333	104.1317237	100.9384118	97.85958767	94.89045591	92.02645498
190626A00033	6/26/2019	2.08	6/22/2021	6/26/2019	102.22806	102.2280615	102.2280615	102.2280615	101.7672893	100.540221	99.34262856	98.17345975	97.03171191
190628A00027	6/28/2019	2.09	6/29/2020	6/28/2019	100.49268	100.4926802	100.4926802	100.4926802	100.4614066	100.2116807	99.96319432	99.71593833	99.46990359
190703A00015	7/3/2019	2.02	1/6/2021	7/3/2019	101.48386	101.4838579	101.4838579	101.4838579	101.2461271	100.4701302	99.70599742	98.95345818	98.21225006
190708A00011	7/8/2019	2.2	7/8/2024	7/8/2019	108.19794	108.1979424	108.1979424	108.1979424	105.3635694	101.1716242	97.17012737	93.3493964	89.7002968
190710A00022	7/10/2019	2.22	7/10/2024	7/10/2019	108.29463	108.2946267	108.2946267	108.2946267	105.4528859	101.2540111	97.24609318	93.41942185	89.76483558
190711A00027	7/11/2019	2.19	7/11/2023	7/11/2019	106.26603	106.2660301	106.2660301	106.2660301	104.4634327	101.2258878	98.10564428	95.09778334	92.19762363

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190717A00008	7/17/2019	2.22	7/17/2024	7/17/2019	108.33166	108.3316617	108.3316617	108.3316617	105.4674121	101.2506151	97.22635107	93.38481958	89.71677229
190719A00002	7/19/2019	2.12	4/21/2022	7/19/2019	103.79274	103.792744	103.792744	103.792744	102.9462569	100.9059273	98.91624608	96.97562368	95.08253222
190724A00022	7/24/2019	1.94	7/23/2021	7/24/2019	102.42154	102.4215391	102.4215391	102.4215391	101.922534	100.6142572	99.33132154	98.07301193	96.83864032
190724A00046	7/24/2019	2.12	7/23/2021	7/24/2019	102.43532	102.4353199	102.4353199	102.4353199	101.9377338	100.6328662	99.35322078	98.09808699	96.86678122
190805A00021	8/5/2019	1.89	1/16/2024	8/5/2019	106.10278	106.1027788	106.1027788	106.1027788	103.801715	100.089699	96.53019943	93.11613607	89.84079771
190805A00049	8/5/2019	1.88	8/4/2023	8/5/2019	105.34538	105.3453764	105.3453764	105.3453764	103.4886369	100.205969	97.04449492	93.9991269	91.06501724
190807A00017	8/7/2019	1.76	3/12/2024	8/7/2019	105.82953	105.8295251	105.8295251	105.8295251	103.3731692	99.52377235	95.83856289	92.30969959	88.92975667
190807A00021	8/7/2019	2	8/7/2026	8/7/2019	110.81121	110.8112057	110.8112057	110.7342864	104.3996367	98.3539164	92.69781899	87.40429242	82.44829092
190807A00039	8/7/2019	2.02	8/7/2020	8/7/2019	100.63187	100.6318732	100.6318732	100.6318732	100.5673808	100.2104344	99.8560234	99.50412083	99.15470008
190808A00009	8/8/2019	1.89	8/8/2024	8/8/2019	106.9993	106.9993039	106.9993039	106.9993039	104.0799342	99.83786126	95.79227521	91.93309885	88.25082175
190808A00015	8/8/2019	1.92	8/9/2021	8/8/2019	102.24685	102.2468486	102.2468486	102.2468486	101.7302975	100.3840387	99.0619385	97.76340224	96.48785443
190808A00049	8/8/2019	1.89	8/8/2024	8/8/2019	106.9993	106.9993039	106.9993039	106.9993039	104.0799342	99.83786126	95.79227521	91.93309885	88.25082175
190809A00008	8/9/2019	1.87	8/3/2023	8/9/2019	105.30729	105.3072906	105.3072906	105.3072906	103.453397	100.173867	97.01533297	93.97271914	91.04118884
190809A00015	8/9/2019	1.88	8/9/2022	8/9/2019	103.77509	103.7750891	103.7750891	103.7750891	102.7384543	100.4103479	98.14649381	95.94477123	93.80314155
190815A00007	8/15/2019	1.81	7/6/2023	8/15/2019	104.98798	104.9879845	104.9879845	104.9879845	103.2072612	100.0031488	96.91489178	93.93762473	91.06671858
190815A00032	8/15/2019	1.83	8/13/2021	8/15/2019	102.14025	102.140251	102.140251	102.140251	101.6194509	100.2634829	98.93201184	97.62443103	96.34015335
190816A00021	8/16/2019	1.77	8/16/2023	8/16/2019	105.02302	105.0230208	105.0230208	105.0230208	103.137982	99.83071361	96.64666555	93.58061964	90.62760611
190816A00036	8/16/2019	1.77	8/16/2024	8/16/2019	106.50493	106.504934	106.504934	106.504934	103.5654106	99.31458482	95.26167793	91.39649101	87.70940147
190819A00030	8/19/2019	2.01	8/20/2029	8/19/2019	117.91455	117.9145502	117.9145502	113.9926571	104.5846885	95.9443065	88.09212049	80.95206165	74.45575782
190821A00016	8/21/2019	1.79	8/22/2022	8/21/2019	103.61439	103.6143865	103.6143865	103.6143865	102.554399	100.1948682	97.90132414	95.67156051	93.50345769
190823A00005	8/23/2019	1.62	8/23/2024	8/23/2019	106.6806	106.6806049	106.6806049	106.6806049	103.6973263	99.40275196	95.30949296	91.40710937	87.68575501
190826A00025	8/26/2019	1.76	11/26/2024	8/26/2019	106.82229	106.8222875	106.8222875	106.8222875	103.5393411	99.03335433	94.74864375	90.67317903	86.79565005
190826A00056	8/26/2019	1.72	8/26/2024	8/26/2019	106.32352	106.3235191	106.3235191	106.3235191	103.3539706	99.08294869	95.01195442	91.13062226	87.42917581
190828A00008	8/28/2019	1.75	8/29/2022	8/28/2019	103.54581	103.5458123	103.5458123	103.5458123	102.4731863	100.0965606	97.78686827	95.54185584	93.35935929
190828A00031	8/28/2019	1.71	8/28/2024	8/28/2019	106.28691	106.2869073	106.2869073	106.2869073	103.3113652	99.03632121	94.96172718	91.0771842	87.37288495
190829A00024	8/29/2019	1.54	8/29/2024	8/29/2019	106.34828	106.3482777	106.3482777	106.3482777	103.3493703	99.04740547	94.94787517	91.04024462	87.31458029
190830A00021	8/30/2019	1.76	8/30/2024	8/30/2019	106.51721	106.5172137	106.5172137	106.5172137	103.532624	99.24778549	95.16401489	91.27087146	87.55850907
190906A00005	9/6/2019	1.77	9/6/2023	9/6/2019	105.10829	105.1082865	105.1082865	105.1082865	103.1686807	99.80716858	96.57282733	93.46018848	90.46404809
190906A00014	9/6/2019	1.57	9/6/2024	9/6/2019	106.51431	106.5143145	106.5143145	106.5143145	103.4870982	99.16165531	95.04066654	91.11344234	87.36990623
190912A00027	9/12/2019	1.95	9/12/2023	9/12/2019	105.7592	105.7592007	105.7592007	105.7592007	103.7989474	100.410872	97.15145498	94.01513972	90.99663951
190912A00034	9/12/2019	1.76	9/12/2022	9/12/2019	104.07481	104.0748074	104.0748074	104.0748074	102.9682379	100.5390254	98.17940608	95.88699486	93.65950306
190918A00016	9/18/2019	1.78	9/18/2024	9/18/2019	107.51178	107.5117792	107.5117792	107.5117792	104.4330573	100.0557205	95.88648506	91.91439833	88.1291405
190925A00024	9/25/2019	1.88	4/14/2022	9/25/2019	103.26315	103.2631516	103.2631516	103.2631516	102.4299762	100.4140157	98.44782993	96.52986856	94.65864114

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190926A00010	9/26/2019	2.11	9/30/2020	9/26/2019	100.94181	100.9418137	100.9418137	100.9418137	100.8184998	100.3127758	99.81210711	99.31641841	98.82563578
190926A00016	9/26/2019	2.28	5/24/2030	9/26/2019	120.00608	120.0060808	120.0060808	114.8235087	104.801675	95.65479756	87.39625007	79.93477437	73.18892892
190926A00034	9/26/2019	1.88	9/26/2022	9/26/2019	103.98478	103.984783	103.984783	103.984783	102.8563793	100.4005677	98.01600167	95.70020685	93.45081046
190927A00019	9/30/2019	1.91	9/30/2022	9/30/2019	104.078	104.0779986	104.0779986	104.0779986	102.9414518	100.4739207	98.07827128	95.75199643	93.49269227
191001A00009	10/1/2019	1.84	10/1/2020	10/1/2019	100.8797	100.879701	100.879701	100.879701	100.7551131	100.2459862	99.74199007	99.24304749	98.74908276
191002A00016	10/2/2019	1.79	10/2/2023	10/2/2019	105.28412	105.2841214	105.2841214	105.2841214	103.2756289	99.84456588	96.54583549	93.37363205	90.3224369
191003A00013	10/3/2019	1.66	10/3/2022	10/3/2019	103.45775	103.4577459	103.4577459	103.4577459	102.3182837	99.85090125	97.45560686	95.12987878	92.87129948
191004A00002	10/4/2019	2.08	10/4/2029	10/4/2019	116.87103	116.8710327	116.8710327	112.8284053	103.4607182	94.86205958	87.05467064	79.96147088	73.51325409
191007A00024	10/7/2019	1.7	7/14/2022	10/7/2019	103.24507	103.2450746	103.2450746	103.2450746	102.2578576	100.0028402	97.80846201	95.67270122	93.59361857
191008A00033	10/8/2019	1.71	10/8/2024	10/8/2019	106.44562	106.4456181	106.4456181	106.4456181	103.3331333	98.95393427	94.78486449	90.8147636	87.03312218
191009A00018	10/9/2019	1.74	10/12/2021	10/9/2019	102.2569	102.2569014	102.2569014	102.2569014	101.6663485	100.150115	98.66400303	97.20718763	95.77887346
191009A00027	10/9/2019	1.74	10/6/2023	10/9/2019	105.12323	105.1232312	105.1232312	105.1232312	103.1054899	99.66723463	96.36192402	93.18371078	90.12703754
191017A00025	10/17/2019	1.74	10/19/2020	10/17/2019	100.90973	100.9097338	100.9097338	100.9097338	100.7655778	100.2070947	99.65479714	99.10858273	98.56835119
191021A00034	10/22/2019	1.9	10/17/2022	10/22/2019	104.12816	104.1281569	104.1281569	104.1281569	102.9574335	100.4455206	98.00768304	95.64129858	93.34385524
191022A00018	10/22/2019	1.9	10/22/2020	10/22/2019	100.93572	100.9357198	100.9357198	100.9357198	100.7885601	100.2227585	99.66329943	99.11007678	98.56298658
191108A00011	11/8/2019	2.08	10/18/2024	11/8/2019	108.18086	108.1808589	108.1808589	108.1808589	105.0138671	100.5719609	96.34367673	92.31762924	88.48310016
191115A00011	11/15/2019	1.89	11/16/2020	11/15/2019	101.04324	101.0432385	101.0432385	101.0432385	100.8680552	100.2337587	99.60742514	98.98890513	98.37805302
191115A00014	11/18/2019	2.45	11/18/2024	11/18/2019	110.06013	110.0601277	110.0601277	110.0601277	106.7634541	102.2025166	97.86368982	93.7349716	89.8050742
191115A00016	11/18/2019	2.48	11/18/2024	11/18/2019	110.20022	110.200217	110.200217	110.200217	106.9018092	102.337698	97.99580923	93.8641356	89.93138482
191119A00027	11/19/2019	1.8	11/19/2024	11/19/2019	107.89023	107.890233	107.890233	107.890233	104.5947601	100.0552984	95.73838707	91.63194404	87.72460948
191120A00027	11/20/2019	1.73	11/20/2020	11/20/2019	101.04724	101.047236	101.047236	101.047236	100.8671614	100.2208259	99.58275713	98.95279698	98.33079155
191120A00032	11/20/2019	1.73	5/20/2021	11/20/2019	101.85624	101.8562428	101.8562428	101.8562428	101.4355238	100.2960638	99.18208092	98.09272835	97.02719633
191121A00034	11/21/2019	2.28	11/2/2029	11/21/2019	118.92738	118.927382	118.927382	114.7418407	105.2269778	96.4873439	88.55526222	81.35165634	74.80557424
191122A00021	11/26/2019	3.4	11/22/2038	11/26/2019	156.86903	156.8690262	149.2295265	129.6247499	111.9631739	97.04389136	84.50227479	73.93558259	65.01180148
191125A00036	11/25/2019	2.29	11/23/2029	11/25/2019	119.13532	119.1353243	119.1353243	114.8541102	105.2817529	96.49436142	88.52305699	81.28752654	74.71575032
191206A00009	12/6/2019	2.87	12/4/2037	12/6/2019	144.75231	144.7523065	138.569975	120.5412497	104.2778512	90.47290611	78.80326394	68.92024125	60.53405735
191210A00010	12/10/2019	1.91	12/10/2020	12/10/2019	101.16603	101.16603	101.16603	101.16603	100.9627022	100.2626973	99.57237685	98.89154068	98.21999427
191217A00012	12/20/2019	2.03	12/20/2024	12/20/2019	108.20225	108.2022492	108.2022492	108.2022492	104.8171795	100.2218101	95.8543591	91.70229748	87.75385587
191223A00022	12/23/2019	1.93	12/30/2021	12/23/2019	102.91116	102.9111581	102.9111581	102.9111581	102.225727	100.4945176	98.80076198	97.14331009	95.52105958
200115A00017	1/15/2020	1.88	1/17/2023	1/15/2020	104.47884	104.4788358	104.4788358	104.4788358	103.1117205	100.3572837	97.69022751	95.10727561	92.60529585
200122A00035	1/22/2020	1.94	1/22/2025	1/22/2020	107.97191	107.9719143	107.9719143	107.9719143	104.4691079	99.79882821	95.36421756	91.1521887	87.15044804
200124A00008	1/24/2020	1.92	1/22/2027	1/24/2020	112.39928	112.3992783	112.3992783	111.728617	104.8598564	98.35385032	92.29496452	86.65021583	81.38921314
200127A00016	1/27/2020	1.81	1/27/2025	1/27/2020	107.31292	107.3129229	107.3129229	107.3129229	103.8019501	99.13676155	94.70776844	90.50183676	86.50662792

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200130A00015	1/30/2020	1.63	7/30/2021	1/30/2020	102.0388	102.0387978	102.0387978	102.0387978	101.5325205	100.2101442	98.91146147	97.63588396	96.38284247
200130A00025	1/30/2020	1.54	1/30/2023	1/30/2020	104.08004	104.0800434	104.0800434	104.0800434	102.6797688	99.88647327	97.18306666	94.56618897	92.03262416
200131A00047	1/31/2020	1.68	1/31/2023	1/31/2020	103.96709	103.9670901	103.9670901	103.9670901	102.5717716	99.78906618	97.09575691	94.48851159	91.96414014
200203A00012	2/3/2020	1.57	2/3/2025	2/3/2020	107.11593	107.1159261	107.1159261	107.1159261	103.5555435	98.84927649	94.38305947	90.14347114	86.11790586
200204A00016	2/4/2020	1.72	2/6/2023	2/4/2020	104.1048	104.1048024	104.1048024	104.1048024	102.6948246	99.89335141	97.18237002	94.55848875	92.01846145
200207A00018	2/7/2020	2.14	2/7/2030	2/7/2020	118.06495	118.0649487	118.0649487	113.4339786	103.7331346	94.85889892	86.82626612	79.55086116	72.95716293
200211A00022	2/11/2020	1.73	2/10/2023	2/11/2020	104.14913	104.1491326	104.1491326	104.1491326	102.7296597	99.91635323	97.19425568	94.55993603	92.01011099
200214A00002	2/14/2020	1.58	11/15/2024	2/14/2020	106.84181	106.8418143	106.8418143	106.8418143	103.5733201	99.06769907	94.78285448	90.70681582	86.82832682
200214A00004	2/14/2020	1.81	2/16/2021	2/14/2020	101.3792	101.3792026	101.3792026	101.3792026	101.0849436	100.2002135	99.33091594	98.47664984	97.63702784
200214A00017	2/14/2020	1.59	2/14/2025	2/14/2020	107.25835	107.2583522	107.2583522	107.2583522	103.6545796	98.91585872	94.42029245	90.15420485	86.10475614
200218A00008	2/18/2020	1.77	2/18/2021	2/18/2020	101.35168	101.3516764	101.3516764	101.3516764	101.0545553	100.1645742	99.29021124	98.43105821	97.58672084
200218A00028	2/18/2020	1.73	2/21/2023	2/18/2020	104.19179	104.1917935	104.1917935	104.1917935	102.746686	99.9019962	97.15047256	94.4885751	91.91291801
200220A00008	2/20/2020	1.74	2/20/2024	2/20/2020	105.66683	105.6668282	105.6668282	105.6668282	103.2718586	99.47853402	95.8448117	92.36317433	89.02649711
200220A00025	2/20/2020	1.72	2/21/2023	2/20/2020	104.16256	104.1625632	104.1625632	104.1625632	102.717632	99.87336705	97.12225782	94.46076471	91.8855022
200224A00018	2/24/2020	1.58	8/19/2024	2/24/2020	105.67725	105.6772461	105.6772461	105.6772461	102.7374696	98.49721058	94.45494333	90.60044258	86.92406203
200225A00003	2/25/2020	1.54	2/27/2023	2/25/2020	103.65655	103.6565479	103.6565479	103.6565479	102.200859	99.3472254	96.58763212	93.91848567	91.33634986
200225A00005	2/25/2020	1.57	2/25/2025	2/25/2020	106.29525	106.2952482	106.2952482	106.2952482	102.6888789	97.97166083	93.49753307	89.25276853	85.22448264
200227A00006	2/27/2020	1.47	2/27/2025	2/27/2020	105.80746	105.807465	105.807465	105.807465	102.2003017	97.48955369	93.02200448	88.7839012	84.76233614
200227A00011	2/27/2020	1.42	2/28/2022	2/27/2020	102.17553	102.1755317	102.1755317	102.1755317	101.4151255	99.52769981	97.68453468	95.88432965	94.12583106
200227A00013	2/27/2020	1.43	2/27/2024	2/27/2020	104.47197	104.4719715	104.4719715	104.4719715	102.0685961	98.27999175	94.6518078	91.17644773	87.84671364
200227A00022	2/27/2020	1.41	2/27/2023	2/27/2020	103.27441	103.2744056	103.2744056	103.2744056	101.8210406	98.97299044	96.21884315	93.55500972	90.97805826
200228A00005	2/28/2020	1.35	2/28/2024	2/28/2020	104.15939	104.1593857	104.1593857	104.1593857	101.7561675	97.97099752	94.34628018	90.87441089	87.54818445
200228A00019	2/28/2020	1.21	2/20/2025	2/28/2020	105.40191	105.4019144	105.4019144	105.4019144	101.8007157	97.09052431	92.62348686	88.38586452	84.36476198
200228A00040	2/28/2020	1.14	2/28/2023	2/28/2020	103.01326	103.0132641	103.0132641	103.0132641	101.5522287	98.69319651	95.92880331	93.25541923	90.66957393
200228A00042	2/28/2020	1.17	2/28/2024	2/28/2020	104.16373	104.1637257	104.1637257	104.1637257	101.7461185	97.94177671	94.29917829	90.81063775	87.46887432
200228A00058	2/28/2020	1.31	2/28/2022	2/28/2020	101.96259	101.9625865	101.9625865	101.9625865	101.2029304	99.31760026	97.4764906	95.67830211	93.92178223
200228A00065	2/28/2020	1.4	2/28/2025	2/28/2020	105.46419	105.464189	105.464189	105.464189	101.8580016	97.15288872	92.69093981	88.45839319	84.44233345
200302A00028	3/2/2020	1.25	2/26/2024	3/2/2020	103.75965	103.7596525	103.7596525	103.7596525	101.3658101	97.59355521	93.98108186	90.52082512	87.20561693
200302A00051	3/2/2020	1.22	8/8/2023	3/2/2020	103.12857	103.1285675	103.1285675	103.1285675	101.2781738	98.02253307	94.88779875	91.86887393	88.96090298
200302A00053	3/2/2020	1.31	3/3/2025	3/2/2020	105.02716	105.0271564	105.0271564	105.0271564	101.4155173	96.71390308	92.25580888	88.02742652	84.01579855
200306A00065	3/6/2020	1.38	3/6/2030	3/6/2020	110.65757	110.6575739	110.6575739	105.9601709	96.50188868	87.90900882	80.14647275	73.12993944	66.7840135
200309A00003	3/9/2020	0.72	3/9/2022	3/9/2020	100.8311	100.8311015	100.8311015	100.8311015	100.0620963	98.16488375	96.31276223	94.50438964	92.73847287
200309A00056	3/9/2020	0.97	3/7/2025	3/9/2020	103.34917	103.3491722	103.3491722	103.3491722	99.74533124	95.07473786	90.64716477	86.44878604	82.46663013

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200310A00022	3/10/2020	1.12	3/10/2027	3/10/2020	107.02223	107.0222278	107.0222278	106.1989272	99.33841392	92.9030427	86.92171017	81.36021367	76.18708627
200326A00029	3/26/2020	1.82	3/26/2027	3/26/2020	110.61384	110.6138445	110.6138445	109.7470597	102.8239327	96.28710911	90.20980204	84.55739405	79.29804107
120702A00016	7/2/2012	2.42	7/6/2027	7/3/2013	100.19163	100.1916292	100.1916292	100.1916292	100.1865491	99.96745609	97.98768808	94.96630637	91.8189048
130823A00025	8/23/2013	3.43	8/23/2023	8/24/2020	101.39331	101.393311	101.393311	101.393311	101.3041079	100.8818239	100.3499047	98.98689301	96.67470755
140723A00038	7/23/2014	2.3	7/23/2024	7/23/2019	100.18163	100.1816302	100.1816302	100.1816302	100.1765506	100.0932433	99.09346727	97.250115	95.26680179
150319A00020	3/19/2015	2.98	3/19/2030	3/19/2020	100.22244	100.2224384	100.2224384	100.2224384	100.2173665	100.0336554	97.72639877	93.8852804	89.84326836
150421A00009	4/21/2015	2.17	4/21/2025	4/21/2020	100.15496	100.1549559	100.1549559	100.1549559	100.1498873	99.8569218	98.1663644	95.92871079	93.64553675
150423A00020	4/23/2015	2.97	4/23/2030	4/23/2020	100.22161	100.2216053	100.2216053	100.2216053	100.2165334	100.017903	97.64483103	93.76392582	89.69485587
150501A00019	5/1/2015	3.69	5/1/2035	5/1/2020	103.82947	103.8294736	103.8294736	103.8294736	103.3621209	101.3966032	97.40744683	91.89190745	86.19458242
150526A00018	5/28/2015	2.27	5/28/2025	5/28/2020	100.53536	100.5353646	100.5353646	100.5353646	100.5042019	100.1264561	98.71546167	96.52407377	94.20308839
160311A00019	3/11/2016	3.02	3/11/2031	3/11/2021	102.65018	102.6501814	102.6501814	102.6501814	102.2662973	100.5493604	97.32758158	93.10833678	88.75123467
161006A00023	10/6/2016	2.49	10/6/2031	10/6/2021	103.76826	103.7682615	103.7682615	103.7682615	102.8018192	99.64078674	95.40157751	90.76589183	86.23806554
161011A00037	10/11/2016	2.17	10/13/2026	10/11/2019	100.17071	100.1707061	100.1707061	100.1707061	100.1655807	99.89939257	97.70347788	94.82886949	91.94335886
170519A00006	5/19/2017	3	5/19/2032	5/19/2022	105.86495	105.8649536	105.8649536	105.8649535	104.7478971	101.5770072	97.42054282	92.70122948	87.95479371
171214A00010	12/14/2017	2.57	12/14/2022	12/14/2020	101.73256	101.7325563	101.7325563	101.7325563	101.4985708	100.6441241	99.2948949	97.32030323	95.17020027
190116A00015	1/16/2019	3.61	1/17/2034	1/16/2024	111.38504	111.3850398	111.3850398	111.3848415	108.7263121	104.0666422	98.89865274	93.50752308	88.22975686
190329A00023	3/29/2019	3	3/29/2034	3/29/2024	110.48015	110.4801474	110.4801474	110.4752807	107.1389787	101.9172045	96.36254037	90.80805611	85.51816347
190329A00025	3/29/2019	3	3/29/2034	3/29/2024	110.48013	110.4801313	110.4801313	110.4752647	107.138976	101.9172188	96.36257391	90.8081088	85.51823377
190329A00026	3/29/2019	3	3/29/2034	3/29/2024	110.48015	110.4801474	110.4801474	110.4752807	107.1389813	101.9172102	96.3625495	90.80806862	85.51817896
190530A00044	5/30/2019	2.85	5/30/2034	5/30/2024	110.11773	110.1177331	110.1177331	110.1046693	106.4696278	101.0411476	95.35460002	89.74425918	84.44537571
190807A00044	8/7/2019	2.27	8/7/2034	8/7/2024	108.48646	108.4864649	108.4864649	108.3254103	103.5451727	97.56151294	91.63572164	86.01704231	80.81924716
191007A00012	10/7/2019	2	10/5/2029	10/7/2024	106.11169	106.1116861	106.1116861	106.1045449	102.8458816	98.49210449	94.23828143	90.16812493	86.32247387
191031A00037	10/31/2019	2.59	10/30/2034	10/31/2024	109.43696	109.4369552	109.4369552	109.2518863	104.3762085	98.35031827	92.38244364	86.71475936	81.46549228
200108A00040	1/8/2020	2.52	1/8/2030	1/8/2025	109.75218	109.7521767	109.7521767	109.668792	104.781767	98.70635534	92.6353189	86.79148156	81.31339315
111215A00019	12/15/2011	2.53	12/15/2026	12/15/2021	103.79056	103.790556	103.790556	103.790556	103.1342659	101.1814428	98.71599391	95.8729273	92.93824698
120924A00030	9/24/2012	2.2	9/24/2027	9/25/2017	100.1733	100.1732977	100.1732977	100.1732977	100.1682186	99.71032532	97.22865999	94.0533342	90.84821449
130416A00025	4/16/2013	2.27	4/18/2028	4/16/2018	100.17913	100.1791304	100.1791304	100.1791304	100.174051	99.69574999	97.05642163	93.6717803	90.25988405
140328A00011	3/28/2014	3.32	3/30/2026	3/29/2021	103.1597	103.1597036	103.1597036	103.1597036	102.8107324	101.7065725	99.90447335	96.87438611	93.10645838
140416A00025	4/14/2014	3.56	4/16/2029	4/14/2021	103.66913	103.6691254	103.6691254	103.6691254	103.2777187	101.9727279	99.58830768	95.64565518	90.94668271
141119A00005	11/19/2014	2.53	11/19/2024	11/19/2019	100.18578	100.1857817	100.1857817	100.1857817	100.1807111	100.0975491	99.0754088	97.12762229	95.01724352
141224A00038	12/24/2014	2.93	12/24/2024	12/24/2019	100.21911	100.2191067	100.2191067	100.2191067	100.2140344	100.1308448	99.14340744	96.53969277	93.49148679
150218A00012	2/18/2015	2.28	2/18/2025	2/18/2020	100.17996	100.1799637	100.1799637	100.1799637	100.1748842	100.0590219	98.83954487	96.75253023	94.53188583
150406A00016	4/6/2015	2.78	4/7/2025	4/6/2020	100.20511	100.2051058	100.2051058	100.2051058	100.1999034	100.1145801	98.52073199	95.16465217	91.58037459

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
151005A00020	10/5/2015	2.27	10/6/2025	10/5/2020	101.26484	101.2648378	101.2648378	101.2648378	101.0727007	100.0384747	98.12596158	95.70901822	93.23064553
160105A00024	1/5/2016	3.78	1/4/2036	1/5/2021	103.27375	103.2737522	103.2737522	103.2737522	102.9738313	101.4375789	97.89134597	92.56499733	86.85274837
160825A00032	8/25/2016	3.14	8/25/2036	8/25/2021	103.94124	103.9412426	103.9412426	103.9412426	103.0127001	99.38947669	93.96022336	87.94172521	82.16752647
161012A00009	10/12/2016	2.56	10/14/2031	10/12/2021	103.88043	103.880432	103.880432	103.880432	102.9582772	99.89763728	95.73037754	91.11140643	86.57508019
161118A00013	11/18/2016	2.96	11/18/2026	11/18/2021	104.70678	104.7067839	104.7067839	104.7067839	103.9813953	101.6275498	98.15556995	93.75726766	89.06195983
170809A00042	8/9/2017	2.35	8/9/2027	8/9/2022	104.66367	104.6636731	104.6636731	104.6636731	103.5825208	100.9094573	97.87322392	94.66113663	91.47210965
181212A00026	12/12/2018	3.22	12/12/2028	12/12/2023	109.7141	109.7141047	109.7141047	109.7141046	107.7201103	104.1906211	100.5047444	96.73311534	93.00202228
190111A00040	1/11/2019	3.74	1/11/2034	1/11/2024	113.21865	113.2186519	113.2186519	113.2166947	110.0940752	104.5324852	98.10931865	91.32056011	84.72260954
190930A00079	9/30/2019	2.04	10/1/2029	9/30/2024	106.94211	106.9421084	106.9421084	106.9397753	103.8185308	99.50435158	95.25763088	91.17159646	87.29919885
100707A00014	7/7/2010	3.19	7/7/2025	7/7/2015	100.25579	100.2557894	100.2557894	100.2557894	100.2507061	100.1673371	99.98682889	98.5407282	96.29881076
141010A00012	10/10/2014	2.44	10/10/2024	10/10/2019	100.17828	100.1782836	100.1782836	100.1782836	100.1732134	100.0692162	98.94909958	96.99745587	94.91744651
150115A00030	1/15/2015	1.98	1/15/2025	1/15/2020	100.15497	100.1549662	100.1549662	100.1549662	100.149888	99.88045888	98.27813118	96.13453046	93.94376114
150202A00006	2/2/2015	1.92	2/3/2025	2/3/2020	100.14997	100.1499667	100.1499667	100.1499667	100.1448887	99.82537148	98.10824414	95.91799644	93.69470725
150327A00011	3/27/2015	2.88	3/27/2030	3/27/2020	102.79635	102.7963504	102.7963504	102.7963504	102.4083252	100.786421	97.61631951	93.32153401	88.87479125
150430A00047	4/30/2015	2.89	5/6/2030	4/30/2020	100.69534	100.6953368	100.6953368	100.6953368	100.6638016	100.2348492	97.98852425	94.16787411	90.08327412
150526A00019	5/28/2015	2.27	5/28/2025	5/28/2020	100.53536	100.5353646	100.5353646	100.5353646	100.5042019	100.1264561	98.71546217	96.52407469	94.2030897
150817A00038	8/17/2015	4.01	8/31/2040	8/17/2020	101.64598	101.6459787	101.6459787	101.6459787	101.5554088	100.7694146	96.88572914	90.06467946	82.90693882
151124A00024	11/24/2015	2.6	11/24/2025	11/24/2020	101.55031	101.5503054	101.5503054	101.5503054	101.3527239	100.445928	98.57695912	95.92008683	93.13605103
151224A00017	12/24/2015	3.06	12/24/2030	12/24/2020	102.18684	102.186842	102.186842	102.186842	101.957003	100.8440944	98.26896209	94.31602744	90.02629241
161012A00020	10/11/2016	2.96	10/14/2031	10/11/2023	109.84704	109.8470394	109.8470394	109.84127	106.2812813	100.2742806	93.58377226	86.78900549	80.32693225
180627A00005	6/27/2018	3.63	6/30/2033	6/30/2023	110.66946	110.6694575	110.6694575	110.6694538	108.6963794	104.7331494	100.1216499	95.06151304	89.94016268
191028A00015	10/28/2019	2.49	10/27/2034	10/28/2024	109.5411	109.541101	109.541101	109.4190814	104.762918	98.79409211	92.81837827	87.1081647	81.80662589
191031A00036	10/31/2019	2.9	10/31/2039	10/31/2024	111.26937	111.2693726	111.2693725	110.7573674	104.5578903	97.09874316	89.71327983	82.80504666	76.54807069
200108A00009	1/8/2020	2.4	1/8/2035	1/8/2025	109.83297	109.8329651	109.8329651	109.5412539	104.1699994	97.6222322	91.17960467	85.11732239	79.54752471
200316A00032	3/16/2020	1.35	3/15/2030	3/16/2025	104.76683	104.7668323	104.7668323	104.6444349	100.7235984	96.10451176	91.69349139	87.53219596	83.63019913
111005A00009	10/5/2011	2.72	10/5/2026	10/5/2016	100.21663	100.2166267	100.2166267	100.2166267	100.2115454	100.1282089	99.08497966	96.57182152	93.72569156
130409A00013	4/9/2013	1.76	4/11/2023	4/9/2018	100.12163	100.1216311	100.1216311	100.1216311	100.1165637	99.77710119	98.52741775	97.07022974	95.61365
130614A00011	6/14/2013	2.95	6/14/2028	6/14/2018	100.23579	100.2357914	100.2357914	100.2357914	100.2307091	100.1473568	98.97961464	95.96655592	92.52172014
140714A00012	7/14/2014	3.04	7/16/2029	7/15/2019	100.24329	100.2432907	100.2432907	100.2432907	100.238208	100.1548494	98.79779539	95.43019697	91.61415916
150116A00005	1/16/2015	1.92	1/16/2025	1/16/2020	100.14997	100.1499667	100.1499667	100.1499667	100.1448887	99.82693206	98.15300955	95.99646544	93.8059909
160627A00034	6/27/2016	1.7	6/26/2026	6/28/2021	101.82365	101.82365	101.82365	101.82365	101.2636385	99.26239173	96.67678685	93.90230201	91.17240294
160711A00011	7/11/2016	1.66	7/13/2026	7/11/2021	101.99325	101.9932548	101.9932548	101.9932548	101.3338467	99.16710324	96.49903635	93.68543558	90.92725966
171012A00039	10/12/2017	3.73	10/12/2032	10/13/2020	102.44509	102.4450934	102.4450934	102.4450934	102.2428923	101.0091916	96.90346309	90.28286226	83.32156534

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180105A00006	1/5/2018	3.07	1/5/2028	1/5/2023	107.12361	107.1236124	107.1236124	107.1236124	105.8822284	103.1285496	100.0805749	96.78999833	93.43590037
190827A00044	8/27/2019	1.9	8/27/2029	8/27/2024	106.32677	106.3267669	106.3267669	106.3242375	103.2154285	98.93052563	94.72282794	90.68269601	86.85773615
190930A00083	9/30/2019	2.04	10/1/2029	9/30/2024	106.94211	106.9421084	106.9421084	106.9397753	103.8185305	99.50435085	95.25762981	91.17159509	87.29919722
200309A00013	3/9/2020	1.1	3/8/2030	3/9/2025	103.05357	103.0535655	103.0535655	102.779031	98.71070494	94.12074578	89.78546183	85.71844567	81.91260901
200316A00030	3/16/2020	1.35	3/15/2030	3/16/2025	104.76683	104.766832	104.766832	104.6444348	100.7235999	96.10451436	91.69349507	87.53220062	83.63020466
120330A00019	3/30/2012	2.71	3/30/2027	3/30/2017	100.21579	100.2157934	100.2157934	100.2157934	100.2107121	100.1273764	98.90044184	96.19822762	93.19011357
120606A00015	6/6/2012	2.36	6/7/2027	6/6/2017	100.18663	100.1866297	100.1866297	100.1866297	100.1815499	99.92567383	97.86614548	94.85105429	91.7338139
121121A00026	11/21/2012	1.63	11/21/2022	11/21/2017	100.1108	100.1108005	100.1108005	100.1108005	100.1057336	99.73196772	98.58700637	97.30436376	96.02908954
130322A00001	3/22/2013	2.06	3/22/2023	3/22/2018	100.16163	100.1616322	100.1616322	100.1616322	100.1565536	99.96917675	98.56612091	96.46283811	94.25987359
150409A00033	4/9/2015	2.03	4/9/2025	4/9/2020	100.15913	100.1591324	100.1591324	100.1591324	100.154054	99.89334116	98.25458961	96.02097915	93.73075465
160128A00029	1/29/2016	3.45	1/29/2036	1/29/2021	103.16755	103.1675505	103.1675505	103.1675505	102.8424063	101.0633574	97.10596525	91.56959269	85.81882384
170411A00031	4/11/2017	3.39	4/12/2032	4/11/2022	106.27156	106.2715627	106.2715627	106.2715627	105.2477524	102.3303559	98.44649929	93.8807607	89.181803
180315A00030	3/15/2018	3.76	3/15/2033	3/17/2025	117.33001	117.33001	117.33001	117.2690514	112.273167	105.4373794	98.15331894	90.82113216	83.83139538
180703A00033	7/3/2018	3.4	7/3/2028	7/3/2023	108.58653	108.5865315	108.5865315	108.5865315	106.9985716	103.875496	100.5288347	97.00988532	93.46797803
190409A00016	4/9/2019	2.91	4/9/2029	4/9/2024	110.15522	110.1552182	110.1552182	110.1551101	107.2333675	102.5270331	97.54679463	92.51003051	87.62905004
190409A00017	4/9/2019	3.01	4/9/2029	4/9/2024	110.981	110.9810011	110.9810011	110.9808021	107.8341411	102.7746367	97.34731828	91.80921706	86.42465761
190520A00018	5/20/2019	3.7	5/20/2044	5/20/2024	113.43084	113.4308369	113.4308369	113.3088751	108.2155729	100.5701692	92.29338127	84.23840697	76.90966572
100517A00013	5/17/2010	3.71	5/19/2025	5/18/2015	100.29912	100.2991184	100.2991184	100.2991184	100.2940329	100.2106279	100.1273606	99.55005557	97.6575466
140508A00011	5/8/2014	2.32	5/8/2024	5/8/2019	100.1833	100.1832967	100.1832967	100.1832967	100.178217	100.0949084	99.18243165	97.4161224	95.50272826
150108A00029	1/8/2015	3.16	1/9/2035	1/10/2022	105.49597	105.4959708	105.4959708	105.4959708	104.4414254	100.8812508	95.7029752	89.79430298	84.01204393
150319A00006	3/19/2015	2.28	3/19/2025	3/19/2020	100.16495	100.1649536	100.1649536	100.1649536	100.159884	99.9563365	98.46032675	96.28887706	94.03849366
150409A00013	4/9/2015	2.2	4/9/2025	4/9/2020	100.15746	100.1574552	100.1574552	100.1574552	100.1523865	99.88301789	98.23180007	96.00195196	93.71908567
150420A00051	4/20/2015	2.66	9/20/2030	4/20/2020	100.21163	100.2116272	100.2116272	100.2116272	100.2065461	99.82892777	96.89244678	92.75070746	88.5321986
150526A00044	5/26/2015	3.19	5/28/2030	5/26/2020	100.72341	100.7234059	100.7234059	100.7234059	100.6919246	100.3303974	98.36013492	94.63314543	90.54916015
150709A00019	7/9/2015	2.36	7/9/2025	7/9/2020	100.74267	100.7426745	100.7426745	100.7426745	100.687118	100.2271052	98.83066941	96.60856811	94.22538215
151209A00031	12/9/2015	3.18	12/9/2030	12/9/2020	102.13619	102.1361944	102.1361944	102.1361944	101.9048979	100.7420536	98.06299944	94.07633186	89.80219287
160209A00028	2/9/2016	2.04	2/9/2026	2/9/2021	101.62705	101.6270508	101.6270508	101.6270508	101.2416362	99.65847435	97.35597321	94.75032806	92.14812492
170705A00037	7/5/2017	2.85	7/6/2032	7/6/2027	115.03221	115.0322065	115.0322065	114.1142222	108.5984175	102.711967	97.129699	91.88530946	86.99740815
171004A00022	10/4/2017	2.74	10/4/2027	10/4/2022	106.27885	106.2788522	106.2788522	106.2788522	104.892969	101.5634559	97.60630347	93.30227708	88.99276561
180105A00005	1/5/2018	3.07	1/5/2028	1/5/2023	107.12361	107.1236132	107.1236132	107.1236132	105.8822288	103.1285491	100.0805729	96.78999438	93.43589427
180130A00087	1/30/2018	2.92	1/31/2028	1/30/2023	106.75555	106.755553	106.755553	106.755553	105.4938102	102.6910953	99.58474224	96.26233741	92.9041613
180302A00003	3/2/2018	3.89	3/2/2033	3/2/2023	110.98382	110.9838191	110.9838191	110.9837986	109.0387678	104.630029	98.9852016	92.48710839	85.86054589
190204A00054	2/4/2019	3.98	2/6/2034	2/2/2024	113.77343	113.7734283	113.7734283	113.7692576	110.4281729	104.6379213	97.95829467	90.8949028	84.02026944

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190807A00041	8/7/2019	2.27	8/7/2034	7/7/2024	108.22161	108.2216079	108.2216079	108.0973435	103.4694103	97.53751738	91.6301471	86.01616844	80.81915651
191007A00013	10/7/2019	2	10/5/2029	10/7/2024	106.11168	106.1116847	106.1116847	106.1045436	102.8458839	98.49210991	94.23828996	90.16813635	86.32248788
200115A00025	1/15/2020	2.1	1/15/2025	1/15/2023	104.637	104.6370047	104.6370047	104.6370047	103.1793796	100.0545259	96.73360985	93.36126418	90.0621363
200306A00021	3/6/2020	1.16	3/6/2030	3/6/2025	103.28628	103.2862841	103.2862841	103.0388079	98.99036567	94.398059	90.05436932	85.97651925	82.1596466
200326A00035	3/26/2020	1.68	3/26/2030	3/26/2025	105.31533	105.3153296	105.3153296	105.226663	101.3959137	96.80143309	92.39529228	88.22855946	84.31664194
130104A00013	1/4/2013	1.79	1/4/2023	1/4/2018	100.12413	100.1241305	100.1241305	100.1241305	100.119063	99.84396968	98.7075798	97.36134877	96.01286277
130416A00010	4/17/2013	2.39	12/29/2028	1/31/2019	100.18913	100.1891294	100.1891294	100.1891294	100.1840495	99.73958824	97.01840296	93.41665849	89.77324724
130521A00009	5/21/2013	2.55	5/22/2028	5/21/2018	100.20246	100.2024614	100.2024614	100.2024614	100.1973808	99.99086732	97.89986072	94.60497339	91.15982156
140617A00012	6/17/2014	3.14	6/18/2029	6/17/2019	100.25162	100.2516232	100.2516232	100.2516232	100.2465401	100.1631746	99.09636283	95.88470279	92.11501864
140822A00012	8/22/2014	3.7	8/22/2034	8/23/2021	104.69977	104.6997749	104.6997749	104.6997749	104.1186985	102.0168132	98.36523072	93.37211479	88.03103594
150204A00008	2/6/2015	2.21	2/6/2025	2/6/2020	100.15829	100.1582883	100.1582883	100.1582883	100.1532196	99.90805362	98.33791328	96.17882136	93.9620024
150223A00011	2/23/2015	3.54	2/22/2030	2/23/2022	105.76774	105.7677405	105.7677405	105.7677405	105.0182633	102.8516738	99.9617443	96.31908004	92.34278091
150325A00018	3/25/2015	2.02	3/25/2025	3/25/2020	100.1583	100.1582992	100.1582992	100.1582992	100.1532208	99.89411149	98.27522455	96.07259787	93.81494941
150709A00018	7/9/2015	2.36	7/9/2025	7/6/2020	100.74267	100.7426747	100.7426747	100.7426747	100.6871182	100.2271053	98.83066917	96.60856745	94.2253811
170515A00052	5/15/2017	3.78	5/15/2042	5/15/2024	115.57982	115.5798177	115.5798177	115.5059774	110.7431989	103.6984791	96.00268595	88.2992012	81.10352941
170802A00074	8/2/2017	2.92	8/2/2027	8/2/2022	105.93556	105.9355616	105.9355616	105.9355616	104.6835971	101.4883506	97.59330738	93.29420184	88.97479753
171016A00037	10/16/2017	3.39	10/18/2032	10/16/2022	108.24013	108.2401268	108.2401268	108.2401077	106.4206852	101.8687372	95.96481448	89.39831102	82.92554861
180212A00090	2/12/2018	2.92	2/13/2023	2/12/2021	104.77289	104.7728902	104.7728902	104.7728902	104.037902	102.1404934	100.114575	97.91306891	95.62663471
180504A00024	5/4/2018	3.62	5/4/2028	5/4/2023	110.63061	110.630607	110.630607	110.630607	108.7844551	104.9700757	100.4674745	95.35852365	90.03006066
180712A00016	7/12/2018	3.66	7/12/2033	7/12/2028	124.54979	124.5497898	124.5497898	122.3320375	114.6342662	106.7949293	99.36628878	92.43463328	86.05988349
190301A00015	3/1/2019	3.86	3/1/2034	3/2/2026	120.15028	120.150283	120.150283	119.6399685	112.6624811	104.7429929	96.68481762	88.85685057	81.5628082
190430A00020	4/30/2019	3.41	4/28/2034	4/28/2026	121.47073	121.4707349	121.4707348	119.6615978	111.2528014	102.438233	93.87955961	85.85945792	78.54875051
200110A00012	1/10/2020	2.57	1/10/2035	1/10/2025	109.52121	109.5212082	109.5212082	109.2812059	104.2122385	98.0658983	92.00852982	86.27634087	80.98018847
200318A00015	3/18/2020	1.69	3/18/2030	3/18/2023	104.21437	104.2143671	104.2143671	104.2143129	101.6706568	97.30144586	92.81320731	88.46310458	84.3573314
090429A00044	4/29/2009	4.1	4/29/2024	4/29/2014	100.31658	100.3165823	100.3165823	100.3165823	100.3115051	100.2282345	100.1450999	99.94012045	98.67674556
120328A00005	3/28/2012	3.18	3/30/2027	3/28/2017	100.2391	100.2391008	100.2391008	100.2391008	100.234028	100.15083	99.50630682	97.08563207	94.13337131
140529A00026	5/29/2014	2.36	5/29/2024	5/29/2019	100.17162	100.1716186	100.1716186	100.1716186	100.1665487	100.05268	98.96913362	97.15792027	95.24484337
141110A00008	11/10/2014	2.31	11/12/2024	11/12/2019	100.18246	100.1824634	100.1824634	100.1824634	100.1773838	100.0853919	98.99158731	97.01760139	94.89920218
150218A00011	2/18/2015	2.28	2/18/2025	2/18/2020	100.17996	100.1799637	100.1799637	100.1799637	100.1748842	100.0590219	98.83954455	96.75252961	94.5318849
150406A00008	4/6/2015	2.95	4/8/2030	4/6/2020	100.21923	100.2192279	100.2192279	100.2192279	100.2140167	100.12855	97.42351649	93.29727041	89.14883314
150417A00033	4/17/2015	1.78	4/18/2022	4/17/2020	100.1383	100.1383012	100.1383012	100.1383012	100.1332238	99.92443992	98.78286688	97.27517905	95.7384996
150715A00020	7/15/2015	3.45	7/15/2030	7/15/2020	101.0543	101.0543006	101.0543006	101.0543006	100.9979613	100.6079227	99.07455308	95.59799867	91.5006422
150721A00044	7/23/2015	2.68	7/23/2025	7/23/2020	100.78666	100.7866626	100.7866626	100.7866626	100.7312732	100.3239965	99.09792343	96.95470479	94.58686484

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150901A00019	9/1/2015	3.26	9/3/2030	9/1/2020	101.47566	101.4756595	101.4756595	101.4756595	101.3540077	100.6425851	98.44595453	94.65038704	90.46501362
151027A00015	10/27/2015	2.89	10/28/2030	10/27/2020	101.83328	101.8332756	101.8332756	101.8332756	101.6376385	100.5050165	97.73037478	93.70490336	89.45854806
151223A00007	12/23/2015	3.76	12/23/2030	12/23/2022	109.49796	109.4979588	109.4979588	109.4979562	107.7852486	103.7007772	98.46984924	92.43213129	86.22977111
160506A00054	5/10/2016	3.31	5/12/2036	5/10/2021	103.40613	103.4061284	103.4061284	103.4061284	102.803802	99.85689316	94.63326327	88.549893	82.68831902
160506A00056	5/10/2016	3.77	5/10/2041	5/10/2021	103.97944	103.9794362	103.9794362	103.9794362	103.3782577	100.2294761	94.14619097	86.86759754	79.90481087
170113A00025	1/13/2017	3.59	1/13/2032	1/13/2022	106.07103	106.0710303	106.0710303	106.0710303	105.3368246	103.1419683	100.0141756	95.88404796	91.30547939
170721A00021	7/21/2017	2.95	7/21/2032	7/21/2022	106.37799	106.377994	106.377994	106.3779938	105.013067	101.4982821	97.10962064	92.27869561	87.48216512
171005A00047	10/5/2017	3.29	10/5/2032	10/5/2022	107.85483	107.8548336	107.8548336	107.8548267	106.1514956	101.9176419	96.5153871	90.53518544	84.63083334
190222A00023	2/22/2019	3.66	2/22/2034	2/22/2026	122.39809	122.3980888	122.3980888	121.4358748	113.503001	104.729787	96.02952272	87.77551409	80.20282852
190530A00037	5/30/2019	2.85	5/30/2034	5/30/2024	110.11772	110.117725	110.117725	110.1046611	106.4696264	101.0411548	95.35461709	89.74428621	84.44541205
191220A00029	12/20/2019	2.57	12/19/2031	12/20/2024	108.92183	108.9218301	108.9218301	108.8922095	105.0630124	100.0131233	94.98727747	90.14519746	85.5834976
200102A00020	1/2/2020	2.78	1/3/2040	1/2/2025	111.80249	111.8024944	111.8024943	111.2615876	104.942075	97.36100498	89.84817539	82.81838179	76.45526273
200115A00023	1/15/2020	2.16	1/15/2030	1/15/2025	107.00949	107.0094851	107.0094851	106.9954074	103.5646097	99.08901232	94.72082391	90.54188208	86.59496109
170224A00012	2/24/2017	2.92	2/25/2030	2/24/2017	113.74879	113.7487867	113.7487867	112.8116933	108.1045062	103.0232149	98.28249824	93.85552754	89.71782299
170303A00004	3/3/2017	2.8	3/4/2024	3/3/2017	109.42613	109.4261311	109.4261311	109.4261311	107.1053523	103.3889045	99.82687361	96.41199795	93.13739635
170524A00037	5/24/2017	2.46	5/24/2024	5/24/2017	108.16115	108.1611487	108.1611487	108.1611487	105.7879913	102.0925375	98.55530689	95.16856679	91.9250088
170619A00101	6/16/2017	2.74	6/16/2027	6/16/2017	114.57593	114.5759276	114.5759276	113.8186668	108.0915314	102.3163967	96.92670573	91.89389102	87.19167446
170804A00005	8/4/2017	1.94	8/5/2024	8/4/2017	104.20598	104.2059795	104.2059795	104.2059795	103.0103215	100.7491758	98.56454635	96.45320136	94.41206937
171207A00026	12/7/2017	2.93	12/7/2027	12/7/2017	118.28944	118.28944	118.28944	116.9017776	109.9815111	103.2633497	97.03497085	91.25741606	85.89504284
171219A00067	12/19/2017	2.72	12/20/2027	12/19/2017	116.64421	116.6442116	116.6442116	115.475233	109.271237	103.0880463	97.34238151	91.9999357	87.02930177
180202A00027	2/2/2018	3.02	2/3/2025	2/2/2018	112.49125	112.4912495	112.4912495	112.4912495	109.1369914	104.588361	100.2647828	96.15387699	92.24400812
180223A00012	2/23/2018	3.33	2/24/2031	2/23/2018	117.67867	117.6786735	117.6786735	116.1856345	110.7430842	105.0570724	99.78532048	94.89249625	90.34660377
180322A00044	3/22/2018	3.18	3/22/2033	3/22/2018	121.58634	121.5863355	121.5863355	118.4627771	111.6621124	104.9058834	98.724564	93.06126706	87.86529808
180517A00024	5/17/2018	3.46	5/17/2033	5/17/2018	124.01262	124.0126176	124.0126176	120.6770857	113.6536207	106.6981169	100.341018	94.52248067	89.18924285
180605A00031	6/5/2018	3.37	6/5/2030	6/5/2018	116.78966	116.7896632	116.7896632	115.6697895	110.6446762	105.2837442	100.2925261	95.64109829	91.30222547
180628A00068	6/28/2018	3.12	6/28/2028	6/28/2018	118.21263	118.212629	118.212629	117.0016271	111.1985112	105.2596749	99.74038441	94.60713434	89.82932767
180809A00031	8/9/2018	2.98	8/9/2021	8/9/2018	103.63364	103.6336415	103.6336415	103.6336415	103.1253588	101.7943232	100.4871388	99.20321646	97.94198621
181105A00015	11/5/2018	3.57	11/5/2025	11/5/2018	117.29842	117.2984238	117.2984238	117.2984238	112.7303304	107.4333927	102.4322022	97.70849182	93.24522263
181115A00044	11/15/2018	3.26	11/15/2023	11/15/2018	110.02227	110.0222719	110.0222719	110.0222719	108.0359037	104.6445949	101.3836857	98.24737465	95.23015438
190104A00006	1/4/2019	2.83	1/5/2026	1/4/2019	107.7313	107.731302	107.731302	107.731302	105.7599172	102.7417191	99.85170341	97.08325757	94.43016035
190207A00003	2/7/2019	2.68	2/7/2024	2/7/2019	108.8389	108.838896	108.838896	108.838896	106.772444	103.3577422	100.0796328	96.93185691	93.90847669
190212A00029	2/12/2019	2.6	2/12/2024	2/12/2019	105.10779	105.1077851	105.1077851	105.1077851	104.1092963	102.0723878	100.0981394	98.18410768	96.32796305
190315A00017	3/15/2019	2.88	3/15/2034	3/15/2019	120.91853	120.9185252	120.8898555	116.8938927	109.629382	102.5408226	96.09539513	90.22539361	84.87093635

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190315A00021	3/15/2019	3.11	3/15/2034	3/15/2019	121.15212	121.1521159	121.1238186	117.1632057	109.9331583	102.8692203	96.44359663	90.58930406	85.24707833
190403A00013	4/3/2019	3.05	4/3/2029	4/3/2019	121.33925	121.3392462	121.3392462	118.808807	111.0616944	103.6235076	96.79575397	90.52364887	84.75764549
190403A00015	4/3/2019	3.05	4/3/2029	4/3/2019	121.33926	121.3392557	121.3392557	118.808814	111.0616967	103.6235066	96.79575025	90.52364275	84.75763729
190501A00015	5/1/2019	2.78	5/1/2029	5/1/2019	111.97843	111.9784332	111.9784332	111.3567797	107.1523091	102.4704896	98.08169939	93.96430603	90.09845827
190605A00007	6/5/2019	2.47	6/5/2026	6/5/2019	112.43637	112.4363655	112.4363655	112.4363655	106.957869	101.4123715	96.20527416	91.31390176	86.71722269
190614A00022	6/14/2019	2.62	6/14/2034	6/14/2019	117.59421	117.5942061	117.5415515	113.4891911	106.3540889	99.41157257	93.10606464	87.36972074	82.14262757
170224A00009	2/24/2017	2.39	2/24/2023	2/24/2017	105.83128	105.8312849	105.8312849	105.8312849	104.4550418	101.7174301	99.06821703	96.50405871	94.02175678
170307A00013	3/7/2017	2.33	3/7/2024	3/7/2017	104.25693	104.2569316	104.2569316	104.2569316	103.2372647	101.1825113	99.19185285	97.26276251	95.39283178
170309A00042	3/9/2017	2.18	3/11/2024	3/9/2017	104.32116	104.3211581	104.3211581	104.3211581	103.2972338	101.235037	99.23733835	97.30158851	95.42535793
170406A00020	4/6/2017	1.84	4/6/2020	4/6/2017	100.02483	100.0248252	100.0248252	100.0248252	100.0238119	100.0071871	99.99057826	99.97398544	99.9574086
170406A00033	4/6/2017	3.01	4/6/2027	4/6/2017	116.78446	116.7844612	116.7844612	116.0887937	110.0067981	103.9642273	98.32475841	93.0588027	88.13910788
170406A00037	4/6/2017	3.07	4/6/2032	4/6/2017	117.87051	117.8705073	117.8705073	115.5995453	109.5169361	103.349214	97.6722059	92.440375	87.61284593
170421A00011	4/21/2017	2.83	4/22/2030	4/21/2017	113.48518	113.4851818	113.4851818	112.4748226	107.6843189	102.5442817	97.75377427	93.28488187	89.11216567
170504A00049	5/4/2017	2.63	5/6/2024	5/4/2017	109.14044	109.1404414	109.1404414	109.1404414	106.6579927	102.8067566	99.12139617	95.59381896	92.21637387
170524A00027	5/24/2017	2.32	5/24/2027	5/24/2017	108.29304	108.2930379	108.2930379	108.2127187	105.3302152	101.6607086	98.1775019	94.86928563	91.72552596
170619A00097	6/16/2017	2.74	6/16/2027	6/16/2017	114.57593	114.5759276	114.5759276	113.8186668	108.0915314	102.3163967	96.92670573	91.89389102	87.19167446
171201A00016	12/1/2017	2.91	12/2/2030	12/1/2017	114.87697	114.8769746	114.8769746	113.5146437	108.2928009	102.8104779	97.72222764	92.99487158	88.59832573
180126A00011	1/26/2018	2.72	1/26/2028	1/26/2018	110.77852	110.778515	110.778515	110.5595338	107.1819808	103.1211317	99.28285748	95.65265178	92.21707122
180712A00044	7/12/2018	3.44	7/12/2033	7/12/2018	122.6164	122.6163981	122.6163981	119.2031649	112.2186266	105.3144382	99.00839098	93.24022655	87.95636231
180809A00032	8/9/2018	3.08	8/9/2023	8/9/2018	108.96782	108.967823	108.967823	108.967823	107.1825885	103.9850787	100.9036847	97.93355883	95.0700818
180905A00017	9/5/2018	3.43	9/6/2033	9/5/2018	137.53991	137.5399059	137.5127102	127.1030346	115.5817843	105.1139637	95.837184	87.60346605	80.28424693
180913A00062	9/13/2018	3.05	9/13/2023	9/13/2018	108.92379	108.9237946	108.9237946	108.9237946	107.1027928	103.8886884	100.7934857	97.81210967	94.93973065
181116A00006	11/16/2018	3.18	11/17/2025	11/16/2018	108.57835	108.5783483	108.5783483	108.5783483	106.6929824	103.7307114	100.8912572	98.16842014	95.5563599
181119A00008	11/19/2018	3.23	11/17/2023	11/19/2018	109.59584	109.5958368	109.5958368	109.5958368	107.7078233	104.4536487	101.323071	98.31062821	95.41113415
181214A00009	12/14/2018	3.22	12/14/2028	12/14/2018	113.53632	113.5363205	113.5363205	113.0504871	109.0370445	104.4750081	100.1872325	96.15422357	92.35803619
181214A00030	12/14/2018	3.47	12/14/2033	12/14/2018	139.0029	139.0029038	138.6558672	127.6725794	115.6759355	104.8127289	95.20804355	86.7026964	79.15876153
181218A00040	12/18/2018	3.23	6/18/2030	12/18/2018	115.98814	115.9881369	115.9881369	114.8752005	109.8841212	104.5596312	99.60238083	94.98264286	90.67336082
190205A00022	2/5/2019	3.32	2/5/2029	2/5/2019	123.1733	123.1733019	123.1733019	120.7748038	113.0481564	105.6050892	98.76283059	92.46833122	86.67353219
190205A00023	2/5/2019	3.32	2/5/2029	2/5/2019	123.17332	123.1733236	123.1733236	120.7748231	113.0481681	105.605094	98.76282895	92.46832376	86.67351943
190305A00015	3/5/2019	3.32	3/5/2029	3/5/2019	123.35402	123.3540195	123.3540195	120.8789784	113.0846048	105.5858126	98.69703039	92.36397064	86.53749346
190315A00019	3/15/2019	2.88	3/15/2034	3/15/2019	120.91848	120.9184796	120.8898098	116.8938566	109.6293669	102.5408228	96.09540899	90.22541961	84.87097311
190326A00029	3/26/2019	2.38	3/26/2026	3/26/2019	107.12475	107.1247533	107.1247533	107.1247533	105.0478852	101.9562314	98.99948867	96.1705256	93.46264183
170330A00060	3/30/2017	2.06	3/30/2022	3/30/2017	103.73923	103.7392275	103.7392275	103.7392275	102.9683279	101.0734928	99.22440634	97.41967026	95.65793904

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170518A00027	5/18/2017	2.11	5/18/2022	5/18/2017	103.7639	103.7638986	103.7638986	103.7638986	102.9095459	100.8742752	98.89029291	96.95594604	95.06964843
170602A00019	6/2/2017	2.42	6/3/2024	6/2/2017	108.45191	108.4519121	108.4519121	108.4519121	105.9048753	102.0103225	98.28607388	94.72369285	91.31521095
170706A00029	7/6/2017	2.42	7/6/2027	7/6/2017	109.18628	109.1862768	109.1862768	109.0121454	105.7500315	101.81986	98.10213566	94.5832005	91.25038195
170707A00007	7/7/2017	2.65	7/8/2024	7/7/2017	109.58702	109.5870197	109.5870197	109.5870197	106.9247423	102.920448	99.09450162	95.43792576	91.94224798
170921A00048	9/21/2017	1.95	9/21/2020	9/21/2017	100.81261	100.8126079	100.8126079	100.8126079	100.7004101	100.2230532	99.75023725	99.28189767	98.81797091
170921A00053	9/21/2017	2.22	9/21/2022	9/21/2017	104.6129	104.612896	104.612896	104.612896	103.544489	101.1933664	98.90926647	96.68988548	94.53301332
170921A00055	9/21/2017	2.82	9/21/2027	9/21/2017	116.47472	116.4747227	116.4747227	115.374719	108.9628761	102.6526587	96.78649875	91.33010165	86.2520124
171204A00009	12/4/2017	2.23	12/4/2024	12/4/2017	105.16462	105.1646236	105.1646236	105.1646236	103.8443631	101.440238	99.12126337	96.88369669	94.72398793
171207A00020	12/7/2017	2.25	12/7/2020	12/7/2017	101.37487	101.3748686	101.3748686	101.3748686	101.1776121	100.4919821	99.81568481	99.14853022	98.49033343
171207A00025	12/7/2017	2.91	12/7/2027	12/7/2017	117.52444	117.524437	117.524437	116.2361665	109.6208806	103.1335686	97.11304154	91.52243903	86.32802359
180104A00024	1/4/2018	2.98	1/4/2028	1/4/2018	118.16314	118.1631425	118.1631425	116.8056902	110.1118849	103.5534412	97.47044477	91.82506714	86.5827087
180117A00004	1/17/2018	2.44	1/17/2025	1/17/2018	105.78882	105.7888175	105.7888175	105.7888175	104.4219321	101.963183	99.59278018	97.30679132	95.10148839
180125A00027	1/25/2018	2.69	1/24/2025	1/25/2018	106.42208	106.4220773	106.4220773	106.4220773	104.8701926	102.2181492	99.6670322	97.21213447	94.84900272
180206A00046	2/6/2018	2.72	2/6/2023	2/6/2018	106.67485	106.6748456	106.6748456	106.6748456	105.3238491	102.6077107	99.9778941	97.43118545	94.96450828
180615A00021	6/15/2018	3.02	6/15/2023	6/15/2018	107.94582	107.9458167	107.9458167	107.9458167	106.4024434	103.5087898	100.7145497	98.01566417	95.40826858
180628A00078	6/28/2018	2.73	6/28/2023	6/28/2018	104.47289	104.4728888	104.4728888	104.4728888	103.7251786	102.026905	100.3739972	98.76487144	97.19801199
180717A00021	7/17/2018	3.34	7/17/2028	7/17/2018	120.70532	120.7053222	120.7053222	119.0761202	112.341692	105.6870584	99.52904681	93.82661612	88.54236874
180907A00013	9/7/2018	3.27	9/8/2025	9/7/2018	114.92181	114.921811	114.921811	114.921811	110.7927919	105.79609	101.0701176	96.59860203	92.36633503
181128A00011	11/28/2018	3.27	11/28/2023	11/28/2018	110.41252	110.4125165	110.4125165	110.4125165	108.3462471	104.8592451	101.5081258	98.28678447	95.18942867
190227A00033	2/27/2019	2.65	2/27/2026	2/27/2019	107.8844	107.8843959	107.8843959	107.8843959	105.8465331	102.7725644	99.83116479	97.01540053	94.31875301
190315A00023	3/15/2019	2.88	3/15/2034	3/15/2019	120.9185	120.9185002	120.8898305	116.8938735	109.6293756	102.5408245	96.09540442	90.22540935	84.87095769
190322A00008	3/22/2019	2.64	3/20/2026	3/22/2019	107.34318	107.3431843	107.3431843	107.3431843	105.2719299	102.1854181	99.23319136	96.40817106	93.70370519
190326A00010	3/26/2019	2.58	3/26/2024	3/26/2019	104.79034	104.7903409	104.7903409	104.7903409	103.7642815	101.6980343	99.69629663	97.75652243	95.87628497
190401A00017	4/1/2019	2.55	4/1/2022	4/1/2019	104.38195	104.3819457	104.3819457	104.3819457	103.6013302	101.6857719	99.81650528	97.99211481	96.21123827
190510A00049	5/10/2019	2.58	5/8/2026	5/10/2019	107.25113	107.2511317	107.2511317	107.2511317	105.126247	102.0029125	99.01709079	96.16145369	93.42911914
170224A00008	2/24/2017	2.18	2/24/2022	2/24/2017	103.50743	103.5074327	103.5074327	103.5074327	102.7752371	100.9467735	99.16060601	97.41550005	95.71026531
170317A00040	3/17/2017	2.74	3/18/2024	3/17/2017	109.2807	109.2807002	109.2807002	109.2807002	106.9258856	103.1824182	99.59588397	96.15883495	92.86421715
170317A00041	3/17/2017	2.73	3/18/2024	3/17/2017	109.08349	109.0834932	109.0834932	109.0834932	106.7801022	103.1017153	99.57668619	96.19775641	92.95805081
170322A00033	3/22/2017	3.61	3/24/2042	3/22/2017	143.90397	143.9039706	140.1714017	128.0579683	114.9341653	103.3171681	93.25897066	84.51958571	76.89920351
170511A00011	5/11/2017	2.41	5/11/2027	5/11/2017	108.63992	108.6399242	108.6399242	108.5598975	105.668636	101.9877711	98.49374804	95.17522698	92.02164592
170619A00096	6/16/2017	2.79	6/16/2027	6/16/2017	115.75285	115.7528541	115.7528541	114.8878409	108.7017108	102.5837067	96.88329523	91.56913163	86.61240362
170707A00013	7/7/2017	2.88	7/8/2030	7/7/2017	114.11276	114.1127607	114.1127607	112.9772451	108.0200406	102.7465447	97.83932376	93.26853158	89.00702056
170731A00041	7/31/2017	2.74	7/31/2030	7/31/2017	113.31659	113.3165921	113.3165921	112.1877401	107.2645064	102.0273314	97.15397091	92.61477302	88.38276732

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	Parallel-Shift Sensitivity Analysis												
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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170921A00052	9/21/2017	2.21	9/21/2022	9/21/2017	104.51593	104.5159343	104.5159343	104.5159343	103.4675338	101.1539495	98.90603201	96.7215279	94.59827548
171207A00024	12/7/2017	2.93	12/7/2027	12/7/2017	118.28944	118.28944	118.28944	116.9017776	109.9815111	103.2633497	97.03497085	91.25741606	85.89504284
180215A00034	2/15/2018	2.9	2/15/2023	2/15/2018	107.23549	107.2354935	107.2354935	107.2354935	105.8606076	103.1107483	100.4489602	97.87193826	95.37652024
180309A00015	3/9/2018	3.37	3/10/2031	3/9/2018	118.06528	118.0652831	118.0652831	116.5187389	111.0121457	105.2728425	99.95440968	95.02072897	90.43911264
181214A00010	12/14/2018	3.41	12/14/2028	12/14/2018	122.15975	122.1597519	122.1597519	120.1705642	113.0772713	106.1216605	99.70597029	93.78381007	88.31306775
181218A00086	12/18/2018	3.06	10/18/2023	12/18/2018	108.85884	108.8588386	108.8588386	108.8588386	107.0408195	103.8613899	100.8008055	97.8539046	95.01578085
181218A00089	12/18/2018	3.05	6/19/2023	12/18/2018	108.0981	108.0981041	108.0981041	108.0981041	106.5361175	103.6176004	100.7997679	98.07849427	95.44985181
190104A00035	1/4/2019	3.1	1/5/2026	1/4/2019	114.81868	114.8186805	114.8186805	114.8186805	110.1586588	104.9294333	99.99765438	95.34456933	90.95271414
190205A00027	2/5/2019	2.87	2/7/2022	2/5/2019	104.72641	104.7264129	104.7264129	104.7264129	104.006833	102.2019367	100.4378563	98.7134265	97.02752262
190308A00016	3/8/2019	3.18	3/8/2034	3/8/2019	133.95338	133.95338	133.4543537	123.6196161	112.4304887	102.2353081	93.2049779	85.19277548	78.07158955
190315A00029	3/15/2019	2.88	3/15/2034	3/15/2019	120.91851	120.918509	120.8898394	116.8938816	109.6293786	102.5408245	96.09540161	90.22540407	84.87095024
190327A00035	3/27/2019	2.68	3/27/2034	3/27/2019	119.32075	119.3207479	119.2920522	115.3482858	108.1792766	101.1840269	94.8234855	89.03082796	83.74695298
190503A00015	5/3/2019	3.03	5/3/2034	5/3/2019	120.76822	120.7682247	120.7240196	116.6338549	109.3467817	102.2466177	95.79459088	89.92201472	84.56819362
190605A00023	6/5/2019	2.64	6/5/2029	6/5/2019	119.04511	119.0451073	119.0451073	116.1721354	108.1080405	100.4603267	93.46100996	87.05043383	81.17476969
190605A00025	6/5/2019	2.64	6/5/2029	6/5/2019	119.0451	119.0450986	119.0450986	116.1721296	108.1080397	100.4603291	93.46101526	87.05044159	81.17477957
190607A00013	6/7/2019	2.59	6/7/2034	6/7/2019	117.35448	117.3544844	117.3021454	113.2581022	106.1375596	99.20919837	92.91653458	87.1918656	81.97540297
190621A00020	6/21/2019	2.58	6/21/2034	6/21/2019	117.27531	117.2753052	117.2225813	113.1809909	106.0650766	99.14127348	92.85278053	87.13193163	81.91897127
190702A00068	7/2/2019	2.69	7/1/2039	7/2/2019	137.9271	137.9271001	132.9569107	119.0275787	105.3533776	93.51713631	83.42154657	74.78290183	67.36647766
170310A00008	3/10/2017	3.17	3/11/2030	3/10/2017	115.25137	115.2513693	115.2513693	114.2648372	109.4481439	104.2643362	99.43046005	94.91876356	90.70394017
170317A00039	3/17/2017	2.73	3/18/2024	3/17/2017	109.08349	109.0834932	109.0834932	109.0834932	106.7801022	103.1017153	99.57668619	96.19775641	92.95805081
170406A00023	4/6/2017	2.24	4/6/2022	4/6/2017	103.8262	103.8261981	103.8261981	103.8261981	103.0350654	101.1017531	99.21544727	97.37470141	95.57812389
170406A00027	4/6/2017	2.61	4/8/2024	4/6/2017	108.74572	108.7457174	108.7457174	108.7457174	106.3939854	102.6783613	99.11959772	95.71017515	92.44297698
170427A00010	4/27/2017	1.46	4/27/2020	4/27/2017	100.10047	100.100473	100.100473	100.100473	100.0959044	100.0209729	99.94615896	99.8714622	99.79688238
170504A00012	5/4/2017	2.28	5/4/2026	5/4/2017	106.99138	106.9913774	106.9913774	106.9913774	104.808597	101.6432079	98.61912982	95.72873822	92.96487809
170526A00017	5/26/2017	2.16	5/28/2024	5/26/2017	103.97999	103.9799925	103.9799925	103.9799925	102.9282103	100.8374322	98.81301642	96.85230701	94.95277398
170901A00030	9/1/2017	1.82	9/1/2022	9/1/2017	103.8198	103.819799	103.819799	103.819799	102.8401006	100.6406261	98.50196851	96.42208701	94.39902188
171207A00021	12/7/2017	2.25	12/7/2020	12/7/2017	101.36974	101.3697353	101.3697353	101.3697353	101.1734246	100.4903491	99.81655822	99.15186316	98.49608009
171219A00009	12/19/2017	2.3	12/19/2024	12/19/2017	105.4326	105.4325998	105.4325998	105.4325998	104.0710918	101.6211274	99.25916135	96.98127859	94.78376757
180305A00030	3/5/2018	3.12	3/5/2025	3/5/2018	113.21528	113.2152781	113.2152781	113.2152781	109.7449819	105.103835	100.6959102	96.50817478	92.52839278
180309A00011	3/9/2018	3.19	3/10/2025	3/9/2018	113.5388	113.538801	113.538801	113.538801	110.0449764	105.3835925	100.9569497	96.75189967	92.7561001
180713A00031	7/13/2018	3.06	7/14/2025	7/13/2018	107.72446	107.7244605	107.7244605	107.7244605	106.0440319	103.2652306	100.5959309	98.03084947	95.56499744
180718A00008	7/18/2018	3.37	7/18/2028	7/18/2018	122.96536	122.9653627	122.9653627	120.933955	113.2252923	105.8103525	98.97124385	92.65927064	86.83012412
180913A00033	9/13/2018	3.31	9/13/2033	9/13/2018	123.47746	123.4774638	123.4767876	119.8485739	112.683252	105.6306338	99.19804986	93.32218453	87.94682706

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3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180914A00049	9/14/2018	3.37	9/14/2033	9/14/2018	123.94838	123.9483766	123.9476624	120.3056762	113.1130971	106.0336362	99.57656832	93.67833678	88.28251691
180925A00013	9/25/2018	3.41	9/25/2028	9/25/2018	114.03272	114.0327159	114.0327159	113.6242304	109.7462299	105.2770109	101.0698404	97.10652445	93.37028292
181128A00004	11/28/2018	3.08	11/28/2023	11/28/2018	110.38902	110.3890185	110.3890185	110.3890185	108.3146302	104.8158542	101.4537686	98.22221789	95.11536227
181226A00030	12/26/2018	2.91	12/26/2028	12/26/2018	112.98587	112.9858748	112.9858748	112.4976895	108.4811969	103.9212715	99.63640003	95.60697443	91.81494902
190104A00034	1/4/2019	3.18	1/4/2029	1/4/2019	118.32083	118.3208342	118.3208342	116.7765553	110.6687912	104.492918	98.77399486	93.47383813	88.5577244
190111A00038	1/11/2019	2.63	1/11/2022	1/11/2019	104.14347	104.1434742	104.1434742	104.1434742	103.5045234	101.875403	100.2815204	98.72182897	97.19532303
190131A00013	1/31/2019	3.48	1/31/2034	1/31/2019	136.82846	136.8284624	136.3388033	125.5033442	113.6851393	102.9887133	93.53675865	85.17117915	77.75507645
190131A00023	1/31/2019	3.02	1/30/2034	1/31/2019	121.76973	121.7697342	121.7534726	117.8760742	110.6426065	103.5644726	97.12193921	91.24875581	85.88625504
190205A00025	2/5/2019	2.88	2/7/2022	2/5/2019	104.74487	104.74487	104.74487	104.74487	104.0251998	102.2200662	100.4557535	98.73109621	97.04496957
190313A00039	3/13/2019	2.7	6/13/2022	3/13/2019	105.17972	105.1797249	105.1797249	105.1797249	104.2723892	102.1452076	100.0729257	98.05372368	96.08585792
190313A00044	3/13/2019	2.7	6/13/2022	3/13/2019	105.17972	105.1797249	105.1797249	105.1797249	104.2723892	102.1452076	100.0729257	98.05372368	96.08585792
170406A00021	4/6/2017	2.24	4/6/2022	4/6/2017	103.8262	103.8261981	103.8261981	103.8261981	103.0350654	101.1017531	99.21544727	97.37470141	95.57812389
170406A00026	4/6/2017	2.61	4/8/2024	4/6/2017	108.74571	108.7457111	108.7457111	108.7457111	106.3939811	102.6783597	99.11959859	95.71017842	92.44298251
170406A00034	4/6/2017	3.01	4/6/2027	4/6/2017	116.78446	116.7844612	116.7844612	116.0887937	110.0067981	103.9642273	98.32475841	93.0588027	88.13910788
170407A00001	4/6/2017	2.97	4/6/2027	4/6/2017	115.63207	115.6320729	115.6320729	115.0226312	109.3880161	103.6773832	98.33947405	93.34726348	88.6758437
170512A00024	5/12/2017	2.88	5/13/2030	5/12/2017	113.87929	113.8792894	113.8792894	112.826739	107.9728745	102.7800016	97.9427594	93.4325547	89.22334682
170602A00030	6/2/2017	1.88	6/2/2022	6/2/2017	103.67377	103.6737684	103.6737684	103.6737684	102.8079746	100.760521	98.76529783	96.82059372	94.92476787
170615A00006	6/15/2017	2.15	6/17/2024	6/15/2017	104.03842	104.0384197	104.0384197	104.0384197	102.9521633	100.8200927	98.7567837	96.75944679	94.82542622
170619A00095	6/16/2017	2.79	6/16/2027	6/16/2017	115.75285	115.7528541	115.7528541	114.8878409	108.7017108	102.5837067	96.88329523	91.56913163	86.61240362
170727A00003	7/27/2017	1.97	7/29/2024	7/27/2017	104.19826	104.1982598	104.1982598	104.1982598	103.0369667	100.8149561	98.66705952	96.59018285	94.58138415
170921A00054	9/21/2017	2.22	9/21/2022	9/21/2017	104.6129	104.612896	104.612896	104.612896	103.544489	101.1933664	98.90926647	96.68988548	94.53301332
170921A00057	9/21/2017	2.79	9/21/2027	9/21/2017	115.361	115.3609978	115.3609978	114.3969043	108.4557314	102.498628	96.95114734	91.78206533	86.96272188
171013A00024	10/13/2017	2.47	10/15/2024	10/13/2017	108.90725	108.9072474	108.9072474	108.9072474	106.1481994	102.1408808	98.31872703	94.6720742	91.19181714
171030A00039	10/30/2017	2.86	10/30/2030	10/30/2017	114.34837	114.3483715	114.3483715	113.0808192	107.973971	102.5850829	97.57840081	92.92215153	88.58748967
180104A00041	1/4/2018	3.08	1/4/2033	1/4/2018	132.1206	132.1206021	132.1206021	123.0354602	112.0343552	101.9812014	93.03086598	85.05154993	77.92809208
180206A00040	2/6/2018	2.47	2/8/2021	2/6/2018	101.89612	101.8961208	101.8961208	101.8961208	101.6173357	100.7625664	99.92226147	99.09605517	98.283594
180206A00048	2/6/2018	2.72	2/6/2023	2/6/2018	106.67485	106.674846	106.674846	106.674846	105.3238494	102.6077108	99.97789405	97.43118525	94.96450795
180220A00107	2/20/2018	3.13	2/20/2025	2/20/2018	112.45025	112.4502543	112.4502543	112.4502543	109.2541127	104.8828163	100.7257924	96.77125965	93.0081478
180402A00013	4/2/2018	2.99	4/3/2028	4/2/2018	116.99669	116.9966862	116.9966862	115.9323048	110.3159347	104.5391704	99.16199242	94.15316871	89.48411859
180517A00018	5/17/2018	3.46	5/17/2033	5/17/2018	124.01262	124.0126215	124.0126215	120.6770873	113.6536211	106.6981163	100.3410167	94.52247866	89.18924032
180716A00062	7/16/2018	2.91	7/16/2025	7/16/2018	107.84635	107.8463511	107.8463511	107.8463511	106.1569192	103.3653127	100.6840231	98.10771381	95.6313465
180717A00026	7/17/2018	3.24	7/16/2025	7/17/2018	113.89765	113.8976541	113.8976541	113.8976541	110.1821094	105.4791247	101.0219544	96.79621938	92.78846291
181003A00019	10/3/2018	3.44	10/3/2025	10/3/2018	116.33713	116.337134	116.337134	116.337134	111.9478526	106.7526424	101.8439964	97.20442958	92.81761702

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190104A00038	1/4/2019	3.25	1/4/2029	1/4/2019	122.40976	122.4097624	122.4097624	120.1074212	112.4809987	105.1261833	98.36032334	92.13178299	86.3937597
190129A00073	1/29/2019	3.11	1/29/2029	1/29/2019	113.13416	113.1341631	113.1341631	112.6217138	108.5718185	103.9884535	99.68294583	95.63538891	91.82746973
190205A00017	2/5/2019	3.36	2/5/2029	2/5/2019	123.49574	123.4957392	123.4957392	121.0932092	113.3503752	105.8908086	99.03325962	92.72457857	86.91661496
190402A00005	4/2/2019	2.77	4/2/2032	4/2/2019	119.60429	119.6042869	119.6042869	115.8603223	108.672085	101.671861	95.30028765	89.49275416	84.19187436
170301A00031	3/1/2017	2.11	3/1/2024	3/1/2017	104.08871	104.0887095	104.0887095	104.0887095	103.0987592	101.0804937	99.12436843	97.22795786	95.38894922
170309A00014	3/9/2017	2.58	3/9/2027	3/9/2017	109.07937	109.079372	109.079372	109.0242622	106.2303596	102.6115814	99.17281115	95.9033268	92.79312884
170313A00045	3/13/2017	3.22	3/15/2032	3/13/2017	118.75764	118.7576412	118.7576412	116.530871	110.4466083	104.2654106	98.57306829	93.32447633	88.47912155
170317A00044	3/17/2017	3.11	3/17/2027	3/17/2017	116.36452	116.364524	116.364524	115.7979245	110.1769553	104.4690974	99.13112446	94.1364044	89.46037682
170406A00024	4/6/2017	2.61	4/8/2024	4/6/2017	108.74572	108.7457174	108.7457174	108.7457174	106.3939854	102.6783613	99.11959772	95.71017515	92.44297698
170406A00029	4/6/2017	3.01	4/6/2027	4/6/2017	116.78446	116.7844637	116.7844637	116.0887954	110.0067985	103.9642268	98.32475722	93.05880087	88.1391055
170406A00032	4/6/2017	3.01	4/6/2027	4/6/2017	116.78446	116.7844637	116.7844637	116.0887954	110.0067985	103.9642268	98.32475722	93.05880087	88.1391055
170619A00089	6/16/2017	2.79	6/16/2027	6/16/2017	115.75285	115.7528541	115.7528541	114.8878409	108.7017108	102.5837067	96.88329523	91.56913163	86.61240362
170710A00079	7/10/2017	2.76	7/12/2032	7/10/2017	117.4819	117.4818996	117.4818996	115.0052202	108.7733405	102.4971271	96.73113541	91.42705327	86.54161004
170801A00022	8/1/2017	1.87	8/3/2020	8/1/2017	100.55756	100.55756	100.55756	100.55756	100.4977369	100.1535692	99.81176077	99.47228747	99.13512539
170829A00066	8/29/2017	2.11	8/29/2024	8/29/2017	108.35906	108.3590621	108.3590621	108.3590621	105.5587139	101.4617079	97.55311832	93.82324963	90.26295593
171109A00016	11/9/2017	2.94	11/9/2032	11/9/2017	130.06426	130.0642642	130.0642642	121.4143458	110.6778644	100.8509199	92.09218179	84.27510988	77.28899619
171204A00024	12/4/2017	2.71	12/4/2024	12/4/2017	110.67576	110.6757639	110.6757639	110.6757639	107.5540178	103.1921122	99.03994408	95.08620918	91.32027763
171207A00022	12/7/2017	2.45	12/7/2022	12/7/2017	105.59112	105.5911233	105.5911233	105.5911233	104.3722051	101.8199457	99.34489328	96.94420734	94.61517295
180104A00023	1/4/2018	2.91	1/4/2028	1/4/2018	115.31655	115.3165541	115.3165541	114.3499241	108.8060797	103.1192506	97.82018567	92.87912514	88.26878958
180322A00040	3/22/2018	3.16	3/21/2031	3/22/2018	120.83853	120.8385267	120.8385267	118.2444982	111.6360718	105.030503	98.96647575	93.39286764	88.26383073
180403A00014	4/3/2018	3.11	4/3/2025	4/3/2018	113.32019	113.3201926	113.3201926	113.3201926	109.747876	105.041875	100.5757115	96.33578821	92.30935171
180410A00002	4/10/2018	3.14	4/11/2033	4/10/2018	121.43022	121.4302178	121.4302178	118.2379599	111.4031261	104.6238027	98.42453556	92.74762381	87.54167986
180420A00011	4/20/2018	2.74	4/20/2023	4/20/2018	104.26151	104.2615053	104.2615053	104.2615053	103.5715243	101.9595931	100.3890928	98.85862112	97.36683413
180601A00038	6/1/2018	2.86	6/1/2021	6/1/2018	102.98899	102.9889916	102.9889916	102.9889916	102.5642937	101.4149772	100.291749	99.19372478	98.1200597
180702A00022	7/2/2018	2.84	6/30/2023	7/2/2018	108.04093	108.0409343	108.0409343	108.0409343	106.4609683	103.5247969	100.6907594	97.95463124	95.31239285
180702A00040	7/2/2018	2.9	7/2/2021	7/2/2018	103.25999	103.2599947	103.2599947	103.2599947	102.794982	101.5568155	100.3480931	99.16776723	98.01483951
180809A00034	8/9/2018	3.08	8/9/2023	8/9/2018	108.96782	108.967823	108.967823	108.967823	107.1825885	103.9850787	100.9036847	97.93355883	95.0700818
180906A00032	9/6/2018	3.24	9/5/2025	9/6/2018	115.06592	115.0659172	115.0659172	115.0659172	110.8349623	105.7424951	100.9276183	96.37360547	92.06482571
180913A00012	9/13/2018	3.31	9/13/2033	9/13/2018	123.47746	123.4774616	123.4767854	119.8485733	112.6832521	105.6306345	99.19805095	93.32218595	87.94682873
180924A00033	9/24/2018	3.08	9/22/2023	9/24/2018	109.33045	109.3304506	109.3304506	109.3304506	107.559365	104.4180588	101.3925338	98.4778336	95.66924264
190619A00010	6/19/2019	2.04	6/17/2022	6/19/2019	102.28689	102.2868879	102.2868879	102.2868879	101.8464742	100.6727105	99.52344432	98.39795069	97.29553281
190718A00012	7/18/2019	2.55	7/18/2029	7/18/2019	116.71864	116.7186408	116.7186408	114.271426	107.0711875	100.094676	93.69148497	87.80960117	82.40205846
190813A00067	8/13/2019	1.9	8/13/2024	8/13/2019	106.67104	106.671036	106.671036	106.671036	103.939504	99.9191945	96.0822812	92.41941493	88.9217712

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190905A00023	9/5/2019	2.08	9/5/2029	9/5/2019	114.69048	114.6904809	114.6904809	111.5957699	103.5961692	96.04950215	89.15962624	82.86466519	77.10891523
190905A00025	9/5/2019	2.08	9/5/2029	9/5/2019	114.69048	114.690481	114.690481	111.5957699	103.5961692	96.04950213	89.15962622	82.86466516	77.1089152
190925A00009	9/25/2019	2	9/25/2026	9/25/2019	109.49516	109.4951595	109.4951595	109.3183391	104.0435535	98.72543858	93.7385191	89.06000396	84.66879637
191004A00019	10/4/2019	2.02	10/4/2029	10/4/2019	114.28523	114.2852293	114.2852293	111.103651	103.0735919	95.50791052	88.60572945	82.30405947	76.54624384
191112A00022	11/12/2019	2.36	11/13/2029	11/12/2019	117.3991	117.3990983	117.3990983	114.026976	105.7532028	97.95987383	90.85485513	84.3722867	78.45298487
191203A00013	12/3/2019	1.93	12/3/2024	12/3/2019	107.20131	107.2013068	107.2013068	107.2013068	104.1287668	99.85092641	95.77964287	91.90376193	88.21279561
191224A00002	12/24/2019	2.17	12/24/2029	12/24/2019	109.52528	109.5252839	109.5252839	108.6929738	104.2516178	99.42706163	94.92116021	90.70915905	86.76844261
200110A00053	1/10/2020	1.99	1/10/2025	1/10/2020	107.62764	107.6276433	107.6276433	107.6276433	104.4273628	100.0567324	95.90098903	91.94834761	88.18773568
200212A00013	2/12/2020	1.98	2/12/2027	2/12/2020	110.54401	110.544014	110.544014	109.9390253	103.8620641	97.93205031	92.39914687	87.23439943	82.41111339
200306A00050	3/6/2020	0.87	3/6/2030	3/6/2020	103.88303	103.8830281	103.8830281	102.9849773	98.61571853	93.91984094	89.54209564	85.45717817	81.64201958
200306A00058	3/6/2020	1.06	3/6/2030	3/6/2020	103.88487	103.8848661	103.8848661	102.9949483	98.6510618	93.97675281	89.61803685	85.5498834	81.7494674
200311A00015	3/11/2020	1.26	3/11/2027	3/11/2020	106.00792	106.007922	106.007922	105.346302	99.39292855	93.61056186	88.2206487	83.1942335	78.50464616
151209A00024	12/9/2015	2.22	12/9/2025	12/9/2015	106.33226	106.3322618	106.3322618	106.3322618	104.4285495	101.4778868	98.65139674	95.9427265	93.34589618
151229A00026	12/29/2015	2.28	12/29/2025	12/29/2015	106.51849	106.51849	106.51849	106.51849	104.6097381	101.65322	98.82117465	96.10722995	93.50538838
160104A00020	1/4/2016	2.47	1/4/2023	1/4/2016	105.83877	105.8387717	105.8387717	105.8387717	104.5521562	101.9122746	99.35418283	96.87481263	94.47123392
160106A00042	1/6/2016	2.43	1/6/2026	1/6/2016	106.48226	106.4822557	106.4822557	106.4822557	104.5334974	101.5501036	98.69341981	95.95690937	93.33442219
160210A00049	2/10/2016	1.78	2/10/2026	2/10/2016	105.13115	105.1311489	105.1311489	105.1311489	103.1464467	100.1512291	97.28513929	94.54142694	91.91374561
160328A00038	3/28/2016	2.54	3/30/2026	3/28/2016	111.34948	111.3494752	111.3494752	111.3494752	106.8515393	101.9227436	97.27704411	92.89628173	88.76356511
160413A00018	4/13/2016	1.78	4/13/2026	4/13/2016	105.27588	105.2758829	105.2758829	105.2758829	103.1819155	100.1052286	97.16434974	94.35202568	91.66144573
160608A00025	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160608A00027	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160608A00028	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160608A00029	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
190404A00015	4/4/2019	2.88	4/3/2026	4/4/2019	114.47309	114.4730902	114.4730902	114.4730902	109.2497359	103.7490893	98.5758878	93.70870194	89.12761824
190506A00026	5/6/2019	3.03	5/4/2029	5/6/2019	122.17456	122.1745552	122.1745552	119.3558206	111.1895772	103.4255692	96.31322191	89.79311602	83.81158688
190524A00041	5/24/2019	2.83	5/24/2034	5/24/2019	119.16179	119.1617913	119.1174968	115.0809617	107.8902193	100.8840721	94.5175403	88.72283265	83.44004571
190531A00036	5/31/2019	2.71	5/31/2034	5/31/2019	118.20389	118.2038948	118.15973	114.1552622	107.0220122	100.0719561	93.75641955	88.00814845	82.76771438
190620A00033	6/20/2019	2.1	6/20/2029	6/20/2019	109.64498	109.6449786	109.6449786	108.9998041	104.8108657	100.1699276	95.82277769	91.7474988	87.92399643
190705A00007	7/5/2019	2.56	7/5/2034	7/5/2019	117.21885	117.2188532	117.1566868	113.0492038	105.8984982	98.95006106	92.64236547	86.90683907	81.6829631
190731A00013	7/31/2019	2.23	7/22/2022	7/31/2019	102.38387	102.3838724	102.3838724	102.3838724	101.922913	100.7095292	99.52197013	98.35946403	97.22126909
190813A00064	8/13/2019	1.9	8/13/2024	8/13/2019	106.67104	106.671036	106.671036	106.671036	103.939504	99.9191945	96.0822812	92.41941493	88.9217712
190911A00016	9/11/2019	1.9	9/11/2029	9/11/2019	108.88306	108.8830621	108.8830621	108.1487856	103.847575	99.1336248	94.72506884	90.59862222	86.73297641
191008A00007	10/8/2019	1.67	10/9/2029	10/8/2019	107.7777	107.7777003	107.7777003	107.0185788	102.7145835	98.01384529	93.61997258	89.50939912	85.66057257

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191008A00014	10/8/2019	1.85	10/8/2026	10/8/2019	109.2569	109.2568953	109.2568953	109.0148354	103.2581283	97.60904645	92.3222687	87.37241245	82.73600669
191015A00025	10/15/2019	2.01	10/15/2029	10/15/2019	108.53556	108.5355588	108.5355588	107.7777248	103.468318	98.75593773	94.35016351	90.22751453	86.36651145
200110A00038	1/10/2020	2.32	1/10/2030	1/10/2020	117.30196	117.3019626	117.3019626	113.7259622	105.3532823	97.4839564	90.31928036	83.79092582	77.83758035
200116A00012	1/16/2020	2.16	1/19/2027	1/16/2020	111.6019	111.6019027	111.6019027	111.0595996	104.9949839	99.06467701	93.52769573	88.35558895	83.52211355
200206A00033	2/6/2020	2.15	2/6/2030	2/6/2020	115.90015	115.9001511	115.9001511	112.2540477	103.9125859	96.0845184	88.96271765	82.47825536	76.5693158
200206A00035	2/6/2020	1.78	2/6/2023	2/6/2020	104.12544	104.1254414	104.1254414	104.1254414	102.7742423	100.0694937	97.45122257	94.9162011	92.4613399
200309A00084	3/9/2020	1.06	3/9/2027	3/9/2020	104.73159	104.7315858	104.7315858	104.0796561	98.18258782	92.45957291	87.12509017	82.15047917	77.50934066
200317A00009	3/17/2020	1.61	3/16/2035	3/17/2020	110.21548	110.2154813	110.05726	105.6925475	98.6841191	91.9433136	85.84896063	80.32918969	75.32088836
151120A00019	11/20/2015	2.72	11/20/2030	11/20/2015	114.79961	114.7996087	114.7996087	113.4704016	108.2664581	102.7959216	97.71738191	92.99794621	88.60777942
151125A00037	11/25/2015	2.41	11/25/2025	11/25/2015	106.23772	106.2377162	106.2377162	106.2377162	104.3920735	101.4930928	98.71433192	96.04972053	93.49354052
151216A00005	12/16/2015	2.15	12/16/2020	12/16/2015	101.35025	101.3502488	101.3502488	101.3502488	101.1427284	100.4343215	99.73589489	99.04723829	98.36814711
151216A00006	12/16/2015	2.3	12/16/2021	12/16/2015	103.37998	103.3799844	103.3799844	103.3799844	102.7327927	101.0853924	99.47286583	97.89416466	96.34828269
151223A00078	12/23/2015	2.28	12/23/2025	12/23/2015	106.51794	106.5179419	106.5179419	106.5179419	104.6097166	101.6534253	98.82158082	96.10781367	93.50612852
160119A00072	1/19/2016	2.77	1/21/2031	1/19/2016	115.06238	115.0623757	115.0623757	113.3311289	107.6424107	101.7573204	96.31308299	91.27116771	86.59676366
160201A00016	2/1/2016	2.1	2/2/2026	2/1/2016	105.5364	105.5364031	105.5364031	105.5364031	103.553585	100.5579842	97.69113634	94.94632974	92.31725321
160203A00017	2/3/2016	2.07	2/3/2023	2/3/2016	104.88995	104.8899541	104.8899541	104.8899541	103.5498187	100.85703	98.24987324	95.72516441	93.2798554
190517A00012	5/17/2019	2.88	5/17/2034	5/17/2019	119.56217	119.5621698	119.5179519	115.4680512	108.2532987	101.2237174	94.83587336	89.02175282	83.72125545
190605A00024	6/5/2019	2.64	6/5/2029	6/5/2019	119.0451	119.0450986	119.0450986	116.1721296	108.1080397	100.4603291	93.46101526	87.05044159	81.17477956
190708A00028	7/8/2019	2.57	7/2/2029	7/8/2019	118.58764	118.5876385	118.5876385	115.6376172	107.5450993	99.88008652	92.86962186	86.45306293	80.57573236
190708A00030	7/8/2019	2.57	7/2/2029	7/8/2019	118.58767	118.5876679	118.5876679	115.6376406	107.545108	99.88008327	92.86960791	86.45303936	80.57570018
190719A00017	7/19/2019	2.55	7/19/2034	7/19/2019	117.13928	117.1392833	117.076729	112.9717597	105.825732	98.88189559	92.57840727	86.84673228	81.62638566
190816A00023	8/16/2019	2.14	8/16/2034	8/16/2019	113.96446	113.9644611	113.893168	109.8328004	102.8425746	96.05924226	89.90461097	84.31106473	79.21896668
190826A00032	8/26/2019	1.72	8/24/2029	8/26/2019	107.8934	107.8934001	107.8934001	107.1969283	102.9808447	98.34402254	94.00533876	89.94222251	86.13400597
190910A00044	9/10/2019	2.02	9/10/2026	9/10/2019	110.18642	110.186425	110.186425	110.0238521	104.2939198	98.65799943	93.37950739	88.43367572	83.79758107
190920A00014	9/20/2019	2.28	9/20/2034	9/20/2019	115.1673	115.1673021	115.0838078	110.9146309	103.8135006	96.93149041	90.69049238	85.02123284	79.8626513
190930A00028	9/30/2019	1.95	9/30/2024	9/30/2019	106.78533	106.7853266	106.7853266	106.7853266	104.0585405	100.0906507	96.30605774	92.69522783	89.24917538
191004A00025	10/4/2019	1.74	10/4/2024	10/4/2019	106.18151	106.1815091	106.1815091	106.1815091	103.3086458	99.18989685	95.26462949	91.52268481	87.9544919
191101A00005	11/1/2019	1.83	11/2/2026	11/1/2019	110.41893	110.418929	110.418929	110.0997638	104.209419	98.43936928	93.04334011	87.99485699	83.26946042
191112A00024	11/12/2019	2.09	11/12/2024	11/12/2019	107.82986	107.8298627	107.8298627	107.8298627	104.8095324	100.5586721	96.51088362	92.65531616	88.98175954
191203A00009	12/3/2019	2.21	12/3/2029	12/3/2019	116.17012	116.1701191	116.1701191	112.7509963	104.5079488	96.75313976	89.6871545	83.24373798	77.36338575
191203A00010	12/3/2019	2.21	12/3/2029	12/3/2019	116.17012	116.1701191	116.1701191	112.7509963	104.5079488	96.75313976	89.6871545	83.24373798	77.36338575
200103A00002	1/3/2020	2.07	1/3/2030	1/3/2020	115.16148	115.1614776	115.1614776	112.244983	104.7977405	97.64776063	91.11191972	85.13206641	79.65593205
200115A00013	1/15/2020	2.18	1/15/2030	1/15/2020	112.9055	112.9054966	112.9054966	110.6714006	104.2476769	97.89511016	92.05676071	86.68571361	81.73967814

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200206A00034	2/6/2020	1.84	2/6/2025	2/6/2020	107.03939	107.0393857	107.0393857	107.0393857	103.7646051	99.35485955	95.16502272	91.18293979	87.39718948
200221A00012	2/21/2020	2.14	2/21/2040	2/21/2020	120.20472	120.2047237	118.1230181	109.451734	99.46645797	90.43677469	82.5288078	75.58186837	69.46034
200318A00012	3/18/2020	1.68	3/18/2033	3/18/2020	112.71394	112.7139377	112.7139377	108.0448953	100.5435532	93.34858468	86.84053759	80.94444369	75.59422351
151223A00036	12/23/2015	2.64	12/23/2025	12/23/2015	108.67556	108.6755559	108.6755559	108.6755559	105.9366887	102.2498514	98.73912635	95.39449128	92.20656925
160307A00024	3/7/2016	2.17	3/6/2026	3/7/2016	105.83739	105.8373904	105.8373904	105.8373904	103.7962141	100.7532683	97.84267707	95.05746618	92.39108164
160401A00005	4/1/2016	2.02	4/3/2023	4/1/2016	105.00712	105.0071176	105.0071176	105.0071176	103.5385911	100.7009557	97.95826013	95.30678665	92.7429853
160428A00020	4/28/2016	1.69	4/28/2021	4/28/2016	101.4776	101.4775977	101.4775977	101.4775977	101.1058275	100.0736184	99.06292557	98.07307704	97.10342871
160428A00025	4/28/2016	1.25	4/28/2021	4/28/2016	100.6711	100.6710964	100.6710964	100.6710964	100.4990057	99.91106718	99.33186808	98.76119207	98.19883043
160524A00101	5/24/2016	2.98	5/23/2031	5/24/2016	125.0975	125.0974989	125.0974989	119.5813534	110.2542296	101.5552311	93.70652715	86.61742247	80.20747242
190809A00017	8/9/2019	2.27	8/9/2034	8/9/2019	114.9974	114.9973974	114.9256706	110.8289072	103.775649	96.93107127	90.72084506	85.07674977	79.93861484
190813A00052	8/13/2019	2.24	8/13/2029	8/13/2019	115.96249	115.9624888	115.9624888	112.9209527	104.8944828	97.31176674	90.38457191	84.05153085	78.25736034
190906A00009	9/6/2019	2.08	9/6/2034	9/6/2019	113.56931	113.569309	113.487346	109.3757981	102.3729288	95.58618624	89.43157113	83.84077345	78.75358146
191004A00023	10/4/2019	2.02	10/4/2029	10/4/2019	114.28522	114.2852236	114.2852236	111.1036484	103.0735934	95.50791486	88.60573614	82.30406815	76.54625421
191101A00004	11/1/2019	1.91	11/1/2029	11/1/2019	113.66439	113.6643855	113.6643855	110.9538955	103.6901805	96.70086514	90.30382225	84.4437403	79.0708253
200109A00008	1/9/2020	1.95	1/9/2030	1/9/2020	109.46587	109.4658747	109.4658747	108.592067	104.0813386	99.2029422	94.6502113	90.39759976	86.42178901
200110A00037	1/10/2020	2.32	1/10/2030	1/10/2020	117.30196	117.3019626	117.3019626	113.7259622	105.3532823	97.4839564	90.31928036	83.79092582	77.83758035
200206A00027	2/6/2020	2.15	2/6/2030	2/6/2020	115.90015	115.9001511	115.9001511	112.2540477	103.9125859	96.0845184	88.96271765	82.47825536	76.5693158
200206A00032	2/6/2020	2.15	2/6/2030	2/6/2020	115.90016	115.9001554	115.9001554	112.2540489	103.9125849	96.08451551	88.96271318	82.47824959	76.56930897
200327A00084	3/27/2020	1.1	3/27/2025	3/27/2020	103.54474	103.5447433	103.5447433	103.5447433	100.3767252	96.16333648	92.16258334	88.36249121	84.75182455
200330A00079	3/30/2020	1.51	3/30/2035	3/30/2020	109.41031	109.4103124	109.2528908	104.9196146	97.96206143	91.27027404	85.22027442	79.74070559	74.76890684
151201A00004	12/1/2015	2.44	12/1/2022	12/1/2015	105.57051	105.5705117	105.5705117	105.5705117	104.3539204	101.7992543	99.32165269	96.91829266	94.58647535
151210A00011	12/10/2015	2.16	12/12/2022	12/10/2015	102.95626	102.9562649	102.9562649	102.9562649	102.3778385	100.9500568	99.55611181	98.19492092	96.86544508
160113A00002	1/13/2016	2.12	1/13/2026	1/13/2016	106.11352	106.113524	106.113524	106.113524	104.1623341	101.1783183	98.32141861	95.58505955	92.96305544
160210A00054	2/10/2016	1.78	2/10/2026	2/10/2016	105.13115	105.131151	105.131151	105.131151	103.1464473	100.1512285	97.28513756	94.54142417	91.9137419
160212A00047	2/12/2016	1.94	2/12/2026	2/12/2016	105.03577	105.0357666	105.0357666	105.0357666	103.0614478	100.0796287	97.22600101	94.49388029	91.87698102
160413A00016	4/13/2016	2.55	4/14/2031	4/13/2016	113.14931	113.1493142	113.1493142	111.6178827	106.2950522	100.7605797	95.63467388	90.88204786	86.47078709
160413A00021	4/13/2016	2.48	4/13/2026	4/13/2016	111.70125	111.7012454	111.7012454	111.7012454	106.801748	101.5944707	96.6940182	92.08038751	87.73498971
160523A00086	5/23/2016	2.2	5/26/2026	5/23/2016	110.82921	110.8292084	110.8292084	110.8292084	106.0818547	101.0552719	96.32432089	91.8695999	87.6730943
160524A00028	5/24/2016	2.06	5/24/2023	5/24/2016	105.35069	105.3506938	105.3506938	105.3506938	103.7648222	100.8009935	97.9396489	95.17662711	92.50796317
160526A00018	5/26/2016	1.68	5/26/2021	5/26/2016	101.50331	101.5033082	101.5033082	101.5033082	101.1194123	100.0627665	99.02926835	98.01815224	97.02868616
160603A00014	6/3/2016	1.74	6/3/2026	6/3/2016	105.28745	105.287448	105.287448	105.287448	103.0832642	99.92972397	96.91857775	94.04206238	91.29289737
160606A00018	6/6/2016	1.74	6/5/2026	6/6/2016	105.28757	105.2875723	105.2875723	105.2875723	103.0832164	99.92960931	96.91840455	94.04183813	91.29262879
160608A00021	6/8/2016	1.91	6/8/2023	6/8/2016	104.88004	104.8800437	104.8800437	104.8800437	103.2934086	100.3464456	97.50200621	94.75588988	92.10409677

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160608A00024	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160729A00015	7/29/2016	2.06	7/30/2029	7/29/2016	108.56101	108.5610069	108.5610069	107.8971721	103.7257466	99.11586599	94.79914707	90.75361769	86.95914094
190708A00029	7/8/2019	2.57	7/2/2029	7/8/2019	118.58767	118.5876679	118.5876679	115.6376406	107.545108	99.88008327	92.86960791	86.45303936	80.57570018
190708A00032	7/8/2019	2.58	7/2/2029	7/8/2019	118.67289	118.6728927	118.6728927	115.7215463	107.6244751	99.95489095	92.94020596	86.51974721	80.63880975
190726A00012	7/26/2019	2.58	7/26/2034	7/26/2019	117.38016	117.3801558	117.3172593	113.2037914	106.0430453	99.08491977	92.76847224	87.02502351	81.79396151
190802A00020	8/2/2019	2.42	8/2/2034	8/2/2019	116.19635	116.1963453	116.1240865	111.9850542	104.8586326	97.94296706	91.66821395	85.96545026	80.77388546
190813A00051	8/13/2019	2.19	8/13/2029	8/13/2019	115.53605	115.5360532	115.5360532	112.5016268	104.4984457	96.93898076	90.03322399	83.71996735	77.94407197
190813A00057	8/13/2019	1.9	8/13/2024	8/13/2019	106.67104	106.671036	106.671036	106.671036	103.939504	99.9191945	96.0822812	92.41941493	88.9217712
190829A00032	8/29/2019	1.69	8/28/2026	8/29/2019	105.26019	105.2601887	105.2601887	105.2573747	102.9394948	99.70968703	96.62908298	93.68937703	90.88278972
190830A00013	8/30/2019	2.06	8/30/2034	8/30/2019	113.33192	113.3319205	113.2606173	109.2224033	102.2706883	95.5248048	89.40418571	83.84157971	78.77767234
190905A00018	9/5/2019	1.85	9/5/2029	9/5/2019	113.00364	113.003643	113.003643	110.4594179	103.3252898	96.4447313	90.13966273	84.35704789	79.04907038
190913A00006	9/13/2019	2.33	9/13/2034	9/13/2019	115.56868	115.5686792	115.4850941	111.3015854	104.1758428	97.26993925	91.0072551	85.31828083	80.14174761
191004A00026	10/4/2019	1.74	10/4/2024	10/4/2019	106.18151	106.1815091	106.1815091	106.1815091	103.3086458	99.18989685	95.26462949	91.52268481	87.9544919
191122A00003	11/22/2019	2.32	11/22/2039	11/22/2019	128.93955	128.9395527	125.0901976	113.4339785	101.4121047	90.85744846	81.77951264	73.94471806	67.15909063
200220A00026	2/20/2020	2.22	2/21/2040	2/20/2020	121.13448	121.1344759	119.0367026	110.2982867	100.2355406	91.13575799	83.166384	76.16548605	69.99639793
200306A00048	3/6/2020	1.04	3/6/2035	3/6/2020	107.18854	107.1885439	107.0324817	102.7394617	95.87579738	89.28292466	83.32500239	77.93120537	73.03936374
200309A00034	3/9/2020	0.96	3/9/2035	3/9/2020	106.55187	106.5518668	106.3966468	102.128864	95.30574527	88.75186713	82.82919785	77.4673281	72.60445324
200317A00043	3/17/2020	1.29	3/15/2030	3/17/2020	106.09467	106.0946719	106.0946719	105.1772997	100.7153831	95.91981897	91.44914686	87.27752292	83.38138671
200326A00032	3/26/2020	1.49	3/26/2030	3/26/2020	106.14202	106.142021	106.142021	105.23208	100.7939674	96.01822523	91.56495615	87.40857932	83.52576844
151029A00008	10/29/2015	2.28	10/29/2025	10/29/2015	105.75972	105.7597159	105.7597159	105.7597159	103.9703185	101.1233555	98.39300991	95.77345815	93.25921106
151030A00026	10/30/2015	3.29	10/30/2030	10/30/2015	125.22082	125.2208216	125.2208216	121.1294639	112.6851489	104.6458578	97.33746336	90.68655402	84.62758662
151113A00035	11/13/2015	1.8	11/14/2022	11/13/2015	102.35935	102.3593469	102.3593469	102.3593469	101.8079686	100.4290022	99.08206071	97.76613495	96.48025605
151124A00006	11/24/2015	1.66	11/24/2020	11/24/2015	100.53289	100.5328876	100.5328876	100.5328876	100.4497175	100.0722791	99.69837457	99.32794881	98.96094797
151215A00039	12/15/2015	2.46	12/15/2025	12/15/2015	106.48206	106.4820593	106.4820593	106.4820593	104.5834187	101.6388975	98.81795719	96.11429021	93.52195867
160209A00008	2/9/2016	2.45	2/10/2031	2/9/2016	112.34865	112.3486498	112.3486498	110.9234161	105.7265799	100.2974809	95.26392091	90.59216698	86.2516712
160303A00035	3/3/2016	2.14	3/3/2026	3/3/2016	105.88833	105.8883299	105.8883299	105.8883299	103.7691037	100.6458773	97.6601585	94.8046155	92.07236361
160328A00030	3/28/2016	1.79	3/29/2021	3/28/2016	101.49674	101.4967369	101.4967369	101.4967369	101.152281	100.1745317	99.21581215	98.27556946	97.353272
160608A00020	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160608A00033	6/8/2016	2.44	6/9/2031	6/8/2016	112.67293	112.6729303	112.6729303	111.0490003	105.6607068	100.0836711	94.92370505	90.14433935	85.71263133
160624A00051	6/24/2016	2.11	6/26/2029	6/24/2016	108.7317	108.7316962	108.7316962	108.0972421	103.9662917	99.38417485	95.09118654	91.06581612	87.28833722
160719A00026	7/19/2016	1.87	7/20/2026	7/19/2016	105.15586	105.1558637	105.1558637	105.1553925	102.9066168	99.7301233	96.69830673	93.80321604	91.03739815
160801A00002	8/1/2016	1.58	8/3/2026	8/1/2016	104.88505	104.8850453	104.8850453	104.883451	102.5746622	99.35705958	96.28803115	93.35931134	90.56315778
160810A00035	8/10/2016	2.1	8/10/2026	8/10/2016	109.55086	109.5508565	109.5508565	109.4934182	104.550757	99.47135986	94.69847439	90.21153586	85.99147394

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160908A00025	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160908A00032	9/8/2016	2.17	9/8/2026	9/8/2016	110.04116	110.041163	110.041163	109.9171166	104.9011091	99.75634154	94.92523716	90.38652935	86.12051355
160930A00025	9/30/2016	1.66	9/30/2027	9/30/2016	106.03286	106.0328642	106.0328642	105.894564	102.8638034	99.12235135	95.57845352	92.21967363	89.03445763
161014A00029	10/14/2016	2.51	10/15/2031	10/14/2016	114.76092	114.7609248	114.7609248	112.8757036	107.1761981	101.3350158	95.94351405	90.96128306	86.3519234
161118A00012	11/18/2016	2.72	11/19/2029	11/18/2016	112.3307	112.3306977	112.3306977	111.5123068	107.0052731	102.0930922	97.50291838	93.20991498	89.19137671
161125A00010	11/25/2016	2.86	11/26/2029	11/25/2016	113.07381	113.0738135	113.0738135	112.2497451	107.7128769	102.7681854	98.14764631	93.82625558	89.78115534
170126A00003	1/26/2017	2.86	1/26/2027	1/26/2017	115.75754	115.7575446	115.7575446	115.2983057	109.7728328	104.1495339	98.88547241	93.95515835	89.33505655
170221A00033	2/21/2017	2.31	2/18/2022	2/21/2017	103.72052	103.7205177	103.7205177	103.7205177	102.9947926	101.1795536	99.40596594	97.67282315	95.97896178
120820A00011	8/20/2012	2.4	8/22/2022	8/20/2012	104.67619	104.676189	104.676189	104.676189	103.7096295	101.5248086	99.39964845	97.33217083	95.32047503
130206A00009	2/6/2013	2.83	2/7/2028	2/6/2013	114.55633	114.5563331	114.5563331	113.6086743	108.2283986	102.6670361	97.48331505	92.64826066	88.13531233
140821A00030	8/21/2014	2.27	8/21/2024	8/21/2014	104.98148	104.9814795	104.9814795	104.9814795	103.7759438	101.4972695	99.29574909	97.16812142	95.1112873
141015A00027	10/15/2014	2.01	10/15/2021	10/15/2014	102.82694	102.8269371	102.8269371	102.8269371	102.2588226	100.7908025	99.35190585	97.94132994	96.55830106
150311A00003	3/11/2015	2.72	3/31/2025	3/11/2015	110.46722	110.4672188	110.4672188	110.4672188	107.3241016	103.0669546	99.02028671	95.17236179	91.51216421
150410A00021	4/10/2015	2.27	4/10/2025	4/10/2015	105.2158	105.215802	105.215802	105.215802	103.7027947	101.1070183	98.60954319	96.20579156	93.89143286
150603A00012	6/3/2015	2.77	6/3/2030	6/3/2015	114.48631	114.4863144	114.4863144	113.378276	108.4227141	103.1425623	98.22781913	93.64882379	89.37858712
150604A00039	6/4/2015	2.82	6/4/2030	6/4/2015	114.7714	114.7714012	114.7714012	113.6605755	108.6927053	103.3994326	98.47247773	93.88210581	89.60126036
150814A00029	8/14/2015	2.39	8/14/2025	8/14/2015	105.90329	105.9032947	105.9032947	105.9032947	104.2060314	101.4344784	98.77356727	96.21789928	93.76237954
151002A00042	10/2/2015	1.26	10/2/2020	10/2/2015	100.32881	100.3288119	100.3288119	100.3288119	100.2647472	99.93908548	99.61599293	99.2954363	98.97738294
160405A00011	4/5/2016	1.31	4/5/2021	4/5/2016	100.60792	100.6079175	100.6079175	100.6079175	100.4385754	99.85684635	99.28362265	98.7186983	98.16187429
160617A00012	6/17/2016	2.13	6/18/2029	6/17/2016	108.83068	108.8306763	108.8306763	108.1959621	104.0614584	99.47533802	95.1785785	91.149654	87.36882399
160711A00004	7/11/2016	1.51	7/13/2026	7/11/2016	104.5878	104.5878017	104.5878017	104.5874946	102.3407775	99.16982145	96.14369185	93.25440959	90.49449652
160805A00014	8/5/2016	2.11	8/6/2029	8/5/2016	108.89012	108.8901159	108.8901159	108.1942404	103.9639828	99.30574494	94.94597834	90.86215568	87.03364351
160824A00019	8/24/2016	1.98	8/25/2031	8/24/2016	111.21184	111.2118393	111.2118393	109.4898808	104.0515247	98.45448384	93.28297597	88.4992165	84.06912812
160908A00019	9/8/2016	1.87	9/8/2023	9/8/2016	105.11015	105.1101463	105.1101463	105.1101463	103.3168389	100.1608163	97.12193885	94.19520895	91.37587011
160908A00023	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160908A00030	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160923A00009	9/23/2016	2.24	9/23/2031	9/23/2016	111.70538	111.7053847	111.7053847	109.9403967	104.4687606	98.84253755	93.64521372	88.83858891	84.38822251
160923A00020	9/23/2016	2.15	9/24/2029	9/23/2016	109.17514	109.1751443	109.1751443	108.4449273	104.1565334	99.45100762	95.04934687	90.92844482	87.06715157
161028A00011	10/28/2016	2.32	10/29/2029	10/28/2016	110.13633	110.1363291	110.1363291	109.3668209	104.9938685	100.2119946	95.74127276	91.55787101	87.63998903
161103A00013	11/3/2016	1.69	11/3/2021	11/3/2016	102.19909	102.1990902	102.1990902	102.1990902	101.6029039	100.0740226	98.57603173	97.1080572	95.66925774
161116A00006	11/16/2016	2.39	11/16/2026	11/16/2016	107.27137	107.2713736	107.2713736	107.2541286	104.7367414	101.3430441	98.1108053	95.03079171	92.09436954
161202A00001	12/2/2016	2.65	12/1/2023	12/2/2016	108.29992	108.2999175	108.2999175	108.2999175	106.231539	102.7589883	99.42260252	96.2162391	93.13407093
170103A00025	1/3/2017	3.09	1/3/2030	1/3/2017	114.55253	114.5525265	114.5525265	113.6470365	108.9552231	103.8744298	99.1316209	94.70036254	90.55651964

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170105A00010	1/5/2017	2.61	1/5/2027	1/5/2017	108.2601	108.2600973	108.2600973	108.2267579	105.5763845	102.0750567	98.74381829	95.57275439	92.55260521
170120A00027	1/20/2017	2.35	1/20/2022	1/20/2017	103.65923	103.6592252	103.6592252	103.6592252	102.9693159	101.2298467	99.52880169	97.865064	96.23755831
170127A00008	1/27/2017	3.05	1/28/2030	1/27/2017	114.33652	114.3365246	114.3365246	113.4315264	108.7479401	103.6762481	98.9420018	94.51880297	90.38254963
170201A00016	2/1/2017	2.49	2/1/2024	2/1/2017	108.74861	108.7486133	108.7486133	108.7486133	106.5101922	102.8736728	99.38558609	96.03907695	92.82764266
170224A00007	2/24/2017	2.02	2/24/2021	2/24/2017	101.58121	101.5812127	101.5812127	101.5812127	101.2808323	100.3869766	99.50899068	98.64645359	97.79895933
120517A00021	5/17/2012	1.85	5/17/2024	5/17/2012	103.77199	103.7719929	103.7719929	103.7719929	102.6857111	100.5535198	98.49022905	96.493039	94.55928441
130508A00004	5/8/2013	1.47	5/8/2020	5/8/2013	100.14246	100.1424571	100.1424571	100.1424571	100.1346132	100.029264	99.92414913	99.81926782	99.71461925
130522A00027	5/22/2013	2.08	5/22/2023	5/22/2013	103.26286	103.2628627	103.2628627	103.2628627	102.5520869	100.9146097	99.32003951	97.76690209	96.25378531
130614A00018	6/14/2013	2.83	6/14/2023	6/14/2013	104.33126	104.3312594	104.3312594	104.3312594	103.5877308	101.897301	100.2518802	98.64990227	97.0898683
140317A00056	3/17/2014	1.82	3/17/2021	3/17/2014	100.84652	100.8465153	100.8465153	100.8465153	100.6944757	100.150502	99.61395094	99.08465418	98.56244892
140717A00027	7/17/2014	3.14	7/17/2026	7/17/2014	114.64696	114.6469621	114.6469621	114.6291846	109.797033	104.7087672	99.91976088	95.41026809	91.16196297
160601A00023	6/1/2016	2.37	6/1/2029	6/1/2016	110.02659	110.0265915	110.0265915	109.3856451	105.2063485	100.5703382	96.22678718	92.1539439	88.33186034
160608A00015	6/8/2016	1.63	6/8/2021	6/8/2016	101.60155	101.6015458	101.6015458	101.6015458	101.1679463	100.0019302	98.86293528	97.75002826	96.66231844
160608A00030	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160719A00012	7/19/2016	1.32	7/19/2021	7/19/2016	100.74252	100.7425249	100.7425249	100.7425249	100.5155581	99.80709512	99.11092813	98.42670684	97.75409489
160810A00022	8/10/2016	1.53	8/10/2021	8/10/2016	101.67063	101.6706265	101.6706265	101.6706265	101.1695204	99.85817847	98.57037677	97.30553321	96.06308446
160810A00029	8/10/2016	2.17	8/10/2026	8/10/2016	110.47977	110.4797697	110.4797697	110.4139624	105.0679188	99.69932033	94.66149161	89.93198619	85.49000033
160812A00006	8/12/2016	2.16	8/12/2026	8/12/2016	110.94397	110.943969	110.943969	110.8809698	105.8570314	100.6965828	95.84843545	91.29157646	87.00652443
160812A00016	8/12/2016	2.06	8/13/2029	8/12/2016	108.63763	108.6376338	108.6376338	107.94307	103.722416	99.07482012	94.72503228	90.65057333	86.83085413
160906A00027	9/6/2016	2.03	9/8/2031	9/6/2016	111.60895	111.6089547	111.6089547	109.8290437	104.3284464	98.6793724	93.4624728	88.63914509	84.17459565
160907A00041	9/7/2016	1.83	9/7/2023	9/7/2016	105.05377	105.0537689	105.0537689	105.0537689	103.2292163	100.0291693	96.94840378	93.98182315	91.12457674
160908A00034	9/8/2016	2.17	9/8/2026	9/8/2016	110.04116	110.041163	110.041163	109.9171166	104.9011091	99.75634154	94.92523716	90.38652935	86.12051355
161005A00016	10/5/2016	2.32	10/6/2031	10/5/2016	112.29678	112.2967765	112.2967765	110.4701516	104.9270894	99.23929991	93.98778593	89.13346098	84.64110707
161102A00014	11/2/2016	1.99	11/2/2023	11/2/2016	105.82355	105.8235472	105.8235472	105.8235472	103.8576723	100.5123036	97.2960928	94.2033135	91.22852737
161202A00003	12/2/2016	2.94	12/3/2029	12/2/2016	113.61739	113.6173931	113.6173931	112.7552609	108.1492874	103.1455089	98.47214605	94.10353758	90.01623884
161207A00014	12/7/2016	2.75	12/8/2031	12/7/2016	116.55633	116.5563306	116.5563306	114.5276041	108.6502924	102.6514546	97.12017564	92.01393864	87.2944946
161222A00013	12/22/2016	2.93	12/22/2026	12/22/2016	115.97685	115.9768522	115.9768522	115.5994268	110.1334272	104.5563521	99.33138304	94.43376874	89.84064673
161229A00018	12/29/2016	2.46	12/29/2026	12/29/2016	108.31505	108.315052	108.315052	108.2892428	105.679051	102.2003389	98.88941539	95.73656313	92.73270315
170210A00007	2/10/2017	2.96	2/11/2030	2/10/2017	113.96682	113.966823	113.966823	113.0285876	108.3127597	103.2220283	98.47246365	94.037195	89.89170348
020129A00031	12/31/2001	6.03	6/30/2021	12/31/2001	104.04567	104.0456744	104.0456744	104.0456744	103.829076	103.1360711	102.4548611	101.785112	101.1265029
110504A00017	5/4/2011	3.46	5/4/2021	5/4/2011	103.56215	103.5621492	103.5621492	103.5621492	103.1769193	102.1110088	101.0676445	100.0461113	99.04572432
110810A00009	8/10/2011	2.36	8/10/2021	8/10/2011	101.57805	101.5780517	101.5780517	101.5780517	101.3312189	100.5775644	99.83684644	99.10871005	98.3928139
111220A00025	12/20/2011	2.17	12/20/2021	12/20/2011	101.75819	101.7581862	101.7581862	101.7581862	101.43643	100.5159985	99.61246761	98.72536422	97.85423317

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
120807A00025	8/7/2012	1.82	8/8/2022	8/7/2012	101.93878	101.9387791	101.9387791	101.9387791	101.4592542	100.2117106	98.99125897	97.79708331	96.62839912
120807A00026	8/7/2012	2.42	8/9/2027	8/7/2012	108.21511	108.2151092	108.2151092	108.0922592	105.0682259	101.3033113	97.73461844	94.34994317	91.13793721
130521A00012	5/21/2013	1.61	5/21/2020	5/21/2013	100.16772	100.1677229	100.1677229	100.1677229	100.1589978	100.0466119	99.93450168	99.82266599	99.71110375
131018A00006	10/18/2013	3.28	10/20/2025	10/18/2013	114.74302	114.7430233	114.7430233	114.7430233	110.9358775	106.2777657	101.8676659	97.69067687	93.73288036
170303A00011	3/3/2017	3.09	3/4/2030	3/3/2017	114.80645	114.8064543	114.8064543	113.8240494	109.0260441	103.8623186	99.04715274	94.55290538	90.3543707
170309A00016	3/9/2017	2.39	3/8/2024	3/9/2017	104.76734	104.7673437	104.7673437	104.7673437	103.7392586	101.6684461	99.66239152	97.71853593	95.83444037
170406A00036	4/6/2017	3.07	4/6/2032	4/6/2017	117.87051	117.8705108	117.8705108	115.5995467	109.5169362	103.3492131	97.6722041	92.44037248	87.61284284
170619A00092	6/16/2017	2.79	6/16/2027	6/16/2017	115.75284	115.7528418	115.7528418	114.8878295	108.701705	102.5837057	96.88329857	91.56913897	86.61241462
170711A00010	7/11/2017	2.38	7/12/2027	7/11/2017	108.72486	108.7248638	108.7248638	108.6159967	105.6152499	101.8553427	98.29009582	94.90747676	91.69629245
170713A00021	7/13/2017	3.25	7/13/2037	7/13/2017	142.21762	142.2176243	138.8216252	125.9518089	112.7424786	101.1001575	91.03192621	82.30233067	74.71323424
170802A00013	8/2/2017	2.5	8/2/2024	8/2/2017	109.10181	109.101809	109.101809	109.101809	106.377311	102.3319949	98.46943392	94.78038372	91.25611497
171207A00023	12/7/2017	2.45	12/7/2022	12/7/2017	105.59112	105.5911233	105.5911233	105.5911233	104.3722051	101.8199457	99.34489328	96.94420734	94.61517295
180206A00045	2/6/2018	2.71	2/6/2023	2/6/2018	106.52973	106.5297349	106.5297349	106.5297349	105.2076781	102.5398794	99.95643471	97.45420987	95.03020485
180228A00055	2/28/2018	3.33	2/28/2028	2/28/2018	120.28836	120.2883618	120.2883618	118.8901411	112.1791036	105.5215976	99.34523116	93.61160822	88.28562324
180601A00037	6/1/2018	2.86	6/1/2021	6/1/2018	103.00834	103.0083446	103.0083446	103.0083446	102.5802982	101.4235589	100.2931383	99.18814325	98.10772047
180813A00045	8/13/2018	2.89	8/13/2025	8/13/2018	107.9112	107.9112036	107.9112036	107.9112036	106.1748229	103.3411871	100.620979	98.00865013	95.49896512
180925A00116	9/25/2018	3.28	9/25/2028	9/25/2018	114.34619	114.3461884	114.3461884	113.9330552	110.0232102	105.5226041	101.2867295	97.29715522	93.53688633
181003A00032	10/3/2018	3.23	10/3/2025	10/3/2018	108.59996	108.5999597	108.5999597	108.5999597	106.765016	103.8429003	101.0404058	98.35156375	95.77074757
190103A00020	1/3/2019	3.12	1/5/2026	1/3/2019	115.26587	115.2658665	115.2658665	115.2658665	110.4588618	105.107949	100.0637385	95.30681519	90.81910177
190305A00017	3/5/2019	3.12	3/5/2026	3/5/2019	114.76327	114.7632746	114.7632746	114.7632746	110.0519278	104.8777448	100.0012903	95.40353891	91.06678479
190308A00026	3/8/2019	3.18	3/8/2034	3/8/2019	133.95338	133.95338	133.4543537	123.6196161	112.4304887	102.2353081	93.2049779	85.19277548	78.07158955
190405A00004	4/5/2019	3.02	4/5/2034	4/5/2019	120.56068	120.5606766	120.5250531	116.5126261	109.2778373	102.2190141	95.80129761	89.95707955	84.62657965
190412A00011	4/12/2019	3.07	4/12/2034	4/12/2019	120.96664	120.9666421	120.9306565	116.9031063	109.6424259	102.5586835	96.11838587	90.25367188	84.90453849
190502A00016	5/2/2019	2.87	5/1/2026	5/2/2019	114.58717	114.5871705	114.5871705	114.5871705	109.2171016	103.6559933	98.42935512	93.51507742	88.89263103
190506A00025	5/6/2019	3.03	5/4/2029	5/6/2019	122.17456	122.1745552	122.1745552	119.3558206	111.1895772	103.4255692	96.31322191	89.79311602	83.81158688
190605A00027	6/5/2019	2.64	6/5/2029	6/5/2019	119.0451	119.0450986	119.0450986	116.1721296	108.1080397	100.4603291	93.46101526	87.05044159	81.17477956
190628A00026	6/28/2019	2.54	6/28/2034	6/28/2019	116.95691	116.9569082	116.9041164	112.8732879	105.7765383	98.87142275	92.59992094	86.89454484	81.69569661
190712A00016	7/12/2019	2.39	7/12/2029	7/12/2019	110.21999	110.2199904	110.2199904	109.5468551	105.3124423	100.6327141	96.25053483	92.14360829	88.29150011
190802A00011	8/2/2019	2.01	8/2/2029	8/2/2019	109.36237	109.3623737	109.3623737	108.6574343	104.384759	99.6854415	95.28821712	91.17022185	87.31051879
190823A00018	8/23/2019	2.12	8/23/2034	8/23/2019	113.80629	113.8062877	113.7348908	109.6799913	102.6993354	95.92532314	89.7791639	84.19333056	79.10826497
160902A00004	9/2/2016	2.15	9/4/2029	9/2/2016	109.09382	109.093823	109.093823	108.3956304	104.1569423	99.48958919	95.12135241	91.02964942	87.1937969
160907A00049	9/7/2016	1.41	9/9/2024	9/7/2016	103.0269	103.0269026	103.0269026	103.0269026	101.8084131	99.53290853	97.33559766	95.2131341	93.16233945
160908A00026	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160908A00028	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304308	110.8304308	110.6884762	105.2701423	99.83794803	94.74399339	89.96507783	85.47971733
160908A00033	9/8/2016	2.17	9/8/2026	9/8/2016	110.04116	110.041163	110.041163	109.9171166	104.9011091	99.75634154	94.92523716	90.38652935	86.12051355
160916A00015	9/16/2016	2.2	9/17/2029	9/16/2016	109.43061	109.4306065	109.4306065	108.6989902	104.4007819	99.68441538	95.27259405	91.1421619	87.27192335
161014A00008	10/14/2016	2.28	10/15/2029	10/14/2016	109.92828	109.9282848	109.9282848	109.1608232	104.7964132	100.0237963	95.56169663	91.38633437	87.47595646
161021A00004	10/21/2016	2.23	10/22/2029	10/21/2016	109.66988	109.669879	109.669879	108.903905	104.5495497	99.78799265	95.33625139	91.17059788	87.26932675
161116A00005	11/16/2016	2.01	11/16/2021	11/16/2016	102.51716	102.5171628	102.5171628	102.5171628	101.9625536	100.5238384	99.11419102	97.73277661	96.37879216
170124A00017	1/24/2017	2.82	1/23/2032	1/24/2017	117.14506	117.1450605	117.1450605	115.0462469	109.094633	103.0321621	97.4451542	92.29011387	87.52793697
170203A00022	2/3/2017	2.99	2/4/2030	2/3/2017	114.1307	114.1307032	114.1307032	113.1914564	108.4690686	103.3711865	98.6149294	94.17339239	90.02202561
170221A00028	2/21/2017	2.31	2/18/2022	2/21/2017	103.72052	103.7205177	103.7205177	103.7205177	102.9947926	101.1795536	99.40596594	97.67282315	95.97896178
000929A00001	9/29/2000	6.82	9/29/2020	9/29/2000	103.34062	103.3406198	103.3406198	103.3406198	103.2191874	102.7152046	102.2161993	101.7220978	101.2328279
110701A00011	7/1/2011	3.87	7/1/2026	7/1/2011	111.98275	111.9827483	111.9827483	111.9827233	109.5901262	106.2089125	102.9816254	99.89980924	96.95553768
110909A00006	9/9/2011	2.26	9/9/2026	9/9/2011	106.63688	106.6368794	106.6368794	106.6313061	104.2392295	100.9418753	97.79802744	94.79908118	91.9369802
111115A00005	11/15/2011	2.26	11/15/2021	11/15/2011	101.75693	101.7569273	101.7569273	101.7569273	101.4538305	100.5749826	99.71197535	98.86437067	98.03174702
120806A00015	8/6/2012	2.38	8/6/2027	8/6/2012	108.05571	108.0557067	108.0557067	107.933151	104.9136301	101.1543093	97.59091166	94.21125217	91.00400039
120808A00006	8/8/2012	2.06	8/9/2027	8/8/2012	107.54781	107.5478092	107.5478092	107.4246924	104.4037951	100.647027	97.08665514	93.71043136	90.50696893
130312A00007	3/12/2013	1.76	3/12/2021	3/12/2013	101.52967	101.5296671	101.5296671	101.5296671	101.2125006	100.2884259	99.38147666	98.49117753	97.61707073
140703A00026	7/3/2014	3.11	7/3/2024	7/3/2014	110.62117	110.6211659	110.6211659	110.6211659	108.1924119	104.4453976	100.8603671	97.42928736	94.144574
141015A00029	10/15/2014	2.32	10/15/2024	10/15/2014	107.94226	107.942259	107.942259	107.942259	105.6055772	102.0660478	98.68254896	95.44713485	92.35231256
150203A00027	2/3/2015	2.26	2/4/2030	2/3/2015	111.21807	111.218072	111.218072	110.2942156	105.6648818	100.6737229	96.0181928	91.67178224	87.61030845
150223A00017	2/23/2015	1.77	2/23/2022	2/23/2015	102.36115	102.3611488	102.3611488	102.3611488	101.8178151	100.3970683	99.00710763	97.64705163	96.31605035
150722A00035	7/22/2015	2.92	7/22/2025	7/22/2015	111.98261	111.9826082	111.9826082	111.9826082	108.4397065	103.9243179	99.64299027	95.58209332	91.72886735
150803A00040	8/3/2015	3.01	8/2/2030	8/3/2015	114.97944	114.979444	114.979444	113.7934985	108.7521505	103.4037562	98.42942144	93.79846523	89.48299764
150824A00050	8/24/2015	2.03	8/25/2025	8/24/2015	105.4169	105.4169036	105.4169036	105.4169036	103.7194578	100.9505866	98.29258954	95.74004073	93.28782051
190329A00067	3/29/2019	2.61	3/29/2024	3/29/2019	108.20726	108.2072614	108.2072614	108.2072614	106.0453155	102.5577394	99.21380827	96.00674059	92.9301139
190403A00010	4/3/2019	3.08	4/3/2029	4/3/2019	122.40713	122.4071306	122.4071306	119.679465	111.5637062	103.8373739	96.75443382	90.25666618	84.29144721
190403A00014	4/3/2019	3.05	4/3/2029	4/3/2019	121.33925	121.3392509	121.3392509	118.8088113	111.0616958	103.6235073	96.79575229	90.5236459	84.75764138
190411A00022	4/11/2019	2.68	4/11/2022	4/11/2019	103.24836	103.2483605	103.2483605	103.2483605	102.7302758	101.384402	100.0679314	98.77998886	97.51973247
190422A00037	4/22/2019	3.07	4/21/2034	4/22/2019	120.96261	120.9626137	120.926364	116.9003439	109.6413329	102.5589157	96.11977967	90.25608213	84.90783632
190529A00061	5/29/2019	2.46	5/29/2026	5/29/2019	106.95477	106.9547694	106.9547694	106.9547694	104.7804836	101.626952	98.61386339	95.73365497	92.97922893
190702A00071	7/2/2019	2.69	7/1/2039	7/2/2019	137.92702	137.9270229	132.9568503	119.0275587	105.3533863	93.51716606	83.42159296	74.78296122	67.3665471
190708A00025	7/8/2019	2.21	7/1/2024	7/8/2019	107.77755	107.7775486	107.7775486	107.7775486	105.1476466	101.1885166	97.40559714	93.79001294	90.33339004
190926A00002	9/30/2019	2.01	9/29/2034	9/30/2019	114.57983	114.5798272	114.49523	110.3013066	103.1881265	96.3033536	90.06252321	84.39581444	79.24170848
191004A00022	10/4/2019	2.02	10/4/2029	10/4/2019	114.28523	114.2852317	114.2852317	111.1036515	103.0735911	95.50790866	88.60572667	82.30405594	76.54623971

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191011A00027	10/11/2019	1.84	10/11/2029	10/11/2019	108.65249	108.6524871	108.6524871	107.8871841	103.5484189	98.80965571	94.38023961	90.23641348	86.35645049
191031A00025	10/31/2019	1.91	10/31/2024	10/31/2019	103.85784	103.8578419	103.8578419	103.8578419	102.5958672	100.2683788	98.02192665	95.8530025	93.75827599
191203A00011	12/3/2019	2.21	12/3/2029	12/3/2019	116.17012	116.1701191	116.1701191	112.7509963	104.5079488	96.75313976	89.6871545	83.24373798	77.36338575
191206A00005	12/6/2019	2.18	12/7/2026	12/6/2019	111.54405	111.5440504	111.5440504	111.12586	105.1536856	99.3012255	93.83123354	88.71639498	83.93149445
200110A00039	1/10/2020	2.32	1/10/2030	1/10/2020	117.30196	117.3019626	117.3019626	113.7259622	105.3532823	97.4839564	90.31928036	83.79092582	77.83758035
200110A00043	1/10/2020	2.32	1/10/2030	1/10/2020	117.30196	117.3019626	117.3019626	113.7259622	105.3532823	97.4839564	90.31928036	83.79092582	77.83758035
200227A00046	2/27/2020	1.52	3/1/2027	2/27/2020	104.35493	104.3549321	104.3549321	104.3121833	101.7033761	98.2902924	95.04482106	91.95709348	89.01789904
200309A00081	3/9/2020	1.18	3/8/2030	3/9/2020	107.44958	107.4495833	107.4495833	103.8779853	95.97515925	88.58973757	81.87974965	75.77854788	70.22642964
200330A00047	3/30/2020	1.5	3/30/2035	3/30/2020	109.32997	109.329968	109.1726613	104.8425531	97.89009152	91.20320123	85.15762919	79.68207058	74.71391055
151102A00024	11/2/2015	2.37	11/2/2022	11/2/2015	105.23289	105.2328882	105.2328882	105.2328882	104.0746309	101.5970705	99.19259926	96.85860737	94.59259613
151118A00037	11/18/2015	2.75	11/18/2025	11/18/2015	110.59382	110.5938224	110.5938224	110.5938224	107.173728	102.9279557	98.90338471	95.0868421	91.46602196
160126A00004	1/26/2016	2.52	1/26/2026	1/26/2016	113.00936	113.00936	113.00936	113.00936	108.1963329	102.9075202	97.92489513	93.22894223	88.8014923
160211A00038	2/11/2016	1.83	2/11/2026	2/11/2016	104.6919	104.691896	104.691896	104.691896	102.72408	99.7520127	96.90771565	94.18452648	91.57618051
160212A00006	2/12/2016	1.57	2/13/2023	2/12/2016	101.9465	101.9464976	101.9464976	101.9464976	101.3257744	99.83455022	98.38005093	96.96107258	95.57646029
160301A00012	3/1/2016	2.02	3/1/2023	3/1/2016	104.86297	104.86297	104.86297	104.86297	103.4680239	100.7093301	98.04044976	95.45796496	92.95860729
160608A00022	6/8/2016	1.91	6/8/2023	6/8/2016	104.88004	104.8800437	104.8800437	104.8800437	103.2934086	100.3464456	97.50200621	94.75588988	92.10409677
150911A00007	9/10/2015	2.51	9/9/2022	9/10/2015	105.28185	105.2818528	105.2818528	105.2818528	104.2221606	101.8744782	99.5929645	97.37537373	95.2195501
150915A00072	9/15/2015	1.91	9/15/2020	9/15/2015	100.76342	100.7634248	100.7634248	100.7634248	100.6583491	100.1990656	99.74399954	99.29309265	98.84628794
160608A00034	6/8/2016	2.44	6/9/2031	6/8/2016	112.67292	112.6729196	112.6729196	111.0489921	105.6607039	100.0836729	94.92371092	90.1443489	85.71264419
160705A00008	7/5/2016	1.7	7/6/2026	7/5/2016	107.5266	107.5266009	107.5266009	107.5214002	103.3341649	98.77856932	94.48329798	90.43146717	86.60739522
160908A00016	9/8/2016	1.87	9/8/2023	9/8/2016	105.11015	105.1101463	105.1101463	105.1101463	103.3168389	100.1608163	97.12193885	94.19520895	91.37587011
160908A00024	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160908A00036	9/8/2016	2.3	9/8/2031	9/8/2016	112.08084	112.0808448	112.0808448	110.3108107	104.821128	99.1762459	93.96164593	89.13900959	84.67378902
161004A00070	10/4/2016	1.92	10/4/2023	10/4/2016	105.46269	105.4626931	105.4626931	105.4626931	103.5700496	100.2984519	97.1511538	94.1227372	91.20805099
161110A00010	11/10/2016	2.53	11/9/2029	11/10/2016	111.32708	111.3270845	111.3270845	110.5163726	106.0496315	101.1813572	96.63219224	92.37752587	88.39485906
161212A00010	12/12/2016	3	12/12/2029	12/12/2016	113.94089	113.9408936	113.9408936	113.0759082	108.4566766	103.4385353	98.75177895	94.3706686	90.27168895
170105A00012	1/5/2017	2.68	1/5/2024	1/5/2017	108.61631	108.6163089	108.6163089	108.6163089	106.4569807	102.8977655	99.48103938	96.2002523	93.0491968
170106A00021	1/6/2017	2.99	1/7/2030	1/6/2017	114.00872	114.008724	114.008724	113.1073009	108.4375626	103.3807345	98.66031007	94.24997787	90.12571476
170106A00030	1/6/2017	2.39	1/6/2027	1/6/2017	108.15923	108.159225	108.159225	108.1255993	105.4646669	101.9530829	98.61259574	95.43320515	92.40557336
170120A00028	1/20/2017	2.34	1/20/2022	1/20/2017	103.5975	103.5975009	103.5975009	103.5975009	102.9170322	101.1985923	99.51802532	97.87423083	96.26614938
170126A00004	1/26/2017	2.13	1/26/2022	1/26/2017	103.55577	103.5557708	103.5557708	103.5557708	102.8668948	101.1305024	99.4327493	97.77252725	96.14876762
110504A00014	5/4/2011	3.46	5/4/2021	5/4/2011	103.56215	103.5621492	103.5621492	103.5621492	103.1769193	102.1110088	101.0676445	100.0461113	99.04572432
110719A00017	7/19/2011	3.68	7/20/2026	7/19/2011	111.32522	111.3252187	111.3252187	111.3247205	108.9448232	105.5827461	102.3737811	99.30951421	96.38205839

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
121114A00020	11/14/2012	1.74	11/14/2022	11/14/2012	103.91638	103.9163754	103.9163754	103.9163754	102.8139792	100.451383	98.15827631	95.93216215	93.77065124
130321A00009	3/21/2013	2.17	3/23/2026	3/21/2013	108.0341	108.0341016	108.0341016	108.0341016	105.0077959	101.2013674	97.58826061	94.15698102	90.89679663
130422A00020	4/22/2013	1.98	4/22/2025	4/22/2013	104.43628	104.4362801	104.4362801	104.4362801	102.9335832	100.3564443	97.8769336	95.49050283	93.19284931
140219A00005	2/19/2014	3.13	2/20/2029	2/19/2014	114.32755	114.3275466	114.3275466	113.7766867	109.6108722	104.9216769	100.5199879	96.38499327	92.49756332
140428A00015	4/28/2014	2.35	4/29/2024	4/28/2014	104.78209	104.7820931	104.7820931	104.7820931	103.7187538	101.6058055	99.56008633	97.57889947	95.65967635
140730A00035	7/30/2014	2.67	1/30/2023	7/30/2014	103.81754	103.8175413	103.8175413	103.8175413	103.2081405	101.7257458	100.279255	98.86750246	97.4893699
141017A00022	10/17/2014	2.78	10/17/2024	10/17/2014	109.9125	109.9124955	109.9124955	109.9124955	107.2312352	103.3014354	99.55127686	95.97143273	92.55311421
150203A00012	2/3/2015	1.61	2/3/2022	2/3/2015	101.34435	101.3443478	101.3443478	101.3443478	100.9878772	99.99160368	99.01432714	98.05551354	97.11464893
150224A00010	2/24/2015	2.34	2/24/2025	2/24/2015	106.09071	106.0907063	106.0907063	106.0907063	104.3020735	101.3490858	98.51320885	95.78883307	93.17065662
150617A00030	6/17/2015	2.91	6/16/2025	6/17/2015	111.74107	111.7410682	111.7410682	111.7410682	108.3257649	103.8828275	99.66666814	95.66422757	91.86327691
150624A00076	6/24/2015	2.04	6/24/2020	6/24/2015	100.41665	100.4166533	100.4166533	100.4166533	100.3882664	100.1538946	99.92062402	99.68844694	99.45735566
140318A00003	3/17/2014	3.08	3/18/2024	3/17/2014	111.20697	111.2069664	111.2069664	111.2069664	108.8401357	105.0657965	101.4493786	97.98338608	94.66071984
140924A00057	9/24/2014	3.25	9/25/2028	9/24/2014	123.32241	123.3224122	123.3224122	121.2567914	113.7388243	106.4612953	99.75301559	93.56523214	87.85364913
150205A00031	2/5/2015	1.96	10/6/2025	2/5/2015	105.37448	105.3744752	105.3744752	105.3744752	103.5858671	100.740084	98.0111391	95.39318646	92.88071665
150219A00016	2/19/2015	2.68	2/19/2025	2/19/2015	110.33806	110.3380562	110.3380562	110.3380562	107.1884279	102.8568684	98.73638388	94.81542167	91.08312404
150320A00019	3/20/2015	2.25	3/20/2025	3/20/2015	108.29347	108.2934698	108.2934698	108.2934698	105.5961887	101.7902982	98.1646582	94.70947017	91.41552699
150603A00032	6/3/2015	2.21	6/3/2025	6/3/2015	105.75121	105.7512065	105.7512065	105.7512065	104.1395199	101.4422091	98.85007302	96.35808482	93.96149534
150617A00017	6/17/2015	2.27	6/17/2025	6/17/2015	105.92058	105.9205755	105.9205755	105.9205755	104.3052544	101.6030635	99.00627631	96.50985248	94.10903038
150714A00003	7/14/2015	3.76	7/12/2030	7/14/2015	120.44159	120.4415908	120.4415908	119.225207	113.9464289	108.342177	103.1289833	98.27486613	93.75074447
150717A00032	7/17/2015	1.88	7/17/2020	7/17/2015	100.52507	100.5250687	100.5250687	100.5250687	100.4797811	100.1822116	99.88642262	99.59239805	99.30012201
150803A00036	8/3/2015	3.41	8/2/2030	8/3/2015	125.7935	125.7934985	125.7934985	122.0063672	113.6636362	105.6935051	98.4345911	91.81680254	85.77741761
150925A00034	9/25/2015	2.36	9/25/2025	9/25/2015	105.90748	105.9074807	105.9074807	105.9074807	104.1630759	101.3515558	98.65375172	96.06404923	93.57715305
150630A00077	6/30/2015	2.02	6/30/2020	6/30/2015	100.44141	100.4414101	100.4414101	100.4414101	100.4098101	100.1586574	99.90875637	99.66009782	99.41267251
150805A00015	8/5/2015	2.29	8/5/2022	8/5/2015	104.98945	104.9894515	104.9894515	104.9894515	103.9897411	101.7247401	99.52153576	97.3780982	95.29247596
151022A00020	10/22/2015	1.71	10/22/2020	10/22/2015	100.82591	100.825908	100.825908	100.825908	100.676901	100.1048449	99.53921289	98.97989724	98.42679262
150318A00003	3/18/2015	2.04	3/18/2022	3/18/2015	102.42834	102.4283441	102.4283441	102.4283441	101.9592692	100.7070656	99.48048816	98.27881131	97.10133576
150409A00009	4/9/2015	1.89	4/9/2025	4/9/2015	104.70468	104.7046811	104.7046811	104.7046811	103.1930082	100.6010963	98.10760676	95.70794483	93.39776428
150420A00012	4/20/2015	2.07	4/20/2022	4/20/2015	103.57214	103.5721377	103.5721377	103.5721377	102.7566255	100.7817221	98.85546656	96.97633738	95.14287211
150427A00014	4/27/2015	2.98	4/27/2035	4/27/2015	121.7459	121.7458994	121.5544052	116.6688261	108.8917109	101.4200783	94.66828525	88.55593676	83.0124785
150529A00056	5/29/2015	1.41	5/29/2020	5/29/2015	100.14002	100.1400182	100.1400182	100.1400182	100.1299225	100.0066859	99.88378355	99.76121402	99.63897585
150615A00024	6/15/2015	2.26	6/16/2025	6/15/2015	105.89247	105.8924653	105.8924653	105.8924653	104.2776458	101.576209	98.9801439	96.48441167	94.08425235
150630A00081	6/30/2015	2.02	6/30/2020	6/30/2015	100.44141	100.4414101	100.4414101	100.4414101	100.4098101	100.1586574	99.90875637	99.66009782	99.41267251
150630A00086	6/30/2015	2.02	6/30/2020	6/30/2015	100.44141	100.4414101	100.4414101	100.4414101	100.4098101	100.1586574	99.90875637	99.66009782	99.41267251

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150630A00088	6/30/2015	2.02	6/30/2020	6/30/2015	100.44141	100.4414101	100.4414101	100.4414101	100.4098101	100.1586574	99.90875637	99.66009782	99.41267251
150713A00011	7/13/2015	1.89	7/13/2020	7/13/2015	100.50863	100.50863	100.50863	100.50863	100.4665652	100.1798992	99.89488644	99.61151249	99.32976312
150803A00033	8/3/2015	3.41	8/2/2030	8/3/2015	125.7935	125.7934985	125.7934985	122.0063672	113.6636362	105.6935051	98.4345911	91.81680254	85.77741761
150803A00038	8/3/2015	3.41	8/2/2030	8/3/2015	125.7935	125.7934985	125.7934985	122.0063672	113.6636362	105.6935051	98.4345911	91.81680254	85.77741761
150803A00042	8/3/2015	3.01	8/2/2030	8/3/2015	114.97943	114.9794319	114.9794319	113.7934884	108.7521453	103.4037553	98.42942432	93.79847153	89.48300702
150902A00008	9/2/2015	1.37	9/2/2020	9/2/2015	100.35488	100.3548798	100.3548798	100.3548798	100.3061192	100.0234909	99.74277162	99.46394044	99.18697655
150902A00009	9/2/2015	1.68	9/2/2020	9/2/2015	100.65237	100.6523688	100.6523688	100.6523688	100.5638046	100.1475	99.73469581	99.32534787	98.91941264
150922A00014	9/22/2015	1.84	9/22/2020	9/22/2015	100.76344	100.7634409	100.7634409	100.7634409	100.650324	100.1708638	99.69598802	99.2256311	98.75972859
151001A00023	10/1/2015	2.02	10/1/2025	10/1/2015	105.55215	105.5521477	105.5521477	105.5521477	103.7609625	100.9105905	98.17723193	95.55503298	93.03847666
151006A00019	10/6/2015	1.67	10/6/2022	10/6/2015	101.86414	101.8641378	101.8641378	101.8641378	101.3405897	100.0129408	98.71540315	97.44704487	96.20697046
181010A00025	10/10/2018	3.48	10/10/2030	10/10/2018	119.20615	119.206147	119.206147	117.8739683	112.5196911	106.876229	101.634348	96.76057402	92.22452534
181129A00005	11/29/2018	3.21	11/29/2023	11/29/2018	110.20554	110.2055363	110.2055363	110.2055363	108.139539	104.6551813	101.3067047	98.08800006	94.99327133
181207A00026	12/7/2018	2.94	12/6/2023	12/7/2018	109.36017	109.360172	109.360172	109.360172	107.4257782	104.1257167	100.9527378	97.90114606	94.96553804
190118A00006	1/18/2019	3.14	1/18/2034	1/18/2019	122.72676	122.726763	122.7107973	118.8034223	111.5134968	104.380015	97.88706541	91.96788812	86.5633642
190205A00019	2/5/2019	2.94	2/5/2024	2/5/2019	109.68934	109.6893432	109.6893432	109.6893432	107.4614159	103.8359352	100.3579075	97.0205331	93.81736203
190205A00020	2/5/2019	3.32	2/5/2029	2/5/2019	123.1733	123.1733019	123.1733019	120.7748038	113.0481564	105.6050892	98.76283059	92.46833122	86.67353219
190205A00021	2/5/2019	3.32	2/5/2029	2/5/2019	123.1733	123.1733019	123.1733019	120.7748038	113.0481564	105.6050892	98.76283059	92.46833122	86.67353219
190308A00008	3/8/2019	3.19	3/8/2034	3/8/2019	121.79197	121.7919661	121.7637562	117.782536	110.5145565	103.4134941	96.95407778	91.06897775	85.69862251
190322A00011	3/22/2019	2.99	3/22/2034	3/22/2019	120.19577	120.1957733	120.1674651	116.2377673	109.0645072	102.0561228	95.68105708	89.87284809	84.57269307
190329A00021	3/29/2019	2.96	3/29/2034	3/29/2019	119.95768	119.9576776	119.9291935	116.0070772	108.847887	101.853289	95.49078233	89.69403126	84.40434501
190430A00026	4/30/2019	3.03	4/28/2034	4/30/2019	120.64199	120.6419887	120.6056115	116.5900449	109.3501239	102.2863712	95.86422308	90.01601115	84.68190303
190510A00022	5/10/2019	2.95	5/10/2034	5/10/2019	120.12404	120.1240351	120.0798377	116.0112002	108.7627726	101.700323	95.28258938	89.44124532	84.11591346
190515A00035	5/15/2019	2.82	2/15/2029	5/15/2019	119.98637	119.9863669	119.9863669	117.4230688	109.5152334	101.9816901	95.06894153	88.72146417	82.88900609
190708A00026	7/8/2019	2.21	7/1/2024	7/8/2019	107.77755	107.7775486	107.7775486	107.7775486	105.1476466	101.1885166	97.40559714	93.79001294	90.33339004
190712A00003	7/12/2019	2.61	7/12/2034	7/12/2019	117.62042	117.620422	117.55783	113.436253	106.2610695	99.28885019	92.95957627	87.20443756	81.9627057
190905A00021	9/5/2019	2.08	9/5/2029	9/5/2019	114.69048	114.6904809	114.6904809	111.5957699	103.5961692	96.04950215	89.15962624	82.86466519	77.10891523
190905A00024	9/5/2019	2.08	9/5/2029	9/5/2019	114.69048	114.6904809	114.6904809	111.5957699	103.5961692	96.04950215	89.15962624	82.86466519	77.10891523
190913A00018	9/13/2019	2.11	9/11/2026	9/13/2019	106.11811	106.1181135	106.1181135	106.1124725	103.7318819	100.4504361	97.3217635	94.33729987	91.48902692
190930A00026	9/30/2019	1.95	9/30/2024	9/30/2019	106.78533	106.7853294	106.7853294	106.7853294	104.0585417	100.0906502	96.30605576	92.69522444	89.24917069
191105A00012	11/5/2019	2.07	11/3/2034	11/5/2019	115.24127	115.2412746	115.1317753	110.7811321	103.5523028	96.57345637	90.25375003	84.52103737	79.31182901
191112A00023	11/12/2019	2.36	11/13/2029	11/12/2019	117.3991	117.3991006	117.3991006	114.0269767	105.7532024	97.9598726	90.85485317	84.37228415	78.45298184
191113A00013	11/13/2019	2.17	11/13/2026	11/13/2019	111.37619	111.3761865	111.3761865	111.0271842	105.1143173	99.31313632	93.88796945	88.81218149	84.06116688
191209A00005	12/9/2019	2.22	12/10/2029	12/9/2019	114.70057	114.7005734	114.7005734	111.8920981	104.5601866	97.50566015	91.05167188	85.14182186	79.72537123

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200109A00006	1/9/2020	1.95	1/9/2030	1/9/2020	109.46588	109.4658794	109.4658794	108.5920697	104.0813383	99.20293977	94.65020699	90.39759382	86.42178166
200130A00046	1/30/2020	1.81	1/29/2027	1/30/2020	105.347	105.3469993	105.3469993	105.3134661	102.733189	99.32503289	96.08251275	92.99596892	90.0563803
200206A00008	2/6/2020	1.64	2/6/2025	2/6/2020	106.69531	106.6953052	106.6953052	106.6953052	103.5878334	99.3499044	95.32073307	91.48884011	87.84343771
190829A00039	8/29/2019	1.85	8/29/2034	8/29/2019	113.21921	113.2192069	113.1469172	109.0683474	102.0764121	95.3002054	89.15465759	83.57171659	78.49138446
190905A00019	9/5/2019	2.08	9/5/2029	9/5/2019	114.69048	114.690481	114.690481	111.5957699	103.5961692	96.04950213	89.15962622	82.86466516	77.1089152
191004A00017	10/4/2019	2.02	10/4/2029	10/4/2019	114.28523	114.2852336	114.2852336	111.1036519	103.0735905	95.5079072	88.60572452	82.30405323	76.54623654
191009A00009	10/9/2019	1.8	10/9/2026	10/9/2019	105.1153	105.1153012	105.1153012	105.1049499	102.6922502	99.40416802	96.27084095	93.28350683	90.4339671
200303A00028	3/3/2020	1.54	3/4/2030	3/3/2020	109.5459	109.5459048	109.5459048	106.5945269	99.41566949	92.54315277	86.26903748	80.53594471	75.29236276
200309A00083	3/9/2020	0.82	3/9/2023	3/9/2020	101.48896	101.4889644	101.4889644	101.4889644	100.0963695	97.36746463	94.72842859	92.17580985	89.70630919
200311A00026	3/11/2020	1.34	3/11/2030	3/11/2020	108.50038	108.5003847	108.5003847	105.1566934	97.52297766	90.32436945	83.77264489	77.80457914	72.36349755
200323A00090	3/23/2020	1.55	3/23/2027	3/23/2020	105.01588	105.0158825	105.0158825	104.9096457	101.8341433	98.01069699	94.38597469	90.94770805	87.68448144
200327A00094	3/27/2020	1.6	3/27/2030	3/27/2020	110.06581	110.0658082	110.0658082	107.0421146	99.80803662	92.8865557	86.57041638	80.80128729	75.52683288
151030A00004	10/30/2015	2.48	10/30/2025	10/30/2015	110.16138	110.1613762	110.1613762	110.1613762	106.8002457	102.5855709	98.58947132	94.79899293	91.20202989
151118A00025	11/18/2015	2.4	11/18/2022	11/18/2015	105.21733	105.2173332	105.2173332	105.2173332	104.073657	101.6369122	99.27227001	96.97713016	94.74900471
151124A00007	11/24/2015	1.98	11/23/2022	11/24/2015	102.36237	102.3623697	102.3623697	102.3623697	101.8118857	100.4355941	99.09121419	97.77774166	96.49421218
151228A00013	12/28/2015	2.27	12/29/2025	12/28/2015	106.48773	106.4877335	106.4877335	106.4877335	104.5795301	101.6238631	98.79263301	96.07946964	93.47837718
160225A00011	2/25/2016	1.5	2/27/2023	2/25/2016	102.36497	102.3649727	102.3649727	102.3649727	101.633114	99.95900399	98.32931883	96.74253149	95.19717881
160413A00014	4/13/2016	2.55	4/14/2031	4/13/2016	113.14931	113.1493141	113.1493141	111.6178827	106.2950522	100.7605798	95.63467398	90.88204798	86.47078723
160413A00020	4/13/2016	2.48	4/13/2026	4/13/2016	111.70125	111.7012454	111.7012454	111.7012454	106.801748	101.5944707	96.6940182	92.08038751	87.73498971
160413A00033	4/13/2016	2.32	4/13/2026	4/13/2016	109.21163	109.2116322	109.2116322	109.2116322	105.3472815	100.9294825	96.75528643	92.80940008	89.07758546
160414A00042	4/13/2016	2.48	4/13/2026	4/13/2016	111.70125	111.7012454	111.7012454	111.7012454	106.801748	101.5944707	96.6940182	92.08038751	87.73498971
160421A00016	4/21/2016	2.26	4/21/2026	4/21/2016	110.9989	110.9989	110.9989	110.9989	106.3925721	101.4164843	96.72944509	92.31271643	88.14888285
160511A00015	5/11/2016	2.42	5/11/2026	5/11/2016	111.50091	111.5009083	111.5009083	111.5009083	106.477973	101.2277343	96.29005577	91.64435505	87.27151985
160603A00029	6/3/2016	2.18	6/3/2031	6/3/2016	112.2735	112.2735048	112.2735048	110.6399401	105.2377531	99.65323469	94.48783992	89.70481246	85.27095975
160616A00029	6/16/2016	1.58	6/16/2026	6/16/2016	104.75877	104.7587709	104.7587709	104.7587709	102.5644874	99.4263066	96.42986242	93.56742491	90.83174493
160629A00066	6/29/2016	2.61	6/30/2036	6/29/2016	131.12473	131.1247318	128.7358958	117.4652305	105.6374525	95.12179323	85.96641504	77.97710588	70.98902286
160722A00011	7/22/2016	2.17	7/23/2029	7/22/2016	109.11226	109.1122581	109.1122581	108.4453696	104.2530287	99.61994985	95.28148753	91.21556236	87.40193899
160802A00026	8/2/2016	1.84	8/2/2023	8/2/2016	104.94835	104.9483525	104.9483525	104.9483525	103.2079234	100.0913362	97.08799072	94.19317048	91.40238045
160810A00027	8/10/2016	2.13	8/10/2026	8/10/2016	109.71434	109.7143404	109.7143404	109.6568514	104.7084329	99.62256067	94.84356044	90.35084449	86.12532106
160608A00023	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932144	111.2932144	111.2932144	106.1465705	100.8547747	95.88128287	91.2049191	86.80603659
160705A00010	7/5/2016	1.68	7/5/2023	7/5/2016	104.33371	104.3337105	104.3337105	104.3337105	102.6639883	99.62425621	96.69282684	93.86518197	91.13702232
160713A00015	7/13/2016	1.57	7/13/2026	7/13/2016	104.78856	104.788562	104.788562	104.7882544	102.5372482	99.36022809	96.32831093	93.43350236	90.66830998
160810A00024	8/10/2016	1.52	8/10/2021	8/10/2016	101.64172	101.6417194	101.6417194	101.6417194	101.1461439	99.84698818	98.57114138	97.31802637	96.08708468

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160810A00025	8/10/2016	2.17	8/10/2026	8/10/2016	110.47977	110.4797697	110.4797697	110.4139624	105.0679188	99.69932033	94.66149161	89.93198619	85.49000033
160819A00012	8/19/2016	2.14	8/20/2029	8/19/2016	109.04266	109.0426596	109.0426596	108.3452412	104.1087664	99.44377637	95.07772425	90.98804394	87.15406676
160908A00017	9/8/2016	1.87	9/8/2023	9/8/2016	105.11015	105.1101463	105.1101463	105.1101463	103.3168389	100.1608163	97.12193885	94.19520895	91.37587011
160908A00022	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304308	110.8304308	110.6884762	105.2701423	99.83794803	94.74399339	89.96507783	85.47971733
160908A00037	9/8/2016	1.4	9/8/2023	9/8/2016	102.61401	102.6140079	102.6140079	102.6140079	101.651348	99.66469661	97.73831843	95.86991078	94.05727545
160930A00047	9/30/2016	2.08	10/1/2029	9/30/2016	108.8179	108.8178972	108.8178972	108.0898013	103.8152365	99.12494755	94.73755689	90.63002997	86.78128271
161005A00031	10/5/2016	1.43	10/5/2021	10/5/2016	101.10781	101.1078145	101.1078145	101.1078145	100.8250162	99.99218476	99.17413075	98.37044868	97.58074829
161014A00019	10/14/2016	2.39	10/15/2031	10/14/2016	112.74066	112.7406625	112.7406625	110.9063755	105.3413588	99.6310547	94.35876943	89.48525806	84.97516009
161014A00026	10/14/2016	2.16	10/14/2031	10/14/2016	112.5206	112.5206028	112.5206028	110.6719207	105.0831817	99.35564815	94.06906131	89.18379542	84.66415748
161128A00006	11/28/2016	1.93	11/29/2021	11/28/2016	102.86986	102.8698566	102.8698566	102.8698566	102.2635614	100.7076682	99.18399722	97.6916018	96.22957253
161214A00034	12/14/2016	2.65	12/14/2026	12/14/2016	108.30424	108.3042394	108.3042394	108.2793483	105.6825769	102.2179234	98.91984811	95.77873235	92.78558746
161216A00008	12/16/2016	3.16	12/17/2029	12/16/2016	114.80495	114.8049469	114.8049469	113.9332296	109.2790318	104.2228889	99.50064838	95.08637477	90.95637313
161229A00019	12/29/2016	2.46	12/29/2026	12/29/2016	108.31505	108.3150495	108.3150495	108.2892403	105.6790498	102.2003387	98.88941616	95.73656477	92.73270558
110505A00036	5/5/2011	3.23	5/5/2021	5/5/2011	103.19574	103.1957443	103.1957443	103.1957443	102.8283236	101.8026901	100.798482	99.81502353	98.85166706
121016A00013	10/16/2012	1.64	10/14/2022	10/16/2012	101.8242	101.8242034	101.8242034	101.8242034	101.300334	99.97252525	98.6748499	97.40637453	96.16620237
140908A00080	9/8/2014	2.51	3/8/2024	9/8/2014	107.4	107.4000012	107.4000012	107.4000012	105.5972118	102.5428329	99.60713986	96.78472838	94.07047268
140925A00039	9/25/2014	2.02	9/27/2021	9/25/2014	101.39741	101.3974083	101.3974083	101.3974083	101.1313969	100.3355025	99.55352001	98.78506793	98.02977934
141107A00027	11/7/2014	1.98	11/8/2021	11/7/2014	101.50503	101.505034	101.505034	101.505034	101.2030851	100.3273387	99.46736196	98.62271939	97.79299182
141203A00039	12/3/2014	3.6	12/4/2034	12/3/2014	126.78129	126.7812948	126.6334885	121.7332811	113.7105501	105.9744206	98.97293302	92.62518821	86.8600558
150414A00037	4/14/2015	2.34	4/14/2025	4/14/2015	105.40513	105.4051348	105.4051348	105.4051348	103.8891367	101.2885325	98.78642268	96.37821981	94.05958427
150617A00036	6/17/2015	2.44	6/15/2022	6/17/2015	104.50429	104.5042938	104.5042938	104.5042938	103.6244086	101.5561428	99.54103012	97.57731006	95.66329553
150624A00077	6/24/2015	2.54	6/24/2022	6/24/2015	104.76548	104.7654808	104.7654808	104.7654808	103.8703168	101.7769321	99.73779381	97.75108806	95.81507754
150701A00056	7/1/2015	2.34	7/1/2025	7/1/2015	106.21246	106.2124596	106.2124596	106.2124596	104.5496529	101.8007457	99.16042905	96.62345165	94.18485552
150729A00041	7/29/2015	2.44	7/29/2025	7/29/2015	105.95578	105.955778	105.955778	105.955778	104.3016042	101.5676518	98.94147957	96.41788523	93.99195662
151006A00050	10/6/2015	2.21	10/6/2022	10/6/2015	102.60237	102.6023694	102.6023694	102.6023694	102.0750564	100.7378445	99.43096025	98.15346493	96.90445669
151023A00018	10/23/2015	1.74	10/23/2020	10/23/2015	100.83735	100.8373484	100.8373484	100.8373484	100.6918162	100.1312533	99.57697094	99.02886378	98.4868287
160810A00030	8/10/2016	2.24	8/11/2031	8/10/2016	111.61821	111.6182111	111.6182111	109.9074888	104.4831297	98.89349061	93.72724885	88.94692576	84.51870953
160908A00027	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304308	110.8304308	110.6884762	105.2701423	99.83794803	94.74399339	89.96507783	85.47971733
160908A00031	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160909A00018	9/9/2016	2.22	9/10/2029	9/9/2016	109.53267	109.5326742	109.5326742	108.800674	104.498642	99.77802243	95.36220388	91.2280129	87.35423774
161007A00012	10/7/2016	2.27	10/9/2029	10/7/2016	109.8762	109.8761966	109.8761966	109.1093523	104.7471301	99.97687049	95.5169611	91.3436362	87.43515564
161012A00011	10/12/2016	1.53	10/12/2023	10/12/2016	102.63912	102.6391178	102.6391178	102.6391178	101.7624439	99.93083098	98.15394371	96.42969854	94.75610696
170207A00055	2/7/2017	2.36	2/8/2027	2/7/2017	108.14849	108.1484941	108.1484941	108.1046841	105.389008	101.8392729	98.46430798	95.25380101	92.19812887

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
090508A00007	5/8/2009	4.26	5/8/2020	5/8/2009	100.43662	100.4366215	100.4366215	100.4366215	100.4287645	100.3231852	100.2178405	100.1127298	100.0078522
110304A00006	3/4/2011	3.6	3/4/2021	3/4/2011	103.05936	103.0593587	103.0593587	103.0593587	102.7644223	101.8847267	101.0207008	100.1719232	99.33798794
140313A00025	3/13/2014	2.43	3/15/2021	3/13/2014	102.19858	102.1985787	102.1985787	102.1985787	101.8716207	100.9253094	99.99674411	99.08542726	98.19087981
140313A00028	3/13/2014	2.86	3/13/2024	3/13/2014	108.81909	108.8190877	108.8190877	108.8190877	106.9089103	103.7138614	100.6449363	97.69633435	94.86255612
140618A00019	6/18/2014	3.08	6/18/2024	6/18/2014	106.22126	106.2212595	106.2212595	106.2212595	105.0780093	102.861168	100.7169165	98.64227156	96.63439483
140929A00028	9/29/2014	2.62	3/29/2023	9/29/2014	106.98907	106.9890721	106.9890721	106.9890721	105.5760865	102.8095339	100.1341692	97.54644948	95.0429908
150115A00031	1/15/2015	1.42	1/18/2022	1/15/2015	101.26866	101.2686603	101.2686603	101.2686603	100.9293771	99.97079243	99.03018639	98.10705144	97.20089954
150407A00022	4/7/2015	1.67	4/7/2020	4/7/2015	100.02566	100.0256582	100.0256582	100.0256582	100.0244762	100.0050839	99.98571081	99.96635691	99.94702217
150617A00026	6/17/2015	2	6/15/2020	6/17/2015	100.36444	100.3644375	100.3644375	100.3644375	100.3407848	100.1310982	99.92230085	99.71438703	99.50735107
150619A00011	6/19/2015	1.93	6/19/2020	6/19/2015	100.26178	100.261784	100.261784	100.261784	100.2461776	100.0882368	99.93085915	99.77404142	99.61778038
150729A00028	7/29/2015	2.25	7/29/2025	7/29/2015	105.95891	105.9589143	105.9589143	105.9589143	104.2978512	101.5543851	98.91937413	96.38757018	93.9540184
150803A00037	8/3/2015	3.41	8/2/2030	8/3/2015	125.79348	125.7934821	125.7934821	122.006358	113.6636328	105.6935064	98.43459642	91.8168112	85.77742906
150803A00041	8/3/2015	3.01	8/2/2030	8/3/2015	114.97942	114.9794213	114.9794213	113.7934804	108.7521425	103.403756	98.42942825	93.79847825	89.48301617
150804A00022	8/4/2015	2.37	8/4/2022	8/4/2015	104.75203	104.7520279	104.7520279	104.7520279	103.7587547	101.5065142	99.31552566	97.18378347	95.10935945
150812A00052	8/14/2015	2.13	8/14/2025	8/14/2015	105.70427	105.7042667	105.7042667	105.7042667	104.0030999	101.2271248	98.56227704	96.00312023	93.54452483
150825A00008	8/25/2015	2.82	8/25/2025	8/25/2015	111.6894	111.6893988	111.6893988	111.6893988	108.033596	103.4685903	99.14373347	95.04485942	91.15871594
150929A00087	9/29/2015	2.09	9/29/2025	9/29/2015	105.67643	105.676433	105.676433	105.676433	103.9281428	101.1127732	98.41160595	95.81898726	93.32958562
151002A00003	10/2/2015	1.94	10/2/2025	10/2/2015	105.31483	105.3148312	105.3148312	105.3148312	103.5275623	100.6835304	97.9562548	95.33989434	92.82894399
151005A00084	10/5/2015	2.25	10/5/2022	10/5/2015	104.7865	104.7865022	104.7865022	104.7865022	103.6835382	101.2806382	98.94724424	96.68093177	94.47937664
151013A00033	10/13/2015	2.23	10/14/2025	10/13/2015	105.61011	105.6101052	105.6101052	105.6101052	103.8244649	100.9820554	98.25603896	95.64060553	93.13027873
151023A00019	10/23/2015	1.74	10/23/2020	10/23/2015	100.83735	100.8373484	100.8373484	100.8373484	100.6918162	100.1312533	99.57697094	99.02886378	98.4868287
200206A00031	2/6/2020	2.15	2/6/2030	2/6/2020	115.90015	115.9001511	115.9001511	112.2540477	103.9125859	96.0845184	88.96271765	82.47825536	76.5693158
200206A00038	2/6/2020	1.78	2/6/2023	2/6/2020	104.12544	104.1254414	104.1254414	104.1254414	102.7742423	100.0694937	97.45122257	94.9162011	92.4613399
200306A00057	3/6/2020	0.92	3/8/2027	3/6/2020	104.72181	104.7218071	104.7218071	104.1574554	98.71492516	93.30804497	88.25967916	83.54369483	79.13600712
200309A00082	3/9/2020	1.18	3/8/2030	3/9/2020	107.44958	107.4495784	107.4495784	103.8779865	95.97516639	88.5897489	81.87976448	75.77856563	70.22644978
200319A00035	3/19/2020	1.72	3/18/2033	3/19/2020	113.05049	113.0504924	113.0504924	108.3682884	100.845028	93.62892755	87.10173519	81.18826836	75.82225849
200330A00058	3/30/2020	1.49	3/29/2030	3/30/2020	109.19337	109.1933685	109.1933685	106.1822555	98.99562815	92.12156525	85.84922968	80.12059611	74.88360753
151204A00011	12/4/2015	2.28	12/4/2025	12/4/2015	106.51619	106.5161858	106.5161858	106.5161858	104.6096341	101.6540701	98.82287122	96.1096756	93.50849495
160115A00011	1/15/2016	2.18	1/15/2026	1/15/2016	105.70684	105.7068391	105.7068391	105.7068391	103.7714109	100.8093379	97.97309601	95.25619264	92.65251921
160209A00006	2/9/2016	1.91	2/9/2026	2/9/2016	104.94174	104.9417402	104.9417402	104.9417402	102.9694297	99.99037544	97.13938513	94.40978152	91.7952859
160210A00051	2/10/2016	2.28	2/10/2031	2/10/2016	112.49969	112.4996875	112.4996875	111.0589438	105.8235416	100.3608782	95.29761264	90.59958252	86.23585967
160329A00017	3/29/2016	2.48	3/30/2026	3/29/2016	111.03669	111.0366928	111.0366928	111.0366928	106.5485363	101.6314809	96.99690146	92.62667659	88.5039503
160330A00003	3/30/2016	1.68	3/30/2021	3/30/2016	101.39143	101.3914278	101.3914278	101.3914278	101.0458755	100.0663148	99.10586991	98.16398416	97.24012219

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160404A00019	4/4/2016	2.48	4/4/2031	4/4/2016	112.72327	112.7232703	112.7232703	111.198104	105.8954041	100.3818349	95.27526837	90.54055546	86.14590587
160412A00029	4/12/2016	2.48	4/14/2031	4/12/2016	112.72377	112.7237725	112.7237725	111.1980503	105.8951444	100.381414	95.27472196	90.53991328	86.14519266
160427A00004	4/27/2016	2.09	4/27/2026	4/27/2016	105.66174	105.6617357	105.6617357	105.6617357	103.5684149	100.4912785	97.54961699	94.7362111	92.04428121
160428A00028	4/28/2016	2	4/28/2026	4/28/2016	105.98846	105.9884552	105.9884552	105.9884552	103.8791014	100.7811727	97.82002718	94.98835686	92.27929978
160504A00022	5/4/2016	2	5/4/2023	5/4/2016	105.0814	105.0813986	105.0813986	105.0813986	103.5429738	100.6303469	97.81714304	95.09938192	92.47326795
160511A00016	5/11/2016	2.48	5/12/2031	5/11/2016	112.8216	112.8215985	112.8215985	111.2455143	105.8939847	100.3424727	95.20345589	90.44108647	86.0229628
160608A00016	6/8/2016	1.63	6/8/2021	6/8/2016	101.59354	101.5935366	101.5935366	101.5935366	101.1625613	100.0023468	98.86896972	97.76150392	96.67906559
160608A00019	6/8/2016	2.36	6/8/2026	6/8/2016	111.29321	111.2932101	111.2932101	111.2932101	106.1465694	100.8547756	95.88128551	91.20492336	86.80604231
160810A00028	8/10/2016	2.19	8/10/2026	8/10/2016	110.9358	110.9357985	110.9357985	110.8648676	105.2742415	99.73197271	94.53517188	89.66024889	85.08534658
160826A00005	8/26/2016	2.12	8/27/2029	8/26/2016	108.94174	108.9417379	108.9417379	108.2446717	104.0119419	99.35112926	94.98900465	90.90301885	87.07251899
160908A00015	9/8/2016	1.87	9/8/2023	9/8/2016	105.11015	105.1101463	105.1101463	105.1101463	103.3168389	100.1608163	97.12193885	94.19520895	91.37587011
160908A00021	9/8/2016	2.21	9/8/2026	9/8/2016	110.83043	110.8304284	110.8304284	110.688474	105.2701423	99.83794919	94.74399555	89.96508088	85.47972117
160908A00035	9/8/2016	2.3	9/8/2031	9/8/2016	112.08084	112.0808388	112.0808388	110.3108063	104.8211275	99.17624802	93.9616504	89.13901613	84.67379737
161104A00002	11/4/2016	2.26	11/5/2029	11/4/2016	109.91114	109.9111423	109.9111423	109.1108176	104.7006934	99.89418469	95.40273463	91.20204548	87.26990437
161227A00073	12/27/2016	2.83	12/28/2026	12/27/2016	113.77513	113.775127	113.775127	113.4888324	108.8369586	103.857321	99.1776298	94.77736367	90.63754047
170112A00015	1/12/2017	2.32	1/12/2027	1/12/2017	107.90224	107.9022392	107.9022392	107.8684137	105.2135574	101.7101085	98.37737731	95.20538462	92.18481245
170113A00028	1/13/2017	2.92	1/14/2030	1/13/2017	113.6293	113.6292988	113.6292988	112.7305159	108.0760809	103.0358956	98.33102686	93.93524652	89.82460748
170217A00012	2/17/2017	2.97	2/19/2030	2/17/2017	113.9528	113.9527972	113.9527972	113.0243082	108.3363121	103.2675162	98.53768147	94.12014458	89.99057425
001127A00007	11/27/2000	6.74	11/27/2020	11/27/2000	102.53321	102.5332135	102.5332135	102.5332135	102.4478287	102.0612826	101.6783802	101.2990645	100.9232792
120330A00013	3/30/2012	2.98	4/2/2024	3/30/2012	109.31104	109.311035	109.311035	109.311035	107.1960311	103.7606811	100.4656313	97.30427966	94.27037332
120806A00014	8/6/2012	1.77	8/8/2022	8/6/2012	101.87482	101.8748238	101.8748238	101.8748238	101.3955974	100.1488317	98.92914114	97.73571021	96.5677549
120820A00009	8/20/2012	2.4	8/22/2022	8/20/2012	104.67619	104.6761924	104.6761924	104.6761924	103.7096321	101.5248096	99.39964793	97.33216882	95.3204716
140508A00008	5/8/2014	1.66	5/10/2021	5/8/2014	100.97442	100.9744226	100.9744226	100.9744226	100.7847626	100.1573604	99.53985343	98.93198285	98.33349943
140730A00037	7/30/2014	2.83	1/30/2024	7/30/2014	105.47358	105.4735834	105.4735834	105.4735834	104.5034467	102.4995657	100.5563498	98.67146267	96.84267572
140821A00040	8/21/2014	3.41	8/21/2031	8/21/2014	131.38364	131.3836372	131.3836372	125.4086299	115.6687393	106.5746852	98.37728689	90.97967992	84.29610096
140917A00030	9/17/2014	3.23	9/17/2029	9/17/2014	123.14671	123.1467113	123.1467113	120.6045597	113.2018129	105.9799086	99.35019132	93.25866747	87.65662525
150114A00029	1/14/2015	1.99	1/14/2022	1/14/2015	101.66117	101.6611685	101.6611685	101.6611685	101.3215965	100.3618765	99.42010745	98.49578288	97.58841592
150213A00014	2/13/2015	2.41	2/13/2025	2/13/2015	105.91157	105.9115721	105.9115721	105.9115721	104.4644746	101.9229356	99.47528729	97.11725101	94.84477467
150227A00011	2/27/2015	2.33	2/27/2025	2/27/2015	108.51974	108.5197367	108.5197367	108.5197367	105.8707323	102.094124	98.49456143	95.06251932	91.78904106
150529A00055	5/29/2015	1.78	5/31/2022	5/29/2015	101.70126	101.7012621	101.7012621	101.7012621	101.2839582	100.1590142	99.05703753	97.97735869	96.9193339
150617A00018	6/17/2015	2.45	6/17/2025	6/17/2015	105.88961	105.8896089	105.8896089	105.8896089	104.2813347	101.5891485	99.00168663	96.51395385	94.12123055
150722A00033	7/22/2015	2.47	7/22/2025	7/22/2015	106.04035	106.0403538	106.0403538	106.0403538	104.3854118	101.6495535	99.02153042	96.49613873	94.06846445
150803A00039	8/3/2015	3.01	8/2/2030	8/3/2015	114.97943	114.9794277	114.9794277	113.7934859	108.7521447	103.403756	98.42942627	93.79847448	89.48301082

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150824A00033	8/24/2015	2.22	8/25/2025	8/24/2015	105.4148	105.4147979	105.4147979	105.4147979	103.7244437	100.965208	98.31615382	95.77190301	93.32738012
150828A00018	8/28/2015	1.7	8/29/2022	8/28/2015	101.94964	101.9496404	101.9496404	101.9496404	101.488833	100.2767774	99.09060386	97.92953784	96.79283487
150928A00016	9/28/2015	1.73	9/28/2020	9/28/2015	100.71409	100.714095	100.714095	100.714095	100.5989738	100.1171836	99.6400938	99.16763556	98.69974123
150929A00076	9/29/2015	2.28	9/29/2025	9/29/2015	105.67378	105.673779	105.673779	105.673779	103.932882	101.1273955	98.43539315	95.8512712	93.36974439
150929A00083	9/29/2015	2.09	9/29/2025	9/29/2015	105.67643	105.676433	105.676433	105.676433	103.9281428	101.1127732	98.41160595	95.81898726	93.32958562
151007A00010	10/7/2015	1.7	10/7/2020	10/7/2015	100.75488	100.754881	100.754881	100.754881	100.6256534	100.10603	99.59179205	99.08285608	98.57914018
020918A00047	9/18/2002	4.72	9/19/2022	9/18/2002	106.94932	106.9493199	106.9493199	106.9493199	106.3255751	104.799503	103.3093649	101.8540317	100.4324183
080220A00035	2/20/2008	4.65	2/22/2022	2/20/2008	106.4572	106.4571971	106.4571971	106.4571971	105.910153	104.4732718	103.0672854	101.6913113	100.3444988
120210A00004	2/10/2012	1.98	2/10/2022	2/10/2012	103.25939	103.2593888	103.2593888	103.2593888	102.5704285	100.8321822	99.13315876	97.47223557	95.84832932
120217A00007	2/17/2012	2.25	2/20/2024	2/17/2012	106.56343	106.5634336	106.5634336	106.5634336	104.7862811	101.7259169	98.78219103	95.94989155	93.22407031
120523A00024	5/23/2012	2.6	5/24/2027	5/23/2012	108.44589	108.4458902	108.4458902	108.3112676	105.3797071	101.7493369	98.31008328	95.04991591	91.95765963
121219A00045	12/19/2012	1.75	12/19/2022	12/19/2017	102.20164	102.2016448	102.2016448	102.2016448	101.5937126	100.1092063	98.66076321	97.24719662	95.86736912
130925A00035	9/25/2013	1.53	6/25/2025	9/25/2013	103.92078	103.9207821	103.9207821	103.9207821	102.2095735	99.50007552	96.90344339	94.41393174	92.02613314
150601A00035	6/1/2015	5.73	4/1/2038	6/1/2015	150.14242	150.1424158	149.1822479	142.0941978	132.1811848	122.7773756	114.3640294	106.8178388	100.0324644
150601A00330	6/1/2015	2.6	8/2/2023	6/1/2015	103.83023	103.8302265	103.8302265	103.8302265	103.0879908	101.4211487	99.79941723	98.22120587	96.68499241
150601A00394	6/1/2015	2.1	12/31/2020	6/1/2015	100.7008	100.7008034	100.7008034	100.7008034	100.6087032	100.223371	99.84213952	99.46493611	99.09168973
150601A00438	6/1/2015	1.91	3/18/2021	6/1/2015	100.79047	100.7904693	100.7904693	100.7904693	100.656142	100.167875	99.68610576	99.21069015	98.74148857
150601A00448	6/1/2015	2.61	4/26/2024	6/1/2015	104.69267	104.6926683	104.6926683	104.6926683	103.6764012	101.644724	99.6770547	97.77084265	95.92365781
150601A00451	6/1/2015	1.91	4/30/2021	6/1/2015	100.89558	100.8955821	100.8955821	100.8955821	100.7319969	100.1775022	99.63140475	99.09349155	98.56355725
150601A00458	6/1/2015	1.86	5/14/2021	6/1/2015	100.88929	100.8892933	100.8892933	100.8892933	100.7199288	100.1518047	99.59241041	99.04152267	98.49892615
150601A00730	6/1/2015	1.55	5/1/2020	6/1/2015	100.05642	100.0564218	100.0564218	100.0564218	100.0534363	100.0060389	99.95872129	99.91148344	99.8643251
150601A00889	6/1/2015	6.55	3/2/2029	6/1/2015	132.81943	132.819433	132.819433	132.1163572	127.0487483	121.4292954	116.1609573	111.2180152	106.5768458
150601A00906	6/1/2015	6.2	11/1/2029	6/1/2015	132.7495	132.7494961	132.7494961	131.7658013	126.3364694	120.4539361	114.9596926	109.8237076	105.0185291
150601A00947	6/1/2015	6.19	8/20/2021	6/1/2015	108.07751	108.0775118	108.0775118	108.0775118	107.5572481	106.1895787	104.8468487	103.5284281	102.2337077
150601A00953	6/1/2015	6.6	6/10/2032	6/1/2015	146.19566	146.1956589	146.1956589	143.0689239	135.1616342	127.2385565	119.9624686	113.2721626	107.1127951
150601A00955	6/1/2015	5.84	7/15/2032	6/1/2015	134.98598	134.9859769	134.9859769	132.7004344	126.3239837	119.7226756	113.6318472	108.004694	102.7991855
150601A01011	6/1/2015	5.05	9/8/2025	6/1/2015	112.82519	112.8251856	112.8251856	112.8251856	111.1200384	108.3045493	105.5999119	103.0007532	100.5020015
150601A01041	6/1/2015	5.99	10/2/2036	6/1/2015	155.97747	155.9774711	155.2532204	147.4898687	136.6494604	126.4481444	117.3137348	109.117269	101.7468227
151123A00067	11/23/2015	1.68	11/23/2020	11/23/2015	100.53912	100.5391155	100.5391155	100.5391155	100.4562726	100.0797328	99.70670967	99.33714863	98.9709962
160210A00068	2/10/2016	2.76	2/10/2031	2/10/2021	113.43929	113.4392915	113.4392915	112.1786205	107.253638	102.0211862	97.1592484	92.63683909	88.42585498
011115A00014	11/15/2001	5.19	11/16/2021	11/15/2001	105.90478	105.9047813	105.9047813	105.9047813	105.4822857	104.3079365	103.1552276	102.0235743	100.9124137
030605A00010	6/5/2003	3.97	6/5/2023	6/5/2003	106.75384	106.7538356	106.7538356	106.7538356	105.9382554	104.1709775	102.4554637	100.7897417	99.17193112
050823A00088	8/23/2005	4.78	8/25/2025	8/23/2005	121.07306	121.073058	121.073058	121.073058	117.3903746	112.7063618	108.2641839	104.0496914	100.0496438

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
110824A00006	8/24/2011	2.69	8/24/2026	8/24/2011	108.88018	108.8801757	108.8801757	108.859912	106.2702755	102.8261594	99.54719235	96.42382118	93.44711847
120423A00011	4/23/2012	2.07	4/25/2022	4/24/2017	101.93285	101.9328513	101.9328513	101.9328513	101.5154183	100.4431685	99.39566204	98.37211961	97.37179298
120614A00015	6/14/2012	1.89	6/14/2022	6/14/2012	103.30079	103.3007895	103.3007895	103.3007895	102.5244153	100.6747935	98.8726722	97.11645441	95.40461111
120827A00052	8/27/2012	2.01	8/27/2027	8/27/2012	107.4922	107.4922007	107.4922007	107.2988463	104.1518137	100.3403657	96.73523125	93.32306838	90.09150464
121120A00011	11/20/2012	2.22	11/22/2027	11/20/2012	111.67837	111.6783684	111.6783684	110.8640143	105.7315399	100.3693739	95.36273977	90.68484144	86.31108536
121220A00023	12/20/2012	1.82	12/20/2022	12/20/2012	104.05524	104.0552445	104.0552445	104.0552445	102.9456264	100.5895295	98.30302733	96.08356035	93.92868348
130528A00020	5/28/2013	2.43	5/30/2023	5/29/2018	105.37299	105.372992	105.372992	105.372992	104.0718934	101.5634748	99.1387919	96.79448097	94.52733691
150601A00011	6/1/2015	5.17	8/3/2022	6/1/2015	111.31342	111.3134158	111.3134158	111.3134158	110.2979307	107.981471	105.7275462	103.5341116	101.3992016
150601A00033	6/1/2015	5.96	12/24/2025	6/1/2015	129.93252	129.9325195	129.9325195	129.9325195	125.1527775	119.6031935	114.3605095	109.4056802	104.720957
150601A00100	6/1/2015	3.26	1/7/2021	6/1/2015	101.15777	101.157775	101.157775	101.157775	101.0633113	100.6711597	100.2832331	99.89945569	99.5197533
150601A00261	6/1/2015	3.19	2/11/2033	6/1/2015	128.65954	128.659543	128.659543	121.8349497	112.4113064	103.6080145	95.70835101	88.60871573	82.21822612
150601A00396	6/1/2015	3.61	1/3/2029	6/1/2015	114.32527	114.3252741	114.3252741	113.8891712	110.1115719	105.740823	101.6273959	97.753223	94.10166111
150601A00478	6/1/2015	2	6/16/2021	6/1/2015	101.04003	101.0400261	101.0400261	101.0400261	100.8518162	100.2409879	99.6402137	99.04921817	98.46773635
150601A00505	6/1/2015	2.07	7/8/2021	6/1/2015	101.15208	101.1520768	101.1520768	101.1520768	100.9463775	100.2960724	99.65700862	99.02886407	98.4113295
150601A00690	6/1/2015	2.34	2/28/2025	6/1/2015	104.9559	104.9559028	104.9559028	104.9559028	103.5864917	101.1619316	98.82588818	96.57435938	94.40355386
150601A00745	6/1/2015	1.76	5/7/2021	6/1/2015	100.81598	100.8159754	100.8159754	100.8159754	100.6517632	100.0954471	99.54751998	99.00777103	98.47599702
150601A00770	6/1/2015	1.47	5/15/2020	6/1/2015	100.06832	100.0683189	100.0683189	100.0683189	100.0640707	100.0041057	99.94426419	99.88454563	99.82494964
150601A00772	6/1/2015	1.84	5/13/2022	6/1/2015	101.63369	101.6336924	101.6336924	101.6336924	101.2441105	100.1860187	99.14925749	98.13320993	97.13728266
150601A00778	6/1/2015	1.56	5/19/2020	6/1/2015	100.08129	100.0812919	100.0812919	100.0812919	100.0764207	100.0106589	99.94504372	99.87957458	99.81425097
150601A00832	6/1/2015	7.17	8/28/2025	6/1/2015	118.45818	118.4581824	118.4581824	118.4581824	116.7185767	113.8168132	111.0280149	108.3467503	105.7678907
150601A00938	6/1/2015	6.35	12/21/2020	6/1/2015	104.39898	104.3989768	104.3989768	104.3989768	104.1852506	103.4585783	102.7422716	102.0361083	101.3398728
050812A00050	8/12/2005	4.97	8/12/2025	8/12/2005	113.68444	113.6844402	113.6844402	113.6844402	111.7627162	108.7517137	105.8651374	103.0966988	100.4404727
080423A00066	4/23/2008	4.41	4/24/2023	4/23/2008	106.85631	106.8563096	106.8563096	106.8563096	106.1181956	104.5001466	102.9281738	101.4005973	99.9158111
081226A00013	12/26/2008	3.99	12/26/2023	12/26/2008	108.39172	108.391724	108.391724	108.391724	107.2411717	104.9595954	102.7502283	100.6101421	98.53655145
110414A00007	4/14/2011	3.95	1/21/2025	4/14/2011	109.33514	109.3351427	109.3351427	109.3351427	107.7609356	105.1330698	102.6083989	100.1820019	97.84922779
120410A00005	4/10/2012	2.35	4/12/2027	4/10/2012	108.06395	108.0639462	108.0639462	107.9449151	105.0868418	101.5287343	98.15697489	94.95993204	91.92679301
121126A00009	11/26/2012	1.07	11/30/2020	11/26/2012	100.40287	100.4028651	100.4028651	100.4028651	100.2990921	99.87725662	99.46019329	99.04781162	98.64002346
121219A00029	12/19/2012	1.75	12/19/2022	12/21/2017	102.08358	102.0835761	102.0835761	102.0835761	101.5154746	100.1102175	98.73806229	97.3979543	96.08888117
130425A00032	4/25/2013	2.59	4/25/2028	4/25/2018	109.35515	109.3551458	109.3551458	109.0047152	105.5591226	101.5460154	97.76578448	94.20239055	90.84103363
130510A00036	5/10/2013	1.45	5/29/2020	5/10/2013	100.21822	100.2182159	100.2182159	100.2182159	100.2030681	100.0394284	99.87632525	99.71375597	99.55171796
140314A00026	3/14/2014	2.99	3/14/2024	3/14/2019	110.26768	110.2676829	110.2676829	110.2676829	108.0505234	104.4406078	100.9781522	97.65626053	94.46839811
140414A00009	4/14/2014	2.32	4/30/2024	4/14/2014	104.63707	104.6370731	104.6370731	104.6370731	103.5140176	101.414308	99.38735436	97.43003629	95.53939021
150601A00005	6/1/2015	4.84	6/9/2025	6/1/2015	122.05386	122.0538649	122.0538649	122.0538649	118.2666541	113.3501936	108.6860132	104.2595508	100.0571712

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00038	6/1/2015	5.77	6/2/2023	6/1/2015	116.94205	116.9420532	116.9420532	116.9420532	115.2629126	112.1050279	109.0555197	106.1099835	103.2642238
150601A00270	6/1/2015	3.12	3/21/2031	6/1/2015	126.94729	126.9472927	126.9472927	121.8568657	112.6827917	104.0737548	96.28833025	89.24017888	82.85257291
150601A00299	6/1/2015	1.8	4/11/2023	6/1/2015	102.32403	102.3240281	102.3240281	102.3240281	101.6687714	100.1306461	98.63171006	97.1706478	95.74619811
150601A00319	6/1/2015	1.94	6/26/2020	6/1/2015	100.20115	100.2011528	100.2011528	100.2011528	100.1886913	100.0663075	99.9443795	99.82290453	99.70187984
150601A00410	6/1/2015	2.68	1/24/2024	6/1/2015	104.52565	104.5256512	104.5256512	104.5256512	103.6110764	101.7073521	99.86056504	98.06854053	96.32920343
150601A00424	6/1/2015	1.95	2/19/2021	6/1/2015	100.75479	100.7547926	100.7547926	100.7547926	100.6351878	100.1813601	99.73316711	99.29049222	98.85322221
150601A00461	6/1/2015	1.94	5/14/2021	6/1/2015	100.90486	100.904858	100.904858	100.904858	100.7432214	100.1927534	99.65053915	99.11637156	98.59005083
150601A00509	6/1/2015	2.52	7/8/2024	6/1/2015	104.71858	104.7185794	104.7185794	104.7185794	103.6246505	101.5005233	99.44580777	97.45764987	95.53333439
150601A00526	6/1/2015	2	7/28/2021	6/1/2015	101.13661	101.1366117	101.1366117	101.1366117	100.9231958	100.255822	99.59985686	98.95498132	98.32088903
150601A00558	6/1/2015	2.51	8/30/2024	6/1/2015	104.85889	104.8588851	104.8588851	104.8588851	103.7016749	101.5041645	99.38046705	97.32747746	95.34224447
150601A00585	6/1/2015	2.45	10/8/2024	6/1/2015	104.82995	104.829948	104.829948	104.829948	103.6308311	101.3868738	99.21965534	97.12589751	95.10248662
150601A00680	6/1/2015	2.23	2/6/2025	6/1/2015	104.64084	104.6408408	104.6408408	104.6408408	103.2972559	100.9015894	98.59267131	96.36660774	94.21970871
180716A00046	7/16/2018	2.9	7/16/2025	7/16/2018	107.50947	107.5094664	107.5094664	107.5094664	105.9198092	103.2385994	100.6609353	98.18189245	95.7968181
180814A00020	8/14/2018	2.7	8/14/2020	8/14/2018	100.59705	100.5970499	100.5970499	100.5970499	100.5606758	100.3167042	100.0741418	99.83297548	99.59319192
181015A00043	10/15/2018	2.91	10/15/2020	10/15/2018	100.88201	100.8820129	100.8820129	100.8820129	100.8157952	100.4839751	100.1548374	99.82834616	99.50446622
190513A00026	5/13/2019	2.55	5/13/2021	5/13/2019	101.43357	101.4335704	101.4335704	101.4335704	101.2443077	100.6174211	100.0003946	99.39297061	98.79490093
200311A00028	3/11/2020	1.04	3/12/2024	3/11/2020	101.5945	101.5944981	101.5944981	101.5944981	100.5579794	98.48953845	96.48670279	94.54683798	92.66743568
070518A00023	5/18/2007	5.46	5/18/2027	5/18/2007	118.99547	118.9954694	118.9954694	118.8634178	115.8019184	111.9573917	108.3120652	104.853527	101.570241
121217A00009	12/17/2012	2.02	12/17/2027	12/17/2012	108.16182	108.1618185	108.1618185	107.8665123	104.3596121	100.1971486	96.2682027	92.55711447	89.04940683
130128A00009	1/28/2013	2.82	1/28/2028	1/28/2013	114.31204	114.3120372	114.3120372	113.3878945	108.0564045	102.490999	97.29899118	92.45195323	87.92381306
141126A00006	11/26/2014	2.41	11/30/2021	11/26/2014	103.45442	103.4544249	103.4544249	103.4544249	102.8178312	101.188654	99.59321648	98.03052988	96.49964401
150601A00019	6/1/2015	5.64	10/3/2022	6/1/2015	113.21604	113.2160372	113.2160372	113.2160372	112.0809701	109.587096	107.1646119	104.8110379	102.5239964
150601A00022	6/1/2015	5.43	10/26/2037	6/1/2015	146.32754	146.3275401	145.5198572	138.852147	129.3285153	120.259528	112.1300201	104.8250613	98.24525732
150601A00023	6/1/2015	5.46	10/30/2037	6/1/2015	154.70657	154.7065702	153.4944591	144.6326897	133.19272	122.5860898	113.1566157	104.7537622	97.2479843
150601A00058	6/1/2015	4.46	8/16/2024	6/1/2015	109.06606	109.0660634	109.0660634	109.0660634	107.8992757	105.6601828	103.4953169	101.4015856	99.37604819
150601A00061	6/1/2015	4.25	9/30/2024	6/1/2015	108.84255	108.8425472	108.8425472	108.8425472	107.6249797	105.330407	103.1136176	100.9713087	98.90034249
150601A00071	6/1/2015	3.83	4/9/2020	6/1/2015	100.02702	100.0270192	100.0270192	100.0270192	100.0265353	100.0185963	100.0106651	100.0027418	99.99482624
150601A00422	6/1/2015	2.03	2/19/2021	6/1/2015	100.74599	100.7459853	100.7459853	100.7459853	100.6361897	100.2077691	99.78444886	99.36612655	98.95270279
150601A00425	6/1/2015	2.64	2/21/2024	6/1/2015	104.54395	104.5439513	104.5439513	104.5439513	103.5987152	101.6558673	99.77208236	97.94507544	96.17266715
150601A00496	6/1/2015	2.27	6/27/2024	6/1/2015	104.55563	104.5556308	104.5556308	104.5556308	103.4693474	101.3528343	99.30532782	97.32399595	95.40614438
150601A00543	6/1/2015	2.23	8/8/2024	6/1/2015	104.58976	104.5897593	104.5897593	104.5897593	103.456602	101.2856496	99.18697357	97.15755607	95.19452787
150601A00544	6/1/2015	1.95	8/13/2021	6/1/2015	101.13803	101.1380283	101.1380283	101.1380283	100.9153703	100.2273791	99.55114575	98.88634579	98.23266717
150601A00563	6/1/2015	2.14	9/10/2021	6/1/2015	101.34257	101.3425672	101.3425672	101.3425672	101.1019197	100.3731786	99.6570361	98.95314689	98.26117879

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00624	6/1/2015	2.48	12/8/2021	6/1/2015	103.90593	103.9059281	103.9059281	103.9059281	103.2549872	101.5980649	99.97604635	98.3878907	96.8325985
150601A00732	6/1/2015	1.91	4/29/2022	6/1/2015	101.68646	101.6864556	101.6864556	101.6864556	101.3030287	100.257601	99.23310438	98.22893607	97.24451612
150601A00735	6/1/2015	2.35	5/1/2025	6/1/2015	105.17451	105.1745128	105.1745128	105.1745128	103.7117766	101.1928015	98.76874622	96.43519801	94.18798232
150601A00865	6/1/2015	6	4/3/2028	6/1/2015	123.47909	123.479087	123.479087	123.235483	119.7121578	115.4084267	111.3376795	107.484751	103.8355915
150601A00871	6/1/2015	6.74	7/31/2028	6/1/2015	130.99917	130.9991726	130.9991726	130.5747931	126.0909786	120.9273462	116.0647914	111.4826316	107.1617719
150601A00893	6/1/2015	6.49	4/6/2029	6/1/2015	132.44045	132.4404508	132.4404508	131.7197499	126.6700871	121.0722223	115.8253419	110.9036127	106.2833177
150601A00898	6/1/2015	6.66	6/8/2029	6/1/2015	129.9569	129.9568984	129.9568984	129.3554249	124.9542854	119.9098362	115.1706185	110.7145247	106.5212468
150601A00899	6/1/2015	7.07	6/14/2029	6/1/2015	130.82897	130.8289735	130.8289735	130.2306417	125.8407193	120.7976428	116.0584286	111.6011344	107.4055999
110223A00003	2/23/2011	3.41	2/23/2021	2/23/2011	102.86468	102.8646817	102.8646817	102.8646817	102.5519253	101.6253166	100.7152526	99.82129423	98.94301736
111007A00007	10/7/2011	3.92	10/7/2031	10/7/2011	130.81776	130.8177591	130.8177591	125.7379604	116.9263399	108.5127153	100.8925316	93.98188264	87.7063768
120716A00025	7/16/2012	1.83	7/18/2022	7/17/2017	102.05114	102.0511406	102.0511406	102.0511406	101.5315668	100.2223607	98.94210445	97.68992429	96.4649799
120907A00026	9/7/2012	1.71	9/7/2022	9/7/2012	103.35018	103.3501841	103.3501841	103.3501841	102.4402849	100.3801353	98.3758849	96.42566708	94.52768948
140311A00039	3/11/2014	3.06	3/11/2024	3/11/2014	109.17897	109.1789654	109.1789654	109.1789654	107.1767946	103.8315464	100.6185468	97.5317328	94.56535519
140911A00033	9/11/2014	3.02	9/13/2027	9/11/2014	112.76273	112.7627284	112.7627284	112.3018615	108.1205936	103.4566484	99.07353861	94.95153755	91.07245006
150601A00018	6/1/2015	4.91	9/5/2025	6/1/2015	123.34935	123.3493466	123.3493466	123.3493466	119.1813917	114.0419718	109.1764111	104.5683903	100.2026525
150601A00075	6/1/2015	3.53	5/12/2020	6/1/2015	100.17719	100.1771907	100.1771907	100.1771907	100.1733457	100.1172172	100.0611975	100.0052864	99.94948354
150601A00089	6/1/2015	2.56	10/27/2020	6/1/2015	100.66212	100.6621244	100.6621244	100.6621244	100.6034813	100.3115461	100.0220036	99.73482125	99.44996686
150601A00407	6/1/2015	2.06	1/22/2021	6/1/2015	100.68724	100.687239	100.687239	100.687239	100.5934746	100.2058082	99.82235839	99.44304763	99.06780042
150601A00447	6/1/2015	2.02	4/28/2021	6/1/2015	100.93914	100.9391382	100.9391382	100.9391382	100.780016	100.2350041	99.69804459	99.16893916	98.64749643
150601A00459	6/1/2015	2.42	5/16/2024	6/1/2015	104.35624	104.3562435	104.3562435	104.3562435	103.3228851	101.2728032	99.28793805	97.36566965	95.5035029
150601A00497	6/1/2015	1.95	7/1/2021	6/1/2015	101.04471	101.0447072	101.0447072	101.0447072	100.8471265	100.2152494	99.59410402	98.98338716	98.38280745
150601A00736	6/1/2015	2.87	5/1/2030	6/1/2015	112.79279	112.7927908	112.7927908	111.8823454	107.3940943	102.5093107	97.950324	93.6914075	89.70910002
150601A00875	6/1/2015	7.14	9/29/2028	6/1/2015	133.41295	133.4129503	133.4129503	132.9294867	128.2919573	122.9848082	117.9911886	113.2892651	108.8589028
150601A00883	6/1/2015	6.21	11/30/2028	6/1/2015	129.08512	129.0851219	129.0851219	128.561089	123.9831315	118.7838135	113.8962786	109.2984922	104.9701581
150601A00888	6/1/2015	5.92	3/1/2029	6/1/2015	128.66696	128.6669585	128.6669585	128.0190281	123.2363576	117.8925032	112.8793813	108.1729085	103.7509559
150601A00922	6/1/2015	6.51	7/7/2020	6/1/2015	101.69051	101.6905062	101.6905062	101.6905062	101.6532709	101.3824682	101.1131317	100.8452493	100.5788092
150601A00927	6/1/2015	6.08	8/7/2030	6/1/2015	130.73093	130.7309318	130.7309318	129.6445164	124.5130195	118.9067725	113.6761204	108.7910918	104.2243899
150601A00931	6/1/2015	7.13	9/20/2030	6/1/2015	141.81688	141.8168834	141.8168834	140.2734883	133.8886666	127.1669013	120.9216787	115.1135354	109.7066254
150601A00948	6/1/2015	6.04	10/22/2031	6/1/2015	132.73053	132.7305334	132.7305334	130.9893618	125.1538691	118.9929557	113.2826712	107.9838425	103.0610927
151006A00015	10/6/2015	1.31	10/6/2020	10/6/2015	100.34652	100.346522	100.346522	100.346522	100.2819224	99.95496203	99.63060011	99.30880269	98.98953642
160928A00033	9/28/2016	2.46	9/29/2036	9/28/2016	118.22453	118.2245266	117.649928	112.0929502	104.1752661	96.65625849	89.91273467	83.85105209	78.39000084
160928A00044	9/28/2016	2.89	9/29/2036	9/28/2023	121.86273	121.8627298	121.2839299	115.6394141	107.53826	99.8303242	92.91361922	86.69288773	81.08549305
120614A00013	6/14/2012	1.89	6/14/2022	6/14/2012	103.30082	103.300821	103.300821	103.300821	102.5244384	100.674799	98.87266073	97.11642637	95.40456697

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
120827A00048	8/27/2012	2.01	8/27/2027	8/27/2012	107.4922	107.4921992	107.4921992	107.2988454	104.1518139	100.3403666	96.7352328	93.32307046	90.09150719
120907A00005	9/7/2012	1.76	9/7/2022	9/7/2012	102.19139	102.1913937	102.1913937	102.1913937	101.5949428	100.1315629	98.70234094	97.30621698	95.94217181
120907A00032	9/7/2012	1.86	9/9/2024	9/7/2012	105.67913	105.6791297	105.6791297	105.6791297	103.6695294	100.4965155	97.45661816	94.54328607	91.7503306
121219A00036	12/19/2012	2.2	12/19/2022	12/19/2017	104.51906	104.5190602	104.5190602	104.5190602	103.4114089	101.0560128	98.76991205	96.55056676	94.3955503
130207A00012	2/7/2013	2.9	2/7/2033	2/7/2013	117.90678	117.9067843	117.9067843	114.8594572	108.3100603	101.7439053	95.73203238	90.21957059	85.15765001
130510A00033	5/10/2013	1.45	5/29/2020	5/10/2013	100.21822	100.2182159	100.2182159	100.2182159	100.2030681	100.0394284	99.87632525	99.71375597	99.55171796
130913A00018	9/13/2013	3.72	9/13/2028	9/13/2013	115.40087	115.4008743	115.4008743	114.9054362	110.9188965	106.3443578	102.042814	97.99483588	94.18254321
130918A00010	9/18/2013	2.43	9/18/2020	9/18/2013	101.05908	101.0590757	101.0590757	101.0590757	100.95409	100.4966715	100.0434899	99.59448602	99.14960173
140325A00012	3/25/2014	3.61	3/26/2029	3/25/2019	116.56299	116.5629939	116.5629939	115.851226	111.3346982	106.2843066	101.551958	97.11396019	92.94859376
150601A00024	6/1/2015	5.58	11/8/2022	6/1/2015	113.56663	113.5666265	113.5666265	113.5666265	112.3605059	109.7714833	107.2585042	104.8188461	102.4499037
150601A00370	6/1/2015	2.58	10/31/2023	6/1/2015	104.07398	104.0739833	104.0739833	104.0739833	103.2459073	101.4586107	99.72231372	98.03514239	96.39530581
150601A00371	6/1/2015	1.88	10/30/2020	6/1/2015	100.47548	100.4754757	100.4754757	100.4754757	100.4149946	100.1178904	99.82326726	99.5310905	99.2413263
150601A00387	6/1/2015	2.81	12/19/2023	6/1/2015	104.65199	104.6519944	104.6519944	104.6519944	103.7726389	101.9137554	100.1093718	98.3574397	96.6560035
150601A00390	6/1/2015	2.39	5/20/2022	6/1/2015	102.7259	102.7259014	102.7259014	102.7259014	102.2664432	101.0603908	99.88069106	98.72652486	97.59710622
150601A00409	6/1/2015	1.98	1/22/2021	6/1/2015	100.70007	100.7000654	100.7000654	100.7000654	100.5971116	100.1839687	99.77551996	99.37167651	98.97235173
150601A00411	6/1/2015	3.38	1/24/2029	6/1/2015	113.41179	113.4117894	113.4117894	112.9596265	109.1679254	104.7984212	100.6878979	96.8180636	93.17207602
150601A00436	6/1/2015	1.99	3/18/2021	6/1/2015	100.79134	100.791339	100.791339	100.791339	100.6662779	100.2000173	99.7397175	99.28525102	98.83649431
150601A00557	6/1/2015	2.03	9/2/2021	6/1/2015	101.23993	101.2399272	101.2399272	101.2399272	101.0052234	100.2900126	99.58712222	98.89621389	98.21696212
150601A00678	6/1/2015	2.12	1/30/2025	6/1/2015	104.37277	104.3727679	104.3727679	104.3727679	103.0327723	100.6429609	98.33966611	96.11900575	93.9773008
150601A00872	6/1/2015	7.42	7/31/2028	6/1/2015	133.78488	133.7848821	133.7848821	133.370392	128.8958758	123.7061075	118.8164818	114.2064823	109.8571623
150601A00901	6/1/2015	7.16	7/26/2029	6/1/2015	131.6235	131.6234967	131.6234967	130.9832483	126.504773	121.3846465	116.5760496	112.056272	107.8044642
150601A00917	6/1/2015	5.72	4/21/2020	6/1/2015	100.31945	100.3194533	100.3194533	100.3194533	100.3159059	100.2577191	100.1996138	100.1415899	100.0836472
150601A00925	6/1/2015	5.73	7/21/2020	6/1/2015	100.85786	100.857863	100.857863	100.857863	100.8389915	100.6826937	100.5271146	100.3722485	100.2180901
150601A00943	6/1/2015	6.44	5/9/2031	6/1/2015	140.29279	140.292794	140.292794	138.2596528	131.4243805	124.3848039	117.8739722	111.845679	106.2581733
150601A00964	6/1/2015	5.25	1/6/2033	6/1/2015	132.58569	132.5856914	132.5856914	129.9566157	123.3993374	116.6943716	110.5265571	104.8449784	99.60408013
150601A00976	6/1/2015	6.8	9/22/2033	6/1/2015	150.79281	150.7928148	150.7918758	146.4959518	137.885238	129.3830711	121.6231635	114.5300826	108.0368303
150601A00993	6/1/2015	5.37	6/9/2034	6/1/2015	142.29256	142.2925629	142.232393	137.22544	128.47932	119.9959682	112.2963499	105.2966603	98.92291655
150601A01008	6/1/2015	5.08	4/15/2025	6/1/2015	111.96902	111.9690221	111.9690221	111.9690221	110.4774991	107.870082	105.3592051	102.940438	100.609587
150601A01015	6/1/2015	5.61	10/28/2025	6/1/2015	126.78073	126.7807293	126.7807293	126.7807293	122.4556076	117.2251535	112.2759329	107.5909345	103.1542755
150819A00027	8/19/2015	3.05	8/19/2030	8/19/2020	115.54812	115.5481181	115.5481181	114.4663378	109.6591486	104.4845436	99.6649016	95.17142538	90.97792027
160506A00016	5/6/2016	1.28	5/6/2021	5/6/2016	100.63161	100.6316068	100.6316068	100.6316068	100.4438865	99.82190223	99.20967576	98.60695336	98.01349049
160930A00032	9/30/2016	2.15	9/30/2031	9/30/2016	110.70733	110.7073252	110.7073252	109.096156	103.9132404	98.52273683	93.53560305	88.91631776	84.632829
170616A00003	6/16/2017	1.91	6/17/2024	6/16/2017	103.92987	103.9298673	103.9298673	103.9298673	102.8258588	100.6773178	98.59893406	96.58782612	94.64125243

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171206A00020	12/6/2017	2.62	12/6/2027	12/6/2017	109.12035	109.1203524	109.1203524	108.9420693	105.8209095	101.9890045	98.36150667	94.92536205	91.66845728
180725A00035	7/25/2018	2.85	7/25/2023	7/25/2018	104.72646	104.7264608	104.7264608	104.7264608	103.9626517	102.244477	100.5727911	98.94595372	97.36239524
181003A00044	10/3/2018	2.78	10/2/2020	10/3/2018	100.87113	100.8711329	100.8711329	100.8711329	100.8068397	100.4796542	100.1550531	99.83300266	99.51347006
181226A00040	12/26/2018	2.84	12/28/2020	12/26/2018	101.09185	101.0918473	101.0918473	101.0918473	100.9920194	100.5705265	100.1534558	99.74072996	99.33227344
190701A00022	7/1/2019	2.28	7/1/2021	7/1/2019	101.42162	101.4216233	101.4216233	101.4216233	101.195848	100.4886113	99.79392693	99.11142587	98.4407542
191114A00013	11/14/2019	1.9	11/14/2022	11/14/2019	102.22997	102.2299671	102.2299671	102.2299671	101.6860663	100.3230415	98.99151247	97.69049003	96.41902439
191115A00029	11/15/2019	2.07	11/15/2029	11/15/2019	108.63842	108.6384165	108.6384165	107.9020981	103.7118111	99.09399173	94.77442883	90.73032379	86.94082272
200225A00049	2/25/2020	1.79	2/24/2040	2/25/2020	116.82306	116.8230556	115.2231316	107.7936971	98.82650798	90.61244352	83.37692234	76.98412905	71.31889323
200327A00004	3/27/2020	0.63	3/28/2022	3/27/2020	100.35272	100.352719	100.352719	100.352719	99.98070838	98.95327456	97.94592277	96.958082	95.98920274
050823A00085	8/23/2005	4.78	8/25/2025	8/23/2005	121.07299	121.0729891	121.0729891	121.0729891	117.3903223	112.706325	108.2641616	104.0496825	100.0496474
111128A00006	11/28/2011	3.03	11/28/2031	11/28/2011	117.87647	117.8764681	117.8764681	115.8271224	110.0079952	104.0135512	98.4832671	93.3747699	88.64997425
120210A00005	2/10/2012	1.64	2/10/2022	2/10/2012	102.14134	102.1413366	102.1413366	102.1413366	101.6097453	100.2142654	98.8485696	97.51181695	96.20319624
121120A00010	11/20/2012	1.93	11/22/2027	11/20/2012	107.62395	107.6239534	107.6239534	107.3530035	103.9389354	99.86546201	96.01861895	92.38333208	88.94565582
130206A00004	2/6/2013	2.14	2/7/2028	2/6/2013	108.50603	108.5060279	108.5060279	108.238356	104.8183726	100.7425162	96.8938053	93.25717592	89.81868529
130624A00019	6/24/2013	3.4	6/26/2023	6/24/2013	108.7937	108.7936986	108.7936986	108.7936986	107.2545381	104.3764733	101.5981406	98.91541353	96.32436651
141031A00015	10/31/2014	2.38	10/31/2024	10/31/2019	105.34141	105.3414112	105.3414112	105.3414112	104.0420536	101.7029697	99.44788441	97.27305122	95.1749189
150601A00001	6/1/2015	5.43	6/15/2037	6/1/2015	153.07785	153.0778524	152.0496807	143.620693	132.4937789	122.1335246	112.9022967	104.6582859	97.27911225
150601A00096	6/1/2015	2.32	11/23/2020	6/1/2015	100.71531	100.7153126	100.7153126	100.7153126	100.6436225	100.3136552	99.98672091	99.66277308	99.3417662
150601A00397	6/1/2015	2.2	12/31/2020	6/1/2015	100.73164	100.7316366	100.7316366	100.7316366	100.6408973	100.2592152	99.88156191	99.5078665	99.13805968
150601A00449	6/1/2015	2.12	4/28/2021	6/1/2015	100.99317	100.9931687	100.9931687	100.9931687	100.8339908	100.2887534	99.75157097	99.22224517	98.70058455
150601A00477	6/1/2015	3.21	6/1/2029	6/1/2015	116.82803	116.8280275	116.8280275	115.9831438	110.8956174	105.4601072	100.3838109	95.63932271	91.20154517
150601A00508	6/1/2015	1.97	7/8/2021	6/1/2015	101.07195	101.0719458	101.0719458	101.0719458	100.8704093	100.2296008	99.59977045	98.98060591	98.37180722
150601A00555	6/1/2015	2.13	9/2/2021	6/1/2015	101.34166	101.3416565	101.3416565	101.3416565	101.0995898	100.3676876	99.64844013	98.94150104	98.24653709
150601A00693	6/1/2015	2.31	2/27/2025	6/1/2015	104.89444	104.8944426	104.8944426	104.8944426	103.5201832	101.0911633	98.75099886	96.49566574	94.32135214
150601A00715	6/1/2015	1.34	4/1/2020	6/1/2015	100.00272	100.0027158	100.0027158	100.0027158	100.002547	99.99977679	99.99700889	99.99424327	99.99147995
150601A00851	6/1/2015	7.12	4/30/2027	6/1/2015	127.36452	127.3645208	127.3645208	127.2808029	123.8952742	119.5824096	115.4881015	111.5991361	107.9032016
150601A00868	6/1/2015	7.08	6/5/2028	6/1/2015	132.0224	132.0223969	132.0223969	131.6348208	127.2349153	122.1213689	117.3020085	112.7568497	108.4674271
150601A00909	6/1/2015	6.14	11/30/2020	6/1/2015	101.84153	101.8415346	101.8415346	101.8415346	101.7761903	101.4626869	101.1519012	100.8437937	100.5383258
150601A00939	6/1/2015	5.79	1/17/2031	6/1/2015	133.9212	133.9212037	133.9212037	132.2785671	126.0954016	119.6347976	113.6430228	108.0803246	102.9106797
150601A01009	6/1/2015	4.6	5/27/2020	6/1/2015	100.34793	100.3479325	100.3479325	100.3479325	100.3415785	100.2624041	100.1834364	100.1046743	100.0261171
150601A01012	6/1/2015	5.43	9/15/2023	6/1/2015	116.96732	116.9673243	116.9673243	116.9673243	115.0787886	111.7224717	108.4894964	105.3746049	102.3727935
150601A01040	6/1/2015	5.4	10/2/2026	6/1/2015	129.67418	129.674183	129.674183	129.4741717	123.6554616	117.6476437	112.0071174	106.7088182	101.7295385
160928A00029	9/28/2016	2.52	9/29/2036	9/28/2016	118.73218	118.7321829	118.156998	112.5878057	104.6445211	97.09915138	90.33146274	84.2475873	78.76611604

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170515A00037	5/15/2017	1.65	5/15/2020	5/15/2017	100.13974	100.1397402	100.1397402	100.1397402	100.1320719	100.0282064	99.92457091	99.82116478	99.71798715
170530A00019	5/30/2017	1.58	6/1/2021	5/30/2017	100.98089	100.9808904	100.9808904	100.9808904	100.7738339	100.1083311	99.45398067	98.81047305	98.17751066
170929A00046	9/29/2017	2.49	9/30/2027	9/29/2017	108.33701	108.3370142	108.3370142	108.2075589	105.2477973	101.543186	98.03097814	94.6991914	91.53668668
190102A00020	1/2/2019	2.97	1/3/2034	1/2/2019	120.0175	120.0174998	120.0049143	116.6203401	109.9433951	103.311347	97.25717842	91.72177196	86.65269086
190618A00009	6/18/2019	2.34	6/18/2021	6/18/2019	101.384	101.3840003	101.3840003	101.3840003	101.1755764	100.5066521	99.84899797	99.20229828	98.56624982
200316A00008	3/16/2020	1.31	3/15/2030	3/16/2020	105.08391	105.0839087	105.0839087	104.225268	99.94541822	95.30672868	90.97813079	86.9351762	83.15556226
200326A00037	3/26/2020	1.78	3/26/2035	3/26/2020	111.10677	111.1067734	110.9645814	106.8999303	100.1368271	93.56974654	87.61956014	82.21855	77.30717975
200330A00010	3/30/2020	0.61	3/30/2022	3/30/2020	100.3317	100.3316979	100.3316979	100.3316979	99.95961404	98.93212053	97.92471675	96.93683127	95.96791423
150601A00918	6/1/2015	5.62	4/28/2025	6/1/2015	114.65139	114.6513857	114.6513857	114.6513857	113.0206516	110.2122455	107.5099846	104.9089415	102.4044539
150601A00919	6/1/2015	7.41	6/7/2030	6/1/2015	142.52268	142.5226812	142.5226812	141.133327	134.8948056	128.2728725	122.1105494	116.3705364	111.0188879
150601A00923	6/1/2015	7.03	7/7/2020	6/1/2015	101.83045	101.8304514	101.8304514	101.8304514	101.79313	101.5217296	101.2517988	100.9833255	100.7162978
150601A00941	6/1/2015	6.23	3/8/2021	6/1/2015	105.5397	105.5397032	105.5397032	105.5397032	105.221999	104.2878321	103.3706986	102.4701324	101.5856842
150601A00971	6/1/2015	6.42	6/20/2033	6/1/2015	146.75871	146.7587117	146.7587117	142.5918134	134.0948966	125.7305055	118.0946916	111.1139726	104.7229991
151026A00034	10/26/2015	2.88	10/28/2030	10/26/2020	114.87876	114.8787588	114.8787588	113.7183759	108.8384541	103.6178841	98.76073859	94.23712511	90.019888
160331A00096	3/31/2016	1.32	11/30/2020	3/31/2016	100.40539	100.4053871	100.4053871	100.4053871	100.3216343	99.94313564	99.56821105	99.19680417	98.8288599
160928A00032	9/28/2016	2.52	9/29/2036	9/28/2016	118.73218	118.7321829	118.156998	112.5878057	104.6445211	97.09915138	90.33146274	84.2475873	78.76611604
170612A00024	6/12/2017	1.72	6/13/2022	6/12/2017	101.89151	101.8915088	101.8915088	101.8915088	101.4562344	100.2943437	99.15664686	98.04242879	96.95100218
170705A00029	7/5/2017	1.98	7/5/2022	7/5/2017	102.0558	102.0557977	102.0557977	102.0557977	101.6013873	100.4020468	99.22812689	98.07886748	96.95353803
180914A00035	9/14/2018	2.82	9/15/2020	9/14/2018	100.74148	100.7414847	100.7414847	100.7414847	100.6903381	100.4015772	100.1148265	99.83006282	99.5472635
181220A00006	12/20/2018	2.93	12/20/2022	12/20/2018	103.7737	103.7736991	103.7736991	103.7736991	103.2005929	101.7821636	100.3971463	99.04447555	97.72312862
190111A00047	1/11/2019	2.8	1/11/2021	1/11/2019	101.1715	101.1715042	101.1715042	101.1715042	101.0568289	100.5976358	100.1436733	99.69484246	99.25104711
200130A00027	1/31/2020	1.79	1/31/2025	1/31/2020	103.68371	103.6837051	103.6837051	103.6837051	102.3350985	99.92603177	97.60401903	95.36516101	93.20576223
200203A00046	2/3/2020	1.98	2/3/2040	2/3/2020	118.73488	118.7348754	117.1285111	109.6372461	100.565117	92.24699464	84.91714601	78.43864517	72.69535406
200311A00027	3/11/2020	1.52	3/9/2035	3/11/2020	109.14788	109.1478769	109.0062759	104.9698206	98.28677097	91.80584549	85.9354322	80.60839892	75.76573339
200331A00056	3/31/2020	0.96	3/29/2030	3/31/2020	104.28703	104.2870291	104.2870291	103.4156558	99.11365431	94.46555454	90.13009005	86.0824979	82.30019699
970806A00018	8/1/1997	6.7	10/23/2026	8/1/1997	121.81587	121.8158654	121.8158654	121.8060647	119.2397914	115.6396281	112.2043132	108.9246622	105.7920752
150601A00685	6/1/2015	1.91	2/10/2022	6/1/2015	101.50256	101.5025629	101.5025629	101.5025629	101.1719337	100.2410824	99.32778624	98.43155215	97.55190566
150601A00714	6/1/2015	1.67	4/1/2022	6/1/2015	101.38078	101.380778	101.380778	101.380778	101.0163716	100.0118853	99.02711221	98.06149073	97.11448035
150601A00848	6/1/2015	6.36	2/18/2022	6/1/2015	105.90332	105.903316	105.903316	105.903316	105.5562021	104.5796696	103.621645	102.6816073	101.7590553
150601A00864	6/1/2015	7.37	3/31/2028	6/1/2015	132.6011	132.6011015	132.6011015	132.271131	127.9992133	122.9718037	118.2280161	113.7489234	109.5170139
150601A00897	6/1/2015	6.15	5/28/2029	6/1/2015	130.6408	130.6408018	130.6408018	129.9035782	124.9045083	119.3715142	114.1872711	109.3259549	104.7638702
150601A00900	6/1/2015	6.06	6/28/2024	6/1/2015	113.15324	113.1532402	113.1532402	113.1532402	111.9558444	109.6224047	107.3650619	105.1807041	103.06637
150601A00905	6/1/2015	6.14	10/29/2029	6/1/2015	132.14048	132.1404771	132.1404771	131.197987	125.8424348	120.0232026	114.5855279	109.5000888	104.7400662

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00929	6/1/2015	5.91	8/30/2030	6/1/2015	134.07866	134.0786622	134.0786622	132.605284	126.5342232	120.1530278	114.2252359	108.713255	103.5829404
150601A00946	6/1/2015	6.28	8/22/2031	6/1/2015	140.31769	140.3176901	140.3176901	138.0657859	131.0307213	123.8406881	117.2023564	111.0665478	105.3889147
150601A00952	6/1/2015	6.34	2/13/2032	6/1/2015	142.82552	142.825525	142.825525	140.0837685	132.5728222	124.992142	118.0158882	111.5881806	105.658823
150601A00988	6/1/2015	4.57	3/22/2024	6/1/2015	108.46693	108.4669301	108.4669301	108.4669301	107.4676402	105.4323918	103.459745	101.5472513	99.69257661
150601A00997	6/1/2015	5.46	9/30/2022	6/1/2015	112.54872	112.5487171	112.5487171	112.5487171	111.4420044	109.0000757	106.6276629	104.3223606	102.0818623
150601A01005	6/1/2015	5.82	3/10/2025	6/1/2015	124.87499	124.8749908	124.8749908	124.8749908	121.4736994	116.7885048	112.3314161	108.0898695	104.0520638
150601A01013	6/1/2015	5.21	9/29/2023	6/1/2015	116.43422	116.4342178	116.4342178	116.4342178	114.5165797	111.1356235	107.8802801	104.745136	101.725043
150601A01020	6/1/2015	5.22	10/19/2020	6/1/2015	101.42661	101.4266064	101.4266064	101.4266064	101.3679008	101.0742748	100.7830319	100.4941399	100.2075673
150601A01030	6/1/2015	5.43	9/30/2020	6/1/2015	102.62515	102.6251473	102.6251473	102.6251473	102.5023886	101.9963344	101.4953207	100.9992723	100.5081155
150601A01047	6/1/2015	5.35	12/30/2024	6/1/2015	122.4962	122.4962018	122.4962018	122.4962018	119.2624204	114.6983775	110.3511811	106.2091348	102.2612457
150601A01051	6/1/2015	4.91	2/7/2025	6/1/2015	121.03628	121.0362802	121.0362802	121.0362802	117.6936055	113.0744686	108.6795398	104.496582	100.5140919
150601A01056	6/1/2015	4.7	3/16/2022	6/1/2015	108.6305	108.6304975	108.6304975	108.6304975	107.8512302	105.9196136	104.0337477	102.1922594	100.3938267
151110A00011	11/10/2015	3.23	11/12/2030	11/10/2020	115.76983	115.7698344	115.7698344	114.5857867	109.6856062	104.4414291	99.56249303	95.0187041	90.78272961
160210A00062	2/10/2016	1.36	2/10/2021	2/10/2016	100.55088	100.5508823	100.5508823	100.5508823	100.4186874	99.91960645	99.4267674	98.94004067	98.45930045
160928A00030	9/28/2016	2.52	9/29/2036	9/28/2016	118.73218	118.7321829	118.156998	112.5878057	104.6445211	97.09915138	90.33146274	84.2475873	78.76611604
160928A00042	9/28/2016	3.05	9/29/2036	9/28/2021	123.21648	123.2164798	122.6361166	116.9590286	108.7896066	101.0113719	94.03022743	87.75031495	82.0884669
190327A00030	3/27/2019	2.9	3/27/2036	3/27/2019	120.81816	120.8181588	120.479521	115.5664866	107.9810266	100.6780423	94.09009177	88.1350634	82.74123582
190523A00038	5/23/2019	2.54	5/24/2021	5/23/2019	101.43221	101.4322059	101.4322059	101.4322059	101.2419596	100.6129739	99.99394119	99.38459951	98.78469636
191216A00013	12/16/2019	1.95	12/16/2024	12/16/2019	104.0106	104.0105969	104.0105969	104.0105969	102.6981873	100.3232541	98.03286027	95.82326782	93.69093198
150601A00932	6/1/2015	5.84	10/20/2020	6/1/2015	103.10888	103.1088833	103.1088833	103.1088833	102.965796	102.4084713	101.8572906	101.3121518	100.7729557
150601A00966	6/1/2015	4.84	2/3/2023	6/1/2015	106.72322	106.7232243	106.7232243	106.7232243	106.1231499	104.6602017	103.2325711	101.8391124	100.4787266
150601A01055	6/1/2015	5.29	3/16/2022	6/1/2015	109.74235	109.7423535	109.7423535	109.7423535	108.959105	107.016407	105.1196736	103.2675259	101.4586358
151119A00027	11/19/2015	1.64	11/19/2020	11/19/2015	100.52206	100.5220592	100.5220592	100.5220592	100.4397921	100.0646564	99.69300281	99.32477754	98.9599281
170705A00027	7/5/2017	1.73	7/6/2020	7/5/2017	100.28525	100.2852512	100.2852512	100.2852512	100.2629351	100.0698008	99.87751638	99.68607575	99.49547299
170705A00028	7/5/2017	1.86	7/6/2021	7/5/2017	101.12358	101.12358	101.12358	101.12358	100.8978396	100.19131	99.49724037	98.81526743	98.14504267
180719A00077	7/19/2018	3.06	7/19/2023	7/19/2018	108.68208	108.6820802	108.6820802	108.6820802	106.9656175	103.8476227	100.840947	97.94097161	95.1432971
180727A00030	7/27/2018	2.89	7/27/2021	7/27/2018	101.8682	101.8682033	101.8682033	101.8682033	101.639914	100.9265202	100.2253367	99.53602165	98.85824691
180830A00066	8/30/2018	3.02	8/30/2023	8/30/2018	108.83798	108.8379802	108.8379802	108.8379802	107.0236085	103.8072062	100.7090571	97.72415741	94.84774293
181003A00072	10/3/2018	2.78	10/2/2020	10/3/2018	100.87113	100.8711329	100.8711329	100.8711329	100.8068397	100.4796542	100.1550531	99.83300266	99.51347006
181029A00097	10/29/2018	3.53	10/27/2028	10/29/2018	121.38389	121.3838924	121.3838924	119.7117762	113.1990665	106.6944865	100.677318	95.1067015	89.94547091
181214A00026	12/14/2018	2.92	12/14/2020	12/14/2018	101.11413	101.1141325	101.1141325	101.1141325	101.0161756	100.5988298	100.1857865	99.77697206	99.37231462
190118A00031	1/18/2019	2.81	1/19/2021	1/18/2019	101.1772	101.1771994	101.1771994	101.1771994	101.0614434	100.6001088	100.144072	99.6932316	99.24748921
190813A00019	8/13/2019	2.13	8/13/2021	8/13/2019	101.39673	101.3967339	101.3967339	101.3967339	101.1516066	100.4022138	99.66566835	98.94161798	98.22972385

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200310A00067	3/10/2020	0.94	3/10/2025	3/10/2020	101.6268	101.6267951	101.6267951	101.6267951	100.2189378	97.76776263	95.40785591	93.13502643	90.9453066
970806A00017	8/1/1997	7.02	7/23/2026	8/1/1997	122.00042	122.0004178	122.0004178	122.0000291	119.6106089	116.133839	112.8109835	109.6337261	106.5942652
970806A00059	8/1/1997	8.25	9/22/2025	8/1/1997	139.7538	139.7538003	139.7538003	139.7538003	135.1537963	129.4755061	124.0979773	119.0032876	114.1746847
160930A00033	9/30/2016	1.8	9/30/2026	9/30/2016	104.95705	104.9570503	104.9570503	104.9509163	102.6554477	99.46605052	96.42396397	93.52096639	90.7493588
170130A00046	1/30/2017	2.52	1/30/2026	1/30/2017	106.8817	106.881699	106.881699	106.881699	104.8372755	101.7784679	98.8515268	96.04956154	93.36609187
180123A00010	1/23/2018	2.68	1/24/2028	1/23/2018	110.25368	110.253682	110.253682	110.0536646	106.8367402	102.9154309	99.20583599	95.69428159	92.36808955
180126A00018	1/26/2018	2.34	1/26/2023	1/26/2018	103.28298	103.2829832	103.2829832	103.2829832	102.6846312	101.2251673	99.80091227	98.41072477	97.05350991
180529A00057	5/29/2018	3.09	5/30/2028	5/29/2018	114.68502	114.6850188	114.6850188	114.0233131	109.6095118	104.7511136	100.2000216	95.93349362	91.93065223
180725A00034	7/25/2018	2.79	7/25/2022	7/25/2018	103.27095	103.2709453	103.2709453	103.2709453	102.8102594	101.5953325	100.4062481	99.2422332	98.10254523
180928A00077	9/28/2018	2.85	9/28/2021	9/28/2018	102.19307	102.1930719	102.1930719	102.1930719	101.9265907	101.1278597	100.3430885	99.57189409	98.81390779
181120A00026	11/20/2018	2.92	11/20/2020	11/20/2018	101.00574	101.0057429	101.0057429	101.0057429	100.9230844	100.5462512	100.1729187	99.80303276	99.4365406
181211A00042	12/11/2018	3.7	12/11/2028	12/11/2023	123.18474	123.1847378	123.1847378	121.323421	114.444411	107.5962126	101.2681691	95.41606237	89.99972822
190102A00022	1/2/2019	2.97	1/3/2034	1/2/2019	120.01741	120.017408	120.0048265	116.6203111	109.943399	103.3113759	97.25722756	91.72183743	86.65276933
190102A00024	1/2/2019	2.97	1/3/2034	1/2/2019	120.01746	120.0174574	120.0048741	116.6203301	109.9434	103.311363	97.25720329	91.72180379	86.65272806
190520A00020	5/20/2019	2.39	5/20/2026	5/20/2019	107.18305	107.1830488	107.1830488	107.1830488	105.0633616	101.9609467	98.99564814	96.16010974	93.44742661
190627A00020	6/27/2019	2.28	6/25/2021	6/27/2019	101.34615	101.3461516	101.3461516	101.3461516	101.1372113	100.4672276	99.80857081	99.16092223	98.52397572
191114A00012	11/14/2019	1.89	11/15/2021	11/14/2019	101.41929	101.4192855	101.4192855	101.4192855	101.119016	100.247224	99.39112159	98.55027514	97.72426738
191114A00014	11/14/2019	1.9	11/14/2023	11/14/2019	103.03843	103.0384321	103.0384321	103.0384321	102.1693279	100.318226	98.52087569	96.77527495	95.07951134
191231A00021	12/31/2019	1.9	2/28/2023	12/31/2019	102.29969	102.2996917	102.2996917	102.2996917	101.7309983	100.3258499	98.9538798	97.61402818	96.30527772
200317A00022	3/17/2020	0.97	3/17/2022	3/17/2020	100.71048	100.7104785	100.7104785	100.7104785	100.3383096	99.30947875	98.30071727	97.3114555	96.34114527
200317A00024	3/17/2020	1.09	3/17/2025	3/17/2020	102.03727	102.0372705	102.0372705	102.0372705	100.6252358	98.16632752	95.79896025	93.51892975	91.32225616
120119A00015	1/19/2012	2.27	1/19/2024	1/19/2012	106.44514	106.445145	106.445145	106.445145	104.7420922	101.7651579	98.89921949	96.13938928	93.48102561
120315A00002	3/14/2012	2.56	3/15/2027	3/14/2022	109.85399	109.8539929	109.8539929	109.7312336	106.5424313	102.543576	98.75240256	95.15608046	91.74267269
120621A00009	6/21/2012	3.18	6/21/2032	6/21/2012	122.69911	122.6991113	122.6991113	118.1180487	110.4468531	103.0576592	96.36285664	90.28804213	84.76744294
121214A00014	12/14/2012	2.16	12/14/2027	12/14/2017	108.7657	108.7657008	108.7657008	108.4749695	104.9914076	100.8527864	96.94604536	93.25565567	89.76726005
130624A00017	6/24/2013	3.4	6/26/2023	6/24/2013	108.7937	108.7936986	108.7936986	108.7936986	107.2545381	104.3764733	101.5981406	98.91541353	96.32436651
140311A00037	3/11/2014	2.59	3/11/2021	3/11/2014	102.22016	102.22016	102.22016	102.22016	101.8869063	100.9241106	99.97933004	99.05206336	98.14182758
141124A00024	11/24/2014	2.27	11/30/2021	11/24/2014	103.48835	103.4883465	103.4883465	103.4883465	102.8576444	101.2405941	99.65702375	98.10595156	96.58643432
150601A00030	6/1/2015	5.28	11/26/2027	6/1/2015	133.68668	133.6866776	133.6866776	132.4454654	125.5038863	118.5455723	112.0734171	106.0496956	100.4398414
150601A00040	6/1/2015	5.45	7/14/2023	6/1/2015	108.75382	108.7538176	108.7538176	108.7538176	107.9736104	106.2166913	104.5071557	102.8433394	101.2236495
150601A00165	6/1/2015	2.66	6/4/2032	6/1/2015	115.40044	115.4004364	115.4004364	113.3131791	107.6248583	101.7994219	96.43178775	91.47965072	86.90503586
150601A00348	6/1/2015	2.11	9/16/2020	6/1/2015	100.42764	100.4276358	100.4276358	100.4276358	100.3876411	100.1532986	99.92052121	99.68929155	99.45959252
150601A00395	6/1/2015	2.86	1/3/2024	6/1/2015	104.79641	104.7964117	104.7964117	104.7964117	103.9012866	102.0210675	100.1964279	98.4252641	96.70556831

Classification | Public

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00426	6/1/2015	3.37	2/21/2029	6/1/2015	113.49023	113.4902287	113.4902287	113.0132266	109.1733701	104.7668481	100.6235492	96.72474416	93.05319834
150601A00473	6/1/2015	2.22	5/31/2024	6/1/2015	104.37706	104.3770629	104.3770629	104.3770629	103.3200128	101.239224	99.22541229	97.27585954	95.38797834
150601A00475	6/1/2015	3.04	6/1/2029	6/1/2015	112.40554	112.4055363	112.4055363	111.8415665	107.8682233	103.3757522	99.15921663	95.1984686	91.4750074
150601A00492	6/1/2015	1.92	6/25/2021	6/1/2015	101.01612	101.0161235	101.0161235	101.0161235	100.8212473	100.1954742	99.58024678	98.97526915	98.38025716
150601A00527	6/1/2015	2.5	7/26/2024	6/1/2015	104.73338	104.733381	104.733381	104.733381	103.6173832	101.4676121	99.38878989	97.37797552	95.43237192
150601A00529	6/1/2015	2.08	7/28/2021	6/1/2015	101.1231	101.123099	101.123099	101.123099	100.9259685	100.2949566	99.67464193	99.06472268	98.46490891
150601A00660	6/1/2015	2.26	1/5/2022	6/1/2015	103.69997	103.6999741	103.6999741	103.6999741	103.0170531	101.2906982	99.60192602	97.94959718	96.33261828
150601A00679	6/1/2015	1.86	2/4/2022	6/1/2015	101.44712	101.4471161	101.4471161	101.4471161	101.1191783	100.1944275	99.28706827	98.39661249	97.52259034
150601A00739	6/1/2015	2.35	5/6/2025	6/1/2015	105.17725	105.1772465	105.1772465	105.1772465	103.7131522	101.1928439	98.76754729	96.43284347	94.18455231
150601A00847	6/1/2015	6.59	1/31/2022	6/1/2015	110.58777	110.5877674	110.5877674	110.5877674	109.9212916	108.2224911	106.5610235	104.9358311	103.3458937
150601A00912	6/1/2015	5.96	11/30/2029	6/1/2015	131.48268	131.4826796	131.4826796	130.4976994	125.0946254	119.2485838	113.7892474	108.6866616	103.9134478
150601A00921	6/1/2015	5.55	6/30/2020	6/1/2015	100.68594	100.6859418	100.6859418	100.6859418	100.6724381	100.5434719	100.4150093	100.2870471	100.1595823
150601A00928	6/1/2015	5.94	8/21/2030	6/1/2015	130.11746	130.1174648	130.1174648	129.0144956	123.8764105	118.273106	113.0466343	108.1668221	103.6061975
150601A00935	6/1/2015	6.46	11/21/2030	6/1/2015	138.14379	138.1437878	138.1437878	136.5255795	130.1822608	123.54187	117.3791493	111.6539987	106.3300418
150601A00950	6/1/2015	6.76	12/18/2031	6/1/2015	144.18315	144.1831535	144.1831535	141.6859899	134.3964816	126.9657712	120.1141497	113.7890548	107.9431864
150601A00960	6/1/2015	6.49	12/16/2032	6/1/2015	140.28463	140.2846295	140.2846295	137.6420435	130.854624	123.8746804	117.4471989	111.5202864	106.0474726
150601A00963	6/1/2015	4.76	12/27/2022	6/1/2015	106.35692	106.3569199	106.3569199	106.3569199	105.7903918	104.3851487	103.0129599	101.6727707	100.3635691
150601A00978	6/1/2015	6.32	11/24/2033	6/1/2015	142.09326	142.0932648	142.0883239	138.6408289	131.2685874	123.8277716	117.0119154	110.7588107	105.0131264
150601A00994	6/1/2015	5.86	6/24/2022	6/1/2015	112.10411	112.1041057	112.1041057	112.1041057	111.1684293	108.9734947	106.8352691	104.7518571	102.7214433
150601A01014	6/1/2015	4.96	9/30/2020	6/1/2015	102.39159	102.3915867	102.3915867	102.3915867	102.2690294	101.7639104	101.2638236	100.7686941	100.2784482
150601A01016	6/1/2015	5.73	10/28/2025	6/1/2015	127.36604	127.3660404	127.3660404	127.3660404	123.0316516	117.7861436	112.8224724	108.1235971	103.6736067
150601A01021	6/1/2015	5.28	10/3/2025	6/1/2015	113.58554	113.5855433	113.5855433	113.5855433	111.8421442	108.9856714	106.2425336	103.6071975	101.0744423
150601A01048	6/1/2015	5.27	1/3/2025	6/1/2015	122.19994	122.1999428	122.1999428	122.1999428	118.9569503	114.3905879	110.0416821	105.898489	101.9499709
150914A00032	9/14/2015	1.49	9/14/2020	9/14/2015	100.3563	100.3562996	100.3562996	100.3562996	100.3054655	100.018021	99.73257339	99.44909982	99.16757779
150914A00040	9/14/2015	1.85	9/14/2022	9/14/2015	102.02958	102.0295826	102.0295826	102.0295826	101.5315679	100.2508609	98.99852955	97.77370819	96.5755649
160928A00041	9/28/2016	3.26	9/29/2036	9/30/2019	124.99328	124.9932767	124.4108618	118.6910226	110.431999	102.561497	95.4957757	89.13818817	83.40487007
170130A00036	1/30/2017	3.11	1/31/2033	1/30/2017	118.46943	118.4694305	118.4694305	115.7514214	109.5177215	103.225477	97.45218585	92.14749811	87.2664677
170130A00039	1/30/2017	2.74	1/31/2028	1/30/2017	109.99763	109.9976324	109.9976324	109.7528508	106.4067303	102.3841878	98.58246431	94.98709354	91.58467409
170130A00043	1/30/2017	2.64	1/29/2027	1/30/2017	108.42136	108.4213557	108.4213557	108.3682279	105.6555125	102.1115974	98.74151111	95.53501177	92.48253998
170313A00041	3/13/2017	3.21	3/15/2032	3/13/2017	117.58028	117.580279	117.580279	115.6269023	109.9870447	104.1630716	98.7870213	93.81827026	89.22028272
170315A00005	3/15/2017	2.1	3/15/2022	3/15/2017	101.90052	101.9005214	101.9005214	101.9005214	101.5257037	100.4885717	99.47164323	98.47434517	97.49612604
190102A00015	1/2/2019	2.97	1/3/2034	1/2/2019	120.01765	120.0176503	120.0050606	116.6204096	109.9434087	103.3113169	97.25711172	91.7216747	86.65256818
190220A00012	2/20/2019	2.76	2/19/2021	2/20/2019	101.18811	101.1881085	101.1881085	101.1881085	101.0635655	100.5888411	100.1199609	99.65680443	99.19925485

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190604A00010	6/4/2019	2.45	6/4/2021	6/4/2019	101.4592	101.4592049	101.4592049	101.4592049	101.2518048	100.5849656	99.92928603	99.28445642	98.65017908
190628A00007	6/28/2019	2.28	6/28/2034	6/28/2019	115.62626	115.6262564	115.5803738	111.9240253	105.2238288	98.63557181	92.63967326	87.17378152	82.18278093
190823A00009	8/23/2019	1.8	8/23/2029	8/23/2019	108.07236	108.072362	108.072362	107.4170422	103.3356825	98.80323604	94.55856099	90.58003702	86.84785738
191231A00027	12/31/2019	1.9	4/28/2023	12/31/2019	102.29969	102.2996875	102.2996875	102.2996875	101.7309892	100.3258283	98.95384636	97.61398329	96.3052218
200210A00007	2/10/2020	1.78	2/10/2025	2/10/2023	106.20767	106.207667	106.207667	106.207667	103.6989418	100.0807822	96.6299951	93.33767273	90.19543408
120614A00005	6/14/2012	2.22	6/15/2022	6/14/2012	104.69838	104.6983773	104.6983773	104.6983773	103.7521943	101.5488802	99.40316424	97.31312139	95.27690771
140811A00037	8/11/2016	2.97	8/11/2020	8/11/2016	101.00227	101.0022652	101.0022652	101.0022652	100.9334027	100.5646286	100.1985562	99.83515574	99.47439804
140923A00070	9/23/2014	2.88	9/23/2022	9/23/2014	106.47873	106.4787261	106.4787261	106.4787261	105.3439032	102.8646662	100.4569118	98.11816851	95.84606588
150126A00024	1/26/2015	1.9	6/22/2020	1/26/2015	100.37637	100.3763706	100.3763706	100.3763706	100.3488762	100.1190404	99.89026438	99.66254069	99.43586209
150601A00211	6/1/2015	2.63	9/25/2020	6/1/2015	101.15177	101.1517704	101.1517704	101.1517704	101.0338779	100.5412176	100.0533564	99.5702243	99.09175282
150601A00672	6/1/2015	1.96	1/28/2022	6/1/2015	103.0451	103.0450987	103.0450987	103.0450987	102.3230509	100.5149577	98.74747332	97.01944033	95.32974197
150630A00091	6/30/2015	2.31	6/30/2021	6/30/2015	102.55847	102.5584676	102.5584676	102.5584676	102.0872929	100.8366928	99.6166258	98.4259846	97.26371462
150731A00020	7/31/2015	2.47	7/29/2022	7/31/2015	105.1149	105.1148968	105.1148968	105.1148968	104.0925152	101.7768422	99.52427314	97.33274035	95.20025631
150812A00026	8/12/2015	1.86	8/12/2020	8/12/2015	100.59689	100.5968856	100.5968856	100.5968856	100.5270933	100.156499	99.78864211	99.42349233	99.06101975
150929A00024	9/29/2015	1.81	9/29/2020	9/29/2015	100.78513	100.7851286	100.7851286	100.7851286	100.6630034	100.1604687	99.66293378	99.17032427	98.68256744
151002A00007	10/2/2015	1.65	10/2/2020	10/2/2015	100.71591	100.7159141	100.7159141	100.7159141	100.5905543	100.0800322	99.57467483	99.07440407	98.57914352
151002A00067	10/2/2015	1.48	10/2/2020	10/2/2015	100.69955	100.6995511	100.6995511	100.6995511	100.5739754	100.062646	99.55650071	99.05546107	98.55945014
151211A00041	12/11/2017	2.71	3/13/2023	12/11/2017	107.189	107.1890031	107.1890031	107.1890031	105.6780803	102.7367884	99.89318507	97.14349687	94.48411749
160203A00013	2/3/2016	1.72	2/3/2021	2/3/2016	101.24728	101.2472762	101.2472762	101.2472762	100.9720162	100.1229355	99.28807564	98.4670817	97.65961063
160205A00004	2/5/2016	1.7	2/5/2021	2/5/2016	101.23795	101.237948	101.237948	101.237948	100.959801	100.1053745	99.26535208	98.43937183	97.62708404
160209A00026	2/9/2016	1.57	2/8/2021	2/9/2016	101.13643	101.1364288	101.1364288	101.1364288	100.8540592	99.99203187	99.14467937	98.3116295	97.49252255
160211A00005	2/11/2016	1.3	2/11/2021	2/11/2016	101.04001	101.0400085	101.0400085	101.0400085	100.7527758	99.88134614	99.02492118	98.18311599	97.35555872
160211A00036	2/11/2016	2.41	2/11/2026	2/11/2016	112.41257	112.4125744	112.4125744	112.4125744	107.0183803	101.3235654	95.96963779	90.93446204	86.19744695
160212A00002	2/12/2016	1.58	11/17/2020	2/12/2016	100.84903	100.849027	100.849027	100.849027	100.6728573	100.0365408	99.40824902	98.7878308	98.17513872
160212A00005	2/12/2016	1.42	2/16/2021	2/12/2016	101.16353	101.163528	101.163528	101.163528	100.8688834	99.98337208	99.11334001	98.25838407	97.41811504
160216A00007	2/16/2016	1.68	2/16/2021	2/16/2016	101.26308	101.2630762	101.2630762	101.2630762	100.9689645	100.0847971	99.21605533	98.3623383	97.52325876
110805A00021	8/5/2011	3.36	8/5/2021	8/5/2011	104.19263	104.1926329	104.1926329	104.1926329	103.6761236	102.3265023	101.0009265	99.6988075	98.41957516
120531A00008	5/31/2012	2.27	5/31/2022	5/31/2012	104.32297	104.3229653	104.3229653	104.3229653	103.408039	101.2571269	99.16150065	97.11934754	95.12892938
141117A00011	11/17/2014	3.81	11/17/2034	11/17/2014	150.85241	150.852409	148.8741127	133.525871	118.6362167	105.5492771	94.16137028	84.23791261	75.57804722
141215A00062	12/15/2014	2.65	12/16/2024	12/15/2014	112.06746	112.067458	112.067458	112.067458	108.6228398	103.920601	99.45066042	95.20027227	91.15746272
150601A00333	6/1/2015	3.06	8/9/2021	6/1/2015	103.75029	103.7502889	103.7502889	103.7502889	103.2302477	101.8731895	100.5404745	99.23150321	97.94569508
150601A00341	6/1/2015	3.09	8/21/2020	6/1/2015	101.10522	101.1052191	101.1052191	101.1052191	101.0256856	100.6291762	100.235785	99.84547513	99.45821046
150601A00355	6/1/2015	2.86	9/24/2020	6/1/2015	101.25646	101.2564626	101.2564626	101.2564626	101.1396236	100.6494007	100.1639273	99.68313448	99.20695476

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150619A00025	6/19/2015	2.01	6/19/2020	6/19/2015	100.38503	100.3850344	100.3850344	100.3850344	100.3591306	100.1375772	99.91701154	99.69742696	99.4788169
150624A00075	6/24/2015	2.1	6/24/2020	6/24/2015	100.43262	100.4326212	100.4326212	100.4326212	100.4040581	100.1686171	99.93428464	99.70105293	99.46891421
150731A00036	7/31/2015	2.01	7/31/2020	7/31/2015	100.59414	100.5941406	100.5941406	100.5941406	100.5370976	100.1994638	99.8640878	99.53094696	99.2000191
150812A00040	8/12/2015	2.94	8/12/2025	8/12/2015	114.22258	114.2225804	114.2225804	114.2225804	109.7790962	104.464378	99.44267973	94.69633577	90.20883214
150909A00017	9/9/2015	2.02	9/9/2020	9/9/2015	100.79357	100.7935706	100.7935706	100.7935706	100.6935661	100.2457204	99.80185697	99.36192268	98.92586548
150929A00085	9/29/2015	1.81	9/29/2020	9/29/2015	100.78513	100.7851286	100.7851286	100.7851286	100.6630034	100.1604687	99.66293378	99.17032427	98.68256744
151002A00014	10/2/2015	1.65	10/2/2020	10/2/2015	100.71591	100.7159141	100.7159141	100.7159141	100.5905543	100.0800322	99.57467483	99.07440407	98.57914352
151027A00020	10/27/2015	1.75	10/27/2020	10/27/2015	100.87115	100.871153	100.871153	100.871153	100.7186211	100.139396	99.5668139	99.00076119	98.44112665
151215A00010	12/15/2015	2.16	12/15/2020	12/15/2015	101.36869	101.3686924	101.3686924	101.3686924	101.1591159	100.4447282	99.74041348	99.04595974	98.36116075
160203A00012	2/3/2016	1.54	2/3/2021	2/3/2016	101.2199	101.2198962	101.2198962	101.2198962	100.944061	100.0933763	99.25696576	98.43447251	97.62555163
160209A00019	2/9/2016	2.52	2/9/2026	2/9/2016	113.04944	113.0494442	113.0494442	113.0494442	107.6549608	101.9471914	96.58045819	91.53264639	86.78318205
160210A00042	2/10/2016	2.57	2/10/2026	2/10/2016	113.35018	113.3501845	113.3501845	113.3501845	107.9443788	102.2256392	96.8486063	91.79111628	87.03255029
160211A00089	2/16/2016	3.91	2/16/2024	2/16/2016	114.1419	114.1419046	114.1419046	114.1419046	111.6789831	107.7336983	103.9520999	100.3265392	96.84976495
160212A00027	2/12/2016	2.53	2/12/2026	2/12/2016	113.12635	113.1263528	113.1263528	113.1263528	107.7131791	101.9957497	96.62037567	91.56484687	86.80850286
130211A00026	2/11/2013	2.27	2/15/2023	2/11/2013	105.73804	105.7380416	105.7380416	105.7380416	104.2975207	101.4472559	98.68964154	96.0211793	93.43852213
130716A00006	7/16/2013	2.81	7/30/2020	7/16/2013	100.858	100.858004	100.858004	100.858004	100.8017046	100.4662671	100.1330556	99.80204805	99.47322272
140314A00003	3/14/2014	3.32	3/14/2024	3/14/2014	112.05718	112.0571786	112.0571786	112.0571786	109.5351362	105.5593402	101.7519143	98.10483918	94.61052013
140930A00104	9/30/2016	3.23	9/30/2021	9/30/2016	104.4714	104.4713955	104.4713955	104.4713955	103.8892718	102.3871504	100.9145025	99.4705364	98.05448795
150601A00406	6/1/2015	3.71	1/17/2024	6/1/2015	112.87579	112.8757908	112.8757908	112.8757908	110.5106514	106.6688224	102.9835287	99.44753442	96.05397977
150601A00682	6/1/2015	2.3	2/9/2022	6/1/2015	103.73007	103.7300689	103.7300689	103.7300689	102.9897645	101.1413901	99.33519084	97.5699588	95.84452814
150601A00775	6/1/2015	2.28	11/12/2021	6/1/2015	103.21013	103.2101272	103.2101272	103.2101272	102.5803455	100.9738203	99.40019657	97.85852977	96.3479112
150601A00791	6/1/2015	2.42	5/20/2022	6/1/2015	104.51021	104.5102064	104.5102064	104.5102064	103.6128975	101.4885201	99.41820367	97.40019649	95.43281771
150619A00028	6/19/2015	2.54	6/20/2022	6/19/2015	105.03782	105.0378198	105.0378198	105.0378198	104.0852396	101.872583	99.71788316	97.61919701	95.57466368
150714A00061	7/14/2015	2.09	7/14/2020	7/14/2015	100.53162	100.531622	100.531622	100.531622	100.4884502	100.1977398	99.90872082	99.62137854	99.33569827
150715A00017	7/15/2015	2.14	7/15/2020	7/15/2015	100.55141	100.5514115	100.5514115	100.5514115	100.5074203	100.2139195	99.92214237	99.63207368	99.3436984
150824A00031	8/24/2015	1.93	2/25/2021	8/24/2015	101.52731	101.5273091	101.5273091	101.5273091	101.2198197	100.3101308	99.41673086	98.53918567	97.67707612
151215A00027	12/15/2015	2.09	12/15/2020	12/15/2015	101.31838	101.3183832	101.3183832	101.3183832	101.1088529	100.394666	99.6905502	98.99629333	98.31168928
160201A00024	2/1/2016	2.16	2/1/2023	2/1/2016	105.34745	105.3474541	105.3474541	105.3474541	103.9417233	101.1365195	98.42136275	95.79289577	93.24790459
160210A00003	2/10/2016	1.63	2/10/2021	2/10/2016	101.19612	101.1961247	101.1961247	101.1961247	100.9107857	100.0430906	99.19025883	98.35191099	97.52768052
160210A00021	2/10/2016	1.97	2/10/2023	2/10/2016	104.84339	104.8433918	104.8433918	104.8433918	103.4197916	100.5964944	97.8646493	95.22081741	92.66170781
160211A00091	2/16/2016	3.55	2/16/2023	2/16/2016	109.46727	109.4672696	109.4672696	109.4672696	108.0020773	105.0950363	102.2821419	99.55984292	96.92474163
160217A00004	2/17/2016	1.54	2/17/2021	2/17/2016	101.27471	101.2747147	101.2747147	101.2747147	100.9784767	100.0897269	99.21655694	98.35855983	97.51534279
160218A00014	2/18/2016	1.57	2/18/2021	2/18/2016	101.30561	101.3056146	101.3056146	101.3056146	101.0078849	100.1162858	99.24036237	98.37970407	97.53391456

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160307A00029	3/7/2016	3.21	3/7/2031	3/7/2016	131.66987	131.6698727	131.6698727	124.6718424	113.4949243	103.3186654	94.18322148	85.97551656	78.59533111
161123A00035	11/23/2016	2.16	11/23/2021	11/23/2016	103.10965	103.109646	103.109646	103.109646	102.4674513	100.8322417	99.23092776	97.66252032	96.12606877
111213A00004	12/13/2011	2.96	12/13/2021	12/13/2011	104.59132	104.5913176	104.5913176	104.5913176	103.9209973	102.2196818	100.5544089	98.92409712	97.32770885
140605A00056	6/6/2016	3.07	6/8/2020	6/6/2016	100.5353	100.5353003	100.5353003	100.5353003	100.5152058	100.323792	100.1331154	99.94317165	99.75395661
150601A00332	6/1/2015	2.72	8/7/2020	6/1/2015	100.86659	100.8665939	100.8665939	100.8665939	100.8020291	100.4445615	100.0896322	99.73721405	99.3872804
150601A00625	6/1/2015	3.96	12/9/2044	6/1/2015	186.74776	186.7477561	168.3964089	141.5363924	118.8402839	100.5394577	85.80266832	73.88078526	64.18850125
150601A00656	6/1/2015	2.59	12/17/2021	6/1/2015	103.9297	103.9297033	103.9297033	103.9297033	103.2565096	101.5501971	99.88022346	98.24549234	96.64495168
150630A00097	6/30/2015	3.05	7/1/2024	6/30/2015	111.80435	111.8043519	111.8043519	111.8043519	108.9532	104.7030689	100.6443127	96.76723545	93.06269059
150706A00019	7/6/2015	1.93	7/6/2020	7/6/2015	100.4506	100.4505974	100.4505974	100.4505974	100.4139587	100.1453948	99.87827127	99.61257648	99.34829896
150731A00016	7/31/2015	3.04	7/31/2025	7/31/2015	114.67264	114.6726432	114.6726432	114.6726432	110.2813763	104.9834004	99.97572655	95.24095282	90.76280545
150824A00043	8/24/2015	1.82	8/24/2020	8/24/2015	100.63423	100.6342251	100.6342251	100.6342251	100.5516794	100.1480822	99.74772362	99.35056489	98.95656766
150824A00046	8/24/2015	1.82	8/24/2020	8/24/2015	100.63423	100.6342251	100.6342251	100.6342251	100.5516794	100.1480822	99.74772362	99.35056489	98.95656766
150930A00059	9/30/2015	1.78	9/30/2020	9/30/2015	100.77419	100.774191	100.774191	100.774191	100.6509671	100.1457362	99.64555713	99.1503545	98.66005445
151008A00025	10/8/2015	2.91	10/8/2025	10/8/2015	114.46608	114.466077	114.466077	114.466077	109.7294526	104.2724838	99.12434621	94.26592783	89.6793969
151013A00012	10/13/2015	1.58	10/13/2020	10/13/2015	100.79561	100.7956132	100.7956132	100.7956132	100.6580413	100.1163287	99.58044243	99.05028865	98.52577557
151214A00051	12/14/2015	2.92	12/15/2025	12/14/2015	115.00708	115.0070774	115.0070774	115.0070774	109.8936625	104.2613759	98.95668899	93.95877187	89.24823076
160208A00004	2/8/2016	1.46	2/8/2021	2/8/2016	101.16974	101.1697359	101.1697359	101.1697359	100.8866986	100.0227461	99.17352695	98.3386668	97.51780388
160210A00041	2/10/2016	1.97	2/10/2023	2/10/2016	104.84339	104.8433918	104.8433918	104.8433918	103.4197916	100.5964944	97.8646493	95.22081741	92.66170781
160210A00052	2/10/2016	1.64	2/10/2021	2/10/2016	101.20489	101.2048912	101.2048912	101.2048912	100.9195414	100.0518046	99.19893157	98.36054296	97.53627221
160211A00056	2/11/2016	1.82	2/10/2023	2/11/2016	104.40948	104.4094798	104.4094798	104.4094798	102.9884592	100.1714062	97.44565329	94.80776655	92.25445979
160212A00017	2/12/2016	1.57	2/12/2021	2/12/2016	101.15062	101.1506221	101.1506221	101.1506221	100.8624433	99.98958245	99.13176783	98.28861301	97.45974466
160222A00005	2/22/2016	2.79	2/22/2028	2/22/2016	119.65851	119.6585132	119.6585132	117.7264131	109.7013915	102.1480323	95.17963209	88.747716	82.80805997
160222A00018	2/22/2016	2.59	2/23/2026	2/22/2016	113.54814	113.5481401	113.5481401	113.5481401	108.0638047	102.3069941	96.89615746	91.80872451	87.02370731
081219A00006	12/19/2008	3.88	12/22/2023	12/19/2008	114.18812	114.188121	114.188121	114.188121	111.8719273	108.0544643	104.3902014	100.8720909	97.49345418
120419A00009	4/19/2012	2.76	4/19/2022	4/19/2012	105.11	105.1099981	105.1099981	105.1099981	104.2616887	102.2129022	100.2148192	98.26585259	96.36447678
130211A00016	2/11/2013	2.27	2/15/2023	2/11/2013	105.73804	105.7380416	105.7380416	105.7380416	104.2975207	101.4472559	98.68964154	96.0211793	93.43852212
130501A00021	5/1/2013	2.27	5/1/2023	5/1/2013	106.14483	106.1448316	106.1448316	106.1448316	104.5207266	101.4676221	98.51978137	95.67297616	92.92317426
140701A00054	7/2/2014	2.65	7/2/2020	7/2/2014	100.61532	100.6153236	100.6153236	100.6153236	100.5819194	100.3241204	100.0676405	99.81246958	99.5585976
141218A00039	12/18/2014	2.29	12/18/2020	12/18/2014	101.47908	101.4790763	101.4790763	101.4790763	101.265757	100.5427753	99.83010134	99.12751565	98.43480499
150115A00021	1/17/2017	2.26	1/18/2022	1/17/2017	103.59926	103.5992635	103.5992635	103.5992635	102.8878987	101.1007268	99.35316428	97.64405264	95.97227693
150601A00356	6/1/2015	3.66	9/22/2023	6/1/2015	111.62146	111.6214567	111.6214567	111.6214567	109.5888317	106.0735998	102.6918458	99.43777977	96.3058954
150731A00040	7/31/2015	2.01	7/31/2020	7/31/2015	100.59414	100.5941406	100.5941406	100.5941406	100.5370976	100.1994638	99.8640878	99.53094696	99.2000191
150824A00118	8/24/2015	1.65	8/24/2020	8/24/2015	100.62116	100.6211556	100.6211556	100.6211556	100.5384745	100.1342626	99.73330249	99.335555	98.94098157

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150909A00003	9/9/2015	3.11	9/9/2025	9/9/2015	115.35501	115.3550098	115.3550098	115.3550098	110.7535191	105.3425499	100.2333739	95.40757369	90.84794838
151030A00022	10/30/2015	1.8	10/30/2020	10/30/2015	100.91318	100.9131777	100.9131777	100.9131777	100.7573695	100.1698264	99.58911057	99.01510363	98.44768996
160125A00022	1/25/2016	1.74	5/5/2020	1/25/2016	100.13719	100.1371853	100.1371853	100.1371853	100.1303864	100.0334657	99.93673944	99.8402071	99.74386809
160210A00036	2/10/2016	1.77	2/10/2023	2/10/2016	104.79014	104.790142	104.790142	104.790142	103.3601526	100.525876	97.78366115	95.13003756	92.56168452
160211A00086	2/16/2016	2.8	2/16/2022	2/16/2016	104.76488	104.7648776	104.7648776	104.7648776	104.011669	102.1334551	100.2984674	98.50545629	96.75321624
160216A00040	2/16/2016	1.49	2/16/2021	2/16/2016	101.2261	101.2261028	101.2261028	101.2261028	100.9313787	100.0455637	99.17523163	98.31997934	97.47941753
160216A00051	2/16/2016	1.49	2/16/2021	2/16/2016	101.2261	101.2261028	101.2261028	101.2261028	100.9313787	100.0455637	99.17523163	98.31997934	97.47941753
160303A00020	3/3/2016	2.97	3/3/2031	3/3/2016	131.38781	131.3878085	131.3878085	124.2923539	113.0058234	102.7501352	93.54871447	85.28666363	77.86217934
160316A00009	3/16/2016	1.95	3/16/2021	3/16/2016	101.62467	101.6246708	101.6246708	101.6246708	101.2903637	100.3292084	99.38623468	98.46093029	97.55280203
160331A00056	3/31/2016	2.09	3/30/2023	3/31/2016	105.4268	105.4268027	105.4268027	105.4268027	103.885988	100.9277965	98.06953394	95.30727745	92.63728099
161017A00015	10/17/2016	1.68	10/18/2021	10/17/2016	102.187	102.187001	102.187001	102.187001	101.5895234	100.0581215	98.5573144	97.08625626	95.64413201
160225A00024	2/25/2016	2.22	2/26/2024	2/25/2016	107.5817	107.5816969	107.5816969	107.5816969	105.1517425	101.3057408	97.62178182	94.09221262	90.70978129
160304A00016	3/4/2016	1.82	3/4/2021	3/4/2016	101.4563	101.4563031	101.4563031	101.4563031	101.1389701	100.210812	99.29962121	98.40493598	97.52631105
160422A00019	4/22/2016	1.69	4/22/2021	4/22/2016	101.51712	101.5171185	101.5171185	101.5171185	101.1334746	100.0736577	99.03595071	98.01966744	97.02414986
160516A00007	5/16/2016	1.42	5/18/2020	5/16/2016	100.14844	100.1484399	100.1484399	100.1484399	100.1371367	100.0042676	99.87176493	99.73962715	99.60785274
160520A00017	9/20/2017	2.34	9/20/2024	9/20/2017	109.2159	109.2158986	109.2158986	109.2158986	106.1307905	101.734863	97.54701968	93.55633723	89.752522
160524A00015	11/25/2016	2.71	11/25/2026	11/25/2016	116.06151	116.0615068	116.0615068	115.6015561	108.860673	102.4107706	96.39091698	90.77013591	85.51984037
160527A00021	5/27/2016	1.68	5/27/2021	5/27/2016	101.64273	101.642728	101.642728	101.642728	101.2147474	100.0606261	98.93268789	97.83004997	96.75186889
160601A00021	6/1/2016	1.71	6/1/2021	6/1/2016	101.69773	101.6977287	101.6977287	101.6977287	101.2634329	100.0956254	98.95460886	97.83947008	96.749337
160627A00068	6/27/2016	1.4	6/28/2021	6/27/2016	101.40188	101.4018772	101.4018772	101.4018772	100.9355179	99.69790339	98.49043681	97.31202799	96.1616387
160714A00024	9/20/2016	2.5	9/20/2028	9/20/2016	118.61818	118.6181826	118.6181826	116.0044298	107.4812107	99.53542082	92.24648777	85.55653716	79.41307304
160819A00015	10/12/2016	2.3	10/13/2026	10/12/2016	113.08937	113.0893666	113.0893666	112.7792929	106.2202131	99.95857217	94.10980861	88.64455563	83.53568016
161005A00008	10/5/2016	1.51	10/5/2020	10/5/2016	100.65449	100.6544945	100.6544945	100.6544945	100.525919	100.0073907	99.49419786	98.98625849	98.48349218
161017A00007	10/17/2016	1.99	10/18/2023	10/17/2016	106.06615	106.0661477	106.0661477	106.0661477	104.0091329	100.5243137	97.17499666	93.9551825	90.85917181
161123A00037	11/23/2016	2.16	11/23/2021	11/23/2016	103.10965	103.109646	103.109646	103.109646	102.4674513	100.8322417	99.23092776	97.66252032	96.12606877
170627A00018	6/27/2017	1.83	6/29/2020	6/27/2017	100.39055	100.3905498	100.3905498	100.3905498	100.3593458	100.1101921	99.86227066	99.61557233	99.37008818
171110A00007	11/10/2017	2.38	11/10/2022	11/10/2017	105.50123	105.5012286	105.5012286	105.5012286	104.2747032	101.6822317	99.16747518	96.72762628	94.35999867
171222A00037	12/22/2017	2.71	12/29/2023	12/22/2017	109.12188	109.1218799	109.1218799	109.1218799	106.8439134	103.1204852	99.54766895	96.11850001	92.82638065
180328A00015	3/28/2018	2.93	3/28/2023	3/28/2018	107.95318	107.9531827	107.9531827	107.9531827	106.4012027	103.410196	100.5197273	97.72586224	95.0248436
180504A00039	5/4/2018	3.33	5/5/2025	5/4/2018	115.50918	115.5091753	115.5091753	115.5091753	111.5013667	106.3937399	101.5547168	96.96872044	92.62115988
180518A00048	5/25/2018	3.65	5/18/2028	5/25/2018	127.24287	127.2428712	127.2428712	125.0172689	116.5296801	108.510937	101.1231574	94.31298627	88.03185385
180618A00036	6/18/2018	3.89	6/18/2048	6/18/2018	198.64794	198.6479428	173.4078052	142.899939	118.0457356	98.53468333	83.19872344	71.06657922	61.402529
160212A00037	2/12/2016	3.03	2/12/2031	2/12/2016	129.53986	129.5398594	129.5398594	122.7120901	111.6871845	101.6536822	92.64363007	84.54628041	77.2634201

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160223A00012	2/23/2016	1.89	2/23/2023	2/23/2016	105.20157	105.2015669	105.2015669	105.2015669	103.7388148	100.86182	98.07935645	95.38781893	92.7837598
160229A00028	2/29/2016	1.74	3/1/2021	2/29/2016	101.36901	101.3690057	101.3690057	101.3690057	101.0559879	100.1363375	99.23335018	98.34657648	97.475583
160406A00009	4/6/2016	1.62	4/6/2021	4/6/2016	101.38262	101.3826184	101.3826184	101.3826184	101.0199264	100.0037167	99.00785501	98.03173506	97.07477451
160629A00021	6/29/2016	1.32	6/29/2020	6/29/2016	100.26311	100.2631072	100.2631072	100.2631072	100.2319254	99.98298536	99.73527669	99.48879036	99.24351738
170327A00077	3/27/2019	2.74	3/27/2024	3/27/2019	109.83217	109.8321706	109.8321706	109.8321706	107.2936574	103.3288904	99.53394524	95.9006522	92.42127833
170327A00079	3/27/2019	3.19	3/29/2027	3/27/2019	120.2398	120.2397989	120.2397989	119.3581408	112.1824801	105.3215131	98.93676508	92.99257341	87.45612364
170327A00080	3/27/2019	3.43	3/27/2029	3/27/2019	128.09565	128.0956465	128.0956465	124.76897	115.4362082	106.7292761	98.77171959	91.49456035	84.83551663
170331A00032	3/31/2017	2.03	3/31/2021	3/31/2017	101.77542	101.7754208	101.7754208	101.7754208	101.4199114	100.4176586	99.43513523	98.47176339	97.52698762
180130A00063	1/30/2018	2.63	1/31/2022	1/30/2018	104.35808	104.358083	104.358083	104.358083	103.6278931	101.7995726	100.0124242	98.26528308	96.55702478
180130A00064	1/30/2018	2.75	1/30/2023	1/30/2018	107.02609	107.0260918	107.0260918	107.0260918	105.615088	102.7913387	100.0578822	97.41135651	94.84854345
180612A00031	6/12/2018	3.04	6/13/2022	6/12/2018	106.10741	106.107407	106.107407	106.107407	105.1624947	102.9566548	100.8081345	98.7150277	96.67550852
180726A00045	7/26/2018	3.1	7/26/2022	7/26/2018	106.57378	106.5737802	106.5737802	106.5737802	105.5502594	103.2251543	100.9631148	98.76206899	96.62002608
181015A00034	4/15/2019	3.25	4/15/2021	4/15/2019	103.13386	103.1338644	103.1338644	103.1338644	102.7566842	101.7065187	100.6778226	99.66994198	98.68224908
181029A00051	2/5/2019	3.69	2/5/2029	2/5/2019	129.97775	129.9777471	129.9777471	126.828021	117.5592656	108.8803378	100.9356879	93.65878863	86.98947268
181206A00018	12/6/2018	3.13	12/6/2023	12/6/2018	110.52936	110.5293577	110.5293577	110.5293577	108.3026844	104.6116025	101.0674717	97.66360131	94.39364688
181220A00076	12/20/2018	3.02	1/20/2023	12/20/2018	107.72377	107.7237734	107.7237734	107.7237734	106.3312197	103.5233455	100.8044193	98.17111648	95.62025741
190122A00017	1/22/2019	2.94	5/2/2022	1/22/2019	105.57809	105.5780915	105.5780915	105.5780915	104.7067587	102.6179771	100.581441	98.59549176	96.65853602
190206A00009	2/12/2019	2.84	2/11/2022	2/12/2019	104.82526	104.8252618	104.8252618	104.8252618	104.0785074	102.2138505	100.3918167	98.61118187	96.87076484
190425A00041	4/25/2019	2.56	6/15/2021	4/25/2019	102.78028	102.7802839	102.7802839	102.7802839	102.3269253	101.1149911	99.93170527	98.77606074	97.64709706
190529A00077	5/29/2019	2.48	5/29/2020	5/29/2019	100.36114	100.3611432	100.3611432	100.3611432	100.3460062	100.182457	100.0194409	99.85695534	99.6949977
161125A00002	11/25/2016	2.62	11/27/2023	11/25/2016	108.57715	108.5771492	108.5771492	108.5771492	106.3919582	102.7594375	99.27111149	95.92044445	92.70123688
170727A00020	7/27/2017	1.94	7/27/2021	7/27/2017	102.21467	102.2146692	102.2146692	102.2146692	101.7129441	100.4000561	99.11145082	97.84648967	96.60455632
170814A00034	8/14/2017	2.1	8/15/2022	8/14/2017	104.32928	104.3292758	104.3292758	104.3292758	103.2789586	100.9287594	98.64377383	96.42183683	94.26086794
170822A00023	8/23/2017	3.95	8/23/2028	8/23/2017	130.64427	130.6442678	130.6442678	128.0838209	119.2280391	110.8719355	103.1895704	96.12258823	89.61798236
171219A00022	12/19/2017	2.26	12/18/2020	12/19/2017	101.45727	101.4572657	101.4572657	101.4572657	101.2439667	100.521073	99.80848614	99.10598665	98.41336133
171228A00023	12/28/2017	2.69	3/29/2024	12/28/2017	109.64421	109.644214	109.644214	109.644214	107.1017147	103.1356774	99.33977801	95.70581983	92.22604506
171228A00024	12/28/2017	2.71	6/28/2024	12/28/2017	110.32727	110.32727	110.32727	110.32727	107.5014379	103.2897566	99.26777488	95.42588409	91.7550203
180118A00008	1/18/2018	2.44	1/19/2021	1/18/2018	101.77417	101.7741678	101.7741678	101.7741678	101.5189541	100.7080064	99.90999394	99.12460903	98.35155349
180123A00067	1/23/2018	2.67	1/23/2023	1/23/2018	106.75122	106.7512154	106.7512154	106.7512154	105.3575412	102.5556853	99.8429205	97.21591945	94.67149912
180130A00062	1/30/2018	2.51	2/1/2021	1/30/2018	101.9122	101.9122048	101.9122048	101.9122048	101.6390614	100.7922907	99.95959352	99.14062143	98.33503724
180316A00031	3/16/2018	2.96	12/16/2022	3/16/2018	107.2963	107.2963019	107.2963019	107.2963019	105.9838121	103.2724456	100.6445428	98.09699333	95.62682639
180328A00042	3/28/2018	2.95	3/28/2023	3/28/2018	108.01357	108.0135705	108.0135705	108.0135705	106.461209	103.4692973	100.5779462	97.78322085	95.08136312
180625A00012	6/25/2018	3.07	6/23/2023	6/25/2018	109.0399	109.0398984	109.0398984	109.0398984	107.2631542	104.0269647	100.9060839	97.89570222	94.99124405

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180726A00044	7/26/2018	2.94	7/27/2020	7/26/2018	100.87929	100.8792917	100.8792917	100.8792917	100.8254322	100.4982082	100.1731079	99.85011082	99.52919648
181016A00019	10/18/2018	3.32	10/16/2023	10/18/2018	110.8115	110.8115007	110.8115007	110.8115007	108.7211787	105.1578716	101.7320914	98.43777443	95.26915946
181203A00039	12/3/2018	3.27	12/1/2023	12/3/2018	111.00855	111.0085495	111.0085495	111.0085495	108.7916458	105.1045889	101.5637816	98.16258832	94.89471601
190311A00030	3/11/2019	2.68	3/11/2021	3/11/2019	102.30955	102.3095514	102.3095514	102.3095514	101.9812299	101.0298553	100.0962073	99.17979374	98.28014035
190311A00061	3/25/2019	2.75	3/25/2022	3/25/2019	104.92002	104.9200152	104.9200152	104.9200152	104.1122822	102.1325941	100.2007578	98.31531945	96.47487932
190311A00068	3/25/2019	2.76	9/26/2022	3/25/2019	106.19823	106.1982309	106.1982309	106.1982309	105.0589673	102.5752563	100.1634098	97.82093465	95.54543979
190318A00016	3/19/2019	2.7	3/18/2022	3/19/2019	104.7732	104.7731972	104.7731972	104.7731972	103.9765342	102.016574	100.103568	98.23610272	96.41281683
190501A00024	5/1/2019	2.62	5/1/2024	5/1/2019	109.5724	109.5724028	109.5724028	109.5724028	106.932585	102.8830083	99.01030059	95.30578517	91.76125958
061013A00024	10/13/2006	5.53	10/15/2021	10/13/2006	108.1822	108.1821988	108.1821988	108.1821988	107.5719941	106.0001621	104.4595332	102.9492485	101.4684808
110609A00010	6/9/2011	3.83	6/9/2021	6/9/2011	104.28649	104.2864929	104.2864929	104.2864929	103.8374452	102.6318257	101.4542616	100.3037808	99.17945549
110706A00009	7/6/2011	3.93	7/6/2021	7/6/2011	104.6671	104.6670983	104.6670983	104.6670983	104.1845076	102.9053416	101.6555599	100.4341497	99.24014457
140605A00058	6/6/2016	3.29	6/7/2021	6/6/2016	103.61849	103.618493	103.618493	103.618493	103.1731975	101.9772151	100.8089672	99.66749683	98.5518903
140811A00047	8/11/2016	3.13	8/11/2021	8/11/2016	103.92624	103.9262435	103.9262435	103.9262435	103.4035331	102.0399461	100.7008999	99.38578804	98.0940235
140814A00004	8/14/2014	2.25	8/14/2020	8/14/2014	100.75306	100.7530559	100.7530559	100.7530559	100.6810869	100.3046417	99.93101798	99.56018398	99.19210844
150211A00005	2/11/2015	2.35	2/15/2022	2/11/2015	103.90305	103.9030507	103.9030507	103.9030507	103.1541743	101.2871941	99.4631562	97.68082075	95.93899163
150601A00188	6/1/2015	2.06	8/24/2021	6/1/2015	102.46895	102.4689469	102.4689469	102.4689469	101.9349933	100.5478114	99.18614559	97.84935317	96.53681245
150601A00334	6/1/2015	3.33	8/9/2022	6/1/2015	107.11477	107.1147663	107.1147663	107.1147663	106.0628437	103.6946854	101.3916381	99.15155539	96.97237388
150601A00718	6/1/2015	1.66	4/6/2020	6/1/2015	100.02137	100.0213727	100.0213727	100.0213727	100.0203596	100.0037377	99.98713185	99.97054199	99.95396809
150709A00014	7/9/2015	1.91	6/25/2020	7/9/2015	100.39233	100.3923318	100.3923318	100.3923318	100.3632458	100.1251136	99.88811418	99.65223949	99.41748154
150710A00025	7/10/2015	2.07	7/10/2020	7/10/2015	100.50571	100.505714	100.505714	100.505714	100.4658079	100.1861582	99.90807321	99.63153957	99.35654431
151002A00011	10/2/2015	1.65	10/2/2020	10/2/2015	100.71591	100.7159141	100.7159141	100.7159141	100.5905543	100.0800322	99.57467483	99.07440407	98.57914352
151002A00038	10/2/2015	2.81	10/2/2025	10/2/2015	113.86953	113.8695262	113.8695262	113.8695262	109.1744312	103.7474102	98.62703793	93.79437371	89.2317428
151002A00091	10/2/2015	1.65	10/2/2020	10/2/2015	100.71591	100.7159141	100.7159141	100.7159141	100.5905543	100.0800322	99.57467483	99.07440407	98.57914352
151211A00037	12/11/2017	2.69	1/11/2023	12/11/2017	106.72877	106.7287694	106.7287694	106.7287694	105.362194	102.5915211	99.90804778	97.30849937	94.78974686
160208A00024	2/8/2016	1.64	2/8/2021	2/8/2016	101.19741	101.1974067	101.1974067	101.1974067	100.9149627	100.0526467	99.20500887	98.37167711	97.55229158
160209A00010	2/9/2016	1.57	2/9/2021	2/9/2016	101.13998	101.1399771	101.1399771	101.1399771	100.8561552	99.99141915	99.14145061	98.30587382	97.48432566
160211A00093	2/16/2016	2.62	2/16/2021	2/16/2016	102.10276	102.1027591	102.1027591	102.1027591	101.8075829	100.9193467	100.0465859	99.18889867	98.34589674
160225A00023	2/25/2016	1.66	2/25/2021	2/25/2016	101.27939	101.2793905	101.2793905	101.2793905	100.9722279	100.0637696	99.1715848	98.2952396	97.43431524
160302A00013	3/2/2016	1.63	3/2/2021	3/2/2016	101.40964	101.4096371	101.4096371	101.4096371	101.0944485	100.16997	99.26232129	98.37104631	97.4957053
160229A00027	2/29/2016	1.74	3/1/2021	2/29/2016	101.36901	101.3690057	101.3690057	101.3690057	101.0559879	100.1363375	99.23335018	98.34657648	97.475583
160301A00006	3/1/2016	1.69	3/1/2021	3/1/2016	101.32254	101.3225406	101.3225406	101.3225406	101.0095849	100.0901674	99.18740984	98.30086306	97.43009367
160308A00011	3/8/2016	1.81	2/16/2021	3/8/2016	101.3792	101.3792026	101.3792026	101.3792026	101.0849436	100.2002135	99.33091594	98.47664984	97.63702784
160309A00008	3/9/2016	1.83	3/3/2021	3/9/2016	101.46133	101.4613338	101.4613338	101.4613338	101.1453934	100.2198997	99.311274	98.41905856	97.54281203

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160309A00014	3/9/2016	1.84	3/9/2021	3/9/2016	101.49692	101.4969211	101.4969211	101.4969211	101.1725366	100.2307257	99.30638564	98.39903367	97.50820473
160405A00018	4/5/2016	1.61	4/5/2021	4/5/2016	101.36865	101.3686458	101.3686458	101.3686458	101.0072717	99.99381851	99.00060393	98.02702662	97.07250887
160627A00019	6/27/2016	1.24	6/25/2020	6/27/2016	100.23235	100.2323466	100.2323466	100.2323466	100.2032874	99.96541692	99.72867828	99.4930634	99.25856431
161118A00026	12/20/2016	3.03	12/21/2026	12/20/2016	118.39206	118.3920636	118.3920636	117.8407748	110.9762798	104.3952509	98.25567832	92.52552685	87.17525293
170331A00031	3/31/2017	2.03	3/31/2021	3/31/2017	101.77542	101.7754208	101.7754208	101.7754208	101.4199114	100.4176586	99.43513523	98.47176339	97.52698762
170412A00019	4/12/2017	2.56	4/12/2024	4/12/2017	109.20744	109.207435	109.207435	109.207435	106.6277443	102.6343635	98.81372268	95.15743188	91.65755447
171016A00016	10/16/2017	2.23	10/17/2022	10/16/2017	104.9773	104.9773023	104.9773023	104.9773023	103.8022832	101.2794335	98.83090508	96.45406844	94.14640421
171219A00024	12/19/2017	2.26	12/18/2020	12/19/2017	101.45727	101.4572657	101.4572657	101.4572657	101.2439667	100.521073	99.80848614	99.10598665	98.41336133
180110A00012	1/10/2018	2.38	1/11/2021	1/10/2018	101.6861	101.6861031	101.6861031	101.6861031	101.441832	100.6528442	99.87610875	99.11134184	98.35826823
180125A00038	2/1/2018	2.91	2/3/2025	2/1/2018	112.7088	112.7088002	112.7088002	112.7088002	109.1002884	104.2903883	99.7230881	95.38491368	91.26320588
180302A00011	3/2/2018	2.68	3/2/2021	3/2/2018	102.24925	102.2492497	102.2492497	102.2492497	101.9336493	101.0068872	100.0969439	99.20336461	98.32571092
180424A00028	4/24/2018	2.98	4/23/2021	4/24/2018	102.90913	102.9091283	102.9091283	102.9091283	102.5218765	101.4514058	100.4032719	99.37678067	98.37126651
180518A00024	5/18/2018	2.81	5/18/2020	5/18/2018	100.33371	100.3337074	100.3337074	100.3337074	100.3223875	100.1893051	100.0565897	99.92423965	99.79225347
180518A00042	5/25/2018	3.42	5/19/2025	5/25/2018	116.09011	116.0901115	116.0901115	116.0901115	112.013142	106.8569749	101.9734415	97.34663963	92.96168075
180529A00072	5/29/2018	3	5/30/2023	5/29/2018	108.63351	108.633509	108.633509	108.633509	106.9203349	103.754184	100.6989859	97.75019579	94.90348493
180726A00046	7/26/2018	3.2	12/26/2023	7/26/2018	110.94925	110.9492483	110.9492483	110.9492483	108.6634265	104.9137384	101.3150847	97.86050305	94.54339628
180910A00039	9/10/2018	3.03	9/9/2022	9/10/2018	106.74941	106.7494085	106.7494085	106.7494085	105.640456	103.1952941	100.8195556	98.51087775	96.26699258
161031A00028	10/31/2016	1.51	10/30/2020	10/31/2016	100.74174	100.7417429	100.7417429	100.7417429	100.5860514	99.99908347	99.41893802	98.84549675	98.2786441
170404A00002	4/4/2017	2.42	4/4/2023	4/4/2017	106.45422	106.4542198	106.4542198	106.4542198	104.8946189	101.9078893	99.02227247	96.23378615	93.53862838
170405A00031	4/5/2017	2.22	4/4/2022	4/5/2017	103.91059	103.9105901	103.9105901	103.9105901	103.0911103	101.0953515	99.1484196	97.24881198	95.3950828
170519A00019	5/19/2017	2	11/19/2021	5/19/2017	102.82399	102.8239904	102.8239904	102.8239904	102.1872942	100.5653588	98.97690267	97.42095437	95.8965801
170622A00044	6/22/2017	2.38	6/21/2024	6/22/2017	108.87569	108.8756906	108.8756906	108.8756906	106.0871022	101.9235149	97.94709549	94.14839211	90.51848667
170918A00051	12/18/2017	2.24	12/19/2022	12/18/2017	105.34069	105.3406913	105.3406913	105.3406913	104.0325059	101.3401608	98.73108978	96.20217812	93.75045103
171110A00006	11/10/2017	2.11	11/10/2020	11/10/2017	101.15289	101.1528857	101.1528857	101.1528857	100.9844449	100.3660997	99.75531506	99.15195285	98.55587827
171219A00032	12/19/2017	2.42	12/20/2021	12/19/2017	103.71948	103.7194772	103.7194772	103.7194772	103.0433757	101.3310802	99.65538318	98.01517601	96.40939499
180124A00073	1/24/2018	2.46	1/25/2021	1/24/2018	101.83528	101.8352788	101.8352788	101.8352788	101.5717987	100.744216	99.93009241	99.12910151	98.34092739
180201A00022	2/1/2018	2.99	2/3/2025	2/1/2018	113.09914	113.0991434	113.0991434	113.0991434	109.4854383	104.6663227	100.0901426	95.74340894	91.61344811
180205A00047	2/5/2018	2.56	2/5/2021	2/5/2018	101.97996	101.9799563	101.9799563	101.9799563	101.7009179	100.8430099	99.99954712	99.17016701	98.35451901
180518A00046	5/25/2018	3.62	5/18/2027	5/25/2018	123.70743	123.7074294	123.7074294	122.6600568	115.2592855	108.1705553	101.5797947	95.44920274	89.74404265
180628A00020	6/28/2018	2.79	6/29/2020	6/28/2018	100.63044	100.6304418	100.6304418	100.6304418	100.599196	100.3496402	100.1013181	99.85422076	99.6083391
180821A00029	8/21/2018	3.01	8/21/2023	8/21/2018	109.28544	109.2854403	109.2854403	109.2854403	107.3551998	103.9635245	100.6979578	97.55315419	94.52402278
190315A00039	3/15/2019	2.64	9/15/2021	3/15/2019	103.47785	103.4778521	103.4778521	103.4778521	102.9159369	101.4622255	100.0363054	98.63744902	97.26495383
190318A00017	3/19/2019	2.7	3/18/2022	3/19/2019	104.7732	104.7731972	104.7731972	104.7731972	103.9765342	102.016574	100.103568	98.23610272	96.41281683

Classification | Public

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190322A00024	3/22/2019	2.55	3/22/2021	3/22/2019	102.24503	102.2450304	102.2450304	102.2450304	101.9014215	100.9208576	99.95913057	99.01570122	98.09005091
190329A00012	3/29/2019	2.61	3/29/2024	3/29/2019	109.32197	109.3219673	109.3219673	109.3219673	106.782619	102.8229303	99.03318137	95.4051834	91.931186
190422A00030	4/22/2019	2.93	12/22/2025	4/22/2019	115.11471	115.1147108	115.1147108	115.1147108	109.9604601	104.309039	98.98723647	93.97403545	89.24987243
190529A00078	5/29/2019	2.39	11/30/2020	5/29/2019	101.44507	101.4450732	101.4450732	101.4450732	101.2536436	100.5797564	99.91481264	99.25863543	98.61105236
190530A00049	5/30/2019	2.44	5/30/2023	5/30/2019	106.84556	106.8455618	106.8455618	106.8455618	105.1446472	102.0067505	98.97906821	96.05708074	93.23648367
190530A00018	5/30/2019	2.36	5/28/2021	5/30/2019	102.44424	102.4442423	102.4442423	102.4442423	102.0135115	100.851754	99.71637742	98.60649102	97.52124376
190530A00066	5/30/2019	2.44	5/30/2023	5/30/2019	106.84556	106.8455618	106.8455618	106.8455618	105.1446472	102.0067505	98.97906821	96.05708074	93.23648367
190815A00040	8/15/2019	1.86	8/15/2023	8/15/2019	105.32536	105.3253609	105.3253609	105.3253609	103.4405966	100.1307446	96.94407042	93.87536231	90.9196564
190829A00072	8/29/2019	1.81	12/15/2022	8/29/2019	104.14283	104.1428344	104.1428344	104.1428344	102.8498551	100.1841236	97.60070068	95.09651633	92.66863803
190917A00030	1/10/2020	2.03	1/10/2023	1/10/2020	104.86929	104.8692945	104.8692945	104.8692945	103.515566	100.7734768	98.11781081	95.54531759	93.05289165
190515A00030	5/15/2019	2.49	5/15/2024	5/15/2019	109.12146	109.1214561	109.1214561	109.1214561	106.4437494	102.3684134	98.47252153	94.74720029	91.18406554
190621A00035	6/21/2019	2.19	12/15/2023	6/21/2019	107.08414	107.0841394	107.0841394	107.0841394	104.8625252	101.2118137	97.70791914	94.34410322	91.11397916
190807A00043	8/7/2019	1.8	8/7/2023	8/7/2019	105.08788	105.0878846	105.0878846	105.0878846	103.2253836	99.93950472	96.7752447	93.72748617	90.79135379
190829A00013	8/29/2019	1.78	8/29/2024	8/29/2019	106.60214	106.6021387	106.6021387	106.6021387	103.6197851	99.33551625	95.25215244	91.35926764	87.64702927
190829A00028	8/29/2019	1.78	8/29/2024	8/29/2019	106.60214	106.6021387	106.6021387	106.6021387	103.6197851	99.33551625	95.25215244	91.35926764	87.64702927
190829A00073	8/29/2019	1.81	3/15/2023	8/29/2019	104.51708	104.51708	104.51708	104.51708	103.0179248	100.1111223	97.30136341	94.584887	91.95809933
190904A00034	9/4/2019	1.74	6/1/2022	9/4/2019	103.16633	103.1663291	103.1663291	103.1663291	102.2544202	100.1136231	98.02797428	95.99566262	94.01495139
190904A00040	9/4/2019	1.73	6/22/2022	9/4/2019	103.22725	103.227253	103.227253	103.227253	102.2788919	100.0814044	97.94170185	95.85784094	93.82796081
180627A00065	6/27/2018	2.9	6/25/2021	6/27/2018	103.26824	103.2682399	103.2682399	103.2682399	102.8016962	101.5597829	100.3478418	99.16479747	98.00962508
180709A00081	7/9/2018	3.05	7/7/2023	7/9/2018	109.0808	109.0808033	109.0808033	109.0808033	107.268105	103.9947895	100.8392906	97.79667384	94.86224383
180821A00041	8/21/2018	3	9/21/2023	8/21/2018	109.48158	109.4815793	109.4815793	109.4815793	107.4685518	103.9930296	100.6497442	97.43295673	94.33720908
180823A00043	8/23/2018	2.83	9/23/2020	8/23/2018	101.25763	101.257629	101.257629	101.257629	101.1418973	100.6544112	100.1716229	99.69346471	99.21987019
180919A00012	9/19/2018	3	9/18/2020	9/19/2018	101.30267	101.3026743	101.3026743	101.3026743	101.1924612	100.7185548	100.2490913	99.78400804	99.32324398
181031A00070	3/1/2019	3.77	3/1/2029	3/1/2019	130.90936	130.9093583	130.9093583	127.6698403	118.3002049	109.5297985	101.5059357	94.160535	87.43206746
181220A00078	12/20/2018	3.17	12/20/2024	12/20/2018	113.62425	113.6242525	113.6242525	113.6242525	110.1700092	105.4496645	100.9616961	96.6933778	92.63275333
190110A00036	1/10/2019	2.88	10/9/2020	1/10/2019	101.39854	101.3985403	101.3985403	101.3985403	101.2651982	100.7334639	100.2073139	99.68666061	99.171418
190311A00073	3/14/2019	2.81	3/14/2024	3/14/2019	110.02385	110.0238523	110.0238523	110.0238523	107.5213793	103.5852572	99.81627738	96.20646885	92.7482827
190328A00077	3/28/2019	2.46	9/28/2021	3/28/2019	103.28997	103.2899653	103.2899653	103.2899653	102.7132837	101.2258382	99.76749707	98.33748097	96.93503797
190426A00023	4/26/2019	2.91	6/24/2026	4/26/2019	116.30491	116.304906	116.304906	116.304906	110.0446001	103.9306532	98.20090806	92.82913154	87.79102057
190515A00032	5/15/2019	2.49	5/15/2024	5/15/2019	109.12146	109.1214561	109.1214561	109.1214561	106.4437494	102.3684134	98.47252153	94.74720029	91.18406554
190607A00040	6/7/2019	2.12	6/7/2022	6/7/2019	104.02964	104.0296395	104.0296395	104.0296395	103.1038041	100.9373678	98.82702026	96.77090744	94.7672521
190621A00039	6/21/2019	2.21	6/17/2024	6/21/2019	108.13079	108.1307888	108.1307888	108.1307888	105.362491	101.2245289	97.27235455	93.49660263	89.88843543
190826A00046	8/26/2019	1.77	8/26/2024	8/26/2019	106.54549	106.5454932	106.5454932	106.5454932	103.5734123	99.29759595	95.22196887	91.33615878	87.6303828

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190904A00044	9/4/2019	1.72	12/30/2022	9/4/2019	103.9557	103.9556955	103.9556955	103.9556955	102.6315929	99.93022599	97.3132911	94.77759723	92.32009866
191002A00038	1/13/2020	1.76	1/13/2023	1/13/2020	104.12345	104.1234469	104.1234469	104.1234469	102.767286	100.0280086	97.37537047	94.80611645	92.31713563
191002A00043	2/3/2020	1.75	2/3/2023	2/3/2020	104.17945	104.1794546	104.1794546	104.1794546	102.7759625	99.98182253	97.27767544	94.66015777	92.12604996
200131A00031	1/31/2020	1.74	1/31/2024	1/31/2020	105.58834	105.5883379	105.5883379	105.5883379	103.250452	99.51114687	95.92707337	92.49101619	89.1961316
130211A00035	2/11/2013	2.27	2/15/2023	2/11/2013	105.73804	105.7380416	105.7380416	105.7380416	104.2975207	101.4472559	98.68964154	96.0211793	93.43852213
130827A00012	8/27/2013	3.66	7/31/2023	8/27/2013	111.31456	111.3145576	111.3145576	111.3145576	109.423834	106.0520767	102.8034828	99.67291443	96.6554749
130827A00014	8/27/2013	2.73	8/31/2020	8/27/2013	101.10982	101.1098234	101.1098234	101.1098234	101.0195028	100.5948325	100.1737246	99.75613435	99.34201796
140626A00028	6/27/2016	2.99	6/29/2020	6/27/2016	100.68042	100.6804193	100.6804193	100.6804193	100.6491648	100.3995252	100.1511197	99.90393918	99.65797471
141002A00030	10/2/2014	2.33	10/2/2020	10/2/2014	101.06509	101.0650906	101.0650906	101.0650906	100.9395394	100.427979	99.92159076	99.42029671	98.92402027
150120A00025	1/20/2015	2.54	1/21/2025	1/20/2015	110.87434	110.8743372	110.8743372	110.8743372	107.3370173	102.6010488	98.10297322	93.82960898	89.76857314
150601A00998	6/1/2015	5.37	10/25/2034	6/1/2015	172.06334	172.0633362	170.1642126	154.1048355	137.9422363	123.6103938	111.0866005	100.1255971	90.51694595
150630A00119	6/30/2015	2.05	6/30/2020	6/30/2015	100.45047	100.4504672	100.4504672	100.4504672	100.4187238	100.1667183	99.91597066	99.66647149	99.41821157
150814A00024	8/14/2015	2.04	8/14/2020	8/14/2015	100.67377	100.6737701	100.6737701	100.6737701	100.6018279	100.2255669	99.85212631	99.48147443	99.11358
151013A00007	10/13/2015	1.75	10/13/2020	10/13/2015	100.81297	100.8129746	100.8129746	100.8129746	100.6756412	100.1347909	99.59974534	99.07041125	98.54669744
151030A00001	10/30/2015	1.9	10/30/2020	10/30/2015	100.97229	100.9722931	100.9722931	100.9722931	100.8164447	100.2287033	99.64779076	99.07358876	98.50598164
151211A00040	12/11/2017	2.7	2/13/2023	12/11/2017	106.97474	106.9747445	106.9747445	106.9747445	105.5314814	102.6690071	99.89926407	97.21875956	94.62415149
160209A00007	2/9/2016	1.53	2/9/2021	2/9/2016	101.10502	101.1050217	101.1050217	101.1050217	100.8212427	99.95667266	99.10686815	98.27145342	97.45006541
160209A00049	2/9/2016	1.92	2/9/2023	2/9/2016	104.69435	104.6943531	104.6943531	104.6943531	103.2739513	100.4556049	97.72848252	95.08915657	92.53434704
160210A00053	2/10/2016	1.99	2/10/2023	2/10/2016	104.90125	104.9012468	104.9012468	104.9012468	103.4773026	100.6531728	97.92051544	95.27589086	92.71600754
160222A00019	2/22/2016	3.09	2/21/2031	2/22/2016	130.25706	130.2570647	130.2570647	123.3652384	112.2856374	102.201391	93.14707447	85.01105078	77.6943418
160309A00015	3/9/2016	1.84	3/9/2021	3/9/2016	101.49692	101.4969211	101.4969211	101.4969211	101.1725366	100.2307257	99.30638564	98.39903367	97.50820473
160315A00003	3/15/2016	1.88	3/15/2021	3/15/2016	101.56188	101.5618836	101.5618836	101.5618836	101.2290138	100.2707381	99.33054285	98.40792011	97.50238058
160404A00040	4/4/2016	1.65	4/5/2021	4/4/2016	101.40969	101.4096939	101.4096939	101.4096939	101.0482562	100.0345778	99.04114113	98.06734485	97.11261111
160405A00012	4/5/2016	1.43	4/3/2020	4/5/2016	100.00908	100.0090802	100.0090802	100.0090802	100.0085737	100.0002627	99.99195911	99.9836628	99.97537381
160516A00008	5/16/2016	1.42	5/18/2020	5/16/2016	100.14844	100.1484399	100.1484399	100.1484399	100.1371367	100.0042676	99.87176493	99.73962715	99.60785274
160304A00015	3/4/2016	1.82	3/4/2021	3/4/2016	101.4563	101.4563031	101.4563031	101.4563031	101.1389701	100.210812	99.29962121	98.40493598	97.52631105
160311A00005	3/11/2016	1.91	3/11/2021	3/11/2016	101.57266	101.5726577	101.5726577	101.5726577	101.2453692	100.2977913	99.36789055	98.45517574	97.55917368
160323A00030	3/23/2016	2.22	3/22/2023	3/23/2016	105.77754	105.777542	105.777542	105.777542	104.253727	101.3105115	98.46599261	95.71632371	93.05783057
160331A00088	3/31/2016	1.69	3/30/2021	3/31/2016	101.42729	101.427289	101.427289	101.427289	101.0737055	100.0760184	99.09793137	98.13887171	97.19828867
160406A00012	4/6/2016	1.62	4/6/2021	4/6/2016	101.38262	101.3826184	101.3826184	101.3826184	101.0199264	100.0037167	99.00785501	98.03173506	97.07477451
160520A00018	9/20/2017	2.34	9/20/2024	9/20/2017	109.2159	109.2158986	109.2158986	109.2158986	106.1307905	101.734863	97.54701968	93.55633723	89.752522
160711A00020	8/24/2017	1.59	8/24/2022	8/24/2017	103.1378	103.1377984	103.1377984	103.1377984	102.0763344	99.71747929	97.42476027	95.19596126	93.02895349
160714A00018	9/6/2016	2.28	9/4/2026	9/6/2016	112.74862	112.7486185	112.7486185	112.573926	106.1248918	99.95957825	94.19486833	88.8026859	83.75705796

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160801A00007	8/1/2016	1.47	8/2/2021	8/1/2016	101.60511	101.6051134	101.6051134	101.6051134	101.0978963	99.77452769	98.47463002	97.1976324	95.94298195
160830A00068	11/30/2016	1.95	11/30/2023	11/30/2016	106.11821	106.1182118	106.1182118	106.1182118	103.9459724	100.3503279	96.89814805	93.5829075	90.39841758
170327A00078	3/27/2019	3.04	3/27/2026	3/27/2019	116.4557	116.4556977	116.4556977	116.4556977	110.7286727	104.8155819	99.26138879	94.04239943	89.13660278
170531A00055	5/31/2017	2.13	5/31/2022	5/31/2017	104.01639	104.0163894	104.0163894	104.0163894	103.10272	100.9551967	98.86289011	96.82398952	94.8367587
170609A00052	6/11/2018	2.9	6/9/2027	6/11/2018	118.71236	118.7123635	118.7123635	117.5971565	110.2698562	103.3011183	96.82891617	90.81515237	85.22484703
170612A00035	6/12/2017	1.85	6/12/2020	6/12/2017	100.31899	100.3189899	100.3189899	100.3189899	100.2968041	100.0946589	99.89333906	99.69283963	99.49315551
170614A00019	6/14/2017	2.48	6/13/2025	6/14/2017	111.38226	111.3822626	111.3822626	111.3822626	107.2644464	102.1653056	97.34062804	92.77417003	88.45073789
170703A00022	7/3/2017	2.86	7/3/2026	7/3/2017	116.05448	116.0544765	116.0544765	116.0493981	109.7445186	103.6175321	97.87707443	92.49666758	87.45178674
170816A00029	8/16/2017	1.79	8/17/2020	8/16/2017	100.59219	100.5921873	100.5921873	100.5921873	100.5170876	100.1327863	99.75142847	99.37298029	98.99740844
171110A00008	11/10/2017	2.65	11/12/2024	11/10/2017	110.9071	110.9070965	110.9070965	110.9070965	107.6221561	103.0586008	98.71632058	94.58340292	90.64864178
171110A00019	5/4/2018	2.46	5/4/2023	5/4/2018	106.7542	106.7542045	106.7542045	106.7542045	105.1186014	102.0484304	99.08424306	96.22177414	93.45695683
180104A00016	1/4/2018	2.56	1/4/2023	1/4/2018	106.3197	106.3196958	106.3196958	106.3196958	104.9711768	102.2242251	99.56324699	96.98500176	94.4863951
180417A00028	4/17/2018	2.88	4/16/2021	4/17/2018	102.75112	102.7511229	102.7511229	102.7511229	102.3732565	101.3225484	100.2933892	99.28512045	98.29711053
181120A00036	11/20/2018	3.02	4/15/2020	11/20/2018	100.11163	100.1116325	100.1116325	100.1116325	100.1090966	100.0674975	100.0259489	99.98445065	99.9430027
181206A00021	12/6/2018	3.15	12/6/2023	12/6/2018	110.60366	110.6036593	110.6036593	110.6036593	108.3763452	104.6839074	101.1384604	97.7333121	94.46211652
181210A00066	12/10/2018	3.13	12/11/2023	12/10/2018	110.56835	110.5683548	110.5683548	110.5683548	108.3274718	104.6229493	101.0663577	97.65094054	94.3702919
181220A00077	12/20/2018	3.06	12/20/2023	12/20/2018	110.3758	110.3758026	110.3758026	110.3758026	108.1116525	104.3877954	100.8134983	97.38189009	94.08645881
190221A00012	2/21/2019	2.83	8/23/2022	2/21/2019	106.13692	106.1369217	106.1369217	106.1369217	105.0633097	102.6705413	100.3445613	98.08313649	95.88412175
190517A00023	5/17/2019	2.51	5/17/2024	5/17/2019	109.21677	109.2167747	109.2167747	109.2167747	106.5320259	102.4497834	98.54745792	94.81614346	91.24742574
190530A00048	5/30/2019	2.41	5/31/2022	5/30/2019	104.62954	104.6295413	104.6295413	104.6295413	103.7133581	101.5590571	99.4601112	97.41470556	95.42110006
190614A00007	6/14/2019	2.22	6/15/2021	6/14/2019	102.36456	102.3645629	102.3645629	102.3645629	101.9120292	100.7027736	99.52212231	98.36906946	97.24265579
190621A00037	6/21/2019	2.21	5/15/2024	6/21/2019	107.95748	107.9574846	107.9574846	107.9574846	105.2917401	101.2400316	97.36701145	93.66383658	90.12215184
190722A00051	11/22/2019	2.03	11/22/2021	11/22/2019	102.88804	102.8880394	102.8880394	102.8880394	102.2476622	100.6170583	99.02022261	97.45617101	95.92395775
190726A00014	7/26/2019	2.23	7/24/2024	7/26/2019	108.41219	108.4121872	108.4121872	108.4121872	105.5249563	101.2893294	97.24784774	93.39061865	89.70830491
190829A00075	8/29/2019	1.8	6/15/2023	8/29/2019	104.86824	104.8682367	104.8682367	104.8682367	103.1409493	99.9927636	96.95671601	94.02814545	91.20261613
190829A00078	8/29/2019	1.8	12/15/2023	8/29/2019	105.62562	105.6256169	105.6256169	105.6256169	103.4167126	99.79278623	96.31488827	92.97631019	89.77069354
190904A00036	9/4/2019	1.74	6/8/2022	9/4/2019	103.19414	103.1941385	103.1941385	103.1941385	102.2700441	100.1102545	98.00648705	95.956887	93.95967667
191002A00045	2/14/2020	1.75	2/14/2023	2/14/2020	104.22272	104.2227207	104.2227207	104.2227207	102.7935777	99.96801654	97.23439439	94.58924018	92.02923289
200131A00029	1/31/2020	1.78	10/31/2024	1/31/2020	106.8585	106.8585021	106.8585021	106.8585021	103.6636222	99.21986247	94.99152724	90.96705501	87.13556657
190621A00034	6/21/2019	2.17	6/15/2023	6/21/2019	106.06584	106.065844	106.065844	106.065844	104.3301733	101.1628111	98.1080931	95.16134078	92.31810156
190722A00047	11/22/2019	2.03	11/22/2021	11/22/2019	102.88804	102.8880394	102.8880394	102.8880394	102.2476622	100.6170583	99.02022261	97.45617101	95.92395775
190722A00056	12/19/2019	2.02	12/20/2021	12/19/2019	103.02241	103.022415	103.022415	103.022415	102.3484796	100.6424052	98.97281574	97.33860563	95.73871426
190815A00041	8/15/2019	1.86	8/15/2024	8/15/2019	106.89772	106.8977176	106.8977176	106.8977176	103.9569724	99.70013035	95.64126643	91.77018694	88.07727383

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190829A00016	8/29/2019	1.82	8/29/2022	8/29/2019	103.71648	103.7164782	103.7164782	103.7164782	102.6430488	100.2643348	97.95259945	95.7055881	93.52113536
160627A00021	6/27/2016	1.24	6/25/2020	6/27/2016	100.23235	100.2323466	100.2323466	100.2323466	100.2032874	99.96541692	99.72867828	99.4930634	99.25856431
160711A00022	1/10/2018	1.91	1/10/2025	1/10/2018	107.72404	107.7240426	107.7240426	107.7240426	104.2696032	99.63514891	95.2331549	91.050743	87.07581863
160712A00019	7/12/2017	2.32	7/12/2027	7/12/2017	114.70939	114.7093875	114.7093875	113.4923847	106.18686	99.28325815	92.87998135	86.93814246	81.42206891
160729A00017	7/31/2017	2.47	7/31/2029	7/31/2017	120.19945	120.1994533	120.1994533	116.412002	107.0665407	98.44429127	90.59794248	83.45338937	76.94395673
161005A00007	10/5/2016	1.51	10/5/2020	10/5/2016	100.65449	100.6544945	100.6544945	100.6544945	100.525919	100.0073907	99.49419786	98.98625849	98.48349218
161221A00053	12/23/2016	3.05	12/23/2021	12/23/2016	104.84031	104.8403108	104.8403108	104.8403108	104.1571393	102.4269241	100.7337869	99.07660036	97.4542833
170428A00027	4/28/2017	1.78	4/28/2020	4/28/2017	100.11197	100.1119661	100.1119661	100.1119661	100.1072381	100.0296944	99.95227249	99.87497229	99.79779348
170628A00044	10/9/2018	2.12	10/8/2021	10/9/2018	102.82629	102.8262862	102.8262862	102.8262862	102.2389563	100.7286847	99.24829471	97.79697314	96.37393574
170703A00024	7/3/2017	2.95	7/6/2027	7/3/2017	119.26675	119.2667536	119.2667536	118.0650106	110.6511871	103.6043384	97.06385983	90.99058302	85.34856915
170908A00021	9/8/2017	1.96	9/8/2022	9/8/2017	104.10363	104.1036302	104.1036302	104.1036302	103.0092661	100.599511	98.25831128	95.98333366	93.77233848
180312A00014	3/12/2018	3	3/13/2023	3/12/2018	108.05265	108.0526519	108.0526519	108.0526519	106.5363776	103.5823094	100.7262473	97.96440723	95.29317295
180515A00022	5/15/2018	3.19	5/15/2023	5/15/2018	109.12046	109.1204579	109.1204579	109.1204579	107.4415496	104.3063622	101.2798787	98.35769532	95.53561485
180524A00003	5/24/2018	2.91	5/24/2021	5/24/2018	103.06014	103.0601444	103.0601444	103.0601444	102.6332908	101.4784664	100.3496042	99.24583557	98.16633039
180621A00068	6/21/2018	3.32	6/23/2025	6/21/2018	115.86173	115.8617287	115.8617287	115.8617287	111.6313204	106.3942761	101.4386953	96.74789439	92.30627215
180626A00026	6/26/2018	2.92	6/25/2021	6/26/2018	103.29325	103.2932476	103.2932476	103.2932476	102.8266529	101.584575	100.3724723	99.18926903	98.03394027
180713A00024	7/13/2018	2.96	7/13/2021	7/13/2018	103.47659	103.4765912	103.4765912	103.4765912	102.9883505	101.7003172	100.4399198	99.20626946	97.99851566
180821A00039	8/21/2018	2.99	7/21/2023	8/21/2018	108.9869	108.9869049	108.9869049	108.9869049	107.1390205	103.8314268	100.644132	97.5721061	94.61055845
180911A00007	9/11/2018	3.12	9/8/2023	9/11/2018	109.80156	109.8015641	109.8015641	109.8015641	107.820291	104.3733558	101.0562153	97.8632951	94.78929059
180925A00033	9/25/2018	3.26	9/25/2023	9/25/2018	110.42575	110.4257483	110.4257483	110.4257483	108.3947049	104.8923591	101.523512	98.28235525	95.16336542
181001A00031	10/1/2018	3.23	9/29/2023	10/1/2018	110.35245	110.3524466	110.3524466	110.3524466	108.3114298	104.7998554	101.4225507	98.1736551	95.04759689
181119A00020	11/19/2018	3.06	11/19/2020	11/19/2018	101.81334	101.8133358	101.8133358	101.8133358	101.6341369	100.9888729	100.3518021	99.72276879	99.10162149
180621A00031	6/21/2018	3.07	6/21/2023	6/21/2018	109.02466	109.0246594	109.0246594	109.0246594	107.2530851	104.0224394	100.9067433	97.90120932	95.00128257
180727A00017	7/27/2018	3.16	7/27/2023	7/27/2018	109.60134	109.6013402	109.6013402	109.6013402	107.7335696	104.4004852	101.1890635	98.09422242	95.11111981
180821A00040	8/21/2018	2.99	8/21/2023	8/21/2018	109.21702	109.2170197	109.2170197	109.2170197	107.2872996	103.8967789	100.6323352	97.48862389	94.46055526
180910A00037	9/10/2018	3.03	9/9/2022	9/10/2018	106.74941	106.7494085	106.7494085	106.7494085	105.640456	103.1952941	100.8195556	98.51087775	96.26699258
180919A00013	9/19/2018	3.14	9/19/2022	9/19/2018	107.09923	107.0992302	107.0992302	107.0992302	105.9691515	103.4928344	101.0875593	98.75088165	96.48045594
181031A00030	10/31/2018	3.1	4/30/2020	10/31/2018	100.22993	100.2299341	100.2299341	100.2299341	100.2248633	100.1416977	100.0586674	99.9757722	99.89301174
181130A00022	11/30/2018	3.06	5/29/2020	11/30/2018	100.45617	100.4561657	100.4561657	100.4561657	100.4410189	100.2773509	100.1142162	99.95161239	99.78953683
181220A00041	12/20/2018	3.36	12/18/2026	12/20/2018	120.59483	120.5948346	120.5948346	120.0536164	113.1446293	106.4999903	100.2992574	94.51030131	89.10348706
181220A00079	12/20/2018	3.23	6/20/2025	12/20/2018	115.3642	115.3642001	115.3642001	115.3642001	111.1549411	105.9379597	101.0011617	96.32795695	91.90282992
181227A00001	12/27/2018	2.92	12/27/2021	12/27/2018	104.64186	104.6418647	104.6418647	104.6418647	103.9545368	102.2155607	100.5140271	98.84879174	97.21875716
190122A00018	1/22/2019	2.98	12/1/2022	1/22/2019	107.23993	107.2399272	107.2399272	107.2399272	105.9603121	103.2886287	100.6982076	98.18606064	95.74933146

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190221A00009	2/21/2019	2.81	2/22/2021	2/21/2019	102.31439	102.3143875	102.3143875	102.3143875	102.0102202	101.1047323	100.2152981	99.3414931	98.48290805
190311A00076	3/14/2019	2.88	9/16/2024	3/14/2019	111.62194	111.621936	111.621936	111.621936	108.5220676	104.0835658	99.85397414	95.82237004	91.97845849
190327A00027	3/27/2019	2.66	1/15/2025	3/27/2019	111.36654	111.3665445	111.3665445	111.3665445	107.8462516	103.1147623	98.62000615	94.34888825	90.28910821
190530A00028	5/30/2019	2.35	5/28/2021	5/30/2019	102.43251	102.4325127	102.4325127	102.4325127	102.0018039	100.8401191	99.70481401	98.59499804	97.50982011
190607A00041	6/7/2019	2.12	6/7/2022	6/7/2019	104.02964	104.0296395	104.0296395	104.0296395	103.1038041	100.9373678	98.82702026	96.77090744	94.7672521
191002A00042	1/13/2020	1.76	1/13/2023	1/13/2020	104.12345	104.1234469	104.1234469	104.1234469	102.767286	100.0280086	97.37537047	94.80611645	92.31713563
191002A00044	2/3/2020	1.75	2/3/2023	2/3/2020	104.17945	104.1794546	104.1794546	104.1794546	102.7759625	99.98182253	97.27767544	94.66015777	92.12604996
181203A00033	12/3/2018	3.1	12/3/2020	12/3/2018	101.94952	101.9495156	101.9495156	101.9495156	101.7540107	101.0700288	100.3952329	99.7294387	99.07246703
181210A00068	12/10/2018	3.34	12/10/2025	12/10/2018	117.37639	117.3763938	117.3763938	117.3763938	112.2492421	106.5635487	101.2068105	96.15818876	91.39827715
190123A00059	1/23/2019	2.95	1/24/2022	1/23/2019	104.90124	104.9012416	104.9012416	104.9012416	104.1780456	102.3629743	100.5883972	98.85314836	97.15610426
190206A00010	2/12/2019	2.84	2/11/2022	2/12/2019	104.82526	104.8252618	104.8252618	104.8252618	104.0785074	102.2138505	100.3918167	98.61118187	96.87076484
190221A00011	2/21/2019	2.81	8/23/2021	2/21/2019	103.56847	103.5684681	103.5684681	103.5684681	103.0330068	101.6403701	100.2732986	98.93114891	97.61329873
190311A00069	3/25/2019	2.78	3/27/2023	3/25/2019	107.49342	107.4934202	107.4934202	107.4934202	105.9467616	102.9651971	100.0838258	97.29872929	94.6061655
190311A00072	3/25/2019	2.79	9/25/2023	3/25/2019	108.77264	108.7726435	108.7726435	108.7726435	106.7547119	103.2810079	99.93999813	96.72590327	93.63322783
190520A00048	5/20/2019	2.53	5/20/2024	5/20/2019	109.31846	109.3184567	109.3184567	109.3184567	106.6235655	102.5317984	98.62063201	94.88111253	91.30478142
190604A00019	6/4/2019	2.27	6/4/2024	6/4/2019	108.31541	108.3154091	108.3154091	108.3154091	105.5853011	101.4765965	97.5509694	93.79926164	90.21282656
190829A00080	8/29/2019	1.8	12/29/2023	8/29/2019	105.68367	105.6836678	105.6836678	105.6836678	103.4361331	99.77645513	96.26549736	92.89636694	89.66253452
190904A00037	9/4/2019	1.73	6/15/2022	9/4/2019	103.19964	103.199636	103.199636	103.199636	102.2634528	100.0849324	97.96330968	95.89668584	93.88324196
190904A00043	9/4/2019	1.72	12/15/2022	9/4/2019	103.89662	103.8966168	103.8966168	103.8966168	102.6049915	99.9426207	97.36247977	94.86150115	92.43675473
191002A00046	2/14/2020	1.75	2/14/2023	2/14/2020	104.22272	104.2227207	104.2227207	104.2227207	102.7935777	99.96801654	97.23439439	94.58924018	92.02923289
110706A00010	7/6/2011	3.93	7/6/2021	7/6/2011	104.6671	104.6670983	104.6670983	104.6670983	104.1845076	102.9053416	101.6555599	100.4341497	99.24014457
110927A00009	9/27/2011	3.07	9/27/2021	9/27/2011	104.20533	104.2053296	104.2053296	104.2053296	103.6274329	102.1355371	100.6727668	99.23834336	97.83151552
111024A00013	10/24/2011	3.24	10/25/2021	10/24/2011	104.69115	104.6911455	104.6911455	104.6911455	104.0784245	102.5081887	100.9694802	99.46141847	97.98315522
140625A00021	6/27/2016	3.2	6/25/2021	6/27/2016	103.64336	103.6433556	103.6433556	103.6433556	103.1760453	101.9316656	100.7172998	99.53187083	98.37435301
140923A00069	9/23/2014	2.63	9/23/2021	9/23/2014	103.51485	103.5148517	103.5148517	103.5148517	102.9434496	101.4677793	100.0207265	98.60153124	97.20946031
150115A00022	1/17/2017	2.56	1/16/2024	1/17/2017	108.66733	108.6673275	108.6673275	108.6673275	106.343098	102.5829375	98.97673623	95.51735897	92.19804189
150601A00246	6/1/2015	2	12/9/2022	6/1/2015	105.05024	105.0502423	105.0502423	105.0502423	103.7593948	101.0859324	98.49474696	95.98278038	93.54711081
150601A00677	6/1/2015	2.39	1/30/2025	6/1/2015	110.93908	110.9390775	110.9390775	110.9390775	107.3428531	102.5565581	98.01255128	93.69734705	89.59827683
150601A00713	6/1/2015	2.2	4/1/2022	6/1/2015	103.78866	103.788663	103.788663	103.788663	102.9744739	100.9880341	99.05007582	97.15911233	95.31371281
150821A00008	8/21/2015	1.83	8/21/2020	8/21/2015	100.62514	100.6251399	100.6251399	100.6251399	100.545782	100.1504321	99.75819358	99.36902981	98.98290463
150929A00031	9/29/2015	1.81	9/29/2020	9/29/2015	100.78513	100.7851286	100.7851286	100.7851286	100.6630034	100.1604687	99.66293378	99.17032427	98.68256744
151002A00053	10/2/2017	2.17	10/4/2021	10/2/2017	102.88243	102.8824333	102.8824333	102.8824333	102.2997156	100.7995308	99.32891752	97.88707602	96.47323502
151027A00021	10/27/2015	2.02	10/27/2021	10/27/2015	102.76358	102.7635754	102.7635754	102.7635754	102.1538267	100.5941167	99.06581901	97.56805342	96.09997235

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160210A00050	2/10/2016	1.64	2/10/2021	2/10/2016	101.20489	101.2048912	101.2048912	101.2048912	100.9195414	100.0518046	99.19893157	98.36054296	97.53627221
160211A00034	2/11/2016	1.82	2/10/2023	2/11/2016	104.40948	104.4094798	104.4094798	104.4094798	102.9884592	100.1714062	97.44565329	94.80776655	92.25445979
160212A00014	2/12/2016	1.61	2/12/2021	2/12/2016	101.18591	101.1859099	101.1859099	101.1859099	100.8976873	100.0246573	99.16667569	98.32335585	97.49432446
160711A00016	7/11/2016	1.42	7/12/2021	7/11/2016	101.47114	101.4711358	101.4711358	101.4711358	100.9883677	99.71638371	98.47203391	97.25441863	96.06267735
161031A00027	10/31/2016	1.51	10/30/2020	10/31/2016	100.74174	100.7417429	100.7417429	100.7417429	100.5860514	99.99908347	99.41893802	98.84549675	98.2786441
161115A00021	11/15/2016	2.02	11/15/2021	11/15/2016	102.85454	102.8545441	102.8545441	102.8545441	102.2223002	100.6106599	99.03214333	97.48579517	95.97069657
170404A00003	4/4/2017	2.74	4/4/2025	4/4/2017	112.27745	112.2774529	112.2774529	112.2774529	108.443235	103.4922228	98.79913171	94.34917206	90.12847847
170518A00008	5/18/2018	3.06	5/18/2028	5/18/2018	122.43683	122.436833	122.436833	120.2239579	111.8902592	104.0528896	96.83624518	90.18765679	84.05918917
170622A00045	6/22/2017	2.76	6/22/2027	6/22/2017	117.78907	117.7890696	117.7890696	116.6333789	109.2961563	102.3300688	95.86318901	89.8570211	84.27623507
170726A00025	7/26/2017	2.14	7/26/2022	7/26/2017	104.32323	104.3232342	104.3232342	104.3232342	103.3097813	101.0112158	98.77515242	96.59953613	94.48239233
170816A00030	8/16/2017	1.95	8/16/2021	8/16/2017	102.32042	102.3204205	102.3204205	102.3204205	101.7958245	100.4306955	99.09035089	97.77417381	96.48156755
171219A00031	12/19/2017	2.42	12/20/2021	12/19/2017	103.71948	103.7194772	103.7194772	103.7194772	103.0433757	101.3310802	99.65538318	98.01517601	96.40939499
171229A00031	12/29/2017	2.36	12/29/2020	12/29/2017	101.59426	101.5942622	101.5942622	101.5942622	101.367484	100.6141514	99.87198648	99.1407425	98.42017976
180105A00021	1/5/2018	2.33	1/5/2021	1/5/2018	101.61186	101.6118628	101.6118628	101.6118628	101.3758339	100.6034342	99.84277791	99.09359868	98.3556382
180110A00011	1/10/2018	2.38	1/11/2021	1/10/2018	101.6861	101.6861031	101.6861031	101.6861031	101.441832	100.6528442	99.87610875	99.11134184	98.35826823
180131A00022	1/31/2018	2.96	1/30/2025	1/31/2018	112.92392	112.9239183	112.9239183	112.9239183	109.3276643	104.5231876	99.96043596	95.62601079	91.50732261
180403A00024	4/3/2018	2.96	4/3/2023	4/3/2018	108.08778	108.087776	108.087776	108.087776	106.5202369	103.5115435	100.6044264	97.79489164	95.07912608
180404A00018	4/4/2018	2.89	4/4/2022	4/4/2018	105.27237	105.2723669	105.2723669	105.2723669	104.4477961	102.4380045	100.4773149	98.56421672	96.69725672
180518A00025	5/18/2018	2.96	5/18/2021	5/18/2018	103.07357	103.0735691	103.0735691	103.0735691	102.6542402	101.5154706	100.4019498	99.31284436	98.24735721
180518A00041	5/25/2018	3.32	5/20/2024	5/25/2018	112.61335	112.6133548	112.6133548	112.6133548	109.8844263	105.7255673	101.7494608	97.94706627	94.30984229
180518A00071	5/25/2018	3.56	5/18/2026	5/25/2018	120.04639	120.0463911	120.0463911	120.0463911	113.9354581	107.7966573	102.0361607	96.62856759	91.55031541
180613A00046	6/13/2018	3	1/13/2022	6/13/2018	104.91056	104.9105618	104.9105618	104.9105618	104.2012003	102.4149874	100.6680647	98.95926814	97.28747845
180613A00047	6/13/2018	3.17	1/12/2024	6/13/2018	110.97059	110.9705858	110.9705858	110.9705858	108.6368329	104.8435759	101.2047619	97.71324516	94.36225299
180615A00039	6/15/2018	3.49	6/15/2028	6/15/2018	126.181	126.1810035	126.1810035	123.8666807	115.3392789	107.3007107	99.90083483	93.0851654	86.80414582
180720A00022	7/20/2018	2.88	7/20/2020	7/20/2018	100.80857	100.808574	100.808574	100.808574	100.7604404	100.452637	100.1467228	99.84268025	99.5404922
180912A00017	9/12/2018	3.13	9/12/2023	9/12/2018	109.86738	109.8673837	109.8673837	109.8673837	107.875044	104.4164741	101.0885273	97.88557593	94.80226578
181003A00023	10/3/2018	3.17	4/4/2022	10/3/2018	105.84147	105.8414677	105.8414677	105.8414677	105.0147693	102.9991132	101.0326741	99.11393811	97.24144881
181113A00073	11/13/2018	3.17	11/13/2020	11/13/2018	101.83605	101.8360496	101.8360496	101.8360496	101.6636787	101.0347279	100.4135615	99.80003542	99.19400913
181120A00035	11/20/2018	3.12	4/15/2021	11/20/2018	102.99686	102.9968579	102.9968579	102.9968579	102.6198988	101.5705039	100.5425675	99.53543566	98.54848112
181226A00046	12/26/2018	2.9	12/28/2020	12/26/2018	101.99598	101.9959786	101.9959786	101.9959786	101.7700187	101.0177299	100.2765478	99.54622778	98.82653243
190311A00031	3/11/2019	2.71	9/8/2021	3/11/2019	103.53441	103.5344103	103.5344103	103.5344103	102.9805773	101.5454193	100.1373488	98.75566566	97.3996933
190325A00022	3/25/2019	2.55	11/25/2022	3/25/2019	106.04291	106.0429108	106.0429108	106.0429108	104.7823124	102.1426471	99.58300538	97.10045815	94.69220475
190501A00014	5/1/2019	2.62	5/1/2024	5/1/2019	109.5724	109.5724028	109.5724028	109.5724028	106.932585	102.8830083	99.01030059	95.30578517	91.76125958

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190514A00006	5/14/2019	2.43	5/17/2021	5/14/2019	102.4606	102.4605966	102.4605966	102.4605966	102.0436345	100.9112671	99.80397239	98.72092447	97.66133317
190514A00017	5/14/2019	2.43	5/17/2021	5/14/2019	102.4606	102.4605966	102.4605966	102.4605966	102.0436345	100.9112671	99.80397239	98.72092447	97.66133317
190523A00035	5/23/2019	2.34	11/23/2021	5/23/2019	103.40987	103.4098655	103.4098655	103.4098655	102.766786	101.1290043	99.52516445	97.95427607	96.41538734
190530A00040	5/30/2019	2.32	11/30/2021	5/30/2019	103.41559	103.4155909	103.4155909	103.4155909	102.7643267	101.1075141	99.48530208	97.89667089	96.34064107
190531A00051	6/3/2019	2.27	6/3/2021	6/3/2019	102.3718	102.3718045	102.3718045	102.3718045	101.9337936	100.756417	99.60614771	98.4820578	97.3832614
190625A00018	6/25/2019	2.19	6/25/2020	6/25/2019	100.45919	100.4591914	100.4591914	100.4591914	100.4300941	100.1918525	99.9547441	99.71876083	99.48389471
190722A00054	12/19/2019	2.02	12/20/2021	12/19/2019	103.02241	103.022415	103.022415	103.022415	102.3484796	100.6424052	98.97281574	97.33860563	95.73871426
190829A00017	8/29/2019	1.8	8/29/2023	8/29/2019	105.1792	105.1791979	105.1791979	105.1791979	103.2597313	99.91740284	96.70074031	93.60437364	90.62319084
190829A00076	8/29/2019	1.81	6/30/2023	8/29/2019	104.96291	104.9629104	104.9629104	104.9629104	103.1975303	100.0088828	96.93502109	93.97111997	91.1125905
190917A00033	1/10/2020	2.03	1/10/2023	1/10/2020	104.86929	104.8692945	104.8692945	104.8692945	103.515566	100.7734768	98.11781081	95.54531759	93.05289165
190607A00022	6/7/2019	1.5	6/7/2024	6/8/2020	105.85255	105.8525465	105.8525465	105.8525465	103.5957595	100.9587798	99.90002457	99.67964572	99.49871297
190702A00082	7/2/2019	1.63	6/30/2022	6/30/2020	103.44199	103.4419878	103.4419878	103.4419878	102.5155091	100.7068911	99.87054111	99.59700485	99.34847236
190712A00044	7/12/2019	1.73	7/12/2022	7/13/2020	103.72336	103.7233618	103.7233618	103.7233618	102.7695244	100.8834783	99.9033525	99.57033846	99.29498634
190513A00065	5/13/2019	2.01	5/13/2022	5/13/2020	104.05589	104.0558928	104.0558928	104.0558928	103.1815433	101.271246	100.0854073	99.85343058	99.73502189
181031A00046	11/2/2018	3.05	10/29/2021	11/2/2020	104.42008	104.4200816	104.4200816	104.4200816	103.8033779	102.2334584	100.8035028	99.78357255	99.12952329
190808A00013	8/8/2019	1.23	8/8/2024	8/10/2020	104.89929	104.8992938	104.8992938	104.8992938	102.7303962	100.475869	99.63532632	99.26307125	98.91370892
190509A00063	5/9/2019	2.11	5/9/2024	5/11/2020	107.51183	107.511831	107.511831	107.511831	105.1092718	101.9731121	100.1720777	99.85029122	99.74589023
180406A00015	4/10/2018	2.61	4/10/2028	4/10/2023	120.19329	120.193293	120.193293	118.382346	111.4057504	105.5779611	101.0586813	97.52433717	94.56399239
190812A00027	8/12/2019	1.71	8/12/2024	8/12/2022	106.22464	106.2246446	106.2246446	106.2246446	103.7560432	100.5271355	97.86867723	95.54923619	93.38504677
190812A00020	8/12/2019	1.47	8/12/2024	8/12/2020	105.16838	105.1683801	105.1683801	105.1683801	102.9386464	100.5699414	99.64300803	99.25090916	98.88909451
200221A00040	2/21/2020	1.28	2/21/2025	2/22/2021	104.85195	104.851953	104.851953	104.851953	102.4482004	100.132733	98.86111097	97.95965824	97.11428176
190606A00054	6/6/2019	1.8	6/6/2024	6/8/2020	106.34404	106.3440415	106.3440415	106.3440415	104.0222989	101.2181996	99.94636217	99.69103247	99.51053433
190610A00069	6/10/2019	2.04	6/10/2022	6/10/2020	103.86731	103.8673097	103.8673097	103.8673097	102.9579885	101.0584854	99.99333871	99.71916732	99.52505901
190606A00032	6/6/2019	1.75	6/6/2024	6/8/2020	106.13317	106.1331721	106.1331721	106.1331721	103.8408755	101.1071855	99.92139439	99.68190789	99.50142211
191211A00013	12/11/2019	1.57	12/11/2024	12/12/2022	106.89924	106.8992373	106.8992373	106.8992373	104.0756245	100.5467452	97.58115584	94.96116798	92.51471001
200228A00095	2/28/2020	1.15	2/28/2023	3/1/2021	102.51241	102.5124064	102.5124064	102.5124064	101.3979443	99.75446155	98.69077644	97.8005553	96.93966739
190805A00014	8/5/2019	1.49	8/5/2024	8/5/2022	106.0339	106.0339013	106.0339013	106.0339013	103.6002452	100.4068753	97.77517536	95.47184496	93.31816523
200306A00069	3/6/2020	0.58	3/6/2025	3/7/2022	102.30166	102.3016633	102.3016633	102.3016633	100.5932235	98.34221118	96.40422713	94.58699967	92.82491729
190509A00033	5/9/2019	2.41	5/9/2022	5/10/2021	104.50085	104.5008473	104.5008473	104.5008473	103.6284143	101.6392702	99.98553645	98.72326508	97.65800691
200228A00096	2/28/2020	1.28	2/28/2022	3/1/2021	101.90451	101.9045107	101.9045107	101.9045107	101.2146139	99.82286327	98.8059823	97.91829429	97.05688757
190816A00028	8/16/2019	1.33	8/16/2022	8/17/2020	102.91678	102.916779	102.916779	102.916779	101.9643184	100.3434258	99.64356723	99.25992524	98.89202479
191017A00012	10/17/2019	1.43	10/17/2022	10/19/2020	103.38277	103.3827732	103.3827732	103.3827732	102.3133307	100.48552	99.52216845	98.94879594	98.41648864
200128A00045	1/28/2020	1.45	1/28/2025	1/28/2021	105.56642	105.5664218	105.5664218	105.5664218	103.0125601	100.4678268	99.11094805	98.24356511	97.45054874

	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190523A00050	5/23/2019	2.3	5/23/2023	5/23/2022	106.35987	106.3598673	106.3598673	106.3598673	104.7223838	101.8635996	99.39574718	97.23697431	95.23791457
190530A00092	5/30/2019	1.69	5/30/2024	6/1/2020	106.62273	106.6227336	106.6227336	106.6227336	104.2633299	101.3584014	99.9833583	99.7523224	99.59024644
190607A00025	6/7/2019	1.48	6/7/2024	6/8/2020	105.76782	105.7678198	105.7678198	105.7678198	103.5243912	100.9172911	99.89222553	99.675995	99.4950672
190809A00026	8/9/2019	1.52	8/9/2024	8/10/2020	105.37832	105.3783236	105.3783236	105.3783236	103.1120466	100.6628768	99.68058335	99.29446361	98.94576318
190828A00021	8/28/2019	1.36	8/28/2024	8/28/2020	104.73117	104.7311715	104.7311715	104.7311715	102.5698309	100.3731936	99.54540588	99.1232563	98.71946398
190510A00019	5/10/2019	2.39	5/10/2022	5/10/2021	104.46406	104.4640594	104.4640594	104.4640594	103.5904813	101.6029281	99.95381405	98.69193646	97.62140571
190816A00029	8/16/2019	1.11	8/16/2024	8/17/2020	104.39234	104.392338	104.392338	104.392338	102.325	100.2793636	99.55796813	99.17743481	98.8097295
181210A00035	12/12/2018	2.65	1/16/2024	1/15/2021	109.01182	109.0118192	109.0118192	109.0118192	106.760365	103.3915474	100.8566385	99.38323867	98.51129037
190515A00061	5/15/2019	2	5/15/2024	5/15/2020	107.08451	107.0845061	107.0845061	107.0845061	104.7119209	101.6839847	100.0766002	99.81709201	99.69353626
190807A00056	8/7/2019	1.49	8/7/2024	8/7/2020	105.23996	105.2399606	105.2399606	105.2399606	103.0043735	100.6093055	99.66571994	99.28376257	98.93511133
191029A00020	10/29/2019	1.51	10/31/2022	11/2/2020	103.64314	103.6431437	103.6431437	103.6431437	102.5320156	100.6027956	99.54404871	98.92326733	98.35456312
200227A00025	2/27/2020	1.09	2/27/2025	2/27/2023	104.82661	104.8266076	104.8266076	104.8266076	102.1671717	98.80175862	95.85106296	93.13201865	90.54186028
181004A00037	10/4/2018	2.48	10/5/2020	4/6/2020	101.16066	101.1606554	101.1606554	101.1606554	101.031793	100.5123747	100.0494597	99.97414327	99.96603022
190702A00051	7/2/2019	1.46	7/2/2024	7/2/2020	105.77568	105.7756801	105.7756801	105.7756801	103.4903614	100.8904685	99.83411467	99.5347858	99.28103657
190607A00016	6/7/2019	1.75	6/7/2024	6/8/2020	106.13715	106.1371486	106.1371486	106.1371486	103.8423517	101.1064243	99.92080529	99.68190996	99.50142481
190812A00026	8/12/2019	1.48	8/12/2024	8/12/2020	105.21239	105.2123911	105.2123911	105.2123911	102.9737718	100.5876835	99.64805825	99.25460992	98.89277912
070906A00048	9/10/2007	3.79	9/12/2022	6/10/2020	108.65427	108.6542674	108.6542674	108.6542674	107.5306262	105.0642099	102.7442142	100.833111	99.91033746
190606A00030	6/6/2019	1.48	6/6/2024	6/8/2020	105.76406	105.7640619	105.7640619	105.7640619	103.5233411	100.9188862	99.89284743	99.67599323	99.49506488
190828A00011	8/28/2019	1.1	8/28/2024	8/28/2020	104.38066	104.3806551	104.3806551	104.3806551	102.2957862	100.2474297	99.50466849	99.08755054	98.68302665
190426A00024	4/26/2019	2.24	4/26/2022	4/27/2020	104.06905	104.0690511	104.0690511	104.0690511	103.2227244	101.3303242	100.1090924	99.92114004	99.85496414
190523A00048	5/23/2019	2.32	5/23/2024	5/23/2023	108.4593	108.4593009	108.4593009	108.4593009	105.8744856	102.1331412	98.79168705	95.76042429	92.92605437
190909A00021	9/9/2019	1.2	9/9/2024	9/9/2020	104.86278	104.8627797	104.8627797	104.8627797	102.6606056	100.4182243	99.51298741	99.04880561	98.61286699
191008A00020	10/8/2019	1.58	10/8/2024	10/11/2022	105.85317	105.8531669	105.8531669	105.8531669	103.3233845	100.0679157	97.33948061	94.91369329	92.63237529
200303A00035	3/3/2020	0.81	3/3/2025	3/3/2023	103.44309	103.4430873	103.4430873	103.4430873	101.0658249	97.87229702	94.99818626	92.30387007	89.72090447
181004A00034	10/4/2018	2.58	10/5/2020	4/6/2020	101.21284	101.212837	101.212837	101.212837	101.0839451	100.5640758	100.0886193	99.97497436	99.96686065
190703A00023	7/3/2019	1.9	6/30/2022	6/30/2020	103.64516	103.64516	103.64516	103.64516	102.7135821	100.8493458	99.90994551	99.62154911	99.37344159
190712A00038	7/12/2019	1.87	7/12/2021	7/13/2020	102.27498	102.2749801	102.2749801	102.2749801	101.7926	100.6170396	99.91917324	99.60933156	99.33395967
190807A00035	8/7/2019	1.45	8/7/2024	8/7/2020	105.06446	105.0644648	105.0644648	105.0644648	102.8645141	100.5389821	99.64609417	99.26950783	98.92091803
190917A00040	9/17/2019	1.63	9/17/2024	9/17/2020	106.00429	106.0042872	106.0042872	106.0042872	103.5620018	100.8829271	99.64635007	99.11755114	98.66085757
190516A00018	5/16/2019	2.03	5/16/2024	5/18/2020	107.21399	107.2139895	107.2139895	107.2139895	104.8256601	101.7618339	100.0987308	99.82083473	99.69727698
190821A00046	8/21/2019	1.44	8/21/2024	8/21/2020	105.06471	105.0647088	105.0647088	105.0647088	102.8417698	100.5119448	99.60472509	99.19282485	98.8073392
190417A00010	4/17/2019	2.09	4/17/2024	4/17/2020	108.07399	108.0739927	108.0739927	108.0739927	105.659373	102.3925361	100.3290582	99.9444762	99.8974887
190515A00056	5/15/2019	1.81	5/15/2024	5/15/2020	107.05822	107.0582245	107.0582245	107.0582245	104.6803648	101.6580997	100.0736741	99.82239859	99.69854295

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190924A00014	9/24/2019	1.54	9/24/2024	9/24/2020	105.62309	105.6230938	105.6230938	105.6230938	103.2391921	100.695268	99.5668235	99.04049154	98.56604774
190911A00012	9/11/2019	1.27	9/11/2024	9/11/2020	105.18386	105.1838587	105.1838587	105.1838587	102.9076291	100.5374947	99.54731511	99.06871503	98.62740303
200221A00045	2/21/2020	1.03	2/21/2025	2/22/2021	104.51357	104.513573	104.513573	104.513573	102.1993654	100.000539	98.78654235	97.89270414	97.04596158
190605A00032	6/5/2019	1.92	6/3/2022	6/3/2020	103.56993	103.5699336	103.5699336	103.5699336	102.6799417	100.8616092	99.94454381	99.71985984	99.54475365
190530A00057	5/30/2019	1.71	5/30/2024	6/1/2020	106.70702	106.7070182	106.7070182	106.7070182	104.3371324	101.40675	99.99396299	99.7555872	99.5935072
190712A00047	7/12/2019	1.54	7/12/2024	7/13/2020	106.15945	106.1594547	106.1594547	106.1594547	103.7963587	101.0578216	99.85672651	99.51734174	99.24209395
190731A00008	7/31/2019	1.53	7/31/2024	7/31/2020	106.19035	106.1903465	106.1903465	106.1903465	103.783589	101.0261679	99.80499313	99.41432991	99.08304326
200131A00023	1/31/2020	1.56	1/31/2025	1/31/2023	106.11168	106.1116829	106.1116829	106.1116829	103.2988558	99.81825901	96.83991098	94.1537893	91.61890943
190814A00019	8/14/2019	1.46	8/14/2024	8/14/2020	105.13078	105.1307813	105.1307813	105.1307813	102.9056068	100.5515533	99.63297626	99.23687165	98.86979741
181203A00046	12/4/2018	2.8	12/4/2023	12/4/2020	109.28959	109.2895949	109.2895949	109.2895949	107.130854	103.7724684	101.159318	99.63143959	98.82627451
190426A00018	4/26/2019	2.14	4/26/2024	4/27/2020	107.57019	107.5701854	107.5701854	107.5701854	105.1873336	102.0341145	100.1810684	99.91449144	99.84832087
180925A00059	9/25/2018	3.01	9/25/2028	9/25/2023	124.77141	124.771408	124.771408	122.3364294	114.5095136	107.8831783	102.6255161	98.45976052	94.99388125
190830A00028	8/30/2019	1.39	8/30/2024	8/31/2020	104.87055	104.8705498	104.8705498	104.8705498	102.6750649	100.4217401	99.56041042	99.13567367	98.73185183
191008A00028	10/11/2019	1.08	10/8/2024	10/8/2020	104.40023	104.4002323	104.4002323	104.4002323	102.2770676	100.2133318	99.3407509	98.80624535	98.29539151
200221A00041	2/21/2020	1.53	2/21/2025	2/21/2023	106.08439	106.0843902	106.0843902	106.0843902	103.2285436	99.70844298	96.68195683	93.94507406	91.36139489
190104A00032	1/4/2019	2.33	1/4/2024	6/4/2020	107.71975	107.7197517	107.7197517	107.7197517	105.5633971	102.4355963	100.3905019	99.9696672	99.96158682
190530A00108	5/30/2019	1.88	5/30/2024	6/1/2020	106.65107	106.6510734	106.6510734	106.6510734	104.29799	101.3876915	99.99019573	99.75438285	99.59260567
190801A00025	8/1/2019	1.68	8/1/2024	8/3/2020	106.05071	106.0507114	106.0507114	106.0507114	103.6779916	100.972945	99.7917071	99.40720423	99.07658764
190820A00068	8/20/2019	1.39	8/20/2024	8/20/2020	104.84041	104.8404059	104.8404059	104.8404059	102.6671454	100.4280428	99.58232045	99.17846238	98.79567586
081028A00036	10/30/2008	4.22	10/30/2023		114.18015	114.1801486	114.1801486	114.1801486	112.0243261	108.3651858	104.8478499	101.4659881	98.21361434
190613A00024	6/13/2019	2.18	6/13/2024	6/13/2023	107.98274	107.9827391	107.9827391	107.9827391	105.3675802	101.6260746	98.27780398	95.22361537	92.35619567
200130A00029	1/30/2020	1.3	1/30/2023	2/1/2021	103.39125	103.3912518	103.3912518	103.3912518	102.1782485	100.268639	99.1088125	98.26232886	97.46556104
190426A00017	4/26/2019	2.31	4/26/2022	4/27/2020	104.21558	104.2155773	104.2155773	104.2155773	103.3671022	101.4522307	100.1479144	99.92579405	99.85961443
190522A00029	5/22/2019	2.41	5/22/2024	5/22/2023	108.8296	108.8295951	108.8295951	108.8295951	106.2304744	102.4586551	99.0893951	96.0413093	93.19947901
200227A00018	2/27/2020	0.99	2/27/2025	2/28/2022	104.32977	104.3297685	104.3297685	104.3297685	101.9955284	99.34152771	97.25968347	95.41914221	93.66234241
190821A00024	8/21/2019	1.65	8/21/2024	8/22/2022	105.99412	105.994121	105.994121	105.994121	103.5390261	100.3393992	97.69614032	95.37437478	93.19914437
191121A00031	11/21/2019	1.54	11/21/2024	11/21/2022	106.6781	106.6780981	106.6780981	106.6780981	103.9261101	100.4610997	97.55563263	94.98726775	92.58486069
191011A00020	10/11/2019	1.53	10/11/2024	10/13/2020	105.63549	105.6354897	105.6354897	105.6354897	103.2275987	100.6852261	99.51394563	98.93821168	98.42494618
190529A00115	5/29/2019	1.92	5/29/2024	5/29/2020	106.81453	106.8145299	106.8145299	106.8145299	104.4437131	101.4854018	100.0131708	99.76089814	99.59910883
190603A00067	6/3/2019	1.72	6/3/2024	6/3/2020	105.99497	105.9949682	105.9949682	105.9949682	103.7283198	101.0410838	99.91050793	99.68446327	99.50940375
190702A00079	7/2/2019	1.69	7/2/2024	7/5/2022	106.76593	106.7659288	106.7659288	106.7659288	104.3056182	101.0351668	98.37939175	96.11236622	94.02265425
190725A00018	7/25/2019	1.78	7/25/2024	7/27/2020	106.45921	106.4592147	106.4592147	106.4592147	104.0330717	101.1911961	99.86367303	99.46950762	99.15737564
191209A00045	12/9/2019	1.56	12/9/2024	12/9/2022	106.84373	106.8437328	106.8437328	106.8437328	104.0319977	100.5122659	97.55215361	94.93454733	92.48894114

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	Parallel-Shift Sensitivity Analysis												
3/31/2020					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190725A00022	7/25/2019	1.7	7/25/2022	7/27/2020	103.71107	103.7110711	103.7110711	103.7110711	102.7377109	100.8413567	99.86459172	99.5016414	99.18891437
200228A00090	2/28/2020	1	2/28/2025	3/1/2021	103.48463	103.4846281	103.4846281	103.4846281	101.4909432	99.63785262	98.55384007	97.66460318	96.80441281
190513A00033	5/13/2019	2.35	5/15/2023	5/13/2022	106.47321	106.4732063	106.4732063	106.4732063	104.8637107	102.0201025	99.54592109	97.38365354	95.39649997
190516A00028	5/16/2019	2.03	5/16/2024	5/18/2020	107.21399	107.2139895	107.2139895	107.2139895	104.8256601	101.7618339	100.0987308	99.82083473	99.69727698
200227A00024	2/27/2020	0.85	2/27/2025	3/1/2021	103.63419	103.6341943	103.6341943	103.6341943	101.5858151	99.6806331	98.57716657	97.68377669	96.82133129
190823A00023	8/23/2019	1.37	8/23/2024	8/24/2020	104.76082	104.7608237	104.7608237	104.7608237	102.6003231	100.3939078	99.56971353	99.1652405	98.77984874
200207A00008	2/7/2020	1.35	2/7/2025	2/7/2023	106.05095	106.0509475	106.0509475	106.0509475	103.2239505	99.72307476	96.71801181	94.00378086	91.4425049
180404A00037	4/6/2018	2.51	4/6/2028	4/6/2022	119.35651	119.3565106	119.3565106	117.5900344	110.7711651	105.2167965	101.2029246	98.41574689	96.30584143
060517A00115	5/19/2006	4.52	5/19/2021	5/21/2007	104.87196	104.8719599	104.8719599	104.8719599	104.4480923	103.2750715	102.1215611	101.0181892	100.1475409
061128A00049	11/30/2006	3.84	11/30/2021	2/28/2007	106.28902	106.2890177	106.2890177	106.2890177	105.6269453	103.8985396	102.2522001	100.7617651	99.76295793
070727A00036	7/31/2007	4.23	8/1/2022	10/31/2007	109.28806	109.2880625	109.2880625	109.2880625	108.2391317	105.767253	103.4478093	101.5097707	99.96808464