

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												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
211006A00003	10/6/2021	0.37	10/6/2022	10/6/2021	100.15704	100.0571101	99.95739157	99.85788052	99.75857634	99.65947835	99.56058591	99.46189835	99.36341502
211008A00004	10/8/2021	0.38	10/3/2022	10/8/2021	100.14933	100.0577424	99.96632227	99.87507312	99.7839945	99.69308594	99.60234696	99.51177708	99.42137583
211025A00017	10/25/2021	0.28	10/25/2022	10/25/2021	100.21619	100.063269	99.91082252	99.75884922	99.6073469	99.45631336	99.30574642	99.1556439	99.00600364
211116A00007	11/16/2021	0.51	11/14/2022	11/16/2021	100.28515	100.0767937	99.86931456	99.66270655	99.45696419	99.252082	99.04805454	98.84487641	98.64254229
211117A00008	11/17/2021	0.5	11/17/2022	11/17/2021	100.28958	100.0728957	99.85715411	99.6423531	99.42848645	99.21554801	99.00353171	98.79243153	98.5822415
211202A00024	12/2/2021	0.61	12/2/2022	12/2/2021	100.35194	100.0935048	99.83639557	99.58060361	99.32611887	99.07293137	98.82103125	98.57040872	98.32105411
211222A00002	12/22/2021	0.52	9/22/2022	12/22/2021	100.11293	100.0518607	99.99088275	99.92999117	99.86918573	99.80846625	99.74783255	99.68728447	99.62682181
211231A00003	12/31/2021	0.59	11/30/2022	12/31/2021	100.34316	100.0902814	99.8386738	99.58832347	99.33922112	99.09135748	98.84472339	98.59930979	98.3551077
220112A00011	1/12/2022	0.79	1/12/2023	1/12/2022	100.49187	100.1194841	99.74986067	99.38296926	99.01877957	98.65726176	98.29838641	97.94212455	97.58844761
220114A00003	1/14/2022	0.76	12/14/2022	1/14/2022	100.4181	100.1262588	99.83612587	99.5476827	99.26091453	98.97580672	98.69234481	98.41051448	98.13030163
220125A00011	1/25/2022	0.75	10/25/2022	1/25/2022	100.26825	100.1154685	99.96316152	99.81132494	99.65995663	99.50905444	99.35861621	99.20863981	99.05912312
220125A00012	1/25/2022	0.92	1/20/2023	1/25/2022	100.55756	100.1628751	99.7712891	99.38276585	98.99726947	98.61476461	98.23521648	97.85859084	97.48485395
220225A00009	2/25/2022	1.11	11/2/2022	2/25/2022	100.36213	100.1870073	100.0124909	99.83858174	99.66527672	99.4925727	99.32046659	99.1489553	98.97803577
220311A00010	3/11/2022	1.17	10/11/2022	3/11/2022	100.26148	100.1475788	100.0339467	99.92058604	99.80749585	99.69467513	99.58212288	99.46983812	99.35781987
220317A00002	3/17/2022	1.49	1/17/2023	3/17/2022	100.77157	100.3846794	100.0007658	99.61979301	99.24172725	98.86653525	98.49418425	98.12464196	97.75787661
220322A00009	3/22/2022	1.87	3/22/2023	3/22/2022	101.23875	100.6731718	100.1139077	99.56084809	99.01388994	98.47293267	97.93787782	97.40862912	96.88509237
220323A00007	3/23/2022	1.58	12/23/2022	3/23/2022	100.6987	100.3813454	100.0659913	99.75262251	99.44122042	99.13176648	98.82424243	98.51863021	98.214912
220324A00006	3/24/2022	1.9	3/20/2023	3/24/2022	101.24484	100.6847947	100.1309353	99.58316237	99.04137593	98.5054781	97.97537315	97.45096744	96.93216931
220406A00004	4/6/2022	1.57	11/7/2022	4/6/2022	100.46648	100.2773353	100.0889139	99.90120732	99.71421145	99.52792224	99.34233564	99.15744768	98.97325439
220419A00010	4/19/2022	2.01	2/17/2023	4/19/2022	101.13422	100.6604627	100.1911451	99.72620095	99.2655694	98.80919055	98.35700563	97.90895696	97.46498791
220425A00007	4/25/2022	2.34	4/25/2023	4/25/2022	101.73215	101.0705051	100.4174475	99.77281266	99.13643842	98.50816675	97.88784361	97.27531884	96.67044606
220427A00017	4/27/2022	1.86	12/23/2022	4/27/2022	100.78752	100.4699802	100.1544472	99.84090036	99.52932105	99.21969074	98.91199113	98.60620418	98.30231206
220428A00013	4/28/2022	2.04	2/1/2023	4/28/2022	101.06338	100.6341936	100.2086427	99.78667899	99.36825735	98.95333338	98.54186343	98.13380458	97.72911461
220505A00010	5/5/2022	2.13	2/3/2023	5/5/2022	101.11307	100.6782116	100.2470809	99.81963429	99.39582479	98.97560614	98.55893286	98.14576026	97.73604438
220505A00011	5/5/2022	2.47	5/5/2023	5/5/2022	101.88772	101.1977239	100.517056	99.84552846	99.18295818	98.52916671	97.88398038	97.2472301	96.61875114
220510A00013	5/10/2022	2.03	1/10/2023	5/10/2022	100.94374	100.575862	100.210671	99.84813646	99.48822949	99.13092149	98.77618428	98.42399011	98.07431162
220511A00001	5/11/2022	2.38	5/8/2023	5/11/2022	101.84576	101.1475901	100.4589813	99.77973408	99.10965854	98.44856966	97.79628745	97.15263669	96.51744678
220512A00011	5/12/2022	1.8	12/12/2022	5/12/2022	100.71158	100.4247375	100.1395375	99.8559663	99.57400979	99.29365417	99.01488574	98.73769097	98.46205651
220516A00023	5/16/2022	1.73	11/17/2022	5/16/2022	100.55649	100.3393855	100.1232324	99.90802121	99.69374583	99.48040007	99.26797785	99.05647313	98.84587994
220518A00016	5/18/2022	2.15	2/17/2023	5/18/2022	101.20044	100.7265043	100.2570026	99.79187577	99.33106271	98.87450357	98.42213956	97.973913	97.52976723
220518A00017	5/18/2022	2.47	5/18/2023	5/18/2022	101.97719	101.2507448	100.5346365	99.82864657	99.13256138	98.44617341	97.7692809	97.10168762	96.44320276
220524A00011	5/24/2022	2.14	2/24/2023	5/24/2022	101.23486	100.7414172	100.2527734	99.76886028	99.28960922	98.81495315	98.34482624	97.87916391	97.4179028
220531A00018	5/31/2022	1.95	12/30/2022	5/31/2022	100.85855	100.5213976	100.1864883	99.85380312	99.52331994	99.19501702	98.8688729	98.54486641	98.22297662

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REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220531A00022	5/31/2022	2.12	2/28/2023	5/31/2022	101.24716	100.7426043	100.2430631	99.74845849	99.25871773	98.77376944	98.29354365	97.81797172	97.34698635
220601A00021	6/1/2022	2.48	6/1/2023	6/1/2022	102.08075	101.3150384	100.5607806	99.81772501	99.08562355	98.36423545	97.6533269	96.95267088	96.26204686
220601A00027	6/1/2022	2.16	3/1/2023	6/1/2022	101.27345	100.766044	100.263706	99.76636136	99.27393598	98.78635722	98.30355385	97.82545606	97.35199536
220602A00050	6/2/2022	2.41	6/2/2023	6/2/2022	102.10281	101.3333072	100.5753759	99.82875583	99.09319536	98.36845012	97.65428292	96.95046348	96.25676813
220608A00010	6/8/2022	2.33	3/8/2023	6/8/2022	101.40589	100.8786456	100.3568755	99.84049873	99.32943205	98.82359372	98.3229037	97.82728362	97.33665665
220614A00010	6/14/2022	3.46	6/14/2023	6/14/2022	102.93985	102.1344377	101.3416318	100.5611421	99.79268301	99.03597746	98.29075699	97.55676127	96.83373776
220615A00001	6/15/2022	2.75	12/16/2022	6/15/2022	101.0151	100.7165602	100.419796	100.1247908	99.83152903	99.53999508	99.25017367	98.96204966	98.67560807
220616A00037	6/16/2022	3.24	4/14/2023	6/16/2022	102.2242	101.5913518	100.9663409	100.3490241	99.73925991	99.13691002	98.54183961	97.95391712	97.37301414
220617A00045	6/17/2022	3.13	3/17/2023	6/17/2022	101.90626	101.3524305	100.8046261	100.2627483	99.72670116	99.19639076	98.67172518	98.15261449	97.63897063
220621A00021	6/21/2022	3.31	6/21/2023	6/21/2022	102.88976	102.0649999	101.2534604	100.4548284	99.66879736	98.89507062	98.13336063	97.38338876	96.64488494
220624A00026	6/24/2022	2.81	1/17/2023	6/24/2022	101.28212	100.8940174	100.5088994	100.1267291	99.74747255	99.37109646	98.99756799	98.62685481	98.25892507
220624A00027	6/24/2022	2.96	2/15/2023	6/24/2022	101.56786	101.0984537	100.6333856	100.1725989	99.71603462	99.26363481	98.81534259	98.3711021	97.93085849
220624A00028	6/24/2022	3.05	3/15/2023	6/24/2022	101.84493	101.2968619	100.7546948	100.2183359	99.68769201	99.16267203	98.64318668	98.12914864	97.62047237
220624A00029	6/24/2022	3.13	4/17/2023	6/24/2022	102.18179	101.5407363	100.9077294	100.2826168	99.66525149	99.05548978	98.45319167	97.85822056	97.27044317
220624A00030	6/24/2022	2.72	12/27/2022	6/24/2022	101.09452	100.7652026	100.4380331	100.1129877	99.79004594	99.46918737	99.15039189	98.83363966	98.51891109
220701A00031	7/1/2022	2.87	2/1/2023	7/1/2022	101.41905	100.9889582	100.5625027	100.13964	99.72032485	99.30451289	98.89216038	98.48322435	98.07766252
220701A00032	7/1/2022	2.95	3/1/2023	7/1/2022	101.67354	101.1649565	100.6614508	100.1629468	99.66937037	99.18064874	98.6967106	98.21748602	97.74290644
220701A00034	7/1/2022	3.04	3/31/2023	7/1/2022	101.97703	101.3840369	100.7979268	100.2185797	99.64587914	99.07971134	98.51996506	97.96653159	97.41930467
220715A00023	7/15/2022	3.36	3/31/2023	7/15/2022	102.16581	101.5721808	100.985443	100.4054734	99.83215545	99.2653753	98.70502167	98.15098575	97.60316123
220720A00031	7/20/2022	3.4	3/20/2023	7/20/2022	102.08382	101.5210715	100.9645355	100.414107	99.86968581	99.33117376	98.79847487	98.27149521	97.7501429
220721A00010	7/21/2022	3.42	4/21/2023	7/21/2022	102.4055	101.7524995	101.1078275	100.4713278	99.84284575	99.22223022	98.60933407	98.00401377	97.40612931
220725A00012	7/25/2022	3.34	3/24/2023	7/25/2022	102.08799	101.5140937	100.9466545	100.3855604	99.83070524	99.28198539	98.73929935	98.20254789	97.67163395
220726A00056	7/26/2022	3.37	4/26/2023	7/26/2022	102.42103	101.7540464	101.0957446	100.4459574	99.80452044	99.17127333	98.54605992	97.92872796	97.31912906
220726A00058	7/26/2022	3.38	7/26/2023	7/26/2022	103.24712	102.3236007	101.4166068	100.5256938	99.6504366	98.7904249	97.94526264	97.11456738	96.29796974
220728A00069	7/28/2022	3.25	7/24/2023	7/28/2022	103.11132	102.1940267	101.2930491	100.4079573	99.53833359	98.68377475	97.84389155	97.01830804	96.20666101
220826A00030	8/26/2022	3.49	3/27/2023	8/26/2022	102.2031	101.620482	101.0445028	100.4750513	99.91201701	99.35529176	98.80476994	98.26034822	97.72192558
220823A00025	8/23/2022	3.44	2/24/2023	8/23/2022	101.87515	101.3798549	100.8893752	100.4036389	99.92257743	99.44612359	98.97421137	98.50677604	98.04375411
220815A00005	8/15/2022	3.52	8/15/2023	8/15/2022	103.54678	102.5663647	101.6045326	100.6607573	99.7345332	98.82537355	97.93280932	97.05638863	96.19567583
220831A00035	8/31/2022	3.65	3/31/2023	8/31/2022	102.33689	101.7426862	101.1553796	100.5748458	100.0009684	99.43363327	98.87272922	98.31814734	97.76978124
220811A00002	8/11/2022	3.5	8/11/2023	8/11/2022	103.50121	102.5319988	101.5809497	100.6475584	99.73133585	98.83181106	97.94853006	97.08105528	96.2289647
220831A00084	8/31/2022	3.84	8/30/2023	8/31/2022	104.00603	102.9815386	101.9772531	100.9925784	100.0269438	99.07980054	98.1506209	97.23889695	96.34413979
150601A00342	6/1/2015	3.97	8/26/2033	6/1/2015	122.49494	116.375825	110.6997194	105.4288464	100.5290044	95.96920403	91.72134125	87.75990641	84.06172419
150601A00439	6/1/2015	2.57	3/18/2024	6/1/2015	102.10442	101.3164364	100.5424019	99.78193531	99.03466598	98.30023733	97.578306	96.86854126	96.17062439

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00440	6/1/2015	3.27	3/16/2029	6/1/2015	111.34456	107.8859147	104.5886943	101.4437926	98.44269271	95.57742046	92.84050603	90.22494864	87.72418384
150601A00450	6/1/2015	3.28	4/27/2029	6/1/2015	111.5714	108.0493471	104.6940588	101.4960101	98.44629171	95.53656901	92.75904119	90.10640321	87.57181091
150601A00460	6/1/2015	3.05	5/16/2029	6/1/2015	110.87971	107.3481467	103.9849981	100.7805773	97.72583465	94.81230758	92.03207839	89.37773545	86.84233738
150601A00506	6/1/2015	3.14	7/6/2029	6/1/2015	111.42074	107.8020117	104.3589429	101.081266	97.95939593	94.98437888	92.14784625	89.44197241	86.85943568
150601A00528	6/1/2015	3.08	7/27/2029	6/1/2015	111.30046	107.6567584	104.1911542	100.8931742	97.753043	94.76163261	91.91041505	89.19141882	86.59718869
150601A00559	6/1/2015	3.06	8/31/2029	6/1/2015	111.38522	107.6895488	104.1766948	100.8357847	97.65668018	94.62992129	91.7466762	88.99869522	86.3782684
150601A00684	6/1/2015	2.25	2/7/2025	6/1/2015	102.87802	101.6386556	100.4265374	99.24083765	98.08075909	96.94553517	95.83442873	94.74673064	93.68175845
160603A00015	6/3/2016	1.95	6/5/2023	6/3/2016	101.67948	100.9130716	100.1582591	99.41478256	98.68238768	97.96082755	97.2498626	96.54926028	95.85879482
160608A00026	6/8/2016	2.36	6/8/2026	6/8/2016	108.96281	105.3928326	101.9653439	98.67379526	95.51197971	92.47401235	89.55431137	86.74758051	84.04879254
160608A00031	6/8/2016	2.36	6/8/2026	6/8/2016	108.96281	105.3928327	101.9653439	98.67379524	95.51197966	92.47401227	89.55431126	86.74758036	84.04879237
160608A00032	6/8/2016	2.36	6/8/2026	6/8/2016	108.96281	105.3928326	101.9653439	98.67379525	95.5119797	92.47401232	89.55431134	86.74758046	84.04879249
160609A00075	6/9/2016	1.94	6/9/2026	6/9/2016	104.14549	102.1366107	100.1887376	98.29951297	96.46668927	94.68812206	92.96176458	91.28566252	89.6579492
160628A00006	6/28/2016	1.44	6/28/2023	6/28/2016	100.84344	100.3791447	99.92023599	99.46660844	99.0181607	98.57479416	98.13641288	97.70292347	97.27423498
161222A00035	12/22/2016	2.29	12/22/2023	12/22/2016	101.76895	101.0510098	100.3455321	99.65215704	98.97054388	98.30036523	97.64130645	96.99306497	96.35534976
161222A00036	12/22/2016	2.69	12/22/2026	12/22/2016	106.33033	104.0619145	101.868903	99.74815239	97.69667185	95.71161676	93.79028046	91.9300866	90.12858191
161222A00037	12/22/2016	3.08	12/22/2031	12/22/2016	115.44738	110.3983156	105.6684835	101.233994	97.072958	93.16530058	89.49259785	86.03792875	82.78574139
170406A00031	4/6/2017	3.01	4/6/2027	4/6/2017	113.83852	109.4261825	105.2213075	101.2128919	97.39058054	93.74462354	90.265837	86.94556716	83.77565667
170921A00056	9/21/2017	2.82	9/21/2027	9/21/2017	114.228	109.4163659	104.8498715	100.5145403	96.3972742	92.48578994	88.76856435	85.23478299	81.8742927
180302A00014	3/2/2018	2.69	3/2/2023	3/2/2018	100.97244	100.675182	100.3800742	100.0870914	99.79620832	99.50739982	99.22064135	98.9359087	98.65317809
180321A00015	3/21/2018	3.02	3/21/2025	3/21/2018	104.91291	103.3260582	101.7784271	100.2687327	98.79574621	97.35828848	95.95522723	94.58547496	93.24798683
180322A00030	3/22/2018	2.79	3/24/2025	3/22/2018	104.11155	102.7409747	101.4016533	100.0926095	98.81290792	97.56164994	96.33797181	95.1410431	93.97006508
180329A00011	3/29/2018	2.77	3/29/2023	3/29/2018	101.11213	100.7731486	100.436985	100.1035959	99.77294331	99.44498986	99.11969888	98.79703443	98.47696124
180508A00038	5/8/2018	3.57	5/9/2033	5/8/2018	121.57036	115.2252491	109.3439128	103.886829	98.81819913	94.10556903	89.71949169	85.6332259	81.82246729
180612A00012	6/12/2018	2.94	6/12/2023	6/12/2018	101.5347	101.0716319	100.6138489	100.161248	99.71373191	99.27120596	98.83357791	98.40075789	97.97265838
150601A00571	6/1/2015	2.5	9/23/2022	6/1/2015	100.24261	100.1786617	100.1148046	100.0510397	99.98736674	99.92378556	99.86029598	99.7968978	99.73359083
201119A00023	11/23/2020	2.23	11/21/2030	11/23/2020	119.52183	110.8135437	102.8097583	95.44963377	88.67789112	82.44427593	76.70307698	71.41269316	66.53524392
220315A00037	3/17/2022	2.63	3/16/2027	3/17/2022	113.26833	108.523719	104.0069362	99.70582465	95.60894506	91.70552551	87.98541917	84.43906455	81.05744858
200318A00054	3/18/2020	1.56	3/18/2025	3/18/2020	104.28505	101.7188116	99.22867776	96.8119385	94.46599906	92.18837344	89.97667906	87.82863176	85.74204097
200327A00054	3/27/2020	0.9	3/27/2023	3/27/2020	100.70402	100.126352	99.55528659	98.99070896	98.43250911	97.8805795	97.33481498	96.79511277	96.26137233
210706A00014	7/6/2021	1.15	6/26/2026	7/6/2021	105.22022	101.372336	97.68473821	94.14994138	90.7608511	87.51073894	84.39322163	81.4022415	78.53204816
200325A00044	3/25/2020	1.7	12/23/2024	3/25/2020	104.20742	101.8775038	99.61103983	97.40592556	95.26014368	93.17175637	91.13890155	89.1597894	87.23269905
200327A00068	6/25/2020	0.93	6/26/2023	6/25/2020	100.94523	100.1155578	99.29944277	98.49655774	97.70658324	96.92921006	96.16413878	95.41107939	94.66975095
200421A00020	4/24/2020	0.83	3/15/2024	4/24/2020	101.3484	99.81318112	98.30869956	96.83410357	95.38857368	93.97132	92.58158082	91.21862137	89.88173264

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220512A00007	5/12/2022	2.91	5/13/2024	5/12/2022	105.10608	103.3781123	101.6869368	100.0314472	98.41057787	96.82330557	95.26864773	93.74566028	92.25343568
220727A00001	7/27/2022	3.39	7/27/2023	7/27/2022	103.26505	102.3386731	101.428915	100.5353326	99.65749703	98.79499453	97.9474257	97.11440492	96.29555973
200611A00021	6/11/2020	0.72	6/11/2024	6/11/2020	101.42436	99.6508065	97.91648435	96.22021694	94.56087597	92.93737682	91.34867652	89.79377164	88.27169646
210201A00001	2/1/2021	0.77	12/16/2025	2/1/2021	103.0271	99.7423742	96.57826277	93.5296803	90.59178385	87.75996233	85.02982396	82.39718434	79.85805541
211227A00005	12/27/2021	1.61	12/18/2026	12/27/2021	108.02542	103.6454669	99.4668981	95.47941005	91.67328043	88.03933361	84.56890682	81.25381869	78.08633978
200327A00045	3/27/2020	2.24	3/27/2034	3/27/2020	126.99554	114.4426765	103.264119	93.30128905	84.41468631	76.48150651	69.39356675	63.05549774	57.3831675
210121A00018	1/25/2021	0.5	8/25/2023	1/25/2021	100.62034	99.62794809	98.65497807	97.70086516	96.76506593	95.84705762	94.9463372	94.06242044	93.19484103
220525A00020	5/25/2022	2.79	5/24/2024	5/25/2022	105.00975	103.2525609	101.5332846	99.85075727	98.20386522	96.59154002	95.01275635	93.46652973	91.95191447
210929A00012	3/16/2022	1.03	3/14/2025	3/16/2022	102.90177	100.3641999	97.90178921	95.51187008	93.19188665	90.9393897	88.75203153	86.62756102	84.56381895
220601A00023	6/1/2022	2.9	6/3/2024	6/1/2022	105.29199	103.5048839	101.7567891	100.0465085	98.37289595	96.73485187	95.13132074	93.56128884	92.02378215
200331A00018	3/31/2020	0.82	3/31/2023	3/31/2020	100.66739	100.0787884	99.49703303	98.92200462	98.35358724	97.79166756	97.23613485	96.68688085	96.14379977
201216A00004	12/16/2020	0.74	9/8/2025	12/16/2020	102.60936	99.59812256	96.69015749	93.88135781	91.16780317	88.54575134	86.01162896	83.56202292	81.19367214
200826A00036	8/28/2020	0.88	7/28/2023	8/28/2020	100.96204	100.044392	99.14331584	98.25836695	97.38911577	96.53514791	95.69606344	94.87147627	94.06101356
210407A00013	4/7/2021	1.23	4/7/2026	4/7/2021	105.12323	101.495505	98.01151826	94.66479004	91.44917101	88.3588233	85.38820277	82.53204242	79.78533681
210914A00011	9/16/2021	0.52	9/18/2023	9/16/2021	100.65244	99.59438908	98.55840721	97.54380611	96.54992987	95.57614918	94.62185995	93.68648212	92.76945838
210928A00008	9/28/2021	1.35	9/28/2026	9/28/2021	106.49998	102.3721059	98.42610083	94.6529917	91.04429827	87.59200288	84.28852258	81.12668306	78.09969427
220325A00019	3/28/2022	2.86	3/23/2027	3/28/2022	114.39547	109.6057584	105.0464601	100.705255	96.57054635	92.63141612	88.87758178	85.29935579	81.88760785
200415A00003	4/15/2020	0.77	4/14/2023	4/15/2020	100.67084	100.0435228	99.42399472	98.81211263	98.20773557	97.61072604	97.02094989	96.43827622	95.86257726
200427A00018	4/27/2020	1.51	4/27/2028	4/27/2020	109.98272	104.1891983	98.73483149	93.59801512	88.75863362	84.19794998	79.89850386	75.84401782	72.01931096
200826A00040	8/28/2020	0.92	10/27/2023	8/28/2020	101.13751	99.97032899	98.82987525	97.71524071	96.62555731	95.55999546	94.51776201	93.49809819	92.50027782
200916A00023	9/16/2020	0.42	9/16/2024	9/16/2020	101.31142	99.27398809	97.28738554	95.35001102	93.4603285	91.61686119	89.81818878	88.06294483	86.34981431
220518A00009	5/18/2022	3.38	5/18/2028	5/18/2022	120.95835	114.7961714	108.9926336	103.5248651	98.37157485	93.51293786	88.93048558	84.60700583	80.52645044
200310A00040	3/10/2020	1.36	3/10/2028	3/10/2020	108.94609	103.3128359	98.00333033	92.99733269	88.27596926	83.82163421	79.61789798	75.64942277	71.90188457
200320A00013	3/20/2020	1.25	3/20/2024	3/20/2020	102.21374	100.654947	99.12754333	97.63065366	96.16343377	94.72507025	93.31477906	91.9318042	90.57541643
200708A00011	7/10/2020	2.87	7/10/2031	7/10/2020	126.65723	116.9964259	108.1638832	100.0838652	92.68792902	85.91419327	79.70667874	74.01471824	68.79242803
210611A00006	6/11/2021	1.85	6/11/2031	6/11/2021	117.29803	108.1226254	99.73702543	92.06905083	85.05346936	78.63129424	72.74915673	67.35874462	62.41629951
211206A00008	12/6/2021	1.24	12/6/2024	12/6/2021	103.06519	100.7942219	98.58414987	96.43291527	94.33854359	92.29914293	90.31289976	88.37807493	86.49299995
200305A00039	3/5/2020	1.58	3/5/2030	3/5/2020	112.98954	105.2495929	98.09226772	91.47074215	85.34217928	79.66737213	74.41041886	69.53842868	65.02125526
210729A00006	7/29/2021	1.87	11/30/2032	7/29/2021	119.59904	108.8559518	99.17307899	90.43995032	82.55814257	75.43991264	69.00698835	63.18950189	57.92504828
211117A00017	11/17/2021	0.49	11/17/2022	11/17/2021	100.28741	100.0707291	99.85499088	99.6401932	99.42632987	99.21339474	99.00138174	98.79028485	98.5800981
211213A00011	12/13/2021	1.32	12/13/2024	12/13/2021	103.27617	100.9840394	98.75378588	96.58333514	94.47069744	92.41396422	90.41130415	88.46095935	86.5612418
220331A00010	3/31/2022	2.83	2/18/2026	3/31/2022	110.52133	106.9307586	103.4772242	100.1547577	96.95768678	93.88061592	90.91841115	88.06618594	85.31928791
220727A00009	7/27/2022	3.31	7/28/2025	7/27/2022	110.08792	107.0777812	104.1664286	101.3500916	98.62516057	95.98818319	93.43585676	90.96502078	88.57265004

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200324A00029	3/24/2020	1.86	3/24/2025	3/24/2020	105.09341	102.5005253	99.98479263	97.54345682	95.17387552	92.87351774	90.63995843	88.47087328	86.36403381
210309A00004	3/11/2021	0.87	11/25/2024	3/11/2021	102.18287	99.95185638	97.78008452	95.66553928	93.60629509	91.60050812	89.64641194	87.74231357	85.88658968
200220A00013	2/20/2020	2.09	12/14/2029	2/20/2020	116.44618	108.8061013	101.7224394	95.15174371	89.05417424	83.39318154	78.13521902	73.24948158	68.70766838
201201A00002	12/1/2020	0.54	12/1/2023	12/1/2020	100.71665	99.45740605	98.22897854	97.03024484	95.86013847	94.71764344	93.60179135	92.51165862	91.44636391
201210A00021	12/10/2020	0.89	12/10/2027	12/10/2020	106.8521	101.4972913	96.4390094	91.65933202	87.14151346	82.86990182	78.82986169	75.00770258	71.39061282
210211A00005	2/11/2021	0.45	6/15/2023	2/11/2021	100.54481	99.74707312	98.96191868	98.18905253	97.42818804	96.67904743	95.94136145	95.21486904	94.499317
220317A00026	5/3/2022	2.59	5/3/2027	5/3/2022	113.54369	108.6555898	104.0078013	99.58719826	95.38144493	91.37894446	87.56879019	83.94072059	80.48507736
200818A00018	3/31/2021	0.57	4/1/2024	3/31/2021	100.97793	99.40053228	97.85524242	96.34115227	94.85738432	93.40309368	91.97746657	90.57971883	89.20909464
210208A00004	2/11/2021	0.76	10/15/2025	2/11/2021	102.7887	99.67476498	96.67029397	93.77080983	90.9720496	88.26995044	85.66063884	83.14042048	80.70577075
210225A00006	2/25/2021	0.98	2/25/2026	2/25/2021	104.0326	100.5352372	97.17326453	93.94072964	90.83197568	87.84162404	84.96455906	82.19591369	79.53105597
210907A00010	9/7/2021	2.58	9/7/2040	9/7/2021	134.6774	115.6577847	99.67485287	86.22025086	74.87346425	65.28623985	57.16983507	50.28457086	44.43126276
220408A00014	4/8/2022	3.12	6/29/2026	4/8/2022	112.90369	108.8993365	105.0604238	101.3792612	97.8485582	94.46139831	91.21121828	88.09178806	85.09719224
220712A00006	7/12/2022	3.36	7/12/2024	7/12/2022	106.51365	104.606649	102.7433417	100.9224726	99.1428272	97.40323396	95.70256184	94.03971889	92.41365061
210420A00010	4/20/2021	1.08	12/12/2025	4/20/2021	104.04837	100.7572552	97.58648648	94.53098556	91.58592098	88.74669374	86.00892455	83.36844182	80.82127044
200415A00020	4/15/2020	0.86	4/15/2024	4/15/2020	101.49214	99.87191888	98.28519303	96.73099371	95.20838621	93.71647153	92.25438465	90.8212929	89.41639444
220601A00024	6/1/2022	3.09	6/2/2025	6/1/2022	108.92632	106.0887454	103.3400616	100.6768969	98.09603694	95.59441272	93.16909243	90.81727433	88.53627985
220727A00049	7/27/2022	3.31	7/25/2025	7/27/2022	110.05906	107.0575555	104.154308	101.3455732	98.62776965	95.99747174	93.4514017	90.98642263	88.5995315
200316A00019	3/16/2020	1.11	3/16/2023	3/16/2020	100.79008	100.2425615	99.70098184	99.16524318	98.63525128	98.11091393	97.5921409	97.07884386	96.57093637
200310A00033	3/10/2020	0.91	3/10/2025	3/10/2020	102.91646	100.3821176	97.92276471	95.5357398	93.21849714	90.968597	88.78370051	86.66156481	84.60003842
200417A00008	4/17/2020	0.96	4/17/2025	4/17/2020	102.82551	100.1971176	97.64864463	95.17716281	92.77987532	90.45410657	88.19729601	86.00699226	83.88084769
200415A00037	4/15/2020	0.97	4/15/2025	4/15/2020	102.84569	100.2225162	97.67897402	95.21215027	92.81926308	90.49765088	88.24476629	86.05817031	83.93552693
200521A00016	5/21/2020	2.18	5/21/2037	5/21/2020	126.84094	111.3854059	98.01890272	86.4456494	76.4132228	67.70600458	60.13964835	53.55640255	47.82115281
220314A00009	3/14/2022	2.38	7/28/2025	3/14/2022	107.34031	104.3708497	101.499172	98.72153603	96.03436394	93.43423403	90.91787289	88.48214816	86.12406165
220812A00014	8/12/2022	3.54	8/12/2024	8/12/2022	107.15759	105.1601911	103.210405	101.3067991	99.4479981	97.63267661	95.85955756	94.12740984	92.43504641
200311A00031	3/11/2020	1.41	12/24/2027	3/11/2020	108.92956	103.5086303	98.38814944	93.54997324	88.97713978	84.65378979	80.56508947	76.69715905	73.03700678
201015A00003	10/15/2020	0.75	10/15/2025	10/15/2020	102.75695	99.64352216	96.6395416	93.74053523	90.94224053	88.24059508	85.63172574	83.11193859	80.67770939
210324A00002	3/24/2021	2.06	3/24/2031	3/24/2021	118.7632	109.7426856	101.4801204	93.90774033	86.96416821	80.59378366	74.74615586	69.37553508	64.44039634
220526A00011	5/26/2022	3.29	5/24/2029	5/26/2022	123.61359	116.2999632	109.4775817	103.1106796	97.1662857	91.61398959	86.42572964	81.57559903	77.03966907
200324A00031	3/24/2020	1.64	3/22/2024	3/24/2020	102.64975	101.0852381	99.5522287	98.04984561	96.57724013	95.13359458	93.71812085	92.33005906	90.96867628
220426A00004	4/26/2022	3.41	4/26/2032	4/26/2022	134.03272	123.1994534	113.3608399	104.4193795	96.28763799	88.88715791	82.14749311	76.0053518	70.40383538
220825A00006	8/25/2022	3.56	8/25/2027	8/25/2022	119.32923	113.9809618	108.909286	104.0984062	99.53350985	95.20070223	91.08694509	87.17999932	83.46837191
201223A00013	12/23/2020	0.9	12/11/2026	12/23/2020	104.93739	100.6413944	96.54302475	92.63215768	88.89924139	85.3352637	81.93171842	78.68057396	75.57424405
220224A00018	2/24/2022	2.15	3/16/2026	2/24/2022	108.32488	104.6993395	101.2149941	97.86557366	94.64512631	91.54799644	88.56880838	85.70245081	82.94406222

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220420A00037	6/15/2022	3.3	6/15/2027	6/15/2022	117.30915	112.2120242	107.369692	102.7680348	98.39379505	94.23451679	90.27849265	86.51471477	82.93282918
210304A00006	3/4/2021	1.02	3/4/2026	3/4/2021	104.20681	100.686888	97.30384556	94.05163549	90.92451269	87.91701617	85.02395337	82.24038537	79.56161307
220114A00010	1/14/2022	1.86	1/13/2027	1/14/2022	109.28694	104.8091806	100.5400002	96.46863524	92.58493293	88.8793118	85.34272697	81.9666374	78.74297525
200402A00044	4/2/2020	1.65	4/2/2030	4/2/2020	113.64488	105.8054177	98.56060679	91.86228718	85.66643221	79.93277541	74.62447129	69.70778842	65.15183146
200415A00027	4/15/2020	0.86	4/15/2024	4/15/2020	101.49214	99.87191888	98.28519303	96.73099371	95.20838621	93.71647153	92.25438465	90.8212929	89.41639444
200528A00021	5/28/2020	0.63	5/26/2023	5/28/2020	100.66001	99.91681442	99.18452675	98.46291313	97.75174166	97.05078711	96.3598307	95.67865985	95.00706796
210917A00003	9/17/2021	0.8	9/17/2024	9/17/2021	101.8353	99.79475343	97.80503361	95.86454474	93.97175175	92.12517875	90.32340625	88.56506857	86.84885138
200406A00053	4/6/2020	1.13	4/7/2025	4/6/2020	103.24238	100.6358966	98.10799026	95.65580987	93.27662999	90.96784197	88.72694804	86.55155579	84.43937295
200302A00056	3/2/2020	1.2	3/2/2023	3/2/2020	100.79074	100.2819859	99.77834436	99.27974226	98.78610432	98.29735674	97.8134272	97.33424477	96.85973995
200330A00037	3/30/2020	1.09	3/28/2025	3/30/2020	103.10177	100.524386	98.02410392	95.59815575	93.24388972	90.95876643	88.74035328	86.58631914	84.49442945
201015A00024	10/19/2020	1.53	10/18/2027	10/19/2020	109.28202	104.035171	99.07016874	94.37040703	89.9203484	85.70544749	81.71208228	77.92749045	74.33971048
210208A00006	2/9/2021	0.46	8/15/2023	2/9/2021	100.57538	99.61055627	98.6641095	97.7355169	96.82427736	95.92990836	95.0519451	94.18993976	93.34346064
220217A00011	2/17/2022	2.08	2/14/2025	2/17/2022	105.42574	102.9347207	100.5153637	98.16520355	95.88187151	93.66309443	91.50669031	89.41056405	87.37270342
220527A00014	5/27/2022	2.99	5/27/2026	5/27/2022	112.06417	108.169854	104.4332467	100.8470339	97.40429127	94.09845727	90.92331187	87.87295629	84.94179425
210305A00006	3/8/2021	1.02	8/11/2025	3/8/2021	103.36942	100.4215707	97.5724762	94.81829854	92.15537365	89.58019962	87.08942853	84.67985878	82.34842783
210624A00025	6/24/2021	1.43	6/24/2027	6/24/2021	108.23529	103.3303926	98.67480567	94.25461486	90.0567487	86.06892679	82.27960795	78.67794195	75.25372473
220510A00015	5/13/2022	3.13	11/3/2025	5/13/2022	110.49764	107.2089045	104.036139	100.9745591	98.01960923	95.16695052	92.4124491	89.75216488	87.18234106
211214A00014	12/14/2021	1.31	12/13/2024	12/14/2021	103.25295	100.9610907	98.73110477	96.56091603	94.44853487	92.3920529	90.38963896	88.43953529	86.54005404
200325A00032	3/25/2020	1.29	9/26/2022	3/25/2020	100.1884	100.1161906	100.0440872	99.97209368	99.90020992	99.82843564	99.75677061	99.6852146	99.61376736
210224A00002	2/25/2021	0.88	11/3/2025	2/25/2021	103.23549	100.06377	97.00493667	94.05431006	91.20743667	88.46007549	85.80818637	83.24791905	80.7756029
220603A00024	6/3/2022	2.94	6/3/2024	6/3/2022	105.3634	103.5756413	101.8269024	100.1159895	98.44175608	96.80310235	95.19897244	93.62835233	92.09026772
200309A00007	3/9/2020	1.11	3/9/2027	3/9/2020	106.21467	101.6491733	97.30427945	93.16819994	89.2298418	85.47875892	81.90511091	78.49962471	75.25355893
200327A00042	3/27/2020	0.83	3/27/2024	3/27/2020	101.57277	100.0005557	98.46022367	96.95087803	95.47165254	94.02171296	92.60025555	91.20650566	89.83971639
201118A00021	11/20/2020	0.97	11/20/2023	11/20/2020	101.24129	100.0080131	98.8045475	97.62982204	96.48281777	95.36256335	94.26813235	93.19864065	92.1532441
220315A00018	3/15/2022	2.43	3/15/2027	3/15/2022	112.33617	107.6155116	103.1217026	98.84263729	94.76692361	90.88383422	87.18326412	83.65569122	80.29213951
200330A00006	3/30/2020	0.9	3/28/2025	3/30/2020	102.94621	100.3634516	97.85812012	95.42742832	93.06870879	90.77940731	88.55707729	86.3993744	84.30405157
211028A00019	10/28/2021	1.1	10/28/2024	10/28/2021	102.60473	100.4456245	98.3422604	96.29280758	94.29550795	92.34867525	90.45069137	88.60000304	86.79511863
220425A00027	4/29/2022	3.15	8/20/2026	4/29/2022	113.55351	109.3920182	105.4081898	101.593492	97.93984849	94.43961214	91.08553921	87.87076613	84.78878744
200427A00017	4/27/2020	1.02	4/25/2025	4/27/2020	103.01293	100.3600463	97.78832255	95.29476745	92.87652136	90.53084977	88.25513673	86.04687881	83.90367936
220304A00004	3/4/2022	2.12	12/29/2028	3/4/2022	114.80322	108.1910345	102.0038842	96.21228425	90.7889353	85.70855309	80.94771013	76.48469065	72.29935751
210616A00008	5/2/2022	0.95	5/2/2025	5/2/2022	102.84633	100.1766738	97.58917044	95.08076998	92.64856045	90.28975819	88.00170114	85.78184259	83.62774525
200310A00015	3/10/2020	1.37	3/11/2030	3/10/2020	111.39971	103.7026618	96.58737254	90.00694829	83.91850207	78.28279	73.06388462	68.22887907	63.74761908
201117A00016	11/17/2020	0.52	11/18/2024	11/17/2020	101.6653	99.45355942	97.30028375	95.2034974	93.16131058	91.1719131	89.23357025	87.34461891	85.50346395

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210104A00007	11/23/2021	0.88	11/23/2026	11/23/2021	104.77893	100.5348881	96.48416577	92.61690479	88.9238098	85.39611119	82.02553201	78.80425716	75.72490475
220419A00016	4/19/2022	3.21	4/19/2027	4/19/2022	116.34874	111.4353493	106.760952	102.3126056	98.07814403	94.04612346	90.20577534	86.54696261	83.06013907
200305A00030	3/5/2020	1.58	3/5/2030	3/5/2020	112.98954	105.2495929	98.09226772	91.47074215	85.34217928	79.66737213	74.41041886	69.53842868	65.02125526
200414A00014	4/14/2020	0.76	4/12/2024	4/14/2020	101.51396	99.89842992	98.31623832	96.76642396	95.2480594	93.76025245	92.30214455	90.87290914	89.47175014
201029A00002	10/29/2020	0.59	10/29/2025	10/29/2020	102.70398	99.54407477	96.49653635	93.55672014	90.72019987	87.98275996	85.34038402	82.78924394	80.32568981
210629A00012	6/29/2021	1.14	12/29/2025	6/29/2021	104.32149	100.9804837	97.76308489	94.66409027	91.67854744	88.801737	86.02916037	83.35652827	80.77974985
220412A00017	4/12/2022	3.09	3/19/2027	4/12/2022	115.42344	110.6214435	106.0497022	101.6959378	97.54858915	93.59677	89.83022628	86.23929581	82.81487093
220418A00015	4/22/2022	3.03	7/28/2025	4/22/2022	109.26069	106.2627911	103.3633836	100.5586985	97.84513578	95.21925226	92.67775409	90.21748924	87.83544063
220425A00026	4/25/2022	3.13	2/25/2026	4/25/2022	111.65617	108.0243728	104.5317656	101.1722592	97.9400643	94.82967556	91.83585622	88.95362325	86.17823372
210224A00004	2/26/2021	0.91	12/18/2025	2/26/2021	103.50306	100.2050776	97.02829113	93.96759443	91.01812364	88.17524718	85.43455314	82.79183748	80.24309293
220311A00008	3/11/2022	2.07	3/11/2024	3/11/2022	103.2614	101.7213862	100.2120494	98.7325489	97.28207163	95.85983368	94.46507891	93.09707776	91.75512602
200305A00032	3/5/2020	1.58	3/5/2030	3/5/2020	112.98954	105.2495929	98.09226772	91.47074215	85.34217928	79.66737213	74.41041886	69.53842868	65.02125526
200403A00018	4/3/2020	0.91	4/3/2024	4/3/2020	101.53242	99.94488316	98.38972721	96.86602865	95.37289998	93.9094868	92.47496633	91.06854583	89.68946132
200225A00034	10/5/2020	1.5	10/5/2023	10/5/2020	101.7503	100.6394282	99.55268084	98.48927564	97.44846716	96.42954144	95.4318143	94.45462981	93.49735886
200317A00027	3/17/2020	1.29	3/17/2025	3/17/2020	103.58283	101.028419	98.54976737	96.14418204	93.80908117	91.54199102	89.34054065	87.20245694	85.12555987
220412A00016	4/12/2022	3.09	3/19/2027	4/12/2022	115.42344	110.6214435	106.0497022	101.6959378	97.54858915	93.59677	89.83022628	86.23929581	82.81487093
200429A00054	4/29/2020	1.04	4/29/2025	4/29/2020	103.08061	100.4158193	97.83280912	95.32855192	92.90015673	90.54485955	88.26001672	86.04309877	83.89168457
211213A00010	12/13/2021	1.02	12/13/2023	12/13/2021	101.36091	100.0704191	98.80787207	97.57236706	96.36303712	95.17905251	94.01961863	92.88397423	91.7713896
220421A00016	4/21/2022	3.31	4/21/2026	4/21/2022	112.89134	109.0822308	105.4238253	101.9093053	98.53219876	95.28636408	92.16597089	89.16548237	86.27963854
200406A00060	4/6/2020	1.03	4/5/2024	4/6/2020	101.734	100.1392669	98.57712716	97.04665214	95.54694567	94.07714521	92.63642018	91.22397053	89.83902529
210907A00015	9/9/2021	2.21	9/9/2026	9/9/2021	109.91394	105.7696814	101.8053249	98.01210404	94.38172924	90.90635727	87.57856477	84.39132347	81.33797693
211209A00007	12/9/2021	1.61	12/8/2026	12/9/2021	108.01196	103.6580397	99.50323218	95.5373617	91.75082781	88.13457265	84.68004691	81.37917823	78.22434172
220112A00008	1/12/2022	1.47	11/20/2024	1/12/2022	103.52288	101.2902255	99.11647661	96.99964433	94.93782517	92.9291959	90.9720093	89.06459032	87.20533236
220706A00032	7/6/2022	3.15	7/6/2027	7/6/2022	117.52897	112.3427917	107.4192637	102.743721	98.30238914	94.08232778	90.07137542	86.25809894	82.63174634
220711A00021	7/11/2022	3.27	7/11/2025	7/11/2022	110.20143	107.227236	104.3494092	101.5643131	98.8684703	96.25855255	93.73137403	91.28388425	88.91316158
220812A00002	8/12/2022	3.17	8/12/2027	8/12/2022	117.99212	112.6896649	107.6607682	102.8898642	98.36235328	94.06453698	89.98355726	86.10734087	82.42454746
210330A00021	3/30/2021	2.16	3/28/2031	3/30/2021	119.6597	110.5906285	102.2834978	94.67016134	87.6888978	81.28377824	75.40409532	70.00385117	65.04129796
220420A00061	6/15/2022	3.3	6/15/2027	6/15/2022	117.30915	112.2120242	107.369692	102.7680348	98.39379505	94.23451679	90.27849265	86.51471477	82.93282918
220308A00011	3/8/2022	2.07	1/10/2025	3/8/2022	105.18248	102.7925439	100.4688211	98.2091213	96.01133534	93.87343586	91.79347343	89.76957318	87.79993143
220314A00006	3/14/2022	2.36	3/14/2025	3/14/2022	106.32728	103.7452157	101.239316	98.80688112	96.44532525	94.15217047	91.92504151	89.76166071	87.65984336
200310A00038	3/10/2020	1.41	3/11/2030	3/10/2020	111.70712	103.9986789	96.87259829	90.28195297	84.18382009	78.53892238	73.31130135	68.46802132	63.97890114
200413A00003	4/13/2020	0.64	4/13/2023	4/13/2020	100.64334	100.0181754	99.40074765	98.79091637	98.18854199	97.5934883	97.00562237	96.42481451	95.85093811
210706A00006	7/6/2021	1.15	7/6/2026	7/6/2021	105.26796	101.3921193	97.67876518	94.1202836	90.70945374	87.43942763	84.30370898	81.2961333	78.4108493

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
211014A00018	10/14/2021	0.8	10/11/2024	10/14/2021	102.18155	100.0669	98.00613484	95.99751093	94.03935582	92.13006392	90.26809324	88.45196232	86.6802473
220614A00011	6/14/2022	3.71	6/14/2024	6/14/2022	106.86318	105.0305818	103.2384904	101.4857079	99.77107987	98.09349592	96.45188753	94.84522603	93.27252071
220711A00009	7/11/2022	3.36	7/11/2023	7/11/2022	103.09835	102.2171877	101.3510928	100.4996811	99.66258132	98.83943427	98.0298929	97.23362153	96.4502955
201028A00013	10/28/2020	0.68	10/28/2024	10/28/2020	101.68318	99.53435545	97.44106117	95.4014735	93.41384032	91.47648108	89.58778317	87.74619862	85.95024089
200318A00037	3/18/2020	1.35	3/18/2024	3/18/2020	102.17387	100.6239341	99.10510679	97.61651877	96.15733706	94.7267589	93.32401037	91.94834507	90.59904289
220209A00013	2/9/2022	1.98	7/29/2025	2/9/2022	106.16446	103.2097206	100.3525097	97.58908598	94.91587599	92.32946242	89.82657623	87.40408942	85.05900812
220317A00010	3/17/2022	2.04	9/15/2023	3/17/2022	102.25809	101.1991182	100.1619998	99.14606822	98.15067916	97.17521426	96.21907976	95.28170527	94.36254269
220317A00023	5/3/2022	2.52	5/2/2025	5/3/2022	107.10423	104.3764892	101.732256	99.16843878	96.68208435	94.27036941	91.93059387	89.66017446	87.45663872
200304A00019	3/4/2020	1.04	3/6/2023	3/4/2020	100.72139	100.2017663	99.68748613	99.17847006	98.67463756	98.17590973	97.68220927	97.19346042	96.70958895
200327A00035	3/27/2020	0.83	3/27/2024	3/27/2020	101.57277	100.0005557	98.46022367	96.95087803	95.47165254	94.02171296	92.60025555	91.20650566	89.83971639
200415A00023	4/15/2020	1.71	4/15/2030	4/15/2020	114.17046	106.2752724	98.98102731	92.23887226	86.00416839	80.23610398	74.89734781	69.95373557	65.37398603
220412A00010	4/12/2022	3.09	3/15/2027	4/12/2022	115.38409	110.5941721	106.0335076	101.689892	97.55183411	93.60851272	89.84973357	86.26588972	82.8479245
201021A00012	10/21/2020	1.85	10/19/2035	10/21/2020	121.37772	107.7612468	95.81990098	85.33788472	76.12823208	68.02883097	60.89900864	54.61660093	49.07543471
200304A00022	3/4/2020	0.86	3/6/2023	3/4/2020	100.67463	100.1545759	99.63988161	99.13046335	98.6262402	98.12713296	97.63306401	97.14395732	96.65973835
210729A00003	7/29/2021	1.11	7/29/2026	7/29/2021	105.21539	101.2793063	97.51072664	93.90168498	90.4446315	87.13241232	83.95824655	80.91570502	77.99869011
220325A00010	3/28/2022	2.78	3/21/2025	3/28/2022	107.4647	104.8488409	102.3104359	99.84672354	97.45506078	95.13291557	92.87786145	90.68757242	88.55981802
200220A00014	2/20/2020	2.09	12/21/2029	2/20/2020	116.48313	108.8226521	101.7213521	95.13549785	89.02498898	83.35303937	78.08588739	73.19253285	68.64449817
200302A00002	3/2/2020	1.12	3/3/2025	3/2/2020	103.43004	100.907784	98.45972766	96.08325832	93.77587219	91.53516899	89.3588469	87.24469786	85.19060314
200306A00055	3/6/2020	0.82	3/6/2025	3/6/2020	102.67384	100.1533085	97.70715952	95.33276402	93.02760495	90.78926958	88.61544451	86.50391089	84.45253992
200521A00013	5/21/2020	2.09	5/21/2035	5/21/2020	124.31474	110.9042088	99.09092202	88.67508745	79.48288802	71.36298458	64.18350646	57.82945827	52.20048352
210518A00023	5/18/2021	1.17	5/18/2026	5/18/2021	105.10499	101.3658923	97.77876158	94.33656307	91.03263102	87.86064779	84.81462331	81.88887585	79.07801409
220420A00034	6/15/2022	3.3	6/15/2027	6/15/2022	117.30915	112.2120242	107.369692	102.7680348	98.39379505	94.23451679	90.27849265	86.51471477	82.93282918
200415A00036	4/15/2020	0.91	10/15/2024	4/15/2020	102.15045	100.030957	97.96557615	95.95254777	93.99018792	92.07688027	90.21107271	88.39127429	86.61605224
200402A00041	4/2/2020	1.03	4/2/2025	4/2/2020	102.96099	100.3719993	97.86076506	95.42448385	93.06047002	90.76615231	88.53906818	86.3768584	84.27726193
200327A00055	3/27/2020	1.01	3/27/2024	3/27/2020	101.66939	100.0996192	98.56163145	97.05453208	95.57745875	94.12958093	92.71009836	91.31823971	89.95326124
200306A00013	3/6/2020	1.01	3/6/2025	3/6/2020	102.82606	100.3107235	97.86945985	95.49965807	93.19881578	90.96453419	88.79451304	86.68654593	84.63851583
201223A00012	12/23/2020	0.91	12/18/2026	12/23/2020	104.96375	100.6498338	96.5351084	92.60935657	88.86294315	85.2867754	81.87226947	78.61131904	75.4962662
220106A00010	1/6/2022	2.64	1/6/2037	1/6/2022	133.27514	117.7234828	104.2100527	92.45386883	82.21412745	73.28427373	65.48697463	58.6698513	52.70185277
220714A00034	7/14/2022	3.62	1/16/2024	7/14/2022	105.08188	103.6814168	102.3064596	100.9563707	99.63053313	98.32834979	97.04924277	95.79265253	94.55803715
210201A00003	2/2/2021	0.74	10/15/2025	2/2/2021	102.7252	99.61227935	96.60878923	93.71026063	90.91243147	88.21123971	85.60281265	83.08345671	80.64964803
201117A00017	11/17/2020	0.39	11/17/2023	11/17/2020	100.65502	99.43166656	98.23775195	97.0722272	95.9340906	94.82238706	93.73620541	92.67467592	91.63696795
220823A00034	8/23/2022	3.61	8/23/2024	8/23/2022	107.4119	105.3819238	103.4010001	101.4676397	99.58040552	97.73791396	95.93883238	94.18187692	92.46581036
200429A00066	4/29/2020	0.8	4/28/2023	4/29/2020	100.72383	100.0576281	99.40019665	98.75135911	98.11094795	97.47880002	96.85475637	96.23866207	95.63036614

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210224A00003	2/26/2021	0.9	12/3/2025	2/26/2021	103.41523	100.1585594	97.02031067	93.99547607	91.07929366	88.2672334	85.55498412	82.93844132	80.41369578
210624A00026	6/24/2021	1.6	6/23/2028	6/24/2021	110.73097	104.7602044	99.14713731	93.86854599	88.90283233	84.22989812	79.83103355	75.68881459	71.78700835
210916A00008	9/16/2021	1.48	9/15/2028	9/16/2021	110.30841	104.1224687	98.32069416	92.877281	87.76828911	82.97149601	78.46626502	74.23342426	70.25515548
220707A00041	7/7/2022	3.41	7/7/2025	7/7/2022	110.17547	107.221596	104.3629123	101.5958479	98.91698497	96.32305163	93.81091515	91.3775752	89.02015745
200305A00006	3/5/2020	0.99	3/6/2023	3/5/2020	100.69538	100.175827	99.66162479	99.15268609	98.64893039	98.15027879	97.65665401	97.1679803	96.68418342
201117A00005	11/17/2020	0.5	11/17/2022	11/17/2020	100.28958	100.0728957	99.85715411	99.6423531	99.42848645	99.21554801	99.00353171	98.79243153	98.5822415
220217A00016	2/17/2022	2.24	9/15/2026	2/17/2022	110.08557	105.9208916	101.937547	98.12667237	94.47988717	90.98926389	87.64730091	84.44689722	81.38132879
220425A00028	4/29/2022	3.16	4/23/2027	4/29/2022	116.15391	111.2334569	106.5528811	102.0991665	97.86007772	93.82410708	89.98042761	86.3188486	82.82977465
200402A00030	4/2/2020	0.8	4/3/2023	4/2/2020	100.6629	100.0660197	99.47618318	98.89326816	98.31715342	97.74772059	97.18485402	96.62844074	96.07837033
201105A00016	11/9/2020	2.18	11/8/2027	11/9/2020	112.81424	107.4185688	102.3141117	97.4835913	92.91084905	88.58076727	84.47919612	80.59288622	76.90942634
201119A00021	11/23/2020	2.22	11/21/2030	11/23/2020	119.43783	110.7329408	102.7323527	95.37524301	88.60634504	82.37541577	76.63675452	71.34876997	66.47359061
200302A00016	3/2/2020	1.36	3/3/2025	3/2/2020	103.70771	101.1890284	98.74427307	96.37084929	94.06626686	91.82813828	89.65417384	87.54217688	85.49003946
200305A00014	3/10/2020	1	2/15/2023	3/10/2020	100.6516	100.1847248	99.72217767	99.26389508	98.80981816	98.35988915	97.91405135	97.47224909	97.0344277
210211A00007	2/11/2021	0.47	9/15/2023	2/11/2021	100.59822	99.54865968	98.52082092	97.51403656	96.52766551	95.56109243	94.61372651	93.68500023	92.77436822
210624A00002	6/24/2021	0.57	6/23/2023	6/24/2021	100.64224	99.82219469	99.01542554	98.22161705	97.44045905	96.67165124	95.91490273	95.16993172	94.43646509
220214A00010	2/14/2022	2.46	12/21/2029	2/14/2022	119.24381	111.483827	104.2882059	97.61288951	91.41747867	85.66490911	80.3211602	75.3549905	70.73769753
220325A00015	3/28/2022	2.86	3/23/2027	3/28/2022	114.39547	109.6057584	105.0464601	100.705255	96.57054635	92.63141612	88.87758178	85.29935579	81.88760785
220823A00015	8/23/2022	3.78	8/30/2032	8/23/2022	138.79421	127.3657149	117.0143264	107.6315686	99.12046177	91.39424609	84.37525556	77.99392122	72.18788809
200318A00047	3/18/2020	1.29	3/18/2025	3/18/2020	103.92596	101.3570795	98.86456066	96.4456782	94.09782382	91.81849881	89.60530861	87.45595773	85.36824497
200421A00024	4/24/2020	0.8	10/16/2023	4/24/2020	100.98397	99.84768903	98.7367838	97.65041082	96.58776513	95.54807666	94.53060832	93.53465429	92.55953833
200327A00027	3/27/2020	0.9	3/27/2023	3/27/2020	100.70402	100.126352	99.55528659	98.99070896	98.43250911	97.8805795	97.33481498	96.79511277	96.26137233
200417A00013	4/17/2020	0.74	4/17/2023	4/17/2020	100.65878	100.0232187	99.39564911	98.7759256	98.16390164	97.55943436	96.96238443	96.37261591	95.78999618
210104A00006	11/22/2021	0.88	11/20/2026	11/22/2021	104.7663	100.5307822	96.48786816	92.62775567	88.94119864	85.41947297	82.05434372	78.83803462	75.76319966
210112A00003	1/12/2021	0.53	9/15/2023	1/12/2021	100.66166	99.61173453	98.58354113	97.5764072	96.58969151	95.62277861	94.67507759	93.7460208	92.83506278
211028A00012	10/28/2021	1.64	10/15/2027	10/28/2021	109.84273	104.5896537	99.61816518	94.91170024	90.45476059	86.23283596	82.23233565	78.44052532	74.84546839
220124A00009	1/24/2022	0.86	1/24/2023	1/24/2022	100.54179	100.136077	99.73363084	99.33441561	98.93839252	98.54552339	98.15577061	97.76909719	97.38546673
220428A00016	5/2/2022	3.09	10/15/2024	5/2/2022	106.85485	104.683687	102.56768	100.5050446	98.49406745	96.53310388	94.6205746	92.75496241	90.9348093
220628A00034	6/28/2022	3.61	6/28/2027	6/28/2022	118.96632	113.7914696	108.8764853	104.206948	99.76931376	95.55085365	91.53960128	87.72430306	84.09437227
200402A00038	4/2/2020	0.84	4/2/2025	4/2/2020	102.80435	100.2099465	97.6936328	95.25258109	92.8840898	90.58557266	88.35455297	86.18865807	84.08561428
200415A00031	4/15/2020	0.97	4/15/2025	4/15/2020	102.84569	100.2225162	97.67897402	95.21215027	92.81926308	90.49765088	88.24476629	86.05817031	83.93552693
220315A00021	3/15/2022	2.15	3/15/2024	3/15/2022	103.41144	101.8594686	100.3385269	98.84775945	97.38633899	95.953468	94.54837744	93.17032549	91.81859635
200326A00011	3/30/2020	1.54	3/31/2025	3/30/2020	104.29182	101.69074	99.1675309	96.71938894	94.34363125	92.03768895	89.79910146	87.62551113	85.51465823
200421A00031	4/21/2020	0.84	4/19/2024	4/21/2020	101.45592	99.8252875	98.22851744	96.66462118	95.13264853	93.63168586	92.16085433	90.71930819	89.3062332

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210225A00007	2/25/2021	1.79	8/23/2030	2/25/2021	115.39728	107.1020305	99.46373709	92.42696206	85.94121102	79.96046964	74.44278518	69.34988926	64.64685729
210319A00003	3/19/2021	0.95	3/19/2025	3/19/2021	102.71001	100.1616647	97.68908863	95.28958363	92.96056207	90.69954498	88.50415665	86.37211962	84.30124993
211117A00009	11/17/2021	0.84	11/17/2023	11/17/2021	101.0753	99.85128334	98.65667146	97.49041245	96.35150726	95.23900327	94.15199165	93.08960482	92.05101417
200527A00013	5/27/2020	1.13	11/25/2026	5/27/2020	105.86491	101.5922668	97.5141758	93.6207098	89.90251084	86.3507507	82.95709752	79.71368473	76.6130821
201119A00003	11/19/2020	0.56	11/17/2023	11/19/2020	100.73024	99.50848203	98.31608668	97.15200768	96.015247	94.90485299	93.81991774	92.75957455	91.72299569
210914A00015	9/14/2021	0.81	9/15/2025	9/14/2021	103.25206	100.2020893	97.25733016	94.41357083	91.66679242	89.01316011	86.44901351	83.97085759	81.57535419
220629A00003	6/29/2022	3.59	6/29/2027	6/29/2022	118.87918	113.7035107	108.7879127	104.1179498	99.68006373	95.4615122	91.45031596	87.63520929	84.00559399
220502A00025	5/2/2022	3.21	5/2/2025	5/2/2022	108.97554	106.222268	103.5531025	100.9649302	98.45477956	96.01981001	93.65730469	91.36466426	89.13940082
210623A00026	6/23/2021	0.78	6/24/2024	6/23/2021	101.57466	99.76396489	97.9939715	96.26350864	94.57144553	92.91669179	91.29819567	89.71494242	88.16595268
200304A00035	3/4/2020	1.17	3/4/2025	3/4/2020	103.22765	100.7124617	98.27120156	95.90126456	93.60015804	91.36549228	89.19497552	87.08640926	85.03768388
220201A00011	2/1/2022	1.86	4/20/2026	2/1/2022	107.51998	103.8123216	100.252288	96.83317714	93.54863248	90.39262243	87.35942152	84.44359288	81.63997191
220217A00018	2/17/2022	2.28	2/17/2027	2/17/2022	111.43612	106.8104315	102.4041824	98.20582089	94.20446517	90.389859	86.75233267	83.28276634	79.97255593
220412A00018	4/12/2022	3.09	3/15/2027	4/12/2022	115.38409	110.5941721	106.0335076	101.689892	97.55183411	93.60851272	89.84973357	86.26588972	82.8479245
200429A00004	5/1/2020	0.74	5/1/2023	5/1/2020	100.69036	100.0160058	99.35063223	98.69406185	98.04612107	97.40664082	96.77545645	96.15240752	95.53733773
220224A00010	2/24/2022	2.04	3/10/2025	2/24/2022	105.47952	102.9192385	100.4343304	98.02213589	95.68010332	93.40578704	91.19684226	89.0510202	86.9661635
210208A00002	2/10/2021	0.45	6/15/2023	2/10/2021	100.54481	99.74707312	98.96191868	98.18905253	97.42818804	96.67904743	95.94136145	95.21486904	94.499317
220419A00015	4/19/2022	3.14	4/17/2026	4/19/2022	112.2202	108.4348438	104.7990159	101.305958	97.94926203	94.72284586	91.62093496	88.6380447	85.76896404
200114A00021	1/11/2021	1.93	1/11/2024	1/11/2021	102.69062	101.321072	99.97626356	98.65558133	97.35843261	96.08424367	94.83245897	93.60254038	92.39396661
200402A00014	4/2/2020	0.84	4/2/2025	4/2/2020	102.80435	100.2099465	97.6936328	95.25258109	92.8840898	90.58557266	88.35455297	86.18865807	84.08561428
200413A00012	4/13/2020	0.64	4/13/2023	4/13/2020	100.64334	100.0181754	99.40074765	98.79091637	98.18854199	97.5934883	97.00562237	96.42481451	95.85093812
200916A00017	9/16/2020	0.54	9/15/2023	9/16/2020	100.67223	99.62224701	98.5939945	97.58680231	96.60002917	95.63305964	94.68530277	93.7561909	92.84517854
220314A00005	3/14/2022	2.36	3/14/2025	3/14/2022	106.32728	103.7452157	101.239316	98.80688112	96.44532525	94.15217047	91.92504151	89.76166071	87.65984336
200417A00006	4/17/2020	0.74	4/17/2023	4/17/2020	100.65878	100.0232187	99.39564911	98.7759256	98.16390164	97.55943436	96.96238443	96.37261591	95.78999618
211015A00029	10/15/2021	0.98	10/15/2024	10/15/2021	102.3015	100.1803565	98.11335012	96.09872886	94.1348079	92.21997002	90.35266222	88.53139272	86.75472792
220131A00011	1/31/2022	1.52	1/31/2024	1/31/2022	102.20806	100.7886716	99.39583591	98.0288747	96.68713087	95.36996907	94.07677474	92.80695337	91.5599296
200218A00026	2/21/2020	1.73	3/25/2024	2/21/2020	102.80809	101.234241	99.69217635	98.18100203	96.69985824	95.24791676	93.82437949	92.42847708	91.05946759
200330A00064	3/30/2020	0.83	3/30/2023	3/30/2020	100.67084	100.0849947	99.50593008	98.93353227	98.36768682	97.80828186	97.25520807	96.70835856	96.16762888
210225A00013	3/1/2021	0.93	10/6/2025	3/1/2021	103.29652	100.1984463	97.20853631	94.32240275	91.53586067	88.84492003	86.24577521	83.7347953	81.30851488
220308A00016	3/8/2022	2.37	3/8/2029	3/8/2022	116.83751	109.9638359	103.5433141	97.54367167	91.93509875	86.69004504	81.78303734	77.19051276	72.89066623
200316A00072	3/16/2020	1.18	3/16/2023	3/16/2020	100.82845	100.2808131	99.73911304	99.20325492	98.67314447	98.14868948	97.6297997	97.11638681	96.60836433
220317A00028	5/3/2022	2.59	5/3/2027	5/3/2022	113.54369	108.6555898	104.0078013	99.58719826	95.38144493	91.37894446	87.56879019	83.94072059	80.48507736
200228A00091	2/28/2020	1.72	12/7/2029	2/28/2020	113.66307	106.1418742	99.16923388	92.70229736	86.7017767	81.13163114	75.95878249	71.15285694	66.68595067
200916A00019	9/16/2020	0.42	9/16/2024	9/16/2020	101.31142	99.27398809	97.28738554	95.35001102	93.4603285	91.61686119	89.81818878	88.06294483	86.34981431

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210129A00002	2/3/2021	0.59	7/25/2024	2/3/2021	101.27804	99.38784069	97.54190188	95.73892275	93.97765248	92.25688477	90.57545596	88.93224324	87.32616293
200221A00023	2/21/2020	2.05	12/7/2029	2/21/2020	116.11234	108.5033202	101.4474022	94.90145865	88.82593998	83.18456193	77.94401953	73.0737276	68.54558527
200331A00022	4/1/2020	1.07	4/1/2025	4/1/2020	103.06259	100.4750034	97.96505959	95.52996099	93.16702845	90.87369682	88.64750924	86.48611179	84.38724845
200909A00001	9/9/2020	0.98	9/8/2028	9/9/2020	108.0959	101.962577	96.21135947	90.81655661	85.75432926	81.00254912	76.54066749	72.34959481	68.41158992
200922A00015	9/24/2020	1.09	9/24/2025	9/24/2020	103.7514	100.6786292	97.71221262	94.84787463	92.08153554	89.40930356	86.82746495	84.3324747	81.92094775
201019A00007	10/19/2020	0.64	10/21/2024	10/19/2020	101.58054	99.45140788	97.37695883	95.35540757	93.38504114	91.46421585	89.5913539	87.76494013	85.98351901
220526A00010	5/26/2022	3	5/26/2026	5/26/2022	112.09231	108.2002293	104.4656631	100.8813125	97.44026566	94.13597297	90.96222524	87.91313384	84.98311186
200317A00045	3/19/2020	1.43	3/19/2025	3/19/2020	103.95297	101.3883947	98.89995863	96.48494973	94.14076949	91.86492843	89.6550407	87.50881914	85.4240704
210729A00004	7/29/2021	1.74	7/29/2031	7/29/2021	116.51055	107.2395204	98.77832959	91.05200564	83.99287279	77.53980624	71.63756835	66.2362151	61.29056496
200302A00005	3/2/2020	1.31	3/3/2025	3/2/2020	103.58047	101.0634153	98.62025709	96.24839498	93.94533983	91.70870519	89.53620234	87.42563561	85.37489795
200327A00043	3/27/2020	1.48	3/27/2028	3/27/2020	110.51672	104.7652991	99.34683975	94.24036661	89.42633145	84.88651	80.60390551	76.56265968	72.74797068
200330A00028	3/30/2020	1.09	3/28/2025	3/30/2020	103.10177	100.524386	98.02410392	95.59815575	93.24388972	90.95876643	88.74035328	86.58631914	84.49442945
201123A00010	11/25/2020	1.48	11/24/2025	11/25/2020	105.28719	102.0242569	98.87891798	95.84622834	92.92148271	90.10020456	87.37813315	84.75121156	82.21557539
210311A00007	3/11/2021	1.06	3/11/2026	3/11/2021	104.38011	100.8384629	97.43506357	94.16378325	91.01879643	87.99456716	85.08583287	82.28758931	79.59507634
211221A00023	12/21/2021	1.53	6/19/2026	12/21/2021	106.65383	102.7978259	99.10141819	95.55716115	92.15800039	88.89724738	85.7685583	82.76591425	79.88360282
211222A00035	12/22/2021	2.15	12/22/2033	12/22/2021	123.82942	111.8198634	101.0981102	91.51863023	82.95304465	75.28802682	68.42346934	62.27088242	56.75199329
220106A00007	1/6/2022	2.42	1/6/2034	1/6/2022	126.99508	114.7717162	103.8579603	94.10570058	85.38430268	77.57846716	70.58636	64.31797929	58.69372703
220302A00010	3/2/2022	2.14	1/13/2027	3/2/2022	110.53204	106.0269917	101.7314449	97.63459541	93.72625343	89.99680249	86.43716436	83.03876625	79.79351015
200316A00067	3/18/2020	1.1	9/15/2022	3/18/2020	100.1016	100.0599516	100.0183493	99.97679791	99.93529727	99.89384732	99.85244796	99.81109911	99.76980067
220324A00015	3/24/2022	2.79	3/3/2026	3/24/2022	110.50834	106.8794727	103.3904633	100.0351662	96.80773684	93.7026186	90.7145273	87.83843612	85.06956163
220630A00044	6/30/2022	3.34	6/30/2025	6/30/2022	109.90482	106.9740748	104.1372239	101.3907698	98.73136056	96.15578642	93.66097329	91.24397613	88.90197284
220802A00009	8/2/2022	3	8/2/2027	8/2/2022	116.28319	111.0752034	106.1344222	101.4457414	96.99498227	92.76883535	88.75480237	84.94114288	81.31682452
200306A00031	3/6/2020	1.01	3/6/2025	3/6/2020	102.82606	100.3107235	97.86945985	95.49965807	93.19881578	90.96453419	88.79451304	86.68654593	84.63851583
200316A00041	3/16/2020	1.16	3/16/2023	3/16/2020	100.81749	100.2698841	99.72821841	99.19239442	98.66231784	98.13789646	97.61904005	97.10566026	96.59767062
200423A00027	4/28/2020	0.88	4/15/2024	4/28/2020	101.52513	99.90461903	98.31761667	96.76314576	95.24027147	93.74809467	92.2857502	90.85240528	89.44725795
200428A00003	4/29/2020	1.01	4/29/2025	4/29/2020	102.9995	100.335812	97.75387941	95.25067491	92.8233083	90.46901632	88.18515605	85.9691987	83.81872381
210609A00003	6/9/2021	0.47	6/9/2023	6/9/2021	100.55541	99.77412002	99.00489681	98.24746492	97.50155496	96.7669057	96.04326377	95.33038332	94.62802581
211123A00012	11/23/2021	2.27	11/23/2033	11/23/2021	125.122	113.119621	102.3940608	92.80196226	84.21677824	76.52672132	69.63297312	63.4481192	57.89477995
200309A00038	3/9/2020	1.26	3/11/2030	3/9/2020	110.55431	102.8886147	95.80300175	89.25068543	83.18887754	77.57842598	72.38348859	67.57123788	63.11159341
200326A00009	3/27/2020	1.54	3/27/2025	3/27/2020	104.27382	101.6836688	99.17083448	96.73254619	94.36614847	92.06909821	89.83895909	87.6733963	85.57017164
201021A00011	10/21/2020	1.11	10/21/2027	10/21/2020	107.09608	101.8971736	96.97876791	92.32428709	87.91822631	83.74607311	79.79423845	76.04999291	72.50140771
210908A00006	9/8/2021	0.36	9/8/2022	9/8/2021	100.03772	100.0155247	99.99335026	99.97119863	99.94906978	99.92696367	99.90488029	99.88281957	99.8607815
200228A00070	5/18/2020	1.35	5/18/2023	5/18/2020	101.16685	100.4436712	99.73079338	99.02800152	98.33508266	97.65182978	96.97804161	96.31352245	95.65808197

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210217A00009	2/18/2021	0.68	11/15/2024	2/18/2021	101.72666	99.52829175	97.38775332	95.30309885	93.27246804	91.29407851	89.36622173	87.48725933	85.6556195
210219A00004	2/19/2021	0.91	2/19/2026	2/19/2021	103.75564	100.2808108	96.93989569	93.72703603	90.63666197	87.66347617	84.802439	82.04875446	79.39785708
200306A00077	3/6/2020	1.06	3/6/2025	3/6/2020	102.95372	100.4367437	97.99387262	95.62249918	93.3201199	91.08433493	88.91284302	86.8034368	84.75399829
220106A00011	1/6/2022	2.7	1/6/2038	1/6/2022	135.24981	118.6058375	104.2712259	91.90908662	81.23343897	72.00128533	64.00595398	57.07150118	51.04799966
200224A00006	2/24/2020	1.58	11/15/2024	2/24/2020	103.7465	101.5251088	99.36202392	97.25528681	95.20302356	93.20343873	91.25481124	89.35549062	87.50389344
211207A00011	12/7/2021	1.62	12/1/2026	12/7/2021	108.01422	103.6792047	99.54166413	95.59151249	91.81923741	88.21586603	84.77293085	81.48243806	78.33683802
220217A00013	2/17/2022	2.08	2/14/2025	2/17/2022	105.42574	102.9347207	100.5153637	98.16520355	95.88187151	93.66309443	91.50669031	89.41056405	87.37270342
200305A00015	3/5/2020	0.99	3/6/2023	3/5/2020	100.69538	100.175827	99.66162479	99.15268609	98.64893039	98.15027879	97.65665401	97.1679803	96.68418342
200326A00016	3/26/2020	1.54	3/25/2025	3/26/2020	104.26482	101.6801313	99.1724867	96.73912804	94.37741353	92.08481292	89.85890199	87.69735733	85.59795144
200408A00011	4/8/2020	0.82	9/26/2022	4/8/2020	100.15442	100.0822369	100.0101626	99.93819819	99.86634348	99.79459822	99.72296216	99.65143508	99.58001672
200605A00005	6/5/2020	0.99	6/5/2025	6/5/2020	103.05994	100.2965881	97.62064457	95.02879051	92.51785969	90.08482819	87.72680684	85.44103413	83.22486949
210224A00006	2/26/2021	0.88	10/21/2025	2/26/2021	103.19006	100.0538338	97.02824404	94.10874845	91.29102153	88.57094181	85.94458089	83.40819295	80.95820511
200325A00016	3/30/2020	1.67	3/31/2025	3/30/2020	104.6328	102.0272131	99.49960164	97.04715705	94.66719333	92.35713864	90.11452957	87.93700572	85.82230473
201116A00024	11/18/2020	2.36	11/15/2034	11/18/2020	127.2891	114.1982353	102.6042075	92.32670273	83.20803225	75.11018766	67.91229367	61.50840172	55.80557763
201123A00009	11/25/2020	1.02	11/25/2024	11/25/2020	102.52368	100.288742	98.11312219	95.99480872	93.9318737	91.92247101	89.96483209	88.05726183	86.19813492
210104A00009	12/20/2021	0.89	12/18/2026	12/20/2021	104.87627	100.5642443	96.45134298	92.52735504	88.7826478	85.20813088	81.79522268	78.53581905	75.4222641
211028A00013	10/28/2021	1.65	10/22/2027	10/28/2021	109.92872	104.6544767	99.66380065	94.93996583	90.4673208	86.23121516	82.21792995	78.4146134	74.80922137
220727A00010	7/27/2022	3.38	7/24/2024	7/27/2022	106.65222	104.7116057	102.8161468	100.9645219	99.15545723	97.38772457	95.66013899	93.97155717	92.32087565
200330A00008	3/30/2020	1.09	3/28/2025	3/30/2020	103.10177	100.524386	98.02410392	95.59815575	93.24388972	90.95876643	88.74035328	86.58631914	84.49442945
210616A00006	2/11/2022	0.86	2/11/2025	2/11/2022	102.36823	99.92457965	97.55124969	95.24581827	93.0059661	90.82946716	88.71418439	86.65806555	84.65913933
200529A00022	6/1/2020	0.98	6/1/2026	6/1/2020	104.44696	100.6828019	97.07309345	93.61062265	90.28855877	87.10043098	84.04010686	81.10177243	78.27991339
201030A00016	10/30/2020	1.14	10/8/2027	10/30/2020	107.20907	102.0420459	97.15214448	92.52308525	88.13963283	83.9875209	80.05338536	76.32470242	72.78973132
201203A00005	12/3/2020	0.78	12/3/2026	12/3/2020	104.95915	100.6671678	96.57218029	92.66408126	88.9333432	85.3709801	81.96851315	78.71793893	75.61169982
210616A00012	3/18/2022	0.9	3/18/2025	3/18/2022	102.57782	100.033849	97.56547751	95.17001217	92.84487327	90.58758925	88.39579141	86.2672089	84.19966399
210709A00006	7/13/2021	2.4	7/11/2031	7/13/2021	122.41141	112.9320718	104.2701179	96.35056375	89.1056679	82.47419675	76.40076966	70.83527277	65.7323342
211123A00010	11/23/2021	0.94	11/24/2023	11/23/2021	101.21145	99.96747263	98.75382236	97.56940368	96.41317159	95.28413034	94.18133055	93.1038666	92.05087406
200302A00013	3/2/2020	1.25	3/4/2024	3/2/2020	101.96112	100.4502736	98.9693473	97.5175299	96.09403706	94.69811211	93.32902484	91.98607035	90.66856795
200423A00006	4/23/2020	0.82	4/23/2025	4/23/2020	102.81927	100.1667535	97.59543004	95.10230771	92.6845256	90.33934789	88.06415733	85.85644924	83.71382573
210914A00018	9/14/2021	1.43	9/14/2029	9/14/2021	112.26469	104.97871	98.21186834	91.9245595	86.08038958	80.64590255	75.590329	70.8853575	66.5049266
220325A00012	3/28/2022	2.85	3/23/2026	3/28/2022	110.90984	107.2188123	103.6716232	100.2618751	96.98348991	93.83069305	90.797997	87.88018509	85.0722965
201030A00018	10/30/2020	1.15	10/22/2027	10/30/2020	107.30897	102.1019285	97.17586838	92.51417977	88.10132722	83.92276995	79.96489277	76.21494204	72.6609666
210330A00015	3/30/2021	0.47	3/30/2023	3/30/2021	100.45947	99.87432811	99.29596382	98.72426058	98.159104	97.60038232	97.04798626	96.50180905	95.96174627
200401A00001	4/1/2020	1.01	4/1/2025	4/1/2020	102.90505	100.3195454	97.8116377	95.37852906	93.01754177	90.72611205	88.50178436	86.34220605	84.24512231

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200527A00012	5/27/2020	1.2	5/27/2027	5/27/2020	106.98503	102.1874046	97.6305633	93.30113913	89.18658008	85.27509794	81.55561716	78.01772749	74.65164006
220311A00013	3/15/2022	2.35	3/15/2027	3/15/2022	111.96672	107.2544618	102.7687565	98.49751551	94.4293587	90.55357015	86.8600557	83.33930352	79.98234739
200304A00032	3/4/2020	1.6	12/15/2028	3/4/2020	111.39411	104.9265033	98.87434075	93.2088229	87.90329354	82.93306641	78.27526975	73.90870385	69.81371056
200330A00043	3/30/2020	0.86	3/30/2023	3/30/2020	100.68846	100.1025503	99.52342727	98.95097158	98.38506872	97.82560682	97.27247655	96.72557102	96.18478576
210907A00006	9/7/2021	2.1	9/7/2034	9/7/2021	123.90025	111.1924809	99.92425465	89.92404289	81.04159001	73.14517917	66.11926142	59.86239814	54.28547441
220126A00003	1/26/2022	1.9	12/18/2026	1/26/2022	109.29383	104.8865149	100.6814967	96.66843221	92.83756302	89.17967915	85.68608516	82.34856855	79.15937027
220217A00015	2/17/2022	2.28	2/16/2027	2/17/2022	111.42758	106.8051162	102.4018018	98.20610852	94.20717518	90.39476479	86.75922534	83.29145336	79.98285984
220721A00017	7/21/2022	3.51	1/22/2024	7/21/2022	104.98676	103.5707718	102.1808398	100.8163096	99.47654472	98.16092944	96.86886796	95.59978363	94.35311818
220628A00044	8/15/2022	3.6	8/13/2027	8/15/2022	119.40597	114.0899025	109.0470498	104.2619027	99.71991436	95.40743408	91.31164697	87.42051874	83.72274413
200413A00026	4/13/2020	0.82	4/13/2023	4/13/2020	100.69979	100.0751359	99.4582014	98.84884727	98.24693434	97.65232688	97.06489244	96.48450178	95.91102871
210127A00009	1/27/2021	1.3	7/27/2029	1/27/2021	110.12928	103.0923837	96.54818312	90.45976203	84.79314289	79.51704047	74.60263607	70.02337164	65.75476213
210420A00009	4/20/2021	1.08	12/5/2025	4/20/2021	104.01951	100.7475321	97.59460598	94.55570351	91.62604049	88.80106504	86.07644463	83.44805388	80.91196319
220325A00018	3/28/2022	2.85	9/10/2026	3/28/2022	112.54413	108.3437708	104.3252126	100.4796118	96.79860025	93.27426046	89.89909849	86.6660191	83.56830225
220609A00035	8/30/2022	3.11	9/29/2023	8/30/2022	103.49647	102.3917901	101.3106726	100.2523685	99.21616093	98.2013632	97.2073166	96.23338923	95.27897465
210208A00015	2/10/2021	0.46	8/25/2023	2/10/2021	100.58039	99.58820883	98.61545088	97.66154717	96.72595434	95.80814969	94.90763025	94.02391185	93.15652824
210929A00011	3/16/2022	1.03	3/14/2025	3/16/2022	102.90177	100.3641999	97.90178921	95.51187008	93.19188665	90.9393897	88.75203153	86.62756102	84.56381895
220701A00050	7/1/2022	3.26	7/1/2027	7/1/2022	117.27673	112.1340435	107.2505574	102.6118674	98.20443746	94.01554699	90.03323786	86.24626487	82.64404982
220823A00002	8/23/2022	3.38	8/23/2027	8/23/2022	119.16822	113.805136	108.7198945	103.8966042	99.3203693	94.97721793	90.85404024	86.93853076	83.21913486
200310A00041	3/10/2020	1.39	3/12/2029	3/10/2020	110.32921	103.6549329	97.42521947	91.6082297	86.17455555	81.09702726	76.35053215	71.91184888	67.75949598
200327A00022	3/27/2020	0.9	3/27/2023	3/27/2020	100.70402	100.126352	99.55528659	98.99070896	98.43250911	97.8805795	97.33481498	96.79511277	96.26137233
200331A00008	3/31/2020	0.64	3/31/2023	3/31/2020	100.61417	100.0250876	99.442865	98.86738403	98.29852827	97.736184	97.18024007	96.63058784	96.08712114
210928A00007	9/28/2021	0.88	9/27/2024	9/28/2021	102.03409	99.96398611	97.94587809	95.97811726	94.05911631	92.18734995	90.36135204	88.57971273	86.84107594
200826A00019	8/26/2020	0.98	8/26/2026	8/26/2020	104.81561	100.8126887	96.9833353	93.31913248	89.81211819	86.45475619	83.23991093	80.16082404	77.21109238
201015A00032	10/19/2020	2.33	10/19/2026	10/19/2020	110.73391	106.4614202	102.3782393	98.47494348	94.74263346	91.17290091	87.7577985	84.48981179	81.36183315
201215A00001	12/15/2020	0.76	12/15/2025	12/15/2020	102.9904	99.70893157	96.54788346	93.50217217	90.56696208	87.73764939	85.00984951	82.37938516	79.84227525
211206A00009	12/6/2021	1.43	12/5/2025	12/6/2021	105.18043	101.8892453	98.71763351	95.66054372	92.71317437	89.87095696	87.12954305	84.48479201	81.93275965
200310A00021	3/10/2020	1.1	3/10/2025	3/10/2020	103.06896	100.5398535	98.0854236	95.7030272	93.39013348	91.14431681	88.96325163	86.84470767	84.78654536
220715A00001	7/15/2022	3.44	7/15/2027	7/15/2022	118.30523	113.0982242	108.1552267	103.461466	99.00307071	94.76701084	90.74104284	86.91365811	83.27403527
200310A00062	3/10/2020	1.05	3/8/2024	3/10/2020	101.66832	100.1491502	98.66018546	97.20060106	95.7696002	94.36641443	92.9903024	91.64054863	90.3164624
200311A00050	3/2/2021	1.46	3/2/2026	3/2/2021	105.76458	102.222416	98.8175462	95.54391975	92.39578621	89.36767897	86.45439959	83.65100308	80.95278409
200331A00024	3/31/2020	0.64	3/31/2023	3/31/2020	100.61417	100.0250876	99.442865	98.86738403	98.29852827	97.736184	97.18024007	96.63058784	96.08712114
200824A00020	8/26/2020	1.57	8/26/2025	8/26/2020	105.08981	102.0759838	99.16420293	96.3504543	93.63090722	91.00190288	88.4599456	86.0016945	83.62395575
220121A00013	1/21/2022	1.78	11/3/2025	1/21/2022	106.14035	102.9218238	99.8174176	96.82240969	93.93230569	91.1428255	88.44989146	85.84961739	83.33829816

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220728A00070	7/28/2022	3.19	1/29/2024	7/28/2022	104.59611	103.164129	101.7588283	100.3795219	99.0255512	97.69627915	96.39108974	95.10938694	93.85059389
220816A00009	8/16/2022	3.33	8/16/2027	8/16/2022	118.07377	112.7821685	107.7634052	103.0019579	98.48326659	94.19367007	90.12034539	86.25125236	82.57508168
211026A00012	10/26/2021	1.52	10/26/2026	10/26/2021	107.367	103.1455705	99.11273979	95.25906389	91.57562582	88.05400343	84.68623886	81.46481015	78.38260474
200331A00016	3/31/2020	1.11	3/31/2026	3/31/2020	105.13091	101.509743	98.03172089	94.69041292	91.4797108	88.39381462	85.42721525	82.57467804	79.83122744
200826A00028	8/28/2020	1.08	8/28/2024	8/28/2020	102.34276	100.3515657	98.40904171	96.51369176	94.66407947	92.85882214	91.09658841	89.37609599	87.69610942
200327A00040	3/27/2020	0.72	3/27/2023	3/27/2020	100.65184	100.073702	99.50217824	98.93715651	98.37852632	97.82617972	97.28001121	96.73991759	96.20579799
200417A00019	4/17/2020	0.77	4/17/2025	4/17/2020	102.66621	100.0322981	97.47863869	95.00228969	92.60043766	90.27039131	88.00957528	85.81552422	83.68587728
201218A00014	12/18/2020	0.57	12/18/2025	12/18/2020	102.80022	99.50299678	96.32730372	93.26800705	90.32021922	87.47928655	84.74077651	82.10046584	79.55432935
220317A00027	5/3/2022	2.59	5/3/2027	5/3/2022	113.54369	108.6555898	104.0078013	99.58719826	95.38144493	91.37894446	87.56879019	83.94072059	80.48507736
200218A00025	2/21/2020	1.71	2/24/2023	2/21/2020	101.02307	100.5302416	100.0422052	99.55889505	99.08024281	98.60618139	98.136645	97.67156912	97.21089044
200312A00009	3/12/2020	1.46	3/12/2027	3/12/2020	107.84086	103.2304561	98.84263089	94.6654954	90.68785392	86.89916423	83.28949591	79.84949157	76.57033068
201221A00014	12/21/2020	0.76	12/19/2025	12/21/2020	103.00332	99.71103289	96.53990656	93.48482794	90.54093408	87.70359394	84.9683959	82.33113596	79.78780676
210225A00003	3/1/2021	0.93	9/24/2025	3/1/2021	103.25283	100.1878244	97.22897667	94.3720145	91.61286473	88.9476418	86.37263793	83.88431382	81.4792899
210302A00005	3/5/2021	0.92	9/10/2025	3/5/2021	103.16966	100.1443235	97.22280983	94.40098101	91.6748917	89.04077608	86.49503861	84.03424517	81.65511486
210826A00013	8/26/2021	1.97	2/28/2033	8/26/2021	120.94471	109.8873543	99.94368081	90.99530862	82.93701278	75.67519966	69.12656858	63.21693313	57.88018283
220804A00037	8/4/2022	3.35	8/4/2025	8/4/2022	110.27486	107.2427271	104.310686	101.4748881	98.7316549	96.07746962	93.50896864	91.02293419	88.61628705
200312A00037	3/12/2020	1.3	3/12/2025	3/12/2020	103.58951	101.0483385	98.5822611	96.18861716	93.86485805	91.60854134	89.41732555	87.28896534	85.22130686
200730A00013	7/30/2020	0.74	1/30/2025	7/30/2020	102.03276	99.62822961	97.2919657	95.02165882	92.81508755	90.67011838	88.58470179	86.55686835	84.58472509
201028A00011	10/28/2020	0.91	4/28/2026	10/28/2020	104.04259	100.3767625	96.85830535	93.48047673	90.23688652	87.12147358	84.1284866	81.25246625	78.48822851
220203A00009	2/3/2022	1.99	2/2/2027	2/3/2022	110.04909	105.4982857	101.1617505	97.02830479	93.08740799	89.32912009	85.74406418	82.32339169	79.05874997
220420A00032	4/20/2022	3.26	10/16/2026	4/20/2022	114.61399	110.2692696	106.1157839	102.1440501	98.34511394	94.71051343	91.23224907	87.90275564	84.71487609
220516A00034	5/16/2022	2.72	11/16/2023	5/16/2022	103.3853	102.1489572	100.9421312	99.76377852	98.61289986	97.48854229	96.38979648	95.31579426	94.26570634
200306A00028	3/6/2020	1.01	3/6/2025	3/6/2020	102.82606	100.3107235	97.86945985	95.49965807	93.19881578	90.96453419	88.79451304	86.68654593	84.63851583
200916A00016	9/16/2020	0.6	9/16/2024	9/16/2020	101.41683	99.3834594	97.40071694	95.46701297	93.58081994	91.74066908	89.9451477	88.19289656	86.48260748
200504A00007	5/4/2020	1.47	5/4/2028	5/4/2020	109.77808	103.9712229	98.50540166	93.35882252	88.5112014	83.94364869	79.63856588	75.57955038	71.75130791
220408A00013	4/8/2022	3.15	1/14/2027	4/8/2022	115.0333	110.4268241	106.0334234	101.84214	97.84263288	94.02514253	90.38045497	86.89986866	83.57516341
200316A00048	3/16/2020	1.11	3/16/2023	3/16/2020	100.79008	100.2425615	99.70098184	99.16524318	98.63525127	98.11091393	97.5921409	97.07884386	96.57093637
200430A00030	4/30/2020	0.96	4/30/2025	4/30/2020	102.86754	100.2029114	97.62014032	95.11619763	92.6881867	90.33333826	88.0490038	85.83264928	83.68184934
210730A00009	7/30/2021	0.74	7/31/2024	7/30/2021	101.58346	99.6743512	97.81027332	95.98989946	94.21194733	92.47518069	90.77840737	89.12047737	87.50028111
220502A00030	5/4/2022	3.24	6/20/2025	5/4/2022	109.52037	106.6234472	103.8186054	101.1023926	98.47150777	95.92279315	93.45322713	91.05991745	88.74009481
220726A00032	7/26/2022	3.36	7/26/2023	7/26/2022	103.22881	102.3053823	101.3984782	100.507654	99.6324844	98.77255925	97.92748249	97.0968717	96.28035753
210826A00008	8/26/2021	0.89	2/26/2025	8/26/2021	102.49639	100.007084	97.59062517	95.24446799	92.96616879	90.75338414	88.60386604	86.51545739	84.48608772
220209A00011	2/9/2022	2.14	1/11/2027	2/9/2022	110.51767	106.01839	101.7281047	97.63604967	93.73207059	90.00658378	86.45054136	83.05539862	79.81308352

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220314A00008	3/14/2022	2.38	7/28/2025	3/14/2022	107.34031	104.3708497	101.499172	98.72153603	96.03436394	93.43423403	90.91787289	88.48214816	86.12406165
200421A00029	4/24/2020	0.72	12/15/2022	4/24/2020	100.41151	100.1168841	99.8239912	99.53282054	99.24335692	98.95558528	98.66949074	98.38505858	98.10227429
210624A00003	6/24/2021	0.78	6/24/2024	6/24/2021	101.57466	99.76396489	97.9939715	96.26350864	94.57144553	92.91669179	91.29819567	89.71494242	88.16595268
210916A00003	9/16/2021	0.75	9/16/2024	9/16/2021	101.72842	99.69174912	97.70577036	95.76889395	93.87959049	92.03638947	90.23787651	88.48269075	86.76952244
220301A00014	3/1/2022	1.85	1/10/2025	3/1/2022	104.65445	102.2709236	99.9534761	97.69991723	95.50814198	93.37612682	91.30192604	89.28366832	87.31955343
200319A00025	3/19/2020	1.39	3/21/2024	3/19/2020	102.2498	100.6912395	99.1640435	97.66733683	96.20027589	94.7620478	93.35186902	91.96898401	90.612664
210225A00016	3/1/2021	0.88	7/15/2025	3/1/2021	102.87163	100.0026946	97.2277057	94.54309898	91.9454662	89.43154617	86.99821754	84.64249204	82.36150803
211220A00006	12/20/2021	1.21	12/20/2024	12/20/2021	103.04534	100.7372635	98.49193589	96.30727562	94.18128021	92.11202695	90.09766906	88.13643215	86.22661085
200521A00015	5/21/2020	2.14	5/21/2036	5/21/2020	125.63392	111.1913013	98.58571981	87.57214017	77.93942464	69.50548957	62.1131756	55.62672272	49.92875925
220331A00004	3/31/2022	2.66	5/20/2024	3/31/2022	104.74876	103.0047417	101.2981845	99.62794437	97.99292633	96.39207964	94.82439569	93.28890582	91.78467929
200310A00051	3/10/2020	1.41	3/8/2030	3/10/2020	111.6965	103.9964239	96.87755541	90.29309931	84.20025161	78.55984064	73.33600174	68.49588257	64.00937609
200327A00031	3/27/2020	1.18	3/27/2025	3/27/2020	103.33358	100.7558045	98.25506299	95.82859431	93.47375147	91.18799947	88.96890978	86.81415508	84.72150435
200417A00002	4/17/2020	0.96	4/17/2025	4/17/2020	102.82551	100.1971176	97.64864463	95.17716281	92.77987532	90.45410657	88.19729601	86.00699226	83.88084769
200511A00006	5/11/2020	1.65	5/13/2030	5/11/2020	113.82551	105.8669105	98.51975636	91.7338989	85.46355324	79.666895	74.30569815	69.34500782	64.7528444
220617A00027	6/17/2022	3.45	6/17/2024	6/17/2022	106.42298	104.5860429	102.7898801	101.0332907	99.31512181	97.63426393	95.98964847	94.38024607	92.80506477
220701A00049	7/1/2022	3.19	7/1/2025	7/1/2022	109.48265	106.5552566	103.721783	100.9787239	98.32272288	95.75056633	93.25917644	90.84560479	88.50702614
200413A00011	4/13/2020	0.94	4/12/2024	4/13/2020	101.61328	100.0002764	98.42051154	96.87302053	95.35688016	93.87120222	92.41513193	90.98784625	89.58855251
200415A00026	4/15/2020	0.77	4/14/2023	4/15/2020	100.67084	100.0435228	99.42399472	98.81211263	98.20773557	97.61072604	97.02094989	96.43827622	95.86257726
220315A00014	3/15/2022	2.78	3/15/2032	3/15/2022	127.54686	117.138767	107.6838411	99.08919394	91.27145614	84.15575584	77.67481268	71.76813234	66.38129025
200327A00061	3/31/2020	1.18	3/31/2025	3/31/2020	103.34757	100.7589684	98.24795039	95.81172342	93.4476132	91.15305903	88.92560823	86.76291072	84.66271406
200415A00038	4/15/2020	1.37	4/15/2027	4/15/2020	107.59905	102.9012377	98.43410057	94.18510842	90.14247588	86.29511817	82.63260536	79.14512006	75.82341797
200428A00002	4/28/2020	1.47	4/26/2030	4/28/2020	113.49929	105.5482823	98.20705741	91.42573293	85.15875587	79.3645015	74.00491544	69.04519013	64.45347219
201116A00009	11/16/2020	0.51	11/14/2022	11/16/2020	100.28515	100.0767937	99.86931456	99.66270655	99.45696419	99.252082	99.04805454	98.84487641	98.64254229
210526A00014	5/26/2021	1.01	12/19/2025	5/26/2021	103.84231	100.5359912	97.35121056	94.28284496	91.32601857	88.47608803	85.72862992	83.07942896	80.52446693
200310A00020	3/10/2020	1.1	3/10/2025	3/10/2020	103.06896	100.5398535	98.0854236	95.7030272	93.39013348	91.14431681	88.96325163	86.84470767	84.78654536
220329A00007	3/29/2022	2.94	3/29/2029	3/29/2022	120.78567	113.7256885	107.1321145	100.9715955	95.21333138	89.82886905	84.79191199	80.07814597	75.66507972
220729A00045	7/29/2022	3.03	7/29/2027	7/29/2022	116.39766	111.1980426	106.2646135	101.5823569	97.13717624	92.91583732	88.90591083	85.09571951	81.4742889
200325A00048	3/25/2020	1.34	12/27/2022	3/25/2020	100.64141	100.3130381	99.98680193	99.66268543	99.34066797	99.02072923	98.70284915	98.38700791	98.07318596
200527A00015	5/27/2020	0.99	11/26/2025	5/27/2020	103.68518	100.4430154	97.31811339	94.30552739	91.40055412	88.59871951	85.89576568	83.28763892	80.77047832
210714A00020	7/14/2021	0.9	3/14/2025	7/14/2021	102.56695	100.0337247	97.57556478	95.18980133	92.87388137	90.6253585	88.4418877	86.32122044	84.26120002
220121A00014	1/21/2022	1.78	11/3/2025	1/21/2022	106.14035	102.9218238	99.8174176	96.82240969	93.93230569	91.1428255	88.44989146	85.84961739	83.33829816
200327A00066	6/25/2020	0.93	6/26/2023	6/25/2020	100.94523	100.1155578	99.29944277	98.49655774	97.70658324	96.92921006	96.16413878	95.41107939	94.66975095
211123A00011	11/23/2021	1.69	11/23/2026	11/23/2021	108.26568	103.9475689	99.82521568	95.88865841	92.1285061	88.53589821	85.10247124	81.82032769	78.6820071

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200302A00003	3/2/2020	1.2	3/2/2023	3/2/2020	100.79074	100.2819859	99.77834436	99.27974226	98.78610432	98.29735674	97.8134272	97.33424477	96.85973995
210104A00012	12/20/2021	0.89	12/18/2026	12/20/2021	104.87627	100.5642443	96.45134298	92.52735504	88.7826478	85.20813088	81.79522268	78.53581905	75.4222641
210305A00005	3/9/2021	0.54	8/11/2023	3/9/2021	100.6597	99.70523704	98.76874858	97.84972811	96.94769079	96.06216959	95.19271446	94.33889158	93.50028259
220217A00020	2/17/2022	2.08	2/13/2025	2/17/2022	105.41886	102.9309044	100.5144419	98.16701573	95.88626549	93.66992583	91.51582211	89.42186619	87.38605245
220331A00003	3/31/2022	2.66	5/17/2024	3/31/2022	104.72437	102.9886848	101.2901453	99.62762806	98.00005139	96.40637696	94.84560793	93.31678673	91.81899313
201030A00017	10/30/2020	1.14	10/15/2027	10/30/2020	107.23282	102.0464602	97.13912072	92.49436066	88.09679613	83.93202509	79.98655926	76.24776122	72.70378619
200304A00012	3/4/2020	0.98	3/4/2025	3/4/2020	103.07645	100.5560699	98.1099202	95.73538471	93.42995606	91.19123064	89.01690359	86.90476401	84.85269056
200402A00036	4/2/2020	0.71	4/2/2024	4/2/2020	101.39884	99.81187644	98.25730326	96.73419345	95.24165953	93.77884714	92.34493353	90.93912599	89.56066057
210616A00009	2/11/2022	0.86	2/11/2025	2/11/2022	102.36823	99.92457965	97.55124969	95.24581827	93.0059661	90.82946716	88.71418439	86.65806555	84.65913933
210624A00004	6/24/2021	1.01	6/24/2025	6/24/2021	103.182	100.3647319	97.63801596	94.99845301	92.44279204	89.96792215	87.57086562	85.24877139	82.99890891
220301A00013	3/1/2022	2.01	2/16/2027	3/1/2022	110.20118	105.6061444	101.2293197	97.05921476	93.08500685	89.29649526	85.68406251	82.23863795	78.95166384
220325A00017	3/28/2022	2.86	3/23/2027	3/28/2022	114.39547	109.6057584	105.0464601	100.705255	96.57054635	92.63141612	88.87758178	85.29935579	81.88760785
220613A00030	6/13/2022	3.08	6/13/2023	6/13/2022	102.62824	101.8269714	101.0382112	100.2616686	99.49706117	98.74411491	98.00256432	97.27215186	96.55262771
200302A00060	3/2/2021	1.44	3/3/2025	3/2/2021	103.91131	101.3900093	98.94269862	96.56677619	94.25975011	92.01923124	89.84292823	87.72864293	85.67426588
201015A00025	10/19/2020	1.54	10/18/2027	10/19/2020	109.3343	104.0861151	99.11982581	94.41882622	89.96757651	85.75152914	81.75706004	77.97140493	74.38260045
210330A00024	3/30/2021	0.68	3/29/2024	3/30/2021	101.1474	99.5766416	98.0377583	96.52984953	95.05204801	93.60351853	92.18345645	90.7910863	89.42566045
210917A00012	9/17/2021	1.2	9/11/2026	9/17/2021	105.78913	101.7228475	97.83425877	94.11467523	90.55587897	87.15009591	83.88996933	80.76853509	77.77919857
220422A00014	4/22/2022	3.36	9/29/2026	4/22/2022	114.84785	110.5459862	106.431682	102.495727	98.7294167	95.1245203	91.67325209	88.36824475	85.20252449
200330A00007	3/30/2020	0.93	4/1/2024	3/30/2020	101.55759	99.97535379	98.42531319	96.90655638	95.41820356	93.9594076	92.5293526	91.12725235	89.75234902
211214A00015	12/14/2021	1.49	12/12/2025	12/14/2021	105.41631	102.1024387	98.90952894	95.83248002	92.86643975	90.00678933	87.24913046	84.58927337	82.02322551
220324A00007	3/24/2022	2.72	3/24/2025	3/24/2022	107.33236	104.7100875	102.1656436	99.6962437	97.2992255	94.97203882	92.71224021	90.51748762	88.38553554
210121A00014	1/22/2021	0.64	10/25/2024	1/22/2021	101.58904	99.44921329	97.36454242	95.33321961	93.35350991	91.42374892	89.54233931	87.70774749	85.91850051
211206A00017	12/6/2021	1.56	12/4/2026	12/6/2021	107.77175	103.4337974	99.29384913	95.34178888	91.5680734	87.9636999	84.52017202	81.22946816	78.08401204
220808A00025	8/8/2022	3.25	8/6/2027	8/8/2022	117.57427	112.3232512	107.3417575	102.6145302	98.12725128	93.86648194	89.81960381	85.97476485	82.32082897
200316A00071	3/16/2020	1.18	3/16/2023	3/16/2020	100.82845	100.2808131	99.73911304	99.20325492	98.67314447	98.14868948	97.6297997	97.11638681	96.60836433
210907A00007	9/7/2021	2.35	9/4/2037	9/7/2021	129.59568	113.6782753	99.94208814	88.07365321	77.80613836	68.91220066	61.19796392	54.49794019	48.6707435
200414A00015	4/14/2020	0.64	4/14/2023	4/14/2020	100.64559	100.0176441	99.39750962	98.7850384	98.18008897	97.58252335	96.99220691	96.40900825	95.83279918
210122A00005	1/26/2021	0.6	7/15/2024	1/26/2021	101.29355	99.42932085	97.60817507	95.82886911	94.09020051	92.39100898	90.73017471	89.10661662	87.51929083
220124A00007	1/24/2022	1.88	1/22/2027	1/24/2022	109.48041	104.972638	100.6759089	96.57928042	92.67242945	88.94561702	85.38965245	81.9958597	78.75604594
220125A00008	1/25/2022	1.31	1/26/2024	1/25/2022	101.88712	100.4834533	99.10582835	97.75358124	96.42607281	95.12268483	93.84281916	92.58589697	91.35135796
220506A00016	5/6/2022	3.35	5/6/2027	5/6/2022	117.18995	112.2081329	107.4704496	102.9635721	98.67497987	94.59290228	90.7062695	87.00466647	83.47829042
200331A00014	3/31/2020	0.72	3/29/2024	3/31/2020	101.40267	99.82652799	98.28241898	96.76943387	95.28670005	93.83337726	92.40865604	91.01175632	89.64192611
200218A00030	2/21/2020	1.71	2/24/2023	2/21/2020	101.02307	100.5302416	100.0422052	99.55889505	99.08024281	98.60618139	98.136645	97.67156912	97.21089044

	Parallel-Shift Sensitivity Analysis												
8/31/2022					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	104.33844	101.8285564	99.39188356	97.02586177	94.7280402	92.4960684	90.32769149	88.22074561	86.17315367
200305A00045	3/5/2020	0.99	3/6/2023	3/5/2020	100.69538	100.175827	99.66162479	99.15268609	98.64893039	98.15027879	97.65665401	97.1679803	96.68418342
200310A00028	3/10/2020	1.1	3/10/2025	3/10/2020	103.06896	100.5398535	98.0854236	95.7030272	93.39013348	91.14431681	88.96325163	86.84470767	84.78654536
210218A00010	2/18/2021	1.72	2/18/2031	2/18/2021	115.63551	106.8402349	98.77987045	91.38919199	84.60907028	78.3858775	72.67095005	67.42010629	62.59321334
211015A00031	10/15/2021	1.22	10/15/2025	10/15/2021	104.24903	101.1119344	98.08490301	95.16344138	92.34326674	89.62029728	86.99064129	84.45058703	81.99659317
200304A00033	3/4/2020	1.17	3/4/2025	3/4/2020	103.22765	100.7124617	98.27120156	95.90126456	93.60015804	91.36549228	89.19497552	87.08640926	85.03768388
220126A00002	1/26/2022	1.9	12/18/2026	1/26/2022	109.29383	104.8865149	100.6814967	96.66843221	92.83756302	89.17967915	85.68608516	82.34856855	79.15937027
220331A00012	3/31/2022	2.81	3/17/2025	3/31/2022	107.5104	104.9048134	102.3761469	99.92166831	97.53876136	95.22491915	92.97773892	90.79491693	88.67424372
220511A00015	5/11/2022	3.29	5/11/2027	5/11/2022	116.95488	111.964476	107.2193106	102.7059603	98.41181632	94.32502742	90.43444981	86.72960069	83.2006152
200403A00017	4/3/2020	0.81	4/3/2023	4/3/2020	100.66888	100.0719821	99.48212544	98.89919042	98.32305584	97.75360334	97.19071727	96.63428465	96.08419505
210226A00004	3/1/2021	1.04	12/5/2025	3/1/2021	103.88684	100.6170506	97.46625998	94.42943606	91.50179662	88.67879168	85.95609052	83.32956952	80.79530074
200316A00049	3/16/2020	1.25	3/14/2025	3/16/2020	103.4684	100.9234657	98.45386131	96.0569095	93.73004942	91.47082712	89.27689033	87.14598352	85.07594329
210121A00012	1/22/2021	0.64	10/15/2024	1/22/2021	101.56779	99.4547014	97.3955908	95.38870641	93.43236798	91.52496266	89.66494174	87.85081751	86.08116031
220222A00018	2/22/2022	2.5	12/19/2031	2/22/2022	124.3078	114.2950942	105.1819436	96.88243864	89.31929669	82.42295627	76.1307696	70.38628326	65.13859689
220224A00023	2/24/2022	2.15	3/16/2026	2/24/2022	108.32488	104.6993395	101.2149941	97.86557366	94.64512631	91.54799644	88.56880838	85.70245081	82.94406222
220225A00015	2/25/2022	2.26	2/25/2027	2/25/2022	111.41308	106.763658	102.3359194	98.11813872	94.09926976	90.26890482	86.6172345	83.13501014	79.81350879
220428A00019	4/28/2022	3.27	4/28/2027	4/28/2022	116.72693	111.7786491	107.072027	102.593927	98.33199798	94.27462577	90.41088455	86.73049219	83.22376864
220812A00001	8/12/2022	3.17	8/12/2027	8/12/2022	117.99212	112.6896649	107.6607682	102.8898642	98.36235328	94.06453698	89.98355726	86.10734087	82.42454746
200225A00029	2/25/2020	1.89	12/28/2029	2/25/2020	115.0239	107.3970885	100.329403	93.77700204	87.69968678	82.06058511	76.82586068	71.96444905	67.44781788
200407A00019	4/7/2020	1.06	4/8/2024	4/7/2020	101.79444	100.1909235	98.62029571	97.08160942	95.57395648	94.09646296	92.64828753	91.2286199	89.83667945
200629A00020	6/29/2020	1.4	6/28/2030	6/29/2020	112.02793	104.0130212	96.62455712	89.81046885	83.52325889	77.71957754	72.35984186	67.40789139	62.83067687
200108A00016	12/18/2020	1.98	12/18/2023	12/18/2020	102.62766	101.3173565	100.0339245	98.77654614	97.54443649	96.3368423	95.15304047	93.99233654	92.85406322
200312A00015	3/12/2020	1.23	3/10/2025	3/12/2020	103.40233	100.8689174	98.41027241	96.023755	93.70683144	91.45707333	89.27215246	87.149836	85.08798191
200916A00015	9/16/2020	0.72	9/16/2025	9/16/2020	102.57319	99.54063929	96.6126548	93.78505329	91.05384302	88.41521489	85.86553294	83.40132532	81.01927592
220617A00026	6/17/2022	3.36	12/18/2023	6/17/2022	104.44703	103.1240881	101.8282314	100.558639	99.31452011	98.09511576	96.89969745	95.7275655	94.5780476
220826A00015	8/26/2022	3.64	8/25/2023	8/26/2022	103.75675	102.74748	101.7578626	100.7873273	99.83532576	98.90133017	97.98483277	97.0853447	96.20239519
210721A00009	7/21/2021	1.7	7/21/2031	7/21/2021	116.11576	106.8831381	98.45562777	90.7588386	83.72560549	77.29525168	71.41293269	66.02904952	61.09872347
220106A00009	1/6/2022	2.57	1/4/2036	1/6/2022	131.21363	116.7708153	104.1071982	92.99207085	83.22580052	74.63550603	67.07135184	60.40337136	54.51874168
220630A00057	6/30/2022	3.34	6/30/2025	6/30/2022	109.90482	106.9740748	104.1372239	101.3907698	98.73136056	96.15578642	93.66097329	91.24397613	88.90197284
200316A00050	3/16/2020	1.54	3/16/2027	3/16/2020	108.23157	103.6014903	99.19525003	95.00086794	91.00706823	87.20323453	83.57936773	80.12604672	76.83439192
200324A00012	3/25/2020	1.78	3/25/2025	3/25/2020	104.89031	102.2974047	99.78173118	97.34052472	94.97113792	92.67103516	90.43778707	88.26906526	86.16263749
200417A00014	4/17/2020	0.96	4/17/2025	4/17/2020	102.82551	100.1971176	97.64864463	95.17716281	92.77987532	90.45410657	88.19729601	86.00699226	83.88084769
200504A00006	5/4/2020	0.94	5/5/2025	5/4/2020	102.8279	100.1505306	97.55575382	95.04049684	92.60182434	90.23693082	87.94313376	85.71786723	83.55867593

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210907A00014	9/9/2021	2.45	9/9/2026	9/9/2021	110.89657	106.7324201	102.7487987	98.93691655	95.2884601	91.79556333	88.45078121	85.24706476	82.1777378
220527A00011	5/27/2022	2.75	5/24/2024	5/27/2022	104.93945	103.1828964	101.4642452	99.78233152	98.13604203	96.52430862	94.94610625	93.40045073	91.88639663
210826A00009	8/26/2021	1.18	8/26/2026	8/26/2021	105.62662	101.6074352	97.76232426	94.08285385	90.56104267	87.18933612	83.96058113	80.86800261	77.9051815
200225A00035	10/5/2020	1.5	10/5/2023	10/5/2020	101.7503	100.6394282	99.55268084	98.48927564	97.44846716	96.42954144	95.4318143	94.45462981	93.49735886
200324A00066	3/26/2020	1.81	3/26/2025	3/26/2020	104.97375	102.3770654	99.85777479	97.4131044	95.04039932	92.73711679	90.50082075	88.32917647	86.21994573
200330A00017	3/30/2020	0.86	3/30/2023	3/30/2020	100.68846	100.1025503	99.52342727	98.95097158	98.38506872	97.82560682	97.27247655	96.72557102	96.18478576
200826A00029	8/28/2020	1.16	11/27/2024	8/28/2020	102.84935	100.6051507	98.4206122	96.29370598	94.22248931	92.20510211	90.23976257	88.32476314	86.45846669
210104A00010	11/22/2021	0.88	11/20/2026	11/22/2021	104.7663	100.5307822	96.48786816	92.62775567	88.94119864	85.41947297	82.05434372	78.83803462	75.76319966
211026A00013	10/26/2021	1.52	10/26/2026	10/26/2021	107.367	103.1455705	99.11273979	95.25906389	91.57562582	88.05400343	84.68623886	81.46481015	78.38260474
200318A00038	3/18/2020	1.48	3/18/2025	3/18/2020	104.07811	101.5145737	99.02707773	96.61291713	94.26949896	91.99433899	89.78505632	87.63936838	85.55508618
211129A00011	11/29/2021	1.53	11/20/2026	11/29/2021	107.55884	103.2641084	99.1639292	95.24841495	91.50824339	87.93461793	84.51923463	81.25425152	78.13225996
220106A00013	1/6/2022	2.75	1/6/2039	1/6/2022	136.77013	119.0776263	103.974716	91.06303851	80.00763996	70.52658946	62.3823412	55.37454013	49.33402448
220323A00017	6/2/2022	2.78	6/2/2025	6/2/2022	108.05881	105.2334385	102.4966582	99.84511564	97.27560549	94.78506729	92.37057755	90.02934245	87.75869106
200226A00004	2/26/2020	1.58	2/26/2025	2/26/2020	104.24279	101.7311763	99.29290652	96.92542114	94.62626182	92.39307099	90.22358707	88.11563988	86.06714636
200304A00018	3/4/2020	0.98	3/4/2025	3/4/2020	103.07645	100.5560699	98.1099202	95.73538471	93.42995606	91.19123064	89.01690359	86.90476401	84.85269056
200327A00041	3/27/2020	0.9	3/27/2023	3/27/2020	100.70402	100.126352	99.55528659	98.99070896	98.43250911	97.8805795	97.33481498	96.79511277	96.26137233
200928A00009	9/28/2020	1.51	9/28/2032	9/28/2020	115.69108	105.3103752	95.94419705	87.48807768	79.8487986	72.94312847	66.69670788	61.04306358	55.92273666
220315A00015	3/15/2022	3.18	3/13/2037	3/15/2022	141.42073	125.1261058	110.9707559	98.65798648	87.93386319	78.58084755	70.41240756	63.26845005	57.01144607
220819A00034	8/19/2022	3.73	8/19/2032	8/19/2022	138.19051	126.8235363	116.5256613	107.1894696	98.71890139	91.02799466	84.03977542	77.68527505	71.90265948
200320A00049	3/25/2020	1.47	3/25/2025	3/25/2020	104.08239	101.5000933	98.99479039	96.56372067	94.20424392	91.91383144	89.69006051	87.53060918	85.43325134
200424A00014	4/28/2020	1.01	4/23/2025	4/28/2020	102.97926	100.3323229	97.7662396	95.27803364	92.86486105	90.52400199	88.2528543	86.04892752	83.90983719
200826A00021	8/26/2020	0.83	8/26/2025	8/26/2020	102.84373	99.86403252	96.98551729	94.20420187	91.51628318	88.91812889	86.40626869	83.97738607	81.62831059
201019A00005	10/19/2020	0.79	10/20/2025	10/19/2020	102.89969	99.77073995	96.75214026	93.83935987	91.02808676	88.31421223	85.69381983	83.16317509	80.71871575
210304A00002	3/5/2021	0.93	7/10/2025	3/5/2021	103.00259	100.1449731	97.38050472	94.70567056	92.11710564	89.61158949	87.18603907	84.83750216	82.56315112
210610A00012	6/11/2021	1.9	6/10/2026	6/11/2021	108.01991	104.1629543	100.4644198	96.91692575	93.5134792	90.24745217	87.11256045	84.10284357	81.21264608
211210A00016	12/10/2021	1.76	12/10/2027	12/10/2021	110.75797	105.3266294	100.1936463	95.34107757	90.7521508	86.41118539	82.30351531	78.41541793	74.73404831
220314A00007	3/14/2022	2.44	3/12/2027	3/14/2022	112.35831	107.6454238	103.1586789	98.88602917	94.81613303	90.93830964	87.24249684	83.71921204	80.35951568
200316A00009	3/16/2020	1.25	3/14/2025	3/16/2020	103.4684	100.9234657	98.45386131	96.0569095	93.73004942	91.47082712	89.27689033	87.14598352	85.07594329
210218A00009	2/19/2021	0.62	7/15/2024	2/19/2021	101.3316	99.46699339	97.64548353	95.86582036	94.12680122	92.42726566	90.76609366	89.14220398	87.55455258
210225A00015	3/1/2021	0.7	8/26/2024	3/1/2021	101.56863	99.59074585	97.66111593	95.77826693	93.94077774	92.14728025	90.39645701	88.68703898	87.01780337
220715A00047	7/15/2022	3.44	7/15/2027	7/15/2022	118.30523	113.0982242	108.1552267	103.461466	99.00307071	94.76701084	90.74104284	86.91365811	83.27403527
200402A00048	4/2/2020	0.71	4/2/2024	4/2/2020	101.39884	99.81187644	98.25730326	96.73419345	95.24165953	93.77884714	92.34493353	90.93912599	89.56066057
201216A00013	12/16/2020	0.59	12/16/2025	12/16/2020	102.86119	99.56826997	96.39654058	93.3408795	90.39641197	87.55849703	84.82271485	82.18485471	79.6409038

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220427A00011	4/29/2022	3.15	4/29/2027	4/29/2022	116.16802	111.2298758	106.5331928	102.0648304	97.81243792	93.76440179	89.90979749	86.23834455	82.74036493
220519A00010	5/19/2022	3.15	11/19/2026	5/19/2022	114.50811	110.0689243	105.8288776	101.7779088	97.90652265	94.20575769	90.6671525	87.28271474	84.04489211
220714A00035	7/14/2022	3.62	7/15/2024	7/14/2022	107.03815	105.1178744	103.2417524	101.4085076	99.61690836	97.86576651	96.15393524	94.48030754	92.84381453
200327A00056	3/27/2020	1.18	3/27/2025	3/27/2020	103.33358	100.7558045	98.25506299	95.82859431	93.47375147	91.18799947	88.96890978	86.81415508	84.72150435
200330A00036	3/30/2020	0.86	3/30/2023	3/30/2020	100.68846	100.1025503	99.52342727	98.95097158	98.38506872	97.82560682	97.27247655	96.72557102	96.18478576
210526A00017	5/26/2021	2.13	5/26/2033	5/26/2021	122.95909	111.5628482	101.3341013	92.14654987	83.88818449	76.45959923	69.77251435	63.74847891	58.31773076
210610A00014	6/11/2021	2.03	6/10/2026	6/11/2021	108.51904	104.6525825	100.944833	97.38839862	93.97627577	90.70182657	87.55875731	84.54109844	81.64318584
211210A00014	12/10/2021	1.54	12/10/2025	12/10/2021	105.57232	102.2612236	99.07079165	95.9959338	93.03180903	90.17380978	87.41754898	84.75884801	82.19372536
220411A00002	4/11/2022	3.18	4/9/2027	4/11/2022	116.05371	111.1776469	106.5376161	102.1208989	97.91553582	93.91027352	90.09451907	86.45829742	82.99221193
200306A00040	3/6/2020	1.01	3/6/2025	3/6/2020	102.82606	100.3107235	97.86945985	95.49965807	93.19881578	90.96453419	88.79451304	86.68654593	84.63851583
200325A00042	3/25/2020	1.58	3/25/2024	3/25/2020	102.56948	100.9976044	99.45747424	97.94820023	96.46892354	95.01881686	93.59708297	92.20295334	90.83568683
200305A00038	3/5/2020	1.51	3/5/2029	3/5/2020	111.10522	104.4246093	98.18741958	92.36198276	86.91904437	81.83157057	77.07456878	72.62492375	68.46124748
201015A00030	10/19/2020	2.39	10/18/2027	10/19/2020	113.77832	108.4163596	103.3406767	98.53445723	93.98196563	89.66846939	85.58016936	81.70413558	78.02824782
210119A00007	1/20/2021	0.51	8/25/2023	1/20/2021	100.63033	99.6378829	98.66485987	97.71069466	96.77484383	95.8567846	94.95601394	94.07204759	93.20441923
210629A00005	6/29/2021	1.25	6/29/2026	6/29/2021	105.62446	101.7604972	98.05770739	94.50856838	91.1059466	87.84307553	84.71353495	81.71123139	78.83037993
210803A00005	8/5/2021	2.06	8/4/2026	8/5/2021	109.03639	105.0087584	101.1523107	97.45889218	93.92077675	90.53064458	87.28155862	84.1669425	81.18055994
200429A00065	4/29/2020	0.74	10/28/2022	4/29/2020	100.27835	100.1172285	99.95662842	99.79654533	99.63697673	99.47792017	99.31937322	99.16133346	99.00379847
200518A00019	5/19/2020	0.9	5/19/2025	5/19/2020	102.75809	100.0445261	97.41563887	94.86823537	92.39927021	90.00583472	87.68514967	85.43455836	83.25152026
220204A00005	2/4/2022	1.83	1/10/2025	2/4/2022	104.60645	102.2235036	99.90662655	97.65362595	95.46239713	93.33091691	91.25723991	89.23949515	87.2758827
220622A00006	6/22/2022	3.58	6/22/2027	6/22/2022	118.75232	113.6001632	108.7060081	104.055552	99.63536293	95.4328192	91.43605601	87.63391614	84.01590413
200327A00051	3/27/2020	0.99	3/27/2025	3/27/2020	103.1786	100.5954421	98.08964772	95.65843173	93.29913146	91.00919711	88.78618618	86.62775818	84.53166961
200330A00011	3/30/2020	0.93	4/1/2024	3/30/2020	101.55759	99.97535379	98.42531319	96.90655638	95.41820356	93.9594076	92.5293526	91.12725235	89.75234902
210407A00012	4/7/2021	0.94	4/7/2025	4/7/2021	102.74032	100.140521	97.61914321	95.17334283	92.80039902	90.49770756	88.26277494	86.09321284	83.98673292
220404A00014	4/4/2022	2.94	4/5/2027	4/4/2022	114.89007	110.0523659	105.4487123	101.066517	96.89393481	92.9198184	89.13367355	85.52561716	82.08633823
220824A00011	8/24/2022	3.7	8/22/2025	8/24/2022	111.51139	108.4110465	105.4144837	102.5176512	99.71667927	97.00787107	94.38769348	91.85276906	89.39986824
200318A00044	3/18/2020	1.17	3/18/2024	3/18/2020	102.07931	100.5269679	99.00583151	97.51502991	96.05372641	94.62111471	93.21641748	91.83888513	90.48779452
200331A00011	3/31/2020	1.09	3/31/2025	3/31/2020	103.11151	100.5260255	98.01805526	95.58480704	93.22360868	90.93190155	88.70723492	86.54726062	84.44972802
200408A00013	4/13/2020	0.87	4/14/2023	4/13/2020	100.73373	100.1061879	99.48643788	98.87433577	98.2697406	97.67251486	97.08252438	96.4996382	95.92372856
200421A00028	4/21/2020	0.56	4/21/2023	4/21/2020	100.60941	99.9622293	99.32334169	98.69258679	98.06981004	97.4548608	96.8475922	96.24786102	95.65552758
201216A00003	12/16/2020	0.59	7/1/2024	12/16/2020	101.24276	99.41609272	97.63086263	95.8858931	94.18004882	92.51223351	90.88138831	89.28649027	87.72655087
210310A00015	3/11/2021	0.51	5/15/2023	3/11/2021	100.55482	99.84237053	99.13996922	98.44740369	97.76446846	97.09096371	96.42669514	95.77147374	95.12511566
210315A00003	3/15/2021	1.13	3/13/2026	3/15/2021	104.64022	101.0885979	97.67572764	94.39544864	91.2419086	88.20954641	85.29307598	82.48747098	79.7879506
210907A00008	9/7/2021	2.42	9/7/2038	9/7/2021	131.24679	114.281421	99.77228698	87.34659245	76.69004212	67.53740024	59.66461016	52.88221286	47.02984535

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200327A00048	3/27/2020	1.18	3/24/2025	3/27/2020	103.32309	100.7534297	98.26039885	95.84125325	93.49336623	91.21422199	89.00141004	86.85262008	84.7656371
200402A00035	4/2/2020	0.62	4/3/2023	4/2/2020	100.60893	100.0115632	99.42125374	98.83788072	98.26132251	97.69146032	97.12817808	96.57136241	96.0209025
200403A00025	4/3/2020	0.91	4/3/2024	4/3/2020	101.53242	99.94488316	98.38972721	96.86602865	95.37289998	93.9094868	92.47496633	91.06854583	89.68946132
210707A00008	7/9/2021	2.44	7/7/2031	7/9/2021	122.74967	113.2666034	104.5999627	96.67495111	89.42398855	82.78597924	76.70565985	71.13301614	66.02276051
220131A00003	1/31/2022	1.98	2/1/2027	1/31/2022	109.99632	105.4497052	101.1170396	96.98716781	93.04957131	89.29433013	85.71208596	82.29400748	79.03175797
210629A00014	6/29/2021	1.78	12/28/2029	6/29/2021	114.201	106.6039226	99.56441958	93.03874582	86.98679233	81.37177042	76.15992143	71.32025331	66.82430115
211028A00021	10/28/2021	2.28	10/28/2033	10/28/2021	125.14683	113.2145935	102.5444143	92.99538393	84.44302703	76.77730574	69.90087804	63.72757424	58.18106306
220512A00013	5/12/2022	3.18	5/12/2027	5/12/2022	116.439	111.4579082	106.7218747	102.2174816	97.9321189	93.85393494	89.97178602	86.27518993	82.75428284
201030A00012	10/30/2020	0.63	10/30/2025	10/30/2020	102.83587	99.6711804	96.61908549	93.67492675	90.83426634	88.09287783	85.44673463	82.8919991	80.42501234
211214A00012	12/14/2021	0.64	12/14/2022	12/14/2021	100.38304	100.0912684	99.801202	99.51282512	99.22612295	98.94108085	98.65768435	98.37591917	98.09577116
220315A00036	3/17/2022	2.63	3/16/2027	3/17/2022	113.26833	108.523719	104.0069362	99.70582465	95.60894506	91.70552551	87.98541917	84.43906455	81.05744858
220715A00027	7/15/2022	3.44	7/15/2027	7/15/2022	118.30523	113.0982242	108.1552267	103.461466	99.00307071	94.76701084	90.74104284	86.91365811	83.27403527
200306A00066	3/6/2020	1.2	3/8/2027	3/6/2020	106.62425	102.0521604	97.70075956	93.55826429	89.61358512	85.85627885	82.27650736	78.8649994	75.61301489
200527A00014	5/27/2020	1.06	5/27/2026	5/27/2020	104.72963	100.9735533	97.37105619	93.91498923	90.5985777	87.41540301	84.3593816	81.42474507	78.60602174
201119A00002	11/19/2020	0.5	11/18/2022	11/19/2020	100.29176	100.0722908	99.85379447	99.63626209	99.41968726	99.20406363	98.98938489	98.77564481	98.5628372
210719A00009	7/19/2021	1.04	7/17/2026	7/19/2021	104.88516	100.9874774	97.25446017	93.67833369	90.25172882	86.96765981	83.81950231	80.80097291	77.90610978
210914A00012	9/14/2021	1.18	9/14/2027	9/14/2021	108.06742	102.920122	98.04629181	93.43001518	89.05638348	84.91142728	80.98205219	77.25597951	73.7216912
200228A00047	5/18/2020	1.35	5/18/2023	5/18/2020	101.16685	100.4436712	99.73079338	99.02800152	98.33508266	97.65182978	96.97804161	96.31352245	95.65808197
210121A00017	1/25/2021	0.48	5/25/2023	1/25/2021	100.5468	99.80682668	99.07767839	98.35912289	97.65093083	96.95287939	96.26475212	95.5863387	94.91743469
220217A00017	2/17/2022	2.27	1/29/2027	2/17/2022	111.27796	106.7114284	102.3590358	98.20964425	94.25275207	90.47845378	86.87740345	83.44078022	80.16025612
201216A00001	12/16/2020	0.49	7/14/2023	12/16/2020	100.59286	99.71541523	98.85318035	98.00576086	97.17277764	96.35386443	95.54866726	94.75684394	93.97806361
220216A00003	2/16/2022	2.49	12/14/2029	2/16/2022	119.42284	111.6757536	104.4906358	97.82369895	91.63478289	85.88704027	80.54664705	75.58253967	70.96617627
200312A00014	3/12/2020	1.04	3/12/2025	3/12/2020	103.25734	100.7132391	98.24448938	95.84841837	93.52246403	91.26417121	89.0711865	86.94125325	84.87220696
220727A00027	7/27/2022	3.23	7/27/2027	7/27/2022	117.37856	112.1604757	107.208918	102.5088722	98.04624616	93.8078085	89.78113143	85.95453806	82.31705329
220811A00021	8/11/2022	3.47	8/11/2025	8/11/2022	110.70333	107.6455173	104.6892009	101.8304572	99.06553472	96.39084778	93.80296802	91.29861662	88.87465689
220825A00022	8/25/2022	3.68	8/25/2025	8/25/2022	111.48335	108.3751455	105.3712531	102.4675918	99.6602623	96.94553995	94.3198656	91.7798373	89.32220247
210218A00011	2/22/2021	0.85	10/24/2025	2/22/2021	103.10427	99.96145378	96.92974328	94.00456748	91.18157329	88.45661354	85.82573581	83.28517188	80.83132789
200114A00017	1/11/2021	1.93	1/11/2024	1/11/2021	102.69062	101.321072	99.97626356	98.65558133	97.35843261	96.08424367	94.83245897	93.60254038	92.39396661
210629A00009	6/29/2021	1.14	12/31/2025	6/29/2021	104.33006	100.9835827	97.76108334	94.65734897	91.66741296	88.78654185	86.01022309	83.33415364	80.75422912
220114A00009	1/14/2022	1.74	4/21/2026	1/14/2022	107.08301	103.3805782	99.82574367	96.41179543	93.13237284	89.98144058	86.95326993	84.0424212	81.24372738
220419A00012	4/19/2022	2.21	4/19/2023	4/19/2022	101.60825	100.9637119	100.3273395	99.69897809	99.07847696	98.46568918	97.86047149	97.26268413	96.67219078
200306A00087	3/8/2021	1.26	3/7/2025	3/8/2021	103.4681	100.9418321	98.48995178	96.1098391	93.79897961	91.55496301	89.37547816	87.25830826	85.20132639
200402A00013	4/2/2020	0.89	4/2/2024	4/2/2020	101.49665	99.91216198	98.35996041	96.83912234	95.3487643	93.88803574	92.45611747	91.05222022	89.67558323

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200225A00041	10/30/2020	1.48	10/30/2023	10/30/2020	101.80407	100.6245325	99.47215915	98.34601993	97.24522767	96.16893477	95.11633104	94.08664164	93.07912518
200826A00035	8/28/2020	0.78	8/28/2023	8/28/2020	100.90419	99.90206407	98.91969499	97.95650616	97.01194076	96.08546335	95.17655881	94.28473142	93.40950391
210217A00008	2/18/2021	0.63	8/15/2024	2/18/2021	101.40279	99.45573936	97.55553766	95.70077193	93.89008156	92.12215595	90.39573223	88.70959325	87.06256556
220421A00014	4/21/2022	3.24	5/30/2025	4/21/2022	109.31742	106.4827499	103.7366157	101.0756594	98.49667979	95.99662036	93.57256189	91.221715	88.94141326
200316A00042	3/16/2020	1.23	3/15/2024	3/16/2020	101.97356	100.4332683	98.92379875	97.44430232	95.99395711	94.57197091	93.17757979	91.81004686	90.46866104
200108A00015	12/18/2020	1.98	12/18/2023	12/18/2020	102.62766	101.3173565	100.0339245	98.77654614	97.54443649	96.3368423	95.15304047	93.99233654	92.85406322
200429A00061	4/29/2020	1.66	10/29/2029	4/29/2020	113.05015	105.6581405	98.79857014	92.43034787	86.51575483	81.0201544	75.91172499	71.16121736	66.74173405
211207A00017	12/7/2021	1.3	11/15/2024	12/7/2021	103.1181	100.9038768	98.7478064	96.64793944	94.60240629	92.60941555	90.66725006	88.77426311	86.92887488
220421A00012	4/21/2022	3.31	4/21/2026	4/21/2022	112.89134	109.0822308	105.4238253	101.9093053	98.53219876	95.28636408	92.16597089	89.16548237	86.27963854
200325A00046	3/25/2020	1.76	3/25/2025	3/25/2020	104.83819	102.2459653	99.73096081	97.29040833	94.92166088	92.62218331	90.38954664	88.22142294	86.11558032
200325A00009	3/27/2020	1.67	3/27/2025	3/27/2020	104.61335	102.0187309	99.50152974	97.05897326	94.68840294	92.38727275	90.15314356	87.98367786	85.87663483
210318A00007	3/22/2021	1.41	3/21/2024	3/22/2021	102.28139	100.7225722	99.19512165	97.69816494	96.23085833	94.7923888	93.38197271	91.9988544	90.64230501
210624A00005	6/24/2021	1.22	6/24/2026	6/24/2021	105.48173	101.6343521	97.94697045	94.41212181	91.02272646	87.77207042	84.65378458	81.66182511	78.79045511
220623A00005	6/23/2022	3.45	6/23/2027	6/23/2022	118.12653	112.9865028	108.1042061	103.4653448	99.05649318	94.86503518	90.87911145	87.08756992	83.47992002
200423A00022	4/28/2020	0.76	2/15/2023	4/28/2020	100.5394	100.0728396	99.61060119	99.15262523	98.69885288	98.24922641	97.80368916	97.36218545	96.92466067
201123A00011	11/25/2020	1.41	11/24/2025	11/25/2020	105.05716	101.7979934	98.65632515	95.62720891	92.70594281	89.88805352	87.16928342	84.54557854	82.01307732
200306A00080	11/6/2020	1.12	11/6/2023	11/6/2020	101.39455	100.1984695	99.03040721	97.88938452	96.77447177	95.68478149	94.61946602	93.57771528	92.55875474
200406A00059	4/6/2020	0.92	4/6/2023	4/6/2020	100.74301	100.1375549	99.53935128	98.94826735	98.36417656	97.78695538	97.21648317	96.6526421	96.09531709
220509A00013	7/15/2022	3.37	7/15/2027	7/15/2022	117.95796	112.7594069	107.8245516	103.1386357	98.68780097	94.45903033	90.44009223	86.61948951	82.98641164
220624A00003	6/24/2022	3.5	6/24/2027	6/24/2022	118.38236	113.233265	108.3424005	103.6954467	99.27895098	95.08027163	91.08752499	87.28953594	83.67579206
200327A00073	3/27/2020	0.99	3/27/2025	3/27/2020	103.1786	100.5954421	98.08964772	95.65843173	93.29913146	91.00919711	88.78618618	86.62775818	84.53166961
220624A00049	6/24/2022	3.29	6/24/2024	6/24/2022	106.42852	104.5677586	102.7487224	100.9702097	99.23106023	97.53015512	95.86641539	94.2388001	92.6463047
220705A00011	7/5/2022	3.14	7/7/2025	7/5/2022	109.39358	106.4510595	103.6034567	100.847205	98.17889534	95.59526413	93.09318668	90.6696703	88.32184807
220823A00006	8/23/2022	3.66	2/23/2024	8/23/2022	105.5451	104.0339027	102.5521538	101.0990626	99.67386932	98.27584077	96.90426882	95.55846951	94.23778197
200305A00016	3/5/2020	0.99	3/6/2023	3/5/2020	100.69538	100.175827	99.66162479	99.15268609	98.64893039	98.15027879	97.65665401	97.1679803	96.68418342
200417A00004	4/17/2020	0.86	4/17/2024	4/17/2020	101.48243	99.85706674	98.26538363	96.70639672	95.17916374	93.68277853	92.21636932	90.77909703	89.37015377
200305A00037	3/5/2020	1.43	3/6/2028	3/5/2020	109.32581	103.6928706	98.38296656	93.37594069	88.65299268	84.19658292	79.99034158	76.0189847	72.26823678
200407A00004	4/7/2020	0.99	4/7/2025	4/7/2020	103.21777	100.6040673	98.06930708	95.61062499	93.22527819	90.9106416	88.66420192	86.48355204	84.3663858
210127A00010	1/27/2021	1.41	7/26/2030	1/27/2021	112.20376	104.1081313	96.65077119	89.77817625	83.44157607	77.5964948	72.20235346	67.22211086	62.62193917
200429A00049	4/29/2020	1.25	4/29/2026	4/29/2020	105.31237	101.620339	98.07656693	94.67427375	91.40703204	88.26874538	85.25362906	82.35619213	79.57122055
210709A00005	7/9/2021	1.69	7/9/2031	7/9/2021	115.97908	106.7841974	98.38857878	90.71861631	83.7078251	77.29612191	71.42918007	66.05785216	61.13765321
211207A00012	12/7/2021	1.62	12/4/2026	12/7/2021	108.03188	103.6883632	99.54303548	95.5857721	91.80702254	88.19777713	84.74953292	81.45426207	78.30438235
220404A00013	4/4/2022	2.1	4/4/2023	4/4/2022	101.44672	100.8443928	100.249204	99.66102411	99.07972997	98.50520116	97.93732009	97.37597189	96.82104431

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200318A00013	3/18/2020	1.5	3/18/2025	3/18/2020	104.12985	101.5656332	99.07747774	96.66267247	94.31862399	92.0428476	89.832962	87.68668422	85.60182488
200331A00007	3/31/2020	0.72	3/29/2024	3/31/2020	101.40267	99.82652799	98.28241898	96.76943387	95.28670005	93.83337726	92.40865604	91.01175632	89.64192611
211227A00009	12/27/2021	1.6	12/23/2026	12/27/2021	108.01069	103.6175333	99.42693438	95.42852127	91.61250776	87.96965657	84.49124567	81.16903682	77.99524612
220615A00010	6/15/2022	3.86	6/15/2027	6/15/2022	120.04007	114.877554	109.9722037	105.3097992	100.8769817	96.66119932	92.65065354	88.83425015	85.20155317
220630A00036	6/30/2022	3.42	6/30/2027	6/30/2022	118.05407	112.8954171	107.9963827	103.342547	98.92036559	94.71710928	90.72081117	86.92021727	83.30474058
220829A00057	8/29/2022	3.67	8/31/2026	8/29/2022	115.78234	111.5454022	107.4901061	103.6076781	99.88981678	96.32866446	92.91678094	89.64711895	86.51300131
200304A00002	3/4/2020	0.98	3/4/2025	3/4/2020	103.07645	100.5560699	98.1099202	95.73538471	93.42995606	91.19123064	89.01690358	86.90476401	84.85269056
200327A00047	3/27/2020	0.99	3/27/2025	3/27/2020	103.1786	100.5954421	98.08964772	95.65843173	93.29913146	91.00919711	88.78618618	86.62775818	84.53166961
200310A00003	3/10/2020	1.1	3/10/2025	3/10/2020	103.06896	100.5398535	98.0854236	95.7030272	93.39013348	91.14431681	88.96325163	86.84470767	84.78654536
200330A00044	3/30/2020	1.09	3/28/2025	3/30/2020	103.10177	100.524386	98.02410392	95.59815575	93.24388972	90.95876643	88.74035328	86.58631914	84.49442945
210616A00011	5/2/2022	0.95	5/2/2025	5/2/2022	102.84633	100.1766738	97.58917044	95.08076998	92.64856045	90.28975819	88.00170114	85.78184259	83.62774525
220217A00012	2/17/2022	2.28	2/16/2027	2/17/2022	111.42758	106.8051162	102.4018018	98.20610852	94.20717518	90.39476479	86.75922534	83.29145336	79.98285984
220325A00011	3/28/2022	2.79	4/25/2025	3/28/2022	107.77874	105.0612737	102.4264725	99.87129336	97.39283118	94.98830774	92.65506508	90.3905594	88.19235528
220701A00024	7/1/2022	3.08	7/1/2025	7/1/2022	109.16594	106.2431207	103.4141106	100.6754073	98.02365802	95.45565245	92.96831597	90.55870324	88.22399197
220729A00047	7/29/2022	3.06	1/29/2027	7/29/2022	114.82719	110.1821185	105.753853	101.5311472	97.50339169	93.66057846	89.99326428	86.49253565	83.14997647
200306A00022	3/6/2020	1.2	3/8/2027	3/6/2020	106.62425	102.0521604	97.70075956	93.55826429	89.61358512	85.85627885	82.27650736	78.8649994	75.61301489
200327A00030	3/27/2020	1.01	3/27/2024	3/27/2020	101.66939	100.0996192	98.56163145	97.05453208	95.57745875	94.12958093	92.71009836	91.31823971	89.95326124
200330A00038	3/30/2020	1.79	3/29/2030	3/30/2020	114.7105	106.8421571	99.56904071	92.8430332	86.62014492	80.86013699	75.52618346	70.58456554	66.00439473
210201A00007	2/3/2021	0.57	8/15/2024	2/3/2021	101.2835	99.33765821	97.43864604	95.5850469	93.77550083	92.00869785	90.28337571	88.59831781	86.95235127
210616A00007	3/18/2022	0.9	3/18/2025	3/18/2022	102.57782	100.033849	97.56547751	95.17001217	92.84487327	90.58758925	88.39579141	86.2672089	84.19966399
200302A00018	3/2/2020	1.25	3/2/2023	3/2/2020	100.8162	100.3073719	99.8036556	99.30497933	98.81126775	98.32244705	97.83844492	97.35919042	96.88461402
200316A00037	3/16/2020	1.06	3/14/2025	3/16/2020	103.31588	100.7656724	98.29110002	95.88947781	93.55822976	91.29488767	89.09708577	86.96255579	84.88912227
200611A00023	6/11/2020	0.64	6/12/2023	6/11/2020	100.69295	99.90281068	99.12500299	98.35924124	97.60524734	96.86275171	96.13149295	95.41121754	94.70167953
201001A00011	10/1/2020	0.71	6/17/2025	10/1/2020	102.30566	99.52010945	96.82366461	94.21296217	91.68479185	89.23608392	86.86390204	84.56543653	82.33799809
201030A00019	10/30/2020	1.15	10/29/2027	10/30/2020	107.33291	102.1065354	97.16304859	92.48568205	88.05875005	83.86757449	79.89841461	76.13840196	72.57548025
220214A00012	2/14/2022	2.47	12/28/2029	2/14/2022	119.36283	111.5792358	104.3629522	97.66962574	91.45858478	85.6925171	80.3371767	75.36111752	70.73545155
210127A00008	1/27/2021	0.93	1/27/2027	1/27/2021	105.25011	100.8222806	96.60356608	92.58305504	88.75046369	85.09609297	81.61079232	78.28592587	75.11334097
211028A00020	10/28/2021	2.05	1/28/2031	10/28/2021	118.36468	109.5180592	101.4028698	93.95476223	87.11535212	80.83164334	75.05550621	69.74320841	64.85499316
220628A00052	8/15/2022	3.6	8/13/2027	8/15/2022	119.40597	114.0899025	109.0470498	104.2619027	99.71991436	95.40743408	91.31164697	87.42051874	83.72274413
200826A00038	8/28/2020	1.11	8/28/2024	8/28/2020	102.40349	100.41167	98.46853028	96.57257668	94.72237237	92.91653436	91.15373095	89.43267955	87.75214442
210312A00008	3/12/2021	1.13	3/12/2026	3/12/2021	104.63564	101.0867681	97.67646093	94.39857027	91.24725496	88.21696433	85.30242203	82.4986108	79.80075832
210330A00022	3/30/2021	1.27	3/30/2026	3/30/2021	105.22741	101.6198317	98.15447124	94.82494838	91.62520896	88.54950367	85.59237073	82.74861981	80.01331685
210907A00009	9/7/2021	2.5	9/7/2039	9/7/2021	132.87643	114.8853384	99.63450933	86.68643421	75.67576005	66.29706116	58.29473584	51.4546489	45.59721139

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210914A00017	9/14/2021	1.32	9/14/2028	9/14/2021	110.21635	104.0026622	98.17583264	92.70982551	87.58049075	82.76541385	78.24378243	73.99626389	70.0048928
220131A00006	1/31/2022	1.83	2/1/2027	1/31/2022	109.93037	105.3670493	101.0189684	96.87488032	92.92418363	89.15688149	85.56354411	82.13527367	78.8636716
220829A00048	8/29/2022	3.75	2/25/2025	8/29/2022	109.72357	107.1449694	104.6411091	102.2093858	99.84730367	97.55246862	95.32258397	93.15544565	91.04893786
200316A00055	3/16/2020	1.06	3/14/2025	3/16/2020	103.31588	100.7656724	98.29110002	95.88947781	93.55822976	91.29488767	89.09708577	86.96255579	84.88912227
220630A00019	6/30/2022	3.25	12/29/2023	6/30/2022	104.4011	103.0533835	101.7300926	100.4306027	99.15431525	97.90065125	96.66905078	95.45897217	94.26989122
220719A00004	7/19/2022	3.46	7/19/2027	7/19/2022	118.44542	113.223727	108.2672872	103.5612292	99.09159078	94.84525842	90.80991158	86.9739708	83.32654942
200423A00017	4/23/2020	1.82	4/23/2035	4/23/2020	122.73861	109.3725195	97.60001889	87.22201199	78.06522819	69.97875901	62.8310719	56.50743578	50.90769981
200429A00057	4/29/2020	1.4	4/29/2027	4/29/2020	107.86313	103.1187009	98.60884537	94.32072511	90.24227736	86.36216198	82.6697139	79.15489908	75.80827353
201118A00009	11/18/2020	0.61	11/18/2025	11/18/2020	102.83624	99.61934764	96.51850094	93.52882078	90.64566937	87.86463376	85.18151323	82.59230749	80.09320564
210216A00011	2/17/2021	0.83	12/15/2025	2/17/2021	103.22453	99.93916398	96.77431725	93.72490927	90.78610086	87.95328482	85.22207326	82.5882858	80.04793833
211119A00009	11/19/2021	1.68	11/19/2027	11/19/2021	110.22622	104.8667306	99.79902203	95.00566194	90.47035498	86.17786239	82.11392748	78.26520674	74.61920619
220325A00020	3/28/2022	2.86	3/23/2027	3/28/2022	114.39547	109.6057584	105.0464601	100.705255	96.57054635	92.63141612	88.87758178	85.29935579	81.88760785
220624A00033	6/24/2022	3.5	6/24/2027	6/24/2022	118.38236	113.233265	108.3424005	103.6954467	99.27895098	95.08027163	91.08752499	87.28953594	83.67579206
200401A00023	4/1/2020	0.82	4/1/2025	4/1/2020	102.74847	100.1575665	97.64458926	95.20671928	92.841263	90.54564163	88.3173855	86.15412863	84.05360356
200413A00027	4/13/2020	0.94	4/12/2024	4/13/2020	101.61328	100.0002764	98.42051154	96.87302053	95.35688016	93.87120222	92.41513193	90.98784625	89.58855251
210224A00007	2/26/2021	0.68	10/21/2024	2/26/2021	101.66753	99.53743276	97.4620409	95.43956588	93.4682942	91.54658164	89.67284989	87.8455833	86.06332586
211214A00013	12/14/2021	1.02	12/14/2023	12/14/2021	101.36375	100.0709957	98.80594224	97.56770519	96.3554347	95.16831696	94.00557229	92.86645338	91.75024356
220329A00009	3/29/2022	2.94	3/29/2029	3/29/2022	120.78567	113.7256885	107.1321145	100.9715955	95.21333138	89.82886905	84.79191199	80.07814597	75.66507972
220419A00014	4/19/2022	3.06	4/18/2025	4/19/2022	108.44214	105.7354201	103.1105115	100.5644266	98.09430819	95.69742282	93.3711545	91.11299872	88.92055687
220617A00040	6/17/2022	3.23	6/16/2023	6/17/2022	102.78139	101.971001	101.1733953	100.3882694	99.61533181	98.85429993	98.10489997	97.36686646	96.63994193
210226A00002	2/26/2021	0.86	2/26/2025	2/26/2021	102.42046	99.93212342	97.51661294	95.17138307	92.89399083	90.68209341	88.53344338	86.44588424	84.41734604
210629A00015	6/29/2021	1.89	6/27/2031	6/29/2021	117.73383	108.4952203	100.0550372	92.34007621	85.2841894	78.82757461	72.91613789	67.50092289	62.53759976
210719A00004	7/19/2021	1	4/20/2026	7/19/2021	104.34075	100.691442	97.1880587	93.82395864	90.59284613	87.48874767	84.50599329	81.63919925	78.8832517
210907A00004	9/7/2021	2.01	9/7/2033	9/7/2021	121.93386	110.3124495	99.91188039	90.5969831	82.24820601	74.75974054	68.03787907	61.99957625	56.57118767
220216A00002	2/16/2022	2.09	2/14/2025	2/16/2022	105.45072	102.9593816	100.5397165	98.18925504	95.90562823	93.68656272	91.52987635	89.43347382	87.39534273
220418A00016	4/22/2022	3.11	9/15/2026	4/22/2022	113.66224	109.4248683	105.371131	101.4920761	97.77923515	94.22459707	90.82058048	87.56000831	84.43608401
200311A00055	3/11/2020	1.66	12/17/2027	3/11/2020	110.252	104.8149933	99.67782601	94.82242673	90.23190905	85.89048476	81.78338663	77.8967971	74.21778232
210623A00028	6/23/2021	1.22	6/23/2026	6/23/2021	105.47655	101.6320285	97.94729227	94.41487907	91.02771934	87.77910908	84.6626889	81.6724244	78.80258785
200818A00016	3/31/2021	0.57	4/1/2024	3/31/2021	100.97793	99.40053228	97.85524242	96.34115227	94.85738432	93.40309368	91.97746657	90.57971883	89.20909464
220511A00002	5/11/2022	3.18	5/12/2025	5/11/2022	108.98555	106.204753	103.509594	100.8968754	98.36354597	95.90668993	93.5235201	91.21137104	88.96769279
220817A00047	8/17/2022	3.29	8/17/2027	8/17/2022	118.64958	113.3165505	108.2591378	103.4616218	98.90926379	94.58823676	90.48556409	86.58906307	82.88729223
200305A00001	3/5/2020	1.14	3/5/2025	3/5/2020	103.1546	100.6376942	98.19482271	95.82337949	93.52086593	91.28488671	89.11314484	87.00343689	84.9536486
200323A00011	3/23/2020	1.37	3/23/2023	3/23/2020	100.96025	100.3928143	99.83173791	99.27691795	98.72825021	98.18563274	97.64896582	97.11815195	96.59309571

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210309A00002	3/11/2021	0.77	7/25/2024	3/11/2021	101.6254	99.73177316	97.88246585	96.07618224	94.31166971	92.58772023	90.90316848	89.25689004	87.64779967
220209A00010	2/9/2022	2.14	1/11/2027	2/9/2022	110.51767	106.01839	101.7281047	97.63604967	93.73207059	90.00658378	86.45054136	83.05539862	79.81308352
220419A00013	4/19/2022	2.84	4/19/2024	4/19/2022	104.77605	103.1168978	101.4921223	99.90072112	98.34173042	96.81422326	95.31730802	93.85012661	92.41185297
201221A00015	12/21/2020	0.88	12/4/2026	12/21/2020	104.82362	100.5487186	96.46973719	92.5766457	88.85998306	85.31082463	81.92074846	78.68180379	75.58648182
211209A00006	12/9/2021	1.61	12/8/2026	12/9/2021	108.01196	103.6580397	99.50323218	95.5373617	91.75082781	88.13457265	84.68004691	81.37917823	78.22434172
220705A00005	7/5/2022	3.15	1/5/2024	7/5/2022	104.32763	102.9623803	101.6215185	100.3044465	99.0105853	97.73937448	96.49027098	95.26274875	94.05629795
200402A00009	4/2/2020	1.03	4/2/2025	4/2/2020	102.96099	100.3719993	97.86076506	95.42448385	93.06047002	90.76615231	88.53906818	86.3768584	84.27726193
201001A00012	10/1/2020	0.74	9/16/2025	10/1/2020	102.63507	99.60155732	96.67263976	93.84412886	91.11203207	88.47253953	85.92201454	83.45698458	81.07413286
220218A00003	2/18/2022	2.16	9/4/2026	2/18/2022	109.66968	105.5444646	101.5978991	97.8213002	94.20645599	90.74559532	87.43136192	84.25678985	81.21528071
220408A00012	4/8/2022	3.12	6/29/2026	4/8/2022	112.90369	108.8993365	105.0604238	101.3792612	97.8485582	94.46139831	91.21121828	88.09178806	85.09719224
200316A00043	3/16/2020	1.3	3/14/2025	3/16/2020	103.59717	101.0505716	98.57933224	96.1807821	93.85235914	91.59160835	89.39617642	87.26380682	85.19233518
200402A00010	4/2/2020	0.89	4/2/2024	4/2/2020	101.49665	99.91216198	98.35996041	96.83912234	95.3487643	93.88803574	92.45611747	91.05222022	89.67558323
211115A00032	11/15/2021	1.75	11/12/2027	11/15/2021	110.56171	105.213112	100.1546162	95.36895037	90.83996578	86.55255701	82.49258857	78.64682717	75.00287913
220209A00012	2/9/2022	1.98	7/29/2025	2/9/2022	106.16446	103.2097206	100.3525097	97.58908598	94.91587599	92.32946242	89.82657623	87.40408942	85.05900812
220317A00011	3/17/2022	2.48	3/17/2025	3/17/2022	106.6577	104.0632278	101.5454197	99.10155616	96.72902816	94.42533607	92.18808403	90.01497496	87.90380578
200327A00058	3/27/2020	0.9	3/27/2023	3/27/2020	100.70402	100.126352	99.55528659	98.99070896	98.43250911	97.8805795	97.33481498	96.79511277	96.26137233
220301A00015	3/1/2022	2	1/4/2027	3/1/2022	109.84837	105.3827638	101.1239368	97.06127526	93.18476643	89.48495817	85.95292474	82.58023482	79.35892179
200310A00054	3/10/2020	1.1	3/10/2025	3/10/2020	103.06896	100.5398535	98.0854236	95.7030272	93.39013348	91.14431681	88.96325163	86.84470767	84.78654536
200611A00020	6/11/2020	0.81	6/11/2025	6/11/2020	102.5722	99.79928587	97.1145882	94.51476896	91.9966413	89.55715969	87.19341267	84.90261586	82.68210551
211221A00025	12/21/2021	1.59	12/21/2026	12/21/2021	107.95526	103.5687134	99.38420634	95.39140041	91.58053675	87.94240446	84.46830685	81.15002997	77.97981319
220309A00010	3/9/2022	2.27	3/8/2027	3/9/2022	111.54454	106.8610958	102.4022009	98.15590508	94.11096074	90.25677456	86.58336584	83.08132771	79.74179118
200330A00066	3/30/2020	1.08	3/31/2025	3/30/2020	103.08528	100.500143	97.99251136	95.55959411	93.19871929	90.9073285	88.68297122	86.5232995	84.42606291
220823A00009	8/23/2022	3.52	8/23/2027	8/23/2022	119.10557	113.7685458	108.7073251	103.9061739	99.35033367	95.02595973	90.92005984	87.02043737	83.31563846
200312A00006	3/12/2020	1.23	3/12/2025	3/12/2020	103.40961	100.8707702	98.40697215	96.01555655	93.69397642	91.4397908	89.25065969	87.12433911	85.05867655
201116A00021	11/16/2020	0.53	11/15/2024	11/16/2020	101.68065	99.4769811	97.33139055	95.24192152	93.20670277	91.22394156	89.2919196	87.40898924	85.5735699
211220A00005	12/20/2021	0.97	12/20/2023	12/20/2021	101.30144	99.99586526	98.7165211	97.46262716	96.23343732	95.02823479	93.84633073	92.68706283	91.54979404
220420A00033	4/20/2022	3.29	4/20/2027	4/20/2022	116.73677	111.8114757	107.1257547	102.6666302	98.42190382	94.38010171	90.5304272	86.86271704	83.36740058
200225A00040	10/30/2020	1.48	10/30/2023	10/30/2020	101.80407	100.6245325	99.47215915	98.34601993	97.24522767	96.16893477	95.11633104	94.08664164	93.07912518
210219A00008	2/22/2021	0.86	12/1/2025	2/22/2021	103.27576	100.0267041	96.89564496	93.87759084	90.96779497	88.1617424	85.45513691	82.84388871	80.32410304
220509A00014	7/15/2022	3.37	7/15/2027	7/15/2022	117.95796	112.7594069	107.8245516	103.1386357	98.68780097	94.45903033	90.44009223	86.61948951	82.98641164
220509A00016	7/15/2022	3.37	7/15/2027	7/15/2022	117.95796	112.7594069	107.8245516	103.1386357	98.68780097	94.45903033	90.44009223	86.61948951	82.98641164
200327A00060	3/27/2020	1.18	3/27/2025	3/27/2020	103.33358	100.7558045	98.25506299	95.82859431	93.47375147	91.18799947	88.96890978	86.81415508	84.72150435
200320A00052	3/25/2020	1.47	3/25/2025	3/25/2020	104.08239	101.5000933	98.99479039	96.56372067	94.20424392	91.91383144	89.69006051	87.53060918	85.43325134

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200304A00005	3/4/2020	0.98	3/4/2025	3/4/2020	103.07645	100.5560699	98.1099202	95.73538471	93.42995606	91.19123064	89.01690358	86.90476401	84.85269056
200327A00046	3/27/2020	1.23	3/27/2025	3/27/2020	103.46417	100.8846746	98.38225347	95.95414318	93.5976955	91.31037429	89.08974996	86.93349414	84.83937481
210707A00002	7/7/2021	1.12	6/26/2026	7/7/2021	105.10369	101.2580516	97.57262863	94.03994119	90.65289742	87.40477128	84.28918178	81.30007342	78.43169788
210712A00010	6/27/2022	1.05	6/27/2025	6/27/2022	103.30713	100.4798252	97.74360959	95.09507086	92.53094299	90.04809975	87.64354793	85.31442087	83.0579724
210701A00007	7/1/2021	1.22	7/1/2026	7/1/2021	105.51769	101.6503524	97.94456378	94.39277552	90.98783216	87.72294631	84.59167796	81.58791488	78.70585436
211210A00015	12/10/2021	1.63	12/10/2026	12/10/2021	108.11073	103.7492697	99.58746821	95.61511486	91.82258114	88.20078209	84.74114236	81.43556461	78.27640004
220111A00002	1/11/2022	1.75	1/16/2026	1/11/2022	106.49406	103.0680381	99.77010795	96.59482227	93.53699704	90.5916945	87.75421016	85.02006046	82.38497132
220209A00004	2/9/2022	1.21	2/9/2023	2/9/2022	100.73174	100.2812525	99.83478837	99.39229367	98.95371558	98.51900224	98.08810266	97.66096679	97.23754543
200402A00003	4/2/2020	0.8	4/3/2023	4/2/2020	100.6629	100.0660197	99.47618318	98.89326816	98.31715342	97.74772059	97.18485402	96.62844074	96.07837033
200527A00016	5/27/2020	0.92	5/27/2025	5/27/2020	102.83601	100.1001428	97.45019084	94.88289285	92.39513843	89.98395793	87.64651493	85.38009908	83.18211946
220204A00003	2/4/2022	1.15	2/3/2023	2/4/2022	100.68767	100.2539064	99.82387124	99.39751338	98.97478582	98.55564238	98.14003766	97.72792702	97.31926658
220624A00044	6/24/2022	3.43	6/24/2025	6/24/2022	110.10244	107.1858455	104.362203	101.628039	98.9800277	96.41498629	93.92986805	91.52175565	89.18785486
200401A00013	4/1/2020	1.01	4/1/2025	4/1/2020	102.90505	100.3195454	97.8116377	95.37852906	93.01754177	90.72611205	88.50178436	86.34220605	84.24512231
200826A00039	8/28/2020	1.03	7/29/2024	8/28/2020	102.14102	100.2316646	98.36720994	96.5463332	94.76775918	93.03025835	91.33264486	89.67377474	88.05254411
210208A00008	2/11/2021	0.78	11/17/2025	2/11/2021	102.96214	99.75648318	96.66613104	93.68624848	90.81223879	88.0397275	85.36454996	82.78273972	80.2905176
210706A00015	7/6/2021	1.06	12/31/2025	7/6/2021	104.0589	100.7170046	97.49895871	94.39955712	91.41383747	88.53707033	85.76474709	83.09256841	80.51643349
200305A00019	3/5/2020	0.81	3/6/2023	3/5/2020	100.6486	100.1286296	99.61401341	99.1046726	98.60052635	98.10149543	97.60750225	97.11847078	96.6343265
200403A00010	4/6/2020	0.8	4/6/2023	4/6/2020	100.67021	100.0650105	99.46705561	98.87621824	98.29237192	97.71539316	97.14516135	96.58155869	96.02447011
220302A00011	3/2/2022	2.14	1/13/2027	3/2/2022	110.53204	106.0269917	101.7314449	97.63459541	93.72625343	89.99680249	86.43716436	83.03876625	79.79351015
200220A00034	2/25/2020	1.71	3/27/2023	2/25/2020	101.17284	100.5936282	100.021026	99.45492414	98.89521235	98.34178295	97.79453062	97.25335243	96.71814767
200302A00017	3/2/2020	1.3	3/4/2024	3/2/2020	102.03774	100.5262798	99.04475343	97.59234647	96.16827426	94.77177984	93.40213275	92.05862782	90.74058411
200330A00054	3/30/2021	1.19	3/30/2026	3/30/2021	104.93636	101.3340464	97.87379407	94.54923329	91.35431527	88.28329581	85.33071804	82.49139631	79.76040105
200331A00017	3/31/2020	0.9	3/31/2025	3/31/2020	102.95545	100.364565	97.85152312	95.41351117	93.04784107	90.75193924	88.52334085	86.35968441	84.25870669
200325A00047	3/25/2020	1.68	9/25/2024	3/25/2020	103.70948	101.6269034	99.5964635	97.61650396	95.6854378	93.80173982	91.96394379	90.17063962	88.42047083
200415A00024	4/15/2020	2.2	4/16/2035	4/15/2020	125.66106	112.2600246	100.4417173	90.00962928	80.79261934	72.64152378	65.42623386	59.03317505	53.36313057
220404A00010	4/4/2022	2.93	4/2/2027	4/4/2022	114.81455	109.9872291	105.393122	101.0197027	96.85518424	92.88847323	89.10912513	85.50730264	82.07373704
220627A00055	6/27/2022	3.55	6/26/2026	6/27/2022	114.54239	110.5150844	106.6535047	102.9499564	99.39714519	95.98815152	92.71640986	89.57568843	86.56007054
220628A00053	8/15/2022	3.6	8/13/2027	8/15/2022	119.40597	114.0899025	109.0470498	104.2619027	99.71991436	95.40743408	91.31164697	87.42051874	83.72274413
210308A00009	3/8/2021	0.62	3/8/2024	3/8/2021	101.00464	99.49079159	98.00706047	96.55261819	95.12667048	93.72845129	92.35722159	91.01226813	89.69290235
200417A00012	4/22/2020	0.71	12/15/2022	4/22/2020	100.40857	100.1139405	99.82105317	99.52988813	99.24043011	98.95266403	98.66657503	98.3821484	98.0993696
210104A00011	11/23/2021	0.88	11/23/2026	11/23/2021	104.77893	100.5348881	96.48416577	92.61690479	88.9238098	85.39611119	82.02553201	78.80425716	75.72490475
210122A00006	1/25/2021	0.61	8/15/2024	1/25/2021	101.36303	99.41637898	97.51657379	95.66219692	93.85188799	92.08433658	90.35828006	88.67250144	87.02582746
210303A00006	3/4/2021	0.97	10/10/2025	3/4/2021	103.43711	100.3261864	97.3241526	94.42657782	91.62923759	88.92810487	86.31933943	83.79927789	81.36442445

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210916A00009	9/16/2021	2.25	9/16/2036	9/16/2021	127.39213	112.5306019	99.59455232	88.32227217	78.48892611	69.90119124	62.39269853	55.82015305	50.06002935
220124A00008	1/24/2022	1.88	1/22/2027	1/24/2022	109.48041	104.972638	100.6759089	96.57928042	92.67242945	88.94561702	85.38965245	81.9958597	78.75604594
200311A00052	3/2/2021	1.43	2/28/2025	3/2/2021	103.87328	101.3604807	98.92126606	96.55305261	94.25336844	92.01984321	89.85020331	87.74226727	85.69394143
200207A00013	2/12/2020	1.73	2/10/2023	2/12/2020	100.9706	100.5167003	100.0668777	99.62107768	99.17924655	98.74133137	98.30728017	97.87704193	97.45056649
200306A00064	3/6/2020	1.2	3/8/2027	3/6/2020	106.62425	102.0521604	97.70075956	93.55826429	89.61358512	85.85627885	82.27650736	78.8649994	75.61301489
200421A00032	4/21/2020	1.31	4/21/2027	4/21/2020	107.39554	102.6842566	98.20511899	93.94547293	89.89342129	86.03777662	82.3680147	78.87423151	75.54710314
200629A00023	6/29/2020	0.95	6/29/2026	6/29/2020	104.45667	100.6152288	96.93427695	93.40631819	90.02424421	86.78131252	83.67112586	80.68761268	77.82500898
210928A00009	9/28/2021	2.18	9/28/2033	9/28/2021	123.91658	112.1312495	101.5864344	92.14437763	83.6832905	76.09543191	69.28542373	63.16877562	57.67059246
220629A00002	6/29/2022	3.48	6/28/2024	6/29/2022	106.59574	104.7262135	102.8987462	101.1121364	99.36522769	97.65690424	95.98608872	94.35174085	92.7528558
220727A00004	7/27/2022	3.23	7/27/2027	7/27/2022	117.37856	112.1604757	107.208918	102.5088722	98.04624616	93.8078085	89.78113143	85.95453806	82.31705329
201204A00015	12/8/2020	1.07	12/8/2025	12/8/2020	103.99863	100.7189976	97.55896028	94.51346472	91.57770708	88.74711587	86.01733904	83.38423193	80.84384594
200327A00088	3/27/2020	1.22	3/27/2025	3/27/2020	103.43805	100.8589006	98.35681537	95.9290334	93.57290669	91.28589933	89.06558192	86.90962632	84.81580071
210525A00004	5/25/2021	1.02	12/19/2025	5/25/2021	103.87587	100.5689895	97.38366272	94.31476564	91.35742195	88.5069878	85.75903928	83.10936068	80.55393333
210907A00011	9/7/2021	2.65	9/6/2041	9/7/2021	136.7676	116.7035995	99.98582479	86.02876736	74.35261375	64.56367877	56.33854271	49.41117694	43.56248314
211019A00009	10/19/2021	1.48	10/9/2026	10/19/2021	107.10197	102.9319141	98.94652986	95.13665416	91.49363023	88.00927669	84.67585862	81.48606055	78.43296132
220729A00043	7/29/2022	3.04	7/29/2027	7/29/2022	116.44767	111.24682	106.31221	101.6288158	97.18253908	92.96014368	88.94919854	85.13802473	81.51564619
200331A00015	3/31/2020	0.64	3/31/2023	3/31/2020	100.61417	100.0250876	99.442865	98.86738403	98.29852827	97.736184	97.18024007	96.63058784	96.08712114
210119A00005	1/20/2021	0.52	9/25/2023	1/20/2021	100.65559	99.57845035	98.52416686	97.49202021	96.48131981	95.49140352	94.5216362	93.57140833	92.64013475
200304A00030	3/4/2020	1.6	12/22/2028	3/4/2020	111.4191	104.9318866	98.86248981	93.1818991	87.86326293	82.88171442	78.21421491	73.83941075	69.73750202
200629A00021	6/29/2020	1.21	6/29/2028	6/29/2020	108.43686	102.5158513	96.95161466	91.72092289	86.80216961	82.17525004	77.8214495	73.72334086	69.86468991
200324A00051	3/24/2020	1.73	11/1/2024	3/24/2020	104.0079	101.8223289	99.69330658	97.61897031	95.5975303	93.62727013	91.70654314	89.83376895	88.00743017
210914A00014	9/14/2021	0.97	9/14/2026	9/14/2021	105.40376	101.321566	97.41853306	93.68586842	90.1152568	86.69883372	83.42915852	80.29918913	77.30225845
220331A00011	3/31/2022	2.73	10/15/2024	3/31/2022	106.07798	103.9153462	101.8076996	99.75325615	97.75030753	95.79721374	93.89239997	92.03435336	90.22162006
220712A00016	7/15/2022	3.35	1/15/2026	7/15/2022	111.97817	108.4611241	105.0745565	101.8129423	98.67102085	95.64378052	92.72644602	89.9144658	87.20350038
200225A00028	2/25/2020	1.89	12/21/2029	2/25/2020	114.99087	107.3841791	100.3338636	93.79636723	87.73175131	82.10338006	76.87763182	72.02363683	67.51303905
200310A00034	3/10/2020	1.41	3/11/2030	3/10/2020	111.70712	103.9986789	96.87259829	90.28195297	84.18382009	78.53892238	73.31130135	68.46802132	63.97890114
201214A00002	12/14/2020	0.45	12/14/2022	12/14/2020	100.32753	100.0358668	99.74590586	99.45763395	99.17103628	98.88609822	98.60280531	98.32114325	98.04109792
211019A00011	10/19/2021	1.48	10/16/2026	10/19/2021	107.14149	102.9517364	98.94821619	95.12165646	91.46329564	87.96485543	84.6185112	81.41686443	78.35291701
200316A00046	3/16/2020	1.18	3/18/2024	3/16/2020	101.90675	100.3590017	98.84231608	97.35583205	95.89871772	94.47017134	93.06941993	91.69571801	90.34834636
200611A00019	6/11/2020	0.88	12/11/2025	6/11/2020	103.37752	100.100219	96.94278168	93.90014545	90.96749569	88.14024983	85.41404453	82.78472371	80.24832726
210310A00003	3/15/2021	0.79	8/26/2024	3/15/2021	101.75033	99.7705676	97.83910037	95.95444979	94.11519372	92.3199631	90.56743953	88.85635307	87.18548005
220225A00014	2/25/2022	2.42	2/23/2029	2/25/2022	117.08858	110.2440629	103.8483874	97.8697555	92.27877597	87.04827392	82.15311313	77.5700332	73.27750054
200324A00013	3/25/2020	1.78	3/25/2025	3/25/2020	104.89031	102.2974047	99.78173118	97.34052472	94.97113792	92.67103516	90.43778707	88.26906526	86.16263749

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
201014A00002	10/14/2020	0.61	10/15/2024	10/14/2020	101.50305	99.390673	97.3322591	95.32605737	93.37038798	91.46363848	89.60426053	87.79076675	86.02172787
220314A00004	3/14/2022	2.44	3/12/2027	3/14/2022	112.35831	107.6454238	103.1586789	98.88602917	94.81613303	90.93830964	87.24249684	83.71921204	80.35951568
200415A00033	4/15/2020	0.82	10/13/2023	4/15/2020	101.00322	99.87499054	98.77177839	97.69275587	96.63713484	95.60416106	94.59311238	93.60329708	92.63405223
200422A00015	4/27/2020	0.73	12/22/2022	4/27/2020	100.43002	100.1159419	99.80383327	99.49367498	99.18544873	98.87913648	98.57472039	98.27218285	97.97150646
201105A00003	11/6/2020	2.24	11/4/2030	11/6/2020	119.50206	110.8425739	102.8800573	95.55462245	88.81182799	82.60215599	76.88054258	71.60595571	66.74101492
210907A00013	9/9/2021	2.14	9/9/2025	9/9/2021	106.91654	103.8363188	100.8612189	97.9870678	95.20988197	92.52585861	89.93136651	87.42293719	84.99725663
200317A00023	3/17/2020	1.1	3/17/2025	3/17/2020	103.43	100.8702768	98.38663136	95.97635184	93.63684114	91.36561111	89.1602772	87.01855345	84.93824769
201015A00002	10/15/2020	0.61	10/15/2024	10/15/2020	101.50305	99.390673	97.3322591	95.32605737	93.37038798	91.46363848	89.60426053	87.79076675	86.02172787
220114A00007	1/14/2022	1.7	1/27/2026	1/14/2022	106.38711	102.9333986	99.60988309	96.41098483	93.33139322	90.36605208	87.51014614	84.7590882	82.1085071
220119A00009	1/19/2022	1.35	1/19/2024	1/19/2022	101.91763	100.5323837	99.17252163	97.83740787	96.52642632	95.23898087	93.97449451	92.73240863	91.5121823
220804A00023	8/4/2022	3.19	8/4/2027	8/4/2022	117.25415	112.0166551	107.0478232	102.3324576	97.85629729	93.6059559	89.56886361	85.73321327	82.08791027
200730A00011	7/30/2020	1.15	7/28/2028	7/30/2020	108.15036	102.1607748	96.53676647	91.25423878	86.29079691	81.62562139	77.23934976	73.11396771	69.23270888
210928A00010	9/28/2021	1.12	9/26/2025	9/28/2021	103.85343	100.7735692	97.80043758	94.92973672	92.15736723	89.4794189	86.8921607	84.39203136	81.97563057
200228A00071	2/28/2020	1.74	12/14/2029	2/28/2020	113.84159	106.2951556	99.3002675	92.81378287	86.79614167	81.21105516	76.02521949	71.20805576	66.73147397
200304A00020	3/4/2020	0.98	3/4/2025	3/4/2020	103.07645	100.5560699	98.1099202	95.73538471	93.42995606	91.19123064	89.01690359	86.90476401	84.85269056
200325A00043	3/25/2020	1.62	6/25/2024	3/25/2020	103.12898	101.300785	99.51368662	97.76650072	96.05808882	94.38735281	92.75323326	91.1547078	89.5907895
200409A00011	4/9/2020	0.7	4/7/2023	4/9/2020	100.66645	100.0578138	99.45650476	98.86239579	98.27535814	97.69526611	97.12199696	96.55543085	95.99545071
210108A00008	1/11/2021	0.51	8/15/2023	1/11/2021	100.62393	99.65885379	98.71215563	97.78331495	96.87183056	95.97721988	95.09901805	94.23677716	93.39006546
210917A00004	9/17/2021	1.03	9/17/2025	9/17/2021	103.53628	100.4860822	97.54099324	94.69681069	91.94952137	89.29529588	86.73047896	84.25158047	81.85526684
200323A00018	3/23/2020	1.37	3/23/2023	3/23/2020	100.96025	100.3928143	99.83173791	99.27691795	98.72825021	98.18563274	97.64896582	97.11815195	96.59309571
200401A00012	4/2/2020	1	4/2/2025	4/2/2020	102.88214	100.2941889	97.78397487	95.34869072	92.98565151	90.6922867	88.46613441	86.30483603	84.20613113
200423A00026	4/28/2020	0.85	12/15/2023	4/28/2020	101.14387	99.85038713	98.58433982	97.34485793	96.13110938	94.94229702	93.77765681	92.63645604	91.51799175
210324A00003	3/24/2021	1.18	3/24/2026	3/24/2021	104.87166	101.2865344	97.842314	94.53270624	91.35173136	88.29370949	85.35324376	82.52520445	79.80471419
210526A00018	5/26/2021	1.11	5/26/2026	5/26/2021	104.91507	101.1581684	97.55474716	94.09766699	90.78016238	87.59582323	84.5385737	81.60265253	78.78259454
220824A00008	8/24/2022	3.62	8/24/2023	8/24/2022	103.72748	102.7211447	101.7343498	100.7665333	99.81715103	98.8856795	97.97161484	97.07447195	96.19378361
200221A00011	2/21/2020	1.69	8/21/2024	2/21/2020	103.54139	101.5565365	99.61970405	97.72943787	95.88433318	94.08303731	92.32424733	90.60670782	88.92920888
200221A00024	2/21/2020	2.05	12/28/2029	2/21/2020	116.22085	108.5507843	101.4421063	94.85082926	88.73662416	83.06249738	77.79449958	72.90146104	68.3547513
200306A00003	3/6/2020	0.7	3/6/2023	3/6/2020	100.59135	100.0715479	99.55710337	99.04793297	98.54395587	98.04509287	97.55126639	97.06240041	96.57842042
200309A00030	3/9/2020	1.11	3/9/2027	3/9/2020	106.21467	101.6491733	97.30427945	93.16819994	89.2298418	85.47875892	81.90511091	78.49962471	75.25355893
200415A00021	4/15/2020	1.37	4/15/2027	4/15/2020	107.59905	102.9012377	98.43410057	94.18510842	90.14247588	86.29511817	82.63260536	79.14512006	75.82341797
200521A00017	5/21/2020	2.22	5/21/2038	5/21/2020	127.96575	111.5160465	97.41874888	85.32173951	74.92738269	65.98385262	58.27787591	51.62865465	45.88277337
210218A00006	2/18/2021	0.5	2/20/2024	2/18/2021	100.78393	99.3185685	97.88167892	96.47250196	95.09030746	93.73439037	92.40406973	91.09868758	89.81760804
201117A00006	11/17/2020	0.57	11/17/2023	11/17/2020	100.74256	99.52072493	98.32825042	97.16409357	96.0272563	94.91678693	93.83177752	92.77136135	91.73471063

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210712A00008	6/27/2022	1.05	6/27/2025	6/27/2022	103.30713	100.4798252	97.74360959	95.09507086	92.53094299	90.04809975	87.64354793	85.31442087	83.0579724
211129A00012	11/29/2021	1.53	11/25/2026	11/29/2021	107.589	103.2796929	99.16613994	95.23836891	91.48697448	87.90308333	84.47832069	81.20477908	78.07498934
220106A00008	1/6/2022	2.5	1/5/2035	1/6/2022	129.18876	115.8490061	104.0463547	93.59415149	84.32933005	76.10932857	68.80941883	62.32039473	56.54657024
220323A00016	6/2/2022	2.78	6/2/2025	6/2/2022	108.05881	105.2334385	102.4966582	99.84511564	97.27560549	94.78506729	92.37057755	90.02934245	87.75869106
200327A00059	3/27/2020	1.01	3/27/2024	3/27/2020	101.66939	100.0996192	98.56163145	97.05453208	95.57745875	94.12958093	92.71009836	91.31823971	89.95326124
201116A00025	11/18/2020	1.96	11/15/2032	11/18/2020	120.48782	109.7416275	100.0508336	91.30592834	83.40929841	76.27388077	69.82197304	63.98418346	58.69850337
211221A00010	12/21/2021	1.31	12/20/2024	12/21/2021	103.27951	100.9686544	98.72060722	96.53328468	94.40468264	92.33287675	90.31601865	88.35233244	86.4401113
220510A00016	5/13/2022	3.23	5/5/2027	5/13/2022	116.6081	111.6427326	106.9207442	102.4288582	98.15459354	94.08621672	90.21269241	86.52363791	83.00928069
220527A00015	5/27/2022	3.03	5/27/2027	5/27/2022	115.81155	110.8047891	106.0463528	101.5225338	97.22046143	93.12804528	89.23392312	85.5274126	81.99846652
200310A00005	3/10/2020	1.41	3/8/2030	3/10/2020	111.6965	103.9964239	96.87755541	90.29309931	84.20025161	78.55984064	73.33600174	68.49588257	64.00937609
200327A00037	3/27/2020	1.18	3/27/2026	3/27/2020	105.366	101.7513339	98.27918338	94.9431611	91.73720018	88.65553913	85.69270456	82.84349501	80.10296579
200406A00049	4/6/2020	0.92	4/6/2023	4/6/2020	100.74301	100.1375549	99.53935128	98.94826735	98.36417656	97.78695538	97.21648317	96.6526421	96.09531709
200429A00021	5/4/2020	0.97	4/29/2025	5/4/2020	102.89135	100.2291356	97.64863981	95.14683889	92.72084371	90.36789201	88.08534181	85.87066527	83.72144279
201019A00006	10/19/2020	0.57	10/19/2023	10/19/2020	100.72252	99.57967505	98.46254393	97.3702661	96.3020203	95.25702108	94.23451685	93.23378813	92.2541458
210225A00012	3/1/2021	0.91	8/25/2025	3/1/2021	103.08346	100.1027666	97.22317591	94.44070804	91.75156674	89.15212605	86.63892157	84.20864231	81.85812293
220204A00004	2/4/2022	2.08	1/8/2027	2/4/2022	110.23015	105.745334	101.4685575	97.38912432	93.49694101	89.78248042	86.23674713	82.85124519	79.61794783
220823A00032	8/23/2022	3.6	8/23/2023	8/23/2022	103.70834	102.7047368	101.7205718	100.7552872	99.80834285	98.87921926	97.96741627	97.07245236	96.19386367
211117A00010	11/17/2021	1.18	11/18/2024	11/17/2021	102.86032	100.6407696	98.47970537	96.37515621	94.32523566	92.32813651	90.38212676	88.48554571	86.63680042
201105A00002	11/5/2020	0.49	11/7/2022	11/5/2020	100.26219	100.0733314	99.88519512	99.69777274	99.51106019	99.32505341	99.1397484	98.95514116	98.77122772
200605A00014	6/5/2020	1.02	6/5/2025	6/5/2020	103.01162	100.3631526	97.79748162	95.3114845	92.90217784	90.5667119	88.30236347	86.10652928	83.97671972
200605A00016	6/5/2020	1.02	6/5/2025	6/5/2020	103.01162	100.3631526	97.79748161	95.31148448	92.90217782	90.56671187	88.30236344	86.10652924	83.97671967
200605A00017	6/5/2020	1.02	6/5/2025	6/5/2020	103.01162	100.3631526	97.79748164	95.31148454	92.90217791	90.56671198	88.30236358	86.1065294	83.97671986
200709A00021	7/9/2020	0.83	7/9/2025	7/9/2020	102.58807	99.86400119	97.22757975	94.675516	92.20466179	89.81200372	87.49465666	85.24985755	83.07495956
200709A00025	7/9/2020	1.37	7/9/2030	7/9/2020	110.47864	103.4009308	96.8554742	90.79885531	85.19143278	79.99698944	75.18241981	70.71744756	66.57437004
200813A00019	8/13/2020	1.44	8/13/2030	8/13/2020	111.08407	103.9025981	97.26667892	91.13135223	85.4556002	80.20198588	75.33632286	70.82737691	66.64659651
200813A00020	8/13/2020	1.44	8/13/2030	8/13/2020	111.08407	103.902598	97.26667896	91.1313524	85.4556005	80.2019863	75.33632338	70.82737753	66.64659722
200813A00023	8/13/2020	0.86	10/14/2025	8/13/2020	102.94952	99.98397056	97.12108925	94.35671461	91.68687732	89.10779351	86.61585479	84.20761888	81.87980088
200911A00011	9/11/2020	1.18	9/11/2030	9/11/2020	109.25644	102.1101107	95.51203432	89.41660098	83.78224418	78.57105932	73.74846263	69.28288367	65.14548771
200911A00012	9/11/2020	1.18	9/11/2030	9/11/2020	109.25493	102.1098255	95.5128427	89.41838997	83.78491147	78.57451219	73.75261707	69.28766354	65.150824
200911A00013	9/11/2020	0.69	9/11/2025	9/11/2020	102.34509	99.4720478	96.69638519	94.01424644	91.42194947	88.9159794	86.49297986	84.14974487	81.88321114
201007A00008	10/7/2020	1.22	10/7/2030	10/7/2020	109.28891	102.3302937	95.90188277	89.95959952	84.46328322	79.37631835	74.66530315	70.29975086	66.25182021
201007A00010	10/7/2020	1.22	10/7/2030	10/7/2020	109.28891	102.3302937	95.90188277	89.95959952	84.46328322	79.37631835	74.66530315	70.29975086	66.25182021
201007A00014	10/7/2020	0.8	10/7/2025	10/7/2020	102.71391	99.80434564	96.99470807	94.28097088	91.65929531	89.12602067	86.67765488	84.31086554	82.02247159

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
201015A00020	10/15/2020	0.94	10/15/2027	10/15/2020	105.66111	100.9131692	96.41443249	92.15039755	88.1074889	84.27299078	80.6349879	77.18231058	73.90448403
201109A00012	11/9/2020	1.39	11/8/2030	11/9/2020	110.96948	103.6110146	96.82563597	90.56493534	84.78486104	79.44530349	74.50972195	69.94480854	65.72018554
201211A00001	12/11/2020	0.95	12/11/2030	12/11/2020	108.04086	101.3852003	95.23479272	89.54740016	84.28457407	79.41129164	74.89563185	70.70848388	66.82328442
210107A00007	1/7/2021	0.84	1/7/2026	1/7/2021	103.15939	99.98321421	96.92368213	93.97589518	91.13518542	88.39710457	85.75741246	83.21206625	80.75721015
210201A00002	2/1/2021	1.19	2/1/2036	2/1/2021	108.47521	101.4430147	95.04021154	89.20176046	83.8699827	78.99367281	74.52732019	70.43042958	66.66692736
210809A00010	8/9/2021	1.06	8/7/2026	8/9/2021	104.6707	100.9973993	97.47786284	94.10480722	90.87133545	87.77091231	84.79734339	81.94475549	79.20757822
210915A00027	9/15/2021	1.1	9/15/2026	9/15/2021	104.97851	101.2067039	97.596378	94.13971007	90.82929656	87.65813214	84.619586	81.70737963	78.91556615
210921A00006	9/21/2021	1.43	9/21/2028	9/21/2021	109.15848	103.4972713	98.17862166	93.17980815	88.47973527	84.05881079	79.8988308	75.98287418	72.29520562
210921A00009	9/21/2021	1.28	9/21/2028	9/21/2021	109.11432	103.4349253	98.09995993	93.08652957	88.37338593	83.94079765	79.77043418	75.84525898	72.1494316
211007A00006	10/7/2021	1.28	10/7/2026	10/7/2021	105.77599	101.929818	98.25012911	94.72876058	91.35799728	88.13054444	85.03950227	82.07834226	79.24088494
211014A00012	10/14/2021	1.46	10/14/2031	10/14/2021	108.41632	103.540732	98.97544632	94.69726178	90.68490875	86.91887408	83.38124346	80.05555887	76.9266897
211110A00012	11/10/2021	1.44	11/10/2026	11/10/2021	106.56975	102.6220718	98.8482842	95.23969855	91.78811752	88.48579981	85.32543186	82.30010155	79.40327363
211110A00013	11/10/2021	1.44	11/10/2026	11/10/2021	106.56975	102.622072	98.84828416	95.23969829	91.78811706	88.48579915	85.32543103	82.30010055	79.40327247
211110A00014	11/10/2021	1.44	11/10/2026	11/10/2021	106.56974	102.6220714	98.84828432	95.23969919	91.78811865	88.48580141	85.3254339	82.300104	79.40327647
211208A00012	12/8/2021	1.62	12/8/2026	12/8/2021	107.4447	103.4053951	99.54664121	95.85931515	92.33480737	88.96499146	85.74219408	82.65916684	79.70906024
220111A00005	1/11/2022	1.54	1/10/2025	1/11/2022	103.75895	101.4767659	99.25728831	97.09844056	94.99823094	92.95474489	90.96614146	89.03065006	87.14656735
220411A00008	4/11/2022	3.02	4/12/2027	4/11/2022	114.96324	110.3826663	106.0202154	101.8642195	97.90369947	94.12832284	90.52836155	87.09465328	83.81856528
220520A00006	5/20/2022	3.02	5/20/2027	5/20/2022	114.89184	110.3307874	105.9890473	101.8547165	97.91661216	94.16422126	90.58765663	87.17761572	83.92534248
220617A00030	6/17/2022	3.43	6/17/2025	6/17/2022	105.30056	103.78213	102.3005584	100.8546465	99.44324253	98.06524125	96.71958188	95.40524584	94.12125474
220617A00061	6/17/2022	3.26	6/17/2024	6/17/2022	103.30686	102.3225539	101.3567709	100.4089849	99.47869068	98.56540266	97.66865337	96.78799284	95.92298769
210603A00008	6/3/2021	1.74	6/3/2036	6/3/2021	113.34737	106.0580675	99.42578054	93.38176715	87.86518273	82.82211094	78.20471722	73.97051184	70.08170744
220722A00036	7/22/2022	3.34	7/22/2025	7/22/2022	105.23431	103.696765	102.1971215	100.7341296	99.30659347	97.9133659	96.55334582	95.22547614	93.92874165
190104A00032	1/4/2019	2.33	1/4/2024	10/4/2022	103.54739	102.1025237	100.9508054	100.194352	99.9435998	99.8463195	99.75299153	99.65974682	99.56668163
190603A00067	6/3/2019	1.72	6/3/2024	9/6/2022	103.73117	101.9154154	100.610093	100.0143855	99.96574922	99.94934554	99.93295599	99.91658048	99.90021899
190606A00032	6/6/2019	1.75	6/6/2024	9/6/2022	103.79754	101.9681507	100.643175	100.019666	99.966224	99.94980997	99.93341008	99.91702425	99.90065244
190606A00054	6/6/2019	1.8	6/6/2024	9/6/2022	103.88045	102.0414978	100.6959999	100.0303979	99.96705541	99.95064066	99.93424006	99.91785352	99.901481
190607A00016	6/7/2019	1.75	6/7/2024	9/7/2022	103.80223	101.9706317	100.6429678	100.0198886	99.96438965	99.94520392	99.92603562	99.90688466	99.88775099
170130A00010	1/30/2017	2.92	1/30/2025	1/30/2017	107.38648	104.9155005	102.5142499	100.1803671	97.91158834	95.70573919	93.56073087	91.47455615	89.44528575
170203A00013	2/3/2017	3.67	2/1/2036	2/3/2017	146.27814	130.7909758	117.1876273	105.2249574	94.69254332	85.40811994	77.21367704	69.97211441	63.56437329
190328A00033	4/25/2019	2.56	4/25/2024	4/25/2019	104.35967	102.6873701	101.0499605	99.44641616	97.87575055	96.33701531	94.82929858	93.35172318	91.90344497
190828A00009	8/28/2019	1.71	8/28/2024	8/28/2019	103.61813	101.6137544	99.65830174	97.75027496	95.88823047	94.07077872	92.29658172	90.56435082	88.87284443
200429A00047	5/1/2020	2.7	4/30/2025	5/1/2020	107.5768	104.8480521	102.2026627	99.63754905	97.14976924	94.73651034	92.39508194	90.12290972	87.91752962
201028A00006	10/30/2020	1.56	2/15/2024	10/30/2020	102.34385	100.8805979	99.44549001	98.03778963	96.65678083	95.30177212	93.97209543	92.66710507	91.3861768

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180810A00028	8/10/2018	2.91	8/10/2023	8/10/2018	103.02375	102.0584198	101.1111612	100.1814737	99.2688714	98.37288617	97.4930669	96.62897867	95.78020204
180905A00015	9/5/2018	2.85	9/1/2022	9/5/2018	100.01189	100.0091111	100.0063307	100.0035527	100.0007771	99.99800378	99.99523281	99.99246417	99.98969786
190712A00009	7/12/2019	2.19	7/12/2023	7/12/2019	102.08152	101.2024401	100.3384668	99.48921086	98.65429862	97.83336877	97.02607212	96.23207101	95.45103887
200130A00028	1/30/2020	1.54	2/7/2023	1/30/2020	100.9125	100.4665999	100.0246355	99.58655571	99.15230952	98.72184669	98.29511788	97.87207458	97.45266916
200925A00002	9/25/2020	0.74	9/25/2025	9/25/2020	102.66399	99.60542347	96.65294659	93.80228297	91.04935793	88.3902847	85.82135456	83.33902744	80.93992323
171005A00006	10/5/2017	2.32	10/7/2024	10/5/2017	105.42076	103.2814987	101.1963702	99.16363144	97.18161171	95.24870658	93.3633748	91.52413527	89.72956411
190108A00039	1/8/2019	3.04	4/30/2024	1/8/2019	105.21154	103.5178776	101.8597269	100.2360373	98.64579806	97.08803791	95.56182335	94.06625665	92.60047411
191001A00023	10/1/2019	1.85	9/27/2024	10/1/2019	104.07875	101.9866754	99.94704397	97.9581878	96.01850731	94.12646544	92.28058465	90.47944419	88.72167741
200207A00018	2/7/2020	2.14	2/7/2030	2/7/2020	117.1214	109.3054173	102.0689713	95.36605353	89.15452943	83.39579504	78.05446443	73.09808651	68.49688796
200601A00006	6/1/2020	0.6	6/1/2023	6/1/2020	100.6473	99.8876156	99.13932803	98.40217998	97.67592448	96.96032179	96.25513919	95.56015065	94.87513665
210312A00010	3/12/2021	0.63	3/12/2024	3/12/2021	101.02907	99.50440785	98.0101912	96.54557949	95.10976475	93.70196796	92.3214378	90.96744931	89.63930286
060308A00014	3/8/2006	5.44	3/16/2026	3/8/2006	120.16538	116.3280442	112.6379559	109.0886262	105.6738903	102.3878892	99.22505259	96.18008313	93.24794114
090226A00006	2/26/2009	4.55	3/1/2024	2/26/2009	107.16596	105.6187331	104.1020251	102.6150049	101.156875	99.72686606	98.32423548	96.94826644	95.59826666
150601A00930	6/1/2015	7.1	8/30/2030	6/1/2015	157.96368	147.975757	138.7420492	130.200451	122.2943174	114.9719553	108.1861647	101.8938256	96.05552482
200302A00051	3/2/2020	1.22	8/8/2023	3/2/2020	101.29507	100.3456827	99.41399376	98.49951407	97.60177044	96.72030687	95.85468377	95.00447726	94.16927846
210323A00007	3/23/2021	0.51	3/25/2024	3/23/2021	101.05697	99.49435308	97.96337666	96.46315099	94.99281892	93.55155482	92.13856314	90.75307705	89.39435707
111024A00027	10/24/2011	3.11	10/30/2023	10/24/2011	103.86226	102.6677985	101.5007864	100.3602853	99.24539939	98.15527259	97.08908667	96.04605911	95.02544117
121116A00021	11/16/2012	2.35	11/17/2025	11/16/2012	108.52908	105.2219525	102.0331638	98.95776127	95.99103525	93.12850352	90.36589881	87.69915683	85.12440511
170530A00064	5/30/2017	2.32	3/27/2023	5/30/2017	101.52591	100.9455275	100.3717681	99.80451829	99.24366788	98.689109	98.14073623	97.59844649	97.06213898
180622A00006	6/22/2018	3.53	12/21/2029	6/22/2018	127.22739	119.1796572	111.7112695	104.7772383	98.3363002	92.35058645	86.78532752	81.60858425	76.7910038
180808A00009	8/8/2018	3.12	8/7/2023	8/8/2018	103.10472	102.1486477	101.2102984	100.2891824	99.38482776	98.49677983	97.62460016	96.7678659	95.92616916
191121A00009	11/21/2019	2.55	11/21/2036	11/21/2019	134.12572	118.4796424	104.8756894	93.0336672	82.71327144	73.70822293	65.84129203	58.96007267	52.93338969
120312A00009	3/12/2012	2.72	3/15/2024	3/12/2012	104.49195	102.9280109	101.3953756	99.89317468	98.42057253	96.97676375	95.56097177	94.17244755	92.81046839
160329A00045	3/29/2016	2.12	3/29/2024	3/29/2016	103.64747	102.0526571	100.4902098	98.95921134	97.45878009	95.98806723	94.54625504	93.13255549	91.7462089
160802A00003	8/2/2016	2.53	8/1/2031	8/2/2016	125.13236	115.4089879	106.528917	98.41428036	90.99478567	84.20693969	77.99335894	72.30215356	67.08637609
171011A00013	10/11/2017	2.77	10/13/2026	10/11/2017	112.52916	108.2359851	104.131975	100.2077559	96.45447244	92.86375581	89.42769396	86.13880404	82.99000655
190703A00017	7/3/2019	2.33	5/4/2026	7/3/2019	109.37229	105.5915196	101.9622232	98.47747219	95.13069616	91.91566394	88.82646357	85.85748387	83.00339721
190923A00078	9/23/2019	1.96	6/28/2024	9/23/2019	103.77631	101.9336412	100.1325253	98.37177496	96.65024766	94.96684075	93.32048967	91.7101664	90.13487794
191031A00041	10/31/2019	1.72	10/31/2023	10/31/2019	102.2217	101.0348069	99.87532598	98.74231288	97.63487005	96.55214006	95.49330343	94.45757652	93.44420962
200210A00005	2/10/2020	1.77	2/10/2027	2/10/2020	109.72771	105.1415837	100.7730758	96.61075108	92.64383047	88.86215358	85.25613985	81.81675242	78.53546457
200309A00021	3/9/2020	1.05	3/9/2026	3/9/2020	104.33555	100.800024	97.40235723	94.13644352	90.99648032	87.97695307	85.0726192	82.27849308	79.58983199
200424A00006	4/24/2020	0.6	4/24/2023	4/24/2020	100.64175	99.98615332	99.33905916	98.70030255	98.06972319	97.44716488	96.83247536	96.22550623	95.62611277
141015A00025	10/15/2014	2.48	10/17/2022	10/15/2014	100.46448	100.3336703	100.2032167	100.073117	99.94336967	99.81397322	99.68492621	99.55622721	99.42787477

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
161109A00018	11/9/2016	2.63	11/9/2026	11/9/2016	112.18435	107.8229084	103.6565963	99.67559518	95.87063831	92.23297686	88.75434757	85.42694285	82.24338279
170515A00010	5/15/2017	2.58	5/15/2024	5/15/2017	104.552	102.8235629	101.1320355	99.47629873	97.85528065	96.26795231	94.71332569	93.19045159	91.69841772
180412A00036	4/12/2018	3.54	4/15/2038	4/12/2018	151.37477	133.0835311	117.3355424	103.7566343	92.0298273	81.88630966	73.09788218	65.4706217	58.83956181
180717A00076	7/17/2018	3.03	7/17/2023	7/17/2018	102.85669	101.9600454	101.0790275	100.2132309	99.36226301	98.52574508	97.70331098	96.89460688	96.09929076
181016A00084	10/16/2018	3.21	10/17/2022	10/16/2018	100.55991	100.428991	100.2984287	100.1682205	100.0383649	99.90886048	99.77970574	99.65089926	99.52243959
210128A00008	1/28/2021	0.54	4/9/2024	1/28/2021	100.94952	99.35039308	97.78411926	96.24975187	94.74638221	93.2731359	91.82917127	90.41367776	89.0258745
211222A00024	12/22/2021	1.13	4/15/2024	12/22/2021	101.9374	100.313371	98.72291213	97.16504638	95.6388372	94.14338383	92.67781953	91.24131001	89.83305186
150519A00013	5/19/2015	2.98	5/19/2025	5/19/2015	108.49763	105.7044487	102.9978226	100.3745004	97.83137928	95.36549506	92.97401533	90.6542323	88.40355633
160706A00029	7/6/2016	2.49	7/8/2030	7/6/2016	120.80287	112.4224326	104.6913215	97.55573446	90.96658839	84.87908208	79.25230267	74.0488703	69.23461688
180925A00060	9/25/2018	3.23	8/25/2023	9/25/2018	103.34722	102.3401526	101.3527089	100.3843179	99.43443196	98.50252388	97.58808653	96.69063166	95.80968908
190906A00004	9/6/2019	1.78	9/6/2022	9/6/2019	100.05198	100.0353171	100.0186657	100.0020306	99.98541171	99.96880896	99.95222236	99.93565187	99.91909747
200123A00048	1/23/2020	1.7	1/23/2025	1/23/2020	104.67686	102.2515852	99.89458843	97.60357453	95.37633577	93.21075134	91.10478337	89.05647321	87.06393779
160119A00028	1/19/2016	3.34	1/21/2031	1/19/2016	129.38477	120.103122	111.576497	103.7390962	96.53118105	89.89848961	83.79170836	78.1659979	72.98056606
170313A00035	3/13/2017	3.31	3/15/2027	3/13/2017	116.40007	111.5870589	107.0041093	102.6389769	98.48013762	94.51673889	90.73855672	87.13595588	83.69985283
170322A00025	3/22/2017	3.58	3/22/2033	3/22/2017	138.36089	126.3506224	115.5297853	105.7728294	96.96811597	89.01631004	81.82896546	75.3272789	69.44099223
180329A00003	3/29/2018	3.08	3/29/2028	3/29/2018	119.6605	113.6491868	107.981951	102.63723	97.59492774	92.83630532	88.343882	84.10134426	80.09346181
181119A00018	11/19/2018	3.28	11/17/2023	11/19/2018	104.08221	102.8385519	101.6246246	100.4393683	99.2817752	98.15088429	97.04577864	95.9655829	94.90946099
190215A00006	2/15/2019	2.89	2/15/2024	2/15/2019	104.31533	102.8368274	101.3867354	99.96431005	98.56882831	97.1995919	95.85592614	94.53717903	93.24272025
201028A00004	10/30/2020	1.55	12/29/2023	10/30/2020	102.10788	100.7764314	99.46911965	98.18533724	96.92449297	95.68601517	94.4693509	93.27396517	92.09934026
130606A00013	6/6/2013	2.94	6/15/2023	6/6/2013	102.54039	101.7338421	100.9399799	100.1585019	99.38911962	98.63155363	97.88553299	97.15079499	96.42708486
150601A00531	6/1/2015	3.28	7/24/2024	6/1/2015	106.36789	104.4301211	102.5374478	100.6885554	98.88217169	97.11706984	95.39206631	93.70601912	92.05782608
160129A00068	1/29/2016	1.97	1/30/2023	1/29/2016	101.06094	100.6368689	100.2163436	99.79932334	99.38576444	98.97562398	98.56885975	98.16543024	97.7652946
160701A00020	7/1/2016	2.13	7/1/2026	7/1/2016	109.06507	105.1292322	101.3570205	97.74081142	94.27337277	90.94784387	87.75771478	84.69680651	81.75925258
160712A00023	7/12/2016	1.79	7/12/2023	7/12/2016	101.73091	100.853508	99.99119073	99.14357107	98.31027564	97.49094357	96.68522604	95.89278576	95.1132965
160830A00035	8/30/2016	2.06	8/30/2024	8/30/2016	104.33909	102.3218904	100.3540152	98.43395124	96.56023972	94.73147671	92.94631053	91.20343939	89.50160924
190919A00025	9/19/2019	1.8	9/19/2024	9/19/2019	104.20058	102.1241307	100.0994559	98.1249281	96.19897905	94.32010105	92.48684431	90.69781427	88.951669
200305A00035	3/5/2020	1.25	3/5/2026	3/5/2020	105.03177	101.494547	98.09480571	94.82646867	91.68376521	88.66121019	85.75358818	82.95593863	80.26354194
200709A00007	7/10/2020	1.67	7/9/2027	7/10/2020	109.49298	104.5167069	99.7949042	95.31329973	91.05848741	87.01787471	83.17962925	79.53262927	76.06641746
210312A00004	3/12/2021	0.34	3/10/2023	3/12/2021	100.40928	99.87895907	99.35422768	98.834995	98.32117484	97.81268283	97.30943631	96.81135435	96.31835769
130904A00036	9/4/2013	3.57	9/15/2023	9/4/2013	103.9931	102.9225582	101.8740809	100.8469892	99.84063285	98.85438792	97.88765527	96.93985934	96.01044705
170111A00013	1/11/2017	3.4	1/10/2031	1/11/2017	129.80134	120.5338312	112.0173464	104.1866607	96.98254025	90.35116296	84.24359868	78.61534166	73.42588984
181210A00015	12/10/2018	3.12	12/11/2023	12/10/2018	104.08319	102.7785227	101.5026086	100.2544994	99.03328543	97.83809678	96.66810116	95.52250178	94.40053555
191007A00027	10/7/2019	1.69	10/7/2022	10/7/2019	100.29574	100.1928996	100.0902801	99.98788093	99.88570127	99.78374041	99.68199764	99.58047224	99.47916348

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191104A00022	11/4/2019	2.17	8/4/2027	11/4/2019	112.13654	107.0249782	102.1773925	97.57880131	93.21514708	89.0732361	85.14068115	81.40584814	77.85780657
191126A00026	11/26/2019	1.91	11/25/2026	11/26/2019	109.81017	105.4366998	101.2617427	97.27518252	93.46747822	89.82962891	86.35313983	83.02999061	79.85260581
191212A00027	12/13/2019	1.93	10/17/2022	12/13/2019	100.39258	100.2618533	100.1314817	100.0014637	99.87179791	99.74248281	99.61351697	99.48489895	99.35662731
200130A00006	1/30/2020	1.77	1/30/2025	1/30/2020	104.56227	102.1263438	99.75937519	97.45903018	95.22306728	93.04933372	90.9357614	88.88036304	86.88122852
200218A00004	2/18/2020	1.73	2/21/2023	2/18/2020	101.01957	100.5350556	100.0551816	99.57988094	99.10908836	98.64273997	98.18077303	97.72312599	97.26973844
171227A00018	12/27/2017	2.83	12/27/2024	12/27/2017	106.89508	104.522302	102.2142037	99.96865362	97.78360613	95.65709481	93.5872291	91.57219083	89.61023097
180904A00012	9/4/2018	3.35	9/4/2030	9/4/2018	129.51321	120.5725246	112.3318974	104.73246	97.72059341	91.24743473	85.26843198	79.74294318	74.6338744
190529A00089	5/29/2019	2.38	5/29/2024	5/29/2019	104.32591	102.5614385	100.8352797	99.14624813	97.49321103	95.87508214	94.29081934	92.73942235	91.21993054
200306A00065	3/6/2020	1.38	3/6/2030	3/6/2020	111.45928	103.7732979	96.66730379	90.0946151	84.01253371	78.3819831	73.1671842	68.33536169	63.85647791
151223A00066	12/23/2015	2.34	12/23/2022	12/23/2015	100.97142	100.6531545	100.3369032	100.0226464	99.71036514	99.40004071	99.09165473	98.78518901	98.48062559
171206A00040	12/6/2017	2.23	12/6/2022	12/6/2017	100.8236	100.552933	100.2837238	100.015962	99.74963584	99.48473379	99.22124438	98.95915627	98.69845826
180308A00011	3/8/2018	2.9	9/15/2022	3/8/2018	100.17669	100.1349735	100.0933068	100.051691	100.0101261	99.96861196	99.9271485	99.88573562	99.84437322
181114A00012	11/14/2018	3.13	11/14/2022	11/14/2018	100.8548	100.6453377	100.4367623	100.2290647	100.0222394	99.81628071	99.61118319	99.40694136	99.20354979
190529A00028	5/29/2019	2.38	5/29/2024	5/29/2019	104.32591	102.5614385	100.8352797	99.14624813	97.49321103	95.87508214	94.29081934	92.73942235	91.21993054
200818A00006	8/18/2020	1.18	8/18/2028	8/18/2020	108.38361	102.3312361	96.6514982	91.31961518	86.3125721	81.60898787	77.1889913	73.03410726	69.12715184
110824A00004	8/24/2011	3.11	8/30/2023	8/24/2011	103.3788	102.3561022	101.353619	100.3707557	99.40694048	98.46162344	97.53427571	96.6243884	95.7314717
160616A00027	6/16/2016	2.27	6/16/2026	6/16/2016	109.48928	105.5874262	101.8461501	98.25797424	94.81581462	91.51295496	88.34302559	85.29998341	82.37809328
180702A00012	7/2/2018	3.01	7/3/2023	7/2/2018	102.73075	101.8735283	101.0305919	100.2015905	99.38618058	98.58402978	97.79481658	97.01822975	96.25396799
190110A00004	1/10/2019	3.09	1/10/2025	1/10/2019	107.63064	105.210965	102.8581481	100.5699766	98.34432274	96.17914138	94.07246588	92.02240479	90.02713854
190514A00021	5/14/2019	2.72	11/14/2025	5/14/2019	109.27268	105.9726131	102.7900316	99.72003859	96.75797843	93.89941943	91.14014138	88.47612389	85.90353546
190812A00003	8/12/2019	1.67	8/12/2024	8/12/2019	103.71429	101.7469115	99.82666756	97.95213818	96.12195834	94.33481306	92.58943523	90.88460347	89.21914017
200331A00060	3/31/2020	1.09	3/31/2025	3/31/2020	103.11151	100.5260255	98.01805526	95.58480704	93.22360868	90.93190155	88.70723492	86.54726062	84.44972802
200408A00021	4/8/2020	0.99	4/4/2025	4/8/2020	103.20669	100.6014272	98.07466301	95.62355662	93.24538783	90.93755279	88.69755819	86.5230157	84.41163682
140815A00032	8/15/2014	3.59	10/15/2029	8/15/2014	127.03115	119.1850516	111.8912954	105.1078394	98.7960627	92.92046762	87.44841086	82.3498598	77.59717061
171010A00038	10/10/2017	2.23	10/11/2022	10/10/2017	100.38235	100.268322	100.1545618	100.0410734	99.92785566	99.81490768	99.70222845	99.58981697	99.47767227
180817A00022	8/17/2018	2.87	8/17/2023	8/17/2018	103.038	102.0531732	101.0871596	100.1394202	99.2094396	98.29672186	97.40078921	96.52118143	95.65745497
180927A00042	9/27/2018	3.02	9/27/2022	9/27/2018	100.33395	100.2587589	100.1836824	100.1087235	100.0338817	99.95915682	99.88454861	99.81005678	99.73568107
190620A00045	6/20/2019	2.14	6/20/2024	6/20/2019	104.05417	102.2311072	100.4487408	98.7058815	97.00138753	95.33415879	93.70313521	92.10729493	90.54565258
190807A00036	8/7/2019	1.75	8/7/2023	8/7/2019	101.8048	100.8554038	99.92364354	99.00903158	98.11109795	97.22938966	96.36347002	95.51291787	94.67732692
200310A00065	3/13/2020	1.1	3/13/2025	3/13/2020	103.07878	100.5415744	98.07944189	95.68972471	93.36987202	91.1174394	88.9300836	86.80555766	84.74170631
130531A00021	5/31/2013	3.22	5/30/2028	5/31/2013	121.02669	114.7971634	108.9329623	103.4106246	98.20832029	93.30573323	88.6839473	84.3253422	80.21349744
170327A00070	3/29/2017	3.05	3/29/2027	3/29/2017	116.03525	111.1701849	106.5399043	102.1318052	97.93402903	93.93541443	90.12545249	86.4942449	83.03246514
181004A00028	10/4/2018	3.31	10/4/2023	10/4/2018	103.75642	102.6363941	101.5405527	100.4681144	99.41833489	98.39050121	97.38393003	96.39796613	95.43198099

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200407A00002	4/8/2020	1.82	4/8/2024	4/8/2020	103.03295	101.4189825	99.8380861	98.28931362	96.77175191	95.28452219	93.8267785	92.39770609	90.99652001
200508A00004	5/8/2020	0.43	5/8/2023	5/8/2020	100.55161	99.85766735	99.17325225	98.49817255	97.83223825	97.1752645	96.52707142	95.8874839	95.25633146
201030A00001	11/2/2020	2.54	10/29/2040	11/2/2020	134.04064	114.9515186	98.93296365	85.46735294	74.12710652	64.55861236	56.46908932	49.61583876	43.79744092
191115A00030	11/15/2019	2.35	11/9/2029	11/15/2019	118.16462	110.5607668	103.5028787	96.9488106	90.85988691	85.20059731	79.93832164	75.04308015	70.48730657
200304A00052	3/6/2020	2.11	3/8/2027	3/6/2020	110.80879	106.1420026	101.6991817	97.4684074	93.43845597	89.59875651	85.93934961	82.45084871	79.12440407
200310A00019	3/10/2020	0.95	3/10/2023	3/10/2020	100.68568	100.1550962	99.6300879	99.11057126	98.59646039	98.08767117	97.58412121	97.08572982	96.59241797
220505A00026	5/9/2022	2.69	8/22/2023	5/9/2022	102.79767	101.8017	100.8250029	99.86702023	98.92721782	98.00508153	97.10011646	96.21184608	95.33981134
170921A00063	9/21/2017	2.23	9/21/2022	9/21/2017	100.20825	100.1498687	100.0915705	100.0333531	99.97521663	99.91716076	99.85918538	99.80129031	99.74347539
180820A00036	8/20/2018	3	8/21/2023	8/20/2018	103.08722	102.0926178	101.117193	100.1603973	99.22170051	98.30059227	97.39658129	96.50919445	95.63797595
181227A00026	12/27/2018	3.03	12/27/2023	12/27/2018	104.08753	102.7465944	101.4305215	100.1386582	98.87037133	97.62505001	96.40210423	95.20096414	94.02107915
200226A00014	2/26/2020	1.53	2/27/2023	2/26/2020	100.9461	100.4451903	99.94922805	99.45814469	98.97186857	98.49032945	98.01345846	97.54118807	97.07345202
200720A00044	7/22/2020	2.22	7/21/2026	7/22/2020	109.56845	105.5684263	101.7367704	98.06553095	94.54717646	91.17456775	87.94093541	84.83985867	81.86524575
200922A00038	9/24/2020	2.33	9/25/2023	9/24/2020	102.61953	101.5309816	100.4654639	99.42224707	98.40063669	97.39996673	96.41959829	95.45891824	94.51733795
211217A00021	12/21/2021	2.44	12/18/2026	12/21/2021	111.65569	107.1974319	102.943163	98.88247347	95.0055375	91.30308119	87.76634826	84.38706828	81.15742703
180207A00003	2/7/2018	3.28	2/7/2028	2/7/2018	119.46498	113.6368645	108.1340848	102.9367472	98.02627285	93.38530662	88.99763037	84.8480828	80.92248536
190528A00005	5/28/2019	2.42	6/15/2023	5/28/2019	102.12364	101.3189345	100.5268908	99.74721125	98.9796078	98.22380133	97.47952127	96.74650524	96.0244988
200121A00009	1/24/2020	1.94	1/24/2025	1/24/2020	104.94697	102.5223477	100.1659086	97.87536084	95.6485016	93.4832146	91.37746628	89.32930204	87.33684266
200303A00007	3/3/2020	1.11	3/4/2024	3/3/2020	101.93013	100.4164609	98.93281598	97.4783797	96.05236393	94.65400842	93.28257959	91.9373693	90.61769381
200604A00004	6/4/2020	0.76	6/4/2024	6/4/2020	101.47452	99.71974714	98.00344442	96.32443358	94.68158624	93.07381954	91.50009383	89.95941046	88.45080973
150601A00485	6/1/2015	3.09	6/21/2024	6/1/2015	105.94757	104.0998447	102.2934168	100.5270854	98.79969315	97.11012515	95.45730673	93.84020187	92.25781138
151223A00077	12/23/2015	3.57	12/24/2035	12/23/2015	146.97375	131.4078235	117.7288698	105.6943833	95.09434725	85.7467224	77.49358634	70.19782246	63.7402784
161214A00023	12/14/2016	3.3	12/15/2031	12/14/2016	133.40176	122.9128509	113.3579618	104.6482737	96.70387003	89.4528007	82.83024972	76.77779351	71.24273975
170809A00005	8/9/2017	2.61	8/11/2025	8/9/2017	108.12898	105.1097646	102.1910853	99.36904639	96.63992716	94.00017128	91.44637865	88.97529754	86.5838173
190529A00032	5/29/2019	2.38	5/29/2024	5/29/2019	104.32591	102.5614385	100.8352797	99.14624813	97.49321103	95.87508214	94.29081934	92.73942235	91.21993054
190613A00011	6/13/2019	2.26	6/13/2024	6/13/2019	104.22273	102.4175796	100.6523667	98.92590331	97.23704765	95.58470176	93.96780929	92.3853535	90.83635544
190805A00050	8/5/2019	1.91	8/5/2024	8/5/2019	103.88983	101.9443134	100.044894	98.19019881	96.37890723	94.60974637	92.88148906	91.19295193	89.54299351
200501A00003	5/1/2020	0.66	4/14/2023	5/1/2020	100.60166	99.97459112	99.35530724	98.74366718	98.13953003	97.54275833	96.95321796	96.37077805	95.79531085
210609A00013	6/11/2021	1.64	6/11/2025	6/11/2021	104.91568	102.1095337	99.39240345	96.76092292	94.2118805	91.74220698	89.3489681	87.02935764	84.78069084
220819A00038	8/19/2022	3.59	8/19/2024	8/19/2022	107.32983	105.3116012	103.3418978	101.4192547	99.54225755	97.70954389	95.91980139	94.17176546	92.46421718
150601A00495	6/1/2015	2.99	6/27/2024	6/1/2015	105.82399	103.960548	102.1390684	100.3583509	98.61723732	96.91461005	95.24939052	93.62053753	92.02704563
190110A00010	1/10/2019	2.97	1/16/2024	1/10/2019	104.17256	102.778765	101.4103624	100.066716	98.74721212	97.45125658	96.17827431	94.92770853	93.69901996
200317A00026	3/17/2020	1.22	3/15/2024	3/17/2020	101.95793	100.4177661	98.90842127	97.42904735	95.97882252	94.55695464	93.16267982	91.79526122	90.45398783
210818A00005	8/18/2021	0.6	8/19/2024	8/18/2021	101.61052	99.6458574	97.72879114	95.85787163	94.03170744	92.24895864	90.50833457	88.80859158	87.14853104

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180823A00033	8/23/2018	2.85	8/23/2023	8/23/2018	103.06316	102.061574	101.0794315	100.1161717	99.17125386	98.24415738	97.33438136	96.44144352	95.56487932
181009A00035	10/9/2018	3.12	10/11/2022	10/9/2018	100.49878	100.3844751	100.2704429	100.1566847	100.0431994	99.92998611	99.81704372	99.70437123	99.59196764
190114A00061	1/14/2019	2.98	1/31/2024	1/14/2019	104.31138	102.8761575	101.4677626	100.0855093	98.72873331	97.39679212	96.08906445	94.80494925	93.54386488
191009A00017	10/9/2019	1.76	10/4/2024	10/9/2019	103.92707	101.8175821	99.761314	97.75655813	95.8016789	93.8951053	92.03532779	90.22089538	88.45041288
191023A00006	10/23/2019	1.95	10/23/2024	10/23/2019	104.44092	102.2747615	100.1641722	98.10733373	96.10250406	94.14801166	92.24225211	90.38368486	88.57083005
200302A00045	3/4/2020	1.31	3/4/2025	3/4/2020	103.58433	101.0645584	98.61881663	96.24449764	93.93910567	91.70024808	89.52563029	87.41305111	85.36039832
151106A00011	11/6/2015	3.1	1/15/2026	11/6/2015	111.12034	107.6179486	104.2456354	100.9978858	97.86945296	94.85533847	91.9507797	89.15123723	86.45238319
191009A00028	10/9/2019	1.76	10/9/2024	10/9/2019	103.95328	101.830087	99.76070133	97.74338843	95.77648568	93.85839659	91.98758755	90.16258487	88.38197189
210129A00008	1/29/2021	0.62	10/8/2024	1/29/2021	101.51014	99.41624203	97.37549132	95.38617995	93.44666574	91.55537172	89.710783	87.91144379	86.15595463
211222A00003	12/22/2021	1.33	1/15/2025	12/22/2021	103.4252	101.0432964	98.72786423	96.4766906	94.28764608	92.15868414	90.0878374	88.07321411	86.11299482
211222A00031	12/22/2021	1.33	1/15/2025	12/22/2021	103.4252	101.0432964	98.72786423	96.4766906	94.28764608	92.15868414	90.0878374	88.07321411	86.11299482
170508A00010	5/8/2017	2.43	5/8/2024	5/8/2017	104.46511	102.7524084	101.0760442	99.43492652	97.82800823	96.25428379	94.71278727	93.20259037	91.72280052
180531A00015	5/31/2018	2.95	5/31/2023	5/31/2018	102.43131	101.6669001	100.9138764	100.1719882	99.44099004	98.72064355	98.01071723	97.31098625	96.62123223
190130A00020	1/30/2019	2.97	4/17/2023	1/30/2019	102.07983	101.4391452	100.8065022	100.1817505	99.56474271	98.95533544	98.35338868	97.75876586	97.17133374
190327A00032	3/27/2019	2.53	1/26/2024	3/27/2019	103.62774	102.211081	100.8206874	99.45589063	98.11604556	96.80052814	95.50873468	94.24008099	92.99400158
190528A00009	5/28/2019	2.45	5/15/2024	5/28/2019	104.32679	102.6003705	100.9108191	99.25702251	97.63790974	96.05245281	94.49966463	92.97859689	91.48833815
191226A00019	12/26/2019	2.4	12/22/2028	12/26/2019	116.57127	109.9229034	103.6997379	97.87236255	92.413543	87.29805354	82.50251892	78.00526962	73.7862091
200505A00005	5/5/2020	0.77	5/5/2025	5/5/2020	102.72016	100.0363658	97.4355366	94.91457631	92.47053155	90.10057976	87.80202234	85.57227817	83.40887761
181123A00016	11/23/2018	3.19	11/23/2022	11/23/2018	100.9336	100.6991989	100.4658888	100.2336663	100.0025235	99.77245304	99.54344743	99.31549925	99.08860119
190530A00029	5/30/2019	2.25	5/30/2024	5/30/2019	104.31764	102.5467241	100.8143695	99.11937867	97.46060865	95.83696361	94.24739241	92.69088617	91.16647619
191203A00004	12/4/2019	1.87	12/4/2024	12/4/2019	104.5052	102.2227907	100.0013691	97.83886707	95.73330385	93.68278207	91.68548342	89.73966464	87.84365372
200207A00009	2/7/2020	1.58	2/7/2025	2/7/2020	104.46393	101.9989482	99.60452912	97.27825542	95.01780854	92.82096287	90.68558144	88.60961181	86.59108216
200304A00054	3/6/2020	2.35	3/8/2027	3/6/2020	111.91241	107.2206424	102.7537106	98.49965393	94.44721312	90.58578359	86.90537395	83.39656721	80.05048473
200604A00013	6/4/2020	2.21	6/4/2035	6/4/2020	125.89745	112.3532488	100.4231742	89.90503277	80.622963	72.42388392	65.1744398	58.75836818	53.0742306
210527A00009	5/27/2021	0.5	5/28/2024	5/27/2021	101.20443	99.46732492	97.76804794	96.10542669	94.47834143	92.88571852	91.32652795	89.79978109	88.30452859
210816A00003	8/16/2021	0.71	8/16/2024	8/16/2021	101.5643	99.61295749	97.70861917	95.84986663	94.03533302	92.26370179	90.53370442	88.84411837	87.19376507
180530A00028	5/30/2018	3.67	5/31/2033	5/30/2018	139.86919	127.5762525	116.5180853	106.562454	97.5919969	89.50247663	82.2012479	75.60591116	69.64312917
190308A00007	3/8/2019	2.8	3/8/2024	3/8/2019	104.36937	102.8285166	101.3182523	99.83774065	98.38617464	96.96277603	95.56679405	94.19750411	92.85420676
200203A00004	2/3/2020	1.7	2/3/2023	2/3/2020	100.92642	100.4920369	100.0613869	99.63441797	99.2110832	98.79133633	98.37513191	97.96242527	97.55317248
200326A00026	3/26/2020	1.32	3/26/2024	3/26/2020	102.16007	100.5888994	99.04950467	97.54098816	96.06248908	94.61317834	93.19225706	91.79895515	90.43253005
170622A00036	6/22/2017	3.23	6/22/2032	6/22/2017	132.6867	121.7522381	111.8379087	102.8423051	94.67461473	87.25346378	80.50589171	74.3664418	68.7763542
180706A00013	7/6/2018	3.01	7/6/2023	7/6/2018	102.75392	101.8882681	101.0371854	100.2003109	99.3772907	98.56778271	97.77145597	96.98799029	96.21707577
190530A00024	5/30/2019	2.25	5/30/2024	5/30/2019	104.31764	102.5467241	100.8143695	99.11937867	97.46060864	95.83696361	94.24739241	92.69088617	91.16647619

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190606A00029	6/6/2019	2.96	6/6/2034	6/6/2019	134.00332	120.9661602	109.3592111	99.01633013	89.79153461	81.55646196	74.19815907	67.61715929	61.72580814
190816A00033	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563
200306A00039	3/6/2020	0.88	3/6/2023	3/6/2020	100.63814	100.1187606	99.60472985	99.09596135	98.5923746	98.09389073	97.60043245	97.11192403	96.62829127
200709A00003	7/10/2020	1.63	7/10/2026	7/10/2020	107.16973	103.246266	99.48729475	95.88509387	92.43234401	89.12210448	85.94779173	82.90315917	79.98227819
170502A00028	5/2/2017	2.84	5/3/2027	5/2/2017	115.39472	110.4430729	105.7348345	101.2566984	96.99616205	92.94147264	89.08157753	85.40607853	81.9051893
190102A00050	1/2/2019	3.38	1/3/2034	1/2/2019	139.99204	126.9553478	115.2980929	104.8652556	95.52004244	87.14165658	79.62335183	72.87073264	66.80026716
190809A00010	8/9/2019	1.88	8/8/2024	8/9/2019	103.84814	101.8949922	99.98830663	98.12669312	96.30881526	94.53338528	92.79916188	91.1049482	89.44958997
201006A00007	10/8/2020	1.47	10/10/2023	10/8/2020	101.73198	100.6075421	99.50782675	98.43202309	97.37935806	96.34909161	95.34051494	94.35294888	93.38574236
211222A00019	12/22/2021	0.97	10/16/2023	12/22/2021	101.17835	100.0408849	98.92881321	97.84129169	96.77751492	95.73671237	94.71814653	93.72111116	92.74492964
160401A00016	4/1/2016	2.42	4/1/2025	4/1/2016	106.60728	103.9728083	101.4170522	98.93717942	96.53047871	94.19435405	91.92631893	89.72399094	87.58508662
160630A00011	6/30/2016	1.8	6/30/2023	6/30/2016	101.68739	100.8432923	100.0131488	99.19661484	98.39335803	97.60305683	96.82539997	96.06008608	95.30682331
170215A00040	2/15/2017	2.59	5/15/2023	2/15/2017	102.04236	101.3239859	100.6157141	99.91733619	99.22864575	98.54944201	97.87952973	97.21871902	96.56682513
181005A00011	10/5/2018	3.2	10/5/2023	10/5/2018	103.76556	102.6408759	101.5405634	100.4638363	99.40994194	98.3781592	97.3677972	96.37819355	95.40871294
190816A00013	8/16/2019	2.2	8/16/2029	8/16/2019	116.58108	109.2692401	102.4685454	96.14058518	90.25002617	84.76434792	79.65360531	74.89021242	70.44874555
191004A00004	10/4/2019	1.54	10/4/2024	10/4/2019	103.73753	101.6246887	99.565253	97.55751271	95.59982362	93.69060659	91.82834437	90.01157869	88.23890745
191015A00013	10/15/2019	1.72	10/15/2024	10/15/2019	104.18148	102.0341431	99.94160979	97.90209915	95.91390441	93.97538739	92.08497513	90.24115671	88.44248024
191021A00021	10/21/2019	2.22	12/21/2027	10/21/2019	113.29881	107.770394	102.5461478	97.6077669	92.93813981	88.52126567	84.34217668	80.38686612	76.64222175
091210A00005	12/10/2009	5.08	12/16/2024	12/10/2009	112.05055	109.6467558	107.3074376	105.0304489	102.8137305	100.6553066	98.55328008	96.50582929	94.51120409
160706A00006	7/6/2016	1.47	7/6/2023	7/6/2016	101.5158	100.6547776	99.80829361	98.97598652	98.15750249	97.3524994	96.56064637	95.78162325	95.01512023
191003A00033	10/3/2019	1.54	10/3/2022	10/3/2019	100.26694	100.1751331	100.0834964	99.99203238	99.90074044	99.80962011	99.71867088	99.62789228	99.53728381
200305A00029	3/5/2020	1.14	3/5/2025	3/5/2020	103.1546	100.6376942	98.19482271	95.82337949	93.52086593	91.28488671	89.11314484	87.00343689	84.9536486
210720A00035	7/22/2021	2.27	7/21/2031	7/22/2021	121.28954	111.8317185	103.192924	95.29775631	88.07811998	81.47248267	75.42521265	69.88598606	64.80925636
130314A00027	3/14/2013	2.38	3/15/2023	3/14/2013	101.52885	100.9811682	100.4394003	99.90344711	99.37321513	98.84861294	98.32955106	97.81594187	97.30769963
160330A00056	3/30/2016	2.26	3/31/2025	3/30/2016	106.52881	103.8906307	101.3313713	98.84819016	96.43836674	94.09929629	91.82848398	89.62353952	87.48217197
180702A00034	7/2/2018	2.86	7/3/2023	7/2/2018	102.68878	101.8305754	100.9866941	100.1567813	99.34049209	98.53749305	97.74746147	96.97008505	96.20506142
190115A00025	1/15/2019	2.96	1/12/2024	1/15/2019	104.1255	102.7428317	101.3851727	100.0519043	98.74242568	97.45615546	96.19253064	94.951006	93.73105336
190827A00002	8/27/2019	1.74	8/27/2024	8/27/2019	103.67355	101.6712723	99.71780754	97.81165851	95.95138685	94.13560796	92.36298855	90.63224439	88.94213815
191206A00013	12/6/2019	3.05	12/6/2044	12/6/2019	151.50227	127.1889614	107.4301467	91.32481859	78.15605547	67.35248713	58.45799326	51.10784475	45.00989158
210609A00007	6/11/2021	2.6	6/11/2029	6/11/2021	118.99267	111.7819767	105.0617209	98.79590244	92.95134674	87.49746931	82.40606044	77.65108888	73.20852272
210802A00002	8/2/2021	0.7	8/1/2025	8/2/2021	102.77301	99.85156436	97.02740614	94.2967802	91.65610059	89.10193881	86.63101599	84.24019547	81.92647581
211222A00011	12/22/2021	0.97	10/16/2023	12/22/2021	101.17835	100.0408849	98.92881321	97.84129169	96.77751492	95.73671237	94.71814653	93.72111116	92.74492964
120127A00018	1/27/2012	3.64	2/1/2027	1/27/2012	117.46818	112.75592	108.2632519	103.978781	99.89176077	95.9920549	92.27009918	88.71686647	85.32383373
150319A00012	3/19/2015	3.13	3/19/2029	3/19/2015	121.98163	114.910886	108.3049334	102.1306642	96.3575014	90.95718949	85.90360615	81.17259075	76.74178735

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00648	6/1/2015	2.71	12/30/2022	6/1/2015	101.10194	100.764268	100.4288496	100.0956577	99.76467039	99.43586584	99.10922256	98.78471935	98.46233528
170831A00004	8/31/2017	2	8/31/2023	8/31/2017	102.25904	101.2396892	100.2405743	99.26109908	98.30068912	97.35879224	96.43487738	95.52843362	94.6389692
180827A00020	8/27/2018	3.21	8/27/2025	8/27/2018	110.07711	106.9847631	103.9965556	101.1083985	98.31638993	95.61680297	93.00607676	90.48080808	88.03774341
190625A00021	6/25/2019	1.88	6/26/2023	6/25/2019	101.81905	100.9842576	100.1631049	99.35526107	98.56040458	97.77822424	97.00841871	96.25069613	95.50477377
190807A00022	8/7/2019	1.76	1/17/2023	8/7/2019	100.876	100.4888622	100.1047022	99.72348448	99.34517515	98.96974095	98.5971491	98.22736731	97.86036379
190809A00012	8/9/2019	1.69	8/9/2024	8/9/2019	103.73731	101.7777671	99.86498987	97.99757285	96.17416705	94.39347269	92.6542371	90.95525264	89.29535474
190829A00005	8/30/2019	2.06	8/30/2023	8/30/2019	102.20331	101.1886371	100.1940319	99.21890497	98.26268863	97.32483711	96.40482542	95.50214842	94.61631988
190904A00001	9/4/2019	1.5	9/4/2024	9/4/2019	103.49389	101.4666218	99.48928789	97.56034594	95.67830781	93.84174176	92.04926988	90.29956562	88.59135148
200511A00015	5/11/2020	0.6	2/1/2023	5/11/2020	100.4463	100.0186983	99.59471688	99.17431294	98.75744144	98.34405808	97.93411932	97.52758233	97.12440498
200928A00003	9/28/2020	0.55	9/26/2025	9/28/2020	102.48043	99.41220427	96.45071211	93.59163971	90.83087746	88.1645058	85.58878519	83.10014664	80.69518283
120112A00013	1/12/2012	2.76	1/16/2024	1/12/2012	104.04781	102.652229	101.2821073	99.9368124	98.61572785	97.31825715	96.04382292	94.79186619	93.56184562
130528A00028	5/28/2013	2.63	5/30/2023	5/28/2013	102.18089	101.4203008	100.6710115	99.93276913	99.20533098	98.48846121	97.78193083	97.08551741	96.39900488
171130A00005	11/30/2017	2.45	11/30/2022	11/30/2017	100.81407	100.5603995	100.3080031	100.0568671	99.80698204	99.55833875	99.31092803	99.06474077	98.81976799
190925A00011	9/25/2019	1.89	9/25/2024	9/25/2019	104.15096	102.0636605	100.0285843	98.04408051	96.10855957	94.22049372	92.37841427	90.5809088	88.82661853
200124A00008	1/24/2020	1.92	1/22/2027	1/24/2020	110.26574	105.7226666	101.3925401	97.26430514	93.32753164	89.57238095	85.98956912	82.57033283	79.30639761
171026A00011	10/26/2017	2.94	10/26/2027	10/26/2017	116.72153	111.2618206	106.0935208	101.1994851	96.56367403	92.17107307	88.00762122	84.06014529	80.31629896
190130A00019	1/30/2019	3.01	1/30/2024	1/30/2019	104.3462	102.9134047	101.5073492	100.1273485	98.77274121	97.44288813	96.13717086	94.85499118	93.59577016
190903A00004	9/3/2019	1.77	9/6/2022	9/3/2019	100.05182	100.0351503	100.0184992	100.0018642	99.98524543	99.96864282	99.95205636	99.93548601	99.91893176
190906A00005	9/6/2019	1.77	9/6/2023	9/6/2019	101.93731	100.9048514	99.89321961	98.9017852	97.92994814	96.9771319	96.04278238	95.12636682	94.22737276
191115A00016	11/18/2019	2.48	11/18/2024	11/18/2019	105.78872	103.5356761	101.3418102	99.20513551	97.12374583	95.09581485	93.11959221	91.1933996	89.31562706
200203A00006	2/3/2020	1.76	2/3/2025	2/3/2020	104.56064	102.1131547	99.73527124	97.42461884	95.17892504	92.99600779	90.87377131	88.81020213	86.80336534
210916A00007	9/16/2021	0.75	9/16/2024	9/16/2021	101.72842	99.69174912	97.70577036	95.76889395	93.87959049	92.03638947	90.23787651	88.48269075	86.76952244
211001A00001	10/1/2021	0.59	10/2/2023	10/1/2021	100.73591	99.63922981	98.56622538	97.5161343	96.48822979	95.48181553	94.49622402	93.53081515	92.58497477
170803A00021	8/3/2017	2.5	8/5/2024	8/3/2017	105.04647	103.0893538	101.1785535	99.31269539	97.49045258	95.71054631	93.97174375	92.27285605	90.61273646
180118A00039	1/18/2018	3.09	1/19/2027	1/18/2018	114.86315	110.2450982	105.8413554	101.6408655	97.63319723	93.80850767	90.15750579	86.67141889	83.34196103
181213A00031	12/13/2018	2.97	12/13/2023	12/13/2018	104.04954	102.7382679	101.4553454	100.1998547	98.97091667	97.76768993	96.58936881	95.4351814	94.30438783
190719A00006	7/19/2019	2.17	7/19/2024	7/19/2019	104.28732	102.3834881	100.523761	98.70685827	96.93154318	95.19662274	93.50094581	91.84340131	90.22291661
200228A00059	2/28/2020	1.79	2/28/2030	2/28/2020	114.57692	106.7917189	99.59036398	92.92605595	86.75597034	81.04090361	75.74494997	70.83520845	66.28151741
200311A00058	3/16/2020	1.1	10/14/2022	3/16/2020	100.26813	100.1458926	100.0239636	99.9023461	99.78103905	99.66004117	99.53935125	99.4189681	99.29889051
200812A00004	8/12/2020	0.59	8/12/2025	8/12/2020	102.47436	99.52811964	96.68097332	93.92905969	91.26869084	88.69634257	86.20864612	83.80238039	81.47446462
211222A00023	12/22/2021	1.13	4/15/2024	12/22/2021	101.9374	100.313371	98.72291213	97.16504638	95.6388372	94.14338383	92.67781953	91.24131001	89.83305186
170216A00043	2/16/2017	3.17	2/16/2027	2/16/2017	115.47017	110.7572824	106.2666504	101.9866102	97.90617446	94.01498656	90.30328061	86.76184488	83.3819874
180125A00022	1/25/2018	2.69	1/25/2023	1/25/2018	101.29233	100.8819904	100.4749748	100.0712437	99.67075729	99.27347658	98.87936315	98.48837921	98.10048757

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180529A00042	5/29/2018	3.42	5/30/2028	5/29/2018	121.2999	115.0939633	109.2508657	103.7473519	98.5617886	93.67403944	89.06535283	84.71825899	80.61647528
180904A00004	9/4/2018	2.89	9/5/2023	9/4/2018	103.20019	102.1618344	101.1443522	100.1471137	99.16951917	98.21099219	97.27097872	96.34894601	95.44438159
190708A00011	7/8/2019	2.2	7/8/2024	7/8/2019	104.28981	102.4151638	100.5833339	98.7930887	97.04324467	95.33265922	93.66022928	92.02488959	90.42561121
190815A00007	8/15/2019	1.81	7/6/2023	8/15/2019	101.72213	100.8613176	100.0150221	99.18287833	98.3645338	97.5596474	96.76788924	95.98894012	95.22249114
200130A00025	1/30/2020	1.54	1/30/2023	1/30/2020	100.87903	100.4554157	100.0353486	99.61878365	99.20567732	98.79598668	98.38966955	97.98668445	97.58699055
200605A00007	6/5/2020	0.52	6/5/2023	6/5/2020	100.6598	99.88813775	99.12823174	98.3798193	97.64264139	96.9164467	96.20099135	95.49603864	94.80135879
210201A00004	2/3/2021	1.15	2/3/2025	2/3/2021	103.05579	100.6270625	98.26752463	95.97481859	93.74668391	91.58095012	89.47553257	87.4284285	85.43771329
140911A00027	9/11/2014	3.18	9/16/2024	9/11/2014	106.77621	104.6860426	102.6476359	100.6593658	98.7196734	96.8270598	94.98008328	93.17735667	91.41754484
170602A00026	6/2/2017	2.25	6/3/2024	6/2/2017	104.34794	102.5656508	100.8223584	99.11686544	97.44802453	95.81473476	94.21593942	92.65062378	91.11781289
180730A00081	7/30/2018	3.5	7/28/2028	7/30/2018	122.31421	115.9089373	109.88727	104.2241622	98.89632953	93.88211584	89.16137159	84.71534162	80.52656197
190122A00008	1/22/2019	2.98	1/20/2023	1/22/2019	101.37153	100.9748779	100.5813402	100.1908764	99.8034507	99.41902756	99.0375721	98.65904995	98.28342729
190326A00002	3/26/2019	2.56	9/26/2022	3/26/2019	100.28023	100.207938	100.1357558	100.0636837	99.99172135	99.91986867	99.84812536	99.77649117	99.70496589
190523A00018	5/23/2019	2.51	3/15/2024	5/23/2019	103.97409	102.4175471	100.8921162	99.39693833	97.93118408	96.49405382	95.08477652	93.70260844	92.34683191
190930A00069	9/30/2019	1.9	9/29/2023	9/30/2019	102.17011	101.0731965	99.99973231	98.94896856	97.92019136	96.91271653	95.92588799	94.95907635	94.01167758
200224A00019	2/24/2020	1.59	2/18/2025	2/24/2020	104.22398	101.7362773	99.32057202	96.97437182	94.69528499	92.48101683	90.32936512	88.23821582	86.20553892
200803A00011	8/3/2020	0.72	8/4/2025	8/3/2020	102.45343	99.53783842	96.7194358	93.99447453	91.3593682	88.81068803	86.34515504	83.95963265	81.65111962
200922A00023	9/24/2020	2.5	9/26/2022	9/24/2020	100.27589	100.2036035	100.131425	100.0593566	99.98739798	99.915549	99.84380938	99.77217889	99.7006573
210527A00008	5/27/2021	0.32	5/30/2023	5/27/2021	100.50019	99.74573106	99.00252163	98.27031223	97.54886039	96.83793072	96.13729466	95.4467302	94.76602169
220429A00002	4/29/2022	3.63	4/29/2032	4/29/2022	136.22858	125.2828827	115.3403009	106.3025732	98.08157958	90.59824513	83.78156761	77.56775376	71.89945226
171206A00010	12/6/2017	2.45	12/6/2022	12/6/2017	100.85596	100.58553	100.3165536	100.0490198	99.78291708	99.51823384	99.25495874	98.99308055	98.73258813
180914A00028	9/14/2018	3.37	9/12/2025	9/14/2018	110.72952	107.5821187	104.5418361	101.6044206	98.76581288	96.02213817	93.36969685	90.8049553	88.32453744
190805A00049	8/5/2019	1.88	8/4/2023	8/5/2019	101.91472	100.9730222	100.0486603	99.14115811	98.25005763	97.3749174	96.51531168	95.67082972	94.84107515
210414A00001	4/14/2021	0.7	5/16/2024	4/14/2021	101.31509	99.61262352	97.94664744	96.31605314	94.7197782	93.15680299	91.62614854	90.12687442	88.65807684
220815A00004	8/15/2022	3.54	2/15/2024	8/15/2022	105.27884	103.7928794	102.3354644	100.9058426	99.50328761	98.1270978	96.77659528	95.45112495	94.15005351
160628A00039	6/28/2016	2.01	6/29/2026	6/28/2016	109.10777	105.1623291	101.3810447	97.75625798	94.28070593	90.94749933	87.75010178	84.6823098	81.73823417
170317A00059	3/17/2017	2.47	3/17/2023	3/17/2017	101.59246	101.0390184	100.4916071	99.95012916	99.4144882	98.88459005	98.36034254	97.84165546	97.32844053
170622A00039	6/22/2017	3.36	6/22/2035	6/22/2017	140.91768	126.3984327	113.5839359	102.2620972	92.24834322	83.38191638	75.52268921	68.54841892	62.35237952
190514A00024	5/14/2019	2.34	5/14/2024	5/14/2019	104.35624	102.6282573	100.9371996	99.28194892	97.66143261	96.07462118	94.52052606	92.99819755	91.50672283
190926A00006	9/26/2019	1.7	9/26/2022	9/26/2019	100.22613	100.1538065	100.0815925	100.0094895	99.93749717	99.86561536	99.79384377	99.72218217	99.65063029
211222A00021	12/22/2021	1.06	1/16/2024	12/22/2021	101.50055	100.1263576	98.77721502	97.45249987	96.1516073	94.8739519	93.618967	92.38610385	91.17483097
100809A00029	8/9/2010	4.23	8/15/2025	8/9/2010	113.02773	109.923917	106.9231942	104.0215658	101.2152131	98.50048693	95.87389848	93.33211175	90.87193576
150601A00515	6/1/2015	2.95	1/16/2024	6/1/2015	104.25694	102.8598163	101.4881871	100.1414105	98.81886932	97.51996638	96.24412364	94.99078148	93.75939797
160624A00011	6/24/2016	1.83	6/26/2023	6/24/2016	101.69404	100.8609517	100.0414627	99.23524218	98.44196988	97.66133589	96.89304011	96.13679184	95.39230948

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170120A00009	1/20/2017	3.67	1/22/2035	1/20/2017	143.99952	129.728986	117.0794326	105.8552458	95.88547091	87.02058556	79.12971055	72.09819629	65.82553241
180529A00044	5/29/2018	3.11	5/29/2024	5/29/2018	105.61906	103.8427904	102.1050527	100.4046542	98.74045626	97.11136693	95.51633861	93.95436571	92.42448255
181005A00005	10/5/2018	3.31	10/5/2023	10/5/2018	103.76454	102.6417078	101.5431744	100.4681595	99.41591328	98.3857175	97.3768839	96.38875261	95.42069067
191003A00020	10/3/2019	1.72	10/3/2022	10/3/2019	100.27231	100.1806043	100.0890725	99.99771191	99.90652205	99.81550245	99.72465262	99.63397209	99.54346039
191101A00002	11/1/2019	1.85	11/1/2022	11/1/2019	100.48419	100.3117038	100.1398051	99.96849279	99.797764	99.62761574	99.45804507	99.28904911	99.12062496
191206A00008	12/6/2019	2.44	12/6/2030	12/6/2019	121.38358	112.5579206	104.447716	96.99100915	90.13152372	83.8181121	78.00426274	72.64765738	67.70977261
200127A00023	1/27/2020	1.8	1/27/2025	1/27/2020	104.62072	102.1920916	99.83199906	97.53812866	95.3082593	93.14025751	91.0320735	88.98173728	86.98735511
160119A00027	1/19/2016	3.25	1/18/2030	1/19/2016	125.37596	117.3157876	109.8427168	102.910724	96.47761787	90.50470514	84.95648436	79.80036747	75.00642708
180829A00008	8/29/2018	3.23	8/30/2027	8/29/2018	118.47444	113.1087052	108.0221913	103.1988674	98.62370668	94.2826184	90.16238445	86.25060091	82.53562371
181211A00031	12/11/2018	2.95	12/11/2023	12/11/2018	104.00641	102.7000012	101.4224284	100.1727343	98.95000589	97.75337002	96.58199137	95.43507033	94.3118411
200106A00015	1/6/2020	1.87	2/15/2024	1/6/2020	102.80337	101.3365611	99.89796074	98.48682822	97.10244603	95.74412109	94.41118379	93.10298697	91.81890497
200305A00007	3/5/2020	1.14	3/5/2025	3/5/2020	103.1546	100.6376942	98.19482271	95.82337949	93.52086593	91.28488671	89.11314484	87.00343689	84.9536486
200818A00007	8/18/2020	1.31	8/20/2029	8/18/2020	110.26899	103.1635582	96.55991669	90.4201407	84.7093503	79.39545386	74.44891211	69.84252314	65.55122657
081209A00008	12/9/2008	4.87	12/15/2023	12/9/2008	106.41064	105.0807685	103.7789557	102.5043143	101.2559954	100.0331854	98.83510464	97.66100548	96.51017045
190603A00002	6/3/2019	2.03	6/2/2023	6/3/2019	101.8119	101.0436282	100.286914	99.54149824	98.80712944	98.08356348	97.37056338	96.66789906	95.97534707
190814A00015	8/14/2019	1.84	8/14/2024	8/14/2019	103.80296	101.8341842	99.91260498	98.03680367	96.20541208	94.41711217	92.67063387	90.96475301	89.29828933
190826A00029	8/26/2019	1.53	8/26/2024	8/26/2019	103.50811	101.5052189	99.55119139	97.64452657	95.78378405	93.96757733	92.19457131	90.46348008	88.77306466
200131A00047	1/31/2020	1.68	1/31/2023	1/31/2020	100.9048	100.478791	100.0563674	99.63748068	99.22208666	98.8101419	98.40160366	97.99642993	97.59457936
200303A00012	3/3/2020	1.71	3/1/2030	3/3/2020	113.96894	106.2035008	99.02109968	92.37496186	86.22229395	80.52392287	75.24397259	70.34957113	65.81058498
200309A00027	3/9/2020	0.97	3/10/2025	3/9/2020	102.73558	100.2107896	97.76057478	95.3822994	93.07343552	90.83156029	88.6543508	86.53957934	84.48510881
200720A00012	7/20/2020	0.77	7/15/2025	7/20/2020	102.55063	99.68639043	96.91598395	94.23584813	91.64257839	89.132917	86.70374598	84.35208024	82.07506123
201030A00004	11/2/2020	2.56	10/29/2040	11/2/2020	134.40208	115.2820675	99.2362168	85.74642698	74.38470882	64.79709955	56.69051692	49.82200336	43.98991603
120907A00023	9/7/2012	2.05	9/15/2022	9/7/2012	100.14505	100.1033221	100.0616467	100.0200227	99.97844995	99.93692837	99.89545784	99.85403827	99.81266956
130424A00005	4/24/2013	3.07	4/24/2030	4/24/2013	126.05262	117.6330081	109.8481035	102.6464634	95.98108188	89.80898191	84.09085015	78.79070631	73.87560412
160524A00027	5/24/2016	3.06	5/27/2031	5/24/2016	128.02495	118.4315378	109.6489915	101.604008	94.23029143	87.46784736	81.26235245	75.56459037	70.32994651
160610A00009	6/10/2016	1.89	6/12/2023	6/10/2016	101.68431	100.8898369	100.1077439	99.33774355	98.57955695	97.83291366	97.09755148	96.37321609	95.65966076
191115A00028	11/15/2019	2.34	9/28/2029	11/15/2019	117.83731	110.3614855	103.4152044	96.95813216	90.95320977	85.36636977	80.16628021	75.32411156	70.81332478
210901A00012	9/1/2021	0.51	9/1/2023	9/1/2021	100.63459	99.62299835	98.63157298	97.6597172	96.70685694	95.77244038	94.85593687	93.95683592	93.07464626
170224A00020	2/24/2017	3.08	2/24/2027	2/24/2017	115.14766	110.4173344	105.9113079	101.617746	97.52550547	93.62408567	89.9035884	86.35468006	82.96855647
171026A00008	10/26/2017	2.6	10/25/2024	10/26/2017	105.87324	103.6857865	101.5544636	99.47743475	97.45293752	95.47928117	93.55484298	91.67806493	89.84745055
181001A00074	10/1/2018	3.03	10/3/2022	10/1/2018	100.4037	100.3117631	100.2200022	100.128414	100.0369983	99.94575429	99.85468166	99.76377987	99.67304843
181107A00008	11/7/2018	3.42	11/7/2023	11/7/2018	104.16737	102.9508315	101.762728	100.602067	99.46790508	98.35934149	97.275516	96.21560655	95.17882715
190507A00027	5/7/2019	2.59	5/7/2024	5/7/2019	104.50609	102.7996638	101.1293399	99.49403246	97.89270416	96.32435864	94.7880387	93.28282428	91.80783062

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190812A00006	8/12/2019	1.86	8/12/2024	8/12/2019	103.83137	101.8676644	99.95091499	98.07971033	96.25269274	94.46855425	92.72603434	91.02391793	89.36103337
190905A00002	9/5/2019	1.78	9/6/2022	9/5/2019	100.05198	100.0353171	100.0186657	100.0020306	99.98541171	99.96880896	99.95222236	99.93565187	99.91909747
200317A00065	3/19/2020	2.05	3/19/2025	3/19/2020	105.55846	102.9729211	100.4639991	98.02896427	95.66520408	93.37021538	91.14159927	88.97705601	86.87438018
200420A00047	4/20/2020	0.77	4/20/2023	4/20/2020	100.68496	100.0410118	99.40526618	98.77756914	98.15776854	97.54571608	96.94126714	96.3442807	95.7546192
200429A00056	5/1/2020	1.54	4/30/2025	5/1/2020	104.43729	101.7512916	99.14764776	96.62331477	94.17538088	91.80106229	89.49769651	87.26273609	85.09374277
180216A00004	2/16/2018	2.75	2/16/2023	2/16/2018	101.51941	101.0468478	100.5786933	100.1148804	99.65534863	99.20003887	98.74889299	98.30185395	97.85886576
180313A00026	3/13/2018	3.34	3/13/2028	3/13/2018	120.12732	114.178047	108.5660122	103.2702638	98.27126271	93.55077829	89.09179342	84.87841773	80.89580719
190724A00023	7/24/2019	2.13	7/24/2025	7/24/2019	106.96825	104.0060346	101.1412686	98.37022519	95.68934402	93.0952196	90.5845939	88.15434902	85.80150041
200207A00017	2/7/2020	1.96	2/8/2027	2/7/2020	109.96001	105.3930845	101.0420349	96.89555649	92.94299023	89.17428671	85.57996817	82.15109301	78.87922275
200922A00029	9/24/2020	2.73	9/25/2023	9/24/2020	103.05354	101.9624803	100.8944798	99.84881654	98.82479512	97.82174865	96.83903742	95.87604751	94.93218949
210212A00014	2/17/2021	1.38	2/17/2026	2/17/2021	105.4021	101.9042955	98.54077226	95.30567172	92.19342313	89.19872762	86.3165435	83.54207227	80.87074556
191025A00005	10/28/2019	1.98	10/28/2024	10/28/2019	104.5356	102.35495	100.2304874	98.16036469	96.14281156	94.17612969	92.25868948	90.38892658	88.56533865
200506A00002	5/8/2020	0.97	5/5/2025	5/8/2020	102.90951	100.2310257	97.63515841	95.11883615	92.67912286	90.31321228	88.01842116	85.79218287	83.63204142
150601A00667	6/1/2015	3.88	1/16/2036	6/1/2015	148.28629	132.7142761	119.0267239	106.9814076	96.36857978	87.00645727	78.73735843	71.42439078	64.94860878
170111A00012	1/11/2017	3.31	1/11/2030	1/11/2017	125.76787	117.7132078	110.2435694	103.3132082	96.88018231	90.90601897	85.35541092	80.19594121	75.39783305
190829A00029	8/29/2019	1.75	7/14/2023	8/29/2019	101.70428	100.8214973	99.95398252	99.10134665	98.26320933	97.43920306	96.62897265	95.83217475	95.04847734
190919A00007	9/19/2019	2.04	9/19/2024	9/19/2019	104.42751	102.3539034	100.3318985	98.35987268	96.43626544	94.55957664	92.72836357	90.9412384	89.19686556
191007A00020	10/7/2019	1.69	10/7/2022	10/7/2019	100.29574	100.1928996	100.0902801	99.98788093	99.88570127	99.78374041	99.68199764	99.58047224	99.47916348
160815A00007	8/15/2016	2.23	8/17/2026	8/15/2016	109.81524	105.7366408	101.8326804	98.09496824	94.51556243	91.08694224	87.80198366	84.65393627	81.63640168
170630A00027	6/30/2017	2.35	6/28/2024	6/30/2017	104.72516	102.8693632	101.0554454	99.28221314	97.54851309	95.85323234	94.19529651	92.57366816	90.98734532
200227A00022	2/27/2020	1.41	2/27/2023	2/27/2020	100.886	100.3852608	99.88947314	99.39856307	98.91245899	98.4310907	97.95438935	97.4822874	97.01471863
200228A00039	2/28/2020	1.33	4/28/2023	2/28/2020	101.07779	100.4102652	99.75152062	99.10138207	98.4596819	97.82625678	97.20094755	96.58359914	95.97406038
210125A00006	1/27/2021	2.16	1/26/2027	1/27/2021	110.76195	106.2150198	101.8810893	97.7490967	93.8086093	90.04978592	86.4633404	83.04050753	79.77301114
210212A00008	2/12/2021	0.95	10/13/2026	2/12/2021	104.90406	100.7687028	96.8174339	93.0410836	89.43099235	85.97897777	82.67730546	79.51866189	76.496129
130712A00005	7/12/2013	3.25	7/17/2023	7/12/2013	103.14237	102.2430903	101.3594982	100.4911828	99.63775008	98.79881936	97.97402291	97.16300535	96.36542311
170215A00043	2/15/2017	2.7	8/28/2024	2/15/2017	105.6223	103.5971937	101.6214247	99.69347714	97.81189634	95.97528191	94.1822855	92.43160842	90.72199945
171016A00021	10/16/2017	2.2	10/17/2022	10/16/2017	100.42788	100.2971089	100.1666971	100.036639	99.90693314	99.7775781	99.64857241	99.51991464	99.39160334
190327A00006	3/27/2019	2.53	3/27/2024	3/27/2019	104.09572	102.5058534	100.9481338	99.42165112	97.92553359	96.45894142	95.02106551	93.61112597	92.22837086
190627A00010	6/27/2019	1.97	6/27/2024	6/27/2019	104.01261	102.1664014	100.3618288	98.59770264	96.87287352	95.18623237	93.53670883	91.92326956	90.34491672
191021A00034	10/22/2019	1.9	10/17/2022	10/22/2019	100.38866	100.257936	100.1275689	99.99755536	99.867894	99.73858334	99.60962192	99.48100832	99.35274108
200430A00017	4/30/2020	0.94	4/30/2025	4/30/2020	102.81341	100.149519	97.56746765	95.06422807	92.63690414	90.28272709	87.99904888	85.78333594	83.63316336
190806A00026	8/6/2019	1.71	8/7/2023	8/6/2019	101.8617	100.9106636	99.97731468	99.06116178	98.16173304	97.27857379	96.41124567	95.55932597	94.72240691
190917A00028	9/17/2019	2.02	3/1/2023	9/17/2019	101.20255	100.6953506	100.1932196	99.6960804	99.203859	98.71648277	98.23388051	97.75598239	97.28271998

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
211222A00029	12/22/2021	1.26	10/15/2024	12/22/2021	102.90574	100.7779549	98.70444604	96.68345322	94.71328784	92.79232901	90.91902026	89.09186642	87.30943067
160926A00004	9/26/2016	1.66	9/26/2023	9/26/2016	102.01573	100.926179	99.85977853	98.81580107	97.79354547	96.79233954	95.8115386	94.85052403	93.908702
181227A00019	12/28/2020	3.1	12/29/2025	12/28/2020	110.95389	107.5010716	104.174904	100.9700852	97.88155897	94.90450674	92.03433498	89.26666345	86.59731413
190820A00013	8/20/2019	1.76	8/21/2023	8/20/2019	101.86243	100.8743561	99.90536965	98.95492619	98.02249736	97.10757471	96.20966878	95.32830818	94.46303881
191009A00027	10/9/2019	1.74	10/6/2023	10/9/2019	102.02114	100.9059253	99.81497339	98.74750141	97.70275786	96.680023	95.67860719	94.69784933	93.73711539
191126A00023	11/26/2019	1.81	5/27/2025	11/26/2019	105.67971	102.8958492	100.1992743	97.58667194	95.05488194	92.60088735	90.22180666	87.91488652	85.67749495
200214A00015	2/18/2020	1.76	8/6/2024	2/18/2020	103.60114	101.6558412	99.75670649	97.90236001	96.0914773	94.32278193	92.59504339	90.90707512	89.25773264
200303A00002	3/3/2020	1.06	3/3/2023	3/3/2020	100.76873	100.2567144	99.74988156	99.24815658	98.75146256	98.2597241	97.77286736	97.29081991	96.81351078
160307A00027	3/7/2016	2.71	3/6/2026	3/7/2016	110.25032	106.6177848	103.1255409	99.76741023	96.53751901	93.43028372	90.44039509	87.56280302	84.79270242
180730A00023	7/30/2018	3.13	7/30/2024	7/30/2018	106.48436	104.5243488	102.6103857	100.7411105	98.91521264	97.13142868	95.38854031	93.6853724	92.02079118
200204A00012	2/4/2020	1.98	2/4/2027	2/4/2020	110.01951	105.4633261	101.1219475	96.9841519	93.03935936	89.27759345	85.68944368	82.26603055	78.99897284
181114A00014	11/14/2018	3.17	11/14/2023	11/14/2018	104.05831	102.8210112	101.6131271	100.4336204	99.28149893	98.15581647	97.0556699	95.98019687	94.92857347
190327A00013	3/27/2019	2.53	3/27/2024	3/27/2019	104.09572	102.5058534	100.9481338	99.42165112	97.92553359	96.45894142	95.02106551	93.61112597	92.22837086
190701A00008	7/3/2019	2.1	7/3/2023	7/3/2019	101.95591	101.1022824	100.2629075	99.43742617	98.62549562	97.82678434	97.04097156	96.26774678	95.50680943
190717A00007	7/17/2019	2.18	10/14/2022	7/17/2019	100.4003	100.2779137	100.155839	100.0340762	99.91262409	99.79148152	99.67064722	99.55012001	99.42989868
200615A00019	6/17/2020	1.34	6/16/2025	6/17/2020	104.09058	101.2823417	98.56365119	95.93113639	93.38157235	90.91187563	88.51909696	86.20041455	83.95312759
200709A00014	7/13/2020	0.57	1/20/2023	7/13/2020	100.41927	100.0249135	99.63365907	99.24546551	98.86029692	98.47811799	98.09889393	97.7225905	97.34917401
200720A00035	7/20/2020	1.81	7/20/2035	7/20/2020	120.75284	107.4075207	95.67771829	85.35865041	76.2724553	68.26453852	61.20042759	54.96306504	49.45047694
220106A00019	1/10/2022	3.17	1/7/2033	1/10/2022	133.44996	121.9080272	111.4953377	102.0944103	93.60058112	85.92054438	78.97106759	72.67785711	66.97455672
190813A00008	8/13/2019	1.88	8/13/2024	8/13/2019	103.87667	101.9098285	99.99007199	98.11598817	96.28621376	94.49943546	92.75438768	91.04985051	89.38464772
190830A00012	8/30/2019	1.76	8/30/2024	8/30/2019	103.7301	101.7192115	99.75752484	97.84352862	95.97576761	94.15284112	92.37340065	90.63614746	88.93983044
191216A00042	12/16/2019	1.95	12/16/2022	12/16/2019	100.77693	100.4788521	100.1825467	99.88799839	99.59519134	99.30411011	99.01473939	98.72706407	98.44106919
200129A00018	2/3/2020	1.74	12/15/2022	2/3/2020	100.71235	100.4171382	100.1236697	99.83192601	99.54189192	99.25355234	98.96689238	98.68189729	98.39855254
200221A00031	2/21/2020	1.69	2/21/2025	2/21/2020	104.49224	101.9922447	99.56483004	97.2074707	94.91774786	92.69334128	90.53202454	88.43166072	86.39019814
200417A00009	4/17/2020	1.35	4/16/2027	4/17/2020	107.55861	102.857448	98.38730242	94.13560928	90.09055862	86.24104302	82.57661173	79.08742816	75.76423035
211015A00028	10/15/2021	0.73	10/16/2023	10/15/2021	100.90393	99.7681378	98.65771287	97.57181281	96.50963286	95.47040313	94.45338671	93.45787793	92.48320074
120411A00013	4/11/2012	3.59	4/15/2027	4/11/2012	118.04454	113.1050436	108.4047645	103.9307912	99.6709835	95.61391978	91.74885033	88.06565398	84.55479779
160830A00061	8/30/2018	1.89	8/30/2023	8/30/2018	102.03114	101.0174049	100.0237243	99.04950919	98.09419236	97.15722824	96.23809214	95.33627918	94.45130338
180918A00013	9/18/2018	3.11	9/16/2022	9/18/2018	100.19782	100.1533079	100.1088555	100.0644588	100.0201176	99.9758317	99.93160111	99.88742571	99.84330538
181109A00027	11/13/2018	3.48	4/15/2024	11/13/2018	105.81275	104.1556394	102.5326895	100.9429122	99.38535509	97.85910192	96.36327124	94.89701451	93.4595146
190625A00017	6/25/2019	2.02	12/15/2022	6/25/2019	100.79493	100.4995609	100.2059344	99.91403339	99.6238427	99.33534722	99.04853204	98.76338243	98.47988383
190925A00019	9/27/2019	1.93	9/27/2023	9/27/2019	102.19425	101.1026851	100.0343399	98.98847844	97.96439689	96.96142056	95.9789024	95.01622153	94.07278197
200108A00021	1/13/2020	1.97	1/13/2025	1/13/2020	104.95911	102.5638373	100.2351525	97.97084501	95.76878725	93.62693421	91.54331981	89.51605341	87.5433164

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200922A00037	9/24/2020	2.76	9/23/2025	9/24/2020	108.94642	105.795513	102.7528788	99.81417499	96.9752635	94.23219648	91.58120618	89.01869564	86.54122975
210429A00005	4/29/2021	2.08	4/29/2031	4/29/2021	119.1355	109.9988893	101.6374174	93.98111693	86.96668438	80.53681055	74.63958423	69.22795798	64.25926936
190501A00017	5/1/2019	2.61	5/1/2024	5/1/2019	104.49253	102.802437	101.1478464	99.52770056	97.94098754	96.38673509	94.86400877	93.37191	91.90957438
190626A00015	6/26/2019	2.15	6/26/2024	6/26/2019	104.11467	102.2743496	100.4754072	98.71666187	96.99696994	95.31522822	93.67037213	92.06137408	90.48724194
190816A00016	8/16/2019	2.2	8/16/2029	8/16/2019	116.58108	109.2692401	102.4685454	96.14058518	90.25002617	84.76434792	79.65360531	74.89021242	70.44874555
190926A00016	9/26/2019	2.28	5/24/2030	9/26/2019	118.84408	110.6650688	103.1123158	96.13446653	89.68464005	83.72001568	78.20146082	73.09319493	68.36248575
191004A00003	10/4/2019	1.89	10/5/2026	10/4/2019	108.78793	104.5939528	100.5848833	96.75157717	93.08539373	89.57816546	86.22216909	83.01009893	79.93504185
191017A00026	10/17/2019	2.3	7/17/2029	10/17/2019	117.12297	109.8747041	103.127242	96.84337859	90.98885037	85.53209093	80.44400596	75.69776814	71.26862997
200115A00018	1/15/2020	1.9	1/16/2024	1/15/2020	102.67568	101.2928614	99.9352484	98.60220749	97.29312984	96.00742621	94.74452624	93.50387763	92.2849455
220726A00060	7/26/2022	3.32	7/26/2024	7/26/2022	106.55627	104.6111744	102.7114584	100.855791	99.04288924	97.27151566	95.54047675	93.848621	92.1948371
050902A00032	9/2/2005	4.69	8/22/2025	9/2/2005	114.92356	111.7618909	108.7058329	105.7512648	102.894249	100.1310235	97.45799365	94.87172296	92.36892565
180724A00075	7/24/2018	2.98	7/24/2023	7/24/2018	102.95725	102.0394329	101.1379689	100.252422	99.38237321	98.52741797	97.68716583	96.86123966	96.04927517
200922A00043	9/24/2020	2.4	9/25/2023	9/24/2020	102.69548	101.6064939	100.5405416	99.49689672	98.47486442	97.47377856	96.49300013	95.53191587	94.58993697
210624A00022	6/24/2021	0.87	6/24/2025	6/24/2021	103.15531	100.3298771	97.59543808	94.94857165	92.38600538	89.9046081	87.50138295	85.17346077	82.91809392
220819A00037	8/19/2022	3.61	2/20/2024	8/19/2022	105.43714	103.93548	102.4629213	101.0186938	99.60205031	98.21226964	96.84865506	95.51053354	94.19725462
150220A00022	2/20/2015	2.8	2/20/2025	2/20/2015	107.27732	104.7449387	102.2857481	99.89721549	97.57690715	95.32248841	93.13171888	91.00244803	88.93261098
170908A00017	9/9/2019	2.32	9/9/2024	9/9/2019	104.93903	102.8878279	100.8872113	98.93560288	97.03149006	95.17341778	93.35998597	91.58984703	89.86170345
180629A00071	6/29/2018	3.02	6/29/2023	6/29/2018	102.70805	101.8620163	101.0299041	100.2113692	99.40608132	98.61372075	97.83397809	97.06655372	96.31115742
181016A00087	10/16/2018	3.31	10/16/2023	10/16/2018	103.85394	102.7001689	101.5720415	100.4687108	99.38936496	98.33322741	97.29955477	96.28763514	95.29678642
200604A00009	6/4/2020	0.7	6/4/2025	6/4/2020	102.60863	99.84611418	97.17112236	94.58032397	92.0705409	89.63873847	87.28201778	84.99760849	82.78286207
200814A00011	8/18/2020	1.58	8/16/2030	8/18/2020	113.65846	105.4501691	97.89205963	90.9293196	84.51201735	78.59464486	73.13570532	68.09734121	63.44499844
210527A00019	5/27/2021	1	5/27/2026	5/27/2021	105.00361	101.2287882	97.60858244	94.13578222	90.80355646	87.60543388	84.53528149	81.58728458	78.75592801
211222A00012	12/22/2021	0.88	7/17/2023	12/22/2021	100.94226	100.0549045	99.18305823	98.32632173	97.48430497	96.6566312	95.84293648	95.04286906	94.25608893
170427A00046	4/27/2017	3.1	4/27/2028	4/27/2017	119.15455	113.102963	107.4013182	102.0274607	96.96075905	92.18199004	87.67323521	83.41778511	79.4000513
180130A00084	1/30/2018	2.59	1/30/2023	1/30/2018	101.32324	100.898499	100.4773132	100.0596364	99.64542494	99.2346359	98.82722701	98.42315673	98.02238416
181203A00053	12/4/2018	3.23	12/1/2023	12/4/2018	104.13629	102.8540775	101.6030762	100.3821505	99.19022325	98.02626807	96.88930665	95.77840589	94.69267527
190530A00045	5/30/2019	2.44	5/30/2024	5/30/2019	104.43971	102.6715074	100.9417372	99.24921108	97.59279134	95.97138703	94.38395159	92.82948054	91.30700928
191121A00034	11/21/2019	2.28	11/2/2029	11/21/2019	117.60783	110.043562	103.0215039	96.49988902	90.44037633	84.8077557	79.56967658	74.69640145	70.16058181
200225A00017	2/25/2020	1.94	2/25/2030	2/25/2020	115.70759	107.889571	100.6562959	93.96098209	87.76081518	82.01659493	76.69241315	71.75536179	67.17526825
200306A00046	3/6/2020	1.01	3/3/2025	3/6/2020	102.81699	100.3097367	97.87616126	95.51366911	93.21977763	90.99210663	88.82837337	86.72638794	84.68404888
200326A00029	3/26/2020	1.82	3/26/2027	3/26/2020	109.58812	104.9000055	100.4391962	96.19347573	92.1513539	88.30201542	84.63527662	81.14154514	77.81178233
200611A00011	6/11/2020	1.2	6/9/2028	6/11/2020	108.3176	102.4551061	96.94288636	91.75823433	86.88003571	82.28864514	77.96577623	73.8944004	70.05865386
200722A00012	7/22/2020	0.41	7/21/2023	7/22/2020	100.61536	99.71736787	98.83529577	97.96872127	97.11723904	96.28045776	95.45799955	94.64949936	93.85460447

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210209A00029	2/12/2021	0.8	12/15/2025	2/12/2021	103.12419	99.84049295	96.6772742	93.62945051	90.69218424	87.86086963	85.13112023	82.49875696	79.95979701
111024A00022	10/24/2011	3.11	10/30/2023	10/24/2011	103.86226	102.6677985	101.5007864	100.3602853	99.24539939	98.15527259	97.08908667	96.04605911	95.02544117
150601A00916	6/1/2015	7.27	4/5/2030	6/1/2015	156.43172	146.9833295	138.2169833	130.0788594	122.5196867	115.4943341	108.9614413	102.8830839	97.22447033
180103A00027	1/3/2018	2.51	1/3/2023	1/3/2018	101.074	100.7252745	100.3789516	100.0350071	99.69341659	99.354156	99.01720155	98.68252978	98.35011756
180814A00010	8/14/2018	3.1	8/14/2025	8/14/2018	110.02895	106.9635942	104.0005377	101.1358024	98.36559	95.68627072	93.09437499	90.58658527	88.1597285
180912A00011	9/12/2018	3.41	9/11/2026	9/12/2018	114.84992	110.5999617	106.5335038	102.6416294	98.91589936	95.34832923	91.93136152	88.65784067	85.52098943
190326A00004	3/26/2019	2.58	9/26/2023	3/26/2019	102.89696	101.8040567	100.7343128	99.68700238	98.66142531	97.65691027	96.67281333	95.70851659	94.76342687
190618A00002	6/18/2019	2.11	6/18/2025	6/18/2019	106.66649	103.8074048	101.0395314	98.35943785	95.76384103	93.24960149	90.81371599	88.45331067	86.16563461
191008A00031	10/8/2019	1.52	10/8/2024	10/8/2019	103.71468	101.5913195	99.52182846	97.50447365	95.53758943	93.6195764	91.74889825	89.92407868	88.14369856
150319A00013	3/19/2015	3.25	3/19/2030	3/19/2015	125.91791	117.6597243	110.0152389	102.9353694	96.37520513	90.29363549	84.65300952	79.418828	74.55946437
160113A00030	1/13/2016	2.52	1/13/2025	1/13/2016	106.60337	104.181461	101.8268903	99.53741169	97.31087146	95.1451998	93.03840693	90.98857951	88.9938773
170914A00039	9/14/2017	2.23	9/16/2024	9/14/2017	105.07652	102.9991225	100.9733489	98.99757728	97.07024954	95.18986762	93.35499072	91.56423267	89.81625945
190211A00002	2/11/2019	2.88	2/12/2024	2/11/2019	104.27387	102.8043301	101.3628773	99.94877819	98.56132179	97.1998213	95.86361304	94.55205544	93.26452821
190328A00003	3/28/2019	2.64	9/30/2024	3/28/2019	105.76838	103.6497926	101.584351	99.57036738	97.60621643	95.69033659	93.82122704	91.9974448	90.21760209
200302A00028	3/2/2020	1.25	2/26/2024	3/2/2020	101.93218	100.4407773	98.97864078	97.54498856	96.13906206	94.76012912	93.40748285	92.08044052	90.77834257
200303A00018	3/3/2020	1.27	3/3/2025	3/3/2020	103.47867	100.9629248	98.52104431	96.15043153	93.8485982	91.61315872	89.44182515	87.33240259	85.28278474
200511A00018	5/11/2020	0.98	2/2/2026	5/11/2020	103.9179	100.4902844	97.19290135	94.02013749	90.96664945	88.02735139	85.19740109	82.47218699	79.84731591
210216A00007	2/16/2021	1.3	2/16/2029	2/16/2021	110.61361	103.9602149	97.7469295	91.9424545	86.51786797	81.44643282	76.70342135	72.26595468	68.11285575
150601A00405	6/1/2015	4.63	1/17/2034	6/1/2015	151.9082	138.28117	126.0757484	115.133306	105.3137895	96.49345515	88.56289028	81.42528335	74.99491089
180205A00018	2/5/2018	2.66	2/3/2023	2/5/2018	101.38202	100.9460029	100.5137308	100.0851567	99.66023332	99.23891414	98.82115343	98.40690623	97.99612834
210106A00007	1/8/2021	0.49	7/25/2023	1/8/2021	100.6007	99.69307406	98.80170875	97.92616996	97.06603951	96.22091384	95.39040335	94.57413185	93.77173593
220531A00020	5/31/2022	2.86	5/31/2024	5/31/2022	105.19356	103.4157665	101.6766354	99.97497007	98.30962491	96.67950151	95.08354619	93.52074767	91.9901349
220823A00060	8/23/2022	3.5	8/23/2024	8/23/2022	107.45883	105.4233312	103.4371114	101.4986653	99.6065471	97.75936479	95.95577793	94.19449519	92.47427221
141028A00012	10/28/2014	2.73	10/28/2022	10/28/2014	100.5994	100.437876	100.276877	100.116396	99.95643057	99.79697823	99.63803656	99.47960311	99.32167549
180927A00015	9/27/2018	3.02	9/27/2022	9/27/2018	100.33395	100.2587589	100.1836824	100.1087235	100.0338817	99.95915682	99.88454861	99.81005678	99.73568107
190828A00015	8/28/2019	2.04	8/28/2029	8/28/2019	115.50368	108.1961625	101.402474	95.08380767	89.20447732	83.73165155	78.63511159	73.88703095	69.46177472
200302A00008	3/2/2020	1.2	3/9/2023	3/2/2020	100.81508	100.2868623	99.76416897	99.24691296	98.73500969	98.22837631	97.72693168	97.23059632	96.73929238
200722A00010	7/22/2020	0.66	7/22/2024	7/22/2020	101.40581	99.52229741	97.68270489	95.88575333	94.13020606	92.41487022	90.73859496	89.10026964	87.49882219
200925A00003	9/25/2020	0.59	9/25/2024	9/25/2020	101.41794	99.35992643	97.35355099	95.39717806	93.48923429	91.62820767	89.81264461	88.04114724	86.31237082
210514A00033	5/18/2021	2.8	5/18/2028	5/18/2021	117.5784	111.5122544	105.800706	100.4210864	95.35229967	90.5747044	86.07000514	81.82115282	77.81225307
170427A00047	4/27/2017	3.18	4/27/2029	4/27/2017	122.63908	115.4343991	108.7095895	102.4300189	96.56373817	91.08125671	85.95534048	81.16082776	76.67446095
180530A00030	5/30/2018	3.68	5/30/2034	5/30/2018	142.5891	129.0836271	117.0427045	106.2973529	96.6990079	88.11695285	80.43608668	73.55498186	67.38419284
180823A00013	8/23/2018	2.97	8/23/2023	8/23/2018	103.08253	102.0822795	101.1014206	100.1393976	99.19567149	98.26972357	97.3610547	96.46918423	95.59364922

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200304A00010	3/4/2020	1.2	3/4/2027	3/4/2020	107.26719	102.6711989	98.29696423	94.13265397	90.16712763	86.38989378	82.79106864	79.36133777	76.09192017
190529A00011	5/29/2019	2.36	5/30/2023	5/29/2019	101.97652	101.2167889	100.4683451	99.73093962	99.00432962	98.28827949	97.58256038	96.88695001	96.20123245
190814A00009	8/14/2019	1.84	8/14/2024	8/14/2019	103.80296	101.8341842	99.91260498	98.03680367	96.20541208	94.41711217	92.67063387	90.96475301	89.29828933
190930A00071	9/30/2019	2.05	9/29/2025	9/30/2019	106.77717	103.6433152	100.6178697	97.69646492	94.87493552	92.14930864	89.51579375	86.97077305	84.51079249
210603A00015	6/7/2021	2.71	6/7/2028	6/7/2021	117.19608	111.0844956	105.3333661	99.91948314	94.82125537	90.01858818	85.49277166	81.22637777	77.20316567
180102A00020	1/2/2018	2.5	1/3/2023	1/2/2018	101.07052	100.7218038	100.3754884	100.0315514	99.6899683	99.35071509	99.01376797	98.6791035	98.34669854
200429A00035	5/1/2020	1.41	4/30/2024	5/1/2020	102.4558	100.7861936	99.15166793	97.55117856	95.98372639	94.44835152	92.94413129	91.47017841	90.02563929
170915A00001	9/15/2017	2.43	9/16/2024	9/15/2017	105.21825	103.144594	101.1223688	99.1499609	97.22582065	95.34845785	93.51643922	91.72838571	89.98297003
171103A00017	11/3/2017	2.09	11/3/2022	11/3/2017	100.56178	100.3833867	100.2056283	100.0285023	99.85200555	99.67613457	99.50088603	99.32625663	99.15224308
181128A00031	11/28/2018	3.29	11/28/2023	11/28/2018	104.18666	102.9119188	101.668366	100.4548704	99.27035139	98.11377964	96.9841741	95.88059914	94.80216201
190523A00017	5/23/2019	2.51	3/15/2024	5/23/2019	103.97409	102.4175471	100.8921162	99.39693833	97.93118408	96.49405382	95.08477652	93.70260844	92.34683191
190820A00020	8/20/2019	1.76	8/20/2024	8/20/2019	103.67637	101.6928028	99.75716598	97.86800148	96.02390925	94.22354107	92.46559822	90.74882933	89.07202824
190923A00020	9/23/2019	2.05	9/24/2029	9/23/2019	116.80155	109.3288511	102.3870844	95.93574072	89.93760322	84.35846293	79.16686114	74.33385488	69.83280362
200227A00052	2/27/2020	1.41	2/27/2023	2/27/2020	100.886	100.3852608	99.88947314	99.39856307	98.91245899	98.4310907	97.95438935	97.4822874	97.01471863
200403A00006	4/3/2020	1.05	4/3/2025	4/3/2020	103.01705	100.4245617	97.90999831	95.47054212	93.10349951	90.80629178	88.57644939	86.41160646	84.30949574
171205A00014	12/5/2017	2.49	12/5/2022	12/5/2017	100.85966	100.5920063	100.3257738	100.0609533	99.79753357	99.53550342	99.27485188	99.01556807	98.75764124
190213A00023	2/13/2019	2.93	2/13/2024	2/13/2019	104.35659	102.8835284	101.438674	100.0212864	98.63065045	97.26607531	95.92689338	94.61245941	93.32214955
190214A00008	2/14/2019	2.64	2/14/2023	2/14/2019	101.45315	100.9863399	100.5238279	100.0655559	99.61146578	99.16150031	98.71560336	98.27371983	97.83579558
200611A00013	6/11/2020	0.59	6/12/2023	6/11/2020	100.6533	99.86332963	99.08569335	98.32010115	97.56627495	96.82394523	96.09285061	95.3727376	94.66336028
150317A00013	3/17/2015	2.58	3/17/2025	3/17/2015	107.26077	104.651046	102.1185318	99.66048123	97.27426345	94.95735782	92.70734863	90.52191988	88.39885056
170913A00003	9/13/2017	2.08	9/13/2022	9/13/2017	100.12349	100.0873572	100.0512711	100.0152272	99.97922536	99.94326549	99.90734753	99.87147141	99.83563704
180828A00032	8/28/2018	3.49	8/29/2033	8/28/2018	140.36123	127.6795214	116.3024961	106.0873423	96.90762678	88.6513421	81.21919147	74.52308593	68.48482572
180910A00028	9/10/2018	3.56	9/9/2033	9/10/2018	141.23681	128.4750687	117.0281268	106.7517997	97.51847927	89.2151447	81.74162557	75.00907896	68.93865418
190603A00003	6/3/2019	2.05	6/3/2024	6/3/2019	103.99047	102.211476	100.4714127	98.76908944	97.10336056	95.47312673	93.87733279	92.31496546	90.78505124
191105A00018	11/5/2019	1.78	11/6/2023	11/5/2019	102.3198	101.1157898	99.93997102	98.79136299	97.66902994	96.57207856	95.49965563	94.45094578	93.42516944
200302A00031	3/2/2020	1.02	11/18/2022	3/2/2020	100.4302	100.2102599	99.99129452	99.77329796	99.55626369	99.3401853	99.1250564	98.91087069	98.69762191
200312A00017	3/16/2020	1.09	2/15/2023	3/16/2020	100.69367	100.2266817	99.76401885	99.30562127	98.85143014	98.40138767	97.95543717	97.51352295	97.07559034
200429A00018	5/4/2020	0.73	4/17/2023	5/4/2020	100.65241	100.0168692	99.38932242	98.76962146	98.15761984	97.55317471	96.95614674	96.36639999	95.78380185
220726A00059	7/26/2022	3.34	1/26/2024	7/26/2022	104.7834	103.3581125	101.9592413	100.5861124	99.23807665	97.91450608	96.61479335	95.3383507	94.08460924
170120A00008	1/20/2017	3.63	1/20/2034	1/20/2017	141.09556	128.0564786	116.394908	105.9560263	96.60322598	88.21588749	80.68743209	73.92362092	67.84106766
180914A00029	9/14/2018	3.48	9/14/2028	9/14/2018	122.62887	116.0763298	109.9239559	104.1451025	98.7150393	93.61080027	88.81104911	84.29595525	80.04708001
181010A00020	10/10/2018	3.27	12/1/2022	10/10/2018	101.03094	100.7741188	100.5186031	100.2643792	100.0114373	99.75976776	99.50936112	99.26020787	99.01229867
190620A00056	6/25/2019	2.07	1/17/2023	6/25/2019	100.9959	100.6084795	100.2240366	99.84253765	99.46394867	99.08823639	98.71536801	98.34531124	97.97803427

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200228A00067	2/28/2020	1.4	2/28/2025	2/28/2020	103.79718	101.2853571	98.84709455	96.4798121	94.18103846	91.94840393	89.77963549	87.67255224	85.62506106
200506A00005	5/6/2020	0.97	5/6/2025	5/6/2020	102.91249	100.2313095	97.63289552	95.1141686	92.67218483	90.30413057	88.00731563	85.77916689	83.61722224
200922A00041	9/24/2020	2.68	9/23/2024	9/24/2020	105.7953	103.6959678	101.6489819	99.65269284	97.70551131	95.80590997	93.95242029	92.14362982	90.37817964
181109A00029	11/9/2018	3.72	11/9/2026	11/9/2018	116.83357	112.3742379	108.1132276	104.040592	100.1469399	96.42340375	92.86160745	89.45363578	86.19200628
190301A00012	3/1/2019	3.41	3/1/2029	3/1/2019	123.69614	116.6210281	110.0070782	103.8216762	98.0346824	92.61822973	87.54654092	82.79576163	78.34380755
190314A00027	3/22/2019	2.92	3/21/2025	3/22/2019	107.82801	105.2073971	102.664347	100.1960941	97.79999195	95.47350554	93.21420542	91.01976271	88.88794423
190430A00001	4/30/2019	2.47	5/2/2024	4/30/2019	104.48606	102.7894406	101.1285581	99.50235233	97.9098016	96.3499245	94.8217779	93.324455	91.8570836
200224A00007	2/24/2020	1.59	2/24/2025	2/24/2020	104.25707	101.7511915	99.31832457	96.95592657	94.66155572	92.4328701	90.26762288	88.16365786	86.11890518
200228A00020	2/28/2020	1.32	2/24/2023	2/28/2020	100.83099	100.3387102	99.85122466	99.36846147	98.89035234	98.41683025	97.94782946	97.48328548	97.02313505
200305A00008	3/10/2020	1.01	6/19/2023	3/10/2020	100.99514	100.1845052	99.38682235	98.60178101	97.82908258	97.0684378	96.31956636	95.58219658	94.85606512
180226A00015	2/26/2018	2.85	9/28/2022	2/26/2018	100.32358	100.2457118	100.1679669	100.0903448	100.0128451	99.93546775	99.85821234	99.78107862	99.70406634
200311A00006	3/13/2020	1.12	3/10/2025	3/13/2020	103.12025	100.5904787	98.13540034	95.75236994	93.43885624	91.19243319	89.01077484	86.89165049	84.83292021
200811A00003	8/11/2020	0.57	8/11/2025	8/11/2020	102.41181	99.46916609	96.62541879	93.87671656	91.21938189	88.64990038	86.16491246	83.76120572	81.43570755
220118A00008	1/18/2022	1.36	1/18/2024	1/18/2022	101.92788	100.5452239	99.18785836	97.85515248	96.54649335	95.26128796	93.99896228	92.75896054	91.54074454
150819A00012	8/19/2015	3.04	8/19/2025	8/19/2015	109.4884	106.4268951	103.4678641	100.6073116	97.84142228	95.16655062	92.57921238	90.07607646	87.65395726
170111A00011	1/11/2017	3.24	1/11/2029	1/11/2017	122.14351	115.264434	108.8255611	102.7963581	97.14855845	91.855985	86.89438538	82.24128145	77.87583109
171016A00005	10/16/2017	2.2	10/17/2022	10/16/2017	100.42788	100.2971089	100.1666971	100.036639	99.90693314	99.7775781	99.64857241	99.51991464	99.39160334
180222A00027	2/22/2018	3.24	2/22/2028	2/22/2018	120.23827	114.3149952	108.7254058	103.4489081	98.46628401	93.75959324	89.31208176	85.10809743	81.13301197
190426A00016	5/1/2019	2.58	4/14/2023	5/1/2019	101.80913	101.1777618	100.554216	99.93835142	99.33002669	98.72910377	98.13544803	97.54892806	96.96941562
190930A00077	9/30/2019	2.23	9/28/2029	9/30/2019	117.04246	109.594418	102.6745071	96.2424834	90.26136724	84.69716501	79.51861365	74.69694796	70.20568893
200511A00021	5/11/2020	1.53	2/1/2029	5/11/2020	111.10461	104.5174369	98.36160856	92.60672998	87.22469318	82.18949469	77.47706801	73.06513021	68.93304145
220826A00033	8/26/2022	3.73	8/26/2025	8/26/2022	111.64593	108.53249	105.5236096	102.6151911	99.80332333	97.08427021	94.45446197	91.91048666	89.44908218
150601A00664	6/1/2015	3.78	1/16/2032	6/1/2015	136.20953	125.5742924	115.8876167	107.0590126	99.00708276	91.65856903	84.94750044	78.8144338	73.20577704
150821A00018	8/21/2015	2.6	8/21/2024	8/21/2015	105.63078	103.6195231	101.6569216	99.74149169	97.87180892	96.0465016	94.2642486	92.52377712	90.82386054
170322A00022	3/22/2017	3.89	9/23/2041	3/22/2017	160.22158	138.0219601	119.4367101	103.8414372	90.72361343	79.66196497	70.30975057	62.38117978	55.64036854
190606A00023	6/6/2019	2.23	6/6/2024	6/6/2019	104.11757	102.3328955	100.5873653	98.87978705	97.20901998	95.57396891	93.97358184	92.40684779	90.87279477
150601A00830	6/1/2015	6.743	7/31/2025	6/1/2015	120.41652	117.2354047	114.1579123	111.1800902	108.2981553	105.5084898	102.8076332	100.192274	97.65924292
170313A00033	3/13/2017	3.31	3/15/2027	3/13/2017	116.40007	111.5870589	107.0041093	102.6389769	98.48013762	94.51673889	90.73855672	87.13595588	83.69985283
170322A00023	3/22/2017	3.82	9/22/2039	3/22/2017	155.43036	135.5823479	118.6864048	104.2770239	91.96491816	81.424159	72.38154538	64.60780474	57.91030205
170728A00031	7/28/2017	2.27	1/27/2023	7/28/2017	101.13235	100.7168588	100.3047763	99.89606134	99.49067287	99.08857036	98.689714	98.29406459	97.90158358
180705A00062	7/5/2018	3.04	7/6/2023	7/5/2018	102.77972	101.9139419	101.0627395	100.2257467	99.40260962	98.59298609	97.79654514	97.01296655	96.24194038
181211A00018	12/11/2018	3.14	12/11/2023	12/11/2018	104.10917	102.8043251	101.528236	100.2799547	99.05857153	97.86321647	96.69305716	95.54729676	94.42517208
190724A00024	7/24/2019	2.49	7/24/2029	7/24/2019	119.56907	112.1755137	105.293969	98.88627176	92.91729282	87.35467793	82.16861554	77.331625	72.81836337

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191105A00014	11/5/2019	1.96	11/6/2023	11/5/2019	102.40404	101.201521	100.0271235	98.87986738	97.75882041	96.66309245	95.59183331	94.54423047	93.51950703
200228A00026	2/28/2020	2.14	2/28/2035	2/28/2020	124.79138	111.5666582	99.89178167	89.57584922	80.45240308	72.37619241	65.22037616	58.87410679	53.24044166
200506A00010	5/6/2020	0.94	5/6/2026	5/6/2020	104.68107	100.9686991	97.40649351	93.98754197	90.70529244	87.55353273	84.52637055	81.61821494	78.8237589
170613A00032	6/13/2017	2.45	6/13/2025	6/13/2017	107.59555	104.7372736	101.9696987	99.28940077	96.6931097	94.17769968	91.740182	89.37769792	87.08751214
171010A00005	10/10/2017	2.06	10/11/2022	10/10/2017	100.37789	100.2637153	100.1498113	100.0361811	99.9228235	99.80973761	99.69692238	99.58437679	99.47209982
171026A00009	10/26/2017	2.75	10/27/2025	10/26/2017	109.20962	105.9610324	102.8266276	99.80171336	96.88182312	94.06270163	91.34029349	88.71073238	86.17033088
180620A00014	6/20/2018	3.4	6/20/2028	6/20/2018	121.37519	115.105711	109.2060793	103.6524761	98.42273753	93.4962324	88.85374843	84.47738756	80.35046944
190214A00006	2/14/2019	2.67	2/14/2024	2/14/2019	104.15997	102.6826095	101.2336352	99.8123015	98.41788649	97.04969282	95.70704679	94.38929731	93.09581497
150601A00668	6/1/2015	3.89	1/16/2037	6/1/2015	150.67845	133.9037081	119.2873315	106.5345712	95.39259849	85.64433833	77.10323978	69.60883411	63.02295933
180111A00007	1/11/2018	2.66	1/14/2025	1/11/2018	106.94894	104.5200975	102.1588247	99.86287172	97.63007523	95.45835637	93.34571672	91.29023477	89.29006243
180124A00020	1/24/2018	2.53	1/24/2023	1/24/2018	101.25659	100.8486867	100.4440763	100.0427158	99.64456598	99.24958841	98.85774521	98.46899912	98.08331345
180410A00017	4/10/2018	3.02	10/10/2023	4/10/2018	103.47842	102.3434888	101.2334339	100.1474473	99.08475187	98.0446038	97.02629061	96.02912958	95.05246619
190409A00019	4/9/2019	2.91	4/9/2029	4/9/2019	121.70269	114.5411218	107.8553761	101.6112384	95.77712802	90.32388457	85.22456995	80.4542879	75.99001892
190620A00027	6/20/2019	2.14	6/20/2024	6/20/2019	104.05417	102.2311072	100.4487408	98.7058815	97.00138753	95.33415879	93.70313521	92.10729493	90.54565258
200127A00016	1/27/2020	1.81	1/27/2025	1/27/2020	104.64519	102.2162636	99.85587489	97.56171472	95.33156181	93.16328253	91.05482687	89.00422469	87.00958209
200302A00033	3/2/2020	1.31	3/3/2025	3/2/2020	103.58047	101.0634153	98.62025709	96.24839498	93.94533983	91.70870519	89.53620234	87.42563561	85.37489795
200828A00002	8/28/2020	0.73	8/28/2026	8/28/2020	104.34346	100.329593	96.49048061	92.81762108	89.3029714	85.93892015	82.71826192	79.63417347	76.68019137
210709A00002	7/9/2021	1.36	7/9/2029	7/9/2021	111.52379	104.445513	97.86006336	91.73070446	86.02361274	80.7076312	75.75404681	71.13638762	66.83023758
210830A00011	8/30/2021	0.53	8/30/2023	8/30/2021	100.65378	99.64754759	98.66126313	97.694343	96.74622215	95.81635731	94.90422593	94.00932525	93.13117131
220225A00013	2/25/2022	1.92	2/23/2024	2/25/2022	102.92718	101.436517	99.97493628	98.54166283	97.13594661	95.75706354	94.40431442	93.07702384	91.77453917
180116A00015	1/16/2018	3.06	1/18/2028	1/16/2018	118.07569	112.3424767	106.9268226	101.809476	96.97244634	92.39891741	88.07316462	83.98047896	80.10709644
191104A00024	11/4/2019	2.26	8/3/2029	11/4/2019	116.93497	109.6467045	102.8652704	96.55277388	90.67433987	85.19785565	80.09373904	75.33472711	70.89568345
140922A00026	9/22/2014	3.02	9/30/2024	9/22/2014	106.85401	104.7182886	102.636183	100.6059871	98.62605919	96.69482227	94.81076071	92.97241742	91.1783911
181130A00037	11/30/2018	3.05	11/30/2023	11/30/2018	104.03973	102.7582487	101.5083012	100.2887335	99.09844784	97.93639876	96.80159012	95.69307215	94.60993875
190918A00007	9/20/2019	1.95	12/15/2022	9/20/2019	100.77428	100.4789552	100.1853682	99.89350654	99.60335501	99.3148985	99.02812213	98.74301115	98.45955101
200228A00016	2/28/2020	1.35	2/22/2024	2/28/2020	102.06496	100.5839079	99.13171233	97.70760548	96.31084453	94.94071227	93.59651611	92.27758696	90.98327825
200818A00010	8/18/2020	1.88	8/20/2035	8/18/2020	121.70312	108.2202971	96.37719976	85.96488726	76.80204302	68.73119801	61.61548896	55.33587104	49.78871931
140423A00036	4/23/2014	4.03	4/23/2029	4/23/2014	128.37086	120.9893725	114.0953152	107.6536971	101.6322221	96.0010698	90.73269313	85.80163287	81.18434891
150601A00512	6/1/2015	3.79	7/16/2029	6/1/2015	127.1895	119.601984	112.5317874	105.940746	99.79370207	94.05825311	88.70452236	83.70495009	79.03410284
190528A00007	5/28/2019	2.44	11/15/2023	5/28/2019	103.03501	101.8037005	100.6017405	99.42809318	98.28176683	97.16181553	96.0673366	94.99746815	93.9513868
190829A00045	8/29/2019	1.9	8/28/2026	8/29/2019	108.5598	104.476349	100.5692753	96.8300409	93.25056389	89.82319455	86.54068984	83.39618955	80.38319402
200722A00011	7/22/2020	0.59	7/24/2023	7/22/2020	100.69098	99.78564516	98.89648263	98.02305954	97.1649612	96.32178739	95.49315168	94.6786809	93.87801455
220421A00015	4/21/2022	3.12	9/16/2024	4/21/2022	106.65157	104.5627267	102.5256145	100.5386134	98.60016518	96.70877164	94.86299176	93.06143899	91.30277886

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170822A00019	8/22/2017	2.44	8/22/2024	8/22/2017	105.05236	103.0493188	101.0947341	99.18713061	97.32508979	95.50724575	93.73228292	91.99893379	90.3059768
170919A00073	9/19/2017	2.28	9/19/2024	9/19/2017	105.20308	103.1159472	101.0808037	99.09601463	97.16000565	95.27126339	93.42833258	91.62981336	89.8743587
180529A00066	5/29/2018	2.99	5/26/2023	5/29/2018	102.42006	101.6695827	100.9300981	100.2013616	99.48314004	98.77520686	98.07734211	97.38933201	96.71096881
180813A00013	8/13/2018	2.99	12/5/2022	8/13/2018	100.99321	100.725317	100.4588492	100.1937942	99.93014098	99.66787829	99.40699516	99.1474807	98.88932414
180830A00039	8/30/2018	3.03	8/30/2023	8/30/2018	103.18569	102.1656677	101.1657873	100.1854573	99.22410856	98.28119358	97.35618588	96.4485788	95.55788467
181217A00010	12/17/2018	3.11	12/15/2023	12/17/2018	104.10479	102.7908503	101.504696	100.2454479	99.01226418	97.80433872	96.62089863	95.46120274	94.32453997
190524A00032	5/24/2019	2.45	5/24/2023	5/24/2019	102.00368	101.2604769	100.5280845	99.80626913	99.09480267	98.3934637	97.70203702	97.02031352	96.3480899
200130A00012	1/30/2020	1.72	1/30/2023	1/30/2020	100.91745	100.4941836	100.0744542	99.65821835	99.2454328	98.83605484	98.43004246	98.02735437	97.62794994
200330A00041	4/1/2020	1.09	4/1/2025	4/1/2020	103.11511	100.5268228	98.01620022	95.5804383	93.21685734	90.92289174	88.69608419	86.53408037	84.43462383
201130A00005	11/30/2020	0.28	11/30/2022	11/30/2020	100.28997	100.0369087	99.78511987	99.53459247	99.28531714	99.03728453	98.79048542	98.54491066	98.3005512
220711A00020	7/11/2022	3.25	1/11/2024	7/11/2022	104.68685	103.3001177	101.9384618	100.6012595	99.28790846	97.99782569	96.73044686	95.48522539	94.26163187
170803A00032	8/3/2017	2.12	8/3/2023	8/3/2017	102.22925	101.2873827	100.3628139	99.45506945	98.56369342	97.68824617	96.82830371	95.98345697	95.15331114
180518A00014	5/18/2018	3.17	5/18/2023	5/18/2018	102.48365	101.7551658	101.0370385	100.3290497	99.63098557	98.94263818	98.26380545	97.59429086	96.93390326
190110A00012	1/10/2019	2.97	1/18/2024	1/10/2019	104.18915	102.7898434	101.4161198	100.0673354	98.74286969	97.44212218	96.16451177	94.90947583	93.67646955
190809A00020	8/9/2019	2.44	8/9/2034	8/9/2019	129.8805	116.7900018	105.1683212	94.84169063	85.6577595	77.48285936	70.1996281	63.7049464	57.90814431
121101A00011	11/1/2012	2.03	11/1/2022	11/1/2012	100.53762	100.3648235	100.1926243	100.0210152	99.8499931	99.67955505	99.50969807	99.34041919	99.17171549
150610A00009	6/10/2015	3.03	6/10/2025	6/10/2015	109.21098	106.3382354	103.5562468	100.8615815	98.25096586	95.72127147	93.26950797	90.89281572	88.58845917
150721A00027	7/21/2015	3.74	7/22/2030	7/21/2015	130.96534	122.1520082	114.0158481	106.5008849	99.55605085	93.13473383	87.1943672	81.69605959	76.60426023
170612A00039	6/12/2017	2.29	6/12/2024	6/12/2017	104.48938	102.6805911	100.9118245	99.18188662	97.48962878	95.83394651	94.21377756	92.62809984	91.07592947
180130A00085	1/30/2018	2.79	1/30/2025	1/30/2018	107.39424	104.9163629	102.5085378	100.1683907	97.89364347	95.68210807	93.53168283	91.44034831	89.40616358
181005A00017	10/5/2018	3.27	4/11/2023	10/5/2018	102.21514	101.5906746	100.9738471	100.364513	99.76253638	99.16778429	98.58012705	97.99943811	97.42559387
190731A00004	7/31/2019	2.18	7/31/2024	7/31/2019	104.38643	102.4493897	100.557921	98.71067879	96.90636615	95.14373269	93.42157264	91.73872289	90.09406123
200131A00038	1/31/2020	1.73	1/30/2025	1/31/2020	104.46404	102.0293297	99.66355346	97.36437498	95.1295535	92.95693701	90.84445812	88.79013024	86.79204392
200220A00015	2/20/2020	1.57	2/20/2025	2/20/2020	104.5154	102.0110588	99.57947575	97.21811941	94.92456372	92.69648154	90.5316399	88.42789561	86.38319106
200922A00036	9/24/2020	1.55	9/23/2025	9/24/2020	105.17933	102.0870733	99.10157966	96.21856038	93.43392641	90.74377675	88.14438866	85.63220826	83.20384188
050923A00096	9/23/2005	4.86	9/22/2025	9/23/2005	115.90201	112.6355953	109.4806241	106.4326452	103.4874108	100.6408682	97.88914949	95.22856164	92.65557778
170417A00068	4/17/2019	2.59	4/17/2024	4/17/2019	104.34472	102.6948502	101.0790978	99.49647123	97.94601653	96.42681614	94.93798729	93.47868036	92.04807728
180913A00029	9/13/2018	3.11	9/13/2023	9/13/2018	103.37404	102.3142645	101.2762083	100.2592118	99.26263837	98.28587684	97.32834027	96.38946472	95.46870811
181109A00028	11/9/2018	3.72	11/9/2026	11/9/2018	116.83357	112.3742379	108.1132276	104.040592	100.1469399	96.42340375	92.86160746	89.45363578	86.19200628
190215A00004	2/15/2019	2.84	2/15/2023	2/15/2019	101.51177	101.0425111	100.5775973	100.116964	99.66055198	99.20830345	98.7601615	98.31607028	97.87597497
190910A00013	9/10/2019	1.9	9/9/2022	9/10/2019	100.08098	100.0559766	100.0309974	100.0060445	99.98111805	99.9562179	99.93134401	99.90649636	99.88167489
191015A00029	10/15/2019	1.91	10/15/2024	10/15/2019	104.30843	102.1652368	100.076633	98.04084908	96.0561877	94.12101954	92.23378	90.39296609	88.59713346
191220A00001	12/20/2019	2.62	12/19/2031	12/20/2019	125.44766	115.3831207	106.2214719	97.87655154	90.27084606	83.33458253	77.00491918	71.22522452	65.94443461

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200110A00014	1/10/2020	1.73	1/10/2023	1/10/2020	100.8664	100.4983185	100.1329334	99.77021112	99.41012257	99.05263898	98.69773206	98.34537393	97.99553708
160606A00004	6/6/2016	2.43	6/8/2026	6/6/2016	110.03767	106.1479638	102.4173989	98.83856728	95.40445379	92.10840977	88.94413169	85.90564091	82.98726489
180823A00035	8/23/2018	3.05	8/22/2025	8/23/2018	109.95414	106.8678533	103.885282	101.0023636	98.21522134	95.52015179	92.91361607	90.39223155	87.95276402
190227A00005	2/27/2019	2.87	2/27/2024	2/27/2019	104.39191	102.8782406	101.3942906	99.93926058	98.51237897	97.11290095	95.74010747	94.3933042	93.07182035
190401A00010	4/1/2019	2.62	4/1/2024	4/1/2019	104.27877	102.6738215	101.1014788	99.56081459	98.05093831	96.57099241	95.12015092	93.697618	92.30262651
190625A00023	6/25/2019	2.47	6/25/2027	6/25/2019	113.34132	108.3106846	103.5341288	98.99751046	94.68754907	90.59176624	86.69843294	82.99652079	79.47565667
200630A00004	6/30/2020	0.66	7/1/2024	6/30/2020	101.37319	99.54527155	97.7588176	96.01264708	94.30562404	92.6366516	91.00467028	89.40865657	87.84762142
150407A00010	4/7/2015	2.21	4/10/2023	4/7/2015	101.6068	100.9865533	100.3738732	99.76861942	99.17065744	98.5798559	97.9960866	97.41922441	96.84914714
180403A00005	4/3/2018	2.72	4/3/2023	4/3/2018	101.8657	101.264052	100.6695016	100.0819233	99.50119489	98.92719715	98.35981351	97.79893011	97.24443569
180813A00059	8/13/2018	3.01	8/11/2023	8/13/2018	103.03083	102.0640551	101.1154164	100.1844041	99.27052974	98.37332311	97.49233086	96.62711602	95.77725719
190701A00009	7/3/2019	2.14	7/2/2024	7/3/2019	104.13735	102.2803112	100.465348	98.6912654	96.95690913	95.26116473	93.60295585	91.98124278	90.3950209
190826A00056	8/26/2019	1.72	8/26/2024	8/26/2019	103.62785	101.6287257	99.67827291	97.77500594	95.9174922	94.10435253	92.33425887	90.60593193	88.91813906
200709A00004	7/10/2020	1.4	7/10/2025	7/10/2020	104.3676	101.4900937	98.70622751	96.01246589	93.4054286	90.88188053	88.43872458	86.07299505	83.78185134
220601A00038	6/3/2022	3.69	5/28/2032	6/3/2022	137.07403	126.0040162	115.9548359	106.8258434	98.52684728	90.97697638	84.10366984	77.84178214	72.13278867
180104A00013	1/4/2018	2.39	1/4/2023	1/4/2018	101.06993	100.7180787	100.368675	100.0216959	99.67711619	99.33491109	98.99505603	98.65752684	98.32229967
190626A00004	6/26/2019	2.15	6/26/2024	6/26/2019	104.11467	102.2743496	100.4754072	98.71666187	96.99696994	95.31522822	93.67037213	92.06137408	90.48724194
200225A00018	2/25/2020	1.94	2/25/2030	2/25/2020	115.70759	107.889571	100.6562959	93.96098209	87.76081518	82.01659493	76.69241315	71.75536179	67.17526825
201015A00017	10/15/2020	0.29	10/17/2022	10/15/2020	100.1939	100.0632382	99.93293494	99.80298696	99.67339279	99.54415094	99.41525994	99.28671831	99.15852459
220421A00013	4/21/2022	3.33	9/15/2026	4/21/2022	114.56669	110.3109314	106.2393937	102.3430977	98.61355303	95.0427273	91.62301899	88.34723181	85.20855085
160714A00029	8/10/2016	2.27	8/10/2026	8/10/2016	109.92182	105.8602578	101.9717922	98.24814906	94.68149091	91.264394	87.98982428	84.85111483	81.84194475
171018A00011	10/18/2017	2.68	10/18/2027	10/18/2017	116.07956	110.6331004	105.4772978	100.5950688	95.97042931	91.58841517	87.4350111	83.49708552	79.76232997
180629A00008	6/29/2018	3.02	6/29/2023	6/29/2018	102.70805	101.8620163	101.0299041	100.2113692	99.40608132	98.61372075	97.83397809	97.06655372	96.31115741
180910A00032	9/10/2018	3.22	9/10/2024	9/10/2018	106.80079	104.7272317	102.7047503	100.7317612	98.80673579	96.92820404	95.09475141	93.30501646	91.5576884
190131A00036	1/31/2019	2.69	7/31/2023	1/31/2019	102.743	101.8068452	100.8877091	99.98513427	99.09867627	98.22790637	97.37241093	96.53179077	95.70566049
200115A00015	1/17/2020	1.88	1/17/2023	1/17/2020	100.92241	100.5351657	100.1508962	99.76956958	99.391152	99.01561015	98.64291126	98.27302303	97.90591365
200827A00007	8/27/2020	0.77	8/27/2025	8/27/2020	102.66432	99.68470228	96.8063747	94.02534616	91.337806	88.7401148	86.22879566	83.80052591	81.45212935
171219A00025	12/19/2017	2.33	12/19/2022	12/19/2017	100.94056	100.6334902	100.3282959	100.0249635	99.72347582	99.42381603	99.12596742	98.82991351	98.53563803
180918A00023	9/18/2018	3.17	9/18/2023	9/18/2018	103.47624	102.4020566	101.3501762	100.3199049	99.31058155	98.32157143	97.35226535	96.40207829	95.47044817
191206A00019	12/6/2019	1.96	11/15/2023	12/6/2019	102.44616	101.2186752	100.0204822	98.85054025	97.70785914	96.59149461	95.50054555	94.43415157	93.39149073
200210A00009	2/10/2020	1.57	2/10/2025	2/10/2020	104.45671	101.9828883	99.58012453	97.24597899	94.97810869	92.77426497	90.63228902	88.55010779	86.52572995
200227A00005	2/27/2020	1.43	2/27/2024	2/27/2020	102.20935	100.7129112	99.24588564	97.80748545	96.396947	95.01353324	93.65653262	92.32525798	91.0190455
200309A00046	3/9/2020	0.78	3/11/2025	3/9/2020	102.58526	100.0525456	97.59485671	95.20952878	92.89401228	90.64586397	88.46274175	86.34239974	84.28268369
200417A00016	4/21/2020	2.18	4/21/2025	4/21/2020	106.10975	103.4260579	100.8238958	98.30027885	95.85234882	93.4773717	91.17273144	88.93592392	86.76455131

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200511A00019	5/11/2020	1.18	2/1/2027	5/11/2020	106.39543	101.9286379	97.67308181	93.61771569	89.7521306	86.06651096	82.55159767	79.19865375	75.99943229
200615A00005	6/15/2020	0.61	6/15/2023	6/15/2020	100.67304	99.87473699	99.08902302	98.31560349	97.55419167	96.80450968	96.06628814	95.33926589	94.62318964
200922A00040	9/24/2020	2	9/23/2024	9/24/2020	104.36951	102.2854137	100.2533648	98.27171631	96.33888772	94.45335977	92.61367177	90.81841882	89.06624928
220624A00016	6/24/2022	3.34	6/24/2026	6/24/2022	114.24048	110.2103285	106.3462262	102.6404478	99.08567151	95.67495352	92.40170621	89.259678	86.24293435
180514A00035	5/14/2018	3.07	5/14/2024	5/14/2018	105.6203	103.8810162	102.1788661	100.5127245	98.88151304	97.28419691	95.71978233	94.1873146	92.68587611
180522A00019	5/22/2018	3.16	5/22/2023	5/22/2018	102.51163	101.7719	101.0428475	100.3242396	99.615853	98.9174704	98.22888082	97.54987914	96.88026592
190103A00010	1/3/2019	2.7	1/3/2024	1/3/2019	103.86135	102.5022283	101.1673367	99.85608273	98.5678927	97.30221094	96.05849925	94.83623612	93.63491615
190514A00073	5/14/2019	2.53	5/14/2024	5/14/2019	104.45764	102.73275	101.0446486	99.3922265	97.77441652	96.19019419	94.63857574	93.11861597	91.62940637
191011A00013	10/11/2019	1.88	10/11/2022	10/11/2019	100.34244	100.228454	100.1147361	100.0012898	99.88811421	99.77520825	99.66257095	99.55020132	99.43809836
200210A00021	2/10/2020	1.76	2/10/2025	2/10/2020	104.60256	102.1337828	99.73577824	97.40611595	95.14246652	92.94259414	90.8043522	88.72567915	86.70459459
160705A00005	7/5/2016	1.49	7/5/2023	7/5/2016	101.52924	100.6709125	99.82703266	98.99723985	98.18118365	97.37852523	96.5889368	95.81210121	95.04771148
180802A00006	8/2/2018	2.99	8/2/2023	8/2/2018	103.03764	102.0944412	101.1684902	100.2593165	99.36646696	98.48950489	97.62800891	96.78157245	95.94980309
190926A00015	9/26/2019	2.32	11/26/2030	9/26/2019	120.30944	111.5551755	103.5094671	96.11106389	89.30432357	83.03866722	77.26809356	71.95074209	67.04850003
191002A00016	10/2/2019	1.79	10/2/2023	10/2/2019	102.06131	100.9568198	99.87611589	98.81843974	97.78306172	96.76928276	95.77643271	94.80386892	93.85097478
210216A00008	2/16/2021	0.71	2/17/2026	2/16/2021	103.50288	100.0264217	96.68404333	93.46987814	90.37834756	87.4041461	84.54222635	81.78778501	79.13624967
160330A00054	3/30/2016	2.9	3/31/2031	3/30/2016	127.5381	118.0655537	109.3840722	101.4230496	94.11853806	87.41258812	81.25265734	75.59107972	70.38458981
170117A00046	1/17/2017	2.55	1/17/2024	1/17/2017	103.59212	102.1999018	100.8330898	99.4910529	98.17317585	96.87886333	95.60753907	94.35864516	93.13164128
170906A00020	9/6/2017	2.14	9/6/2023	9/6/2017	102.31923	101.2846558	100.2709358	99.2774423	98.3035746	97.34875551	96.41243031	95.4940656	94.59314834
190329A00018	3/29/2019	2.6	3/29/2024	3/29/2019	104.22291	102.6266024	101.0626313	99.53007848	98.0280646	96.55574267	95.11229677	93.69694057	92.30891597
190816A00006	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563
190927A00019	9/30/2019	1.91	9/30/2022	9/30/2019	100.26827	100.1849074	100.1016818	100.0185923	99.93563845	99.85282007	99.7701368	99.68758834	99.60517437
200429A00045	5/1/2020	1.54	4/30/2025	5/1/2020	104.43729	101.7512916	99.14764776	96.62331477	94.17538088	91.80106229	89.49769651	87.26273609	85.09374277
210106A00006	1/8/2021	0.48	7/17/2023	1/8/2021	100.58609	99.70045968	98.83031975	97.97526888	97.13491742	96.30888909	95.49682029	94.6983597	93.91316765
140521A00019	5/21/2014	3.43	5/22/2028	5/21/2014	122.18645	115.9466809	110.0710914	104.5363868	99.32088719	94.40441017	89.76815877	85.39461874	81.26746389
180720A00068	7/20/2018	2.89	7/20/2023	7/20/2018	102.84465	101.9384948	101.0482924	100.1736275	99.31409573	98.46930651	97.63888266	96.82245977	96.01968566
180727A00039	7/27/2018	3.48	7/27/2028	7/27/2018	122.18471	115.7860633	109.7705275	104.1130947	98.79051797	93.78117523	89.06494817	84.6231102	80.43822347
200428A00013	4/30/2020	1.49	4/29/2024	4/30/2020	102.58595	100.917972	99.28499289	97.68597787	96.11993137	94.58589683	93.0829547	91.61022066	90.1668439
210129A00013	1/29/2021	0.65	1/9/2025	1/29/2021	101.77239	99.42651174	97.14581289	94.92813453	92.77140022	90.67361381	88.63285586	86.64728019	84.71511073
170609A00026	6/9/2017	2.3	6/9/2023	6/9/2017	101.99148	101.2039772	100.4286063	99.66509315	98.91316707	98.1725657	97.44303451	96.72432656	96.01620221
180827A00010	8/27/2018	2.99	8/25/2023	8/27/2018	103.10749	102.101717	101.1155457	100.14841	99.19976242	98.2690763	97.35584483	96.45958013	95.57981233
190523A00020	5/23/2019	2.5	2/9/2024	5/23/2019	103.69029	102.2338609	100.8051249	99.40336079	98.02787144	96.67798329	95.35304531	94.05242807	92.77552282
190826A00065	8/26/2019	2.09	8/28/2029	8/26/2019	115.86063	108.5407804	101.7353804	95.40558344	89.51566882	84.03277297	78.92664708	74.16943661	69.73548046
191004A00002	10/4/2019	2.08	10/4/2029	10/4/2019	115.99052	108.5627148	101.6634062	95.25221318	89.2920401	83.74879412	78.59112748	73.790203	69.31948086

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200327A00036	3/27/2020	0.77	9/27/2023	3/27/2020	101.0484	99.96174694	98.89827777	97.85725922	96.8379871	95.83978642	94.86200983	93.90403624	92.96526951
150601A00490	6/1/2015	3.19	7/2/2024	6/1/2015	106.01075	104.1357956	102.3032557	100.511925	98.76063992	97.04827725	95.37375212	93.73601661	92.1340582
160830A00038	8/30/2016	2.24	8/28/2026	8/30/2016	109.94043	105.8292487	101.8953161	98.13005887	94.52536219	91.073545	87.76733433	84.59984146	81.56453948
170518A00034	5/18/2017	2.15	5/18/2023	5/18/2017	101.811	101.0843632	100.3680863	99.66194464	98.96572396	98.27921613	97.60221876	96.93453509	96.27597373
190402A00004	4/2/2019	2.9	4/2/2029	4/2/2019	121.5785	114.4415366	107.7776232	101.5528263	95.7358181	90.29766591	85.21163645	80.45301785	75.99895662
190829A00031	8/29/2019	1.54	8/29/2024	8/29/2019	103.5437	101.5323905	99.57033006	97.65600422	95.78795571	93.96478201	92.18513283	90.4477078	88.75125423
200131A00010	2/3/2020	1.68	2/3/2023	2/3/2020	100.91773	100.4833776	100.0527499	99.62580326	99.20249057	98.78276564	98.36658302	97.95389806	97.54466681
200221A00004	2/21/2020	1.69	2/21/2025	2/21/2020	104.49224	101.9922447	99.56483004	97.2074707	94.91774786	92.69334128	90.53202454	88.43166072	86.39019814
200224A00021	2/24/2020	1.58	9/24/2024	2/24/2020	103.49406	101.4165565	99.39102869	97.41582787	95.48937346	93.61014637	91.77668614	89.98758819	88.24150124
200504A00015	5/4/2020	0.68	5/4/2023	5/4/2020	100.65549	99.97298804	99.29969288	98.63541981	97.97998853	97.33322354	96.69495396	96.06501335	95.44323961
220217A00021	2/17/2022	1.85	2/13/2024	2/17/2022	102.76169	101.3009245	99.86814991	98.46263351	97.08366578	95.73056135	94.40265794	93.0993154	91.81991477
170313A00032	3/13/2017	3.69	6/14/2032	3/13/2017	137.22404	126.0963179	115.9990375	106.8302381	98.49857971	90.92218691	84.02762213	77.74897535	72.02705615
171206A00048	12/6/2017	3.04	12/6/2032	12/6/2017	133.56424	122.0186011	111.5980597	102.1860383	93.6786393	85.98320545	79.0170498	72.70633471	66.98508235
190821A00030	8/21/2019	1.8	8/21/2024	8/21/2019	103.76194	101.7748186	99.83577002	97.94333061	96.09609441	94.29270757	92.53186603	90.81231331	89.13283844
200109A00012	1/14/2020	1.94	12/15/2022	1/14/2020	100.77133	100.4760116	100.1824302	99.89057414	99.60042819	99.31197726	99.02520642	98.74010096	98.45664632
200304A00034	3/4/2020	1.12	3/4/2024	3/4/2020	101.76192	100.2526576	98.77329138	97.32300682	95.90102034	94.50657601	93.13894429	91.79742095	90.48132593
200430A00009	4/30/2020	1.16	4/30/2026	4/30/2020	104.9824	101.2937118	97.75330187	94.35438678	91.090533	87.95563855	84.94391368	82.04986289	79.26826809
210428A00007	4/28/2021	1.74	10/27/2028	4/28/2021	112.08774	105.7334737	99.77920335	94.19768106	88.96365097	84.05369723	79.44610039	75.12070571	71.05880243
211222A00025	12/22/2021	1.2	7/15/2024	12/22/2021	102.43486	100.5594971	98.72742885	96.93740656	95.18822194	93.47870915	91.80774303	90.17423734	88.57714322
150601A01024	6/1/2015	5.33	2/27/2026	6/1/2015	119.21739	115.4459813	111.8180009	108.3271928	104.9676077	101.7335879	98.61975165	95.62097758	92.7323909
160929A00004	9/29/2016	1.74	9/29/2022	9/29/2016	100.24562	100.1650469	100.0846026	100.0042876	99.92410148	99.84404411	99.76411513	99.68431427	99.60464123
170322A00011	3/22/2017	2.48	3/22/2024	3/22/2017	104.17059	102.5903431	101.0419396	99.5244897	98.03713462	96.57904691	95.14942918	93.74751263	92.37255582
170831A00022	8/31/2017	2.27	2/29/2024	8/31/2017	103.49688	101.9845475	100.5020306	99.04852089	97.62324181	96.22544395	94.85440395	93.5094233	92.18982734
180914A00026	9/14/2018	3.15	9/14/2023	9/14/2018	103.42387	102.3610486	101.3200638	100.3002506	99.3009674	98.32159843	97.36155219	96.4202605	95.49717725
190510A00018	5/10/2019	2.54	5/10/2023	5/10/2019	101.97122	101.2670103	100.5725167	99.8875386	99.2118814	98.54535559	97.88777682	97.23896568	96.59874753
190620A00057	6/25/2019	2.09	5/15/2023	6/25/2019	101.68478	100.9678283	100.2609677	99.56398704	98.87668006	98.19884626	97.53029064	96.87082352	96.22026035
200227A00026	2/27/2020	1.41	2/27/2023	2/27/2020	100.886	100.3852608	99.88947314	99.39856307	98.91245899	98.4310907	97.95438935	97.4822874	97.01471863
210917A00008	9/17/2021	1.55	9/15/2028	9/17/2021	110.73995	104.5410677	98.72692181	93.27167884	88.15136998	83.34374577	78.82814421	74.58536958	70.59758121
150317A00012	3/17/2015	2.46	3/18/2024	3/17/2015	104.10822	102.5392902	101.001863	99.49505727	98.01802848	96.56996275	95.15007548	93.75761006	92.39183657
150601A00523	6/1/2015	4.55	7/25/2031	6/1/2015	141.44044	131.0934513	121.6217044	112.9455832	104.9931321	97.69928095	91.00515249	84.85744337	79.20786966
150601A00734	6/1/2015	2.92	5/1/2025	6/1/2015	108.06425	105.3261828	102.6717735	100.097932	97.60170386	95.18026418	92.8309113	90.55106025	88.33823683
150819A00013	8/19/2015	3.51	8/19/2030	8/19/2015	129.37368	120.5416558	112.3956382	104.8783602	97.93762252	91.52582346	85.59953216	80.1191031	75.04832817
170110A00020	1/10/2017	2.4	1/10/2024	1/10/2017	103.50147	102.1260597	100.7754836	99.44912642	98.1463933	96.86670819	95.6095134	94.37426875	93.16045098

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170203A00012	2/3/2017	3.63	2/2/2035	2/3/2017	143.56182	129.2860649	116.6362712	105.4157413	95.45263026	86.59668778	78.71644139	71.69676	65.43674427
200302A00036	3/2/2020	1.45	3/2/2026	3/2/2020	105.72898	102.187448	98.78319032	95.51015883	92.36260366	89.33505879	86.42232636	83.61946192	80.92176066
200429A00015	4/29/2020	0.66	4/29/2024	4/29/2020	101.40347	99.74198378	98.11545378	96.52284114	94.96314995	93.43542339	91.93874175	90.47222062	89.03500919
200429A00046	5/1/2020	2.07	4/30/2025	5/1/2020	105.87172	103.1661908	100.5434735	98.00050802	95.53436866	93.14225838	90.82150192	88.56953956	86.38392124
180503A00040	5/3/2018	3.3	5/5/2025	5/3/2018	109.24803	106.4828176	103.8022484	101.2031888	98.68264075	96.23773879	93.86574263	91.56403084	89.33009477
190329A00017	3/29/2019	2.59	3/29/2023	3/29/2019	101.69688	101.1103753	100.5306256	99.95751048	99.39091643	98.8307327	98.276851	97.72916549	97.18757264
190605A00020	6/5/2019	2.19	2/5/2024	6/5/2019	103.20809	101.7668282	100.3527709	98.96521802	97.60348971	96.26692891	94.95490035	93.66678967	92.40200253
190816A00031	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563
190826A00058	8/26/2019	1.91	8/26/2026	8/26/2019	108.58682	104.5082599	100.605634	96.87043685	93.29461704	89.87055288	86.59102736	83.44920443	80.4386068
200227A00016	2/27/2020	1.47	2/27/2025	2/27/2020	103.96956	101.458481	99.02083712	96.65406192	94.35569099	92.12336107	89.95480524	87.84784832	85.80040259
191122A00018	11/26/2019	3.11	11/22/2039	11/26/2019	143.45359	124.4163962	108.2723408	94.55801147	82.88685415	72.93605798	64.43573643	57.15999209	50.91952935
200303A00010	3/3/2020	1.34	3/3/2025	3/3/2020	103.65681	101.1387831	98.69466668	96.32186757	94.01789605	91.78036505	89.60698524	87.49556037	85.44398286
200414A00016	4/16/2020	1.64	4/15/2024	4/16/2020	102.77843	101.147225	99.54971488	97.98492365	96.4519113	94.94977371	93.47764097	92.03467567	90.62007143
200922A00030	9/24/2020	2.45	9/25/2023	9/24/2020	102.74973	101.6604312	100.5941686	99.55021791	98.52788422	97.52650131	96.54543003	95.58405702	94.64179341
171208A00008	12/8/2017	2.25	12/8/2022	12/8/2017	100.8424	100.5661254	100.2913771	100.0181382	99.7463964	99.47613924	99.20735452	98.94003015	98.67415419
180604A00050	6/4/2018	3.15	6/4/2024	6/4/2018	105.74814	103.9540298	102.1991221	100.4822151	98.80216077	97.15785712	95.54824618	93.97231165	92.42907681
180911A00080	9/11/2018	2.94	9/9/2022	9/11/2018	100.1093	100.0842511	100.0592264	100.0342285	100.0092572	99.98431241	99.95939421	99.9345025	99.90963724
191121A00010	11/21/2019	2.59	11/20/2037	11/21/2019	135.88052	119.1352784	104.7059485	92.25608457	81.49987436	72.19428678	64.13246996	57.13819666	51.06118683
191212A00028	12/13/2019	1.93	1/17/2023	12/13/2019	100.94175	100.5544588	100.1701437	99.7887717	99.41030902	99.03472232	98.66197883	98.29204624	97.92489276
220302A00006	3/2/2022	1.52	4/25/2023	3/2/2022	101.19136	100.531716	99.8806448	99.23797815	98.60355416	97.97721506	97.35880709	96.74818034	96.14518869
220815A00006	8/15/2022	3.52	8/15/2024	8/15/2022	107.1488	105.1433149	103.1858175	101.2748609	99.40905328	97.58705406	95.80757146	94.06936049	92.37122087
160628A00050	6/28/2016	1.56	6/28/2023	6/28/2016	101.56107	100.7219254	99.89658506	99.08471107	98.28597617	97.50006356	96.72666656	95.96548822	95.21624088
180102A00021	1/2/2018	2.82	1/2/2026	1/2/2018	110.04238	106.5939717	103.2725706	100.0728442	96.98971347	94.01833772	91.15410224	88.3926065	85.72965314
180619A00021	6/19/2018	3.24	6/19/2028	6/19/2018	121.32811	115.0309654	109.1061752	103.5297112	98.27921853	93.33389163	88.67435865	84.28257552	80.14172822
190924A00035	9/24/2019	1.88	9/13/2024	9/24/2019	104.05768	102.0046444	100.0024544	98.04952205	96.14431948	94.28537749	92.47128266	90.70067485	88.97224478
191122A00020	11/26/2019	3.2	11/23/2037	11/26/2019	142.82514	125.7433571	110.994463	98.24200578	87.19991912	77.62473606	69.30904022	62.07595299	55.77448827
191212A00019	12/13/2019	1.93	12/19/2022	12/13/2019	100.79063	100.4841625	100.1795634	99.87681939	99.57591345	99.27682881	98.97954888	98.68405731	98.39033791
200515A00001	5/15/2020	0.59	5/15/2023	5/15/2020	100.61203	99.89935574	99.19672864	98.50393956	97.82078297	97.14705903	96.48257339	95.82713702	95.18056603
200313A00032	3/18/2020	1.46	3/18/2025	3/18/2020	104.02638	101.4635142	98.97667772	96.56316179	94.22037394	91.94583038	89.73715063	87.59205254	85.50834749
200511A00028	5/13/2020	1.02	5/13/2024	5/13/2020	101.84246	100.1435667	98.48094133	96.85348468	95.26014528	93.69991382	92.17182102	90.6749356	89.20836237
151211A00055	12/11/2015	2.62	12/11/2024	12/11/2015	106.58775	104.2558421	101.9866545	99.77807519	97.62808253	95.53473804	93.49618228	91.51063095	89.57637119
170615A00015	6/15/2017	2.25	6/14/2024	6/15/2017	104.43221	102.6183531	100.8447384	99.11016775	97.41349242	95.75360746	94.12944965	92.53999552	90.98425944
170912A00009	9/12/2017	2.11	12/15/2022	9/12/2017	100.82147	100.5260539	100.2323766	99.94042505	99.65018403	99.36163843	99.07477336	98.78957408	98.50602603

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171026A00006	10/26/2017	2.32	10/26/2022	10/26/2017	100.51826	100.3623825	100.2069924	100.0520891	99.89767043	99.74373401	99.59027762	99.43729903	99.28479601
180130A00091	1/30/2018	2.74	1/25/2023	1/30/2018	101.31278	100.902392	100.4953262	100.0915451	99.69100894	99.29367883	98.89951629	98.50848352	98.12054333
181004A00029	10/4/2018	3.7	10/4/2028	10/4/2018	124.18186	117.5240869	111.2752387	105.4079138	99.89669273	94.71798225	89.84987477	85.27201918	80.96550232
190122A00042	1/22/2019	2.79	1/23/2023	1/22/2019	101.35464	100.949275	100.5471616	100.148257	99.75252265	99.3599209	98.97041455	98.58396701	98.20054226
200123A00049	1/23/2020	1.63	1/23/2023	1/23/2020	100.8865	100.482285	100.0813126	99.68354223	99.28893555	98.89745486	98.50906304	98.12372357	97.7414005
200130A00021	1/30/2020	1.54	1/30/2023	1/30/2020	100.87903	100.4554157	100.0353486	99.61878365	99.20567732	98.79598668	98.38966955	97.98668445	97.58699055
180205A00050	2/5/2018	2.81	2/6/2023	2/5/2018	101.43063	100.9866007	100.5464603	100.1101547	99.67763392	99.24884876	98.82375095	98.40229305	97.98442842
180731A00004	7/31/2018	2.97	7/31/2023	7/31/2018	103.00336	102.06589	101.1454589	100.2416055	99.35388487	98.48186808	97.62514114	96.78330453	95.95597255
190807A00014	8/7/2019	1.75	8/7/2023	8/7/2019	101.8048	100.8554038	99.92364354	99.00903158	98.11109795	97.22938966	96.36347002	95.51291787	94.67732692
190820A00021	8/20/2019	2.13	8/20/2029	8/20/2019	116.10453	108.7981373	102.0035796	95.68233048	89.79895072	84.32082669	79.21793189	74.46260935	70.02937352
200806A00002	8/6/2020	0.43	8/6/2024	8/6/2020	101.24378	99.31741445	97.43694476	95.60100544	93.80827687	92.05748734	90.34741098	88.67686578	87.04471172
211206A00010	12/6/2021	1.54	12/4/2026	12/6/2021	107.68504	103.3489422	99.21078702	95.26046114	91.48842368	87.88567416	84.44371838	81.15453685	78.01055527
220429A00006	4/29/2022	3.06	4/29/2024	4/29/2022	105.2359	103.5448101	101.8891421	100.2678464	98.67991607	97.12438376	95.60031946	94.10682877	92.64305118
130926A00009	9/26/2013	4	10/2/2028	9/26/2013	127.0043	120.2318315	113.8747263	107.90516	102.2973224	97.02725761	92.07272144	87.41305028	83.02904059
151116A00025	11/16/2015	3.04	11/14/2025	11/16/2015	110.31534	106.9983173	103.7992301	100.7131659	97.73545408	94.86164864	92.08751561	89.40902143	86.82232198
170918A00007	9/18/2017	2.8	9/20/2027	9/18/2017	115.69147	110.35945	105.3078542	100.5204329	95.98196685	91.67819338	87.59574105	83.72206928	80.04541242
171212A00024	12/12/2017	2.29	12/12/2022	12/12/2017	100.88065	100.5931769	100.3073504	100.0231596	99.74059018	99.45962827	99.18026008	98.90247197	98.62625046
191004A00032	10/4/2019	2.01	1/3/2028	10/4/2019	112.23425	106.6984991	101.4695791	96.52894758	91.85927025	87.44433875	83.26899208	79.31904396	75.5812155
200429A00058	5/1/2020	1.83	4/30/2025	5/1/2020	105.22217	102.5254817	99.91140148	97.37687334	94.91897797	92.5349243	90.22204287	87.9777795	85.79968948
200604A00001	6/4/2020	0.65	6/5/2023	6/4/2020	100.69104	99.92016954	99.16103047	98.41335984	97.67689948	96.95139889	96.23661503	95.53231196	94.83826062
160119A00025	1/19/2016	3.05	1/19/2028	1/19/2016	118.02908	112.2943185	106.8773726	101.7589625	96.92107525	92.34687389	88.02061516	83.92757302	80.05396803
160504A00004	5/4/2016	2.3	5/4/2026	5/4/2016	109.76547	105.9640102	102.315099	98.81174476	95.44732097	92.21554348	89.11045065	86.12638469	83.25797411
190215A00005	2/15/2019	2.89	2/15/2024	2/15/2019	104.31533	102.8368274	101.3867354	99.96431005	98.56882831	97.1995919	95.85592614	94.53717903	93.24272025
190814A00006	8/14/2019	1.84	8/14/2023	8/14/2019	101.91108	100.9420041	99.99128914	99.05841975	98.14289693	97.24424021	96.3619867	95.49569032	94.64492105
190930A00070	9/30/2019	1.93	9/27/2024	9/30/2019	104.24738	102.1534951	100.1120886	98.12149259	96.18010657	94.28639249	92.43887187	90.63612307	88.87677856
200922A00027	9/24/2020	1.65	9/23/2025	9/24/2020	105.49066	102.3935559	99.40333992	96.51571861	93.72659889	91.03207591	88.42842316	85.91208325	83.47965906
180814A00032	8/14/2018	3.1	8/14/2025	8/14/2018	110.02895	106.9635942	104.0005377	101.1358024	98.36559	95.68627072	93.09437499	90.58658527	88.1597285
190220A00007	2/20/2019	2.87	2/20/2024	2/20/2019	104.32995	102.8369223	101.3728508	99.93696323	98.52851664	97.14679354	95.79110099	94.46076955	93.15515222
190225A00026	2/25/2019	3.43	2/27/2034	2/25/2019	140.96172	127.7047413	115.8666139	105.2859967	95.820742	87.34552457	79.74977042	72.93585033	66.8175026
190930A00012	9/30/2019	1.93	9/30/2024	9/30/2019	104.26586	102.1634613	100.1138907	98.11546195	96.16655875	94.26562827	92.41117807	90.60177329	88.8360339
191025A00010	10/25/2019	2.24	7/25/2028	10/25/2019	114.70356	108.5298392	102.7290652	97.27679552	92.15030959	87.32847876	82.79164701	78.52152124	74.50107033
130702A00018	7/2/2013	3.17	7/17/2023	7/2/2013	103.0711	102.1721674	101.2889171	100.4209393	99.56784017	98.72923905	97.90476829	97.09407257	96.29680843
150720A00011	7/20/2015	2.69	7/20/2023	7/20/2015	102.66481	101.7595321	100.8701993	99.9963934	99.13771015	98.29375923	97.46416364	96.64855918	95.84659388

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190110A00013	1/10/2019	2.97	1/17/2024	1/10/2019	104.18085	102.7843042	101.413241	100.0670254	98.74504035	97.44668854	96.17139185	94.91859059	93.68774272
191120A00011	11/20/2019	1.88	1/20/2023	11/20/2019	100.93688	100.5412842	100.1487886	99.75936107	99.37296558	98.98956676	98.60912978	98.23162033	97.85700463
200305A00036	3/5/2020	1.36	3/5/2027	3/5/2020	107.34506	102.7647321	98.40495144	94.25396667	90.3007153	86.53477831	82.9463393	79.52614645	76.26547704
160129A00067	1/29/2016	2.53	1/29/2026	1/29/2016	109.74753	106.2185682	102.8225329	99.55371712	96.4066926	93.37629162	90.45759331	87.64591038	84.93677681
170821A00038	8/23/2017	2.39	8/23/2024	8/23/2017	105.22417	103.2116738	101.2480037	99.331669	97.46123647	95.63532609	93.85260887	92.11180456	90.41167948
190110A00009	1/10/2019	2.97	1/16/2024	1/10/2019	104.17256	102.778765	101.4103624	100.066716	98.74721212	97.45125658	96.17827431	94.92770853	93.69901996
190514A00020	5/14/2019	2.66	5/14/2025	5/14/2019	107.57618	104.8093671	102.1280401	99.52900055	97.00919499	94.56570608	92.19574536	89.89664652	87.66585904
190820A00019	8/20/2019	1.76	8/21/2023	8/20/2019	101.86243	100.8743561	99.90536965	98.95492619	98.02249736	97.10757471	96.20966878	95.32830818	94.46303881
210924A00005	9/24/2021	2.37	9/24/2036	9/24/2021	129.11997	114.121035	101.0637465	89.68416239	79.75555122	71.08297552	63.49868919	56.85822082	51.03703806
150601A00665	6/1/2015	3.82	1/14/2033	6/1/2015	139.79214	127.9105299	117.1846393	107.4945229	98.73330795	90.8057084	83.62671382	77.12043274	71.21907125
150826A00039	8/26/2015	3.22	8/27/2029	8/26/2015	125.02999	117.3519196	110.20845	103.5593881	97.36776533	91.59956339	86.22346445	81.21062374	76.53446224
160816A00003	8/16/2016	1.63	8/16/2023	8/16/2016	101.82224	100.8465987	99.88957159	98.95063436	98.02927783	97.12501174	96.23736393	95.36587949	94.51011997
171214A00005	12/14/2017	2.29	12/14/2022	12/14/2017	100.89427	100.6012031	100.3098488	100.020194	99.73222373	99.44592316	99.16127772	98.87827299	98.59689469
220831A00078	8/31/2022	3.81	8/30/2024	8/31/2022	107.89154	105.8375172	103.8335425	101.8780832	99.96966037	98.106851	96.28828486	94.51264234	92.77865222
091112A00011	11/12/2009	4.77	11/15/2024	11/12/2009	111.2106	108.8981083	106.6459583	104.4521253	102.3146738	100.231749	98.20157321	96.22244144	94.29271797
111216A00001	12/16/2011	3.95	12/30/2031	12/16/2011	138.18986	127.5136001	117.7830862	108.9085989	100.8093957	93.41276666	86.65319734	80.4716228	74.81476214
150603A00017	6/3/2015	2.84	6/3/2025	6/3/2015	108.61129	105.7669096	103.0119138	100.34291	97.75666158	95.25007832	92.82020812	90.46422982	88.17944627
180406A00014	4/6/2018	2.95	4/6/2023	4/6/2018	101.97446	101.3647633	100.762353	100.1670981	99.57887164	98.99754949	98.42301058	97.85513659	97.29381195
190208A00005	2/8/2019	2.63	2/8/2023	2/8/2019	101.40514	100.9551432	100.5091463	100.0670914	99.6289265	99.19460017	98.7640621	98.33726278	97.91415358
190529A00031	5/29/2019	2.36	5/30/2023	5/29/2019	101.97652	101.2167889	100.4683451	99.73093962	99.00432962	98.28827949	97.58256038	96.88695001	96.20123245
190821A00017	8/21/2019	1.8	8/21/2024	8/21/2019	103.76194	101.7748186	99.83577002	97.94333061	96.09609441	94.29270757	92.53186603	90.81231331	89.13283844
191120A00024	11/20/2019	2.23	11/16/2029	11/20/2019	117.32514	109.7313097	102.6846485	96.14279756	90.06689104	84.42125268	79.17311801	74.29238194	69.75136955
200505A00004	5/5/2020	0.77	5/5/2025	5/5/2020	102.72016	100.0363658	97.4355366	94.91457631	92.47053155	90.10057976	87.80202234	85.57227817	83.40887761
200731A00004	7/31/2020	0.38	7/31/2023	7/31/2020	100.59506	99.66972547	98.7612732	97.86924705	96.99320538	96.13272226	95.28738676	94.45680228	93.64058596
210607A00001	6/7/2021	0.46	6/7/2023	6/7/2021	100.54581	99.77005889	99.00620447	98.25397618	97.51311031	96.7833511	96.06445038	95.35616735	94.65826828
210608A00017	6/10/2021	2.67	6/8/2029	6/10/2021	119.45629	112.238652	105.5110849	99.23764795	93.38522526	87.92328545	82.82366677	78.06038104	73.60943501
190517A00005	5/17/2019	2.31	5/17/2024	5/17/2019	104.32678	102.590938	100.8923247	99.22980436	97.60229126	96.00874375	94.44816174	92.91958463	91.42208935
190528A00006	5/28/2019	2.43	9/15/2023	5/28/2019	102.67042	101.6091047	100.5696812	99.55147736	98.55384816	97.57617446	96.61786177	95.67833901	94.75705737
200205A00013	2/5/2020	1.77	2/6/2023	2/5/2020	100.97049	100.5276794	100.0887455	99.65363865	99.22230896	98.79470738	98.37078569	97.95049653	97.53379333
200604A00005	6/4/2020	0.89	6/4/2025	6/4/2020	102.77613	100.0195219	97.35006518	94.7644478	92.2595107	89.83223718	87.47974524	85.19928049	82.98820944
190110A00003	1/10/2019	2.97	1/10/2024	1/10/2019	104.12279	102.7455316	101.3930967	100.0648729	98.76026578	97.47870019	96.21961905	94.98248282	93.76676879
190820A00029	8/20/2019	1.76	8/20/2024	8/20/2019	103.67637	101.6928028	99.75716598	97.86800148	96.02390925	94.22354107	92.46559822	90.74882933	89.07202824
210817A00013	8/19/2021	2	8/19/2026	8/19/2021	108.90246	104.8366197	100.9453049	97.220118	93.65310782	90.23674553	86.96390014	83.82781526	80.82208741

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
110505A00022	5/5/2011	4.59	5/15/2026	5/5/2011	117.97289	114.0013431	110.1882744	106.5264235	103.008906	99.62919458	96.38109786	93.25874088	90.2565468
170228A00015	2/28/2017	2.87	5/28/2025	2/28/2017	108.26856	105.454036	102.7273852	100.0852806	97.52454785	95.04215641	92.6352114	90.30094653	88.03671726
181109A00023	11/9/2018	3.39	11/9/2022	11/9/2018	100.83301	100.6377696	100.4432924	100.2495759	100.0566157	99.86440729	99.67294625	99.4822282	99.29224878
190805A00011	8/5/2019	1.91	8/5/2024	8/5/2019	103.88983	101.9443134	100.044894	98.19019881	96.37890723	94.60974637	92.88148906	91.19295193	89.54299351
200227A00012	2/27/2020	1.41	2/27/2023	2/27/2020	100.886	100.3852608	99.88947314	99.39856307	98.91245899	98.4310907	97.95438935	97.4822874	97.01471863
200305A00002	3/5/2020	1.14	3/5/2025	3/5/2020	103.1546	100.6376942	98.19482271	95.82337949	93.52086593	91.28488671	89.11314484	87.00343689	84.9536486
210715A00009	7/15/2021	0.54	7/17/2023	7/15/2021	100.63952	99.7536264	98.88323052	98.0279268	97.18732556	96.3610504	95.54873772	94.7500361	93.96460584
180126A00028	1/26/2018	2.69	1/26/2023	1/26/2018	101.29941	100.8862754	100.4765101	100.070072	99.66692076	99.26701654	98.87032023	98.47679333	98.08639795
190819A00026	8/19/2019	1.62	8/19/2024	8/19/2019	103.6526	101.6670351	99.7294669	97.83844262	95.99255957	94.19046703	92.43086389	90.71249649	89.03415654
190823A00005	8/23/2019	1.62	8/23/2024	8/23/2019	103.674	101.677461	99.72943338	97.82843731	95.97304802	94.16189384	92.39365376	90.6670552	88.98087191
190917A00022	9/17/2019	2.02	9/16/2022	9/17/2019	100.14932	100.1048493	100.0604386	100.0160834	99.97178367	99.92753927	99.88335009	99.83921604	99.795137
171030A00021	10/30/2017	2.29	11/30/2022	10/30/2017	100.77356	100.5199593	100.2676307	100.0165622	99.76674454	99.51816832	99.2708244	99.0247037	98.77979721
180918A00011	9/18/2018	3.17	9/18/2023	9/18/2018	103.47624	102.4020566	101.3501762	100.3199049	99.31058155	98.32157143	97.35226535	96.40207829	95.47044817
190328A00019	3/28/2019	2.56	3/28/2024	3/28/2019	104.15122	102.5582024	100.9974234	99.46797071	97.96896885	96.49957447	95.05897507	93.6463876	92.26105704
190529A00023	5/29/2019	2.38	5/29/2024	5/29/2019	104.32591	102.5614385	100.8352797	99.14624813	97.49321103	95.87508214	94.29081934	92.73942235	91.21993054
200818A00009	8/18/2020	1.7	8/18/2033	8/18/2020	118.4103	107.0302295	96.845941	87.72529007	79.55136058	72.22063936	65.64142	59.7324037	54.421472
151223A00074	12/23/2015	3.01	12/23/2027	12/23/2015	118.40947	112.7129749	107.3289005	102.2384599	97.42409141	92.86937318	88.55894318	84.47842548	80.614362
160119A00019	1/19/2016	2.95	1/19/2027	1/19/2016	114.23811	109.6338015	105.2433435	101.0556928	97.06043681	93.2477502	89.6083589	86.13350629	82.81492174
160707A00032	7/7/2016	1.52	7/7/2023	7/7/2016	101.56267	100.6986587	99.84929048	99.01419235	98.19300708	97.38538922	96.59100469	95.80953032	95.04065334
190830A00010	9/3/2019	1.75	9/1/2023	9/3/2019	101.89731	100.878807	99.88056715	98.90199074	97.94250152	97.00154557	96.07859023	95.17312304	94.28465087
200402A00011	4/2/2020	0.8	3/31/2023	4/2/2020	100.65559	100.0670294	99.48531326	98.91032377	98.34194497	97.78006356	97.22456881	96.67535247	96.13230874
201208A00031	12/10/2020	1.43	12/9/2024	12/10/2020	103.5151	101.230849	99.00800693	96.84450134	94.73834875	92.68764774	90.69057487	88.74538077	86.85038648
210624A00020	6/24/2021	0.78	6/24/2024	6/24/2021	101.57466	99.76396489	97.9939715	96.26350864	94.57144553	92.91669179	91.29819567	89.71494242	88.16595268
130405A00006	4/5/2013	2.41	4/7/2025	4/5/2013	106.97657	104.3127476	101.7290221	99.22249081	96.79037609	94.43001956	92.13887592	89.91450729	87.75457791
150923A00041	9/23/2015	2.23	9/23/2022	9/23/2015	100.23394	100.1699327	100.1060216	100.0422034	99.97847794	99.91484497	99.8513043	99.78785575	99.7244991
160119A00029	1/19/2016	3.39	1/20/2032	1/19/2016	133.02421	122.5237196	112.9643348	104.2559941	96.31771152	89.07661868	82.46711267	76.43009769	70.91230922
170328A00015	3/28/2017	2.75	11/29/2024	3/28/2017	106.48728	104.1954331	101.964398	99.79210285	97.67656695	95.61589408	93.60826791	91.65194787	89.74526527
180918A00041	9/18/2018	3.18	9/18/2024	9/18/2018	107.07274	104.9685032	102.9165439	100.915216	98.9629392	97.05819445	95.19952086	93.38551306	91.61481867
200226A00015	2/26/2020	1.53	2/26/2024	2/26/2020	102.35579	100.861047	99.39563099	97.95875632	96.54966289	95.16761702	93.81191037	92.48185884	91.17680151
200304A00040	3/4/2020	1.12	3/1/2024	3/4/2020	101.75108	100.2499078	98.77838127	97.33570275	95.92109873	94.53382284	93.17315468	91.83839865	90.52888291
200604A00012	6/4/2020	1.59	6/4/2030	6/4/2020	113.44336	105.4401029	98.05631438	91.24084476	84.94702361	79.1322427	73.7575824	68.78747433	64.18939644
200626A00014	6/26/2020	0.62	6/26/2025	6/26/2020	102.44455	99.62383759	96.89420338	94.25222425	91.69462631	89.21827642	86.8201753	84.49745101	82.24735278
211222A00004	12/22/2021	1.26	10/15/2024	12/22/2021	102.90574	100.7779549	98.70444604	96.68345322	94.71328784	92.79232901	90.91902026	89.09186642	87.30943067

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
220112A00004	1/12/2022	1.55	1/12/2026	1/12/2022	106.23933	102.8169322	99.52241277	96.3503404	93.29554458	90.35310017	87.51831441	84.78671471	82.15403716
120127A00019	1/27/2012	3.87	1/30/2032	1/27/2012	137.72122	126.9761858	117.1913566	108.2748821	100.1441713	92.72491706	85.95022528	79.7598406	74.09945576
140626A00036	6/26/2014	3.55	6/26/2029	6/26/2014	126.8009	119.2413275	112.1951668	105.6247046	99.49518439	93.77456307	88.43328553	83.44407967	78.78176911
150827A00029	8/27/2015	2.74	8/27/2024	8/27/2015	105.96268	103.9317196	101.9502417	100.0167333	98.12973446	96.28784028	94.4896979	92.73400436	91.01950435
180104A00018	1/4/2018	2.97	1/4/2027	1/4/2018	114.13724	109.5781597	105.2289966	101.0790064	97.1180511	93.33655938	89.72549216	86.27631031	82.98094452
180530A00025	5/30/2018	3.49	5/30/2030	5/30/2018	128.45039	119.8886963	111.9757528	104.6586078	97.88891141	91.62249205	85.81897332	80.44142872	75.45606933
180718A00026	7/18/2018	3.03	7/18/2023	7/18/2018	102.86447	101.9650153	101.0812849	100.2128684	99.35937009	98.52040752	97.69561137	96.88462472	96.08710259
181005A00016	10/5/2018	3.26	1/10/2023	10/5/2018	101.39552	101.0266113	100.6603986	100.296848	99.93593039	99.57761718	99.22188015	98.86869149	98.5180238
181025A00010	10/25/2018	3.07	10/25/2022	10/25/2018	100.64308	100.4896382	100.3366708	100.184178	100.0321575	99.88060706	99.7295246	99.57890788	99.42875475
190819A00004	8/20/2019	1.81	5/24/2024	8/20/2019	103.28737	101.5457812	99.84181893	98.17432628	96.5421972	94.94437081	93.37982899	91.84759422	90.34672748
200122A00034	1/22/2020	1.87	1/22/2024	1/22/2020	102.66514	101.266357	99.89333872	98.54543267	97.22201031	95.92246358	94.64620405	93.39266217	92.1612865
200922A00035	9/24/2020	2.94	9/23/2024	9/24/2020	106.34046	104.2352972	102.1826003	100.1807133	98.22804386	96.32306152	94.46429473	92.65032815	90.87980007
220630A00045	6/30/2022	3.39	6/30/2026	6/30/2022	113.96593	109.9382353	106.0768186	102.3739624	98.82234276	95.41501129	92.14537391	89.00717102	85.99445885
120709A00016	7/9/2012	3.2	7/15/2027	7/9/2012	117.11459	111.9365648	107.0214836	102.3546191	97.92214588	93.71107765	89.70921217	85.90508005	82.28789711
180618A00026	6/18/2018	3.05	4/13/2023	6/18/2018	102.09601	101.4664039	100.8445604	100.2303403	99.6236037	99.0242143	98.43203905	97.84694809	97.26881469
190131A00019	1/31/2019	3.44	1/30/2034	1/31/2019	140.86914	127.7062564	115.942915	105.421013	96.00113591	87.56025976	79.98974665	73.19359454	67.08690764
190211A00016	2/11/2019	3.01	2/11/2025	2/11/2019	107.7201	105.2091605	102.7700209	100.4002205	98.09739625	95.85928035	93.68369542	91.56855048	89.51183689
190521A00043	5/21/2019	2.54	5/22/2023	5/21/2019	102.05615	101.318277	100.591064	99.87427702	99.16769287	98.47109473	97.78427187	97.10701947	96.43913837
190808A00052	8/8/2019	1.7	8/8/2024	8/8/2019	103.75147	101.7944844	99.88413277	98.01902476	96.1978166	94.41921355	92.68196769	90.9848759	89.32677794
201208A00029	12/10/2020	1.52	12/9/2025	12/10/2020	105.50035	102.193136	99.00636802	95.93496606	92.97409695	90.11916086	87.36577841	84.70977852	82.14718709
210527A00026	6/1/2021	2.78	6/1/2028	6/1/2021	117.56334	111.4584956	105.7126057	100.3025912	95.20698619	90.40581337	85.88047187	81.61363497	77.58915584
211222A00030	12/22/2021	1.33	1/15/2025	12/22/2021	103.4252	101.0432964	98.72786423	96.4766906	94.28764608	92.15868414	90.0878374	88.07321411	86.11299482
160606A00005	6/6/2016	2.92	6/6/2031	6/6/2016	126.85197	117.2801357	108.5208315	100.5003651	93.15210773	86.41577928	80.23681175	74.56578034	69.35789372
190206A00013	2/6/2019	2.68	2/6/2023	2/6/2019	101.41281	100.9683587	100.5278064	100.0910984	99.65818446	99.22901526	98.80354228	98.38171787	97.96349518
190808A00025	8/8/2019	1.7	8/8/2024	8/8/2019	103.75147	101.7944844	99.88413277	98.01902476	96.1978166	94.41921355	92.68196769	90.9848759	89.32677794
190816A00022	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563
200103A00009	1/3/2020	1.9	1/3/2024	1/3/2020	102.60649	101.2589627	99.93542414	98.63529192	97.35799921	96.10299699	94.86975338	93.65775294	92.46649606
200309A00004	3/9/2020	0.71	3/8/2024	3/9/2020	101.32781	99.80828018	98.31901675	96.85919179	95.42800586	94.02468801	92.64849453	91.29870771	89.97463474
180621A00017	6/21/2018	3.42	6/21/2028	6/21/2018	121.50283	115.2267436	109.3209924	103.761724	98.52674127	93.59538245	88.94840652	84.56788861	80.43712338
180719A00061	7/19/2018	3.07	7/19/2023	7/19/2018	102.90809	102.0056503	101.119035	100.2478286	99.39163181	98.55005877	97.72273684	96.90930597	96.10941812
180730A00078	7/30/2018	3.14	7/28/2023	7/30/2018	103.04357	102.1155285	101.2041869	100.3091011	99.42983893	98.56598332	97.71713184	96.88289594	96.06290038
191031A00033	10/31/2019	2.2	5/31/2028	10/31/2019	114.15474	108.1502133	102.5001792	97.1818058	92.17385174	87.45655053	83.01149983	78.82155977	74.87075936
191106A00022	11/6/2019	2.34	1/2/2030	11/6/2019	118.42005	110.6568267	103.4610877	96.7883773	90.59793394	84.85236735	79.51736429	74.5614211	69.95560082

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191218A00014	12/18/2019	2.04	12/18/2024	12/18/2019	104.9773	102.651676	100.3890259	98.18725085	96.0443386	93.95835756	91.92745292	89.94984305	88.02381604
201116A00010	11/16/2020	0.57	11/15/2023	11/16/2020	100.74093	99.52453921	98.3372552	97.17804324	96.04591813	94.93994029	93.85921314	92.80288064	91.77012504
170427A00044	4/27/2017	3.02	4/27/2027	4/27/2017	115.53135	110.613828	105.9367115	101.4869288	97.25218951	93.22093621	89.38229659	85.72603885	82.2425303
171025A00027	10/25/2017	2.36	10/25/2022	10/25/2017	100.51455	100.3614707	100.2088635	100.0567275	99.90506062	99.75386059	99.60312528	99.45285258	99.30304034
180920A00014	9/20/2018	3.59	9/20/2028	9/20/2018	123.36448	116.7722417	110.5831428	104.7703012	99.30876275	94.17535742	89.34856227	84.80837625	80.53620477
190807A00021	8/7/2019	2	8/7/2026	8/7/2019	108.81792	104.7864341	100.9266817	97.23046331	93.69001239	90.29797181	87.04736997	83.93159855	80.94439164
191003A00014	10/3/2019	1.71	9/20/2024	10/3/2019	103.7448	101.6756891	99.65814681	97.69055074	95.77133934	93.8990115	92.07212369	90.28928732	88.54916623
200306A00001	3/6/2020	1.11	3/6/2026	3/6/2020	104.53674	101.0056375	97.61194393	94.34958596	91.21279059	88.19607075	85.2942094	82.50224467	79.81545594
200327A00075	3/31/2020	1.75	3/29/2024	3/31/2020	102.86135	101.2763593	99.72349479	98.20185213	96.71055726	95.24876844	93.81567476	92.41049467	91.03247472
200730A00001	7/30/2020	0.46	7/30/2024	7/30/2020	101.28784	99.37963163	97.51646903	95.69702368	93.92001234	92.1841979	90.48838736	88.83142998	87.21221548
150401A00008	4/1/2015	2.62	4/1/2025	4/1/2015	107.13242	104.4910016	101.9284585	99.44195252	97.02876764	94.68630327	92.41206852	90.20367674	88.05884042
160811A00011	8/11/2016	2.25	8/11/2026	8/11/2016	109.84936	105.7864997	101.8969197	98.17233159	94.60488435	91.18714171	87.912058	84.77295556	81.76350355
180403A00041	4/3/2018	2.91	4/3/2025	4/3/2018	108.26385	105.5941988	103.0044413	100.4916942	98.05319837	95.68631268	93.38850771	91.15736029	88.99054829
180917A00078	9/17/2018	3.05	9/15/2023	9/17/2018	103.44299	102.3755724	101.3301744	100.306118	99.30275398	98.31945946	97.35563627	96.4107098	95.48412789
181029A00081	10/29/2018	3.27	4/28/2023	10/29/2018	102.37343	101.7010503	101.0374989	100.3825982	99.73617978	99.09807962	98.46813794	97.84619899	97.23211098
181116A00015	11/19/2018	3.29	2/15/2024	11/19/2018	104.90826	103.4251671	101.9705686	100.5437147	99.14388019	97.77036476	96.42249177	95.09960729	93.80107918
191004A00001	10/4/2019	2.47	10/4/2034	10/4/2019	128.52273	115.4723498	103.8994839	93.62773016	84.50263021	76.38883981	69.16767534	62.73498616	56.99930803
200226A00005	2/26/2020	1.53	2/27/2023	2/26/2020	100.9461	100.4451903	99.94922805	99.45814469	98.97186857	98.49032945	98.01345846	97.54118807	97.07345202
211222A00010	12/22/2021	1.06	1/16/2024	12/22/2021	101.50055	100.1263576	98.77721502	97.45249987	96.1516073	94.8739519	93.618967	92.38610385	91.17483097
160211A00035	2/11/2016	2.25	2/11/2025	2/11/2016	105.82828	103.3411226	100.925246	98.57819923	96.29763489	94.08129987	91.92703106	89.83275116	87.79646473
180815A00021	8/15/2018	3.01	8/15/2023	8/15/2018	103.05155	102.07373	101.1144621	100.1732172	99.24949056	98.34279601	97.45266529	96.57864715	95.72030663
180831A00019	8/31/2018	3.21	9/2/2025	8/31/2018	110.13531	107.0254354	104.0207785	101.117187	98.31070018	95.59753598	92.97408177	90.43688566	87.9826484
190808A00009	8/8/2019	1.89	8/8/2024	8/8/2019	103.86782	101.9144815	100.0076014	98.14579712	96.32773212	94.55211852	92.81771492	91.12332439	89.46779254
191223A00055	12/23/2019	2.46	12/7/2029	12/23/2019	119.15538	111.4372379	104.2778538	97.63374995	91.46505194	85.73517292	80.41052615	75.46026387	70.85604038
200511A00016	5/11/2020	0.71	2/1/2024	5/11/2020	101.044	99.63053429	98.24357422	96.88244044	95.54647608	94.23504603	92.94753603	91.68335184	90.44191844
170120A00011	1/20/2017	3.75	1/20/2037	1/20/2017	149.481	132.7774514	118.2273576	105.5362334	94.45151874	84.75641037	76.26462651	68.81596092	62.27250457
180619A00023	6/19/2018	3.04	6/19/2023	6/19/2018	102.64457	101.8265745	101.0216074	100.229363	99.44954121	98.6818513	97.92601153	97.18174882	96.44879844
181023A00025	10/23/2018	3.27	10/23/2023	10/23/2018	103.86432	102.6911537	101.5444947	100.4234493	99.3271658	98.25482971	97.20566205	96.1789173	95.17388164
191031A00019	10/31/2019	1.88	10/31/2022	10/31/2019	100.48341	100.3137008	100.1445625	99.97598963	99.80797957	99.6405295	99.47363667	99.30729836	99.14151185
200430A00008	4/30/2020	0.94	4/30/2025	4/30/2020	102.81341	100.149519	97.56746765	95.06422807	92.63690414	90.28272709	87.99904888	85.78333594	83.63316336
211222A00008	12/22/2021	1.13	4/15/2024	12/22/2021	101.9374	100.313371	98.72291213	97.16504638	95.6388372	94.14338383	92.67781953	91.24131001	89.83305186
160930A00005	9/30/2016	2.03	9/30/2024	9/30/2016	104.47748	102.3728037	100.3209978	98.32037821	96.36932744	94.46629141	92.60977652	90.79834674	89.03062097
170130A00031	1/30/2017	2.96	7/30/2025	1/30/2017	109.07117	106.0706331	103.1688664	100.3620825	97.6466651	95.01915563	92.47624578	90.01476993	87.63169826

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200127A00030	1/27/2020	1.8	1/27/2025	1/27/2020	104.62072	102.1920916	99.83199906	97.53812866	95.3082593	93.14025751	91.0320735	88.98173728	86.98735511
200228A00031	2/28/2020	1.35	2/28/2024	2/28/2020	102.09273	100.5943567	99.125494	97.68534482	96.27314183	94.88814453	93.52963804	92.19693205	90.88935971
200302A00053	3/2/2020	1.31	3/3/2025	3/2/2020	103.58047	101.0634153	98.62025709	96.24839498	93.94533983	91.70870519	89.53620234	87.42563561	85.37489795
210428A00008	4/28/2021	1.93	4/26/2030	4/28/2021	115.94101	107.9486065	100.5651975	93.74117553	87.43121759	81.59389666	76.19132789	71.18884838	66.55472761
160706A00010	7/6/2016	1.99	7/7/2025	7/6/2016	106.06328	103.1691451	100.3687384	97.65854086	95.03518022	92.4954285	90.03619502	87.65451982	85.34756739
190326A00032	3/26/2019	2.4	3/26/2024	3/26/2019	104.07391	102.4836482	100.9255615	99.39873987	97.90231083	96.43543395	94.99729948	93.58712695	92.20416384
190328A00046	3/28/2019	2.7	3/4/2025	3/28/2019	107.12566	104.560375	102.0701377	99.65231179	97.30437142	95.02389491	92.80855979	90.65613805	88.56449165
191121A00004	11/21/2019	1.77	11/21/2024	11/21/2019	104.5029	102.250286	100.0572075	97.92165194	95.84169137	93.81547928	91.84124639	89.91729665	88.04200355
120306A00004	3/6/2012	2.95	3/15/2023	3/6/2012	101.79039	101.2424934	100.7004967	100.1643069	99.63383076	99.10897728	98.58965717	98.07578312	97.56726961
171026A00010	10/26/2017	2.84	10/26/2026	10/26/2017	112.94542	108.60757	104.4620928	100.4993887	96.7103945	93.08654889	89.61976134	86.3023835	83.12718237
190523A00023	5/23/2019	2.48	3/22/2023	5/23/2019	101.58332	101.016633	100.4562608	99.90210175	99.35405295	98.81201358	98.27588512	97.74557115	97.22097737
190821A00028	8/21/2019	1.8	8/21/2023	8/21/2019	101.90194	100.9136549	99.94446073	98.99381235	98.06118133	97.14605915	96.24795628	95.36640129	94.50094001
200312A00004	3/13/2020	1.23	1/24/2025	3/13/2020	103.21519	100.8119242	98.47637676	96.20626914	93.99941204	91.85370224	89.76711873	87.73771896	85.76363534
210305A00013	3/5/2021	2.41	3/5/2036	3/5/2021	129.20144	114.7252859	102.0574623	90.96048149	81.22924096	72.6864578	65.17876897	58.57339491	52.75528293
210609A00011	6/11/2021	1.32	6/11/2024	6/11/2021	102.50892	100.7252779	98.98105685	97.27507312	95.60619332	93.97332794	92.37542926	90.81148932	89.280538
180823A00053	8/23/2018	3.2	8/23/2028	8/23/2018	121.65611	115.1626994	109.063943	103.333712	97.9477449	92.88350001	88.12002518	83.63783778	79.41881435
190328A00031	4/25/2019	2.56	4/25/2024	4/25/2019	104.35967	102.6873701	101.0499605	99.44641616	97.87575055	96.33701531	94.82929858	93.35172318	91.90344497
190528A00028	5/28/2019	2.42	5/30/2023	5/28/2019	102.02194	101.2620138	100.5133821	99.77579062	99.04899659	98.33276432	97.62686492	96.9310761	96.24518188
190603A00005	6/3/2019	2.25	6/3/2024	6/3/2019	104.13152	102.3550761	100.6174485	98.91744299	97.2539188	95.62578154	94.03198062	92.47150712	90.94339163
190816A00020	8/16/2019	1.79	8/16/2024	8/16/2019	103.7146	101.7413637	99.81555599	97.93574835	96.10056225	94.30866986	92.55879184	90.8496952	89.1801913
190826A00030	8/26/2019	1.72	8/26/2026	8/26/2019	108.36094	104.2716763	100.3592443	96.61507789	93.03106893	89.59954314	86.31323443	83.165261	80.14910287
191009A00021	10/9/2019	1.71	10/7/2022	10/9/2019	100.2978	100.1949556	100.0923341	99.98993283	99.88775114	99.78578825	99.68404346	99.58251603	99.48120525
191119A00027	11/19/2019	1.8	11/19/2024	11/19/2019	104.55893	102.3112491	100.1228502	97.9917362	95.91599148	93.89378098	91.92334624	90.00300137	88.13112942
200131A00032	1/31/2020	2.1	1/31/2030	1/31/2020	116.77346	108.9913082	101.7849276	95.10872083	88.92091793	83.18323992	77.8605909	72.92077856	68.33426052
220510A00014	5/13/2022	2.72	11/6/2023	5/13/2022	103.31739	102.1090438	100.9289144	99.77601855	98.64942157	97.54823095	96.47159419	95.41869659	94.38875911
180222A00025	2/22/2018	3.48	2/22/2033	2/22/2018	138.83285	126.7882712	115.9326722	106.141026	97.30210679	89.31689778	82.09719299	75.56436539	69.64828102
190906A00012	9/6/2019	1.76	9/6/2024	9/6/2019	103.7696	101.7389921	99.75839144	97.82624389	95.9410586	94.10140122	92.30589133	90.55320005	88.84204766
190429A00004	4/29/2019	2.65	4/15/2024	4/29/2019	104.44401	102.7985829	101.1871086	99.60860217	98.06211685	96.54674191	95.06160106	93.60585079	92.17867882
190808A00024	8/8/2019	1.69	2/8/2024	8/8/2019	102.6731	101.2244464	99.8033429	98.40907214	97.04094111	95.69828026	94.38044238	93.08680176	91.81675325
191115A00015	11/18/2019	2.61	11/18/2024	11/18/2019	106.08156	103.8251667	101.6280206	99.48813344	97.40359685	95.37258269	93.39333876	91.46418498	89.58350972
200727A00016	7/27/2020	0.43	7/27/2023	7/27/2020	100.63829	99.72371696	98.82564013	97.9436186	97.07722534	96.22604834	95.38968994	94.56776624	93.75990649
200922A00033	9/24/2020	2.37	9/23/2024	9/24/2020	105.14531	103.0529211	101.0127447	99.02313001	97.08249173	95.18930621	93.34210846	91.53948951	89.78009374
190712A00018	7/12/2019	2.25	7/12/2024	7/12/2019	104.41149	102.5249128	100.6816408	98.88042956	97.12007552	95.39941709	93.71733308	92.07274096	90.46459531

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200224A00024	2/24/2020	1.59	2/24/2025	2/24/2020	104.25707	101.7511915	99.31832457	96.95592657	94.66155572	92.4328701	90.26762288	88.16365786	86.11890518
200227A00030	2/27/2020	1.59	2/27/2026	2/27/2020	106.20895	102.6672622	99.26249998	95.98864198	92.83996582	89.8110309	86.89666284	84.09193897	81.3921746
150408A00004	4/8/2015	2.17	4/10/2023	4/8/2015	101.58208	100.9619218	100.3493277	99.74415916	99.14628165	98.55556385	97.97187759	97.39509774	96.82510211
150601A00737	6/1/2015	2.68	12/31/2024	6/1/2015	106.79206	104.4032619	102.0799624	99.82000706	97.6213292	95.48194119	93.39993118	91.37345968	89.40075648
180622A00018	6/22/2018	2.92	6/22/2023	6/22/2018	102.65282	101.825336	101.0111845	100.2100435	99.42160263	98.64556149	97.88162907	97.12952338	96.38897116
181211A00009	12/11/2018	3.14	12/11/2023	12/11/2018	104.10917	102.8043251	101.528236	100.2799547	99.05857153	97.86321647	96.69305716	95.54729676	94.42517208
190529A00013	5/29/2019	2.38	5/29/2024	5/29/2019	104.32591	102.5614385	100.8352797	99.14624813	97.49321103	95.87508214	94.29081934	92.73942235	91.21993054
210507A00008	5/7/2021	1.94	5/7/2031	5/7/2021	117.93576	108.8283734	100.496619	92.87027304	85.88581861	79.48576962	73.6180694	68.23555186	63.29545889
130424A00004	4/24/2013	2.46	4/24/2025	4/24/2013	107.24156	104.5263151	101.8938041	99.34098652	96.86495146	94.46291517	92.13221456	89.87030098	87.67473448
131217A00024	12/17/2013	4.34	1/2/2029	12/17/2013	129.18898	122.1138528	115.4859462	109.2744886	103.4509787	97.9890086	92.86409986	88.05355345	83.53631177
150601A00666	6/1/2015	3.88	1/16/2035	6/1/2015	145.90767	131.5398916	118.7987266	107.4883477	97.43756133	88.49659473	80.53431283	73.43580963	67.10032142
170907A00059	9/7/2017	1.99	9/7/2022	9/7/2017	100.06474	100.0452878	100.0258578	100.0064473	99.98705624	99.96768457	99.94833226	99.92899929	99.90968563
190826A00057	8/26/2019	1.87	8/26/2025	8/26/2019	106.00038	102.9727207	100.0474539	97.22055664	94.48818723	91.84667612	89.29251732	86.82236008	84.43300109
200214A00002	2/14/2020	1.58	11/15/2024	2/14/2020	104.04066	101.8100433	99.63806417	97.52275029	95.46221446	93.45464859	91.49831967	89.59156584	87.73279289
200228A00014	2/28/2020	1.4	2/28/2025	2/28/2020	103.79718	101.2853571	98.84709455	96.4798121	94.18103846	91.94840393	89.77963549	87.67255224	85.62506106
201204A00016	12/8/2020	1.58	12/8/2023	12/8/2020	102.06951	100.7853988	99.53054587	98.30394729	97.10464913	95.93174032	94.78435026	93.66164657	92.56283297
211222A00020	12/22/2021	0.97	10/16/2023	12/22/2021	101.17835	100.0408849	98.92881321	97.84129169	96.77751492	95.73671237	94.71814653	93.72111116	92.74492964
170224A00039	5/24/2017	3.17	5/24/2027	5/24/2017	116.4574	111.4437533	106.6781961	102.1470608	97.83751196	93.73749086	89.83566369	86.12137359	82.58459617
190730A00016	7/30/2019	2	7/30/2024	7/30/2019	104.28508	102.3469966	100.4545333	98.60634717	96.80113911	95.03765685	93.3146928	91.63108216	89.98570109
200224A00001	2/24/2020	1.59	2/24/2025	2/24/2020	104.25707	101.7511915	99.31832457	96.95592657	94.66155572	92.4328701	90.26762288	88.16365786	86.11890518
170915A00031	9/15/2017	2.1	9/15/2023	9/15/2017	102.43798	101.3762716	100.3364991	99.3179879	98.32009066	97.34218631	96.38367848	95.4439943	94.52258328
181127A00027	11/27/2018	3.25	11/28/2022	11/27/2018	100.99442	100.7460312	100.4988635	100.2529066	100.0081516	99.76458976	99.52221236	99.28101085	99.0409767
190128A00035	1/28/2019	3.04	1/26/2024	1/28/2019	104.35538	102.9332861	101.5375547	100.1675118	98.82250958	97.50192166	96.20514199	94.93158414	93.68068048
190814A00003	8/14/2019	2.01	8/14/2029	8/14/2019	116.28317	108.943974	102.1191848	95.77008415	89.86105496	84.35931932	79.23469886	74.45939623	70.00779603
201030A00005	11/2/2020	2.49	10/29/2040	11/2/2020	133.13704	114.1251462	98.17483076	84.76966783	73.48310076	63.96239439	55.91552032	49.10042726	43.31625315
160628A00049	6/28/2016	1.88	6/27/2025	6/28/2016	106.0679	103.1921966	100.4090006	97.7148487	95.10642276	92.58054688	90.13418047	87.76441165	85.4684511
161208A00007	12/8/2016	2.6	12/8/2023	12/8/2016	103.38601	102.0929332	100.829263	99.59399639	98.3861752	97.2048844	96.0492495	94.9184344	93.81163926
190715A00010	7/15/2019	2.23	7/15/2024	7/15/2019	104.39411	102.4996329	100.6488145	98.84039584	97.07315872	95.34592778	93.65756864	92.00698623	90.39312316
190828A00020	8/28/2019	1.95	5/28/2027	8/28/2019	110.60883	105.7226111	101.0805323	96.66906286	92.47550066	88.48791574	84.69509862	81.08651244	77.65224858
200818A00008	8/18/2020	1.5	8/18/2031	8/18/2020	114.39364	105.1618546	96.7434238	89.06251343	82.05071532	75.64628689	69.79347147	64.44189093	59.54600261
140313A00030	3/13/2014	3.27	3/15/2024	3/13/2014	105.35239	103.781455	102.2419446	100.7329894	99.25375037	97.80341903	96.38121572	94.98638845	93.61821166
140710A00027	7/10/2014	2.8	7/17/2023	7/10/2014	102.74148	101.8441487	100.9624793	100.0960632	99.24450688	98.40743012	97.58446565	96.7752585	95.97946554
150720A00012	7/20/2015	2.99	7/21/2025	7/20/2015	109.47705	106.48598	103.5927548	100.7936459	98.08509173	95.46368525	92.92616646	90.46941514	88.09044405

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170824A00038	8/24/2017	2.23	8/24/2023	8/24/2017	102.34294	101.3440323	100.3645687	99.40398464	98.46173822	97.53730805	96.63019235	95.73990806	94.86598991
190107A00010	1/7/2019	2.66	1/9/2023	1/7/2019	101.20081	100.8347567	100.4713558	100.1105814	99.75240499	99.39679837	99.0437339	98.69318428	98.3451226
170920A00028	9/21/2017	2.16	9/21/2022	9/21/2017	100.20416	100.1457842	100.0874894	100.0292756	99.97114261	99.91309024	99.85511834	99.79722675	99.73941531
190215A00017	2/15/2019	2.89	2/15/2024	2/15/2019	104.31533	102.8368274	101.3867354	99.96431005	98.56882831	97.1995919	95.85592614	94.53717903	93.24272025
190729A00008	7/29/2019	2.18	1/29/2024	7/29/2019	103.14668	101.725579	100.3309648	98.96216121	97.61851475	96.29939332	95.0041855	93.73229975	92.48316357
200310A00042	3/10/2020	1.41	3/11/2030	3/10/2020	111.70712	103.9986789	96.87259829	90.28195297	84.18382009	78.53892238	73.31130135	68.46802132	63.97890114
200511A00023	5/11/2020	1.7	2/3/2031	5/11/2020	115.38585	106.6453456	98.63180493	91.2810151	84.53473625	78.34012076	72.64918946	67.41836102	62.60802891
150826A00038	8/26/2015	2.94	8/26/2026	8/26/2015	113.3213	109.1323248	105.1233171	101.2855833	97.6108967	94.09147013	90.7199298	87.48929116	84.39293623
160129A00066	1/29/2016	3.04	1/29/2031	1/29/2016	128.23026	118.9119612	110.3570791	102.4987104	95.27614691	88.634273	82.52302455	76.89690214	71.71453354
160706A00026	7/6/2016	2.19	7/6/2027	7/6/2016	112.04393	107.0139619	102.2399285	97.70751655	93.40328481	89.3146054	85.42961082	81.73714446	78.22671451
170224A00021	2/24/2017	3.4	2/24/2032	2/24/2017	133.42028	122.7968957	113.1344656	104.3401653	96.33060897	89.03084802	82.37347747	76.29784077	70.74932217
180716A00054	7/16/2018	3.59	7/16/2040	7/16/2018	155.62824	134.7303078	117.0855585	102.1584373	89.50475976	78.75567518	69.60451635	61.7960026	55.11736573
180823A00055	8/23/2018	3.44	8/23/2033	8/23/2018	139.75333	127.1217661	115.7888685	105.6126152	96.46726136	88.24139327	80.83622711	74.16411706	68.14724652
190122A00043	1/22/2019	2.96	1/22/2025	1/22/2019	107.74295	105.2825605	102.8911307	100.566344	98.3059756	96.10788818	93.97002789	91.89042057	89.86716821
190409A00033	4/9/2019	2.62	6/9/2023	4/9/2019	102.2426	101.4540069	100.677561	99.91298442	99.16000634	98.41836416	97.68780316	96.96807619	96.25894344
191120A00031	11/20/2019	1.69	11/21/2022	11/20/2019	100.59486	100.3663161	100.1388201	99.91236515	99.68694413	99.46254992	99.23917545	99.01681375	98.79545789
200731A00005	7/31/2020	0.45	7/31/2024	7/31/2020	101.27059	99.35989445	97.4943662	95.67266731	93.89350962	92.15565132	90.45789494	88.7990855	87.17810865
200803A00005	8/3/2020	0.54	6/30/2023	8/3/2020	100.62504	99.78583236	98.96052509	98.14877153	97.35024046	96.56461134	95.79157394	95.03082788	94.28208224
211022A00008	10/22/2021	1.12	10/22/2024	10/22/2021	102.62785	100.4844651	98.39611872	96.36101194	94.3774197	92.44368676	90.55822431	88.71950666	86.92606824
111024A00010	10/24/2011	3.11	10/30/2023	10/24/2011	103.86226	102.6677985	101.5007864	100.3602853	99.24539939	98.15527259	97.08908667	96.04605911	95.02544117
150601A00688	6/1/2015	2.61	2/21/2025	6/1/2015	107.0461	104.5066069	102.0407556	99.64598586	97.31984216	95.05996909	92.86410672	90.73008602	88.65582466
170706A00090	7/6/2017	2.48	7/6/2023	7/6/2017	102.29822	101.4346983	100.5857299	99.75094485	98.92998974	98.12252295	97.328214	96.54674314	95.77780089
180110A00027	1/10/2018	2.6	1/10/2023	1/10/2018	101.1531	100.7847458	100.4190813	100.056076	99.69570064	99.33792681	98.98272627	98.63007124	98.27993434
190920A00018	9/20/2019	1.98	9/20/2022	9/20/2019	100.18443	100.1288391	100.0733286	100.0178937	99.96253416	99.9072499	99.85204076	99.79690658	99.7418472
191126A00022	11/26/2019	1.72	5/26/2023	11/26/2019	101.5401	100.7923762	100.0556276	99.32961493	98.61410479	97.90887059	97.21369216	96.52835561	95.85265307
191230A00013	12/30/2019	1.84	12/2/2024	12/30/2019	104.72723	102.4415362	100.2168963	98.05122989	95.94254637	93.88893975	91.88858412	89.93972951	88.04069803
200218A00024	2/20/2020	1.73	7/17/2023	2/20/2020	101.69913	100.8080997	99.93262749	99.07230906	98.22675349	97.3955832	96.57843337	95.77495146	94.98479663
200429A00051	5/1/2020	2.54	4/30/2025	5/1/2020	107.14376	104.4209127	101.7812813	99.2217926	96.73950878	94.33162096	91.99544257	89.72840301	87.52804178
211222A00026	12/22/2021	1.2	7/15/2024	12/22/2021	102.43486	100.5594971	98.72742885	96.93740656	95.18822194	93.47870915	91.80774303	90.17423734	88.57714322
071231A00068	12/31/2007	4.93	12/30/2022	12/31/2007	101.89224	101.5525674	101.2151586	100.879991	100.5470423	100.2162904	99.8877139	99.56129123	99.23700132
160706A00030	7/6/2016	2.59	7/7/2031	7/6/2016	124.10531	114.5634883	105.8417031	97.8649025	90.56526551	83.88147458	77.7580623	72.14482646	66.99630623
170728A00040	7/28/2017	2.44	1/27/2025	7/28/2017	106.5116	104.0528321	101.6634283	99.34104735	97.08343909	94.88844238	92.75398092	90.67805947	88.65876011
171207A00036	12/7/2017	2.23	12/7/2022	12/7/2017	100.83024	100.5567793	100.2848054	100.0143098	99.74528055	99.47770556	99.21157302	98.94687121	98.68358857

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180116A00014	1/16/2018	3.01	1/19/2027	1/16/2018	114.50598	109.8957858	105.4996343	101.3064811	97.30590556	93.48807483	89.84370757	86.36404026	83.04079572
180604A00048	6/4/2018	3.01	6/5/2023	6/4/2018	102.51676	101.7380895	100.9712391	100.2159392	99.47193026	98.73896033	98.01678496	97.30516687	96.6038757
180910A00013	9/10/2018	3.08	9/11/2023	9/10/2018	103.32736	102.2733692	101.2408744	100.22922	99.23777917	98.26595013	97.31315474	96.37883742	95.46246405
200214A00020	2/18/2020	1.78	1/15/2025	2/18/2020	104.51154	102.1163615	99.78794871	97.52407325	95.32259727	93.18146622	91.098705	89.07241445	87.10076798
200226A00006	2/26/2020	1.57	2/26/2025	2/26/2020	104.21748	101.7061895	99.26823578	96.9010595	94.6022025	92.36930742	90.20011285	88.09244883	86.04423247
160307A00028	3/7/2016	2.91	3/7/2028	3/7/2016	117.65441	111.790051	106.2583697	101.0387176	96.1118313	91.4597351	87.06564846	82.91390037	78.98985044
171012A00027	10/12/2017	2.21	10/12/2022	10/12/2017	100.38804	100.2712228	100.1546913	100.0384447	99.92248204	99.80680221	99.69140415	99.57628682	99.46144914
190104A00033	1/4/2019	3.37	1/31/2029	1/4/2019	123.15695	116.1894435	109.6707417	103.5694903	97.85668222	92.50547042	87.49099645	82.79023365	78.38184339
190110A00014	1/10/2019	2.97	1/17/2024	1/10/2019	104.18085	102.7843042	101.413241	100.0670254	98.74504035	97.44668854	96.17139185	94.91859059	93.68774272
190627A00009	6/27/2019	1.93	6/27/2023	6/27/2019	101.86589	101.0281169	100.2040732	99.39342629	98.59585148	97.81103462	97.03867154	96.27846769	95.53013771
190628A00004	6/28/2019	2.12	6/28/2023	6/28/2019	101.94626	101.1064918	100.280515	99.46799019	98.66859085	97.88200103	97.10791482	96.34603597	95.59607753
200709A00008	7/10/2020	1.88	7/10/2026	7/10/2020	108.15059	104.2080619	100.4306116	96.81049153	93.34036076	90.01325802	86.82258015	83.76206182	80.82575654
181227A00028	12/27/2018	3.46	12/27/2028	12/27/2018	123.44188	116.5643739	110.1236684	104.0896521	98.43443662	93.13218466	88.15894939	83.49252686	79.11232081
190110A00002	1/10/2019	2.93	1/10/2023	1/10/2019	101.27431	100.9056786	100.53974	100.176462	99.81581552	99.457772	99.10230321	98.74938136	98.39897907
190603A00047	6/3/2019	2.22	6/2/2023	6/3/2019	101.88828	101.1206087	100.3644669	99.61960086	98.88575985	98.16270051	97.45018664	96.74798886	96.05588442
190617A00027	6/17/2019	2.21	6/16/2023	6/17/2019	101.96108	101.1543293	100.360314	99.57873889	98.80931311	98.05175486	97.30579103	96.57115679	95.84759537
190816A00035	8/16/2019	1.77	8/16/2023	8/16/2019	101.86132	100.8868587	99.93097245	98.99313257	98.07283162	97.16958103	96.28291027	95.41236597	94.55751114
200311A00040	3/12/2020	1.3	3/11/2025	3/12/2020	103.58568	101.047222	98.58372592	96.19253558	93.87110906	91.61701021	89.42790349	87.3015491	85.23579846
210818A00007	8/18/2021	0.81	8/18/2025	8/18/2021	103.15391	100.1814533	97.30940022	94.53382129	91.85096212	89.25723592	86.74921497	84.32362261	81.97732572
150220A00021	2/20/2015	2.72	2/20/2024	2/20/2015	104.10552	102.6142416	101.1518905	99.71769353	98.31090847	96.93081866	95.57673193	94.24797955	92.94391525
190318A00021	3/18/2019	2.76	3/18/2024	3/18/2019	104.38933	102.8213141	101.2847239	99.77868512	98.30235624	96.8549263	95.43561344	94.04366363	92.6783494
200131A00015	2/5/2020	1.73	2/5/2025	2/5/2020	104.49844	102.0457988	99.66307172	97.34787268	95.0979136	92.91099772	90.78501535	88.71793987	86.70782394
210226A00012	2/26/2021	2.31	2/26/2036	2/26/2021	127.81126	113.4464744	100.8766883	89.86627814	80.21172034	71.73707568	64.29012638	57.73907042	51.96969075
210528A00003	5/28/2021	0.63	5/28/2024	5/28/2021	101.22341	99.48989892	97.79407312	96.13476884	94.51087192	92.92131395	91.36506988	89.84115576	88.34862671
220323A00008	3/23/2022	2.47	3/25/2024	3/23/2022	103.98521	102.4016479	100.8500401	99.32949091	97.83913607	96.37814289	94.94570897	93.54106085	92.16345262
160714A00054	7/14/2016	2.03	7/15/2024	7/14/2016	104.01368	102.1229075	100.2757299	98.47088336	96.70715158	94.98336106	93.2983792	91.65111266	90.04050569
180614A00038	6/14/2018	3.08	6/14/2023	6/14/2018	102.63638	101.8322977	101.0408118	100.2616276	99.49445975	98.73903151	97.99507464	97.26232906	96.54054247
190114A00040	1/14/2019	2.89	1/14/2025	1/14/2019	107.50443	105.068795	102.7008804	100.3984283	98.15927115	95.981326	93.86259046	91.80113921	89.79512052
190530A00006	5/30/2019	2.25	5/30/2024	5/30/2019	104.31764	102.5467241	100.8143695	99.11937867	97.46060864	95.83696361	94.24739241	92.69088617	91.16647619
191108A00014	11/8/2019	2.25	11/8/2029	11/8/2019	118.53305	110.8730854	103.7643193	97.16412929	91.03340749	85.33625151	80.0396856	75.11340732	70.52955742
200504A00004	5/4/2020	0.75	5/5/2025	5/4/2020	102.66565	99.98260696	97.38250743	94.86225987	92.41891142	90.04964003	87.7517476	85.52265349	83.35988849
180126A00029	1/26/2018	2.88	1/27/2025	1/26/2018	107.264	104.8026675	102.4105877	100.0854229	97.82493121	95.62695912	93.48943755	91.410378	89.3878689
190131A00053	1/31/2019	2.67	1/31/2023	1/31/2019	101.36435	100.9367228	100.512699	100.0922285	99.67526675	99.26177009	98.85169549	98.44500067	98.04164402

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190411A00017	4/15/2019	2.65	4/15/2024	4/15/2019	104.44401	102.7985829	101.1871086	99.60860217	98.06211685	96.54674191	95.06160106	93.60585079	92.17867882
190717A00008	7/17/2019	2.22	7/17/2024	7/17/2019	104.36943	102.4701618	100.6147809	98.80201026	97.03062258	95.29943381	93.60730132	91.95312216	90.33583144
200203A00011	2/3/2020	1.7	2/15/2023	2/3/2020	100.97883	100.5110565	100.0476091	99.58843215	99.13346689	98.68265546	98.23594108	97.79326802	97.35458156
200709A00006	7/10/2020	2.58	7/10/2030	7/10/2020	121.53791	113.123568	105.3609621	98.19608898	91.57967825	85.46675883	79.81626394	74.59067416	69.75569467
200720A00034	7/20/2020	0.77	7/21/2025	7/20/2020	102.56589	99.68558902	96.90013868	94.20591881	91.59947063	89.07748537	86.63679696	84.27437505	81.98731844
220406A00007	4/6/2022	2.87	4/8/2024	4/6/2022	104.74406	103.115643	101.5205597	99.95785232	98.42660085	96.92591981	95.45495681	94.01289095	92.59893132
181002A00055	10/2/2018	3.14	10/3/2022	10/2/2018	100.40262	100.3108012	100.2191511	100.1276724	100.0363647	99.9452274	99.85426011	99.76346233	99.67283358
181227A00022	12/27/2019	2.91	12/27/2022	12/27/2019	101.1569	100.8274571	100.5001591	100.1749859	99.85191682	99.5309316	99.21201009	98.89513244	98.58027904
190625A00016	6/25/2019	2.13	6/25/2024	6/25/2019	104.07071	102.2335876	100.437723	98.68193416	96.96507806	95.28605215	93.64379279	92.03727353	90.46550351
200922A00034	9/24/2020	2.24	9/23/2026	9/24/2020	110.15064	105.9620496	101.9566058	98.12531813	94.45968801	90.95167849	87.59368646	84.37851674	81.29935788
051003A00009	10/3/2005	5.15	10/15/2025	10/3/2005	116.72536	113.3903599	110.1705846	107.0613588	104.0582306	101.1569561	98.35348829	95.64396651	93.02470652
150601A00404	6/1/2015	4.29	1/17/2029	6/1/2015	128.62447	121.5237263	114.8747901	108.6463805	102.8095388	97.33744636	92.20525586	87.38993704	82.87013503
160122A00029	1/22/2016	2.48	1/22/2025	1/22/2016	106.57295	104.1269845	101.7496642	99.438682	97.19182227	95.00695649	92.88203929	90.81510466	88.80426243
160628A00038	6/28/2016	1.88	6/27/2025	6/28/2016	106.0679	103.1921966	100.4090006	97.7148487	95.10642276	92.58054688	90.13418047	87.76441165	85.4684511
200611A00010	6/11/2020	1.08	6/11/2027	6/11/2020	106.4667	101.6402628	97.05811026	92.70661856	88.57299832	84.64523765	80.91205048	77.36282871	73.98759767
171025A00026	10/25/2017	2.64	10/25/2024	10/25/2017	105.96067	103.7722472	101.6399722	99.56201057	97.53659931	95.56204714	93.63673081	91.75909182	89.92763321
181015A00024	10/15/2018	3.29	10/16/2023	10/15/2018	103.83107	102.6774399	101.5494498	100.4462542	99.36704145	98.31103497	97.27749145	96.26569904	95.27497568
190621A00015	6/21/2019	2.2	6/21/2024	6/21/2019	104.17129	102.3443472	100.5582269	98.81174684	97.1037643	95.43317825	93.79892741	92.19998855	90.63537475
190805A00009	8/5/2019	1.91	8/5/2024	8/5/2019	103.88983	101.9443134	100.044894	98.19019881	96.37890723	94.60974637	92.88148906	91.19295193	89.54299351
190816A00021	8/16/2019	1.77	8/16/2023	8/16/2019	101.86132	100.8868587	99.93097245	98.99313257	98.07283162	97.16958103	96.28291027	95.41236597	94.55751114
200225A00050	2/25/2020	1.57	2/25/2025	2/25/2020	104.21202	101.7037579	99.2686623	96.9041828	94.6078697	92.37737356	90.21044049	88.10490758	86.05869865
220622A00010	6/22/2022	3.43	7/12/2024	6/22/2022	106.64622	104.7379296	102.8733589	101.05125	99.27038811	97.52960079	95.82775645	94.16376255	92.53656401
190107A00024	1/7/2019	2.91	1/5/2024	1/7/2019	103.99922	102.6363253	101.2977826	99.98299021	98.69137034	97.42236348	96.17542764	94.95003771	93.7456848
190211A00017	2/11/2019	3.12	2/11/2026	2/11/2019	111.46719	107.8813498	104.4314209	101.1115252	97.91607081	94.8397369	91.87745891	89.02441486	86.27601235
190607A00018	6/7/2019	2.19	6/7/2024	6/7/2019	104.05296	102.2661005	100.5184812	98.80891392	97.13625834	95.49941923	93.89734434	92.32902221	90.79348024
190801A00010	8/1/2019	1.97	8/1/2023	8/1/2019	102.07852	101.1429427	100.2244508	99.32257671	98.43687273	97.56690717	96.71226357	95.87254005	95.04734868
190816A00011	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563
200326A00028	3/26/2020	1.54	3/26/2025	3/26/2020	104.26932	101.6819	99.17166046	96.73583682	94.37178048	92.07695477	89.84892941	87.68537531	85.58405961
200922A00044	9/24/2020	2.61	9/25/2023	9/24/2020	102.92334	101.8330307	100.765775	99.7208457	98.69754759	97.69521408	96.71320568	95.75090873	94.80773403
211005A00019	10/5/2021	0.47	10/5/2023	10/5/2021	100.72551	99.61891276	98.53641108	97.47722795	96.44061729	95.42586454	94.43228498	93.45922222	92.50604675
220106A00018	1/10/2022	3.11	1/8/2032	1/10/2022	130.25132	119.9118175	110.4991717	101.9248067	94.10905166	86.98020544	80.47370241	74.53136935	69.10076297
180530A00026	5/30/2018	3.55	5/30/2031	5/30/2018	132.42501	122.634562	113.6678548	105.4505782	97.91551615	91.0018349	84.65444467	78.82342873	73.46353179
180816A00038	8/16/2018	3.38	8/16/2028	8/16/2018	121.75587	115.3130231	109.2594559	103.5695376	98.21945274	93.18706547	88.45179297	83.99448881	79.79733562

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191003A00019	10/3/2019	1.71	9/27/2024	10/3/2019	103.78364	101.6947409	99.6582159	97.67240442	95.73570861	93.8465931	92.003582	90.20525614	88.45025039
200228A00005	2/28/2020	1.35	2/28/2024	2/28/2020	102.09273	100.5943567	99.125494	97.68534482	96.27314183	94.88814453	93.52963804	92.19693205	90.88935971
200306A00030	3/6/2020	0.88	3/6/2023	3/6/2020	100.63814	100.1187606	99.60472985	99.09596135	98.5923746	98.09389073	97.60043245	97.11192403	96.62829127
161213A00017	12/13/2016	2.24	12/13/2022	12/13/2016	100.87299	100.5827466	100.2941834	100.0072876	99.7220446	99.43844	99.15645963	98.87608947	98.59731564
170918A00108	9/18/2017	1.97	9/20/2022	9/18/2017	100.18896	100.1333174	100.0777546	100.022268	99.96685736	99.91152259	99.8562635	99.80107994	99.74597175
170929A00057	9/29/2017	2.16	9/29/2023	9/29/2017	102.57596	101.4748777	100.3973415	99.34260485	98.3099502	97.29868987	96.30816449	95.3377415	94.38681384
180205A00019	2/5/2018	2.88	2/5/2025	2/5/2018	107.67172	105.1725492	102.744494	100.3851255	98.09211543	95.86322871	93.69631891	91.58932429	89.54026386
200309A00005	3/9/2020	0.77	3/7/2025	3/9/2020	102.54867	100.0270946	97.57999291	95.20473571	92.8988004	90.65976907	88.48532344	86.3732401	84.32138596
081205A00033	12/5/2008	4.77	12/7/2023	12/5/2008	106.17355	104.8637901	103.5840045	102.333164	101.1102851	99.91442836	98.74469656	97.60023205	96.48021463
190828A00031	8/28/2019	1.71	8/28/2024	8/28/2019	103.61813	101.6137544	99.65830174	97.75027496	95.88823047	94.07077872	92.29658172	90.56435082	88.87284443
200227A00009	2/27/2020	1.47	2/27/2025	2/27/2020	103.96956	101.458481	99.02083712	96.65406192	94.35569099	92.12336107	89.95480524	87.84784832	85.80040259
200511A00017	5/11/2020	0.83	2/3/2025	5/11/2020	102.26636	99.8474731	97.4975592	95.21426763	92.9953443	90.83862478	88.74203028	86.70356364	84.72130566
151229A00080	12/29/2015	3.49	12/30/2030	12/29/2015	130.4694	121.2059101	112.6900496	104.8571206	97.64835041	91.01031782	84.89444086	79.25651579	74.0563021
180717A00047	7/17/2018	3.3	9/17/2025	7/17/2018	110.56549	107.4064151	104.3552386	101.4076609	98.55957872	95.80707616	93.14641504	90.57402565	88.08649808
180820A00055	8/20/2018	3.37	8/21/2028	8/20/2018	121.73835	115.2818112	109.2162288	103.5157993	98.15655755	93.11623249	88.37411883	83.91095932	79.70883634
190424A00023	4/24/2019	2.43	4/24/2023	4/24/2019	101.84395	101.1839077	100.5324084	99.88928703	99.25438258	98.62753829	98.0086013	97.39742263	96.79385701
190501A00028	5/1/2019	2.42	5/1/2024	5/1/2019	104.39336	102.7002561	101.042783	99.41987708	97.83052144	96.27373901	94.74859083	93.25417403	91.78962015
200115A00017	1/15/2020	1.88	1/17/2023	1/15/2020	100.92241	100.5351657	100.1508962	99.76956958	99.391152	99.01561015	98.64291126	98.27302303	97.90591365
200415A00035	4/17/2020	2.16	4/16/2025	4/17/2020	106.02324	103.3546525	100.7668205	98.2568009	95.82177441	93.45904382	91.16602762	88.94025416	86.77935613
200429A00010	4/29/2020	0.78	4/29/2025	4/29/2020	102.73024	100.0623971	97.47661807	94.9698619	92.5392222	90.18192044	87.89529932	85.67681651	83.52403878
200429A00043	5/1/2020	1.56	4/30/2025	5/1/2020	104.49142	101.804684	99.20032043	96.67528432	94.22666344	91.85167346	89.54765143	87.31204943	85.14242875
200819A00007	8/19/2020	0.38	8/21/2023	8/19/2020	100.60713	99.62418864	98.66030356	97.71492524	96.7875252	95.87759489	94.9846448	94.10820354	93.24781701
060808A00022	8/8/2006	5.57	6/15/2026	8/8/2006	122.19752	118.0557517	114.0816511	110.2674753	106.6058826	103.0899109	99.71295627	96.46875181	93.35134876
160718A00010	7/18/2016	1.65	7/18/2023	7/18/2016	101.7212	100.8260627	99.94662166	99.08246669	98.23320186	97.39844475	96.57782598	95.77098861	94.97758763
171002A00013	10/2/2017	2.23	11/30/2022	10/2/2017	100.75837	100.5047942	100.252491	100.0014479	99.75165548	99.50310441	99.25578554	99.0096898	98.76480817
190809A00022	8/9/2019	1.88	8/9/2024	8/9/2019	103.85384	101.8979593	99.98865923	98.12455102	96.30429299	94.52659227	92.79020271	91.09392287	89.43659411
190926A00017	9/26/2019	2.23	9/26/2029	9/26/2019	117.03061	109.5886246	102.6740003	96.24657316	90.26943873	84.70867083	79.53306668	74.71391498	70.22478492
200306A00012	3/6/2020	0.95	3/6/2024	3/6/2020	101.5077	99.99514004	98.51260278	97.05926782	95.63434577	94.23707518	92.86672135	91.52257513	90.20395179
200428A00011	4/30/2020	1.95	4/29/2025	4/30/2020	105.54096	102.8427075	100.2270102	97.69082128	95.23122599	92.84543758	90.53079053	88.28473434	86.10482769
200529A00009	5/29/2020	0.42	5/30/2023	5/29/2020	100.57591	99.82113389	99.07761085	98.3450911	97.62333213	96.91209849	96.21116156	95.52029929	94.83929598
200720A00042	7/22/2020	2.04	7/21/2026	7/22/2020	108.85668	104.8706007	101.0524528	97.39430952	93.88865541	90.52836644	87.30668771	84.21721229	81.25386161
200730A00002	7/30/2020	0.67	11/6/2024	7/30/2020	101.68241	99.50919547	97.39264196	95.33086145	93.32204897	91.36447421	89.45647768	87.59646723	85.78291463
200925A00004	9/25/2020	0.53	9/25/2023	9/25/2020	100.66644	99.58923781	98.53489226	97.50268445	96.49192377	95.50194807	94.53212217	93.58183656	92.65050603

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170111A00016	1/11/2017	3.51	1/11/2033	1/11/2017	137.0731	125.3371438	114.7455499	105.1794321	96.53286488	88.71141179	81.63082494	75.21589821	69.3994543
180620A00038	6/20/2018	3.4	6/20/2028	6/20/2018	121.37519	115.105711	109.2060793	103.6524761	98.42273753	93.4962324	88.85374843	84.47738756	80.35046943
180917A00032	9/17/2018	3.17	9/15/2023	9/17/2018	103.45278	102.3870279	101.3432305	100.3207152	99.31883548	98.33697074	97.37452508	96.4309261	95.50562368
190430A00002	4/30/2019	2.4	11/2/2022	4/30/2019	100.60921	100.4335362	100.2584797	100.0840345	99.91019767	99.73696587	99.56433598	99.39230486	99.2208694
190919A00017	9/19/2019	1.8	9/19/2022	9/19/2019	100.17052	100.1176758	100.0648988	100.0121927	99.95955724	99.90699242	99.85449804	99.80207397	99.74972005
191129A00012	11/29/2019	1.99	11/29/2024	11/29/2019	104.75202	102.4802712	100.2689149	98.11588967	96.0192268	93.97704166	91.98752907	90.04895917	88.15967361
160922A00014	9/22/2016	2.06	9/22/2026	9/22/2016	109.95822	105.7605972	101.7468674	97.90798707	94.23541133	90.72106013	87.35729011	84.13686855	81.05294893
171013A00021	10/13/2017	2	10/17/2022	10/13/2017	100.41747	100.2865542	100.1559959	100.0257934	99.89594541	99.76645029	99.63730661	99.50851289	99.38006767
180801A00015	8/1/2018	3.16	8/1/2023	8/1/2018	103.09445	102.1550655	101.2327841	100.3271421	99.43769218	98.56400292	97.70565806	96.86225591	96.03340868
181022A00029	10/22/2018	3.22	10/24/2022	10/22/2018	100.63534	100.4848909	100.3349002	100.185366	100.036286	99.88765825	99.73948068	99.59175124	99.44446789
191002A00006	10/2/2019	1.84	10/2/2024	10/2/2019	104.08633	101.9804902	99.927673	97.92618054	95.97438698	94.07073049	92.21371014	90.40188306	88.63386172
191107A00011	11/8/2019	2.02	2/24/2023	11/8/2019	101.17576	100.6824844	100.1940102	99.71026533	99.23118138	98.75669126	98.28672915	97.82123048	97.36013191
200403A00014	4/3/2020	0.63	4/17/2023	4/3/2020	100.64594	100.009699	99.38146837	98.76110191	98.14845256	97.54337694	96.9457352	96.35539092	95.77221101
150904A00021	9/4/2015	2.52	9/5/2023	9/4/2015	102.81906	101.7828198	100.7674186	99.77223221	98.79666147	97.8401306	96.90208621	95.98199616	95.07934856
160616A00028	6/16/2016	1.81	6/16/2023	6/16/2016	101.6394	100.8340658	100.0414586	99.26127592	98.49322734	97.73703131	96.99241497	96.25911379	95.53687123
170609A00043	6/9/2017	3.07	6/9/2032	6/9/2017	132.59048	121.6177315	111.6690951	102.6427714	94.44760594	87.00192179	80.23248831	74.07360707	68.46630103
190826A00018	8/26/2019	1.9	8/27/2029	8/26/2019	115.56319	108.2129613	101.3808715	95.02771693	89.11744955	83.61690955	78.49558033	73.72536512	69.28038371
190927A00036	9/27/2019	1.94	9/6/2024	9/27/2019	104.1385	102.1040337	100.11965	98.1837935	96.29497127	94.45174691	92.65273806	90.89661395	89.18209307
200227A00031	2/27/2020	1.43	2/27/2024	2/27/2020	102.20935	100.7129112	99.24588564	97.80748545	96.396947	95.01353324	93.65653262	92.32525798	91.0190455
200302A00034	3/2/2020	1.25	3/1/2024	3/2/2020	101.9492	100.4464567	98.97338685	97.52919182	96.11309743	94.72435662	93.36224831	92.02607623	90.71516793
200604A00010	6/4/2020	0.89	6/4/2025	6/4/2020	102.77613	100.0195219	97.35006518	94.7644478	92.2595107	89.83223718	87.47974524	85.19928049	82.98820944
220322A00010	3/22/2022	2.34	9/22/2023	3/22/2022	102.61384	101.5335846	100.4760084	99.44040578	98.42609721	97.4324309	96.45878143	95.50454841	94.56915528
190530A00008	5/30/2019	2.38	5/30/2025	5/30/2019	107.29004	104.4754674	101.7491791	99.10782343	96.54819909	94.06725004	91.66205775	89.32983382	87.06791308
190830A00021	8/30/2019	1.76	8/30/2024	8/30/2019	103.7301	101.7192115	99.75752484	97.84352862	95.97576761	94.15284112	92.37340065	90.63614746	88.93983044
191115A00014	11/18/2019	2.45	11/18/2024	11/18/2019	105.72115	103.4688705	101.2757616	99.1398283	97.05916483	95.03194535	93.05641993	91.13091066	89.25380798
141208A00008	12/8/2014	3.02	12/16/2024	12/8/2014	107.24959	104.9025136	102.6187064	100.3960617	98.23255515	96.12624391	94.07526302	92.07782146	90.13219875
160620A00015	6/20/2016	1.71	6/20/2023	6/20/2016	101.64989	100.8324655	100.0281449	99.23661501	98.45757251	97.69072361	96.93578366	96.19247682	95.46053572
170110A00022	1/10/2017	2.27	1/10/2023	1/10/2017	101.06478	100.6962484	100.3304143	99.9672454	99.60671266	99.24878728	98.89344094	98.54064573	98.19037413
171219A00063	12/19/2017	2.8	12/20/2027	12/19/2017	117.24364	111.5865606	106.2397817	101.1846437	96.40370298	91.88064896	87.60022447	83.54815241	79.71106768
200228A00025	2/28/2020	1.57	3/2/2027	2/28/2020	108.29225	103.6986385	99.32560655	95.16142722	91.19505785	87.41609684	83.81474306	80.381758	77.10843052
200228A00030	2/28/2020	1.32	2/28/2023	2/28/2020	100.84423	100.3408556	99.84248393	99.34904058	98.86045282	98.37664937	97.89756035	97.42311722	96.95325278
211222A00017	12/22/2021	0.88	7/17/2023	12/22/2021	100.94226	100.0549045	99.18305823	98.32632173	97.48430497	96.6566312	95.84293648	95.04286906	94.25608893
150316A00043	3/16/2015	2.37	3/16/2023	3/16/2015	101.53037	100.9799054	100.4354112	99.89679012	99.36394738	98.83679014	98.31522761	97.79917087	97.28853293

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170216A00045	2/16/2017	3.73	2/17/2037	2/16/2017	149.3608	132.5837399	117.9807065	105.2528914	94.14424442	84.43514818	75.93705635	68.48794559	61.94845325
190214A00013	2/14/2019	2.64	2/14/2023	2/14/2019	101.45315	100.9863399	100.5238279	100.0655559	99.61146578	99.16150031	98.71560336	98.27371983	97.83579558
191017A00022	10/17/2019	2.25	7/17/2028	10/17/2019	114.71974	108.5674082	102.785451	97.34967957	92.23760075	87.42829185	82.9022835	78.64145183	74.62891907
200228A00066	2/28/2020	1.35	2/28/2024	2/28/2020	102.09273	100.5943567	99.125494	97.68534482	96.27314183	94.88814453	93.52963804	92.19693205	90.88935971
200312A00042	3/16/2020	1.38	3/16/2023	3/16/2020	100.93809	100.3901034	99.84805935	99.31185989	98.78141073	98.25661962	97.7373963	97.22365238	96.71530136
210507A00009	5/7/2021	2.02	5/7/2032	5/7/2021	120.37529	110.155706	100.8934173	92.49346688	84.8707831	77.94910336	71.66002059	65.94213722	60.74031412
130513A00007	5/13/2013	2.54	5/15/2023	5/13/2013	102.00661	101.2883701	100.5802394	99.88200128	99.19344918	98.51438243	97.84460582	97.18392947	96.53216865
160706A00028	7/6/2016	2.39	7/6/2029	7/6/2016	117.69102	110.4535581	103.7137705	97.43484285	91.58286242	86.12657452	81.03716194	76.28804345	71.85469003
190603A00033	6/3/2019	2.05	6/3/2024	6/3/2019	103.99047	102.211476	100.4714127	98.76908944	97.10336056	95.47312673	93.87733279	92.31496546	90.78505124
200122A00035	1/22/2020	1.94	1/22/2025	1/22/2020	104.93604	102.5169134	100.1656753	97.88004881	95.65784493	93.49696056	91.39537459	89.35114422	87.36240144
200305A00009	3/10/2020	1.04	10/18/2023	3/10/2020	101.26202	100.118597	99.00081222	97.9078157	96.83879055	95.79295541	94.76956252	93.76789601	92.78727011
190531A00013	5/31/2019	2.31	12/6/2022	5/31/2019	100.81818	100.5478146	100.2789055	100.0114386	99.74540255	99.4807857	99.21757673	98.95576439	98.69533755
190924A00033	9/24/2019	1.84	9/30/2022	9/24/2019	100.26243	100.1790725	100.0958518	100.0127671	99.92981813	99.84700458	99.76432613	99.68178247	99.5993733
190927A00012	10/1/2019	1.96	10/1/2024	10/1/2019	104.33514	102.2293094	100.1764319	98.17482124	96.22285535	94.31897597	92.46168554	90.64954434	88.88116776
200207A00004	2/7/2020	1.53	2/7/2023	2/7/2020	100.90805	100.4621585	100.0202058	99.5821377	99.14790312	98.71745183	98.29073447	97.86770255	97.44830844
081215A00091	12/15/2008	4.19	12/15/2023	12/15/2008	105.66626	104.3392354	103.0402629	101.7684574	100.5229689	99.30298305	98.10771929	96.9364291	95.78839434
140113A00012	1/13/2014	3.48	1/17/2023	1/13/2014	101.54126	101.1525451	100.7668158	100.3840376	100.0041766	99.62719949	99.25307337	98.88176587	98.51324512
170728A00032	7/28/2017	2.36	7/27/2023	7/28/2017	102.31925	101.3975871	100.4924817	99.60349376	98.73019582	97.87217522	97.02903372	96.20038678	95.38586305
171120A00017	11/20/2017	2.41	11/21/2022	11/20/2017	100.734	100.5055032	100.2780506	100.0516356	99.82625108	99.60189002	99.37854543	99.15621037	98.93487798
190910A00004	9/11/2019	1.86	9/11/2024	9/11/2019	104.00437	101.9574425	99.96112534	98.01384094	96.11407196	94.260359	92.45129798	90.68553757	88.96177684
200115A00022	1/15/2020	1.88	10/14/2022	1/15/2020	100.36359	100.2412412	100.1192069	99.99748449	99.87607269	99.75497031	99.63417612	99.51368893	99.39350752
220729A00035	8/3/2022	3.14	8/3/2027	8/3/2022	116.99406	111.7657756	106.8056379	102.0984799	97.63007277	93.38706011	89.35689988	85.52781071	81.88872192
190424A00007	4/24/2019	2.66	4/24/2024	4/24/2019	104.519	102.8481012	101.2120275	99.60975086	98.04028793	96.50269365	94.9960592	93.51951027	92.07220539
190930A00008	9/30/2019	1.9	10/10/2023	9/30/2019	102.21648	101.0891273	99.98654358	98.90791496	97.85246731	96.81945951	95.80818174	94.81795385	93.84812381
210621A00008	6/21/2021	1.04	6/23/2025	6/21/2021	103.26424	100.4485358	97.72325044	95.08498536	92.5304932	90.05666685	87.66053248	85.33924303	83.09007198
170322A00026	3/22/2017	3.22	3/22/2028	3/22/2017	119.52851	113.5703371	107.9513888	102.6505116	97.64798044	92.92539566	88.46558745	84.25252706	80.27124517
180426A00053	4/26/2018	2.94	4/26/2023	4/26/2018	102.19629	101.5293706	100.87115	100.2214564	99.58012483	98.94699453	98.32190887	97.70471519	97.09526465
180622A00005	6/22/2018	3.5	7/2/2029	6/22/2018	125.41459	117.9270709	110.9485682	104.4416784	98.37193021	92.70754194	87.41919872	82.47984946	77.86452142
190426A00009	4/26/2019	2.63	4/26/2024	4/26/2019	104.48531	102.8091325	101.1679622	99.56076916	97.98656222	96.44438865	94.93333243	93.45251245	92.00108082
190724A00021	7/24/2019	2.33	7/23/2027	7/24/2019	113.59508	108.4572352	103.5832434	98.95820178	94.56812578	90.39988609	86.44115205	82.68033904	79.10655975
200203A00001	2/3/2020	1.7	2/3/2023	2/3/2020	100.92642	100.4920369	100.0613869	99.63441797	99.2110832	98.79133633	98.37513191	97.96242527	97.55317248
220601A00022	6/1/2022	2.73	12/1/2023	6/1/2022	103.50067	102.222726	100.9759205	99.75911974	98.57124839	97.41128208	96.27824433	95.1712038	94.08927167
200212A00003	2/12/2020	1.63	2/12/2025	2/12/2020	104.61822	102.1364031	99.7260272	97.38463055	95.10985241	92.89942733	90.75118065	88.6630243	86.63295271

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200406A00006	4/6/2020	1.13	4/7/2025	4/6/2020	103.24238	100.6358966	98.10799026	95.65580987	93.27662999	90.96784197	88.72694804	86.55155579	84.43937295
200511A00020	5/11/2020	1.4	2/1/2028	5/11/2020	109.01827	103.4903002	98.27431611	93.35115959	88.70294473	84.3129649	80.16560936	76.24628595	72.54134981
200922A00025	9/24/2020	2.61	9/26/2022	9/24/2020	100.28385	100.2115501	100.1393648	100.0672896	99.99532417	99.9234684	99.851722	99.78008474	99.70855638
201028A00003	10/30/2020	1.42	2/27/2026	10/30/2020	105.60521	102.0741807	98.67977909	95.41599079	92.27710399	89.25768816	86.35257855	83.55686168	80.86586171
211103A00007	11/3/2021	0.52	1/4/2023	11/3/2021	100.38289	100.032887	99.68532425	99.34017169	98.99740431	98.65699746	98.3189268	97.98316835	97.64969846
130107A00002	1/7/2013	3.22	1/18/2028	1/7/2013	118.95363	113.1968701	107.7586156	102.6195659	97.76168701	93.16812146	88.82310585	84.71189446	80.82068863
130508A00013	5/8/2013	2.23	5/15/2023	5/8/2013	101.84951	101.1310606	100.4227305	99.7243097	99.03559122	98.35637372	97.68646141	97.02566385	96.37379578
151002A00081	10/2/2015	2.29	10/2/2023	10/2/2015	102.73543	101.6251404	100.5387719	99.47555486	98.43475545	97.41567044	96.41762578	95.43997506	94.48209811
170613A00033	6/13/2017	2.3	6/13/2024	6/13/2017	104.51531	102.7034742	100.9317833	99.19903796	97.50408921	95.84583212	94.22320372	92.635181	91.080779
171016A00045	10/16/2017	2.2	10/17/2022	10/16/2017	100.42788	100.2971089	100.1666971	100.036639	99.90693314	99.7775781	99.64857241	99.51991464	99.39160334
171204A00020	12/4/2017	2.48	12/5/2022	12/4/2017	100.85699	100.5893401	100.3231123	100.0582965	99.79488142	99.53285592	99.27220901	99.01292982	98.75500758
210128A00010	1/28/2021	0.57	7/9/2024	1/28/2021	101.2232	99.37554208	97.57024649	95.8061022	94.08193599	92.39661548	90.74904739	89.13817598	87.56298147
220602A00039	6/2/2022	3.11	6/2/2027	6/2/2022	116.98582	111.911637	107.0901307	102.5073022	98.15001023	94.00591226	90.06341157	86.31160751	82.7402496
220823A00056	8/23/2022	3.5	8/23/2024	8/23/2022	107.45883	105.4233312	103.4371114	101.4986653	99.6065471	97.75936479	95.95577793	94.19449519	92.47427221
180511A00035	5/11/2018	2.93	5/11/2023	5/11/2018	102.31666	101.6074913	100.9081475	100.2184296	99.53813968	98.86708511	98.20507855	97.55193768	96.90748505
180627A00027	6/27/2018	2.87	6/27/2023	6/27/2018	102.65095	101.8095861	100.9819915	100.1678342	99.36678886	98.57854061	97.80278451	97.03922527	96.28757686
190328A00083	3/28/2019	2.37	3/28/2024	3/28/2019	104.0409	102.4455166	100.882469	99.35084522	97.8497657	96.37838344	94.93588248	93.52147641	92.13440708
190910A00030	9/10/2019	1.86	9/10/2024	9/10/2019	103.9984	101.9543125	99.96071795	98.01604816	96.11879088	94.26749153	92.46075055	90.69722091	88.97560572
191126A00015	11/27/2019	1.88	10/14/2022	11/27/2019	100.36359	100.2412412	100.1192069	99.99748449	99.87607269	99.75497031	99.63417612	99.51368893	99.39350752
200330A00045	3/30/2020	1.47	3/30/2027	3/30/2020	107.98212	103.3199542	98.88476219	94.66430936	90.64709019	86.82227681	83.17967541	79.7096856	76.40326264
051107A00075	11/7/2005	5.29	11/17/2025	11/7/2005	118.15382	114.6894832	111.3476717	108.1232895	105.011487	102.0076482	99.10737745	96.30648772	93.60098869
180327A00024	3/27/2018	2.79	5/26/2023	3/27/2018	102.33838	101.5873557	100.8473397	100.1180932	99.3993824	98.69098001	97.99266534	97.30422396	96.62544747
200311A00056	3/13/2020	1.27	4/10/2024	3/13/2020	102.14569	100.5336887	98.9548143	97.40811271	95.89266648	94.40759281	92.95204199	91.52519578	90.12626597
180716A00016	7/16/2018	3.03	7/14/2023	7/16/2018	102.83335	101.9451363	101.0722577	100.2143227	99.37094946	98.54176928	97.72642574	96.9245743	96.13588177
190110A00005	1/10/2019	3.2	1/9/2026	1/10/2019	111.40302	107.912318	104.5506342	101.3125276	98.19281684	95.1865648	92.28906604	89.49583467	86.80259289
191204A00013	12/4/2019	1.72	12/4/2024	12/4/2019	104.46243	102.174417	99.94766248	97.78008078	95.66967936	93.61454969	91.61286298	89.66286599	87.76287728
210924A00003	9/24/2021	2.37	9/24/2036	9/24/2021	129.11997	114.121035	101.0637465	89.68416239	79.75555122	71.08297552	63.49868919	56.85822082	51.03703806
170822A00018	8/22/2017	2.25	8/22/2023	8/22/2017	102.36182	101.3681794	100.3937792	99.43806278	98.50049642	97.58056672	96.67777943	95.79165865	94.92174592
190318A00008	3/18/2019	2.76	3/18/2024	3/18/2019	104.38933	102.8213141	101.2847239	99.77868512	98.30235624	96.8549263	95.43561344	94.04366363	92.6783494
190531A00038	5/31/2019	2.82	5/31/2034	5/31/2019	134.21481	121.0705505	109.3719156	98.95070713	89.65916446	81.36738582	73.96108462	67.33963793	61.41438793
190604A00031	6/4/2019	2.25	6/5/2023	6/4/2019	101.92882	101.1526577	100.3882906	99.63544755	98.8938695	98.16330495	97.4435099	96.73424749	96.03528779
190712A00001	7/12/2019	2.05	7/12/2024	7/12/2019	104.26231	102.3729678	100.5270734	98.7233743	96.96066122	95.23776715	93.55356573	91.90696954	90.2969285
191230A00031	12/30/2019	1.85	12/30/2024	12/30/2019	104.90884	102.5453568	100.2467429	98.01086857	95.83568322	93.71921518	91.65956815	89.6549179	87.70350906

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200128A00028	1/28/2020	1.81	1/28/2025	1/28/2020	104.6503	102.2186278	99.85564784	97.55903667	95.32656598	93.15609552	91.04556901	88.99301038	86.99652011
200407A00001	4/8/2020	2.41	4/7/2025	4/8/2020	106.62466	103.9731638	101.4012756	98.90611414	96.48492283	94.13506323	91.85400891	89.63933989	87.48873741
200415A00030	4/15/2020	0.76	3/15/2023	4/15/2020	100.59596	100.0518234	99.51355819	98.98107111	98.45426939	97.93306227	97.41736088	96.90707824	96.40212918
201028A00005	10/30/2020	1.85	10/31/2025	10/30/2020	106.34674	103.1332457	100.0334134	97.04255237	94.15619672	91.37009292	88.68018806	86.08261901	83.57370214
201030A00002	11/2/2020	2.8	10/29/2040	11/2/2020	138.73936	119.2486548	102.8752546	89.09531547	77.47593645	67.65894583	59.34764814	52.29597856	46.29961736
220701A00014	7/1/2022	3.15	7/14/2023	7/1/2022	102.9392	102.0504775	101.177096	100.3186642	99.4748001	98.64513487	97.82931197	97.02698676	96.23782593
150105A00026	1/5/2015	2.54	1/5/2024	1/5/2015	103.65798	102.2949193	100.9562485	99.64136875	98.34970071	97.08068327	95.83377298	94.60844335	93.40418418
160705A00104	7/5/2016	2.1	7/6/2026	7/5/2016	108.98458	105.0367094	101.253525	97.62732393	94.15080426	90.81704066	87.61946294	84.5518361	81.60824149
180816A00024	8/16/2018	3.01	8/16/2023	8/16/2018	103.06893	102.0881135	101.1259577	100.1819311	99.25552431	98.34624715	97.45362731	96.57720975	95.7165559
190115A00063	1/15/2019	2.96	1/16/2024	1/15/2019	104.15857	102.7648781	101.3965762	100.053029	98.73362256	97.43776284	96.1648748	94.9144017	93.68580431
190212A00017	2/12/2019	2.86	6/30/2023	2/12/2019	102.58111	101.7329014	100.8986894	100.0781338	99.27090139	98.47666969	97.69512662	96.92596997	96.16890706
190709A00018	7/9/2019	2.24	7/9/2024	7/9/2019	104.37197	102.493848	100.658667	98.86519891	97.11225468	95.39868683	93.72338751	92.08528694	90.48335185
190930A00014	9/30/2019	1.89	9/30/2022	9/30/2019	100.2666	100.1832403	100.1000161	100.0169279	99.9339755	99.8511585	99.76847661	99.68592952	99.60351692
210201A00012	2/3/2021	0.75	11/17/2025	2/3/2021	102.86414	99.66008032	96.57128332	93.59291486	90.72037968	87.94930466	85.27552645	82.69507982	80.20418681
220118A00009	1/18/2022	1.65	1/17/2025	1/18/2022	104.20702	101.810222	99.4803926	97.21529693	95.01278589	92.87079428	90.78733696	88.76050527	86.78846363
190520A00007	5/20/2019	2.52	5/20/2024	5/20/2019	104.50426	102.7624464	101.0580505	99.38993251	97.75699827	96.1581982	94.59252469	93.05901006	91.55672452
200326A00030	3/26/2020	1.13	3/24/2023	3/26/2020	100.8273	100.2575223	99.69416911	99.13712825	98.58629408	98.04156327	97.5028348	96.97000985	96.44299177
210428A00015	4/28/2021	2.02	4/28/2031	4/28/2021	118.59947	109.4884078	101.1506553	93.51640188	86.52248679	80.11172987	74.23233665	68.83736544	63.88424965
150601A00470	6/1/2015	2.98	5/31/2024	6/1/2015	105.5476	103.762742	102.0167498	100.308422	98.63660536	97.0001946	95.39812932	93.82939189	92.29300522
171018A00003	10/18/2017	2.23	10/18/2023	10/18/2017	102.75596	101.6014686	100.4728392	99.36920804	98.28975133	97.23368129	96.20024398	95.18871758	94.19841068
180207A00002	2/7/2018	3.13	2/6/2026	2/7/2018	111.44729	107.8770318	104.4415446	101.1350251	97.95195015	94.88706307	91.93535939	89.09207323	86.35266468
180918A00038	9/18/2018	3.11	9/16/2022	9/18/2018	100.19782	100.1533079	100.1088555	100.0644588	100.0201176	99.9758317	99.93160111	99.88742571	99.84330538
190826A00063	8/26/2019	2.05	8/28/2028	8/26/2019	113.72805	107.4899993	101.6348132	96.13701283	90.97294304	86.12063127	81.5596598	77.27104802	73.23714433
190923A00081	9/23/2019	1.96	9/20/2024	9/23/2019	104.26691	102.192231	100.169239	98.19630111	96.27185264	94.39438949	92.56246531	90.77468875	89.02972098
191113A00016	11/15/2019	2.02	8/15/2024	11/15/2019	104.16644	102.1912861	100.2635269	98.38173513	96.54453509	94.75060175	92.99865837	91.28747438	89.61586345
200225A00012	2/25/2020	1.57	2/25/2025	2/25/2020	104.21202	101.7037579	99.2686623	96.9041828	94.6078697	92.37737356	90.21044049	88.10490758	86.05869865
100824A00009	8/24/2010	3.91	9/2/2025	8/24/2010	112.27363	109.1310717	106.0945569	103.1599081	100.3231381	97.58043936	94.92817459	92.36286848	89.88119922
160930A00010	9/30/2016	1.47	9/30/2022	9/30/2016	100.24174	100.1582947	100.0749913	99.99182526	99.90879611	99.82590355	99.74314726	99.66052691	99.57804218
170215A00041	2/15/2017	2.6	10/16/2023	2/15/2017	103.04212	101.8932921	100.7700364	99.67150243	98.59688054	97.54539592	96.51630697	95.5089035	94.52250509
180820A00054	8/20/2018	3	8/18/2023	8/20/2018	103.07437	102.0879952	101.1204855	100.1713063	99.23993993	98.32588807	97.42867078	96.54782575	95.68290747
190523A00016	5/23/2019	2.48	2/15/2023	5/23/2019	101.34347	100.8746833	100.4102326	99.95005917	99.49410405	99.04230935	98.59461821	98.15097483	97.71132442
190904A00020	9/4/2019	1.69	9/1/2023	9/4/2019	101.83621	100.818042	99.82013195	98.84188073	97.88271226	96.94207274	96.01942958	95.11427044	94.22610226
200720A00039	7/22/2020	2.48	7/21/2025	7/22/2020	107.58459	104.630451	101.7729735	99.00848607	96.33347246	93.74456894	91.23855663	88.81235448	86.46301259

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160926A00023	9/26/2016	1.74	9/26/2022	9/26/2016	100.22094	100.1486996	100.0765682	100.0045468	99.93263523	99.86083317	99.7891404	99.71755669	99.6460818
170731A00029	7/31/2017	2.34	7/31/2023	7/31/2017	102.32432	101.3915884	100.4758043	99.57651287	98.69327185	97.82565461	96.97324953	96.13565934	95.31250047
180920A00028	9/20/2018	3.12	9/20/2023	9/20/2018	103.55701	102.4750931	101.415772	100.3783461	99.36214126	98.3665108	97.39083409	96.43451527	95.49698201
180920A00062	9/20/2018	3.12	9/20/2023	9/20/2018	103.55701	102.4750931	101.415772	100.3783461	99.36214126	98.3665108	97.39083409	96.43451527	95.49698201
180924A00052	9/24/2018	3.22	9/22/2023	9/24/2018	103.56134	102.4756218	101.4126618	100.3717535	99.35221547	98.3533941	97.3746622	96.41541767	95.47508231
190809A00011	8/9/2019	1.69	8/9/2024	8/9/2019	103.73731	101.7777671	99.86498987	97.99757285	96.17416705	94.39347269	92.6542371	90.95525264	89.29535474
191120A00005	11/20/2019	2.63	11/20/2034	11/20/2019	130.66454	117.3607826	105.5732652	95.11957824	85.84018484	77.5954493	70.26306094	63.73580328	57.91962041
191217A00012	12/20/2019	2.03	12/20/2024	12/20/2019	104.96554	102.6346691	100.3670408	98.16054994	96.01318015	93.92299528	91.88813568	89.90681454	87.97731454
200204A00020	2/4/2020	1.6	2/4/2025	2/4/2020	104.49572	102.0392736	99.6529024	97.33421158	95.08090667	92.89078487	90.76173071	88.6917121	86.67877645
200226A00009	2/26/2020	1.75	2/26/2030	2/26/2020	115.39893	107.5403391	100.2718134	93.54600616	87.31959695	81.55293181	76.20969555	71.25661492	66.66318964
020916A00006	9/16/2002	5.38	9/16/2022	9/16/2002	100.29882	100.2542262	100.2096872	100.1652039	100.1207762	100.076404	100.0320872	99.98782567	99.94361932
150601A00689	6/1/2015	2.81	2/28/2025	6/1/2015	107.26841	104.7122093	102.2305599	99.82085185	97.48058451	95.20736003	92.99887832	90.85293245	88.76740425
160329A00006	3/29/2016	2.12	3/29/2023	3/29/2016	101.42222	100.8366388	100.257796	99.68558012	99.11987806	98.5605791	98.00757504	97.46076013	96.92003095
160701A00039	7/1/2016	1.92	7/1/2026	7/1/2016	108.77125	104.8267656	101.0466815	97.42332196	93.94940642	90.61802917	87.42263819	84.35701522	81.41525703
170728A00033	7/28/2017	2.46	1/29/2024	7/28/2017	103.5485	102.124385	100.7268081	99.3550929	98.00858426	96.6866488	95.38867381	94.1140665	92.86225317
190327A00031	3/27/2019	2.53	3/27/2024	3/27/2019	104.09572	102.5058534	100.9481338	99.42165112	97.92553359	96.45894142	95.02106551	93.61112597	92.22837086
191004A00012	10/4/2019	1.78	10/4/2024	10/4/2019	103.96961	101.8596684	99.80294867	97.79775012	95.84243696	93.93543795	92.07524331	90.26040182	88.48951805
200127A00013	1/27/2020	1.56	1/27/2023	1/27/2020	100.87496	100.4596759	100.0478082	99.63931301	99.2341491	98.83227582	98.43365318	98.03824185	97.64600313
200205A00011	2/7/2020	2.31	2/7/2024	2/7/2020	103.39723	101.9487826	100.5277811	99.13351064	97.76528288	96.42243275	95.10431728	93.81031476	92.53982382
200214A00007	2/14/2020	1.59	2/14/2025	2/14/2020	104.53022	102.0435588	99.62864696	97.28300845	95.00426684	92.79014184	90.63844477	88.54707427	86.5140123
200226A00025	2/26/2020	1.38	2/26/2025	2/26/2020	104.06891	101.552425	99.10958525	96.73781119	94.43463022	92.19767133	90.0246602	87.91341464	85.86184022
200429A00050	5/1/2020	2.61	4/30/2025	5/1/2020	107.33321	104.6077862	101.9656356	99.40368604	96.91899773	94.50876006	92.17028479	89.9009997	87.69844271
180118A00004	1/18/2018	2.88	1/17/2025	1/18/2018	107.18318	104.7499516	102.3844837	100.0845159	97.847876	95.67247687	93.55631211	91.49745264	89.49404322
180730A00004	7/30/2018	3.14	7/28/2023	7/30/2018	103.04357	102.1155285	101.2041869	100.3091011	99.42983893	98.56598332	97.71713184	96.88289594	96.06290038
181227A00027	12/27/2018	3.24	12/26/2025	12/27/2018	111.39719	107.9451644	104.6194327	101.4146985	98.3259202	95.34829414	92.4772416	89.70839716	87.03759759
200203A00005	2/3/2020	1.7	5/3/2023	2/3/2020	101.34899	100.6666073	99.99337736	99.32912073	98.67365901	98.02681849	97.38842998	96.75832871	96.13635416
200221A00013	2/21/2020	1.69	2/21/2025	2/21/2020	104.49224	101.9922447	99.56483004	97.2074707	94.91774786	92.69334128	90.53202454	88.43166072	86.39019814
200922A00039	9/24/2020	3	9/23/2025	9/24/2020	109.69361	106.5310712	103.4771034	100.5273548	97.67767747	94.92411444	92.262889	89.69039561	87.20319098
190522A00019	5/23/2019	2.55	5/15/2024	5/23/2019	104.50003	102.772057	101.0809855	99.42569653	97.80511813	96.21822165	94.66401929	93.14156205	91.64993782
190524A00026	5/28/2019	2.45	6/15/2023	5/28/2019	102.14768	101.3428715	100.5507229	99.77093955	99.00323348	98.2473255	97.50294502	96.76982965	96.04772492
200224A00029	2/24/2020	1.56	2/24/2023	2/24/2020	100.94919	100.4565757	99.96875113	99.48565136	99.00720801	98.53335403	98.06402364	97.59915234	97.13867683
140131A00025	1/31/2014	3.28	1/30/2023	1/31/2014	101.57727	101.1523311	100.7309415	100.3130556	99.89863003	99.48762199	99.07998939	98.67569082	98.27468555
160727A00002	7/27/2016	1.87	7/27/2023	7/27/2016	101.86931	100.949886	100.0469939	99.16019179	98.28905253	97.43316409	96.59212879	95.76556262	94.95309473

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
161031A00007	10/31/2016	1.91	10/31/2022	10/31/2016	100.4885	100.3187847	100.1496399	99.98106061	99.81304414	99.64558769	99.4786885	99.31234384	99.146551
171030A00023	10/30/2017	2.9	11/1/2027	10/30/2017	116.56168	111.08923	105.9097143	101.0058525	96.36147966	91.96146652	87.79164763	83.83875443	80.0903535
180529A00043	5/29/2018	2.99	5/30/2023	5/29/2018	102.45338	101.6916501	100.9412332	100.2018751	99.47333279	98.75537018	98.0477581	97.35027395	96.66270146
190522A00017	5/23/2019	2.53	3/1/2023	5/23/2019	101.46083	100.9528764	100.4499915	99.95210391	99.45913943	98.9710254	98.48769056	98.00906503	97.5350803
190710A00022	7/10/2019	2.22	7/10/2024	7/10/2019	104.34107	102.4605518	100.6230928	98.82745455	97.07244351	95.3569077	93.67973504	92.03985171	90.43622058
190910A00017	9/16/2019	1.86	9/16/2024	9/16/2019	104.0342	101.9730931	99.96316573	98.00281319	96.09049256	94.22472036	92.40406973	90.62716778	88.89269317
191114A00009	11/18/2019	1.94	8/16/2023	11/18/2019	102.02688	101.0515469	100.0948011	99.15611301	98.23497497	97.33089816	96.4434118	95.57206229	94.71641244
200429A00003	4/29/2020	0.74	4/28/2023	4/29/2020	100.68375	100.0177069	99.36042413	98.71173387	98.07146863	97.43946529	96.81556491	96.19961259	95.59145736
201006A00003	10/6/2020	0.29	10/6/2022	10/6/2020	100.16115	100.061095	99.96125275	99.8616196	99.76219485	99.66297783	99.56396786	99.46516426	99.36656636
170314A00006	3/14/2017	2.67	3/14/2024	3/14/2017	104.40547	102.844941	101.3156207	99.81664247	98.34717453	96.90641508	95.49359097	94.10795643	92.74879185
170622A00037	6/22/2017	3.27	6/22/2033	6/22/2017	135.62496	123.4895809	112.5855209	102.779981	93.95516957	86.0065347	78.84121355	72.37667062	66.5395006
180924A00047	9/24/2018	3.14	9/23/2022	9/24/2018	100.28564	100.2216543	100.1577612	100.0939603	100.0302515	99.96663445	99.90310906	99.83967511	99.77633242
181114A00021	11/14/2018	3.17	11/14/2023	11/14/2018	104.05831	102.8210112	101.6131271	100.4336204	99.28149893	98.15581647	97.0556699	95.98019687	94.92857347
190828A00019	8/28/2019	2	3/28/2028	8/28/2019	112.64611	106.8619418	101.4109004	96.2720686	91.42594789	86.85435724	82.54033709	78.46806104	74.62275431
191106A00012	11/6/2019	2.02	10/11/2024	11/6/2019	104.52194	102.3871695	100.3065604	98.27836925	96.30091904	94.3725997	92.49186477	90.65722832	88.86726211
211222A00018	12/22/2021	0.88	7/17/2023	12/22/2021	100.94226	100.0549045	99.18305823	98.32632173	97.48430497	96.6566312	95.84293648	95.04286906	94.25608893
190904A00019	9/4/2019	1.69	9/4/2024	9/4/2019	103.61515	101.5916987	99.61799741	97.69250654	95.81374604	93.98029186	92.19077332	90.44387076	88.73831322
200224A00015	2/24/2020	1.57	1/10/2024	2/24/2020	102.18759	100.8243688	99.48573005	98.17106714	96.87979237	95.61133672	94.36514914	93.14069585	91.93745969
200604A00014	6/4/2020	2.42	6/4/2040	6/4/2020	131.71628	113.1701714	97.55900854	84.39654508	73.27965454	63.87374541	55.90079676	49.12953284	43.36734576
210604A00005	6/4/2021	0.3	12/2/2022	6/4/2021	100.29757	100.0389454	99.78165257	99.52568131	99.27102148	99.01766303	98.76559601	98.51481057	98.26529696
180625A00041	6/25/2018	3.06	6/20/2023	6/25/2018	102.66891	101.8480243	101.0402616	100.2453074	99.46285857	98.69262149	97.93431167	97.18765341	96.45237945
181023A00021	10/23/2018	3.28	10/23/2023	10/23/2018	103.87595	102.7027104	101.5559806	100.4348655	99.3385133	98.2661096	97.21687536	96.19006502	95.18496473
190122A00007	1/22/2019	3.03	1/22/2024	1/22/2019	104.30726	102.8963089	101.5113273	100.1516627	98.81668099	97.5057687	96.21833218	94.95379686	93.71160647
200303A00034	3/3/2020	1.21	3/3/2025	3/3/2020	103.32597	100.8121891	98.37222515	96.00348636	93.70348576	91.469839	89.30025935	87.19255305	85.14461493
200810A00004	8/10/2020	0.43	8/9/2024	8/10/2020	101.24987	99.31547086	97.42734188	95.58409913	93.784407	92.0269786	90.31057364	88.6339964	86.99609383
170123A00039	1/23/2017	2.79	1/23/2026	1/23/2017	110.59595	107.0688244	103.6738273	100.4053151	97.2579171	94.22651926	91.30625055	88.49247009	85.78075506
170913A00027	9/13/2017	2.08	9/13/2022	9/13/2017	100.12349	100.0873572	100.0512711	100.0152272	99.97922536	99.94326549	99.90734753	99.87147141	99.83563704
170928A00020	9/29/2017	2.29	9/29/2022	9/29/2017	100.28998	100.2093642	100.1288819	100.0485289	99.96830486	99.88820963	99.80824285	99.72840425	99.64869353
190626A00010	6/26/2019	2.1	6/26/2023	6/26/2019	101.91868	101.0845698	100.2640687	99.45684752	98.66258588	97.88097365	97.1117105	96.35450557	95.60907704
190808A00023	8/8/2019	1.68	11/8/2023	8/8/2019	102.20796	100.9991727	99.81881947	98.66591097	97.53949897	96.4386785	95.36258536	94.31039388	93.28131478
150601A00650	6/1/2015	2.75	3/31/2023	6/1/2015	101.78373	101.1913827	100.6059153	100.0272057	99.4551373	98.88959652	98.33047216	97.77765559	97.23104059
180110A00028	1/10/2018	2.85	1/10/2025	1/10/2018	107.0546	104.6419247	102.2959535	100.0144812	97.79538453	95.63662244	93.53623236	91.49232677	89.50308981
180719A00063	7/19/2018	3.21	7/19/2024	7/19/2018	106.27697	104.3536236	102.4747547	100.6390723	98.84532962	97.09232384	95.37889439	93.70392115	92.06632274

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190606A00026	6/6/2019	2.23	6/6/2023	6/6/2019	101.91915	101.1402593	100.3732487	99.61784423	98.87378392	98.14081362	97.41868672	96.7071639	96.0060128
190711A00022	7/11/2019	2	7/11/2023	7/11/2019	101.99766	101.1205388	100.2584564	99.41103292	98.57789664	97.75868845	96.95306115	96.16067901	95.38121729
190830A00002	8/30/2019	1.93	8/28/2026	8/30/2019	108.68162	104.5957225	100.6862789	96.94474837	93.36304609	89.93351959	86.64892318	83.50239414	80.48743039
190930A00035	9/30/2019	1.93	9/30/2024	9/30/2019	104.26586	102.1634613	100.1138907	98.11546195	96.16655875	94.26562827	92.41117807	90.60177329	88.8360339
191105A00007	11/5/2019	1.98	11/5/2026	11/5/2019	109.95863	105.6387805	101.5127535	97.57078399	93.80365836	90.20267805	86.75962734	83.46674358	80.31668948
200709A00002	7/10/2020	1.66	7/10/2025	7/10/2020	105.12271	102.2342029	99.43960607	96.73537395	94.1181179	91.58459472	89.13169954	86.7564592	84.45602594
220317A00012	3/17/2022	1.99	9/15/2023	3/17/2022	102.20523	101.1465558	100.109733	99.09409269	98.09899083	97.12380911	96.16795386	95.23085479	94.31196389
170608A00020	6/8/2017	2.27	6/10/2024	6/8/2017	104.4377	102.634989	100.8720686	99.14774374	97.46086617	95.81033242	94.19508163	92.61409352	91.06638635
180223A00022	2/23/2018	2.93	2/23/2023	2/23/2018	101.61617	101.1243991	100.6373864	100.1550607	99.6773546	99.2042019	98.73553772	98.27129837	97.81142141
190702A00002	7/2/2019	2.16	7/2/2024	7/2/2019	104.17467	102.317274	100.5019601	98.72753338	96.99283934	95.29676336	93.63822895	92.0161962	90.42966034
200304A00053	3/6/2020	2.33	3/6/2025	3/6/2020	106.1964	103.637657	101.1539571	98.7426633	96.40124437	94.12727378	91.91842463	89.77246487	87.6872528
220830A00055	8/30/2022	3.7	8/30/2029	8/30/2022	127.37353	119.6502636	112.462162	105.7690967	99.53415582	93.7233676	88.30545186	83.25159355	78.53523651
020920A00012	9/20/2002	5.4	9/20/2022	9/20/2002	100.37464	100.3188945	100.2632208	100.2076229	100.1521006	100.0966538	100.0412824	99.98598609	99.93076484
160630A00012	6/30/2016	2.11	6/30/2025	6/30/2016	106.36685	103.4871575	100.7001207	98.0022809	95.39032483	92.86107999	90.41150797	88.03869796	85.7398608
200123A00013	1/27/2020	1.89	1/27/2025	1/27/2020	104.84099	102.4096396	100.0468815	97.75040318	95.51798195	93.34748265	91.23685384	89.184124	87.18739793
200928A00002	9/28/2020	0.35	9/28/2023	9/28/2020	100.59034	99.50362724	98.44017785	97.39924936	96.38013352	95.38215145	94.40465218	93.44701121	92.50862918
160119A00030	1/19/2016	3.44	1/18/2033	1/19/2016	136.38167	124.6607165	114.0855071	104.5367618	95.90823025	88.1052084	81.0432294	74.64690902	68.84892641
170803A00020	8/3/2017	2.84	8/3/2027	8/3/2017	115.48972	110.2984383	105.3739224	100.701073	96.265721	92.05456655	88.05512122	84.25565444	80.64514371
211222A00022	12/22/2021	1.06	1/16/2024	12/22/2021	101.50055	100.1263576	98.77721502	97.45249987	96.1516073	94.8739519	93.618967	92.38610385	91.17483097
220831A00079	8/31/2022	3.79	8/29/2025	8/31/2022	111.8614	108.7363965	105.7165748	102.7978078	99.97615171	97.24783963	94.60927283	92.05701205	89.58776953
170327A00072	3/29/2017	3.09	3/29/2027	3/29/2017	116.22216	111.3528006	106.7183783	102.3062815	98.10464555	94.10230309	90.2887396	86.65405144	83.18890701
180116A00010	1/16/2018	2.58	1/17/2023	1/16/2018	101.19316	100.8052691	100.420361	100.0383993	99.65935026	99.28318049	98.90985718	98.53934802	98.17162117
180719A00065	7/19/2018	3.36	7/20/2026	7/19/2018	114.06545	109.9801615	106.0657144	102.3140746	98.71762462	95.26914305	91.96178155	88.78904382	85.74476558
180926A00004	9/26/2018	3.04	9/26/2022	9/26/2018	100.32303	100.25062	100.1783228	100.1061367	100.0340615	99.96209683	99.89024255	99.81849838	99.74686406
190430A00003	4/30/2019	2.43	8/2/2023	4/30/2019	102.51381	101.5732647	100.6499346	99.74334824	98.85305354	97.97861432	97.1196099	96.27563436	95.44629591
150601A00733	6/1/2015	2.72	5/1/2025	6/1/2015	107.89294	105.1492258	102.489523	99.91072024	97.40984522	94.9840567	92.63063743	90.34698775	88.13061963
151109A00020	11/9/2015	2.79	11/9/2023	11/9/2015	103.42247	102.2051804	101.0165041	99.85544074	98.72103602	97.61237921	96.52860068	95.46886958	94.4323917
190930A00011	9/30/2019	1.89	10/24/2022	9/30/2019	100.43557	100.2853661	100.1356171	99.98632397	99.83748449	99.68909663	99.54115833	99.39366755	99.24662226
191206A00044	12/10/2019	2.01	10/31/2024	12/10/2019	104.61923	102.429588	100.2965069	98.21812645	96.19265878	94.21838939	92.29367332	90.41693171	88.58664857
200114A00006	1/15/2020	1.99	1/15/2025	1/15/2020	105.01849	102.6171251	100.2826548	98.01285181	95.80557449	93.65876452	91.57044321	89.53870795	87.56172879
200220A00025	2/20/2020	1.72	2/21/2023	2/20/2020	101.01473	100.5302276	100.0503673	99.57508025	99.10430119	98.63796621	98.1760126	97.7183788	97.26500441
200318A00043	3/18/2020	1.06	3/20/2023	3/18/2020	100.82537	100.2660509	99.71292571	99.16589108	98.62484677	98.08969468	97.56033884	97.03668537	96.51864239
200925A00008	9/25/2020	0.74	9/25/2025	9/25/2020	102.66399	99.60542347	96.65294659	93.80228297	91.04935793	88.3902847	85.82135456	83.33902744	80.93992323

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210608A00005	6/8/2021	0.51	6/7/2024	6/8/2021	101.24923	99.48444262	97.7585593	96.07040207	94.41883782	92.80277843	91.22117858	89.67303356	88.15737729
120113A00013	1/13/2012	3.87	1/15/2032	1/13/2012	137.57917	126.8842125	117.1413556	108.2598734	100.1581499	92.76272359	86.00743399	79.83266179	74.18465096
170623A00028	6/23/2017	2.79	6/23/2027	6/23/2017	114.89309	109.8308342	105.0234708	100.4568323	96.11761425	91.9933156	88.07218594	84.34317661	80.79589517
180103A00019	1/3/2018	2.51	1/3/2023	1/3/2018	101.074	100.7252745	100.3789516	100.0350071	99.69341659	99.354156	99.01720155	98.68252978	98.35011756
180920A00035	9/20/2018	3.16	9/20/2022	9/20/2018	100.25006	100.1944138	100.138847	100.0833558	100.0279401	99.97259979	99.91733465	99.86214454	99.80702931
190122A00045	1/22/2019	3.17	1/22/2027	1/22/2019	115.87344	111.2065055	106.7567275	102.5128688	98.46432987	94.6011112	90.91377569	87.39341441	84.03161427
190326A00024	3/26/2019	2.59	3/26/2024	3/26/2019	104.18379	102.5958967	101.0400697	99.51541091	98.02105178	96.55615553	95.11991589	93.71155568	92.33032549
200224A00020	2/24/2020	1.59	2/24/2025	2/24/2020	104.25707	101.7511915	99.31832457	96.95592657	94.66155572	92.4328701	90.26762288	88.16365786	86.11890518
200302A00035	3/2/2020	1.22	7/3/2023	3/2/2020	101.2066	100.3564622	99.52053139	98.69845404	97.88988818	97.09450304	96.31197857	95.54200501	94.78428247
150601A00522	6/1/2015	4.52	7/25/2030	6/1/2015	136.76255	127.715317	119.3591255	111.6370038	104.4969743	97.89158777	91.77750725	86.11513176	80.86825636
170216A00044	2/16/2017	3.52	2/17/2032	2/16/2017	134.51884	123.8660405	114.1736836	105.3492401	97.30956918	89.97992208	83.29305524	77.18844105	71.61156529
180116A00046	1/16/2018	2.58	1/11/2023	1/16/2018	101.15253	100.7813952	100.4129951	100.0472947	99.68426414	99.32387431	98.96609632	98.61090176	98.25826264
180917A00054	9/17/2018	3.17	9/15/2023	9/17/2018	103.45278	102.3870279	101.3432305	100.3207152	99.31883548	98.33697074	97.37452508	96.4309261	95.50562368
190827A00001	8/27/2019	1.74	8/27/2024	8/27/2019	103.67355	101.6712723	99.71780754	97.81165851	95.95138685	94.13560796	92.36298855	90.63224439	88.94213815
190926A00007	9/26/2019	1.88	9/26/2022	9/26/2019	100.23106	100.1588134	100.0866734	100.0146434	99.94272311	99.8709124	99.799211	99.72761868	99.65613518
191212A00029	12/13/2019	1.94	5/16/2023	12/13/2019	101.58291	100.863596	100.1544444	99.45524416	98.76578676	98.08586947	97.41529516	96.75387211	96.10141381
200228A00063	2/28/2020	1.32	2/28/2023	2/28/2020	100.84423	100.3408556	99.84248393	99.34904058	98.86045281	98.37664937	97.89756035	97.42311722	96.95325278
150422A00019	4/22/2015	2.62	4/22/2025	4/22/2015	107.29743	104.594899	101.9744247	99.4329978	96.96774097	94.57590222	92.2548483	90.00205874	87.8151201
160706A00027	7/6/2016	2.29	7/6/2028	7/6/2016	114.89785	108.7704251	103.0100521	97.59287145	92.4966908	87.70085986	83.18615591	78.93467844	74.92975192
180206A00013	2/6/2018	2.72	2/6/2024	2/6/2018	104.16364	102.7093607	101.2826189	99.88269944	98.50891176	97.1605887	95.8370853	94.53777793	93.2620634
180412A00034	4/12/2018	3.23	4/15/2030	4/12/2018	127.224	118.7869264	110.9831194	103.7614374	97.07513252	90.88145055	85.14127012	79.8187759	74.88116287
180622A00004	6/22/2018	3.47	12/22/2028	6/22/2018	123.46231	116.5983883	110.1695573	104.1458574	98.49954259	93.20490711	88.23812553	83.57710584	79.20135483
190130A00018	1/30/2019	2.95	10/17/2022	1/30/2019	100.52592	100.3950411	100.2645176	100.134348	100.004531	99.87506502	99.74594865	99.61718044	99.48875897
190321A00003	3/21/2019	2.67	3/21/2024	3/21/2019	104.27168	102.6965302	101.1530452	99.64033629	98.15755205	96.70387198	95.27850526	93.88068935	92.50968873
190710A00012	7/10/2019	2.18	7/10/2023	7/10/2019	102.06192	101.1884643	100.3299181	99.48590576	98.65606042	97.8400275	97.03746419	96.24803891	95.4714309
200825A00007	8/27/2020	4.79	8/27/2026	8/27/2020	120.28029	115.9643033	111.8318485	107.8741089	104.0827391	100.4498379	96.96792212	93.62990201	90.42905857
170524A00011	5/24/2017	2.54	5/24/2024	5/24/2017	104.57037	102.8171579	101.1017882	99.4230963	97.77997031	96.17134379	94.59619325	93.05353598	91.54242799
191025A00013	10/25/2019	1.98	10/25/2024	10/25/2019	104.51804	102.345646	100.2290804	98.16650955	96.15617981	94.19640873	92.28558162	90.42214819	88.60461942
120112A00014	1/12/2012	3.43	1/15/2032	1/12/2012	134.91716	124.2685868	114.5743259	105.74305	97.69263452	90.34918737	83.64618486	77.52370241	71.927729
170822A00020	8/22/2017	2.59	8/22/2025	8/22/2017	108.15465	105.1051295	102.1581132	99.30959068	96.55573334	93.8928834	91.31754542	88.8263781	86.41618651
180619A00020	6/19/2018	3.1	6/19/2025	6/19/2018	109.49602	106.5936285	103.7835929	101.0624463	98.42687044	95.87369201	93.3998749	91.0025135	88.67882615
190806A00027	8/6/2019	1.71	8/7/2023	8/6/2019	101.8617	100.9106636	99.97731468	99.06116178	98.16173304	97.27857379	96.41124567	95.55932597	94.72240691
140815A00030	8/15/2014	2.96	10/16/2023	8/15/2014	103.45375	102.3024127	101.1766869	100.0757208	98.99870363	97.94485977	96.9134467	95.90375335	94.91509844

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170911A00032	9/11/2017	1.85	9/12/2022	9/11/2017	100.10936	100.0759883	100.0426535	100.0093571	99.97609887	99.94287883	99.9096969	99.87655298	99.84344703
180904A00014	9/4/2018	3.37	9/1/2028	9/4/2018	121.83387	115.3431924	109.2473178	103.5200698	98.13714541	93.07596773	88.31555443	83.83639739	79.6203517
190814A00010	8/14/2019	1.84	4/5/2023	8/14/2019	101.29577	100.6911895	100.0938045	99.50348968	98.92011998	98.34357341	97.77373075	97.21047559	96.65369419
190918A00003	9/18/2019	1.95	9/19/2022	9/18/2019	100.17362	100.1208133	100.0680794	100.0154159	99.96282257	99.91029929	99.85784592	99.80546232	99.75314835
200204A00001	2/4/2020	1.79	2/4/2025	2/4/2020	104.64072	102.1892694	99.8076067	97.49335301	95.24422719	93.05803901	90.93268492	88.86614407	86.85647458
200626A00015	6/26/2020	0.43	6/26/2023	6/26/2020	100.61209	99.78280393	98.96709552	98.16463384	97.3750986	96.59817972	95.833577	95.08099967	94.34016606
170130A00008	1/30/2017	2.58	1/30/2023	1/30/2017	101.2812	100.8570085	100.4363638	100.0192184	99.60552871	99.19525212	98.78834654	98.38477062	97.98448367
171006A00034	10/6/2017	2.27	10/6/2022	10/6/2017	100.34726	100.2471504	100.1472468	100.0475511	99.94806257	99.84878062	99.74970456	99.65083374	99.5521675
191220A00002	12/20/2019	3.02	12/20/2038	12/20/2019	141.16826	123.1774875	107.7998255	94.63539943	83.34772638	73.65336835	65.31331932	58.12582798	51.92041096
200131A00048	1/31/2020	1.69	1/31/2024	1/31/2020	102.45297	101.031735	99.63708764	98.26834585	96.92485171	95.60596901	94.31108245	93.03959672	91.79093576
201030A00003	11/2/2020	2.58	10/29/2040	11/2/2020	134.76352	115.6126164	99.53946995	86.02550102	74.64231112	65.03558674	56.91194452	50.02816796	44.18239115
160119A00026	1/19/2016	3.14	1/19/2029	1/19/2016	121.55629	114.6732956	108.2324784	102.2030597	96.55655426	91.2665893	86.30873795	81.66036624	77.30049301
160726A00005	7/26/2016	2.28	7/27/2026	7/26/2016	109.85247	105.8305447	101.9784979	98.28828085	94.75226786	91.36323208	88.11432235	84.99904177	82.0112275
171116A00021	11/16/2017	2.16	11/16/2022	11/16/2017	100.66658	100.4518409	100.2380274	100.0251371	99.81316388	99.60210184	99.39194501	99.1826875	98.97432349
180814A00033	8/14/2018	3.25	8/13/2027	8/14/2018	118.40673	113.0911458	108.049796	103.2670696	98.72832792	94.41983595	90.32870171	86.44282036	82.75082212
190208A00009	2/8/2019	2.67	2/8/2024	2/8/2019	104.10802	102.6483907	101.2164995	99.81162719	98.43307566	97.08017046	95.75225966	94.448713	93.16892096
200131A00007	1/31/2020	1.68	1/31/2023	1/31/2020	100.9048	100.478791	100.0563674	99.63748068	99.22208666	98.8101419	98.40160366	97.99642993	97.59457936
200207A00016	2/7/2020	1.74	2/7/2024	2/7/2020	102.56498	101.1228822	99.70811726	98.31997594	96.95777288	95.62084579	94.30855444	93.02027973	91.75542282
200402A00021	4/2/2020	0.77	10/2/2024	4/2/2020	102.09144	100.0017978	97.96497508	95.97927673	94.04307934	92.15482357	90.31301102	88.5162014	86.76300973
200430A00016	4/30/2020	0.82	4/30/2024	4/30/2020	101.45832	99.79742452	98.17145027	96.57935852	95.02015444	93.49288222	91.99662311	90.53049364	89.09364386
210924A00011	9/24/2021	2.19	9/25/2034	9/24/2021	125.05076	112.2273405	100.8596298	90.7737096	81.81729605	73.85694776	66.77564881	60.47071227	54.85196058
160328A00045	3/28/2016	2.49	3/27/2026	3/28/2016	110.13224	106.4314461	102.8756534	99.4583804	96.17347242	93.01508399	89.97766147	87.05592661	84.24486128
160922A00009	9/22/2016	1.55	9/22/2022	9/22/2016	100.18216	100.1209733	100.0598765	99.99886689	99.93794422	99.8771083	99.81635894	99.75569598	99.69511921
171026A00007	10/26/2017	2.47	10/26/2023	10/26/2017	102.9514	101.7756432	100.6266718	99.50357789	98.40549446	97.33159301	96.28108125	95.25320116	94.24722718
190523A00014	5/23/2019	2.5	11/15/2023	5/23/2019	103.10862	101.8768287	100.6743978	99.50028729	98.35350529	97.23310564	96.13818548	95.06788273	94.0213738
190814A00005	8/14/2019	1.65	8/14/2024	8/14/2019	103.6855	101.7130398	99.78795471	97.9088184	96.0742552	94.28294004	92.53359617	90.8249931	89.15594454
190930A00075	9/30/2019	2.19	9/29/2027	9/30/2019	112.61162	107.3318166	102.331958	97.59572455	93.10783741	88.85398308	84.82074737	80.99555409	77.36660826
160815A00006	8/15/2016	2.23	8/17/2026	8/15/2016	109.81524	105.7366408	101.8326804	98.09496824	94.51556243	91.08694224	87.80198366	84.65393627	81.63640168
171129A00020	11/29/2017	2.89	11/30/2026	11/29/2017	113.50014	109.0508034	104.8025688	100.7452037	96.86905616	93.16502087	89.62450435	86.23939292	83.00202284
190404A00003	4/4/2019	2.47	4/4/2024	4/4/2019	104.25688	102.6403998	101.0569175	99.50549528	97.98522639	96.49523798	95.03468958	93.60277162	92.19870394
190925A00004	9/25/2019	1.7	9/24/2024	9/25/2019	104.02123	101.9327779	99.89663686	97.91115017	95.97472467	94.08582931	92.24299226	90.44479809	88.68988516
200214A00014	2/18/2020	1.8	2/18/2025	2/18/2020	104.75082	102.2564382	99.83420684	97.4816242	95.19629415	92.97591781	90.81828896	88.72128964	86.68288615
200227A00027	2/27/2020	1.47	2/27/2025	2/27/2020	103.96956	101.458481	99.02083712	96.65406192	94.35569099	92.12336107	89.95480524	87.84784832	85.80040259

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
210924A00004	9/24/2021	2.37	9/24/2036	9/24/2021	129.11997	114.121035	101.0637465	89.68416239	79.75555122	71.08297552	63.49868919	56.85822082	51.03703806
170906A00036	9/6/2017	1.81	9/6/2022	9/6/2017	100.05401	100.037327	100.02066	100.0040094	99.9873751	99.97075717	99.95415555	99.9375702	99.92100111
180611A00030	6/11/2018	2.91	6/12/2023	6/11/2018	102.5651	101.7658079	100.9789724	100.2042991	99.44150735	98.69032508	97.95048847	97.22174165	96.50383641
181018A00011	10/18/2018	3.35	10/18/2023	10/18/2018	103.91616	102.7564777	101.6226962	100.5139497	99.42941488	98.36830427	97.32986424	96.31337319	95.31813988
190531A00037	5/31/2019	2.61	5/31/2029	5/31/2019	120.03655	112.7812044	106.0180946	99.71112354	93.82703489	88.33517121	83.20725718	78.41720196	73.94091899
190829A00050	8/29/2019	1.73	8/29/2024	8/29/2019	103.66391	101.656384	99.69791835	97.78700883	95.92220603	94.10211491	92.32539227	90.59074447	88.89692522
200228A00012	3/3/2020	1.4	3/3/2025	3/3/2020	103.80951	101.2895188	98.84348584	96.46881274	94.16300849	91.92368476	89.74855104	87.63540991	85.58215267
210428A00006	4/28/2021	1.23	4/28/2026	4/28/2021	105.23272	101.544922	98.00513914	94.60660495	91.3429062	88.20795966	85.19599296	82.30152661	79.51935733
220310A00005	3/10/2022	2.06	3/8/2024	3/10/2022	103.22721	101.6955274	100.1942698	98.72260734	97.27973745	95.86488598	94.47730615	93.11627722	91.78110343
140307A00011	3/7/2014	3.19	3/15/2023	3/7/2014	101.97075	101.4216763	100.8785266	100.3412022	99.80960952	99.28365706	98.76325516	98.24831609	97.73875395
160830A00037	8/30/2016	2.16	8/29/2025	8/30/2016	106.90033	103.8508981	100.9047373	98.0577842	95.30615636	92.64614569	90.07420984	87.58696367	85.18117139
190409A00031	4/9/2019	2.64	4/9/2024	4/9/2019	104.37757	102.7494562	101.1547142	99.59238461	98.06154486	96.56130719	95.09081703	93.64925142	92.23581754
190711A00019	7/11/2019	2.19	7/11/2023	7/11/2019	102.07608	101.1997863	100.3385059	99.49185136	98.65945234	97.84095091	97.03600106	96.24426817	95.46542858
200513A00003	5/13/2020	0.68	5/13/2025	5/13/2020	102.49515	99.79314146	97.17522971	94.63825431	92.17920065	89.79518881	87.48346647	85.24140213	83.06647889
200818A00004	8/18/2020	0.92	8/18/2026	8/18/2020	104.54015	100.5640668	96.75956851	93.11837522	89.63265327	86.29498562	83.09834748	80.03608345	77.10188614
210601A00002	6/1/2021	0.9	6/2/2025	6/1/2021	102.79784	100.0464161	97.38182484	94.80076499	92.30008576	89.87677892	87.52797114	85.25091682	83.04299134
220429A00007	4/29/2022	3.14	10/29/2024	4/29/2022	107.08992	104.8780511	102.723078	100.6231273	98.57640632	96.58119574	94.63584572	92.73877252	90.88845524
161215A00014	12/15/2016	2.66	12/15/2022	12/15/2016	100.98369	100.6879556	100.3939679	100.1017074	99.81115878	99.52230695	99.23513699	98.94963417	98.66578391
190820A00005	8/21/2019	1.76	2/27/2023	8/21/2019	101.06131	100.560055	100.0637583	99.57234281	99.08573693	98.60387038	98.12667426	97.65408101	97.18602436
210125A00007	1/27/2021	2.98	1/27/2031	1/27/2021	126.34565	117.172387	108.749502	101.0113537	93.89836541	87.35643848	81.33642305	75.7936422	70.6874641
160815A00005	8/15/2016	2.23	8/17/2026	8/15/2016	109.81524	105.7366408	101.8326804	98.09496824	94.51556243	91.08694224	87.80198366	84.65393627	81.63640168
180130A00070	1/30/2018	3.14	1/29/2027	1/30/2018	115.18661	110.5335807	106.0976319	101.867502	97.83257038	93.98281893	90.30879449	86.80157417	83.45273297
190215A00046	2/15/2019	2.7	2/15/2024	2/15/2019	104.21314	102.7324788	101.2803191	99.85591011	98.45852562	97.08746432	95.7420487	94.42162402	93.1255574
191114A00008	11/18/2019	1.93	4/17/2023	11/18/2019	101.4171	100.7788028	100.1485259	99.52611914	98.91143566	98.30433225	97.70466921	97.11231028	96.52712251
191206A00021	12/6/2019	2.02	12/6/2024	12/6/2019	104.86132	102.5693713	100.3387662	98.16742712	96.05336686	93.99468135	91.98954537	90.03620851	88.13299144
150601A00646	6/1/2015	2.68	9/30/2022	6/1/2015	100.32944	100.2460304	100.162754	100.0796138	99.99660938	99.91374047	99.83100676	99.74840793	99.66594369
180620A00044	6/20/2018	2.89	6/20/2023	6/20/2018	102.61239	101.7906489	100.9820604	100.1863105	99.40309483	98.63211881	97.87309692	97.1257525	96.38981738
180926A00031	9/26/2018	3.24	9/26/2023	9/26/2018	103.61493	102.5178444	101.4439844	100.3926183	99.36304431	98.35458973	97.36660927	96.3984837	95.44961855
190102A00058	1/2/2019	2.91	1/2/2024	1/2/2019	103.97483	102.6202037	101.2896441	99.98256602	98.6984013	97.4365996	96.19662772	94.97796901	93.78012264
190523A00015	5/23/2019	2.51	4/1/2024	5/23/2019	104.10165	102.4981815	100.9272905	99.38805222	97.87957688	96.4010076	94.95151908	93.53031609	92.13663212
200710A00006	7/10/2020	0.4	7/10/2023	7/10/2020	100.59828	99.73058275	98.87775016	98.03940668	97.21518572	96.40473297	95.60770591	94.82377326	94.0526146
210722A00001	7/22/2021	1.1	7/22/2026	7/22/2021	105.1442	101.2281407	97.47800689	93.88593463	90.44447704	87.14657599	83.9855397	80.95502187	78.04900206
080909A00042	9/9/2008	4.74	9/11/2023	9/9/2008	105.18083	104.1147273	103.0703257	102.0469687	101.0440237	100.0608831	99.09696346	98.1517039	97.22456528

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160422A00026	4/22/2016	2.62	4/22/2026	4/22/2016	110.34774	106.5825097	102.9668324	99.49391839	96.15733182	92.95096578	89.86902345	86.90600031	84.05666759
161222A00030	12/22/2016	3.09	12/22/2026	12/22/2016	115.19419	110.6293857	106.2734519	102.115724	98.14613785	94.35519358	90.73392108	87.27384754	83.96696718
180109A00028	1/9/2018	2.6	1/9/2025	1/9/2018	106.76565	104.352636	102.0064195	99.72478223	97.50559668	95.34681772	93.24647895	91.20268923	89.2136293
180727A00028	7/27/2018	3.25	7/27/2026	7/27/2018	114.25313	110.1297129	106.1798487	102.395318	98.7683371	95.29152935	91.95790187	88.76082342	85.6940038
190530A00004	5/30/2019	2.24	5/30/2023	5/30/2019	101.95401	101.1934655	100.4442345	99.70606649	98.97871776	98.26195187	97.55553924	96.85925683	96.17288799
191120A00006	11/20/2019	2.67	11/20/2035	11/20/2019	132.42773	118.0264979	105.3822075	94.26894076	84.49099642	75.8787062	68.28485007	61.58158099	55.65778475
200305A00020	3/5/2020	0.95	3/5/2025	3/5/2020	103.00311	100.4810018	98.0332373	95.65719258	93.35035435	91.11031337	88.93475951	86.82147692	84.76833958
110805A00014	8/5/2011	4.06	8/17/2026	8/5/2011	117.18988	112.964231	108.9178117	105.0420482	101.328826	97.77045964	94.35966828	91.08955171	87.9535686
160307A00026	3/7/2016	2.2	3/7/2023	3/7/2016	101.33127	100.8070208	100.2881949	99.7747035	99.26646471	98.7633981	98.26542496	97.77246815	97.28445208
170228A00014	2/28/2017	2.89	3/1/2027	2/28/2017	115.01542	110.2525183	105.7167215	101.3959917	97.2789912	93.35503954	89.61407226	86.04660181	82.64368154
170322A00024	3/22/2017	3.72	9/22/2036	3/22/2017	148.35171	132.0618178	117.8325561	105.3873773	94.48839877	84.93081083	76.5381172	69.15808214	62.65927582
170808A00037	8/8/2017	2.19	12/15/2022	8/8/2017	100.84507	100.5496032	100.2558808	99.9638843	99.67359854	99.3850084	99.09809898	98.81285555	98.52926354
171127A00016	11/27/2017	2.28	11/27/2023	11/27/2017	103.04465	101.7781017	100.5425769	99.33694387	98.16012802	97.01110575	95.88890142	94.79258456	93.72126731
180110A00029	1/10/2018	3.13	1/10/2028	1/10/2018	118.39192	112.6726399	107.2688307	102.1614448	97.33267515	92.76587216	88.44546312	84.35687722	80.48647625
190606A00027	6/6/2019	2.51	6/5/2026	6/6/2019	110.31798	106.4314455	102.7035583	99.12693311	95.6945788	92.39987042	89.2365276	86.19859437	83.28042024
191105A00008	11/5/2019	1.83	11/5/2024	11/5/2019	104.54224	102.3337834	100.182779	98.087314	96.04555973	94.05576318	92.1162431	90.22538636	88.38164463
200303A00001	3/3/2020	1.15	3/3/2025	3/3/2020	103.50652	100.9832775	98.53425955	96.15685	93.8485444	91.60694184	89.42973988	87.3147299	85.2597926
171030A00022	10/30/2017	2.28	10/31/2022	10/30/2017	100.55128	100.3814852	100.212261	100.0436026	99.87550722	99.70797205	99.54099437	99.37457143	99.20870052
180831A00016	8/31/2018	2.99	8/31/2023	8/31/2018	103.15271	102.1301032	101.1277424	100.1450319	99.18139821	98.23628974	97.3091761	96.39954696	95.50691109
200130A00016	1/30/2020	1.58	1/30/2025	1/30/2020	104.41783	101.9769589	99.60532652	97.30058518	95.06048033	92.88284684	90.76560497	88.70675635	86.7043804
200226A00016	2/26/2020	1.57	2/26/2025	2/26/2020	104.21748	101.7061895	99.26823578	96.9010595	94.6022025	92.36930742	90.20011285	88.09244883	86.04423247
200227A00013	2/27/2020	1.43	2/27/2024	2/27/2020	102.20935	100.7129112	99.24588564	97.80748545	96.396947	95.01353324	93.65653262	92.32525798	91.0190455
211222A00005	12/22/2021	1.2	7/15/2024	12/22/2021	102.43486	100.5594971	98.72742885	96.93740656	95.18822194	93.47870915	91.80774303	90.17423734	88.57714322
121031A00004	10/31/2012	2.07	10/31/2022	10/31/2012	100.53766	100.3676561	100.1982211	100.0293552	99.86105559	99.69331939	99.52614382	99.3595261	99.19346347
160616A00034	6/16/2016	1.97	6/17/2024	6/16/2016	103.72303	101.9114257	100.1401183	98.40792391	96.71370261	95.05635718	93.434831	91.84810617	90.29520179
170912A00031	9/12/2017	1.89	9/12/2022	9/12/2017	100.1107	100.0773221	100.0439862	100.0106886	99.97742926	99.94420808	99.911025	99.87787995	99.84477286
190114A00042	1/14/2019	2.92	1/13/2023	1/14/2019	101.29379	100.9167769	100.5425788	100.1711637	99.80250038	99.43655838	99.07330748	98.71271799	98.35476061
190917A00029	9/17/2019	2.02	12/6/2022	9/17/2019	100.73991	100.46969	100.20092	99.93359187	99.66769388	99.40321456	99.14014256	98.87846663	98.61817564
191009A00026	10/9/2019	1.74	10/7/2022	10/9/2019	100.30089	100.1980395	100.095415	99.99301068	99.89082593	99.78886001	99.68711217	99.58558171	99.48426791
200115A00024	1/15/2020	1.88	1/17/2023	1/15/2020	100.92241	100.5351657	100.1508962	99.76956958	99.391152	99.01561015	98.64291126	98.27302303	97.90591365
130405A00007	4/5/2013	2.91	4/17/2028	4/5/2013	118.85054	112.8063309	107.1112329	101.7431849	96.68163755	91.9074411	87.40274268	83.15089148	79.13635147
170224A00044	5/24/2017	3.29	5/24/2029	5/24/2017	123.61359	116.2999632	109.4775817	103.1106796	97.1662857	91.61398959	86.42572964	81.57559903	77.03966907
180103A00011	1/3/2018	2.35	1/3/2023	1/3/2018	101.04953	100.7005015	100.3538836	100.0096505	99.66777759	99.32824074	98.991016	98.65607978	98.32340885

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191104A00009	11/4/2019	1.91	11/6/2023	11/4/2019	102.34395	101.1418156	99.96779512	98.82091007	97.70022823	96.60485966	95.5339543	94.4866998	93.4623194
200221A00014	2/21/2020	1.49	2/21/2023	2/21/2020	100.94699	100.4621652	99.98198771	99.50639352	99.03531716	98.56869445	98.1064624	97.64855921	97.19492424
180402A00005	4/2/2018	2.94	4/3/2023	4/2/2018	101.94321	101.3419796	100.7478269	100.1606318	99.58027276	99.00663078	98.43958977	97.87903627	97.3248594
190507A00006	5/7/2019	2.57	5/8/2023	5/7/2019	101.97794	101.2792563	100.5901387	99.91038772	99.23981315	98.57823	97.92545819	97.28132244	96.64565207
190530A00034	5/30/2019	2.44	5/30/2024	5/30/2019	104.43971	102.6715074	100.9417372	99.24921108	97.59279134	95.97138703	94.38395159	92.82948054	91.30700928
190809A00008	8/9/2019	1.87	8/3/2023	8/9/2019	101.89149	100.9527974	100.0313326	99.12662325	98.23821581	97.3656728	96.50857233	95.66650733	94.83908493
190819A00030	8/19/2019	2.01	8/20/2029	8/19/2019	116.31498	108.9580798	102.1179401	95.75558025	89.83514937	84.32366073	79.1907494	74.40845137	69.95100241
190826A00060	8/26/2019	2.02	8/26/2027	8/26/2019	111.51775	106.3611426	101.4741071	96.84115713	92.44777753	88.28035612	84.32612274	80.57309289	77.01001542
220112A00005	1/12/2022	1.55	1/12/2026	1/12/2022	106.23933	102.8169322	99.52241277	96.3503404	93.29554458	90.35310017	87.51831441	84.78671471	82.15403716
140827A00038	8/27/2014	3.07	8/30/2024	8/27/2014	106.38936	104.3509093	102.3621996	100.4217074	98.52796249	96.67954988	94.87510714	93.11332224	91.39293118
151229A00079	12/29/2015	3	12/30/2025	12/29/2015	110.62499	107.174961	103.8516301	100.6496841	97.56406501	94.58995196	91.72274906	88.95807358	86.29174501
190522A00003	5/22/2019	2.55	5/22/2024	5/22/2019	104.5723	102.8244703	101.1142775	99.44056783	97.80223826	96.19823059	94.62752916	93.08915864	91.58218202
191218A00013	12/18/2019	1.94	12/19/2022	12/18/2019	100.79369	100.4872171	100.182612	99.87986202	99.57895012	99.27985953	98.9825737	98.68707625	98.393351
191223A00056	12/23/2019	2.46	12/14/2029	12/23/2019	119.19959	111.4605297	104.2830211	97.6233023	91.44123724	85.70000086	80.36578995	75.40756031	70.79678817
200225A00015	2/25/2020	1.54	2/26/2024	2/25/2020	102.37092	100.8760567	99.4105235	97.97353374	96.5643272	95.18217016	93.82635421	92.49619521	91.19103219
170602A00023	6/2/2017	2.09	6/2/2023	6/2/2017	101.85783	101.089367	100.3324606	99.5868547	98.85229774	98.12854558	97.4153612	96.7125145	96.01978198
170622A00038	6/22/2017	3.32	6/22/2034	6/22/2017	138.4134	125.0789066	113.204515	102.6205857	93.17807929	84.7459547	77.20891068	70.46542092	64.42602323
171206A00038	12/6/2017	2.69	12/6/2027	12/6/2017	116.53651	110.9375903	105.6441121	100.6377458	95.90136661	91.4189642	87.17556427	83.15715547	79.3506222
180530A00072	5/30/2018	3.06	5/30/2024	5/30/2018	105.53972	103.7614734	102.0218401	100.3196315	98.65370494	97.02296463	95.42635933	93.86288003	92.33155782
210216A00006	2/16/2021	1.44	2/15/2030	2/16/2021	112.96087	105.2254628	98.07041882	91.44928144	85.31953281	79.64224242	74.38174771	69.50536456	64.98312481
130212A00017	2/12/2013	2.29	2/15/2023	2/12/2013	101.25465	100.7861076	100.3219012	99.86197054	99.40625654	98.95470135	98.50724814	98.06384112	97.62442552
161020A00002	10/20/2016	1.96	8/15/2023	10/20/2016	102.03195	101.059482	100.1054934	99.16945826	98.25087336	97.34925404	96.46413345	95.59506175	94.74160534
180104A00017	1/4/2018	2.77	1/3/2025	1/4/2018	106.80816	104.4174438	102.0923563	99.8307437	97.63053188	95.48972626	93.40640839	91.37873258	89.40492268
180530A00024	5/30/2018	3.44	5/30/2029	5/30/2018	124.69684	117.3300876	110.4585271	104.046057	98.05939992	92.46786779	87.24314644	82.3590995	77.79158946
190403A00006	4/3/2019	2.48	4/3/2024	4/3/2019	104.26485	102.6511026	101.0702602	99.52138909	98.00358623	96.51598255	95.05774109	93.62805561	92.22614909
190701A00023	7/1/2019	1.95	7/1/2024	7/1/2019	104.00239	102.145217	100.3301423	98.55596765	96.82153812	95.12573851	93.46749186	91.84575783	90.25953122
190816A00015	8/16/2019	2.2	8/16/2029	8/16/2019	116.58108	109.2692401	102.4685454	96.14058518	90.25002617	84.76434792	79.65360531	74.89021242	70.44874555
200221A00016	2/21/2020	1.69	2/21/2025	2/21/2020	104.49224	101.9922447	99.56483004	97.2074707	94.91774786	92.69334128	90.53202454	88.43166072	86.39019814
160921A00020	9/21/2016	1.97	9/21/2023	9/21/2016	102.21098	101.1357904	100.0831353	99.05231197	98.04264672	97.05349322	96.08423124	95.13426536	94.2030237
170622A00040	6/22/2017	3.41	6/23/2036	6/22/2017	143.48146	127.7708435	114.0270455	101.9893896	91.43316488	82.16449324	74.01595192	66.84283718	60.519972
180719A00064	7/19/2018	3.3	7/21/2025	7/19/2018	109.99123	107.0016714	104.1096546	101.3114715	98.6035786	95.98258562	93.4452484	90.98846157	88.6092519
181218A00072	12/18/2018	3.04	12/19/2022	12/18/2018	101.13037	100.8232264	100.5179595	100.2145507	99.91298301	99.61323968	99.31530407	99.01915979	98.72479065
190326A00003	3/26/2019	2.57	3/27/2023	3/26/2019	101.67061	101.0897485	100.5155148	99.94779458	99.38647752	98.83145575	98.28262377	97.73987848	97.20311902

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190730A00007	7/30/2019	2.19	7/30/2024	7/30/2019	104.39921	102.4647238	100.5756938	98.73077722	96.92868204	95.1681626	93.44801757	91.76708814	90.12425612
200309A00019	3/9/2020	0.89	3/11/2024	3/9/2020	101.43028	99.90504267	98.41021891	96.94497738	95.50851198	94.10004549	92.7188282	91.36413673	90.03527288
201116A00011	11/16/2020	0.71	11/15/2024	11/16/2020	101.79398	99.59485231	97.45356234	95.36817178	93.33681989	91.35772385	89.42917472	87.54953371	85.71722864
160615A00031	6/15/2016	2.51	6/17/2030	6/15/2016	122.04359	113.6213062	105.8481988	98.67070227	92.03993293	85.91126079	80.24391914	75.00065148	70.14739262
170531A00080	5/31/2017	2.3	5/31/2024	5/31/2017	104.41391	102.639411	100.9035917	99.20525015	97.54323857	95.91645655	94.32384854	92.76440158	91.23714306
200226A00008	2/26/2020	1.38	2/26/2025	2/26/2020	104.06891	101.552425	99.10958525	96.73781119	94.43463022	92.19767133	90.0246602	87.91341464	85.86184022
200304A00021	3/4/2020	0.94	3/4/2024	3/4/2020	101.66938	100.1577949	98.67619495	97.22376794	95.79972668	94.40331188	93.03379085	91.69045635	90.37262544
200325A00029	3/25/2020	1.15	3/24/2023	3/25/2020	100.89005	100.3194376	99.7552621	99.19741571	98.64579239	98.10028837	97.56080223	97.02723475	96.4994889
180914A00013	9/14/2018	3.48	9/14/2028	9/14/2018	122.62887	116.0763298	109.9239559	104.1451025	98.7150393	93.61080027	88.81104911	84.29595525	80.04708001
190328A00079	3/28/2019	2.37	3/28/2024	3/28/2019	104.0409	102.4455166	100.882469	99.35084522	97.8497657	96.37838344	94.93588248	93.52147641	92.13440708
190523A00022	5/23/2019	2.47	10/12/2022	5/23/2019	100.41841	100.3015613	100.1849971	100.068718	99.95272281	99.83701056	99.72158015	99.60643054	99.49156065
190523A00024	5/23/2019	2.47	10/31/2022	5/23/2019	100.58352	100.4136828	100.2444179	100.0757188	99.90758286	99.74000727	99.57298927	99.40652614	99.24061514
190524A00040	5/24/2019	2.47	5/24/2024	5/24/2019	104.44734	102.6952451	100.9809693	99.30335123	97.66127974	96.05368885	94.47955558	92.93789773	91.42777178
190820A00038	8/20/2019	1.76	8/20/2024	8/20/2019	103.67637	101.6928028	99.75716598	97.86800148	96.02390925	94.22354107	92.46559822	90.74882933	89.07202824
160714A00023	8/10/2016	2.49	8/10/2028	8/10/2016	116.30707	110.042128	104.1574278	98.62790887	93.43028327	88.54290495	83.94564596	79.61978264	75.54789084
190111A00026	1/11/2019	3.48	1/11/2034	1/11/2019	141.21167	128.0845345	116.3468631	105.8423638	96.43313958	87.99743863	80.42768741	73.62877297	67.51654076
190913A00014	9/13/2019	2.08	9/13/2024	9/13/2019	104.47147	102.414062	100.4075905	98.45046081	96.54114284	94.67816501	92.86011169	91.08562059	89.35338036
191125A00036	11/25/2019	2.29	11/23/2029	11/25/2019	117.80987	110.1789728	103.098889	96.52688461	90.42376359	84.75355408	79.48322642	74.58243758	70.02329906
200221A00003	2/25/2020	1.69	2/25/2025	2/25/2020	104.51541	102.0032742	99.56439331	97.19621233	94.89627891	92.66224118	90.49184288	88.38291885	86.33339071
200309A00033	3/9/2020	1.06	3/9/2026	3/9/2020	104.37135	100.8351808	97.43689529	94.17038028	91.02983263	88.00973715	85.10485069	82.31018708	79.62100307
200327A00074	3/31/2020	1.76	3/29/2024	3/31/2020	102.87737	101.2922445	99.73924934	98.21747832	96.72605734	95.26414461	93.83092913	92.42562933	91.04749168
081219A00069	12/19/2008	4.26	12/22/2023	12/19/2008	105.68084	104.340124	103.0256797	101.7367476	100.4726023	99.23254567	98.01590625	96.82203759	95.6503172
170120A00010	1/20/2017	3.71	1/22/2036	1/20/2017	146.76566	131.2749884	117.6641092	105.6909183	95.14581986	85.84720939	77.63760136	70.38030946	63.95659871
180727A00037	7/27/2018	3.13	7/27/2023	7/27/2018	103.02631	102.1011174	101.1925338	100.3001111	99.423421	98.56204985	97.7155986	96.88368189	96.06592756
190625A00012	6/25/2019	2.12	6/25/2024	6/25/2019	104.05225	102.2152973	100.4196046	98.66398448	96.94729395	95.26843059	93.62633084	92.01996832	90.44835226
190819A00005	8/19/2019	1.62	8/21/2023	8/19/2019	101.83264	100.8431561	99.87282093	98.92107895	97.98739975	97.07127291	96.17220709	95.28972915	94.42338329
200430A00007	4/30/2020	0.72	4/28/2023	4/30/2020	100.6704	100.0043998	99.34716662	98.69852545	98.05830886	97.42635372	96.80250109	96.1865961	95.57848776
210304A00004	3/4/2021	0.58	3/4/2024	3/4/2021	100.93446	99.43179126	97.95890523	96.51498784	95.09925859	93.7109645	92.34937891	91.01380034	89.70355137
150817A00077	8/17/2015	2.49	8/17/2023	8/17/2015	102.66667	101.683808	100.7197293	99.7738991	98.84580272	97.93494462	97.0408476	96.16305196	95.30111465
170818A00003	8/18/2017	2.23	8/20/2024	8/18/2017	104.8809	102.880053	100.9275759	99.02200283	97.16191877	95.34596128	93.57281807	91.84122473	90.14996268
210114A00009	1/19/2021	2.66	1/17/2030	1/19/2021	120.9207	113.0254882	105.7084631	98.92417505	92.63096968	86.79065146	81.36818052	76.33139723	71.65077204
210623A00011	6/23/2021	0.56	6/23/2023	6/23/2021	100.63401	99.81399531	99.00726296	98.21349085	97.43236884	96.6635966	95.90688328	95.16194706	94.42851486
130821A00019	8/21/2013	3.81	8/29/2025	8/21/2013	112.33806	109.196104	106.1600571	103.2257492	100.3892037	97.64662287	94.99437861	92.42900399	89.94718503

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150512A00029	5/12/2015	3.03	5/12/2025	5/12/2015	108.57456	105.7994313	103.1098018	100.502484	97.97443048	95.52272947	93.14459754	90.83737286	88.59850894
180116A00031	1/16/2018	2.58	1/17/2023	1/16/2018	101.19316	100.8052691	100.420361	100.0383993	99.65935026	99.28318049	98.90985718	98.53934802	98.17162117
180118A00037	1/18/2018	2.88	1/21/2025	1/18/2018	107.21551	104.7710371	102.3949219	100.0848712	97.83868509	95.65425001	93.52953462	91.46258617	89.45152701
180813A00026	8/13/2018	2.87	8/11/2023	8/13/2018	102.99295	102.0250053	101.0752346	100.1431329	99.22821016	98.3299943	97.44803049	96.58188026	95.73112082
190222A00021	2/22/2019	2.95	8/21/2024	2/22/2019	106.06761	104.056859	102.0946415	100.179482	98.30996175	96.48471475	94.70242517	92.96182519	91.26169292
191202A00005	12/2/2019	2.03	12/2/2024	12/2/2019	104.86115	102.5799778	100.3596198	98.19800473	96.09315316	94.04316957	92.04623794	90.10061765	88.20463966
210210A00005	2/10/2021	0.52	2/13/2024	2/10/2021	100.7976	99.35197709	97.93407864	96.54318137	95.1785828	93.83960434	92.52559022	91.23590656	89.96994046
150610A00017	6/10/2015	2.9	6/15/2023	6/10/2015	102.50833	101.7019261	100.9082038	100.1268641	99.35761871	98.60018807	97.85430132	97.11969578	96.3961167
180730A00041	7/30/2018	3.14	7/31/2023	7/30/2018	103.06783	102.1313485	101.2118703	100.3089315	99.42208885	98.55091468	97.69499648	96.85393607	96.02734902
180910A00007	9/10/2018	2.96	9/8/2023	9/10/2018	103.29494	102.2477472	101.2217718	100.2163697	99.23092633	98.26485146	97.31757786	96.38856031	95.47727449
180914A00008	9/14/2018	3.15	9/14/2023	9/14/2018	103.42387	102.3610486	101.3200638	100.3002506	99.30096741	98.32159843	97.36155219	96.4202605	95.49717725
190802A00032	8/2/2019	2.01	8/2/2024	8/2/2019	104.06766	102.1284237	100.2349427	98.38586473	96.57988396	94.81574164	93.09222405	91.40816057	89.76242183
190830A00023	8/30/2019	1.78	9/15/2022	8/30/2019	100.12997	100.0882932	100.0466666	100.0050909	99.96356594	99.92209174	99.88066817	99.83929512	99.79797252
191007A00029	10/7/2019	1.88	10/9/2029	10/7/2019	115.64717	108.1730887	101.2335272	94.78747301	88.79726486	83.22830197	78.04878009	73.2294518	68.74340855
200429A00044	5/1/2020	1.86	4/30/2025	5/1/2020	105.30336	102.6055704	99.99041049	97.45482767	94.9959018	92.61084106	90.29697525	88.05174951	85.87271845
161212A00040	12/12/2016	2.45	12/12/2023	12/12/2016	103.36352	102.0592539	100.783498	99.53532098	98.31382905	97.11816694	95.94751609	94.80109263	93.67814551
180719A00004	7/19/2018	3.07	7/19/2023	7/19/2018	102.90809	102.0056503	101.119035	100.2478286	99.39163181	98.55005877	97.72273684	96.90930597	96.10941812
190909A00025	9/9/2019	1.88	9/9/2024	9/9/2019	104.03359	101.9919063	100.0006108	98.05814058	96.16298818	94.31370359	92.50889155	90.7472091	89.02736321
200302A00054	3/2/2020	1.31	3/3/2025	3/2/2020	103.58047	101.0634153	98.62025709	96.24839498	93.94533983	91.70870519	89.53620234	87.42563561	85.37489795
201022A00012	10/26/2020	2.25	10/24/2030	10/26/2020	119.51984	110.8901154	102.9526973	95.64828594	88.92295793	82.72765108	77.01770239	71.75243236	66.89477063
150601A00696	6/1/2015	2.83	3/13/2025	6/1/2015	107.4222	104.8286772	102.3115008	99.86797047	97.49549755	95.1916014	92.9539039	90.78012456	88.66807585
160628A00040	6/28/2016	1.56	6/28/2023	6/28/2016	101.56107	100.7219254	99.89658506	99.08471107	98.28597617	97.50006356	96.72666656	95.96548822	95.21624088
170313A00034	3/13/2017	3.31	3/15/2027	3/13/2017	116.40007	111.5870589	107.0041093	102.6389769	98.48013762	94.51673889	90.73855672	87.13595588	83.69985283
181120A00024	11/20/2018	3.25	11/20/2023	11/20/2018	104.07003	102.8181626	101.5964157	100.4037118	99.23902381	98.10137219	96.98982281	95.90348411	94.84150477
190620A00055	6/25/2019	2.08	4/17/2023	6/25/2019	101.51269	100.8740445	100.2434263	99.62068135	99.00566264	98.39822694	97.79823451	97.20554906	96.62003759
191104A00023	11/4/2019	2.24	8/4/2028	11/4/2019	114.75828	108.5555614	102.7291242	97.25419908	92.10777318	87.26845277	82.71634159	78.43292884	74.40098602
151223A00070	12/23/2015	2.57	12/26/2023	12/23/2015	103.62421	102.2862553	100.9734417	99.6850886	98.42054399	97.17917893	95.96038669	94.76358172	93.58819867
160804A00014	8/4/2016	1.99	8/5/2024	8/4/2016	104.04666	102.0995731	100.1986105	98.34240174	96.52962525	94.75900737	93.0293202	91.33937961	89.6880434
180222A00026	2/22/2018	2.98	2/21/2025	2/22/2018	108.07631	105.5236536	103.044938	100.6375882	98.2991402	96.02723017	93.81959021	91.67404361	89.58850061
180713A00013	7/13/2018	2.88	7/13/2023	7/13/2018	102.7822	101.8957731	101.0246288	100.1683713	99.32662108	98.49901135	97.68518773	96.88480754	96.09753942
190513A00013	5/13/2019	2.52	5/13/2024	5/13/2019	104.43264	102.7106664	101.0253822	99.37567719	97.76048861	96.17879616	94.62962	93.11201868	91.62508722
191003A00022	10/3/2019	1.72	2/3/2023	10/3/2019	100.9351	100.5006962	100.0700238	99.64303269	99.21967583	98.79990701	98.38368079	97.97095248	97.56167815
200224A00025	2/24/2020	1.59	1/23/2025	2/24/2020	104.08879	101.6774152	99.33385264	97.05581961	94.84112679	92.68767093	90.59343086	88.55646381	86.57490187

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
171005A00003	10/5/2017	2.02	10/5/2022	10/5/2017	100.32658	100.2291506	100.1319177	100.0348817	99.93804218	99.8413984	99.74494979	99.64869572	99.55263559
190208A00008	2/8/2019	2.86	2/8/2024	2/8/2019	104.2091	102.7515787	101.3217169	99.91879252	98.54211047	97.19099919	95.86480949	94.5629137	93.28470477
190328A00065	3/28/2019	2.56	3/28/2024	3/28/2019	104.15122	102.5582024	100.9974234	99.46797071	97.96896885	96.49957447	95.05897507	93.6463876	92.26105704
200224A00002	2/24/2020	1.56	2/24/2023	2/24/2020	100.94919	100.4565757	99.96875113	99.48565136	99.00720801	98.53335403	98.06402364	97.59915234	97.13867683
200309A00020	3/9/2020	0.96	3/10/2025	3/9/2020	102.70994	100.185477	97.73558641	95.35762803	93.04907414	90.80750209	88.6305892	86.51610793	84.46192138
121116A00006	11/16/2012	2.64	11/13/2025	11/16/2012	109.00329	105.7104293	102.5347463	99.47136578	96.51564677	93.66317126	90.90973191	88.25132046	85.68411684
131217A00023	12/17/2013	3.74	1/2/2024	12/17/2013	105.10368	103.7409897	102.4025052	101.0876369	99.79581298	98.52647949	97.27909982	96.05315398	94.84813797
150727A00013	7/27/2015	3.04	7/28/2025	7/27/2015	109.29023	106.2918979	103.3920638	100.5869626	97.87299381	95.24671408	92.70482918	90.2441868	87.86176954
181108A00025	11/8/2018	3.44	7/31/2023	11/8/2018	103.34664	102.4087585	101.4878951	100.5835885	99.69539523	98.82288721	97.96565159	97.12328985	96.29541723
190115A00034	1/15/2019	2.91	1/17/2023	1/15/2019	101.3208	100.9326036	100.5473944	100.1651334	99.78578659	99.40932079	99.03570312	98.66490123	98.29688329
200325A00030	3/25/2020	1.5	3/25/2025	3/25/2020	104.5034	101.9081514	99.39039039	96.94733481	94.57632369	92.27480862	90.0403482	87.87060273	85.76332925
211001A00006	10/1/2021	0.36	10/3/2022	10/1/2021	100.1475	100.0559087	99.96449018	99.87324269	99.78216573	99.69125883	99.6005215	99.50995327	99.41955367
170111A00014	1/11/2017	3.47	1/12/2032	1/11/2017	133.72442	123.2146584	113.6440419	104.9229284	96.97068502	89.71474139	83.08974598	77.03681413	71.50285793
181010A00021	10/10/2018	3.29	3/15/2023	10/10/2018	101.97583	101.4273463	100.8847702	100.3480056	99.81695901	99.29153942	98.77165751	98.25722588	97.74815899
190807A00020	8/7/2019	1.57	2/7/2024	8/7/2019	102.4918	101.0473996	99.63042009	98.24014824	96.87589567	95.53699715	94.22280964	92.93271141	91.66610111
191008A00018	10/8/2019	1.74	10/11/2022	10/8/2019	100.32648	100.2125067	100.0988058	99.98537639	99.87221763	99.75932848	99.64670795	99.53435505	99.4222688
200130A00005	1/30/2020	1.73	1/30/2024	1/30/2020	102.50575	101.086785	99.69432158	98.32767924	96.98620322	95.66926035	94.37623821	93.10654428	91.85960513
120113A00012	1/13/2012	3.62	1/15/2027	1/13/2012	117.13595	112.4805458	108.0400326	103.8033614	99.7601108	95.9004455	92.21507986	88.69524454	85.33265523
171122A00009	11/22/2017	2.2	11/22/2022	11/22/2017	100.71844	100.486915	100.2564632	100.0270774	99.79875007	99.57147391	99.34524161	99.12004596	98.89587979
180920A00027	9/20/2018	3.04	9/20/2022	9/20/2018	100.24847	100.1927838	100.1371699	100.0816322	100.0261706	99.97078498	99.91547506	99.86024074	99.80508186
200310A00073	3/12/2020	2.12	3/11/2027	3/12/2020	110.87611	106.1995877	101.7477976	97.50876507	93.47121323	89.62452239	85.95868805	82.46428195	79.13241589
200511A00022	5/11/2020	1.6	2/1/2030	5/11/2020	112.99029	105.34354	98.26570379	91.71158377	85.63978994	80.01239871	74.79464649	69.95465189	65.46316357
160830A00034	8/30/2016	1.9	8/30/2023	8/30/2016	102.04127	101.0274774	100.0337424	99.05947365	98.1041039	97.16708759	96.24789998	95.34603619	94.46101023
190429A00003	4/29/2019	2.62	10/13/2023	4/29/2019	103.04636	101.9057611	100.7903701	99.69935437	98.6319211	97.58731147	96.56479896	95.56368758	94.58331032
190724A00025	7/24/2019	1.96	7/24/2023	7/24/2019	102.02869	101.1154668	100.2185407	99.33747544	98.47185309	97.62127034	96.78533779	95.96367941	95.15593192
190917A00035	9/19/2019	2.02	10/16/2023	9/19/2019	102.37894	101.2341533	100.1148772	99.0202618	97.94949891	96.90181527	95.87647074	94.87275654	93.88999358
200818A00005	8/18/2020	1.05	8/18/2027	8/18/2020	106.56414	101.5522656	96.80310858	92.30159467	88.03358602	83.98582217	80.14586115	76.50202487	73.04334842
150601A00616	6/1/2015	2.72	9/30/2022	6/1/2015	100.33273	100.2493189	100.1660398	100.0828969	99.99988971	99.91701809	99.83428166	99.75168013	99.66921317
170906A00037	9/6/2017	1.99	9/6/2022	9/6/2017	100.05549	100.0388181	100.0221638	100.0055256	99.98890372	99.97229798	99.95570838	99.9391349	99.92257751
190807A00012	8/7/2019	1.76	2/7/2023	8/7/2019	100.9706	100.5250175	100.0833607	99.64557953	99.21162328	98.78144189	98.35498624	97.93220805	97.51305986
190923A00017	9/23/2019	1.74	9/23/2024	9/23/2019	104.09932	102.0128114	99.97851808	97.99478627	96.06002749	94.17271516	92.33138162	90.5346154	88.78105861
200224A00046	2/24/2020	1.59	2/24/2025	2/24/2020	104.25707	101.7511915	99.31832457	96.95592657	94.66155572	92.4328701	90.26762288	88.16365786	86.11890518
081211A00029	12/11/2008	4.57	12/15/2023	12/11/2008	106.0176	104.6904416	103.3912978	102.1192803	100.8735412	99.65326831	98.45768316	97.28603911	96.1376198

	Parallel-Shift Sensitivity Analysis												
8/31/2022					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	112.32909	109.105519	105.9927691	102.9863852	100.0821195	97.27592067	94.56392278	91.94243608	89.40793759
111006A00023	10/6/2011	3.81	10/15/2026	10/6/2011	116.91072	112.5212046	108.3242253	104.3102592	100.470308	96.79586748	93.27889745	89.91179355	86.6873611
121116A00022	11/16/2012	2.78	11/16/2029	11/16/2012	122.5075	114.6826948	107.4195871	100.6747418	94.4083095	88.58371062	83.16735047	78.12836028	73.43836227
130904A00039	9/4/2013	4.19	9/15/2028	9/4/2013	127.98985	121.2388158	114.8986371	108.9419823	103.3434832	98.07958164	93.12839174	88.46957219	84.08420958
180323A00013	3/23/2018	3.18	3/23/2028	3/23/2018	120.17728	114.1687003	108.5029803	103.1586966	98.1158733	93.35587993	88.86133374	84.61600969	80.60475734
190802A00003	8/2/2019	2.01	8/2/2024	8/2/2019	104.06766	102.1284237	100.2349427	98.38586473	96.57988396	94.81574164	93.09222405	91.40816057	89.76242183
191104A00018	11/5/2019	1.96	11/5/2024	11/5/2019	104.53918	102.3365319	100.1910764	98.10091589	96.0642328	94.07928446	92.14439943	90.25797389	88.41846833
191104A00025	11/4/2019	2.33	8/2/2030	11/4/2019	119.66943	111.26449	103.5169471	96.371861	89.77914771	83.69312873	78.07212308	72.87807892	68.07624085
200305A00040	3/10/2020	0.99	3/10/2023	3/10/2020	100.70694	100.1762903	99.65121705	99.13163596	98.61746114	98.10860843	97.60499546	97.10654152	96.61316758
200310A00025	3/10/2020	0.87	3/11/2024	3/10/2020	101.58474	100.0551348	98.55607781	97.0867307	95.6462828	94.23395251	92.84898601	91.49065596	90.15826041
200403A00016	4/3/2020	0.63	4/17/2023	4/3/2020	100.64594	100.009699	99.38146837	98.76110191	98.14845256	97.54337694	96.9457352	96.35539092	95.77221101
150601A00530	6/1/2015	3.08	7/24/2024	6/1/2015	106.24363	104.3023701	102.4063762	100.5543229	98.74493142	96.97696838	95.24924416	93.56061096	91.90996106
151002A00075	10/2/2015	2.04	10/3/2022	10/2/2015	100.31283	100.2209821	100.1293037	100.037798	99.94646454	99.85530272	99.76431208	99.67349214	99.5828424
160212A00044	2/12/2016	1.93	2/13/2023	2/12/2016	101.07634	100.6138353	100.1555622	99.70146198	99.25147764	98.80555335	98.36363429	97.92566658	97.49159733
181010A00023	10/10/2018	3.41	4/1/2024	10/10/2018	105.5508	103.9352353	102.3524674	100.8015625	99.28162497	97.7917924	96.33123416	94.89914987	93.49476806
190122A00046	1/22/2019	3.29	1/22/2029	1/22/2019	123.56907	116.5759922	110.0328319	103.9082005	98.17305955	92.80052949	87.76571851	83.04556613	78.61869968
190729A00007	7/29/2019	2.17	7/28/2023	7/29/2019	102.15017	101.2265894	100.3196538	99.42891876	98.55395333	97.69434157	96.84968213	96.0195875	95.20368347
210312A00005	3/12/2021	0.53	3/12/2024	3/12/2021	101.05892	99.53089715	98.03343308	96.56568447	95.12683921	93.7161144	92.33275497	90.97603248	89.64524392
220518A00008	5/18/2022	3.01	5/20/2024	5/18/2022	105.36	103.6104799	101.8985192	100.222974	98.58274647	96.97678323	95.40407318	93.8636452	92.35456622
190814A00008	8/14/2019	1.84	8/14/2024	8/14/2019	103.80296	101.8341842	99.91260498	98.03680367	96.20541208	94.41711217	92.67063387	90.96475301	89.29828933
190820A00008	8/20/2019	1.76	8/20/2024	8/20/2019	103.67637	101.6928028	99.75716598	97.86800148	96.02390925	94.22354107	92.46559822	90.74882933	89.07202824
200115A00014	1/17/2020	1.88	9/15/2022	1/17/2020	100.13414	100.0924611	100.0508309	100.0092516	99.9677231	99.92624533	99.8848182	99.8434416	99.80211544
200302A00011	3/2/2020	1.31	2/27/2025	3/2/2020	103.56416	101.0582569	98.62568132	96.26386214	93.97033838	91.74275007	89.57883345	87.47641639	85.43341407
200312A00016	3/16/2020	1.09	2/15/2023	3/16/2020	100.69367	100.2266817	99.76401885	99.30562127	98.85143014	98.40138767	97.95543717	97.51352295	97.07559034
200429A00053	5/1/2020	2.18	4/30/2025	5/1/2020	106.16943	103.4598491	100.8331732	98.28634058	95.81642273	93.42061984	91.09625399	88.84076292	86.65169413
170111A00009	1/11/2017	3.16	1/11/2028	1/11/2017	118.56443	112.8377327	107.4269978	102.313137	97.47830984	92.90583619	88.58011507	84.48654963	80.61147766
171206A00041	12/6/2017	2.44	12/6/2024	12/6/2017	106.13354	103.8205827	101.5695597	99.37837249	97.24501264	95.16755598	93.14415807	91.17305023	89.25253566
180530A00014	5/30/2018	2.93	5/30/2023	5/30/2018	102.40796	101.6464252	100.8961962	100.1570241	99.42866583	98.71088535	98.00345355	97.30614786	96.61875203
200110A00022	1/13/2020	2	1/6/2025	1/13/2020	104.99195	102.6150572	100.3037611	98.05589272	95.86937143	93.74219672	91.67244468	89.65826462	87.69787584
210212A00016	2/17/2021	1.32	2/18/2025	2/17/2021	103.54662	101.0674991	98.66018439	96.3221902	94.05113036	91.84471556	89.70074876	87.6171209	85.59180677
210903A00002	9/8/2021	1.22	9/8/2023	9/8/2021	101.37438	100.3395692	99.32576317	98.33232446	97.35864444	96.40413847	95.46824479	94.55042338	93.65015493
080910A00065	9/10/2008	5.03	9/15/2023	9/10/2008	105.41926	104.3423481	103.2875571	102.2542049	101.2416415	100.2492425	99.27640855	98.32256393	97.38715523
170119A00006	1/19/2017	2.85	1/21/2025	1/19/2017	107.14258	104.6990103	102.323772	100.0145793	97.76923295	95.58561978	93.46170901	91.39554842	89.38526083

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180703A00015	7/3/2018	3.06	7/3/2023	7/3/2018	102.77333	101.9159044	101.0727724	100.2435776	99.42797645	98.62563667	97.83623664	97.05946508	96.29502066
190905A00015	9/5/2019	1.78	9/6/2022	9/5/2019	100.05198	100.0353171	100.0186657	100.0020306	99.98541171	99.96880896	99.95222236	99.93565187	99.91909747
200228A00015	3/3/2020	1.34	10/16/2023	3/3/2020	101.60141	100.46137	99.34675957	98.2567383	97.19049975	96.14727244	95.12631792	94.12692905	93.14842836
200601A00009	6/1/2020	0.84	6/2/2025	6/1/2020	102.62994	99.88087285	97.21858547	94.63977507	92.14129258	89.72013142	87.37341987	85.09841388	82.89249028
200911A00006	9/11/2020	0.37	9/11/2023	9/11/2020	100.60645	99.56606869	98.54702555	97.54866832	96.57037282	95.61153975	94.67159348	93.74998085	92.84617014
170316A00018	3/16/2017	2.8	3/18/2024	3/16/2017	104.45218	102.8836511	101.346557	99.84002317	98.36320785	96.91529984	95.49551707	94.10310529	92.73733682
180214A00004	2/14/2018	2.71	2/14/2023	2/14/2018	101.48569	101.0187872	100.556186	100.0978255	99.64364739	99.19359453	98.74761077	98.30564099	97.86763106
180328A00010	3/28/2018	3.1	3/28/2025	3/28/2018	108.35704	105.7104168	103.1424789	100.6504042	98.2314938	95.88316287	93.60293519	91.3884377	89.23739549
180927A00008	9/27/2018	3.14	9/27/2022	9/27/2018	100.33456	100.2594477	100.1844522	100.1095732	100.0348104	99.96016356	99.88563238	99.81121662	99.73691605
190923A00012	9/23/2019	2.43	9/25/2034	9/23/2019	129.92984	116.7053763	104.9790068	94.5718385	85.32723306	77.10793731	69.79359494	63.27858871	57.47016766
190926A00034	9/26/2019	1.88	9/26/2022	9/26/2019	100.23106	100.1588134	100.0866734	100.0146434	99.94272311	99.8709124	99.799211	99.72761868	99.65613518
191206A00009	12/6/2019	2.87	12/4/2037	12/6/2019	137.78792	121.0431106	106.6027084	94.13272549	83.34937293	74.01128181	65.91296228	58.87930012	52.76092153
191219A00036	12/20/2019	2.1	12/20/2024	12/20/2019	105.12945	102.7966428	100.5271107	98.31875629	96.16956185	94.07759014	92.04098039	90.05794475	88.12676486
200305A00012	3/5/2020	1.14	3/5/2025	3/5/2020	103.1546	100.6376942	98.19482271	95.82337949	93.52086593	91.28488671	89.11314484	87.00343689	84.9536486
180705A00003	7/5/2018	3.04	7/5/2023	7/5/2018	102.77191	101.9089458	101.0604594	100.2260913	99.40549116	98.59832011	97.8042503	97.02296452	96.25415569
200110A00013	1/10/2020	1.76	1/10/2024	1/10/2020	102.61604	101.2470572	99.90280232	98.58265855	97.28603389	96.01235521	94.76106757	93.53163345	92.32353213
200214A00005	2/14/2020	1.59	2/14/2025	2/14/2020	104.53022	102.0435588	99.62864696	97.28300845	95.00426684	92.79014184	90.63844477	88.54707427	86.5140123
220401A00009	4/1/2022	2.98	4/1/2027	4/1/2022	115.03826	110.2086857	105.6122492	101.2364355	97.06946879	93.10026584	89.31839113	85.7140155	82.27787754
150610A00008	6/10/2015	3.58	6/10/2030	6/10/2015	130.53564	121.8076659	113.7437987	106.2896319	99.39549988	93.01604008	87.10979865	81.6388742	76.56859568
161003A00004	10/3/2016	1.91	10/3/2023	10/3/2016	102.19809	101.0900468	100.0059249	98.9449564	97.90640586	96.88956875	95.89376978	94.91836142	93.96272244
190620A00026	6/20/2019	2.09	6/20/2023	6/20/2019	101.87806	101.0607138	100.256454	99.46496353	98.68593999	97.91909046	97.16413115	96.42078704	95.68879154
200513A00002	5/13/2020	0.56	5/13/2024	5/13/2020	101.2714	99.57365615	97.91223373	96.28603122	94.69399397	93.13510969	91.60840629	90.11294988	88.64784282
130211A00017	2/11/2013	3.27	2/15/2028	2/11/2013	119.48521	113.6324473	108.1076965	102.8908189	97.96301312	93.30672145	88.90554097	84.74414199	80.80819249
160628A00031	6/28/2016	1.77	6/28/2023	6/28/2016	101.65311	100.814685	99.99003633	99.17882441	98.38072305	97.59541657	96.82259932	96.06197533	95.31325792
160801A00001	8/1/2016	1.97	8/1/2024	8/1/2016	103.98362	102.0479088	100.1578137	98.31198787	96.50913123	94.74799045	93.02735697	91.34606506	89.70299005
180521A00025	5/21/2018	3.24	5/21/2025	5/21/2018	109.6067	106.7843761	104.0497071	101.3993904	98.83027518	96.33935209	93.92374593	91.58070845	89.30761169
200131A00016	1/31/2020	1.73	1/31/2025	1/31/2020	104.46891	102.0314726	99.6631116	97.36148832	95.124355	92.94955301	90.83500872	88.7787296	86.77880058
200228A00019	2/28/2020	1.21	2/20/2025	2/28/2020	103.60874	101.1159264	98.69561741	96.34528636	94.06251469	91.84498253	89.6904639	87.59682236	85.56200675
200429A00052	5/1/2020	1.43	4/30/2024	5/1/2020	102.48961	100.8197112	99.18489565	97.58412161	96.01638985	94.48074031	92.97625021	91.50203213	90.05723235
211222A00027	12/22/2021	1.26	10/15/2024	12/22/2021	102.90574	100.7779549	98.70444604	96.68345322	94.71328784	92.79232901	90.91902026	89.09186642	87.30943067
180627A00026	6/27/2018	2.87	6/27/2023	6/27/2018	102.65095	101.8095861	100.9819915	100.1678342	99.36678886	98.57854061	97.80278451	97.03922527	96.28757686
190315A00014	3/15/2019	2.74	3/15/2024	3/15/2019	104.33356	102.7740972	101.2457982	99.74780261	98.27927955	96.83942809	95.42747593	94.0426781	92.68431573
190816A00036	8/16/2019	1.77	8/16/2024	8/16/2019	103.67478	101.7019488	99.77653864	97.89712091	96.06231726	94.27080008	92.52129022	90.81255489	89.14340563

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191108A00013	11/8/2019	2.25	11/8/2029	11/8/2019	118.53305	110.8730854	103.7643193	97.16412929	91.03340749	85.33625151	80.0396856	75.11340732	70.52955742
191210A00011	12/10/2019	1.92	12/12/2022	12/10/2019	100.74597	100.4590622	100.1737979	99.8901626	99.60814231	99.32772317	99.0488915	98.77163377	98.49593661
151223A00072	12/23/2015	2.81	12/23/2025	12/23/2015	110.37467	106.9367812	103.6248121	100.4334753	97.35773115	94.39277889	91.5340441	88.77716656	86.117989
170417A00057	4/17/2017	2.32	4/17/2023	4/17/2017	101.66562	101.0264312	100.395267	99.77198089	99.15642581	98.54845844	97.94793901	97.35473112	96.76870172
180913A00030	9/13/2018	3.33	9/12/2025	9/13/2018	110.60622	107.4607152	104.4222857	101.4866764	98.64982958	95.90787195	93.25710534	90.69399753	88.21517374
181219A00006	12/19/2018	3.06	12/19/2023	12/19/2018	104.06	102.7374636	101.4417297	100.171991	98.92747506	97.70744037	96.51117466	95.33799349	94.18723888
190625A00024	6/25/2019	2.26	6/25/2025	6/25/2019	106.76356	103.8920942	101.1125893	98.42160325	95.81584173	93.2921519	90.8475155	88.47904233	86.18396403
190813A00016	8/13/2019	1.88	8/13/2024	8/13/2019	103.87667	101.9098285	99.99007199	98.11598817	96.28621376	94.49943546	92.75438768	91.04985051	89.38464772
160613A00047	6/15/2016	2.18	6/16/2025	6/15/2016	106.474	103.6317996	100.8799701	98.21510698	95.63396001	93.13342136	90.71051838	88.36240679	86.08636423
200429A00009	4/29/2020	0.78	4/29/2025	4/29/2020	102.73024	100.0623971	97.47661807	94.9698619	92.5392222	90.18192044	87.89529932	85.67681651	83.52403878
220125A00010	1/25/2022	1.89	1/25/2027	1/25/2022	109.54468	105.0273541	100.7218643	96.61720854	92.70300846	88.96947427	85.40736821	82.00797067	78.76304853
170815A00006	8/15/2017	2.5	8/15/2024	8/15/2017	105.1208	103.1359353	101.1986599	99.30753537	97.46118091	95.65826649	93.89751056	92.17767794	90.49757782
180426A00011	4/26/2018	2.94	4/26/2023	4/26/2018	102.19629	101.5293706	100.87115	100.2214564	99.58012483	98.94699453	98.32190887	97.70471519	97.09526465
190807A00005	8/7/2019	1.77	8/7/2024	8/7/2019	103.62617	101.677943	99.77600581	97.91898004	96.10553579	94.33439144	92.6043116	90.91410504	89.26262282
191002A00013	10/2/2019	1.78	10/3/2022	10/2/2019	100.27781	100.1861056	100.0945688	100.0032032	99.91200836	99.82098378	99.73012899	99.63944351	99.54892686
200709A00005	7/10/2020	2.23	7/10/2030	7/10/2020	118.72937	110.4236027	102.7635493	95.6956024	89.17085839	83.14468624	77.57633447	72.42857618	67.66738812
220406A00006	4/6/2022	2.65	10/6/2023	4/6/2022	103.03636	101.9150959	100.8181894	99.74485217	98.69433047	97.66590238	96.65887617	95.67258873	94.70640412
180111A00016	1/11/2018	2.57	1/11/2023	1/11/2018	101.14882	100.7777029	100.4093112	100.0436191	99.68059693	99.32021538	98.96244564	98.60725928	98.25462831
191025A00009	10/25/2019	2.26	5/25/2029	10/25/2019	116.54329	109.4622637	102.8614286	96.70564526	90.96252716	85.60221202	80.59715177	75.92192121	71.55304348
191122A00021	11/26/2019	3.4	11/22/2038	11/26/2019	147.30145	128.9100693	113.160534	99.65171302	88.04568069	78.05745239	69.4464314	62.00927573	55.57394334
191226A00020	12/26/2019	2.44	12/21/2029	12/26/2019	119.09458	111.3399797	104.149457	97.47897644	91.2881549	85.53994318	80.20033464	75.2381009	70.62455162
081217A00076	12/17/2008	3.86	12/22/2023	12/17/2008	105.31089	103.9702195	102.6558616	101.3670579	100.1030807	98.86323011	97.64683268	96.45324025	95.28182867
180727A00038	7/27/2018	3.36	7/25/2025	7/27/2018	110.20636	107.2026835	104.2973144	101.4865101	98.76668734	96.13441882	93.58642526	91.11956824	88.7308433
190606A00028	6/6/2019	2.74	6/6/2029	6/6/2019	119.92585	112.6982439	105.9607155	99.67735748	93.81507882	88.34337028	83.23408963	78.46126585	74.00092054
190816A00007	8/16/2019	1.77	8/16/2023	8/16/2019	101.86132	100.8868587	99.93097245	98.99313257	98.07283162	97.16958103	96.28291027	95.41236597	94.55751114
200204A00016	2/4/2020	1.72	2/6/2023	2/4/2020	100.94837	100.5056159	100.06674	99.63169076	99.20041834	98.77287366	98.34900852	97.92877554	97.51212818
200227A00004	2/27/2020	1.65	2/27/2030	2/27/2020	114.63545	106.8021198	99.55779263	92.85516601	86.6509607	80.90556307	75.58269725	70.64912826	66.07439286
200306A00014	3/6/2020	1.38	3/6/2030	3/6/2020	111.45928	103.7732979	96.66730379	90.0946151	84.01253371	78.3819831	73.1671842	68.33536169	63.85647791
200529A00004	5/29/2020	0.56	5/29/2024	5/29/2020	101.31328	99.57252131	97.86970725	96.20366428	94.57326775	92.97743935	91.41514469	89.88539097	88.38722489
180910A00033	9/10/2018	3.43	9/8/2028	9/10/2018	122.26567	115.741602	109.6152191	103.8600977	98.45170508	93.36725512	88.58557521	84.08698381	79.85317805
190805A00008	8/5/2019	1.88	8/4/2023	8/5/2019	101.91472	100.9730222	100.0486603	99.14115811	98.25005763	97.3749174	96.51531168	95.67082972	94.84107515
150817A00099	8/17/2015	3.19	8/17/2027	8/17/2015	117.376	112.0988639	107.094205	102.3465063	97.84121383	93.56467264	89.50406637	85.64736164	81.98325615
180223A00026	2/23/2018	2.92	12/15/2022	2/23/2018	101.06037	100.764491	100.4703566	100.17795	99.88725594	99.59825934	99.31094526	99.02529894	98.74130582

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190808A00050	8/8/2019	1.7	8/8/2024	8/8/2019	103.75147	101.7944844	99.88413277	98.01902476	96.1978166	94.41921355	92.68196769	90.9848759	89.32677794
200720A00037	7/22/2020	2.1	7/21/2025	7/22/2020	106.46933	103.5315928	100.6901214	97.9412489	95.28147205	92.70743925	90.21594337	87.80391461	85.46841389
170629A00073	6/29/2017	2.2	6/29/2023	6/29/2017	102.10334	101.2589337	100.4284523	99.61155136	98.80789988	98.01717763	97.23907464	96.47329073	95.71953521
181009A00008	10/9/2018	3.24	10/7/2022	10/9/2018	100.45524	100.3522379	100.2494602	100.1469031	100.0445659	99.94244775	99.84054801	99.73886593	99.63740081
190809A00021	8/9/2019	2.12	8/9/2029	8/9/2019	117.03996	109.6885732	102.8509861	96.48861182	90.5659526	85.05033427	79.91166827	75.12223491	70.65648564
190916A00009	9/16/2019	2.04	9/16/2022	9/16/2019	100.15021	100.1057385	100.061327	100.016971	99.97267053	99.92842537	99.88423543	99.84010062	99.79602083
191108A00011	11/8/2019	2.08	10/18/2024	11/8/2019	104.69369	102.5381838	100.4377117	98.39048082	96.39477479	94.44894653	92.55141464	90.70066019	88.89522377
191230A00012	12/30/2019	1.77	12/1/2023	12/30/2019	102.42013	101.1472507	99.90547444	98.6936688	97.5107577	96.35571609	95.22756692	94.12537837	93.04826123
200227A00006	2/27/2020	1.47	2/27/2025	2/27/2020	103.96956	101.458481	99.02083712	96.65406192	94.35569099	92.12336107	89.95480524	87.84784832	85.80040259
200814A00009	8/18/2020	1.36	8/16/2028	8/18/2020	109.47312	103.3938242	97.68793051	92.33064297	87.29893487	82.57141197	78.12818886	73.95077523	70.02197138
131106A00003	11/6/2013	3.57	11/15/2023	11/6/2013	104.42128	103.1809478	101.9701193	100.787749	99.63284118	98.50444602	97.4016572	96.32360927	95.26947545
151229A00081	12/29/2015	3.76	12/31/2035	12/29/2015	147.31734	131.8525227	118.2557571	106.2874791	95.74016305	86.43388372	78.21251315	70.94045868	64.49986239
170919A00076	9/19/2017	1.97	9/19/2022	9/19/2017	100.17951	100.1266514	100.0738666	100.0211528	99.96850967	99.91593716	99.86343511	99.81100337	99.7586418
180530A00027	5/30/2018	3.61	6/1/2032	5/30/2018	136.31223	125.2667939	115.2418593	106.1366682	97.86094295	90.33374584	83.48246633	77.24192332	71.55356836
181218A00077	12/18/2018	3.09	12/18/2023	12/18/2018	104.09107	102.7705971	101.4771713	100.2099687	98.9681994	97.75110574	96.55796022	95.38806418	94.2407463
190107A00023	1/7/2019	2.87	1/6/2023	1/7/2019	101.22195	100.8645625	100.5096987	100.157334	99.80744216	99.45999703	99.11497302	98.77234483	98.43208754
210804A00008	8/6/2021	2.28	8/4/2028	8/6/2021	115.00015	108.7903141	102.9570657	97.47562283	92.32295712	87.4776605	82.91982316	78.63092155	74.59371518
160714A00020	9/6/2016	2.28	9/4/2026	9/6/2016	110.15931	106.024219	102.0680853	98.28221707	94.65839067	91.18882371	87.86614917	84.68339091	81.63394074
181026A00002	10/26/2018	3.28	10/26/2023	10/26/2018	103.90008	102.7184133	101.5636269	100.4348092	99.33109083	98.25164104	97.1956653	96.16240345	95.15112787
190726A00017	7/26/2019	2.44	7/24/2026	7/26/2019	110.46311	106.4373719	102.5812123	98.88661192	95.34597548	91.95210383	88.69817133	85.57770452	82.5845621
191004A00005	10/4/2019	1.54	10/4/2024	10/4/2019	103.73753	101.6246887	99.565253	97.55751271	95.59982362	93.69060659	91.82834437	90.01157869	88.23890745
191008A00033	10/8/2019	1.71	10/8/2024	10/8/2019	103.84111	101.7218252	99.65620354	97.6425194	95.67911628	93.76440342	91.89685265	90.07499542	88.29741994
120517A00007	5/17/2012	2.42	5/31/2023	5/17/2012	102.09729	101.3333688	100.5808462	99.8394705	99.10899547	98.38918219	97.67979863	96.98061942	96.29142569
160701A00019	7/1/2016	1.73	7/3/2023	7/1/2016	101.64086	100.7886989	99.9507721	99.12672198	98.31620613	97.51889334	96.73446314	95.96260536	95.20301968
180403A00006	4/3/2018	3.07	4/3/2028	4/3/2018	119.6476	113.622151	107.9423058	102.5863678	97.53411355	92.76668802	88.26650491	84.01715463	80.0033194
180529A00056	5/29/2018	3	5/26/2023	5/29/2018	102.42751	101.6770096	100.9374946	100.208728	99.49047648	98.78251373	98.0846197	97.39658062	96.71818873
181005A00012	10/5/2018	3.33	10/4/2024	10/5/2018	107.55094	105.3967067	103.2967172	101.2492345	99.25259107	97.30518532	95.40547841	93.55199125	91.74330171
190619A00009	6/19/2019	2.26	6/19/2024	6/19/2019	104.26675	102.4444696	100.6628105	98.92058228	97.21664219	95.54988961	93.91926422	92.3237441	90.76234405
191002A00017	10/2/2019	1.84	10/2/2024	10/2/2019	104.08633	101.9804902	99.927673	97.92618054	95.97438698	94.07073049	92.21371014	90.40188306	88.63386172
200716A00015	7/20/2020	1.54	7/19/2024	7/20/2020	103.08205	101.1900407	99.3419091	97.53638246	95.77223024	94.04826535	92.36334234	90.71635563	89.1062379
210216A00009	2/16/2021	0.92	2/16/2027	2/16/2021	105.89992	101.3814046	97.0792635	92.98204525	89.07896739	85.35986971	81.81517501	78.43585261	75.21338442
090429A00044	4/29/2009	4.1	4/29/2024	4/29/2014	100.45012	100.3666141	100.2832459	100.1796637	99.92500115	99.3313174	98.57157248	97.77011503	96.9714748
130416A00025	4/16/2013	2.27	4/18/2028	4/16/2018	100.15284	99.99715214	99.3406601	97.94441102	95.96077072	93.6584553	91.26587389	88.90971811	86.63664959

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
140508A00011	5/8/2014	2.32	5/8/2024	5/8/2019	100.29467	100.2089023	100.0257125	99.50450225	98.72910643	97.88332729	97.03352019	96.19625355	95.37345147
140723A00038	7/23/2014	2.3	7/23/2024	7/23/2019	100.28512	100.1994797	99.99597442	99.42148697	98.58363317	97.66545858	96.74064109	95.8293053	94.93435909
141119A00005	11/19/2014	2.53	11/19/2024	11/19/2019	100.28561	100.2029472	99.99239353	99.38028253	98.45021083	97.40381388	96.33719112	95.28394632	94.25091748
150202A00006	2/2/2015	1.92	2/3/2025	2/3/2020	100.20376	100.1094225	99.67185384	98.81219286	97.70720063	96.53162237	95.35729715	94.20459852	93.07618794
151223A00007	12/23/2015	3.76	12/23/2030	12/23/2022	101.09206	100.8068352	100.0688382	98.59589453	96.0186558	92.32131032	87.8657315	83.11857268	78.46361787
161012A00020	10/11/2016	2.96	10/14/2031	10/11/2023	102.56382	101.2910657	99.41964365	96.69428438	92.90828034	88.20396256	83.08311614	78.01302733	73.24651731
170515A00052	5/15/2017	3.78	5/15/2042	5/15/2024	105.59253	103.8053107	101.5676805	98.59485651	94.41764355	88.90002435	82.68787754	76.70324432	71.31016583
170519A00006	5/19/2017	3	5/19/2032	5/19/2022	100.22577	100.1390522	99.56745189	98.08348541	95.58516968	92.31668363	88.6843733	85.02692424	81.53305979
170705A00037	7/5/2017	2.85	7/6/2032	7/6/2027	111.76017	107.6781899	103.6436699	99.63750513	95.64445761	91.6755517	87.78330866	84.03878807	80.49621031
170802A00074	8/2/2017	2.92	8/2/2027	8/2/2022	99.894197	99.88100281	99.52497215	98.23403126	96.07711617	93.33477759	90.31529602	87.24964304	84.27030197
170809A00042	8/9/2017	2.35	8/9/2027	8/9/2022	100.18563	100.0965346	99.52479269	98.31841013	96.55812749	94.50074986	92.35301118	90.22878843	88.17058496
171004A00022	10/4/2017	2.74	10/4/2027	10/4/2022	100.51997	100.2691142	99.57090694	98.17547685	96.00125326	93.25111056	90.2324699	87.17588442	84.21120226
171005A00047	10/5/2017	3.29	10/5/2032	10/5/2022	100.51606	100.3440435	99.59869026	97.86928945	94.88241753	90.82715139	86.20706666	81.52323791	77.07743952
180105A00005	1/5/2018	3.07	1/5/2028	1/5/2023	101.35231	100.9420478	100.2690838	99.25015121	97.73662211	95.7748986	93.5672071	91.2929386	89.0587014
180105A00006	1/5/2018	3.07	1/5/2028	1/5/2023	101.35231	100.9420478	100.2690838	99.25015125	97.7366222	95.77489877	93.56720736	91.29293895	89.05870183
180130A00087	1/30/2018	2.92	1/31/2028	1/30/2023	101.2586	100.8384214	100.1351499	99.0507996	97.45553436	95.43582003	93.20080888	90.92215894	88.69426776
180302A00003	3/2/2018	3.89	3/2/2033	3/2/2023	101.81927	101.3802578	100.4944088	98.93526959	96.28952316	92.38069228	87.54793516	82.3506061	77.28095376
180315A00030	3/15/2018	3.76	3/15/2033	3/17/2025	109.21333	106.419071	103.3683403	99.92005909	95.92572048	91.23748608	86.02338141	80.63953257	75.47365076
180504A00024	5/4/2018	3.62	5/4/2028	5/4/2023	102.61638	101.8708708	100.7863527	99.28422197	97.145333	94.24710687	90.75591854	86.9646801	83.15651723
180627A00005	6/27/2018	3.63	6/30/2033	6/30/2023	102.5949	101.8562261	100.7816181	99.2539504	97.01435311	93.93794301	90.23820886	86.30039363	82.45262377
180703A00033	7/3/2018	3.4	7/3/2028	7/3/2023	102.83971	101.9776364	100.9084115	99.60073621	97.94448054	95.89635507	93.56959226	91.13694988	88.73206389
180712A00016	7/12/2018	3.66	7/12/2033	7/12/2028	119.4682	113.9350293	108.4935024	103.1412926	97.85668717	92.62150297	87.47684605	82.5060535	77.82120609
190111A00040	1/11/2019	3.74	1/11/2034	1/11/2024	104.83694	103.3104402	101.4223848	98.98498558	95.73423116	91.48530642	86.52623011	81.38251261	76.47870839
190116A00015	1/16/2019	3.61	1/17/2034	1/16/2024	104.49601	103.0573891	101.3355517	99.20141071	96.47060697	93.02898833	89.07823924	84.97632073	81.0244897
190204A00054	2/4/2019	3.98	2/6/2034	2/2/2024	104.91564	103.4702376	101.6352351	99.20998726	95.91911122	91.53281666	86.32829253	80.85750816	75.61545454
190222A00023	2/22/2019	3.66	2/22/2034	2/22/2026	112.25654	108.3900392	104.2961924	99.83444569	94.83099218	89.25568753	83.30622786	77.37440244	71.81121141
190301A00015	3/1/2019	3.86	3/1/2034	3/2/2026	112.35732	108.6520556	104.7294004	100.4535813	95.67698881	90.32744109	84.5679356	78.77082492	73.29649615
190409A00016	4/9/2019	2.91	4/9/2029	4/9/2024	104.36178	102.6644199	100.6968229	98.36014153	95.53416358	92.22894959	88.63813212	85.0133244	81.52579617
190409A00017	4/9/2019	3.01	4/9/2029	4/9/2024	104.41312	102.7590955	100.7597422	98.31634001	95.31073875	91.74587643	87.8264628	83.84068283	79.99956959
190430A00020	4/30/2019	3.41	4/28/2034	4/28/2026	111.5707	107.5770731	103.3232925	98.63382953	93.38678329	87.57195932	81.48356492	75.54285629	70.04064999
190520A00018	5/20/2019	3.7	5/20/2044	5/20/2024	105.55793	103.5180489	100.8931905	97.24857029	92.13758766	85.67441957	78.91636968	72.71620594	67.22318088
190530A00044	5/30/2019	2.85	5/30/2034	5/30/2024	104.34478	102.4813662	100.2586816	97.5052566	94.08453396	90.06202938	85.78634993	81.60792088	77.68987434
190807A00041	8/7/2019	2.27	8/7/2034	7/7/2024	103.50982	101.3436221	98.70668939	95.42703797	91.46182544	87.08324407	82.70566297	78.56956025	74.72947577

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190807A00044	8/7/2019	2.27	8/7/2034	8/7/2024	103.69334	101.4535474	98.75870807	95.44383652	91.46456413	87.08337663	82.70566379	78.56956025	74.72947577
190827A00044	8/27/2019	1.9	8/27/2029	8/27/2024	103.20396	101.2884834	99.15145538	96.73232919	94.03072317	91.16213138	88.2929593	85.52354364	82.88056009
190930A00079	9/30/2019	2.04	10/1/2029	9/30/2024	103.48043	101.5729596	99.45363466	97.05875097	94.3742439	91.49990418	88.60233862	85.79572759	83.11650753
190930A00083	9/30/2019	2.04	10/1/2029	9/30/2024	103.48043	101.5729595	99.45363422	97.05875013	94.37424252	91.49990219	88.602336	85.7957244	83.11650381
191007A00012	10/7/2019	2	10/5/2029	10/7/2024	103.40893	101.3583184	99.10495225	96.5866112	93.807721	90.87996616	87.96353283	85.15372585	82.47503472
191007A00013	10/7/2019	2	10/5/2029	10/7/2024	103.40893	101.3583185	99.104952	96.58661052	93.80771982	90.87996445	87.96353058	85.15372309	82.47503148
191028A00015	10/28/2019	2.49	10/27/2034	10/28/2024	104.58912	102.2473275	99.51694309	96.24153432	92.33331873	87.97675023	83.54659277	79.32861951	75.40874459
191031A00036	10/31/2019	2.9	10/31/2039	10/31/2024	104.82047	102.3424411	99.2682124	95.27516975	90.23166692	84.52124858	78.86337271	73.66190157	68.96350311
191031A00037	10/31/2019	2.59	10/30/2034	10/31/2024	104.30229	102.0328121	99.35327425	96.10791896	92.20733079	87.85619907	83.44218529	79.24542146	75.34593123
191220A00029	12/20/2019	2.57	12/19/2031	12/20/2024	104.9514	102.6517129	100.1329562	97.29208204	94.0774076	90.56282215	86.96489183	83.4756832	80.17600042
200102A00020	1/2/2020	2.78	1/3/2040	1/2/2025	105.5768	102.839671	99.51184901	95.29722292	90.09420664	84.27256644	78.53328297	73.2688455	68.52181782
200108A00009	1/8/2020	2.4	1/8/2035	1/8/2025	104.85927	102.1984796	99.13653092	95.51268381	91.26036955	86.61588486	81.98439141	77.62325541	73.59194256
200108A00040	1/8/2020	2.52	1/8/2030	1/8/2025	104.98083	102.4453103	99.5602503	96.21161231	92.36245219	88.12492589	83.7851813	79.58562234	75.63121604
200110A00012	1/10/2020	2.57	1/10/2035	1/10/2025	105.01071	102.4249633	99.47230323	96.0125314	91.95776554	87.50369411	83.02131086	78.77357532	74.83390673
200115A00023	1/15/2020	2.16	1/15/2030	1/15/2025	104.1958	101.9591472	99.56597547	96.95107679	94.10323573	91.10291169	88.10001327	85.20060979	82.4383384
200115A00025	1/15/2020	2.1	1/15/2025	1/15/2023	100.74499	100.2483602	99.37874257	98.08632561	96.44370231	94.64902326	92.8398323	91.06642551	89.33773511
200306A00021	3/6/2020	1.16	3/6/2030	3/6/2025	102.04151	99.54822919	96.82656883	93.83957448	90.70062242	87.58166447	84.58738886	81.74143192	79.03867345
200309A00013	3/9/2020	1.1	3/8/2030	3/9/2025	101.89294	99.38897025	96.64945499	93.64533886	90.49857377	87.38132215	84.39305079	81.55353152	78.85693122
200316A00030	3/16/2020	1.35	3/15/2030	3/16/2025	102.85121	100.4052324	97.75757123	94.85733217	91.76673433	88.63849765	85.60604533	82.71752966	79.97417097
200316A00032	3/16/2020	1.35	3/15/2030	3/16/2025	102.85121	100.4052323	97.75757105	94.85733185	91.76673383	88.63849697	85.60604448	82.71752865	79.97416981
200318A00015	3/18/2020	1.69	3/18/2030	3/18/2023	100.4209	99.54387543	97.99378669	95.68489193	92.81135261	89.72122203	86.66787088	83.74845155	80.97744924
200326A00035	3/26/2020	1.68	3/26/2030	3/26/2025	103.32029	100.9055217	98.30757023	95.47231578	92.43005189	89.31777092	86.27898894	83.37729255	80.6204296
200423A00008	4/23/2020	1.59	4/23/2030	4/23/2025	103.21908	100.0319101	96.38793118	92.13619933	87.39879771	82.51004046	77.78364652	73.34854644	69.21764404
200423A00009	4/23/2020	1.59	4/23/2030	4/23/2025	103.21908	100.0319102	96.38793139	92.1361997	87.39879827	82.51004122	77.78364747	73.34854757	69.21764534
200423A00010	4/23/2020	1.59	4/23/2030	4/23/2025	103.21908	100.0319103	96.38793156	92.13619996	87.39879866	82.51004175	77.78364813	73.34854834	69.21764621
200430A00021	4/30/2020	1.2	4/30/2030	4/30/2025	102.13019	99.63057257	96.90107099	93.89994068	90.73743868	87.58912128	84.56512153	81.69182159	78.96442729
200505A00010	5/5/2020	0.89	5/6/2030	5/5/2025	101.87406	99.22768397	96.36061832	93.24952615	90.02046737	86.8410687	83.80222561	80.91861147	78.18315365
200512A00023	5/12/2020	1.78	5/11/2035	5/12/2025	103.38451	99.8444102	95.61189518	90.48895662	84.77118924	79.03096599	73.67593559	68.80313459	64.38376781
200609A00003	6/9/2020	1.66	6/8/2035	6/9/2025	102.78725	98.90650212	94.12750177	88.35659171	82.01228457	75.77597952	70.03582583	64.85822567	60.19876694
200612A00001	6/12/2020	0.75	6/12/2030	6/12/2025	101.5788	98.84811057	95.89281967	92.705747	89.43005405	86.23151132	83.18339503	80.29353044	77.55353803
201022A00008	10/22/2020	1.02	10/22/2035	10/22/2025	101.86124	98.09645995	93.79399016	88.96836027	83.9884506	79.22502425	74.82051212	70.77134735	67.04594227
201029A00008	10/29/2020	0.92	10/29/2030	10/29/2025	101.95322	99.00355417	95.872257	92.54771118	89.15732434	85.85610295	82.71541263	79.74315262	76.93018566
201030A00025	10/30/2020	2.02	10/28/2050	10/30/2025	103.91337	98.95708907	92.43245614	84.37720943	75.96258563	68.33098889	61.73287263	56.07237463	51.2098109

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
201116A00019	11/16/2020	1.32	11/15/2030	11/16/2025	102.7451	99.07079136	94.98655288	90.43064694	85.6026283	80.82337273	76.30177908	72.09124406	68.18018079
201118A00015	11/18/2020	1.66	11/18/2036	11/18/2027	106.10205	99.93272486	93.22062681	86.02733608	78.75143162	71.88965122	65.70673384	60.21197522	55.3328731
201118A00017	11/18/2020	1.66	11/18/2036	11/18/2027	106.10205	99.9327263	93.22062927	86.02733975	78.75143653	71.88965725	65.7067408	60.21198294	55.33288141
201118A00018	11/18/2020	1.85	11/18/2036	11/18/2027	106.42099	100.3166454	93.6768947	86.55022551	79.31717939	72.46908837	66.28525716	60.78485966	55.89804062
201202A00016	12/2/2020	1.32	12/3/2035	12/2/2025	102.62891	98.8147531	94.5250615	89.73360802	84.73690117	79.9176492	75.45015082	71.34408414	67.56867078
201202A00017	12/2/2020	1.32	12/3/2035	12/2/2025	102.62891	98.81475357	94.52506244	89.73360955	84.73690339	79.91765211	75.45015437	71.34408826	67.56867541
201229A00003	12/29/2020	1.28	12/30/2030	12/30/2025	102.68929	98.92322794	94.75198001	90.11462539	85.226991	80.40985368	75.86318368	71.63470008	67.71074914
201230A00018	12/30/2020	1.52	12/28/2035	12/28/2027	105.66296	99.49611067	92.86531446	85.83631794	78.76457267	72.09063352	66.0517885	60.6580099	55.84449265
210108A00007	1/8/2021	1.65	1/8/2036	1/8/2026	103.58492	99.138255	93.85460839	87.70424781	81.1205693	74.73953514	68.91068943	63.67746736	58.98594342
210225A00010	2/25/2021	2.02	2/25/2041	2/25/2026	104.90725	100.5936999	95.56503957	89.70139409	83.36586768	77.23509898	71.66768095	66.68391048	62.21889927
210405A00013	4/5/2021	1.82	4/7/2036	4/5/2026	104.93616	101.0541277	96.80000228	92.10078974	87.09955771	82.12997121	77.45932633	73.1612504	69.21550452
210622A00004	6/22/2021	2.42	6/20/2036	6/22/2026	107.12294	102.6287091	97.55169679	91.72202885	85.29454275	78.75806129	72.62074523	67.07635546	62.11027104
210910A00009	9/10/2021	1.77	9/10/2036	9/10/2026	105.92474	101.7156124	97.18066986	92.2638049	87.09601147	81.98200436	77.18334753	72.77691672	68.74160477
210924A00016	9/24/2021	1.91	9/24/2036	9/24/2026	106.51455	102.3406321	97.85753646	93.00778579	87.88258643	82.76233786	77.92734898	73.4793066	69.40517436
211019A00005	10/19/2021	2.49	10/20/2036	10/19/2026	108.7605	104.0333429	98.76869921	92.8446292	86.3437192	79.68395864	73.38341192	67.68238604	62.58436644
211110A00017	11/10/2021	2.01	11/10/2036	11/10/2026	107.21952	102.9312537	98.36342669	93.45963494	88.29050547	83.11869219	78.22246477	73.71656796	69.59249347
211116A00012	11/16/2021	2.22	12/18/2034	11/16/2026	107.64332	103.6126919	99.44418024	95.05258198	90.4770526	85.86405808	81.42002562	77.26710804	73.4226086
211124A00008	11/24/2021	2.62	11/22/2041	11/24/2026	109.73133	105.0093982	99.80465116	93.9792122	87.58616632	81.06310644	74.96227168	69.48539495	64.59780903
211215A00020	12/15/2021	1.85	12/15/2031	12/15/2026	106.35703	102.6985884	99.0082433	95.25883074	91.47543838	87.74044211	84.15008828	80.75541262	77.56175695
211227A00012	12/27/2021	2.39	12/29/2036	12/27/2028	112.75569	105.9258799	98.91432854	91.65062913	84.28722138	77.13155121	70.52214827	64.6001247	59.33883486
220217A00024	2/17/2022	2.43	2/17/2027	2/17/2025	105.35156	102.9908645	100.5369476	97.95669668	95.22697073	92.37057055	89.47500403	86.63071653	83.89001045
220413A00002	4/13/2022	3.16	4/13/2032	4/13/2027	112.61942	108.6758307	104.7844278	100.9230845	97.07809187	93.24167821	89.45501948	85.77989892	82.28217372
220617A00069	6/17/2022	4.06	6/17/2027	6/17/2025	110.46784	107.8413859	105.2173344	102.588264	99.92957944	97.20449982	94.39918709	91.52430311	88.63093787
220831A00108	8/31/2022	4.07	8/31/2027	9/2/2025	111.93014	108.8824019	105.8610498	102.8501593	99.8233334	96.7439019	93.59931141	90.4024132	87.20764519
210611A00010	6/11/2021	1.02	6/11/2026	6/11/2021	104.30323	100.7718136	97.38307782	94.13043256	91.00763002	88.00874675	85.12816469	82.36055356	79.70085425
160608A00029	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928445	101.9653891	98.67387223	95.51208702	92.47414859	89.5544752	86.74777065	84.04900777
170921A00053	9/21/2017	2.22	9/21/2022	9/21/2017	100.20766	100.1492852	100.0909875	100.0327706	99.97463463	99.91657926	99.85860437	99.8007098	99.74289538
210915A00018	9/15/2021	0.74	9/16/2024	9/15/2021	101.64531	99.68463149	97.77234082	95.90692176	94.08691868	92.31093195	90.57761531	88.88567343	87.23385955
160212A00047	2/12/2016	1.94	2/12/2026	2/12/2016	103.76578	101.9323235	100.150786	98.41927267	96.73597384	95.09915876	93.50717182	91.9584287	90.45141276
170711A00010	7/11/2017	2.38	7/12/2027	7/11/2017	106.94677	104.3157567	101.7826215	99.34287799	96.99227918	94.72680259	92.54263688	90.43616934	88.40397414
200514A00008	5/14/2020	1.23	5/14/2030	5/14/2020	108.52621	102.2511862	96.42362351	91.00827954	85.97290271	81.28795917	76.92638867	72.86338377	69.07618984
170504A00049	5/4/2017	2.63	5/6/2024	5/4/2017	104.46322	102.7985818	101.1689813	99.57337536	98.01075975	96.48017	94.98067935	93.51139694	92.07146598
171207A00025	12/7/2017	2.91	12/7/2027	12/7/2017	115.20766	110.1843845	105.4256081	100.9157617	96.64028684	92.58556025	88.73882865	85.088148	81.62232761

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200421A00026	4/21/2020	1.34	4/19/2030	4/21/2020	109.17233	102.9121302	97.0948939	91.68599551	86.6537253	81.96902533	77.60525315	73.5379679	69.7447364
120807A00026	8/7/2012	2.42	8/9/2027	8/7/2012	106.79861	104.1349116	101.5714935	99.10371201	96.72717326	94.43771763	92.23140572	90.10450517	88.05347837
190205A00020	2/5/2019	3.32	2/5/2029	2/5/2019	120.39324	114.1981724	108.3885206	102.9378241	97.82158563	93.01711332	88.50337883	84.26088675	80.27155506
190305A00017	3/5/2019	3.12	3/5/2026	3/5/2019	110.72914	107.3770828	104.1509238	101.0451904	98.05468147	95.17445113	92.39979426	89.72623357	87.14950713
151120A00019	11/20/2015	2.72	11/20/2030	11/20/2015	113.32324	108.7201833	104.3840952	100.2966759	96.44102751	92.80153903	89.3637793	86.11439953	83.04104442
180402A00013	4/2/2018	2.99	4/3/2028	4/2/2018	114.65465	110.0716621	105.7280621	101.6095741	97.70286334	93.99546808	90.47573712	87.1327725	83.95637642
180713A00031	7/13/2018	3.06	7/14/2025	7/13/2018	104.87421	103.3195165	101.8033279	100.3243724	98.88143304	97.47334236	96.09897998	94.75727023	93.44718008
160908A00025	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437516	101.6201318	98.14854335	94.82172714	91.63281159	88.57528982	85.64299821	82.8300963
170407A00001	4/6/2017	2.97	4/6/2027	4/6/2017	113.0386	108.8298069	104.8159151	100.9866738	97.33242998	93.84409182	90.51309273	87.33135802	84.29127374
181003A00019	10/3/2018	3.44	10/3/2025	10/3/2018	110.75743	107.6632347	104.6746754	101.787516	98.99771554	96.30141987	93.69495144	91.17480021	88.73761483
220308A00012	3/8/2022	2.51	3/8/2032	3/8/2022	120.01827	111.8768649	104.4238278	97.59507441	91.33289565	85.58528584	80.30534788	75.45076325	70.98331968
150320A00019	3/20/2015	2.25	3/20/2025	3/20/2015	105.4482	103.240038	101.0944163	99.00914897	96.98214114	95.01138514	93.09495635	91.23100906	89.4177727
150803A00038	8/3/2015	3.41	8/2/2030	8/3/2015	123.57487	116.3890338	109.7236832	103.5371258	97.79125425	92.45122295	87.48515101	82.8638545	78.56060389
160608A00019	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928444	101.9653891	98.67387224	95.51208708	92.47414869	89.55447534	86.74777082	84.04900798
190826A00032	8/26/2019	1.72	8/24/2029	8/26/2019	107.50287	103.7769316	100.2382378	96.87554345	93.67836897	90.63694076	87.74213873	84.98544811	82.3589151
191008A00007	10/8/2019	1.67	10/9/2029	10/8/2019	107.48161	103.6710727	100.0559403	96.62425995	93.3649049	90.26751066	87.32241767	84.52061847	81.85370915
200319A00035	3/19/2020	1.72	3/18/2033	3/19/2020	112.95831	106.0302335	99.67142265	93.82842093	88.45323755	83.50275032	78.93817858	74.7246162	70.8306177
200910A00006	9/10/2020	0.96	9/10/2027	9/10/2020	105.66405	100.9961364	96.56953663	92.37041789	88.38581755	84.60358067	81.01230542	77.60129236	74.36049752
190227A00033	2/27/2019	2.65	2/27/2026	2/27/2019	105.34092	103.4748437	101.6617489	99.89970199	98.18685084	96.52142446	94.90172899	93.32614372	91.7931174
190403A00010	4/3/2019	3.08	4/3/2029	4/3/2019	119.94019	113.4481232	107.3732958	101.6862749	96.35986814	91.36893906	86.69024038	82.30226229	78.18509356
160524A00028	5/24/2016	2.06	5/24/2023	5/24/2016	101.69849	100.9644079	100.2409637	99.52792987	98.82508256	98.13220411	97.4490831	96.77551406	96.11129726
160908A00035	9/8/2016	2.3	9/8/2031	9/8/2016	111.80006	106.8342765	102.1812007	97.81768271	93.72247806	89.87608063	86.26056803	82.85946168	79.6576001
161229A00018	12/29/2016	2.46	12/29/2026	12/29/2016	106.24827	103.9347369	101.6988628	99.53738877	97.44721614	95.42539851	93.46913298	91.57575221	89.74271685
181129A00005	11/29/2018	3.21	11/29/2023	11/29/2018	104.01967	102.7675922	101.5460102	100.3538131	99.18994595	98.05340403	96.94322963	95.85850939	94.7983718
191112A00024	11/12/2019	2.09	11/12/2024	11/12/2019	104.72979	102.5691791	100.4646512	98.41433907	96.4164523	94.46927505	92.57116206	90.72053516	88.91587988
180716A00062	7/16/2018	2.91	7/16/2025	7/16/2018	104.84474	103.2873715	101.7686395	100.2872725	98.84204718	97.43178984	96.05537433	94.71171954	93.39978727
160824A00019	8/24/2016	1.98	8/25/2031	8/24/2016	110.82507	105.9286568	101.3388806	97.03315626	92.99075387	89.1926316	85.62128592	82.26061634	79.09580289
170713A00021	7/13/2017	3.25	7/13/2037	7/13/2017	137.03811	123.6978267	111.9907062	101.6977629	92.63106187	84.62912564	77.55304731	71.28319504	65.7164152
181115A00044	11/15/2018	3.26	11/15/2023	11/15/2018	103.93932	102.7264874	101.5422465	100.3855919	99.25556181	98.15123905	97.07174815	96.0162531	94.98395514
200317A00043	3/17/2020	1.29	3/15/2030	3/17/2020	106.34939	102.3666758	98.59852723	95.03121333	91.65198715	88.44901265	85.41129322	82.52860631	79.7914436
190708A00032	7/8/2019	2.58	7/2/2029	7/8/2019	117.26178	110.6755329	104.5268584	98.78398744	93.41762747	88.40075391	83.70842353	79.31760396	75.20701792
210217A00005	2/17/2021	0.83	2/14/2031	2/17/2021	104.97629	100.5863959	96.45790769	92.57246247	88.9131373	85.46432762	82.21163518	79.14176627	76.24243912
210212A00006	2/12/2021	0.77	2/12/2026	2/12/2021	103.04967	99.78825548	96.64989779	93.62928341	90.72135761	87.92131055	85.22456401	82.6267589	80.12374358

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160705A00010	7/5/2016	1.68	7/5/2023	7/5/2016	101.58779	100.7414749	99.90932042	99.09097122	98.28608519	97.49433148	96.71538999	95.94895099	95.19471465
190708A00026	7/8/2019	2.21	7/1/2024	7/8/2019	104.16017	102.3493916	100.5793899	98.84901254	97.15714239	95.50270096	93.88464669	92.30197346	90.75370914
210423A00003	4/23/2021	1.31	4/23/2031	4/23/2021	107.28655	102.7153502	98.4210638	94.38391948	90.58572357	87.00972137	83.64047305	80.4637411	77.46638817
151113A00035	11/13/2015	1.8	11/14/2022	11/13/2015	100.44627	100.292068	100.1383962	99.98525219	99.83263315	99.68053614	99.52895827	99.3778967	99.22734858
160307A00024	3/7/2016	2.17	3/6/2026	3/7/2016	104.29695	102.4123049	100.5819869	98.80398435	97.07637739	95.39733116	93.76509127	92.1779797	90.63439092
200501A00009	5/4/2020	0.67	5/1/2025	5/4/2020	101.10569	99.69001023	98.30796125	96.95846665	95.64049138	94.35304188	93.09516399	91.86594113	90.66449243
151223A00036	12/23/2015	2.64	12/23/2025	12/23/2015	106.08687	103.8386563	101.661234	99.55185565	97.50789437	95.52684199	93.6063028	91.74398783	89.93770937
190605A00023	6/5/2019	2.64	6/5/2029	6/5/2019	117.49833	110.9649625	104.8614539	99.15681013	93.82244414	88.83197695	84.16105501	79.78718381	75.68957607
141015A00029	10/15/2014	2.32	10/15/2024	10/15/2014	104.75207	102.8786748	101.0514025	99.26877459	97.52937544	95.83184585	94.17488029	92.55722438	90.97767236
200406A00029	4/6/2020	1.61	4/5/2030	4/6/2020	111.8963	104.9480862	98.50710646	92.53309049	86.98918082	81.84162953	77.05951994	72.61451466	68.48062725
170921A00052	9/21/2017	2.21	9/21/2022	9/21/2017	100.20708	100.1487017	100.0904045	100.0321881	99.97405262	99.91599776	99.85802337	99.80012929	99.74231537
210809A00013	8/9/2021	1.05	8/7/2026	8/9/2021	104.51896	100.9313091	97.49270787	94.19612576	91.03490103	88.00272058	85.09359987	82.30186398	79.62212995
150414A00037	4/14/2015	2.34	4/14/2025	4/14/2015	103.43285	102.025742	100.6514146	99.30883414	97.99700572	96.7149737	95.46181999	94.23666219	93.03865193
180717A00021	7/17/2018	3.34	7/17/2028	7/17/2018	118.06905	112.6921708	107.6195561	102.8319711	98.31150696	94.04148045	90.0063432	86.19159876	82.58372597
150604A00039	6/4/2015	2.82	6/4/2030	6/4/2015	113.091	108.7222695	104.5956107	100.6951146	97.00604944	93.51476215	90.20859169	87.07578999	84.10544979
200406A00032	4/6/2020	1.09	4/4/2025	4/6/2020	103.00327	100.50837	98.08771897	95.73864801	93.45859978	91.24512591	89.09588149	87.00861996	84.98118824
131018A00006	10/18/2013	3.28	10/20/2025	10/18/2013	109.9413	107.0571931	104.2702886	101.5766819	98.9726521	96.45465171	94.01929728	91.66336067	89.38376082
140821A00030	8/21/2014	2.27	8/21/2024	8/21/2014	102.66081	101.5966844	100.5534951	99.53064182	98.52754828	97.54365975	96.57844218	95.63138123	94.70198131
170201A00016	2/1/2017	2.49	2/1/2024	2/1/2017	103.71602	102.3076395	100.9256389	99.56933662	98.23807658	96.93122438	95.64816667	94.38831025	93.15108122
150617A00018	6/17/2015	2.45	6/17/2025	6/17/2015	103.81142	102.3143745	100.8536724	99.42812866	98.03660766	96.67801972	95.35131894	94.05550106	92.78960142
170322A00033	3/22/2017	3.61	3/24/2042	3/22/2017	136.35834	123.7709986	112.7617397	103.1047858	94.60937716	87.1140155	80.48170013	74.59597681	69.35765482
190315A00017	3/15/2019	2.88	3/15/2034	3/15/2019	119.52954	112.8028449	106.6029674	100.8819848	95.59678099	90.70852416	86.18220878	81.98624902	78.09211824
150617A00030	6/17/2015	2.91	6/16/2025	6/17/2015	107.77882	105.1662838	102.6344714	100.1803872	97.80116317	95.49405617	93.25644169	91.08580781	88.97974957
160413A00021	4/13/2016	2.48	4/13/2026	4/13/2016	108.98422	105.5446557	102.2378536	99.05789348	95.99915513	93.05630174	90.22426386	87.4982243	84.87360396
170619A00096	6/16/2017	2.79	6/16/2027	6/16/2017	113.40224	108.8394256	104.4986655	100.3678268	96.43550745	92.69098902	89.12419133	85.72563112	82.48638334
191004A00023	10/4/2019	2.02	10/4/2029	10/4/2019	114.0065	107.3579739	101.1664415	95.39761469	90.01996585	85.00449016	80.32449063	75.9553826	71.87451579
210611A00007	6/11/2021	0.61	6/11/2024	6/11/2021	101.18815	99.47487462	97.79927264	96.16021795	94.55662879	92.98746533	91.45172759	89.94845353	88.47671723
160608A00024	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928446	101.9653892	98.67387221	95.51208692	92.47414843	89.55447498	86.74777036	84.04900743
170317A00044	3/17/2017	3.11	3/17/2027	3/17/2017	113.4663	109.288918	105.3031484	101.4990057	97.86708302	94.39851461	91.08494201	87.91848194	84.89169665
191101A00004	11/1/2019	1.91	11/1/2029	11/1/2019	113.13887	106.9823997	101.2394129	95.87914827	90.87331774	86.19589259	81.82291057	77.73230044	73.90372234
160810A00029	8/10/2016	2.17	8/10/2026	8/10/2016	108.68704	104.9794369	101.4257233	98.01863611	94.75129395	91.61717622	88.610102	85.72421058	82.95394307
180925A00116	9/25/2018	3.28	9/25/2028	9/25/2018	111.70044	108.3217585	105.0935298	102.0076608	99.0565559	96.23308274	93.53054029	90.94263004	88.46342906
190529A00061	5/29/2019	2.46	5/29/2026	5/29/2019	105.09265	103.1069657	101.1806161	99.3113395	97.49697702	95.73546778	94.02484377	92.36322496	90.74881469

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150825A00008	8/25/2015	2.82	8/25/2025	8/25/2015	108.0288	105.2541486	102.5702495	99.97359402	97.46082827	95.02874741	92.67428826	90.39452215	88.18664817
180206A00048	2/6/2018	2.72	2/6/2023	2/6/2018	101.38281	100.9417992	100.5046385	100.0712766	99.64166426	99.21575277	98.79349438	98.37484215	97.95974992
200330A00047	3/30/2020	1.5	3/30/2035	3/30/2020	110.26085	103.5724703	97.44652498	91.82824739	86.66873176	81.92425813	77.55570185	73.52801417	69.80976522
210913A00014	9/13/2021	1.15	9/13/2028	9/13/2021	104.22149	101.0773747	98.07295907	95.20074084	92.45368187	89.82517203	87.30900023	84.8993276	82.59066271
110701A00011	7/1/2011	3.87	7/1/2026	7/1/2011	108.30694	106.1748105	104.1085033	102.1054406	100.163169	98.27934852	96.45174659	94.67823223	92.95677074
190131A00023	1/31/2019	3.02	1/30/2034	1/31/2019	120.19152	113.5203327	107.3649617	101.6790529	96.42084643	91.55268489	87.04057901	82.85382228	78.96464863
210714A00012	7/14/2021	1.12	7/14/2026	7/14/2021	104.8011	101.1793631	97.70695876	94.37691875	91.18264096	88.11786407	85.17664822	82.35335676	79.64263923
151124A00007	11/24/2015	1.98	11/23/2022	11/24/2015	100.47757	100.3151188	100.1532722	99.99202219	99.83136522	99.67129773	99.51181623	99.35291723	99.19459726
160104A00020	1/4/2016	2.47	1/4/2023	1/4/2016	101.06261	100.7126171	100.3650492	100.0198847	99.67709855	99.33666626	98.99856361	98.66276671	98.329252
191009A00009	10/9/2019	1.8	10/9/2026	10/9/2019	104.2261	102.0468557	99.9383199	97.89761015	95.92198287	94.00882583	92.1556509	90.36008721	88.61987488
151229A00026	12/29/2015	2.28	12/29/2025	12/29/2015	104.41911	102.6543245	100.9378336	99.26791576	97.64292815	96.06129878	94.52152268	93.02215859	91.56182575
160412A00029	4/12/2016	2.48	4/14/2031	4/12/2016	112.1362	107.375456	102.9023732	98.69645639	94.73884473	91.01216583	87.50040781	84.18880307	81.06372275
160923A00009	9/23/2016	2.24	9/23/2031	9/23/2016	111.5011	106.5481091	101.9070737	97.55488838	93.47035651	89.63401638	86.02798677	82.63582724	79.44241169
191112A00022	11/12/2019	2.36	11/13/2029	11/12/2019	116.49565	109.6417571	103.2642036	97.32682805	91.7964176	86.64244996	81.8368612	77.35383472	73.16960935
171204A00024	12/4/2017	2.71	12/4/2024	12/4/2017	106.23871	104.0044457	101.8293282	99.71135602	97.64861609	95.63927583	93.68157881	91.77384091	89.91444666
200309A00081	3/9/2020	1.18	3/8/2030	3/9/2020	108.81184	102.0781359	95.83299456	90.03789235	84.65754761	79.65963354	75.01451586	70.69501506	66.67619082
150803A00033	8/3/2015	3.41	8/2/2030	8/3/2015	123.57487	116.3890339	109.7236832	103.5371258	97.79125425	92.45122293	87.48515098	82.86385446	78.56060384
151125A00037	11/25/2015	2.41	11/25/2025	11/25/2015	104.30484	102.5880652	100.9173044	99.29094936	97.70745791	96.16535347	94.66322184	93.19970798	91.77351315
160328A00038	3/28/2016	2.54	3/30/2026	3/28/2016	108.72863	105.4520675	102.2993492	99.26503682	96.34396258	93.53121579	90.82212835	88.21226132	85.69739217
181010A00025	10/10/2018	3.48	10/10/2030	10/10/2018	116.67599	111.9838499	107.5613898	103.390274	99.45356654	95.73561146	92.22192644	88.89910675	85.75473746
190905A00021	9/5/2019	2.08	9/5/2029	9/5/2019	114.27662	107.6810374	101.5345352	95.80372513	90.45788239	85.46871814	80.81017404	76.45823507	72.39075905
200612A00004	6/12/2020	1.42	6/12/2040	6/12/2020	111.68313	101.9070709	93.27445857	85.63247869	78.85048778	72.81660049	67.43482767	62.62267236	58.30910754
160126A00004	1/26/2016	2.52	1/26/2026	1/26/2016	109.17885	105.842697	102.6300342	99.5356124	96.55443309	93.68173645	90.91298859	88.24386958	85.6702622
181119A00008	11/19/2018	3.23	11/17/2023	11/19/2018	103.86169	102.6712249	101.5087741	100.3733499	99.26401003	98.17985569	97.12002909	96.08371114	95.07011929
190708A00029	7/8/2019	2.57	7/2/2029	7/8/2019	117.19625	110.612938	104.4670185	98.72673951	93.36281936	88.34824377	83.658079	79.26930143	75.16064193
160713A00015	7/13/2016	1.57	7/13/2026	7/13/2016	103.74451	101.6967682	99.71239972	97.78891632	95.9239504	94.11524407	92.36064328	90.6580923	89.00562852
220211A00010	2/11/2022	1.99	2/11/2025	2/11/2022	103.86021	102.0155718	100.2192894	98.46976197	96.76545161	95.10488155	93.48663334	91.9093441	90.371704
180322A00044	3/22/2018	3.18	3/22/2033	3/22/2018	119.77003	113.5876981	107.8522245	102.5259381	97.57468136	92.96745541	88.67610404	84.67503191	80.94095242
200605A00018	6/5/2020	0.91	6/5/2025	6/5/2020	102.71406	100.0714489	97.51146704	95.03099813	92.62706445	90.29682174	88.03755207	85.84665721	83.72165238
210512A00011	5/12/2021	1.16	5/12/2026	5/12/2021	104.68338	101.211917	97.87815099	94.6757937	91.59888676	88.64177961	85.79911158	83.06579498	80.43699942
171204A00009	12/4/2017	2.23	12/4/2024	12/4/2017	102.93602	101.7417253	100.5725146	99.42763977	98.30638258	97.2080524	96.13198507	95.0775416	94.04410698
181226A00030	12/26/2018	2.91	12/26/2028	12/26/2018	110.89947	107.4113409	104.0839865	100.9084841	97.8764753	94.98012597	92.21208947	89.56547316	87.03380716
200103A00002	1/3/2020	2.07	1/3/2030	1/3/2020	114.39852	108.0603338	102.1560257	96.65276544	91.52039787	86.73120878	82.25971483	78.08247245	74.17790394

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
170707A00007	7/7/2017	2.65	7/8/2024	7/7/2017	105.00778	103.173043	101.3799652	99.62735618	97.91406458	96.23897918	94.60102719	92.99917272	91.43241521
180925A00013	9/25/2018	3.41	9/25/2028	9/25/2018	111.65226	108.284383	105.0661546	101.9895454	99.04701406	96.23147777	93.53628154	90.95516935	88.4822575
190829A00039	8/29/2019	1.85	8/29/2034	8/29/2019	113.17425	106.5852267	100.5288163	94.95509012	89.81927241	85.08116604	80.70464886	76.65722886	72.90965101
191206A00005	12/6/2019	2.18	12/7/2026	12/6/2019	109.85039	105.7038871	101.7429225	97.95811213	94.34060304	90.88203965	87.57453264	84.41063001	81.38329017
200430A00027	4/30/2020	1.31	4/30/2035	4/30/2020	109.00253	102.3486996	96.25769843	90.67441788	85.54967334	80.83952366	76.50467088	72.50993283	68.82377918
200512A00013	5/12/2020	1.17	5/12/2027	5/12/2020	106.30095	101.8888726	97.69165107	93.6975814	89.8956635	86.27555649	82.8275352	79.54244979	76.41168835
200716A00004	7/16/2020	0.97	7/16/2027	7/16/2020	105.55716	101.0205235	96.71210872	92.61919736	88.72984058	85.03281308	81.51756563	78.17418094	74.99333268
181218A00040	12/18/2018	3.23	6/18/2030	12/18/2018	114.24937	109.8495188	105.6929425	101.7636861	98.04696923	94.52909176	91.19734728	88.03994408	85.04593294
190905A00025	9/5/2019	2.08	9/5/2029	9/5/2019	114.27662	107.6810356	101.5345348	95.80372605	90.45788448	85.46872132	80.81017821	76.45824016	72.39076498
200327A00084	3/27/2020	1.1	3/27/2025	3/27/2020	102.92246	100.5139608	98.17617634	95.90659153	93.70279447	91.56247498	89.48341954	87.46350652	85.50070175
220801A00066	8/1/2022	2.93	7/30/2027	8/1/2022	115.47677	110.6121626	105.991863	101.6022092	97.43037144	93.46430149	89.6926807	86.10487218	82.69087622
150729A00028	7/29/2015	2.25	7/29/2025	7/29/2015	103.81648	102.273276	100.768403	99.30059345	97.86863219	96.47135378	95.10763984	93.77641684	92.47665388
150911A00007	9/10/2015	2.51	9/9/2022	9/10/2015	100.09625	100.071231	100.0462387	100.0212728	99.99633324	99.97142003	99.9465331	99.92167241	99.89683792
180305A00030	3/5/2018	3.12	3/5/2025	3/5/2018	107.94255	105.4437651	103.0174356	100.6610213	98.37209111	96.14831419	93.98745501	91.88736894	89.84599789
200413A00009	4/13/2020	0.77	4/13/2027	4/13/2020	102.56832	100.1690995	97.8553886	95.62341394	93.46959347	91.39052859	89.38299356	87.44392544	85.5704148
160523A00086	5/23/2016	2.2	5/26/2026	5/23/2016	108.41459	105.0125173	101.7436733	98.60198073	95.58168404	92.67732636	89.8837318	87.19598902	84.60943586
170921A00055	9/21/2017	2.82	9/21/2027	9/21/2017	114.22797	109.4163865	104.8499411	100.514656	96.3974333	92.4859899	88.76880285	85.23505784	81.8746019
180104A00041	1/4/2018	3.08	1/4/2033	1/4/2018	129.33362	119.3303686	110.2573756	102.0205166	94.53576008	87.72803036	81.53020605	75.88223594	70.73035711
160210A00054	2/10/2016	1.78	2/10/2026	2/10/2016	103.71013	101.8740844	100.0901174	98.35632405	96.67088639	95.03206612	93.43820049	91.88769841	90.37903692
151013A00033	10/13/2015	2.23	10/14/2025	10/13/2015	103.88662	102.219773	100.5967319	99.01599009	97.47610206	95.9756831	94.51340608	93.08799866	91.69824056
160603A00029	6/3/2016	2.18	6/3/2031	6/3/2016	111.60293	106.7609756	102.2172146	97.9500246	93.93953521	90.1674703	86.61700881	83.27265849	80.12014141
190813A00057	8/13/2019	1.9	8/13/2024	8/13/2019	103.81273	101.8981855	100.0292128	98.20444222	96.42255635	94.68228596	92.98240801	91.32174361	89.69915612
191203A00010	12/3/2019	2.21	12/3/2029	12/3/2019	115.56964	108.7131974	102.3367148	96.40351842	90.8799387	85.73505096	80.9404368	76.46996767	72.29960823
200406A00014	4/6/2020	1.33	4/6/2035	4/6/2020	110.1188	103.3689115	97.19149573	91.53037742	86.3354362	81.56190457	77.16975415	73.12315647	69.3900088
160115A00011	1/15/2016	2.18	1/15/2026	1/15/2016	104.1093	102.3119386	100.5645502	98.86533662	97.21257971	95.60463555	94.03993084	92.51695932	91.03427836
170124A00017	1/24/2017	2.82	1/23/2032	1/24/2017	115.70924	110.3700915	105.3789137	100.7090984	96.33630269	92.23823626	88.39447395	84.786286	81.39648499
151201A00004	12/1/2015	2.44	12/1/2022	12/1/2015	100.81651	100.5607525	100.306294	100.0531207	99.80122292	99.55059116	99.30121588	99.05308769	98.80619728
160608A00034	6/8/2016	2.44	6/9/2031	6/8/2016	112.16795	107.3178689	102.7657859	98.49013427	94.47109304	90.6904285	87.131356	83.77841436	80.61735208
190131A00013	1/31/2019	3.48	1/31/2034	1/31/2019	133.86952	122.7413687	112.7320423	103.7191277	95.59437846	88.2620006	81.63715362	75.64463879	70.21775105
200406A00035	4/6/2020	1.05	4/4/2025	4/6/2020	102.73823	100.3852593	98.10118928	95.88356166	93.73001993	91.6383076	89.60626317	87.63181547	85.71297915
160203A00017	2/3/2016	2.07	2/3/2023	2/3/2016	101.08169	100.6494001	100.2208067	99.79586749	99.37453576	98.95676572	98.54251233	98.13173129	97.72437906
161116A00006	11/16/2016	2.39	11/16/2026	11/16/2016	105.65759	103.4053594	101.2273901	99.12061174	97.08210419	95.10908881	93.1989206	91.34908086	89.55717024
171219A00009	12/19/2017	2.3	12/19/2024	12/19/2017	103.12594	101.8885174	100.6776122	99.49242426	98.33218643	97.19616136	96.08363999	94.99394027	93.92640583

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180717A00026	7/17/2018	3.24	7/16/2025	7/17/2018	109.08597	106.3225035	103.647051	101.0563131	98.54713126	96.11648256	93.76147319	91.4793322	89.26740557
200110A00037	1/10/2020	2.32	1/10/2030	1/10/2020	116.51239	109.5276404	103.03749	97.0037872	91.39152826	86.1685791	81.30542607	76.77494937	72.55221719
161014A00026	10/14/2016	2.16	10/14/2031	10/14/2016	111.92529	106.8925353	102.1800605	97.76392364	93.62217181	89.7346648	86.0829126	82.64992824	79.42009482
170804A00005	8/4/2017	1.94	8/5/2024	8/4/2017	102.30305	101.2444515	100.2066285	99.18898958	98.19096399	97.21200247	96.25157616	95.30917562	94.38430999
191004A00019	10/4/2019	2.02	10/4/2029	10/4/2019	114.0065	107.3579744	101.1664416	95.39761436	90.01996517	85.00448916	80.32448934	75.95538106	71.87451401
170309A00042	3/9/2017	2.18	3/11/2024	3/9/2017	102.06122	101.2135307	100.3809682	99.56311391	98.75956558	97.96993617	97.19385301	96.43095709	95.68090247
200512A00021	5/12/2020	0.86	5/12/2025	5/12/2020	102.5182	99.93801534	97.43698745	95.01216599	92.66073552	90.38000565	88.1674044	86.02047207	83.93685536
121114A00020	11/14/2012	1.74	11/14/2022	11/14/2012	100.56187	100.3541016	100.14721	99.94118682	99.73602649	99.53172352	99.32827247	99.12566794	98.92390459
140730A00037	7/30/2014	2.83	1/30/2024	7/30/2014	102.37907	101.609564	100.8534209	100.1102667	99.37974514	98.66151376	97.95524286	97.26061507	96.57732469
141017A00022	10/17/2014	2.78	10/17/2024	10/17/2014	105.75649	103.7439415	101.7817617	99.86832865	98.0020851	96.18153609	94.40524597	92.67183557	90.97997941
170619A00095	6/16/2017	2.79	6/16/2027	6/16/2017	113.40225	108.8394288	104.4986672	100.3678271	96.43550647	92.69098683	89.12418802	85.72562677	82.48637801
191004A00022	10/4/2019	2.02	10/4/2029	10/4/2019	114.0065	107.3579768	101.1664418	95.39761268	90.01996173	85.00448412	80.32448286	75.95537328	71.87450507
210611A00012	6/11/2021	1.02	6/11/2026	6/11/2021	104.30323	100.7718138	97.38307747	94.13043173	91.00762875	88.00874505	85.12816259	82.36055108	79.70085141
170406A00024	4/6/2017	2.61	4/8/2024	4/6/2017	104.19538	102.6192212	101.0751984	99.56238601	98.07989785	96.62688129	95.20251546	93.80600982	92.43660272
200323A00090	3/23/2020	1.55	3/23/2027	3/23/2020	104.42972	101.8477137	99.36163102	96.96709754	94.65997011	92.43632316	90.29243575	88.22477953	86.23000747
170524A00037	5/24/2017	2.46	5/24/2024	5/24/2017	104.22688	102.5571631	100.9231947	99.32388155	97.7581771	96.22507747	94.7236191	93.25287672	91.81196141
200303A00028	3/3/2020	1.54	3/4/2030	3/3/2020	110.33261	104.0964362	98.29554455	92.89636377	87.86810654	83.18252606	78.81369288	74.73779247	70.9329415
160414A00042	4/13/2016	2.48	4/13/2026	4/13/2016	108.98422	105.5446557	102.2378536	99.05789348	95.99915512	93.05630172	90.22426384	87.49822428	84.87360393
190802A00011	8/2/2019	2.01	8/2/2029	8/2/2019	108.60007	104.8370316	101.2630278	97.86671412	94.63751547	91.56556883	88.64167023	85.85722626	83.20420932
160629A00066	6/29/2016	2.61	6/30/2036	6/29/2016	127.91514	116.0790742	105.6133656	96.34442295	88.12191392	80.81551436	74.31212697	68.51350089	63.33419255
200206A00027	2/6/2020	2.15	2/6/2030	2/6/2020	115.45336	108.4591057	101.9649378	95.93191529	90.3243413	85.10947299	80.25726248	75.74012161	71.53270845
140703A00026	7/3/2014	3.11	7/3/2024	7/3/2014	105.5914	103.8309939	102.1099768	100.4272283	98.78166732	97.17225028	95.59796956	94.05785207	92.55095784
160608A00023	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928445	101.9653891	98.67387223	95.51208704	92.47414863	89.55447526	86.74777072	84.04900786
170224A00009	2/24/2017	2.39	2/24/2023	2/24/2017	101.34829	100.8585496	100.3735523	99.89323404	99.4175273	98.9463658	98.47968452	98.01741971	97.5595088
180913A00033	9/13/2018	3.31	9/13/2033	9/13/2018	121.49608	114.9415856	108.8806431	103.2700042	98.07060194	93.24711678	88.76758879	84.60307261	80.72733014
150729A00041	7/29/2015	2.44	7/29/2025	7/29/2015	103.9094	102.3677494	100.8643275	99.39787023	97.96716771	96.57105932	95.20843127	93.87821434	92.57938172
180907A00013	9/7/2018	3.27	9/8/2025	9/7/2018	109.85824	106.8860188	104.0132874	101.2361296	98.55080923	95.95375872	93.44157068	91.01098958	88.65890403
160908A00016	9/8/2016	1.87	9/8/2023	9/8/2016	102.01123	100.9941525	99.99753759	99.02076995	98.06325912	97.12443786	96.20376106	95.30070465	94.41476461
190620A00033	6/20/2019	2.1	6/20/2029	6/20/2019	108.73416	105.0527616	101.552521	98.22277182	95.05355481	92.03556999	89.16012856	86.41910849	83.80491362
200309A00082	3/9/2020	1.18	3/8/2030	3/9/2020	108.81184	102.0781357	95.83299492	90.03789319	84.65754888	79.65963519	75.01451785	70.69501737	66.67619341
200309A00084	3/9/2020	1.06	3/9/2027	3/9/2020	105.52881	101.2912724	97.25396137	93.40629644	89.73831662	86.24063798	82.90441705	79.72131672	76.68347455
210212A00007	2/12/2021	0.76	2/12/2026	2/12/2021	102.97371	99.75665039	96.66047295	93.67997004	90.81018553	88.04640313	85.38413343	82.81910168	80.34723632
210512A00012	5/12/2021	1.16	5/12/2026	5/12/2021	104.68338	101.2119169	97.87815116	94.67579416	91.5988875	88.64178062	85.79911283	83.06579647	80.43700113

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160908A00023	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437513	101.6201317	98.1485434	94.82172732	91.63281189	88.57529022	85.64299871	82.8300969
190403A00014	4/3/2019	3.05	4/3/2029	4/3/2019	119.13041	112.8562167	106.9808638	101.4763886	96.31694469	91.47863236	86.93934102	82.67860597	78.67747719
190712A00016	7/12/2019	2.39	7/12/2029	7/12/2019	109.39167	105.6557442	102.1051664	98.72893871	95.5168013	92.45917781	89.54712526	86.77228778	84.12685405
200512A00001	5/12/2020	1.17	5/12/2027	5/12/2020	106.30095	101.8888726	97.69165104	93.69758128	89.89566328	86.27555619	82.82753482	79.54244935	76.41168783
201110A00003	11/10/2020	1.12	11/10/2027	11/10/2020	106.61606	101.7745151	97.18984008	92.84691694	88.73160713	84.8306785	81.13174187	77.62319249	74.29415596
120806A00015	8/6/2012	2.38	8/6/2027	8/6/2012	106.69069	104.0298152	101.4691067	99.00392527	96.62988263	94.34282438	92.13881604	90.01412987	87.96523263
160606A00018	6/6/2016	1.74	6/5/2026	6/6/2016	104.00318	101.9931057	100.0441733	98.15401396	96.32037178	94.54109457	92.81412834	91.13751208	89.50937287
191113A00013	11/13/2019	2.17	11/13/2026	11/13/2019	109.64282	105.5613038	101.6600606	97.93006333	94.36279567	90.95021611	87.68472851	84.55915457	81.56670823
150603A00032	6/3/2015	2.21	6/3/2025	6/3/2015	103.64243	102.1461904	100.686294	99.26155494	97.87083536	96.51304384	95.18713295	93.89209713	92.62697066
160511A00016	5/11/2016	2.48	5/12/2031	5/11/2016	112.2497	107.4401127	102.923585	98.67907436	94.68722662	90.93022653	87.39166429	84.05641469	80.91052737
190910A00044	9/10/2019	2.02	9/10/2026	9/10/2019	108.60831	104.7114627	100.9811192	97.40922509	93.98816396	90.71072774	87.57009268	84.55979662	81.67371778
151102A00024	11/2/2015	2.37	11/2/2022	11/2/2015	100.58216	100.4070134	100.2324806	100.0585544	99.88523168	99.7125094	99.54038443	99.36885369	99.19791412
160211A00038	2/11/2016	1.83	2/11/2026	2/11/2016	103.56116	101.7313749	99.95340386	98.22535397	96.54541924	94.91187268	93.32306221	91.77740688	90.27339326
200318A00012	3/18/2020	1.68	3/18/2033	3/18/2020	112.67983	105.7692865	99.42659027	93.5984198	88.23690213	83.29902106	78.74609133	74.5432928	70.65925756
220310A00008	3/10/2022	2.22	3/10/2025	3/10/2022	105.71501	103.2468146	100.8505149	98.5235798	96.26358608	94.06821099	91.93522737	89.86249909	87.84797663
160908A00030	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437513	101.6201317	98.1485434	94.82172732	91.63281188	88.57529021	85.64299869	82.83009688
160908A00028	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437515	101.6201318	98.14854335	94.82172717	91.63281163	88.57528987	85.64299827	82.83009638
200221A00012	2/21/2020	2.14	2/21/2040	2/21/2020	118.57363	108.4850659	99.55766758	91.63852182	84.59658837	78.31937956	72.7101677	67.68563342	63.17388278
210331A00007	3/31/2021	1.25	3/31/2031	3/31/2021	106.2941	101.8217977	97.61751381	93.66230009	89.93870663	86.43065095	83.12330114	80.0029697	77.05701717
210915A00025	9/15/2021	1.09	9/15/2026	9/15/2021	104.81533	101.1334297	97.60795344	94.23134481	90.99645937	87.89653612	84.92517464	82.07631377	79.34421174
190905A00024	9/5/2019	2.08	9/5/2029	9/5/2019	114.27661	107.6810346	101.5345347	95.8037267	90.45788588	85.46872339	80.81018089	76.45824339	72.3907687
130206A00009	2/6/2013	2.83	2/7/2028	2/6/2013	112.96775	108.5633518	104.3835638	100.4153072	96.64634665	93.06522794	89.66122396	86.42428441	83.34498941
160401A00005	4/1/2016	2.02	4/3/2023	4/1/2016	101.38249	100.7881789	100.2008496	99.62038177	99.04665559	98.47955393	97.91896241	97.36476928	96.8168653
170106A00030	1/6/2017	2.39	1/6/2027	1/6/2017	106.20773	103.8532858	101.5790268	99.38155221	97.25762651	95.20417437	93.21827162	91.29713681	89.43812321
200206A00008	2/6/2020	1.64	2/6/2025	2/6/2020	104.33664	102.0178788	99.76437386	97.57390772	95.44435087	93.37365896	91.35986882	89.40109467	87.49552459
200406A00027	4/6/2020	1.31	4/5/2030	4/6/2020	109.86129	103.5658521	97.71501539	92.2741077	87.21136485	82.49767272	78.10633169	74.01284336	70.19471721
150714A00003	7/14/2015	3.76	7/12/2030	7/14/2015	117.45893	112.866076	108.5303267	104.4346335	100.5632161	96.90145903	93.43581767	90.15373204	87.04354847
170619A00089	6/16/2017	2.79	6/16/2027	6/16/2017	113.40224	108.8394278	104.4986667	100.367827	96.43550677	92.69098751	89.12418905	85.72562812	82.48637967
200206A00038	2/6/2020	1.78	2/6/2023	2/6/2020	100.97082	100.5302332	100.0934979	99.66056268	99.23137801	98.80589526	98.38406662	97.96584509	97.55118449
151001A00023	10/1/2015	2.02	10/1/2025	10/1/2015	103.74976	102.082806	100.4597019	98.87893873	97.33906872	95.83870495	94.37651825	92.95123429	91.56163099
170105A00012	1/5/2017	2.68	1/5/2024	1/5/2017	103.62061	102.285059	100.9733475	99.68489014	98.41911984	97.17548742	95.95346101	94.75252538	93.5721813
201221A00022	12/21/2020	0.51	12/19/2025	12/21/2020	102.37262	99.35335731	96.44263232	93.6359128	90.92888456	88.31743829	85.79765844	83.36581292	81.01834333
150929A00076	9/29/2015	2.28	9/29/2025	9/29/2015	103.86893	102.243383	100.6597812	99.11670363	97.61278456	96.14671482	94.71723922	93.32315379	91.96330335

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
151029A00008	10/29/2015	2.28	10/29/2025	10/29/2015	103.97398	102.3046291	100.6791893	99.0961497	97.55405992	96.05153031	94.58722917	93.15987987	91.76825809
200110A00043	1/10/2020	2.32	1/10/2030	1/10/2020	116.51238	109.5276392	103.0374897	97.00378765	91.3915294	86.16858087	81.30542839	76.77495219	72.55222045
200414A00009	4/14/2020	0.82	4/14/2025	4/14/2020	101.28413	99.90613167	98.56023726	97.24543433	95.9607484	94.70524359	93.47802073	92.27821563	91.10499743
210714A00016	7/14/2021	0.75	7/12/2024	7/14/2021	101.50478	99.72722766	97.99022294	96.29259682	94.63322318	93.01101541	91.42492468	89.87393847	88.357079
210809A00015	8/9/2021	1.06	8/7/2026	8/9/2021	104.6707	100.9973992	97.47786301	94.10480764	90.87133611	87.77091319	84.79734448	81.94475678	79.20757971
170802A00013	8/2/2017	2.5	8/2/2024	8/2/2017	104.89055	102.994199	101.1423016	99.33354525	97.56666283	95.84043304	94.15367827	92.50526278	90.89409089
160329A00017	3/29/2016	2.48	3/30/2026	3/29/2016	108.53071	105.2589854	102.110941	99.08114154	96.16442609	93.35589026	90.65087204	88.04493826	85.53387191
170901A00030	9/1/2017	1.82	9/1/2022	9/1/2017	100.00903	100.0062489	100.003471	100.0006955	99.9979223	99.99515144	99.99238292	99.98961673	99.98685287
171207A00026	12/7/2017	2.93	12/7/2027	12/7/2017	115.75421	110.581583	105.6838453	101.0447362	96.64905396	92.48257641	88.53199253	84.78483867	81.22943985
200311A00015	3/11/2020	1.26	3/11/2027	3/11/2020	106.40554	102.1360011	98.06825276	94.1916326	90.4960959	86.97218027	83.61096877	80.40405539	77.3435131
161102A00014	11/2/2016	1.99	11/2/2023	11/2/2016	102.38293	101.212313	100.0686431	98.95099442	97.85848417	96.79026923	95.74554381	94.72353747	93.72351316
170309A00014	3/9/2017	2.58	3/9/2027	3/9/2017	106.93151	104.4742238	102.1032238	99.81474492	97.60521745	95.47125243	93.40963128	91.41729602	89.49134014
190506A00026	5/6/2019	3.03	5/4/2029	5/6/2019	119.83089	113.26938	107.1341837	101.394903	96.02348077	90.99400432	86.28252994	81.86692278	77.72671051
190913A00018	9/13/2019	2.11	9/11/2026	9/13/2019	104.8076	102.6585417	100.5781062	98.56353428	96.61219761	94.72159205	92.8893311	91.11313948	89.39084715
170727A00003	7/27/2017	1.97	7/29/2024	7/27/2017	102.24897	101.2299737	100.2306165	99.25033992	98.28860721	97.34490183	96.41872649	95.50960225	94.61706765
160210A00051	2/10/2016	2.28	2/10/2031	2/10/2016	111.64634	106.9788031	102.5891558	98.4578803	94.56698906	90.89989551	87.44129518	84.17705748	81.09412732
200109A00008	1/9/2020	1.95	1/9/2030	1/9/2020	108.85754	104.868175	101.0895724	97.50848426	94.1125989	90.8904697	87.83144839	84.92562381	82.16376577
200220A00026	2/20/2020	2.22	2/21/2040	2/20/2020	119.3816	109.2217002	100.2311674	92.25600453	85.16424745	78.84261527	73.19369806	68.13358875	63.5898862
200724A00011	7/24/2020	1.41	7/26/2038	7/24/2020	114.80093	102.5141925	91.85322961	82.58439891	74.50937412	67.45959987	61.29164615	55.88331119	51.13034902
160908A00019	9/8/2016	1.87	9/8/2023	9/8/2016	102.01123	100.9941525	99.99753759	99.02076995	98.06325911	97.12443784	96.20376104	95.30070462	94.41476458
181116A00006	11/16/2018	3.18	11/17/2025	11/16/2018	105.64444	103.9063071	102.2147397	100.5681074	98.96485059	97.40347617	95.88255386	94.40071328	92.95664087
160812A00006	8/12/2016	2.16	8/12/2026	8/12/2016	108.77396	105.1924681	101.7580123	98.46367672	95.30291309	92.26951613	89.35760347	86.56159707	83.87620584
210408A00007	4/8/2021	1.05	4/8/2031	4/8/2021	106.07807	101.5585637	97.31280473	93.32124975	89.56591648	86.03024446	82.69897255	79.55802773	76.5944242
220310A00010	3/10/2022	2.31	3/10/2027	3/10/2022	110.89235	106.5299273	102.3722167	98.40843658	94.62843502	91.0226472	87.58205821	84.29816833	81.16296086
150929A00087	9/29/2015	2.09	9/29/2025	9/29/2015	103.7708	102.1436341	100.5585305	99.0140593	97.50884882	96.04158441	94.6110057	93.21590385	91.85511908
170313A00045	3/13/2017	3.22	3/15/2032	3/13/2017	117.35688	111.8695349	106.7444892	101.9536955	97.47151919	93.27451325	89.34121531	85.65196538	82.1887414
160802A00026	8/2/2016	1.84	8/2/2023	8/2/2016	101.84502	100.9221859	100.0161477	99.12645293	98.25266143	97.39434889	96.55110593	95.72253751	94.90826229
170317A00040	3/17/2017	2.74	3/18/2024	3/17/2017	104.26938	102.7347626	101.2308139	99.75668207	98.31154601	96.89461446	95.50512454	94.14234058	92.80555282
190205A00021	2/5/2019	3.32	2/5/2029	2/5/2019	120.39324	114.1981715	108.38852	102.9378239	97.82158577	93.01711376	88.50337956	84.26088774	80.2715563
180206A00046	2/6/2018	2.72	2/6/2023	2/6/2018	101.38281	100.9417992	100.5046384	100.0712766	99.64166427	99.21575279	98.79349441	98.37484218	97.95974996
210809A00016	8/9/2021	0.66	8/9/2024	8/9/2021	101.23686	99.59793397	97.99666954	96.43195255	94.90270686	93.4078957	91.94651994	90.51761641	89.12025639
150701A00056	7/1/2015	2.34	7/1/2025	7/1/2015	103.95076	102.4078197	100.903112	99.43538118	98.00341816	96.60606307	95.24220281	93.91076877	92.6107347
190813A00064	8/13/2019	1.9	8/13/2024	8/13/2019	103.81273	101.8981855	100.0292128	98.20444232	96.42255653	94.68228623	92.98240836	91.32174405	89.69915663

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
201029A00004	10/29/2020	1.49	10/29/2038	10/29/2020	115.77616	103.2682842	92.43455374	83.03143224	74.85265289	67.72329622	61.49483657	56.0409972	51.25427801
210714A00009	7/14/2021	0.75	7/12/2024	7/14/2021	101.51956	99.72376195	97.96901011	96.25412369	94.57796242	92.93942595	91.33745223	89.77101588	88.23912674
190329A00067	3/29/2019	2.61	3/29/2024	3/29/2019	104.01111	102.503762	101.0266979	99.57906465	98.16003957	96.76883036	95.40467378	94.06683429	92.75460276
160201A00016	2/1/2016	2.1	2/2/2026	2/1/2016	104.06159	102.2236712	100.4377592	98.70196173	97.01446726	95.37354326	93.77753237	92.22484849	90.71397323
160908A00024	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437514	101.6201317	98.14854338	94.82172726	91.6328118	88.5752901	85.64299856	82.83009672
181218A00089	12/18/2018	3.05	6/19/2023	12/18/2018	102.58623	101.7902496	101.006819	100.235644	99.47643701	98.72891942	97.99282123	97.26788069	96.55384404
200522A00009	5/22/2020	0.96	5/22/2030	5/22/2020	104.62736	100.5469819	96.69522683	93.05688402	89.61787752	86.36517664	83.28671075	80.37129153	77.60854204
200512A00018	5/12/2020	0.85	5/12/2025	5/12/2020	102.42226	99.9142595	97.48259561	95.12443491	92.83707216	90.61792197	88.46451251	86.37447957	84.345561
150219A00016	2/19/2015	2.68	2/19/2025	2/19/2015	106.42125	104.064353	101.7738984	99.54761136	97.38330659	95.27888702	93.23233974	91.24173208	89.30520786
161229A00019	12/29/2016	2.46	12/29/2026	12/29/2016	106.24827	103.9347368	101.6988628	99.53738879	97.44721625	95.42539871	93.46913326	91.57575257	89.74271729
190205A00022	2/5/2019	3.32	2/5/2029	2/5/2019	120.39324	114.1981737	108.3885213	102.9378244	97.82158546	93.01711276	88.50337791	84.2608855	80.27155352
110719A00017	7/19/2011	3.68	7/20/2026	7/19/2011	107.90748	105.7819775	103.7221454	101.7254171	99.78934186	97.91158252	96.08990911	94.32219332	92.60640317
160908A00032	9/8/2016	2.17	9/8/2026	9/8/2016	108.49674	104.8737502	101.4015837	98.07305052	94.88134167	91.82001032	88.88295031	86.06437615	83.35880442
200512A00020	5/12/2020	0.86	5/12/2025	5/12/2020	102.5182	99.93801533	97.43698698	95.01216508	92.66073419	90.38000391	88.16740228	86.02046957	83.9368525
201103A00005	11/3/2020	0.89	11/4/2030	11/3/2020	104.49308	100.261612	96.27498336	92.51644857	88.97054134	85.62297073	82.46052358	79.47097566	76.64301063
190104A00034	1/4/2019	3.18	1/4/2029	1/4/2019	116.41744	111.2814852	106.441683	101.8786701	97.57446922	93.51238093	89.67688612	86.05355588	82.62896902
191112A00023	11/12/2019	2.36	11/13/2029	11/12/2019	116.49565	109.6417589	103.2642041	97.32682749	91.79641603	86.64244746	81.83685788	77.35383065	73.1696046
160106A00042	1/6/2016	2.43	1/6/2026	1/6/2016	104.56312	102.7585781	101.004179	99.29812146	97.6386825	96.02421357	94.45313688	92.92394181	91.43518153
180906A00032	9/6/2018	3.24	9/5/2025	9/6/2018	109.87686	106.8731339	103.9701607	101.1639767	98.45079896	95.82701531	93.28917532	90.83398216	88.45828476
191008A00014	10/8/2019	1.85	10/8/2026	10/8/2019	108.11293	104.1614808	100.3814229	96.76434355	93.30229001	89.98774344	86.81359251	83.77310898	80.8599247
110909A00006	9/9/2011	2.26	9/9/2026	9/9/2011	105.13412	102.9785107	100.891732	98.8710121	96.913715	95.0173295	93.17946223	91.39783137	89.67026062
150824A00050	8/24/2015	2.03	8/25/2025	8/24/2015	103.57186	101.9903855	100.4489775	98.9462967	97.48105543	96.05201906	94.65800331	93.2978718	91.97053372
200115A00013	1/15/2020	2.18	1/15/2030	1/15/2020	112.72874	107.0980578	101.8345291	96.91114372	92.30305018	87.98737247	83.94304218	80.15064539	76.59228351
141203A00039	12/3/2014	3.6	12/4/2034	12/3/2014	124.77971	117.3243051	110.4878613	104.210856	98.44005816	93.12781244	88.23141218	83.71254675	79.53681441
160301A00012	3/1/2016	2.02	3/1/2023	3/1/2016	101.19541	100.69172	100.1930478	99.69931956	99.21046212	98.72640361	98.24707362	97.77240308	97.30232429
161214A00034	12/14/2016	2.65	12/14/2026	12/14/2016	106.38185	104.0713629	101.8382444	99.67925573	97.59131606	95.57149544	93.61700648	91.72519638	89.89353943
210512A00008	5/12/2021	0.66	5/10/2024	5/12/2021	101.17913	99.54638284	97.94820622	96.38355801	94.85144192	93.35090135	91.88101739	90.44090693	89.02972088
120517A00021	5/17/2012	1.85	5/17/2024	5/17/2012	101.94964	101.0185357	100.1046373	99.20746414	98.32654947	97.46144439	96.61171692	95.77695124	94.95674683
180322A00040	3/22/2018	3.16	3/21/2031	3/22/2018	118.94196	113.0477993	107.5548586	102.4316423	97.64936954	93.18172424	89.00462819	85.09603585	81.43574942
210714A00011	7/14/2021	0.75	7/12/2024	7/14/2021	101.51956	99.72376196	97.96901013	96.25412372	94.57796246	92.939426	91.33745229	89.77101596	88.23912682
160908A00027	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437517	101.6201318	98.14854332	94.82172704	91.63281142	88.57528959	85.64299791	82.83009594
190605A00024	6/5/2019	2.64	6/5/2029	6/5/2019	117.49833	110.9649604	104.861453	99.15681026	93.82244526	88.83197899	84.16105789	79.78718747	75.68958044
150227A00011	2/27/2015	2.33	2/27/2025	2/27/2015	105.5119	103.3461186	101.2407719	99.19378209	97.20315738	95.26698713	93.38343816	91.55075097	89.76723633

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190308A00016	3/8/2019	3.18	3/8/2034	3/8/2019	130.84497	120.3385709	110.8738272	102.3373028	94.62868839	87.65921091	81.35024077	75.63207436	70.44286899
190813A00052	8/13/2019	2.24	8/13/2029	8/13/2019	115.23088	108.6434286	102.5006749	96.76983409	91.42071064	86.42548333	81.75850657	77.39612943	73.31653058
220104A00006	1/4/2022	1.76	1/4/2029	1/4/2022	111.57012	105.8906815	100.5607468	95.55657974	90.85618665	86.43917731	82.28664017	78.3810276	74.70605074
190515A00035	5/15/2019	2.82	2/15/2029	5/15/2019	118.00694	111.7034519	105.7990151	100.2659186	95.07852487	90.21310301	85.64767728	81.36188849	77.33686692
200330A00058	3/30/2020	1.49	3/29/2030	3/30/2020	110.07205	103.808912	97.98592374	92.56890303	87.52652734	82.83007662	78.45320299	74.37172203	70.56342354
210107A00008	1/7/2021	0.54	1/5/2024	1/7/2021	100.74324	99.43721182	98.15450253	96.89453993	95.65676974	94.44065527	93.24567668	92.07133037	90.91712833
191209A00005	12/9/2019	2.22	12/10/2029	12/9/2019	114.33043	108.0667834	102.2277053	96.78132308	91.69834454	86.95183697	82.51702404	78.37110136	74.49306876
180104A00024	1/4/2018	2.98	1/4/2028	1/4/2018	115.74109	110.6382885	105.8073141	101.2320678	96.89748634	92.78947334	88.89483226	85.20120445	81.69701174
200309A00034	3/9/2020	0.96	3/9/2035	3/9/2020	107.55391	101.0017998	95.00216529	89.50109744	84.45046327	79.80724334	75.53294832	71.59310622	67.95681102
191004A00025	10/4/2019	1.74	10/4/2024	10/4/2019	103.77151	101.724232	99.72825946	97.78195293	95.8837395	94.03210829	92.22560745	90.46284139	88.74246812
200406A00037	4/6/2020	0.9	4/6/2023	4/6/2020	100.72621	100.1257986	99.532549	98.9463376	98.36703958	97.79453301	97.22869882	96.66942073	96.11658513
150311A00003	3/11/2015	2.72	3/31/2025	3/11/2015	106.75707	104.3416376	101.9965452	99.71929034	97.50747817	95.35881498	93.27110316	91.24223646	89.27019553
190605A00007	6/5/2019	2.47	6/5/2026	6/5/2019	109.64329	105.9556143	102.4162475	99.01834291	95.75541109	92.62130103	89.61018022	86.71651599	83.93505809
200110A00039	1/10/2020	2.32	1/10/2030	1/10/2020	116.51238	109.5276388	103.0374895	97.0037878	91.39152979	86.16858147	81.3054292	76.77495317	72.55222159
210714A00013	7/14/2021	1.12	7/14/2026	7/14/2021	104.8011	101.1793636	97.7069581	94.37691702	91.18263821	88.11786037	85.1766436	82.35335128	79.64263294
210809A00012	8/9/2021	1.06	8/7/2026	8/9/2021	104.6707	100.9973993	97.47786286	94.10480727	90.87133552	87.7709124	84.79734351	81.94475563	79.20757838
150224A00010	2/24/2015	2.34	2/24/2025	2/24/2015	103.7311	102.1805385	100.667049	99.18945293	97.74661786	96.3374554	94.96091933	93.61600367	92.30174083
180718A00008	7/18/2018	3.37	7/18/2028	7/18/2018	120.05031	114.0385338	108.377779	103.0454823	98.02065295	93.2837516	88.81658219	84.60219315	80.62478607
190103A00020	1/3/2019	3.12	1/5/2026	1/3/2019	110.62758	107.2981437	104.0899862	100.9980369	98.01746327	95.14365982	92.37223576	89.69900402	87.11997065
200818A00012	8/18/2020	0.97	8/18/2027	8/18/2020	105.64743	101.0331461	96.65482881	92.49910434	88.55342498	84.806016	81.24582398	77.8624689	74.64619966
180813A00045	8/13/2018	2.89	8/13/2025	8/13/2018	104.94974	103.3482603	101.7873152	100.2655507	98.78166564	97.33441224	95.92259363	94.54506126	93.20071259
160209A00006	2/9/2016	1.91	2/9/2026	2/9/2016	103.70944	101.8771942	100.0968238	98.36643527	96.68422079	95.04845151	93.45747361	91.90970442	90.40362889
190205A00023	2/5/2019	3.32	2/5/2029	2/5/2019	120.39324	114.1981715	108.38852	102.9378239	97.82158577	93.01711376	88.50337956	84.26088775	80.27155631
150617A00017	6/17/2015	2.27	6/17/2025	6/17/2015	103.73626	102.2374815	100.7751464	99.34806872	97.95510786	96.59516941	95.26720301	93.97020023	92.70319244
191203A00011	12/3/2019	2.21	12/3/2029	12/3/2019	115.56964	108.7131979	102.336715	96.40351816	90.87993808	85.73505002	80.94043557	76.46996617	72.29960647
160413A00020	4/13/2016	2.48	4/13/2026	4/13/2016	108.98422	105.5446558	102.2378536	99.05789347	95.99915508	93.05630164	90.22426373	87.49822414	84.87360376
210611A00008	6/11/2021	0.61	6/11/2024	6/11/2021	101.19511	99.47095444	97.7847559	96.13537912	94.52173384	92.94277206	91.39748595	89.88490591	88.40409878
170309A00016	3/9/2017	2.39	3/8/2024	3/9/2017	102.23906	101.3903373	100.5567526	99.73788888	98.93334367	98.1427298	97.36567444	96.60181844	95.85081571
180905A00017	9/5/2018	3.43	9/6/2033	9/5/2018	134.15185	123.4233242	113.7425567	104.9981184	97.09113644	89.93380936	83.44810741	77.56463206	72.22161409
171013A00024	10/13/2017	2.47	10/15/2024	10/13/2017	105.20677	103.1722782	101.1888495	99.25484348	97.36868157	95.52884816	93.7338877	91.98240178	90.27304638
190702A00071	7/2/2019	2.69	7/1/2039	7/2/2019	131.58491	117.4253581	105.18722	94.58513209	85.37845726	77.36399399	70.36991196	64.25070299	58.88297215
190702A00068	7/2/2019	2.69	7/1/2039	7/2/2019	131.58493	117.4253677	105.1872213	94.58512644	85.3784459	77.36397794	70.36989206	64.25067995	58.88294657
151209A00024	12/9/2015	2.22	12/9/2025	12/9/2015	104.30822	102.5467227	100.8333681	99.16644365	97.54431182	95.96540591	94.42822612	92.93133627	91.47336055

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160603A00014	6/3/2016	1.74	6/3/2026	6/3/2016	104.00286	101.992922	100.0441118	98.15406531	96.3205269	94.54134485	92.81446561	91.13792859	89.50986128
160608A00025	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928443	101.965389	98.67387227	95.51208717	92.47414885	89.55447557	86.74777112	84.04900833
160908A00031	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437514	101.6201317	98.14854338	94.82172725	91.63281176	88.57529006	85.6429985	82.83009665
191105A00012	11/5/2019	2.07	11/3/2034	11/5/2019	114.89663	108.0755515	101.8159566	96.06429527	90.77263395	85.89802151	81.40193272	77.24977746	73.41046781
120330A00013	3/30/2012	2.98	4/2/2024	3/30/2012	104.54365	103.0418749	101.5703276	100.1281459	98.71450452	97.32860909	95.96969448	94.63702354	93.32988576
140730A00035	7/30/2014	2.67	1/30/2023	7/30/2014	100.87565	100.6205859	100.3670908	100.1151494	99.86474576	99.61586437	99.36848981	99.1226069	98.87820069
190813A00067	8/13/2019	1.9	8/13/2024	8/13/2019	103.81273	101.8981855	100.0292128	98.20444224	96.42255639	94.68228601	92.98240809	91.32174371	89.69915623
191015A00025	10/15/2019	2.01	10/15/2029	10/15/2019	108.2468	104.4206008	100.7901876	97.34360676	94.06972916	90.95818679	87.99931559	85.18410273	82.50413827
220310A00009	3/10/2022	2.31	3/10/2027	3/10/2022	110.89235	106.529928	102.372217	98.40843643	94.62843448	91.0226463	87.58205695	84.29816674	81.16295896
150410A00021	4/10/2015	2.27	4/10/2025	4/10/2015	103.3324	101.9270131	100.5543558	99.2133968	97.90314297	96.62264057	95.37097323	94.14726024	92.95065478
150803A00041	8/3/2015	3.01	8/2/2030	8/3/2015	113.56773	109.1048424	104.8932578	100.916216	97.15820946	93.60488156	90.24293317	87.06003737	84.04476156
190308A00026	3/8/2019	3.18	3/8/2034	3/8/2019	130.84497	120.3385707	110.8738271	102.3373028	94.62868842	87.659211	81.3502409	75.63207454	70.4428692
170406A00026	4/6/2017	2.61	4/8/2024	4/6/2017	104.19538	102.6192212	101.0751984	99.56238602	98.07989789	96.62688135	95.20251556	93.80600995	92.43660287
170615A00006	6/15/2017	2.15	6/17/2024	6/15/2017	102.12347	101.1903757	100.2745353	99.37546486	98.492696	97.62577808	96.77427751	95.93777693	95.1158744
181214A00030	12/14/2018	3.47	12/14/2033	12/14/2018	135.0993	123.9448678	113.9035909	104.854608	96.69094293	89.31783744	82.65128902	76.61677171	71.14811503
190708A00028	7/8/2019	2.57	7/2/2029	7/8/2019	117.19625	110.6129366	104.467018	98.72673968	93.36282022	88.34824527	83.6580811	79.26930408	75.16064511
200130A00046	1/30/2020	1.81	1/29/2027	1/30/2020	104.53166	102.2181286	99.98331901	97.82389302	95.73667583	93.71864977	91.76694548	89.87883356	88.05171675
160801A00002	8/1/2016	1.58	8/3/2026	8/1/2016	103.85111	101.7596676	99.73401304	97.77152966	95.86972824	94.02623615	92.23879105	90.50523489	88.82350845
170406A00034	4/6/2017	3.01	4/6/2027	4/6/2017	113.8385	109.4261976	105.2213575	101.2129751	97.39069546	93.74476866	90.26601097	86.94576872	83.77588465
210412A00008	4/12/2021	0.66	4/12/2024	4/12/2021	101.12396	99.56279955	98.03367572	96.53566028	95.06786434	93.62943275	92.21954252	90.83740125	89.48224572
140924A00057	9/24/2014	3.25	9/25/2028	9/24/2014	119.89214	114.0022016	108.4619135	103.2482836	98.33996379	93.71712005	89.36131753	85.25541411	81.38346294
170511A00011	5/11/2017	2.41	5/11/2027	5/11/2017	106.76891	104.2287442	101.780418	99.41982798	97.14308038	94.94648328	92.82653462	90.77991113	88.80345795
191224A00002	12/24/2019	2.17	12/24/2029	12/24/2019	109.06926	105.1271974	101.3909374	97.84768364	94.48553346	91.29341237	88.26101078	85.37872586	82.63760818
151030A00026	10/30/2015	3.29	10/30/2030	10/30/2015	123.28954	115.9450768	109.1458004	102.8469478	97.00770893	91.59085447	86.56240139	81.89131205	77.54922261
160908A00026	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437515	101.6201318	98.14854335	94.82172717	91.63281163	88.57528988	85.64299827	82.83009638
180410A00002	4/10/2018	3.14	4/11/2033	4/10/2018	119.67372	113.4499961	107.6792259	102.3229821	97.34643737	92.7180046	88.40901114	84.39340809	80.64751042
161012A00011	10/12/2016	1.53	10/12/2023	10/12/2016	101.22394	100.559846	99.90737656	99.26619747	98.63598452	98.01642644	97.40722423	96.8080905	96.21874894
170619A00092	6/16/2017	2.79	6/16/2027	6/16/2017	113.40224	108.8394269	104.4986662	100.3678269	96.43550707	92.69098816	89.12419003	85.72562941	82.48638125
180628A00068	6/28/2018	3.12	6/28/2028	6/28/2018	115.72773	110.9566664	106.4427974	102.1703523	98.12461895	94.2918709	90.65929578	87.21492946	83.9475952
190718A00012	7/18/2019	2.55	7/18/2029	7/18/2019	115.70529	109.6656388	104.0164736	98.72980377	93.7798016	89.14262722	84.79626519	80.72037542	76.89615699
210714A00018	7/14/2021	0.75	7/12/2024	7/14/2021	101.50478	99.72722766	97.99022294	96.29259681	94.63322317	93.01101538	91.42492465	89.87393844	88.35707896
170105A00010	1/5/2017	2.61	1/5/2027	1/5/2017	106.39353	104.040667	101.7677794	99.57147658	97.44853744	95.3959001	93.4106529	91.49002599	89.63138345
200306A00058	3/6/2020	1.06	3/6/2030	3/6/2020	104.84991	100.9355859	97.23164918	93.72466344	90.40215469	87.25253845	84.26505014	81.42968138	78.73712161

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160608A00033	6/8/2016	2.44	6/9/2031	6/8/2016	112.16795	107.3178703	102.7657863	98.49013395	94.47109201	90.69042682	87.13135373	83.77841155	80.6173488
161202A00001	12/2/2016	2.65	12/1/2023	12/2/2016	103.34476	102.089634	100.8649114	99.66948857	98.50231866	97.36240425	96.24879448	95.16058235	94.09690224
170207A00055	2/7/2017	2.36	2/8/2027	2/7/2017	106.26243	103.8635331	101.5476071	99.31108242	97.15056874	95.06284565	93.04485279	91.09368083	89.20656291
200317A00009	3/17/2020	1.61	3/16/2035	3/17/2020	111.01544	104.2817183	98.11419807	92.45775159	87.2631497	82.48638278	78.08806641	74.0329187	70.28930034
150925A00034	9/25/2015	2.36	9/25/2025	9/25/2015	103.9997	102.3724187	100.7871253	99.24238908	97.73684365	96.2691792	94.83813985	93.44252099	92.0811668
161004A00070	10/4/2016	1.92	10/4/2023	10/4/2016	102.18076	101.0883071	100.0193594	98.97315898	97.94898364	96.94614166	95.96397	95.00183287	94.05912037
140618A00019	6/18/2014	3.08	6/18/2024	6/18/2014	103.12942	102.1466633	101.1824063	100.2361208	99.30730254	98.39546667	97.5001465	96.6208928	95.75727286
191122A00003	11/22/2019	2.32	11/22/2039	11/22/2019	124.37468	111.9984455	101.2339789	91.8471307	83.64005752	76.44532355	70.12099701	64.54656792	59.61954532
171207A00024	12/7/2017	2.93	12/7/2027	12/7/2017	115.75421	110.5815832	105.6838454	101.0447362	96.64905387	92.48257624	88.53199228	84.78483833	81.22943944
180104A00023	1/4/2018	2.91	1/4/2028	1/4/2018	113.51532	109.0418461	104.7957942	100.7640373	96.93427796	93.29499568	89.83539346	86.54534854	83.41536671
200206A00034	2/6/2020	1.84	2/6/2025	2/6/2020	104.61778	102.2407973	99.93104157	97.68622728	95.50415875	93.38272799	91.31991058	89.31376184	87.36241318
200327A00094	3/27/2020	1.6	3/27/2030	3/27/2020	110.77119	104.4768934	98.62452438	93.179795	88.11127747	83.39015345	78.98998322	74.8864966	71.05740325
150929A00083	9/29/2015	2.09	9/29/2025	9/29/2015	103.7708	102.1436341	100.5585305	99.0140593	97.50884882	96.04158441	94.6110057	93.21590385	91.85511908
160608A00030	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928444	101.9653891	98.67387224	95.51208706	92.47414867	89.55447531	86.74777079	84.04900794
180628A00078	6/28/2018	2.73	6/28/2023	6/28/2018	101.49126	101.0234868	100.561142	100.1041252	99.65233414	99.20566913	98.76403325	98.32733215	97.89547398
181128A00011	11/28/2018	3.27	11/28/2023	11/28/2018	104.08666	102.8366319	101.6169858	100.4266161	99.26447392	98.12956021	97.02092247	95.93765231	94.87888284
151228A00013	12/28/2015	2.27	12/29/2025	12/28/2015	104.40128	102.636803	100.920604	99.25097003	97.62625874	96.04489833	94.50538409	93.00627499	91.54619052
160908A00036	9/8/2016	2.3	9/8/2031	9/8/2016	111.80006	106.8342764	102.1812007	97.81768274	93.72247814	89.87608076	86.26056821	82.8594619	79.65760036
201207A00009	12/7/2020	1.01	12/7/2027	12/7/2020	106.14253	101.2555561	96.63111215	92.25358452	88.10837557	84.18183183	80.46117756	76.93445338	73.59045954
190605A00027	6/5/2019	2.64	6/5/2029	6/5/2019	117.49834	110.9649662	104.8614555	99.15680977	93.822442	88.83197319	84.16104977	79.78717722	75.68956825
210611A00011	6/11/2021	1.02	6/11/2026	6/11/2021	104.30323	100.7718138	97.3830774	94.13043157	91.00762851	88.00874472	85.12816219	82.3605506	79.70085085
160810A00025	8/10/2016	2.17	8/10/2026	8/10/2016	108.68704	104.9794369	101.4257233	98.0186361	94.75129395	91.61717621	88.61010199	85.72421057	82.95394305
200109A00006	1/9/2020	1.95	1/9/2030	1/9/2020	108.85755	104.8681778	101.089573	97.50848288	94.11259565	90.89046473	87.83144183	84.92561577	82.16375638
150722A00033	7/22/2015	2.47	7/22/2025	7/22/2015	103.95464	102.4128843	100.9093351	99.44273289	98.01186909	96.6155844	95.25276624	93.92234653	92.62329951
160810A00030	8/10/2016	2.24	8/11/2031	8/10/2016	111.399	106.4945702	101.8964891	97.58224945	93.53118339	89.72430236	86.14414854	82.77466048	79.60105144
160908A00017	9/8/2016	1.87	9/8/2023	9/8/2016	102.01123	100.9941525	99.99753759	99.02076993	98.06325909	97.12443781	96.20376099	95.30070457	94.41476452
171109A00016	11/9/2017	2.94	11/9/2032	11/9/2017	127.58711	117.8599226	109.0272792	100.9996475	93.69701	87.04779719	80.98795014	75.46009159	70.41279279
180215A00034	2/15/2018	2.9	2/15/2023	2/15/2018	101.53043	101.0643535	100.6025755	100.1450369	99.69167936	99.24244565	98.7972795	98.35612568	97.91892997
180517A00024	5/17/2018	3.46	5/17/2033	5/17/2018	121.81136	115.4292487	109.5148454	104.0282065	98.93315667	94.19690738	89.78971427	85.68457176	81.85694014
150803A00042	8/3/2015	3.01	8/2/2030	8/3/2015	113.56773	109.1048424	104.8932578	100.916216	97.15820947	93.60488156	90.24293316	87.06003736	84.04476154
160428A00028	4/28/2016	2	4/28/2026	4/28/2016	104.32901	102.3960059	100.5198767	98.69847817	96.92976636	95.2117893	93.54268193	91.92066167	90.34402416
170619A00101	6/16/2017	2.74	6/16/2027	6/16/2017	112.55382	108.2089401	104.0721869	100.1322826	96.37862629	92.80124927	89.39077341	86.13837291	83.0357386
170406A00032	4/6/2017	3.01	4/6/2027	4/6/2017	113.8385	109.4261978	105.2213576	101.2129751	97.39069542	93.74476854	90.26601079	86.94576847	83.77588434

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200414A00024	4/14/2020	1.37	4/14/2027	4/14/2020	107.03593	102.6670068	98.50782082	94.54711015	90.77427835	87.1793542	83.75295122	80.48622999	77.37086319
200623A00028	6/23/2020	1.23	6/23/2038	6/23/2020	110.58337	102.2602023	94.79377568	88.08287458	82.0393158	76.58616454	71.6562038	67.19062307	63.13789349
160608A00020	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928441	101.9653889	98.6738723	95.5120873	92.47414907	89.55447587	86.74777149	84.04900878
161014A00029	10/14/2016	2.51	10/15/2031	10/14/2016	113.70614	108.5935765	103.8063709	99.32019592	95.11275103	91.1635773	87.45389208	83.96643955	80.68535562
200330A00079	3/30/2020	1.51	3/30/2035	3/30/2020	110.32932	103.6368048	97.50706706	91.88531073	86.72259989	81.97518762	77.60392508	73.57374189	69.85318878
180420A00011	4/20/2018	2.74	4/20/2023	4/20/2018	101.24568	100.8665321	100.4909076	100.1187518	99.75001151	99.38463477	99.02257065	98.66376933	98.30818205
180605A00031	6/5/2018	3.37	6/5/2030	6/5/2018	114.86167	110.4387861	106.2604045	102.3104939	98.57420185	95.03776162	91.68840465	88.51428147	85.50438905
181128A00004	11/28/2018	3.08	11/28/2023	11/28/2018	103.98716	102.7361798	101.5156366	100.3244266	99.1614978	98.02584824	96.91652273	95.83261031	94.7732417
190104A00038	1/4/2019	3.25	1/4/2029	1/4/2019	119.74944	113.653566	107.93252	102.5608788	97.51507924	92.77327381	88.31519726	84.12204398	80.17635561
200309A00083	3/9/2020	0.82	3/9/2023	3/9/2020	100.61099	100.0871575	99.56878753	99.05579638	98.5481005	98.04561804	97.54826883	97.05597436	96.5686577
130614A00018	6/14/2013	2.83	6/14/2023	6/14/2013	101.48071	101.0174305	100.559447	100.1066576	99.65896481	99.21627335	98.77849056	98.34552619	97.91729229
150803A00037	8/3/2015	3.41	8/2/2030	8/3/2015	123.57487	116.3890338	109.7236832	103.5371258	97.79125425	92.45122296	87.48515102	82.86385451	78.56060391
180809A00034	8/9/2018	3.08	8/9/2023	8/9/2018	103.03062	102.0835284	101.1539969	100.2415412	99.34569256	98.46599903	97.60202505	96.7533506	95.91957052
201203A00007	12/3/2020	0.58	12/1/2023	12/3/2020	100.75578	99.52565052	98.32537171	97.15386265	96.01009441	94.89308671	93.80190502	92.73565796	91.69349485
170526A00017	5/26/2017	2.16	5/28/2024	5/26/2017	102.04032	101.1495866	100.2750357	99.41621237	98.57268236	97.74402771	96.92984613	96.12975021	95.34336672
190905A00019	9/5/2019	2.08	9/5/2029	9/5/2019	114.27662	107.6810356	101.5345348	95.80372606	90.45788452	85.46872138	80.81017829	76.45824026	72.39076509
181218A00086	12/18/2018	3.06	10/18/2023	12/18/2018	103.45221	102.3401599	101.2525942	100.1887046	99.14771821	98.12889555	97.13152877	96.15494	95.19847975
190403A00013	4/3/2019	3.05	4/3/2029	4/3/2019	119.13041	112.8562161	106.9808635	101.4763885	96.31694487	91.47863275	86.9393416	82.67860673	78.67747811
151005A00084	10/5/2015	2.25	10/5/2022	10/5/2015	100.33605	100.2387941	100.1417387	100.0448784	99.9482127	99.85174097	99.75546261	99.65937703	99.56348364
220407A00017	4/7/2022	3.16	4/6/2029	4/7/2022	119.04635	112.9945216	107.3219592	102.0022731	97.01106023	92.32574705	87.92544217	83.79080195	79.90390748
160907A00041	9/7/2016	1.83	9/7/2023	9/7/2016	101.97555	100.9561731	99.95728919	98.97828445	98.01856847	97.077574	96.15475586	95.24958988	94.36157191
180809A00032	8/9/2018	3.08	8/9/2023	8/9/2018	103.03062	102.0835285	101.1539969	100.2415412	99.34569255	98.46599901	97.60202502	96.75335055	95.91957047
151223A00078	12/23/2015	2.28	12/23/2025	12/23/2015	104.41788	102.6535491	100.9374749	99.26794492	97.64331744	96.06202159	94.52255351	93.02347303	91.56340048
200413A00013	4/13/2020	1.19	4/12/2030	4/13/2020	105.42757	101.4498177	97.68792833	94.12798856	90.75709346	87.56326609	84.5353843	81.66311371	78.9368465
150213A00014	2/13/2015	2.41	2/13/2025	2/13/2015	103.48956	102.1636342	100.86737	99.59985195	98.36020395	97.14758377	95.96118169	94.80021893	93.66394616
151006A00050	10/6/2015	2.21	10/6/2022	10/6/2015	100.31729	100.2255498	100.1339828	100.0425878	99.95136427	99.86031173	99.76942969	99.67871768	99.5881752
200709A00018	7/9/2020	0.59	7/7/2023	7/9/2020	100.66792	99.82018631	98.98674857	98.1672504	97.36134379	96.56869225	95.78897032	95.02186313	94.26706597
201228A00013	12/28/2020	0.84	12/30/2030	12/28/2020	104.31372	100.047654	96.03069406	92.24565016	88.67666198	85.30908424	82.12938504	79.12505339	76.28451497
160511A00015	5/11/2016	2.42	5/11/2026	5/11/2016	108.97899	105.4736463	102.1058848	98.86945688	95.75844167	92.76722305	89.89047184	87.12312926	84.46039129
161207A00014	12/7/2016	2.75	12/8/2031	12/7/2016	115.2038	109.9336371	105.0042131	100.389669	96.06633068	92.01250686	88.20830829	84.63548519	81.27728015
200512A00017	5/12/2020	0.85	5/12/2025	5/12/2020	102.42226	99.91425952	97.48259602	95.12443569	92.8370733	90.61792346	88.46451433	86.37448172	84.34556346
150722A00035	7/22/2015	2.92	7/22/2025	7/22/2015	108.06406	105.3644387	102.7507074	100.2196345	97.76813094	95.39324081	93.0921351	90.86210531	88.70055775
150814A00029	8/14/2015	2.39	8/14/2025	8/14/2015	103.93718	102.3540383	100.8109092	99.30645118	97.8393819	96.40847162	95.01254059	93.65045665	92.32113293

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160413A00016	4/13/2016	2.55	4/14/2031	4/13/2016	112.47131	107.6963937	103.2099919	98.99155005	95.02215124	91.28437158	87.76215164	84.44067999	81.30628732
200306A00048	3/6/2020	1.04	3/6/2035	3/6/2020	108.09563	101.5107006	95.48100534	89.95236259	84.87640069	80.20988664	75.91413993	71.9545172	68.29995877
200306A00050	3/6/2020	0.87	3/6/2030	3/6/2020	104.65227	100.7331112	97.02508451	93.51467307	90.18933583	87.03742783	84.04812982	81.21138403	78.51783529
190205A00019	2/5/2019	2.94	2/5/2024	2/5/2019	104.20597	102.7893163	101.3993355	100.0353378	98.69665548	97.38264331	96.09267743	94.82615464	93.58249148
210412A00007	4/12/2021	0.66	4/12/2024	4/12/2021	101.12396	99.56279955	98.03367571	96.53566027	95.06786432	93.62943273	92.21954249	90.83740121	89.48224568
190708A00025	7/8/2019	2.21	7/1/2024	7/8/2019	104.16017	102.3493916	100.5793899	98.84901255	97.15714239	95.50270097	93.8846467	92.30197348	90.75370916
191031A00025	10/31/2019	1.91	10/31/2024	10/31/2019	102.30932	101.1660583	100.0462689	98.94925939	97.8743682	96.82095904	95.78841959	94.77616044	93.78361397
200206A00033	2/6/2020	2.15	2/6/2030	2/6/2020	115.45335	108.4591035	101.9649374	95.93191653	90.32434402	85.10947705	80.25726774	75.74012795	71.53271576
190104A00006	1/4/2019	2.83	1/5/2026	1/4/2019	105.29419	103.477156	101.7106079	99.99273257	98.32179517	96.69613607	95.11416678	93.57436646	92.07527845
190501A00015	5/1/2019	2.78	5/1/2029	5/1/2019	110.60431	106.9156224	103.4060805	100.0652622	96.88342934	93.85148151	90.96090954	88.20375311	85.57256163
170921A00057	9/21/2017	2.79	9/21/2027	9/21/2017	113.40248	108.8253634	104.4775877	100.3461924	96.41902829	92.68469791	89.13250488	85.75240694	82.53497225
200311A00026	3/11/2020	1.34	3/11/2030	3/11/2020	109.59804	103.039175	96.95003325	91.2938209	86.03683427	81.14818091	76.59953062	72.36488977	68.42039665
151118A00037	11/18/2015	2.75	11/18/2025	11/18/2015	107.74994	105.0193022	102.3804974	99.82980373	97.36367774	94.97874379	92.67178483	90.43973364	88.2796648
150812A00052	8/14/2015	2.13	8/14/2025	8/14/2015	103.7297	102.1466803	100.6037328	99.09951802	97.63274961	96.20219393	94.80666765	93.44503523	92.11620667
190404A00015	4/4/2019	2.88	4/3/2026	4/4/2019	110.60963	107.0550209	103.6379397	100.3522637	97.19218226	94.15217649	91.22700268	88.41167684	85.70146023
210714A00015	7/14/2021	1.11	7/14/2026	7/14/2021	104.64853	101.1103719	97.71702678	94.46176163	91.33819628	88.34027928	85.4622692	82.69871715	80.04445029
161222A00013	12/22/2016	2.93	12/22/2026	12/22/2016	112.63687	108.6613935	104.8605688	101.2256555	97.74840383	94.4210212	91.23614424	88.18681267	85.26644501
170406A00029	4/6/2017	3.01	4/6/2027	4/6/2017	113.8385	109.4261995	105.2213586	101.2129754	97.39069503	93.74476752	90.26600917	86.9457663	83.77588164
190930A00026	9/30/2019	1.95	9/30/2024	9/30/2019	104.09423	102.0964593	100.148297	98.24817393	96.3945786	94.58605867	92.82121819	91.09871497	89.41725805
140821A00040	8/21/2014	3.41	8/21/2031	8/21/2014	128.4453	119.8871202	112.028038	104.8054529	98.16274916	92.04868905	86.41687316	81.22525796	76.43572377
150603A00012	6/3/2015	2.77	6/3/2030	6/3/2015	112.87314	108.5128293	104.3941181	100.501132	96.8191679	93.33459934	90.03478988	86.90801433	83.9433866
190930A00028	9/30/2019	1.95	9/30/2024	9/30/2019	104.09423	102.0964591	100.148297	98.24817414	96.39457902	94.58605929	92.821219	91.09871597	89.41725924
210107A00010	1/7/2021	0.54	1/5/2024	1/7/2021	100.74324	99.43721189	98.15450269	96.89454018	95.6567701	94.44065572	93.24567722	92.07133099	90.91712905
121016A00013	10/16/2012	1.64	10/14/2022	10/16/2012	100.28958	100.186755	100.0841569	99.98178258	99.8796314	99.77770254	99.67599525	99.57450875	99.47324231
160421A00016	4/21/2016	2.26	4/21/2026	4/21/2016	108.39145	105.0654996	101.8671666	98.79075416	95.83085929	92.98235253	90.24036228	87.6002601	85.05764703
160810A00028	8/10/2016	2.19	8/10/2026	8/10/2016	108.97478	105.1774995	101.5389913	98.05173087	94.70859385	91.50283005	88.42804172	85.47816321	82.64744196
190402A00005	4/2/2019	2.77	4/2/2032	4/2/2019	119.09518	112.2893655	106.0011223	100.185357	94.80126296	89.81188709	85.18374027	80.88644946	76.89244676
160608A00027	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928443	101.965389	98.67387226	95.51208713	92.47414879	89.55447548	86.747771	84.04900819
160908A00037	9/8/2016	1.4	9/8/2023	9/8/2016	101.24616	100.514799	99.79605336	99.08957503	98.39502998	97.71209664	97.04046529	96.37983748	95.72992551
181003A00032	10/3/2018	3.23	10/3/2025	10/3/2018	105.57912	103.886067	102.2374766	100.6318214	99.06763545	97.54351446	96.05811235	94.61013858	93.19835538
190829A00032	8/29/2019	1.69	8/28/2026	8/29/2019	104.0883	101.9906332	99.95902735	97.99085075	96.08360028	94.23489027	92.44244608	90.7040982	89.01777656
160616A00029	6/16/2016	1.58	6/16/2026	6/16/2016	103.67911	101.6745858	99.73106183	97.84618038	96.01768995	94.24344259	92.52138832	90.84956991	89.226118
180517A00018	5/17/2018	3.46	5/17/2033	5/17/2018	121.81137	115.429252	109.5148473	104.0282071	98.93315624	94.19690599	89.78971206	85.68456883	81.85693658

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191004A00017	10/4/2019	2.02	10/4/2029	10/4/2019	114.00651	107.3579788	101.1664421	95.39761132	90.01995892	85.00448002	80.32447758	75.95536694	71.87449777
191101A00005	11/1/2019	1.83	11/2/2026	11/1/2019	108.71939	104.6799464	100.8182881	97.12555146	93.59337085	90.21384456	86.97950632	83.88329856	80.91854749
200610A00006	6/10/2020	1.11	6/10/2027	6/10/2020	106.08732	101.6159987	97.36552768	93.32373923	89.47920624	85.82119143	82.33960167	79.02494559	75.86829435
150203A00027	2/3/2015	2.26	2/4/2030	2/3/2015	110.22242	106.1394798	102.2743425	98.61319551	95.14320973	91.85246514	88.72987986	85.76514545	82.94866754
160906A00027	9/6/2016	2.03	9/8/2031	9/6/2016	111.16977	106.2148185	101.5726588	97.22007845	93.13578735	89.30024088	85.69548433	82.30501218	79.11364067
190315A00029	3/15/2019	2.88	3/15/2034	3/15/2019	119.52955	112.8028515	106.6029708	100.8819853	95.5967787	90.70851936	86.18220168	81.98623979	78.09210706
220407A00014	4/7/2022	3.14	4/6/2029	4/7/2022	117.67422	112.042418	106.7541248	101.7858099	97.11569577	92.72362084	88.59091013	84.70025738	81.03561702
180615A00021	6/15/2018	3.02	6/15/2023	6/15/2018	102.53664	101.7524454	100.9804456	100.2203591	99.47191004	98.73483105	98.00886287	97.29375412	96.58926097
190104A00035	1/4/2019	3.1	1/5/2026	1/4/2019	110.40171	107.1239357	103.9650375	100.9200547	97.98426003	95.15314766	92.42242178	89.78798563	87.24593124
170602A00019	6/2/2017	2.42	6/3/2024	6/2/2017	104.32696	102.5920662	100.894903	99.23431598	97.6091984	96.01848827	94.46116615	92.93625293	91.44280783
190305A00015	3/5/2019	3.32	3/5/2029	3/5/2019	120.60523	114.3331988	108.4556771	102.9452759	97.77666134	92.92638842	88.37275037	84.09564064	80.07642664
210913A00015	9/13/2021	1.08	9/14/2026	9/13/2021	104.56215	101.035531	97.65653096	94.41807373	91.3134679	88.33637941	85.4808103	82.74107898	80.11180164
150803A00036	8/3/2015	3.41	8/2/2030	8/3/2015	123.57487	116.3890338	109.7236832	103.5371258	97.79125425	92.45122295	87.485151	82.86385448	78.56060388
160210A00049	2/10/2016	1.78	2/10/2026	2/10/2016	103.71012	101.8740827	100.0901173	98.35632556	96.67088941	95.0320706	93.43820636	91.88770563	90.37904543
140917A00030	9/17/2014	3.23	9/17/2029	9/17/2014	120.44572	114.241887	108.4414699	103.0151809	97.93603677	93.17916435	88.72162421	84.54224948	80.62149919
160711A00004	7/11/2016	1.51	7/13/2026	7/11/2016	103.61985	101.5745643	99.59256953	97.67138719	95.80865249	94.00211022	92.24960892	90.54909529	88.89860907
200608A00001	6/8/2020	1.34	6/7/2030	6/8/2020	109.29551	102.9366363	97.03423641	91.55213154	86.4572283	81.7192381	77.31042392	73.20537136	69.3807815
210423A00001	4/23/2021	1.72	4/23/2036	4/23/2021	113.55319	106.0737326	99.27299762	93.0799374	87.43164797	82.27237149	77.55262674	73.22845143	69.26074125
160427A00004	4/27/2016	2.09	4/27/2026	4/27/2016	104.24955	102.322057	100.4511716	98.63476516	96.87080686	95.15735675	93.49256124	91.87464852	90.3019244
180309A00011	3/9/2018	3.19	3/10/2025	3/9/2018	108.16112	105.6458337	103.2037294	100.8322347	98.52888413	96.29131437	94.11725931	92.00454543	89.95108739
200110A00053	1/10/2020	1.99	1/10/2025	1/10/2020	104.83257	102.5208355	100.2726606	98.08594162	95.95865941	93.88887285	91.87471548	89.91439219	88.00617602
160908A00033	9/8/2016	2.17	9/8/2026	9/8/2016	108.49674	104.8737501	101.4015837	98.07305054	94.88134175	91.82001045	88.88295048	86.06437637	83.35880467
210319A00009	3/19/2021	1.1	3/19/2026	3/19/2021	104.24848	100.9154281	97.71045551	94.62790836	91.66241615	88.8088753	86.06243426	83.41847954	80.87262258
201207A00021	12/7/2020	1.85	12/7/2050	12/7/2020	121.23781	105.6860604	92.80517887	82.07559596	73.08650967	65.51193397	59.0922279	53.6198121	48.92809203
200227A00046	2/27/2020	1.52	3/1/2027	2/27/2020	103.90938	101.5678849	99.30728702	97.12410824	95.01504534	92.97696043	91.00687151	89.10194362	87.2594806
200806A00004	8/6/2020	0.3	3/6/2024	8/6/2020	100.46613	99.63231932	98.81337617	98.0088923	97.21847267	96.44173708	95.67831945	94.9278671	94.19004019
140318A00003	3/17/2014	3.08	3/18/2024	3/17/2014	104.96417	103.4255541	101.9177087	100.4397787	98.99093915	97.57039529	96.17738084	94.81115691	93.47101072
170829A00066	8/29/2017	2.11	8/29/2024	8/29/2017	104.56366	102.5999373	100.6839307	98.81417339	96.98925671	95.2078248	93.46857236	91.77024233	90.11162373
190911A00016	9/11/2019	1.9	9/11/2029	9/11/2019	108.27813	104.4826244	100.8797854	97.45794203	94.20621784	91.11447525	88.17326022	85.37375152	82.70771395
180126A00011	1/26/2018	2.72	1/26/2028	1/26/2018	108.70716	105.7688262	102.9490618	100.2420298	97.64222268	95.14444296	92.7437839	90.4356111	88.21554554
200512A00014	5/12/2020	1.17	5/12/2027	5/12/2020	106.30095	101.8888727	97.69165095	93.69758102	89.89566287	86.27555563	82.82753412	79.54244851	76.41168687
210915A00023	9/15/2021	0.74	9/16/2024	9/15/2021	101.64531	99.68463146	97.77234058	95.90692133	94.08691806	92.31093115	90.57761433	88.88567227	87.23385823
151204A00011	12/4/2015	2.28	12/4/2025	12/4/2015	104.41401	102.6510916	100.9363367	99.26803539	97.64454954	96.06431168	94.52582141	93.02764195	91.56839696

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
200709A00019	7/9/2020	0.77	7/9/2025	7/9/2020	102.42081	99.70015215	97.0670441	94.51819718	92.05046668	89.66084252	87.34644276	85.10450737	82.93239244
150824A00033	8/24/2015	2.22	8/25/2025	8/24/2015	103.66742	102.0875157	100.5475775	99.0462635	97.58229153	96.15443209	94.76150576	93.40238073	92.07597051
210512A00009	5/12/2021	0.66	5/10/2024	5/12/2021	101.17913	99.54638282	97.94820617	96.38355793	94.85144181	93.35090121	91.88101722	90.44090673	89.02972065
161014A00019	10/14/2016	2.39	10/15/2031	10/14/2016	112.35968	107.3249131	102.6097821	98.19043974	94.04501879	90.15345433	86.49732229	83.05969345	79.82500139
190708A00030	7/8/2019	2.57	7/2/2029	7/8/2019	117.19625	110.6129379	104.4670185	98.72673952	93.36281943	88.34824389	83.65807917	79.26930164	75.1606422
190510A00049	5/10/2019	2.58	5/8/2026	5/10/2019	105.20986	103.2644821	101.376239	99.54298774	97.76267784	96.03335081	94.35313531	92.72024257	91.1329622
200424A00022	4/24/2020	1.39	4/24/2030	4/24/2020	109.50423	103.2194763	97.37995905	91.95082872	86.90017531	82.19876104	77.81978191	73.73865183	69.93280699
160608A00021	6/8/2016	1.91	6/8/2023	6/8/2016	101.64971	100.8784694	100.1190108	99.37106287	98.63436464	97.90866298	97.19371232	96.48927436	95.79511783
190605A00025	6/5/2019	2.64	6/5/2029	6/5/2019	117.49833	110.9649628	104.8614541	99.1568101	93.82244398	88.83197667	84.16105463	79.78718334	75.68957551
180125A00027	1/25/2018	2.69	1/24/2025	1/25/2018	103.97326	102.544287	101.1484653	99.78475951	98.45217618	97.14976043	95.87659414	94.6317942	93.41451096
210714A00010	7/14/2021	0.75	7/12/2024	7/14/2021	101.51956	99.72376194	97.96900998	96.25412344	94.57796206	92.93942548	91.33745166	89.77101521	88.23912597
190118A00006	1/18/2019	3.14	1/18/2034	1/18/2019	120.9822	114.2675671	108.0720628	102.3490418	97.0564802	92.15648173	87.61484116	83.40065646	79.48598438
160504A00022	5/4/2016	2	5/4/2023	5/4/2016	101.54541	100.8661952	100.1960967	99.53493062	98.88251901	98.23868852	97.60327039	96.97610027	96.35701806
190813A00051	8/13/2019	2.19	8/13/2029	8/13/2019	114.90082	108.3284783	102.1999133	96.48240486	91.14581657	86.16238172	81.50650517	77.1545827	73.08483622
191004A00026	10/4/2019	1.74	10/4/2024	10/4/2019	103.77151	101.7242322	99.72825943	97.78195272	95.88373913	94.03210775	92.22560675	90.46284054	88.74246712
210107A00009	1/7/2021	0.54	1/5/2024	1/7/2021	100.74324	99.43721187	98.15450264	96.8945401	95.65676998	94.44065557	93.24567704	92.07133078	90.91712881
170406A00036	4/6/2017	3.07	4/6/2032	4/6/2017	116.68364	111.1823603	106.0470679	101.2492272	96.76277451	92.56388477	88.63076336	84.94345807	81.48368997
200406A00030	4/6/2020	1.61	4/5/2030	4/6/2020	111.89631	104.9480867	98.50710627	92.53308967	86.98917943	81.84162762	77.05951757	72.61451188	68.48062409
200406A00036	4/6/2020	1.09	4/4/2025	4/6/2020	103.00327	100.5083699	98.08771919	95.7386485	93.45860054	91.24512692	89.09588274	87.00862144	84.98118995
140428A00015	4/28/2014	2.35	4/29/2024	4/28/2014	102.31821	101.4238549	100.5457675	99.68349216	98.83659163	98.00464531	97.18724838	96.38401096	95.59455749
160413A00033	4/13/2016	2.32	4/13/2026	4/13/2016	107.38198	104.3749429	101.4789771	98.68924463	96.00114618	93.41031104	90.91258439	88.50401525	86.18084506
171207A00022	12/7/2017	2.45	12/7/2022	12/7/2017	100.86017	100.5879667	100.3172419	100.0479826	99.78017688	99.51381288	99.24887895	98.98536355	98.72325527
200206A00032	2/6/2020	2.15	2/6/2030	2/6/2020	115.45336	108.4591068	101.964938	95.93191475	90.32434006	85.10947112	80.25726004	75.74011866	71.53270504
210714A00014	7/14/2021	1.12	7/14/2026	7/14/2021	104.8011	101.1793631	97.70695877	94.37691878	91.18264099	88.11786411	85.17664827	82.35335682	79.6426393
161227A00073	12/27/2016	2.83	12/28/2026	12/27/2016	111.08913	107.4917868	104.0473366	100.7482679	97.5874844	94.55827789	91.65430447	88.86956286	86.19837395
190926A00002	9/30/2019	2.01	9/29/2034	9/30/2019	114.32466	107.6248521	101.4699496	95.80857148	90.59466922	85.78692925	81.34824951	77.24527727	73.44800082
200110A00038	1/10/2020	2.32	1/10/2030	1/10/2020	116.51238	109.5276388	103.0374895	97.0037878	91.39152981	86.16858151	81.30542925	76.77495324	72.55222168
200116A00012	1/16/2020	2.16	1/19/2027	1/16/2020	110.04724	105.7926386	101.7329096	97.85805934	94.15866212	90.62582172	87.25113898	84.02668144	80.94495508
200406A00033	4/6/2020	1.09	4/4/2025	4/6/2020	103.00327	100.5083699	98.08771921	95.73864853	93.45860058	91.24512698	89.09588282	87.00862153	84.98119005
171219A00067	12/19/2017	2.72	12/20/2027	12/19/2017	114.32187	109.507623	104.9444669	100.6176915	96.51353533	92.61911636	88.92237079	85.41199666	82.07740158
180913A00062	9/13/2018	3.05	9/13/2023	9/13/2018	103.23922	102.2045544	101.1909148	100.1976646	99.22419037	98.26990282	97.33423606	96.41664628	95.51661073
190322A00008	3/22/2019	2.64	3/20/2026	3/22/2019	105.19933	103.2975215	101.4505675	99.65643849	97.9131944	96.21898098	94.57202542	92.9706322	91.41317908
150615A00024	6/15/2015	2.26	6/16/2025	6/15/2015	103.72091	102.2224332	100.7603932	99.33360065	97.94091506	96.58124239	95.2535326	93.95677752	92.69000884

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
160209A00008	2/9/2016	2.45	2/10/2031	2/9/2016	111.76784	107.1107075	102.7301946	98.60690988	94.72298164	91.06192767	87.60853732	84.34876437	81.26962974
190315A00019	3/15/2019	2.88	3/15/2034	3/15/2019	119.52954	112.8028444	106.6029671	100.8819848	95.59678117	90.70852453	86.18220933	81.98624973	78.0921191
191011A00027	10/11/2019	1.84	10/11/2029	10/11/2019	108.14	104.3061479	100.6689012	97.21623175	93.93694398	90.82060963	87.85750968	85.03858122	82.35536868
200616A00005	6/16/2020	0.74	6/17/2030	6/16/2020	104.25251	100.2235017	96.41780886	92.82075857	89.41875634	86.19920324	83.15041596	80.26155392	77.52255254
210611A00009	6/11/2021	0.61	6/11/2024	6/11/2021	101.18815	99.47487463	97.79927268	96.16021802	94.55662889	92.98746546	91.45172775	89.94845373	88.47671745
140717A00027	7/17/2014	3.14	7/17/2026	7/17/2014	111.3184	107.8233825	104.4678054	101.245262	98.14967864	95.17529283	92.31663561	89.568515	86.92600044
200512A00011	5/12/2020	1.48	5/10/2030	5/12/2020	111.09044	104.1081672	97.64130267	91.64847849	86.09187754	80.93690797	76.15191122	71.70789801	67.57830942
200428A00009	4/28/2020	1.08	4/29/2030	4/28/2020	104.98055	101.0190734	97.27262409	93.72734074	90.3703647	87.18976228	84.17445176	81.31413668	78.59924466
160303A00035	3/3/2016	2.14	3/3/2026	3/3/2016	104.24215	102.3565075	100.5257139	98.74773945	97.020645	95.34257619	93.71175936	92.12649744	90.58516616
160810A00027	8/10/2016	2.13	8/10/2026	8/10/2016	108.17867	104.6262368	101.21926	97.95091713	94.81474736	91.80462691	88.91474984	86.13960974	83.47398261
180206A00045	2/6/2018	2.71	2/6/2023	2/6/2018	101.37503	100.9352529	100.499311	100.0671531	99.63873018	99.21399369	98.79289613	98.37539076	97.96143164
181105A00015	11/5/2018	3.57	11/5/2025	11/5/2018	111.49508	108.3018407	105.2199966	102.2449677	99.37239718	96.59813516	93.91822747	91.32890492	88.82657332
151118A00025	11/18/2015	2.4	11/18/2022	11/18/2015	100.70646	100.4873898	100.2692808	100.0521311	99.83593446	99.6206845	99.40637499	99.19299971	98.98055253
160119A00072	1/19/2016	2.77	1/21/2031	1/19/2016	113.6637	108.7281573	104.0956328	99.7442187	95.65377185	91.80575754	88.18311012	84.77010632	81.55225047
160908A00034	9/8/2016	2.17	9/8/2026	9/8/2016	108.49674	104.87375	101.4015837	98.07305056	94.88134179	91.82001052	88.88295058	86.0643765	83.35880483
200212A00013	2/12/2020	1.98	2/12/2027	2/12/2020	109.43095	105.1346156	101.0379389	97.13053357	93.40260996	89.84493668	86.44880583	83.20600048	80.10876449
210319A00008	3/19/2021	0.63	3/19/2024	3/19/2021	101.01983	99.52075395	98.0516887	96.61180241	95.20029032	93.8163769	92.45931456	91.12838238	89.82288489
140908A00080	9/8/2014	2.51	3/8/2024	9/8/2014	103.63442	102.278351	100.9487852	99.64499298	98.36627359	97.1119516	95.88137562	94.67391723	93.48896995
170524A00027	5/24/2017	2.32	5/24/2027	5/24/2017	106.5406	104.0051665	101.5614475	99.20533564	96.93294094	94.74057496	92.62473914	90.58211366	88.60954701
160404A00019	4/4/2016	2.48	4/4/2031	4/4/2016	112.13549	107.375081	102.9022813	98.69660336	94.73919201	91.01267991	87.50105959	84.18956732	81.06457761
160608A00022	6/8/2016	1.91	6/8/2023	6/8/2016	101.64971	100.8784694	100.1190108	99.37106289	98.63436468	97.90866304	97.1937124	96.48927447	95.79511796
160908A00022	9/8/2016	2.21	9/8/2026	9/8/2016	109.02707	105.2437514	101.6201317	98.14854337	94.82172724	91.63281175	88.57529004	85.64299848	82.83009663
150427A00014	4/27/2015	2.98	4/27/2035	4/27/2015	120.80278	113.4313851	106.6833945	100.4977697	94.82004027	89.60154199	84.79875242	80.3727068	76.28848438
150803A00039	8/3/2015	3.01	8/2/2030	8/3/2015	113.56773	109.1048394	104.8932562	100.9162157	97.15821031	93.60488351	90.24293614	87.06004129	84.04476637
190129A00073	1/29/2019	3.11	1/29/2029	1/29/2019	111.24327	107.7097088	104.3405088	101.1264751	98.05899616	95.13000435	92.3319378	89.65770528	87.10065373
211007A00005	10/7/2021	0.86	10/7/2024	10/7/2021	101.9454	99.92754374	97.96038912	96.04230863	94.17174303	92.34719481	90.56722525	88.83045159	87.13554439
160719A00026	7/19/2016	1.87	7/20/2026	7/19/2016	104.0982	102.0474303	100.0600324	98.13352384	96.26553969	94.45382464	92.69622694	90.99069291	89.33526178
210212A00004	2/12/2021	1.1	2/12/2036	2/12/2021	108.85211	101.764017	95.3121725	89.43067041	84.06108094	79.15154586	74.65598668	70.53341361	66.74732198
120808A00006	8/8/2012	2.06	8/9/2027	8/8/2012	106.21239	103.5565559	101.0009065	98.54079712	96.17183003	93.8898425	91.69089259	89.57124592	87.52736332
160608A00028	6/8/2016	2.36	6/8/2026	6/8/2016	108.96279	105.3928444	101.9653891	98.67387224	95.51208706	92.47414866	89.5544753	86.74777077	84.04900792
180403A00014	4/3/2018	3.11	4/3/2025	4/3/2018	108.16062	105.5843704	103.0843914	100.6579484	98.30242168	96.01530301	93.79418988	91.63678035	89.54086806
190502A00016	5/2/2019	2.87	5/1/2026	5/2/2019	110.8247	107.1935266	103.7052102	100.3532843	97.13161205	94.03437068	91.05603376	88.19135399	85.43534729
210915A00026	9/15/2021	1.1	9/15/2026	9/15/2021	104.97851	101.2067037	97.59637826	94.13971073	90.82929759	87.65813354	84.61958774	81.70738169	78.91556852

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180913A00012	9/13/2018	3.31	9/13/2033	9/13/2018	121.49608	114.9415827	108.8806416	103.2700038	98.07060249	93.24711821	88.76759099	84.60307549	80.7273336
160413A00014	4/13/2016	2.55	4/14/2031	4/13/2016	112.47131	107.6963939	103.209992	98.99155003	95.02215115	91.2843714	87.7621514	84.44067969	81.30628695
170301A00031	3/1/2017	2.11	3/1/2024	3/1/2017	101.91632	101.1085536	100.3150131	99.53530915	98.76906341	98.01591172	97.27550353	96.54750124	95.83157958
170317A00039	3/17/2017	2.73	3/18/2024	3/17/2017	104.22271	102.6999599	101.2076081	99.74481239	98.31075896	96.90466348	95.52576982	94.1733488	92.84669696
170406A00033	4/6/2017	3.01	4/6/2027	4/6/2017	113.8385	109.4261967	105.221357	101.212975	97.39069565	93.74476916	90.26601177	86.9457698	83.77588599
190905A00023	9/5/2019	2.08	9/5/2029	9/5/2019	114.27661	107.6810353	101.5345348	95.80372624	90.45788491	85.46872195	80.81017904	76.45824117	72.39076614
191203A00009	12/3/2019	2.21	12/3/2029	12/3/2019	115.56965	108.7131989	102.3367152	96.40351774	90.87993708	85.7350485	80.94043359	76.46996379	72.29960373
170112A00015	1/12/2017	2.32	1/12/2027	1/12/2017	106.0426	103.6914705	101.4204338	99.22609041	97.10520767	95.05471302	93.07168503	91.15334487	89.29704834
200326A00032	3/26/2020	1.49	3/26/2030	3/26/2020	106.58681	102.6072909	98.8417168	95.27641377	91.89869359	88.69677321	85.65970383	82.77730611	80.04011071
160212A00006	2/12/2016	1.57	2/13/2023	2/12/2016	100.63002	100.3407217	100.0534385	99.76814603	99.48482162	99.2034429	98.92398787	98.64643489	98.37076265
161005A00016	10/5/2016	2.32	10/6/2031	10/5/2016	112.00512	106.986432	102.2863326	97.88105729	93.74881228	89.86959998	86.2250579	82.79831322	79.57385122
200306A00057	3/6/2020	0.92	3/8/2027	3/6/2020	105.22993	101.194925	97.34760825	93.67813746	90.17724236	86.83618758	83.64673881	80.60113125	77.69204027
190205A00017	2/5/2019	3.36	2/5/2029	2/5/2019	120.63708	114.4318224	108.6125562	103.1527824	98.02796894	93.21539204	88.69399351	84.44425022	80.44805435
190925A00009	9/25/2019	2	9/25/2026	9/25/2019	108.21169	104.461467	100.8702893	97.43046313	94.13471302	90.97615546	87.94827541	85.04490436	82.26019993
200512A00010	5/12/2020	1.48	5/10/2030	5/12/2020	111.09044	104.1081665	97.6413032	91.64848013	86.09188018	80.93691151	76.15191558	71.70790309	67.57831515
210915A00024	9/15/2021	1.1	9/15/2026	9/15/2021	104.97851	101.2067036	97.59637832	94.13971092	90.82929792	87.65813398	84.61958829	81.70738234	78.91556926
140219A00005	2/19/2014	3.13	2/20/2029	2/19/2014	111.98015	108.3685216	104.927109	101.6462747	98.51700068	95.53084439	92.67989849	89.95675316	87.35446136
190315A00023	3/15/2019	2.88	3/15/2034	3/15/2019	119.52952	112.8028374	106.6029638	100.8819848	95.59678403	90.70852995	86.18221702	81.98625943	78.09213057
200520A00009	5/20/2020	1.63	5/20/2038	5/20/2020	117.42725	105.172271	94.50974245	85.21417258	77.09372647	69.98499664	63.74861673	58.26557513	53.43411345
210714A00017	7/14/2021	0.73	7/12/2024	7/14/2021	101.39107	99.71199941	98.07077561	96.46630581	94.8975403	93.36346635	91.8631066	90.39551766	88.9597886
200206A00031	2/6/2020	2.15	2/6/2030	2/6/2020	115.45336	108.4591071	101.9649381	95.93191456	90.32433964	85.10947049	80.25725921	75.74011765	71.53270387
170303A00004	3/3/2017	2.8	3/4/2024	3/3/2017	104.25146	102.7528798	101.2838577	99.84359373	98.43131272	97.04626683	95.68773447	94.35501908	93.04744809
200501A00002	5/1/2020	1.3	5/1/2035	5/1/2020	108.97076	102.277945	96.15448925	90.544339	85.39750253	80.6693447	76.31997081	72.31368551	68.61851717
210420A00035	4/20/2021	1.92	4/20/2034	4/20/2021	114.26772	106.6610685	99.72923786	93.40390843	87.62427657	82.3361744	77.49129839	73.04653243	68.96335319
180914A00049	9/14/2018	3.37	9/14/2033	9/14/2018	121.88243	115.3071293	109.2269537	103.5985108	98.38260964	93.54381836	89.0500755	84.87234374	80.98430166
200814A00003	8/14/2020	0.96	8/14/2035	8/14/2020	107.68868	100.922245	94.74315176	89.09247645	83.91778152	79.17234923	74.81451242	70.8070681	67.1167632
211208A00013	12/8/2021	1.63	12/8/2026	12/8/2021	107.612	103.5065693	99.58556995	95.83965252	92.26000118	88.83829562	85.56668011	82.4377347	79.44444844
170406A00027	4/6/2017	2.61	4/8/2024	4/6/2017	104.19538	102.6192212	101.0751984	99.56238602	98.07989789	96.62688136	95.20251557	93.80600997	92.43660289
210809A00014	8/9/2021	1.06	8/7/2026	8/9/2021	104.6707	100.9973993	97.4778629	94.10480736	90.87133566	87.77091259	84.79734374	81.94475591	79.2075787
200429A00030	4/29/2020	1.41	4/29/2030	4/29/2020	110.20283	103.5178095	97.31825267	91.56560143	86.22458097	81.26290085	76.65098662	72.36173708	68.37030436
150601A00396	6/1/2015	3.61	1/3/2029	6/1/2015	112.07066	108.70352	105.4891271	102.4190819	99.48551618	96.68105191	93.99876704	91.43216433	88.97514227
150601A00739	6/1/2015	2.35	5/6/2025	6/1/2015	103.29396	101.9311439	100.6001597	99.29999486	98.02968023	96.78828505	95.57491526	94.38871172	93.22884851
150601A01051	6/1/2015	4.91	2/7/2025	6/1/2015	111.83259	109.4147803	107.0645929	104.7797335	102.5579989	100.3972739	98.29552753	96.25080887	94.2612434

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00477	6/1/2015	3.21	6/1/2029	6/1/2015	113.62231	109.5374024	105.658368	101.9729541	98.4697267	95.13801231	91.96784237	88.94990197	86.07548261
160928A00033	9/28/2016	2.46	9/29/2036	9/28/2016	117.47197	109.8383077	102.9166411	96.62984539	90.90996998	85.69707221	80.93820548	76.58654237	72.60061408
150601A00919	6/1/2015	7.41	6/7/2030	6/1/2015	133.70991	128.543637	123.6632803	119.0501146	114.6867913	110.5572269	106.6465019	102.9407683	99.42716543
220610A00068	6/10/2022	3.09	6/10/2025	6/10/2022	104.91148	103.416605	101.9578886	100.5341534	99.14426988	97.78715462	96.46176765	95.1671105	93.90222418
150601A00871	6/1/2015	6.74	7/31/2028	6/1/2015	122.82748	119.1948126	115.7202033	112.395357	109.2124738	106.1642186	103.2436897	100.4443905	97.76020298
200225A00049	2/25/2020	1.79	2/24/2040	2/25/2020	115.72225	106.540944	98.37360955	91.09101942	84.58192784	78.75040539	73.51358933	68.79978155	64.54683809
150601A00950	6/1/2015	6.76	12/18/2031	6/1/2015	136.73592	130.5021351	124.6703028	119.210036	114.0935034	109.2951946	104.79171	100.561571	96.58504817
150601A00966	6/1/2015	4.84	2/3/2023	6/1/2015	101.22248	100.9996422	100.7782155	100.5581867	100.3395412	100.1222645	99.90634231	99.69176063	99.47850563
080423A00066	4/23/2008	4.41	4/24/2023	4/23/2008	103.14469	102.4798387	101.8235732	101.1757293	100.5361452	99.90466362	99.28113101	98.66539777	98.057318
150601A00864	6/1/2015	7.37	3/31/2028	6/1/2015	123.56848	120.1026553	116.7814322	113.5974869	110.5439249	107.6142492	104.8023349	102.1024052	99.50900921
970806A00018	8/1/1997	6.7	10/23/2026	8/1/1997	114.79262	112.4888496	110.2585471	108.0987406	106.0066052	103.9794507	102.014714	100.109952	98.26283544
200401A00011	4/1/2020	0.68	4/3/2023	4/1/2020	100.42914	100.0594964	99.69319021	99.33017279	98.97039557	98.61381095	98.26037231	97.91003398	97.56275123
150601A00953	6/1/2015	6.6	6/10/2032	6/1/2015	138.70484	131.9366695	125.6294671	119.7466451	114.2548307	109.1235615	104.3250099	99.8337368	95.62646896
150601A00964	6/1/2015	5.25	1/6/2033	6/1/2015	128.81105	122.7829737	117.1673726	111.9308432	107.043	102.4761771	98.20516411	94.20696886	90.46060522
110414A00007	4/14/2011	3.95	1/21/2025	4/14/2011	106.46627	104.8096577	103.1917569	101.6113636	100.0673193	98.5585102	97.08386478	95.64235217	94.23298011
191231A00027	12/31/2019	1.9	4/28/2023	12/31/2019	100.57203	100.360384	100.1498012	99.94027381	99.731793	99.52435012	99.31793665	99.11254411	98.90816417
200210A00007	2/10/2020	1.78	2/10/2025	2/10/2023	104.19658	102.107775	100.0761529	98.09978117	96.17680861	94.30545796	92.48402265	90.71086345	88.98440534
191114A00013	11/14/2019	1.9	11/14/2022	11/14/2019	100.44456	100.2905623	100.1370956	99.98415394	99.83173449	99.67983437	99.52845074	99.37758077	99.22722169
150601A00906	6/1/2015	6.2	11/1/2029	6/1/2015	125.82996	121.3202876	117.0438795	112.9863892	109.1344635	105.4756678	101.9984169	98.69191086	95.54607651
150601A00261	6/1/2015	3.19	2/11/2033	6/1/2015	126.48355	117.8112024	109.9005811	102.6771495	96.07420085	90.03198753	84.49695345	79.42105517	74.76116099
150601A00459	6/1/2015	2.42	5/16/2024	6/1/2015	102.17846	101.3098876	100.4572019	99.61995902	98.79773054	97.99010438	97.19668388	96.41708714	95.65094628
190102A00015	1/2/2019	2.97	1/3/2034	1/2/2019	118.83837	112.5514181	106.7391709	101.3595941	96.37477269	91.75047844	87.45578239	83.46271094	79.74594005
160928A00042	9/28/2016	3.05	9/29/2036	9/28/2021	121.72707	113.8738688	106.7493212	100.2747571	94.3808451	89.0064053	84.09738105	79.60594767	75.48973929
150601A00736	6/1/2015	2.87	5/1/2030	6/1/2015	111.71612	107.6650583	103.8309499	100.19991	96.75905718	93.49643237	90.40092621	87.4622127	84.67068846
200130A00027	1/31/2020	1.79	1/31/2025	1/31/2020	102.39606	101.1352029	99.90188082	98.69526092	97.51454027	96.35894697	95.22773868	94.12020121	93.03564724
150601A01013	6/1/2015	5.21	9/29/2023	6/1/2015	105.67623	104.5893353	103.5253473	102.4835449	101.4632351	100.4637535	99.4844631	98.52475248	97.5840349
150601A00897	6/1/2015	6.15	5/28/2029	6/1/2015	123.73984	119.6058972	115.6729112	111.9292085	108.3638794	104.9667264	101.7282136	98.6394187	95.69198958
020918A00047	9/18/2002	4.72	9/19/2022	9/18/2002	100.32482	100.2718439	100.2189343	100.1660959	100.1133283	100.0606315	100.0080054	99.95544967	99.90296431
150601A00024	6/1/2015	5.58	11/8/2022	6/1/2015	101.24493	101.0526928	100.8612034	100.6704531	100.4804376	100.2911528	100.1025942	99.91475762	99.72763894
150601A01048	6/1/2015	5.27	1/3/2025	6/1/2015	112.18507	109.8531292	107.5840809	105.3758707	103.2265198	101.1341253	99.09685714	97.11295488	95.18072443
160928A00032	9/28/2016	2.52	9/29/2036	9/28/2016	117.9047	110.2487037	103.3064051	97.00051438	91.26294033	86.03361455	81.25947757	76.89360054	72.89442342
170130A00043	1/30/2017	2.64	1/29/2027	1/30/2017	106.86103	104.3607889	101.9477913	99.61827114	97.36865342	95.19554133	93.0957062	91.06607804	89.10373679
190823A00009	8/23/2019	1.8	8/23/2029	8/23/2019	107.64341	103.9841637	100.5071713	97.20155194	94.05715633	91.06451646	88.21479509	85.49973936	82.91163812

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
191115A00029	11/15/2019	2.07	11/15/2029	11/15/2019	108.36577	104.5798817	100.9876052	97.57708929	94.33729882	91.25795688	88.32948726	85.54296178	82.89005195
050823A00088	8/23/2005	4.78	8/25/2025	8/23/2005	114.06642	111.1399211	108.3088395	105.5694921	102.9183576	100.3520715	97.86741755	95.46132102	93.13084104
150601A00270	6/1/2015	3.12	3/21/2031	6/1/2015	124.53786	116.5687198	109.2250764	102.4530484	96.20371882	90.43264968	85.09944839	80.16737768	75.60300534
110824A00006	8/24/2011	2.69	8/24/2026	8/24/2011	107.52767	104.9156558	102.3934106	99.95714874	97.60327336	95.32836303	93.12916223	91.00257212	88.94564202
070518A00023	5/18/2007	5.46	5/18/2027	5/18/2007	115.68706	112.7168139	109.8587993	107.1077313	104.4586182	101.9067412	99.44763755	97.07708499	94.79108658
160930A00032	9/30/2016	2.15	9/30/2031	9/30/2016	110.71008	105.9342525	101.455045	97.25067634	93.30115033	89.58809826	86.0946344	82.80522552	79.70557267
150601A01041	6/1/2015	5.99	10/2/2036	6/1/2015	149.41086	139.2987353	130.1298737	121.8029055	114.2283762	107.3272518	101.0296198	95.27356183	90.00417236
190520A00020	5/20/2019	2.39	5/20/2026	5/20/2019	105.1381	103.1754153	101.2711331	99.42303047	97.62898644	95.8869761	94.19506575	92.55140805	90.95423757
130207A00012	2/7/2013	2.9	2/7/2033	2/7/2013	116.82943	110.8445381	105.2935474	100.1394915	95.34889521	90.89141657	86.73953045	82.86824541	79.2548512
050812A00050	8/12/2005	4.97	8/12/2025	8/12/2005	110.20379	108.1228317	106.1000184	104.1332965	102.2207031	100.3603573	98.55045654	96.78927293	95.07514938
120410A00005	4/10/2012	2.35	4/12/2027	4/10/2012	107.18827	104.4120934	101.7402527	99.16787791	96.69036864	94.30337264	92.00277074	89.78466263	87.6453537
150601A00690	6/1/2015	2.34	2/28/2025	6/1/2015	103.0403	101.7782249	100.5442115	99.33740204	98.15696948	97.00211877	95.8720855	94.7661344	93.683558
170130A00046	1/30/2017	2.52	1/30/2026	1/30/2017	105.11934	103.1531812	101.2434811	99.38818122	97.58531337	95.8329941	94.12942054	92.47286646	90.86167845
150601A00448	6/1/2015	2.61	4/26/2024	6/1/2015	102.27909	101.433986	100.6041814	99.78925029	98.98878273	98.20238414	97.4296747	96.67028861	95.92387346
160928A00041	9/28/2016	3.26	9/29/2036	9/30/2019	123.2416	115.310255	108.1134954	101.5720986	95.61624132	90.18430352	85.22183337	80.68065126	76.51807199
150601A00943	6/1/2015	6.44	5/9/2031	6/1/2015	133.06887	127.3017935	121.8878956	116.8017881	112.0201154	107.5213782	103.285773	99.29504633	95.5323624
050823A00085	8/23/2005	4.78	8/25/2025	8/23/2005	114.0664	111.1399012	108.3088247	105.5694822	102.9183524	100.3520707	97.86742109	95.46132865	93.13085259
170130A00039	1/30/2017	2.74	1/31/2028	1/30/2017	108.64955	105.6046889	102.6848198	99.88370134	97.19544909	94.61451284	92.13565564	89.75393408	87.46467991
200310A00067	3/10/2020	0.94	3/10/2025	3/10/2020	101.40296	100.070153	98.76770676	97.4946813	96.25016896	95.03329764	93.84322907	92.67915718	91.54030664
150601A00905	6/1/2015	6.14	10/29/2029	6/1/2015	125.29885	120.8531496	116.6353183	112.6314621	108.8286385	105.2147889	101.7786714	98.50980054	95.39839093
150601A00993	6/1/2015	5.37	6/9/2034	6/1/2015	137.13115	129.2393302	121.9780672	115.288992	109.1196801	103.4230008	98.15654152	93.28209956	88.76523141
181220A00006	12/20/2018	2.93	12/20/2022	12/20/2018	100.76687	100.5625245	100.3591469	100.1567335	99.95527686	99.75476956	99.55520426	99.35657374	99.15887081
150601A00473	6/1/2015	2.22	5/31/2024	6/1/2015	102.17029	101.277005	100.4002635	99.53959448	98.69454818	97.86469212	97.0496102	96.24890189	95.4621815
150601A00527	6/1/2015	2.5	7/26/2024	6/1/2015	102.49573	101.5260425	100.574941	99.64189904	98.72641004	97.82798647	96.94615891	96.08047522	95.23049975
150601A00893	6/1/2015	6.49	4/6/2029	6/1/2015	124.87944	120.7391809	116.7983517	113.0454699	109.4698009	106.0613048	102.8105873	99.70885318	96.74786472
190327A00030	3/27/2019	2.9	3/27/2036	3/27/2019	120.22439	112.805273	106.0356973	99.8493165	94.18724616	88.99716624	84.23253458	79.85190012	75.81830261
200317A00024	3/17/2020	1.09	3/17/2025	3/17/2020	101.60646	100.2711877	98.966345	97.69098674	96.44420282	95.22511877	94.03289405	92.86672043	91.72582054
150601A00030	6/1/2015	5.28	11/26/2027	6/1/2015	126.3385	121.1440473	116.2164943	111.5403455	107.1010975	102.8851724	98.8798526	95.07322171	91.45410866
150601A00997	6/1/2015	5.46	9/30/2022	6/1/2015	100.56583	100.4824918	100.399294	100.3162334	100.2333094	100.1505219	100.0678705	99.98535482	99.90297459
140911A00033	9/11/2014	3.02	9/13/2027	9/11/2014	110.47862	107.084954	103.8450795	100.7508128	97.79446287	94.96879568	92.26700449	89.68268192	87.20979405
150601A01040	6/1/2015	5.4	10/2/2026	6/1/2015	121.19665	117.1614783	113.2955832	109.5908066	106.0394291	102.6341476	99.3680501	96.23459233	93.22757601
150601A00928	6/1/2015	5.94	8/21/2030	6/1/2015	125.10345	120.5240756	116.1947784	112.0991907	108.2221505	104.5496069	101.0685305	97.76683238	94.63328886
130624A00019	6/24/2013	3.4	6/26/2023	6/24/2013	103.00127	102.1466379	101.3059962	100.4789995	99.665318	98.86463269	98.07663455	97.30102431	96.53751202

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00931	6/1/2015	7.13	9/20/2030	6/1/2015	133.50272	128.1823636	123.1648146	118.4297196	113.9582584	109.7330164	105.73787	101.9578815	98.3792038
130206A00004	2/6/2013	2.14	2/7/2028	2/6/2013	107.49782	104.3889408	101.4099485	98.55425643	95.81566474	93.18833079	90.66674633	88.24571615	85.92033819
170130A00036	1/30/2017	3.11	1/31/2033	1/30/2017	117.79044	111.8972168	106.4205551	101.3258261	96.58159699	92.15931139	88.03300476	84.17904938	80.5759263
150601A00946	6/1/2015	6.28	8/22/2031	6/1/2015	133.33336	127.3742461	121.789962	116.5528964	111.6376965	107.0210711	102.6816081	98.59960983	94.75694331
160928A00044	9/28/2016	2.89	9/29/2036	9/28/2023	120.57315	112.7794794	105.7099503	99.28630646	93.43959083	88.10895904	83.24065547	78.7871259	74.70624771
210514A00010	5/14/2021	1.34	5/14/2031	5/14/2021	107.35165	102.8182009	98.55932462	94.55536926	90.78825277	87.24132856	83.89926132	80.74791422	77.77424665
150601A00875	6/1/2015	7.14	9/29/2028	6/1/2015	124.76575	120.996844	117.3954349	113.9525555	110.6597838	107.5092086	104.4933948	101.6053518	98.83850354
150601A00900	6/1/2015	6.06	6/28/2024	6/1/2015	105.71825	104.7752024	103.8497086	102.9412738	102.0494206	101.1736894	100.3136381	99.4688413	98.63888917
181211A00042	12/11/2018	3.7	12/11/2028	12/11/2023	120.03612	114.4401457	109.1739695	104.2157459	99.54520894	95.14354848	90.99329749	87.07822863	83.38325924
970806A00059	8/1/1997	8.25	9/22/2025	8/1/1997	113.16045	111.461276	109.8051904	108.1907501	106.6165701	105.0813224	103.583733	102.1225794	100.6966883
150601A00883	6/1/2015	6.21	11/30/2028	6/1/2015	122.03344	118.2611331	114.6602246	111.2213419	107.9356993	104.795054	101.791669	98.91827833	96.16805539
150601A00899	6/1/2015	7.07	6/14/2029	6/1/2015	124.70826	120.820654	117.1172425	113.5874468	110.2213784	107.0097913	103.9440358	101.0160157	98.21814936
150601A00976	6/1/2015	6.8	9/22/2033	6/1/2015	143.6958	136.0549418	128.9858821	122.4387279	116.3683988	110.7341239	105.4989973	100.6295823	96.09555858
200331A00056	3/31/2020	0.96	3/29/2030	3/31/2020	104.95481	101.0683583	97.39023412	93.90713788	90.60672754	87.47754143	84.50892921	81.69098885	79.01450876
150601A00939	6/1/2015	5.79	1/17/2031	6/1/2015	127.96226	122.6950337	117.7375635	113.0683619	108.6676098	104.5170128	100.5996739	96.89997609	93.40347707
171206A00020	12/6/2017	2.62	12/6/2027	12/6/2017	107.67969	104.8811699	102.1927904	99.60923023	97.12546582	94.73675243	92.43860656	90.22678972	88.09729341
150601A00929	6/1/2015	5.91	8/30/2030	6/1/2015	127.69472	122.5900532	117.7763342	113.2339941	108.9449379	104.8924226	101.0609464	97.43614843	94.00471678
210409A00010	4/9/2021	1.05	4/9/2031	4/9/2021	105.98911	101.5369152	97.35260651	93.41713577	89.71297121	86.22396356	82.93522716	79.83303203	76.90470583
150601A00019	6/1/2015	5.64	10/3/2022	6/1/2015	100.63395	100.5421278	100.4504757	100.3589961	100.2676886	100.1765527	100.0855878	99.99479351	99.90416928
150601A00678	6/1/2015	2.12	1/30/2025	6/1/2015	102.70533	101.4735342	100.2687374	99.09011897	97.93689031	96.80829327	95.70359875	94.62210533	93.56313795
181029A00097	10/29/2018	3.53	10/27/2028	10/29/2018	118.93289	113.5279456	108.4358689	103.6362824	99.11025695	94.84020333	90.80977019	87.00374962	83.40799077
190102A00020	1/2/2019	2.97	1/3/2034	1/2/2019	118.83823	112.5513315	106.7391334	101.3595989	96.37481381	91.75055074	87.45588136	83.46283262	79.746081
200428A00018	4/28/2020	1.33	4/27/2035	4/28/2020	108.91897	102.4376905	96.49786541	91.0468781	86.03774019	81.42844633	77.18140597	73.26294378	69.64286014
120827A00052	8/27/2012	2.01	8/27/2027	8/27/2012	107.08827	104.0005664	101.0379307	98.19423674	95.46370592	92.84088216	90.32061171	87.89802438	85.56851611
970806A00017	8/1/1997	7.02	7/23/2026	8/1/1997	114.51259	112.3498961	110.2528141	108.2188043	106.2454418	104.3304135	102.471512	100.6666297	98.91375406
120907A00026	9/7/2012	1.71	9/7/2022	9/7/2012	100.06107	100.041603	100.0221599	100.0027364	99.98333257	99.96394831	99.9445836	99.92523841	99.9059127
150601A00038	6/1/2015	5.77	6/2/2023	6/1/2015	104.54272	103.7751693	103.0190543	102.2741236	101.5401295	100.8168315	100.103996	99.40139632	98.70881222
191114A00014	11/14/2019	1.9	11/14/2023	11/14/2019	101.42113	100.7475674	100.0854119	99.43434006	98.79404326	98.16422512	97.54460065	96.93489575	96.33484663
150601A00018	6/1/2015	4.91	9/5/2025	6/1/2015	114.53108	111.5385933	108.6452291	105.8471059	103.1405203	100.5219353	97.98797249	95.53540326	93.16114157
200402A00050	4/6/2020	0.73	4/5/2024	4/6/2020	100.75682	99.88235745	99.02371203	98.18044525	97.3521344	96.53837263	95.73876825	94.95294397	94.18053623
150601A01016	6/1/2015	5.73	10/28/2025	6/1/2015	117.341	114.2216779	111.2084065	108.2968973	105.4830622	102.7630052	100.1330116	97.5895387	95.12920624
150601A00971	6/1/2015	6.42	6/20/2033	6/1/2015	140.50926	133.0129168	126.0727828	119.6409321	113.6739967	108.1326967	102.9814242	98.18787321	93.7227087
150601A00888	6/1/2015	5.92	3/1/2029	6/1/2015	122.14534	118.1791214	114.4011622	110.8007554	107.3678838	104.0931721	100.9678409	97.9836652	95.13293551

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
121120A00010	11/20/2012	1.93	11/22/2027	11/20/2012	106.30769	103.4526609	100.7172618	98.09537486	95.58124251	93.16944445	90.85487547	88.63272479	86.4984569
150601A00023	6/1/2015	5.46	10/30/2037	6/1/2015	148.4525	137.5866549	127.8080199	118.9918028	111.0288279	103.8234558	97.2917919	91.36014511	85.9636999
120217A00007	2/17/2012	2.25	2/20/2024	2/17/2012	103.14091	101.8315831	100.5466806	99.2855638	98.04761786	96.83224896	95.63888331	94.46696635	93.31596194
130925A00035	9/25/2013	1.53	6/25/2025	9/25/2013	103.27302	101.4098182	99.59623068	97.83058726	96.11128266	94.43677617	92.80558862	91.21629951	89.66754428
180529A00057	5/29/2018	3.09	5/30/2028	5/29/2018	112.66565	108.8100644	105.1422072	101.6512756	98.32717002	95.16044017	92.14223935	89.26428171	86.518803
210514A00007	5/14/2021	0.95	5/15/2028	5/14/2021	103.76627	100.8196286	97.99755374	95.29364605	92.70188101	90.21658692	87.83242174	85.54435165	83.34763116
150601A01005	6/1/2015	5.82	3/10/2025	6/1/2015	114.19332	111.69828	109.2746694	106.9199898	104.6318487	102.4079527	100.2461024	98.1441885	96.10018673
191231A00021	12/31/2019	1.9	2/28/2023	12/31/2019	100.57202	100.3603868	100.1498132	99.94029498	99.73182328	99.52438949	99.31798505	99.11260153	98.90823057
150601A00948	6/1/2015	6.04	10/22/2031	6/1/2015	128.41716	123.1114725	118.1302193	113.4497588	109.0483819	104.9061393	101.0046853	97.32713734	93.8579481
150601A00395	6/1/2015	2.86	1/3/2024	6/1/2015	102.04745	101.3621047	100.6885006	100.0263126	99.37522583	98.73493775	98.10515724	97.48560416	96.87600878
121220A00023	12/20/2012	1.82	12/20/2022	12/20/2012	100.7931	100.4789727	100.1667843	99.85651886	99.54815862	99.24168594	98.93708347	98.63433403	98.33342067
150601A00001	6/1/2015	5.43	6/15/2037	6/1/2015	147.03023	136.5174328	127.0333982	118.4625409	110.7034486	103.6670266	97.27490005	91.45803506	86.15554618
150601A00425	6/1/2015	2.64	2/21/2024	6/1/2015	102.07088	101.3174422	100.5771692	99.8496999	99.13468515	98.43178892	97.74068771	97.06106997	96.39263548
150601A00426	6/1/2015	3.37	2/21/2029	6/1/2015	111.55105	108.1236447	104.8547106	101.7353867	98.75737778	95.91291329	93.19471038	90.59593999	88.11019546
121120A00011	11/20/2012	2.22	11/22/2027	11/20/2012	110.21667	106.1280734	102.2423117	98.54781657	95.03375745	91.68998743	88.50699584	85.47586433	82.58822624
120621A00009	6/21/2012	3.18	6/21/2032	6/21/2012	122.68518	115.2042554	108.3264328	101.996696	96.16546263	90.78801262	85.82398115	81.23690733	76.99383205
180126A00018	1/26/2018	2.34	1/26/2023	1/26/2018	100.78571	100.5334008	100.2826252	100.0333643	99.78560273	99.53932569	99.29451837	99.05116625	98.80925496
150601A00927	6/1/2015	6.08	8/7/2030	6/1/2015	125.54682	120.9767591	116.655117	112.5656989	108.6935013	105.0246158	101.546142	98.24610642	95.11338983
200316A00008	3/16/2020	1.31	3/15/2030	3/16/2020	105.76202	101.8740431	98.19357126	94.70740292	91.40328325	88.26982895	85.29646019	82.47333827	79.79130853
150601A00872	6/1/2015	7.42	7/31/2028	6/1/2015	124.80399	121.1595945	117.6728715	114.3355732	111.1399434	108.0786869	105.1449387	102.332236	99.63449141
150601A00558	6/1/2015	2.51	8/30/2024	6/1/2015	102.62848	101.6094753	100.6105029	99.63099019	98.67038578	97.72815888	96.8037985	95.89681244	95.00672649
120119A00015	1/19/2012	2.27	1/19/2024	1/19/2012	102.94712	101.7275169	100.5293667	99.35214551	98.19534171	97.05846018	95.94102154	94.84256156	93.76263055
160928A00029	9/28/2016	2.52	9/29/2036	9/28/2016	117.9047	110.2487037	103.3064051	97.00051438	91.26294033	86.03361455	81.25947757	76.89360054	72.89442342
140414A00009	4/14/2014	2.32	4/30/2024	4/14/2014	103.01814	101.8202408	100.6448597	99.49136945	98.35917092	97.24768715	96.15636252	95.08466166	94.03206855
030605A00010	6/5/2003	3.97	6/5/2023	6/5/2003	103.32978	102.5466997	101.7755053	101.0159248	100.2676971	99.53056869	98.80429377	98.0886336	97.38335645
150601A00952	6/1/2015	6.34	2/13/2032	6/1/2015	135.75448	129.3478941	123.364484	117.7716204	112.5394613	107.6406972	103.0503175	98.74540106	94.7049262
190102A00022	1/2/2019	2.97	1/3/2034	1/2/2019	118.8381	112.5512499	106.739098	101.3596033	96.37485255	91.75061887	87.45597461	83.46294727	79.74621379
150601A00865	6/1/2015	6	4/3/2028	6/1/2015	117.77211	114.6764861	111.7065285	108.8559744	106.1189219	103.4898058	100.9633766	98.53467981	96.19903763
160928A00030	9/28/2016	2.52	9/29/2036	9/28/2016	117.9047	110.2487037	103.3064051	97.00051438	91.26294033	86.03361455	81.25947757	76.89360054	72.89442342
150601A00035	6/1/2015	5.73	4/1/2038	6/1/2015	145.52193	135.7864167	126.9908404	119.0288803	111.8074702	105.245028	99.26993357	93.81922001	88.83744691
120827A00048	8/27/2012	2.01	8/27/2027	8/27/2012	107.08826	104.0005645	101.0379301	98.19423722	95.46370743	92.84088464	90.32061508	87.89802858	85.56852108
120907A00005	9/7/2012	1.76	9/7/2022	9/7/2012	100.06026	100.0408143	100.0213881	100.0019815	99.98259423	99.96322639	99.94387791	99.92454876	99.90523892
121217A00009	12/17/2012	2.02	12/17/2027	12/17/2012	106.75463	103.8096168	100.9875314	98.2821268	95.68752023	93.19816856	90.80884628	88.51462526	86.31085585

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
150601A00033	6/1/2015	5.96	12/24/2025	6/1/2015	119.23054	115.8822064	112.6526588	109.5369788	106.5304825	103.6287062	100.8273949	98.1224906	95.51012284
200311A00028	3/11/2020	1.04	3/12/2024	3/11/2020	100.98015	100.1497923	99.33384267	98.53192254	97.74366712	96.96872443	96.20675478	95.4574302	94.72043393
200326A00037	3/26/2020	1.78	3/26/2035	3/26/2020	111.78802	105.228695	99.21202444	93.68569754	88.6029577	83.92197209	79.60527369	75.6192705	71.93381317
150601A00509	6/1/2015	2.52	7/8/2024	6/1/2015	102.44696	101.5042721	100.579419	99.67189231	98.78120768	97.90689902	97.04851763	96.20563134	95.37782379
150601A00832	6/1/2015	7.17	8/28/2025	6/1/2015	110.90202	109.3051676	107.748206	106.2298035	104.7486879	103.3036391	101.8934865	100.5171065	99.17342059
150601A00475	6/1/2015	3.04	6/1/2029	6/1/2015	110.91924	107.3631061	103.9775517	100.7527169	97.6793886	94.7489547	91.95336037	89.28506822	86.73702147
150601A01012	6/1/2015	5.43	9/15/2023	6/1/2015	105.71857	104.6685814	103.6399681	102.6320817	101.644296	100.6760098	99.72664601	98.79564984	97.88248829
170929A00046	9/29/2017	2.49	9/30/2027	9/29/2017	106.96612	104.306324	101.7472562	99.28421729	96.91275953	94.6286746	92.42797883	90.30689969	88.26186317
150601A00955	6/1/2015	5.84	7/15/2032	6/1/2015	130.47463	124.6603842	119.2270523	114.1450162	109.3872281	104.9289709	100.74764	96.82254617	93.13473909
160930A00033	9/30/2016	1.8	9/30/2026	9/30/2016	104.08744	101.9761978	99.93210759	97.95247709	96.03473788	94.17644304	92.37526049	90.62896681	88.93544135
150601A00851	6/1/2015	7.12	4/30/2027	6/1/2015	118.62365	115.8472018	113.1703095	110.5885584	108.0977608	105.6939448	103.3733409	101.1323707	98.96763577
150601A01047	6/1/2015	5.35	12/30/2024	6/1/2015	112.30904	109.9855544	107.7244833	105.5237919	103.3815205	101.2957851	99.26477355	97.28674253	95.36001449
220629A00034	6/29/2022	3.51	6/29/2027	6/29/2022	109.15333	106.5846071	104.1089241	101.7221024	99.42017977	97.19940037	95.05620249	92.98720716	90.9892075
150601A00868	6/1/2015	7.08	6/5/2028	6/1/2015	123.42967	119.8564977	116.4363617	113.1613357	110.0239607	107.0172168	104.1344948	101.3695688	98.71657182
111007A00007	10/7/2011	3.92	10/7/2031	10/7/2011	128.17825	120.3001525	113.0480817	106.3665978	100.2055458	94.51951791	89.26737722	84.41183101	79.91904934
150601A00005	6/1/2015	4.84	6/9/2025	6/1/2015	113.21955	110.4686688	107.8026987	105.2184637	102.7129298	100.2831977	97.92649528	95.64017126	93.42168882
130624A00017	6/24/2013	3.4	6/26/2023	6/24/2013	103.00127	102.1466379	101.3059962	100.4789995	99.665318	98.86463269	98.07663455	97.30102431	96.53751202
150601A00410	6/1/2015	2.68	1/24/2024	6/1/2015	101.99698	101.2841911	100.5836945	99.89515052	99.21823182	98.5526236	97.89802291	97.25413806	96.62068813
150601A00988	6/1/2015	4.57	3/22/2024	6/1/2015	103.68791	102.8840623	102.0944649	101.3187211	100.5564526	99.80729503	99.07089796	98.34692362	97.63504654
170313A00041	3/13/2017	3.21	3/15/2032	3/13/2017	116.47611	111.2649419	106.3905609	101.8272346	97.55142176	93.54157206	89.77794282	86.24243396	82.91843912
150601A00889	6/1/2015	6.55	3/2/2029	6/1/2015	124.99635	120.8727177	116.946196	113.2055303	109.6401899	106.2403207	102.9966968	99.90067665	96.94416181
200203A00046	2/3/2020	1.98	2/3/2040	2/3/2020	117.43043	108.1529287	99.89771481	92.53469153	85.95184554	80.05256885	74.75339801	69.98210233	65.67606495
150601A01015	6/1/2015	5.61	10/28/2025	6/1/2015	116.9931	113.8791949	110.8711977	107.9648268	105.1559986	102.4408215	99.81558533	97.2767512	94.82094284
150601A00935	6/1/2015	6.46	11/21/2030	6/1/2015	130.94061	125.611898	120.5921831	115.8603382	111.3968505	107.1836876	103.2041755	99.44288611	95.88553617
150601A00022	6/1/2015	5.43	10/26/2037	6/1/2015	142.12846	132.8118083	124.3756025	116.7223856	109.7665912	103.4329895	97.6553452	92.37526054	87.54117542
150601A00918	6/1/2015	5.62	4/28/2025	6/1/2015	107.881	106.471137	105.0937473	103.7478129	102.4323555	101.1464356	99.88915016	98.6596312	97.45704405
150601A00496	6/1/2015	2.27	6/27/2024	6/1/2015	102.29876	101.3699894	100.4586944	99.56438047	98.68657213	97.82481206	96.97866006	96.14769229	95.33150047
200521A00005	5/21/2020	0.75	5/21/2030	5/21/2020	104.21235	100.2626448	96.5289189	92.99713307	89.65427523	86.48827704	83.48793884	80.64286097	77.94338108
140311A00039	3/11/2014	3.06	3/11/2024	3/11/2014	104.39516	102.95632	101.5453457	100.161484	98.80400758	97.47221513	96.16542978	94.88299822	93.62428962
190628A00007	6/28/2019	2.28	6/28/2034	6/28/2019	115.22225	108.8574681	102.9911327	97.57761108	92.57588617	87.94905452	83.66388144	79.69040716	76.00159798
130913A00018	9/13/2013	3.72	9/13/2028	9/13/2013	112.22664	108.8923161	105.7131293	102.6804086	99.78603283	97.02239316	94.38235742	91.85923699	89.44675613
150601A00912	6/1/2015	5.96	11/30/2029	6/1/2015	124.90554	120.4143685	116.155962	112.1159853	108.2810951	104.6388673	101.1777272	97.88688605	94.75628164
150601A00411	6/1/2015	3.38	1/24/2029	6/1/2015	111.43899	108.0561423	104.8280359	101.7461062	98.80232706	95.98917542	93.2995963	90.72697043	88.26508432

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190102A00024	1/2/2019	2.97	1/3/2034	1/2/2019	118.83816	112.5512869	106.7391141	101.3596013	96.374835	91.75058799	87.45593234	83.4628953	79.7461536
150601A00960	6/1/2015	6.49	12/16/2032	6/1/2015	135.10948	128.8982396	123.1070902	117.7023179	112.6532275	107.9318511	103.5126846	99.37245156	95.48989098
150601A00978	6/1/2015	6.32	11/24/2033	6/1/2015	137.2209	130.3855214	124.048543	118.166982	112.7019819	107.6183825	102.8843392	98.47098336	94.35212029
160210A00041	2/10/2016	1.97	2/10/2023	2/10/2016	101.07946	100.6252631	100.1751486	99.72905865	99.28693944	98.84873804	98.41440247	97.98388169	97.55712552
160520A00017	9/20/2017	2.34	9/20/2024	9/20/2017	105.0605	102.9773745	100.9460991	98.96504167	97.03263285	95.14736405	93.30778458	91.51249891	89.76016419
180518A00046	5/25/2018	3.62	5/18/2027	5/25/2018	118.55766	113.5113442	108.7133217	104.1499772	99.80851713	95.67691893	91.74387986	87.99876957	84.43158607
191002A00038	1/13/2020	1.76	1/13/2023	1/13/2020	100.85804	100.4820358	100.1088419	99.73842533	99.3707552	99.00580089	98.64353229	98.28391974	97.92693402
191002A00044	2/3/2020	1.75	2/3/2023	2/3/2020	100.94812	100.5136851	100.0829792	99.65595475	99.23256478	98.81276305	98.39650411	97.98374329	97.57443666
190329A00012	3/29/2019	2.61	3/29/2024	3/29/2019	104.23892	102.6424876	101.0783858	99.54570468	98.04356468	96.57111884	95.12755115	93.71207523	92.32393292
130211A00016	2/11/2013	2.27	2/15/2023	2/11/2013	101.2453	100.7767838	100.3126032	99.85269805	99.39700943	98.94547945	98.49805129	98.05466915	97.61527826
190829A00080	8/29/2019	1.8	12/29/2023	8/29/2019	102.44512	101.1112773	99.80161567	98.51552334	97.25240801	96.01169695	94.79283617	93.59528973	92.41853893
141215A00062	12/15/2014	2.65	12/16/2024	12/15/2014	106.69686	104.3500295	102.0666247	99.84452183	97.68168801	95.57617249	93.52610277	91.52968082	89.58517948
160212A00037	2/12/2016	3.03	2/12/2031	2/12/2016	126.91235	117.6671631	109.1816092	101.3889139	94.22850939	87.64542412	81.58973979	76.01610287	70.88328581
160712A00019	7/12/2017	2.32	7/12/2027	7/12/2017	112.72778	107.6647842	102.8599664	98.29885373	93.96785342	89.8541977	85.94588979	82.23165357	78.70088673
180618A00036	6/18/2018	3.89	6/18/2048	6/18/2018	182.55125	151.4755779	126.7839326	107.0748067	91.26585347	78.51932266	68.185277	59.75827266	52.84425302
180621A00068	6/21/2018	3.32	6/23/2025	6/21/2018	109.77797	106.8688641	104.0524307	101.325203	98.68386333	96.12523701	93.6462854	91.24409919	88.91589205
170412A00019	4/12/2017	2.56	4/12/2024	4/12/2017	104.27128	102.6357	101.0337554	99.46447967	97.92693859	96.42023353	94.94349962	93.49590417	92.07664513
180726A00046	7/26/2018	3.2	12/26/2023	7/26/2018	104.30704	102.9668299	101.651753	100.3611346	99.09432327	97.85069086	96.62963129	95.4305596	94.25291101
190829A00078	8/29/2019	1.8	12/15/2023	8/29/2019	102.3885	101.0864225	99.81192318	98.56413245	97.34221427	96.14536765	94.97282483	93.82384956	92.69773547
190515A00032	5/15/2019	2.49	5/15/2024	5/15/2019	104.39609	102.6690451	100.9788857	99.32449212	97.70479309	96.11876034	94.56540649	93.04378295	91.55297802
190501A00014	5/1/2019	2.62	5/1/2024	5/1/2019	104.50946	102.8192231	101.1644871	99.54419848	97.9573452	96.40295498	94.88009329	93.3878615	91.92539514
190621A00035	6/21/2019	2.19	12/15/2023	6/21/2019	102.89946	101.5938476	100.3158785	99.06467673	97.8394047	96.6392598	95.46347275	94.31130585	93.18205132
160210A00053	2/10/2016	1.99	2/10/2023	2/10/2016	101.08853	100.63431	100.1841712	99.73805706	99.29591385	98.8576886	98.42332933	97.992785	97.56600544
180911A00007	9/11/2018	3.12	9/8/2023	9/11/2018	103.34616	102.3003657	101.2757238	100.271601	99.28738537	98.32248867	97.37634585	96.44841366	95.53816969
081219A00006	12/19/2008	3.88	12/22/2023	12/19/2008	105.3375	103.9966453	102.682104	101.3931201	100.1289657	98.88894079	97.67237195	96.4786109	95.30703342
160830A00068	11/30/2016	1.95	11/30/2023	11/30/2016	102.50367	101.2346916	99.99697404	98.78937766	97.61081377	96.4602456	95.33668521	94.23919063	93.16686323
171110A00019	5/4/2018	2.46	5/4/2023	5/4/2018	101.87399	101.1868266	100.5089123	99.84006407	99.18010078	98.52884628	97.88612901	97.2517819	96.6256422
200131A00031	1/31/2020	1.74	1/31/2024	1/31/2020	102.525	101.1032243	99.70804403	98.33877854	96.9947696	95.67538076	94.37999648	93.10802124	91.85887875
170822A00023	8/23/2017	3.95	8/23/2028	8/23/2017	125.2938	118.7260251	112.5545017	106.7531215	101.2976288	96.16548118	91.33572059	86.78885354	82.50674169
160819A00015	10/12/2016	2.3	10/13/2026	10/12/2016	110.56004	106.307621	102.243055	98.35702183	94.64071659	91.08581862	87.68446177	84.42920689	81.31301619
170614A00019	6/14/2017	2.48	6/13/2025	6/14/2017	107.30252	104.456926	101.7014874	99.03280596	96.44763618	93.94287552	91.51555725	89.16284348	86.88201861
160225A00024	2/25/2016	2.22	2/26/2024	2/25/2016	103.39968	101.8967117	100.423214	98.97839832	97.56150064	96.17178363	94.80853535	93.47106829	92.1587182
180925A00033	9/25/2018	3.26	9/25/2023	9/25/2018	103.62862	102.5342159	101.4629258	100.4140211	99.38680504	98.3806097	97.39479428	96.42874378	95.48186777

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180821A00029	8/21/2018	3.01	8/21/2023	8/21/2018	103.0971	102.1024425	101.1269657	100.1701189	99.23137151	98.31021338	97.40615316	96.51871772	95.64745124
190829A00075	8/29/2019	1.8	6/15/2023	8/29/2019	101.62675	100.824237	100.0343615	99.25682627	98.49134371	97.73763513	96.99543036	96.26446745	95.54449235
180328A00042	3/28/2018	2.95	3/28/2023	3/28/2018	101.8989	101.3145042	100.7368045	100.1656844	99.60103212	99.04273817	98.49069561	97.94479989	97.40494876
160223A00012	2/23/2016	1.89	2/23/2023	2/23/2016	101.15105	100.6600903	100.1738891	99.6923773	99.21548721	98.74315252	98.27530817	97.81189032	97.35283634
181206A00018	12/6/2018	3.13	12/6/2023	12/6/2018	104.05267	102.7596149	101.4965307	100.2623783	99.05616384	97.87693892	96.72379786	95.59587532	94.49234414
190830A00020	8/31/2020	1.67	8/31/2023	8/31/2020	101.8122	100.7969046	99.80175866	98.82616405	97.86954939	96.93136538	96.01108373	95.10819615	94.22221342
150731A00016	7/31/2015	3.04	7/31/2025	7/31/2015	109.31682	106.3099219	103.4020519	100.5894155	97.86838412	95.23548778	92.6874073	90.22096679	87.83312672
171228A00023	12/28/2017	2.69	3/29/2024	12/28/2017	104.36707	102.7695693	101.2044222	99.67071422	98.16756538	96.69412817	95.24958616	93.83315249	92.44406857
161125A00002	11/25/2016	2.62	11/27/2023	11/25/2016	103.334	102.0677036	100.832367	99.62686812	98.45013556	97.30114881	96.17893507	95.08256658	94.01115799
191002A00046	2/14/2020	1.75	2/14/2023	2/14/2020	100.9977	100.532642	100.0718627	99.61530445	99.1629094	98.7146207	98.27038256	97.83014018	97.39383976
160520A00018	9/20/2017	2.34	9/20/2024	9/20/2017	105.0605	102.9773745	100.9460991	98.96504167	97.03263285	95.14736405	93.30778458	91.51249891	89.76016419
181220A00041	12/20/2018	3.36	12/18/2026	12/20/2018	115.67961	111.1345497	106.7963724	102.6545438	98.69912364	94.92072911	91.31050022	87.86006783	84.56152374
190815A00040	8/15/2019	1.86	8/15/2023	8/15/2019	101.93484	100.9628869	100.0094011	99.07386217	98.15576696	97.25463099	96.36998756	95.50138695	94.6483957
190829A00076	8/29/2019	1.81	6/30/2023	8/29/2019	101.69582	100.8516848	100.021503	99.20493106	98.40163674	97.61129846	96.83360494	96.0682548	95.31495617
160210A00042	2/10/2016	2.57	2/10/2026	2/10/2016	109.52906	105.9800537	102.5657881	99.28043172	96.11843914	93.07453366	90.14369267	87.32113409	84.60230346
180615A00039	6/15/2018	3.49	6/15/2028	6/15/2018	121.86086	115.5920304	109.6919871	104.137015	98.90504676	93.9755413	89.32937	84.94871232	80.81695964
191002A00043	2/3/2020	1.75	2/3/2023	2/3/2020	100.94812	100.5136851	100.0829792	99.65595475	99.23256478	98.81276305	98.39650411	97.98374329	97.57443666
150601A00356	6/1/2015	3.66	9/22/2023	6/1/2015	103.98111	102.8929689	101.8276238	100.7843649	99.76251008	98.76140488	97.78042133	96.81895658	95.87643167
160210A00036	2/10/2016	1.77	2/10/2023	2/10/2016	101.02943	100.5748867	100.1244352	99.67801762	99.23557988	98.79706885	98.36243232	97.93161901	97.50457857
180709A00081	7/9/2018	3.05	7/7/2023	7/9/2018	102.79615	101.9275235	101.0735654	100.2339086	99.40819584	98.5960817	97.79723204	97.01132361	96.2380436
160222A00018	2/22/2016	2.59	2/23/2026	2/22/2016	109.72244	106.1307845	102.6768986	99.35475952	96.15863957	93.08309155	90.12293363	87.27323489	84.52930171
160222A00019	2/22/2016	3.09	2/21/2031	2/22/2016	127.5113	118.2132327	109.6808328	101.8466262	94.64942392	88.0337068	81.9490726	76.34974043	71.19410515
190829A00073	8/29/2019	1.81	3/15/2023	8/29/2019	101.16863	100.6226926	100.0826383	99.54837591	99.01981252	98.49685714	97.97942075	97.46741619	96.96075815
180131A00022	1/31/2018	2.96	1/30/2025	1/31/2018	107.48471	105.0125146	102.6100716	100.2750223	98.00510211	95.7981359	93.65203415	91.56478896	89.53447035
171222A00037	12/22/2017	2.71	12/29/2023	12/22/2017	103.67266	102.3301164	101.0119012	99.71740074	98.44601876	97.19717861	95.97032258	94.76491112	93.58042209
160210A00021	2/10/2016	1.97	2/10/2023	2/10/2016	101.07946	100.6252631	100.1751486	99.72905865	99.28693944	98.84873804	98.41440247	97.98388169	97.55712552
160209A00049	2/9/2016	1.92	2/9/2023	2/9/2016	101.0518	100.6004517	100.1531341	99.70979144	99.27037088	98.83482049	98.40308924	97.975127	97.55088452
180912A00017	9/12/2018	3.13	9/12/2023	9/12/2018	103.38737	102.3302804	101.2948015	100.2802754	99.28607039	98.3115799	97.35622135	96.41943492	95.50068244
181203A00039	12/3/2018	3.27	12/1/2023	12/3/2018	104.18714	102.9045857	101.6532487	100.431993	99.23974124	98.07546695	96.93819164	95.82698206	94.74094756
160714A00024	9/20/2016	2.5	9/20/2028	9/20/2016	116.62943	110.2396403	104.2440256	98.6161825	93.33160732	88.36755309	83.70289465	79.31800484	75.19464083
180518A00042	5/25/2018	3.42	5/19/2025	5/25/2018	109.71176	106.9017401	104.1786691	101.5392873	98.98047927	96.49926936	94.09281383	91.75839409	89.49341011
190815A00041	8/15/2019	1.86	8/15/2024	8/15/2019	103.84832	101.876403	99.95181592	98.07313504	96.23898648	94.44804684	92.69904097	90.99073986	89.32195865
181001A00031	10/1/2018	3.23	9/29/2023	10/1/2018	103.62801	102.5225597	101.4406833	100.3816313	99.34468684	98.32916287	97.33440043	96.35976737	95.404657

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190327A00027	3/27/2019	2.66	1/15/2025	3/27/2019	106.63592	104.2147997	101.8610028	99.5722882	97.34650181	95.18157339	93.07551276	91.02640624	89.03241327
161118A00026	12/20/2016	3.03	12/21/2026	12/20/2016	114.26569	109.7427681	105.4264382	101.3061671	97.37201539	93.61460057	90.02506262	86.59503211	83.31660038
180518A00048	5/25/2018	3.65	5/18/2028	5/25/2018	122.53178	116.3248914	110.4785309	104.9697275	99.77709951	94.8807362	90.26208854	85.90386844	81.78995611
180919A00013	9/19/2018	3.14	9/19/2022	9/19/2018	100.2365	100.1836371	100.1308493	100.078132	100.0254848	99.9729078	99.92040076	99.86796358	99.81559609
171110A00007	11/10/2017	2.38	11/10/2022	11/10/2017	100.64372	100.4459642	100.2489987	100.0528153	99.85740938	99.66277626	99.46891133	99.27580999	99.08346771
170327A00080	3/27/2019	3.43	3/27/2029	3/27/2019	124.05726	116.8964635	110.206438	103.9536119	98.10697985	92.6378945	87.51987527	82.72843362	78.24091317
171228A00024	12/28/2017	2.71	6/28/2024	12/28/2017	105.16747	103.3115551	101.497437	99.72392698	97.98987597	96.29417471	94.63575236	93.01357484	91.42664333
160211A00036	2/11/2016	2.41	2/11/2026	2/11/2016	108.97741	105.4350098	102.0273039	98.74845742	95.59292069	92.55541311	89.63090874	86.81462251	84.1019974
140923A00070	9/23/2014	2.88	9/23/2022	9/23/2014	100.26901	100.2050385	100.1411597	100.077373	100.0136784	99.95007559	99.88656438	99.82314459	99.75981604
190829A00072	8/29/2019	1.81	12/15/2022	8/29/2019	100.73299	100.4377439	100.1442359	99.85245285	99.56237961	99.27400106	98.98730229	98.70226858	98.41888537
180316A00031	3/16/2018	2.96	12/16/2022	3/16/2018	101.07762	100.7789585	100.4820739	100.1869488	99.89356767	99.60191489	99.31197517	99.02373337	98.73717453
181029A00051	2/5/2019	3.69	2/5/2029	2/5/2019	125.30562	118.2540002	111.6563706	105.4809881	99.69849067	94.28170572	89.205476	84.44650044	79.9831882
190726A00014	7/26/2019	2.23	7/24/2024	7/26/2019	104.43613	102.5173979	100.6434009	98.81283025	97.02442376	95.27696413	93.56927708	91.9002295	90.26872775
161017A00007	10/17/2016	1.99	10/18/2023	10/17/2016	102.35355	101.2034397	100.0790762	98.97960241	97.90419883	96.85208156	95.82250046	94.81473727	93.828104
190621A00039	6/21/2019	2.21	6/17/2024	6/21/2019	104.16086	102.3451474	100.5698094	98.83365906	97.13555437	95.47439611	93.84912572	92.25872345	90.7022066
190422A00030	4/22/2019	2.93	12/22/2025	4/22/2019	110.31363	106.8908223	103.5930481	100.4150658	97.35187914	94.39872874	91.55107932	88.80460786	86.1551924
170327A00079	3/27/2019	3.19	3/29/2027	3/27/2019	115.98756	111.1446924	106.5349779	102.1459273	97.96578683	93.98349251	90.18862582	86.57137241	83.1224838
181016A00019	10/18/2018	3.32	10/16/2023	10/18/2018	103.86538	102.7115333	101.5833374	100.4799391	99.40052671	98.34432363	97.31058643	96.29860319	95.30769179
190917A00033	1/10/2020	2.03	1/10/2023	1/10/2020	100.94374	100.575862	100.210671	99.84813646	99.48822949	99.13092149	98.77618428	98.42399011	98.07431162
160729A00017	7/31/2017	2.47	7/31/2029	7/31/2017	118.40094	111.0708355	104.2489117	97.89725868	91.98097672	86.46792545	81.32849284	76.53538435	72.0634307
170918A00051	12/18/2017	2.24	12/19/2022	12/18/2017	100.88551	100.578856	100.2740704	99.97114074	99.67005	99.37078139	99.07331835	98.77764449	98.48374363
180201A00022	2/1/2018	2.99	2/3/2025	2/1/2018	107.59501	105.1097013	102.6948259	100.3479866	98.06688667	95.84932079	93.69317073	91.59640142	89.55705719
170908A00021	9/8/2017	1.96	9/8/2022	9/8/2017	100.07332	100.0510906	100.0288856	100.0067035	99.98454416	99.96240761	99.94029381	99.91820271	99.89613429
180518A00071	5/25/2018	3.56	5/18/2026	5/25/2018	114.12747	110.2194024	106.4683123	102.8669761	99.40854655	96.08653307	92.89478021	89.82744829	86.87899497
170327A00078	3/27/2019	3.04	3/27/2026	3/27/2019	111.63703	107.9218903	104.3517295	100.9200861	97.62082237	94.44810842	91.39640458	88.46044534	85.63522402
190530A00049	5/30/2019	2.44	5/30/2023	5/30/2019	102.03707	101.2770887	100.5283944	99.79074095	99.06388558	98.34759259	97.64163311	96.9457848	96.25983169
180403A00024	4/3/2018	2.96	4/3/2023	4/3/2018	101.95518	101.3539045	100.7597114	100.1724764	99.59207761	99.01839629	98.45131627	97.89072408	97.33650883
180910A00037	9/10/2018	3.03	9/9/2022	9/10/2018	100.10926	100.0842348	100.0592313	100.0342543	100.0093036	99.98437922	99.95948117	99.93460938	99.90976379
180515A00022	5/15/2018	3.19	5/15/2023	5/15/2018	102.47146	101.7513749	101.0414097	100.3413552	99.65100459	98.9701569	98.29861663	97.63619361	96.98270286
190829A00028	8/29/2019	1.78	8/29/2024	8/29/2019	103.76527	101.7566941	99.7971997	97.88528148	96.01948947	94.19842806	92.42075355	90.68517177	88.99043595
190917A00030	1/10/2020	2.03	1/10/2023	1/10/2020	100.94374	100.575862	100.210671	99.84813646	99.48822949	99.13092149	98.77618428	98.42399011	98.07431162
180328A00015	3/28/2018	2.93	3/28/2023	3/28/2018	101.88727	101.3029112	100.7252497	100.1541676	99.58955297	99.03129636	98.47929085	97.93343188	97.3936172
190621A00034	6/21/2019	2.17	6/15/2023	6/21/2019	101.92328	101.1194597	100.3282903	99.54947537	98.78272712	98.02776657	97.28432332	96.55213516	95.83094781

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
190520A00048	5/20/2019	2.53	5/20/2024	5/20/2019	104.52172	102.7797532	101.075203	99.40693335	97.77385028	96.17490402	94.60908691	93.07543119	91.573007
191002A00042	1/13/2020	1.76	1/13/2023	1/13/2020	100.85804	100.4820358	100.1088419	99.73842533	99.3707552	99.00580089	98.64353229	98.28391974	97.92693402
190426A00023	4/26/2019	2.91	6/24/2026	4/26/2019	112.03664	108.0632642	104.2537099	100.6003573	97.09598659	93.73374983	90.50715019	87.41002182	84.43651127
190904A00043	9/4/2019	1.72	12/15/2022	9/4/2019	100.70645	100.4112509	100.1177936	99.82606119	99.53603829	99.24770985	98.96106097	98.67607693	98.39274317
180727A00017	7/27/2018	3.16	7/27/2023	7/27/2018	103.05385	102.1285277	101.2198085	100.3272521	99.45042977	98.58892808	97.74234788	96.91030378	96.09242358
180312A00014	3/12/2018	3	3/13/2023	3/12/2018	101.80069	101.2583235	100.7217392	100.1908458	99.66555275	99.1457717	98.63141603	98.12240096	97.61864347
200131A00029	1/31/2020	1.78	10/31/2024	1/31/2020	104.11266	101.9286806	99.80115374	97.72821437	95.70807804	93.73903337	91.81943844	89.94771733	88.12235684
150601A00677	6/1/2015	2.39	1/30/2025	6/1/2015	106.3232	103.8586758	101.4639137	99.13654541	96.87430119	94.67500139	92.5365522	90.45694182	88.43423666
160211A00034	2/11/2016	1.82	2/10/2023	2/11/2016	101.01142	100.5574114	100.1074793	99.66157055	99.21963139	98.78160887	98.34745103	97.91710684	97.49052613
160714A00018	9/6/2016	2.28	9/4/2026	9/6/2016	110.15931	106.024219	102.0680853	98.28221707	94.65839067	91.18882371	87.86614917	84.68339091	81.63394074
170609A00052	6/11/2018	2.9	6/9/2027	6/11/2018	115.30336	110.2715475	105.4911356	100.9481895	96.62962782	92.52316184	88.61724315	84.90101471	81.36426552
160222A00005	2/22/2016	2.79	2/22/2028	2/22/2016	116.87034	111.0678358	105.5927756	100.424946	95.54548633	90.93678927	86.58241094	82.46698834	78.57616291
180625A00012	6/25/2018	3.07	6/23/2023	6/25/2018	102.7014	101.8720394	101.0560701	100.2531654	99.46301303	98.68531086	97.91976613	97.16609521	96.42402324
160303A00020	3/3/2016	2.97	3/3/2031	3/3/2016	127.92371	118.5152959	109.8862452	101.9675121	94.69651778	88.01651089	81.8759969	76.22822632	71.03073494
190621A00037	6/21/2019	2.21	5/15/2024	6/21/2019	103.91103	102.188323	100.5024196	98.85220488	97.23660958	95.65460757	94.10521343	92.58748052	91.10049895
130211A00026	2/11/2013	2.27	2/15/2023	2/11/2013	101.2453	100.7767838	100.3126032	99.85269805	99.39700943	98.94547945	98.49805129	98.05466915	97.61527826
141117A00011	11/17/2014	3.81	11/17/2034	11/17/2014	145.33011	131.1693768	118.5938954	107.4148577	97.46697695	88.60544518	80.70329536	73.64911547	67.34506613
171016A00016	10/16/2017	2.23	10/17/2022	10/16/2017	100.4318	100.3010262	100.1706099	100.0405473	99.91083706	99.78147758	99.65246746	99.52380527	99.39548956
190826A00046	8/26/2019	1.77	8/26/2024	8/26/2019	103.72879	101.7286267	99.77715315	97.87288531	96.01438997	94.20028745	92.42924916	90.69999531	89.01129277
180123A00067	1/23/2018	2.67	1/23/2023	1/23/2018	101.2701	100.8653709	100.4638752	100.0655787	99.67044299	99.27843062	98.88950457	98.50362843	98.12076639
191002A00045	2/14/2020	1.75	2/14/2023	2/14/2020	100.9977	100.532642	100.0718627	99.61530445	99.1629094	98.7146207	98.27038256	97.83014018	97.39383976
170327A00077	3/27/2019	2.74	3/27/2024	3/27/2019	104.43093	102.8382936	101.2778479	99.7486873	98.24993867	96.78076097	95.34034386	93.92790631	92.54269521
190325A00022	3/25/2019	2.55	11/25/2022	3/25/2019	100.79745	100.5577352	100.3191589	100.0817176	99.84540336	99.61020812	99.37612395	99.143143	98.91125748
181031A00070	3/1/2019	3.77	3/1/2029	3/1/2019	126.08436	118.9323878	112.2451929	105.9899576	100.1363508	94.65632632	89.52393916	84.71517775	80.20781035
160524A00015	11/25/2016	2.71	11/25/2026	11/25/2016	112.67508	108.2576	104.0394341	100.0104633	96.16114221	92.4824646	88.96592903	85.60350741	82.3876157
190904A00044	9/4/2019	1.72	12/30/2022	9/4/2019	100.78112	100.4441227	100.1093755	99.77685148	99.44652869	99.11838538	98.79240008	98.46855163	98.1468191
190805A00031	8/5/2020	1.77	8/4/2023	8/5/2020	101.81126	100.8700937	99.94625184	99.03926297	98.14866933	97.27402959	96.41491811	95.57092429	94.74165188
150601A00998	6/1/2015	5.37	10/25/2034	6/1/2015	163.5224	148.3609375	134.8570185	122.8162039	112.0680042	102.4628101	93.86922843	86.17177062	79.26884502
180910A00039	9/10/2018	3.03	9/9/2022	9/10/2018	100.10926	100.0842348	100.0592313	100.0342543	100.0093036	99.98437922	99.95948117	99.93460938	99.90976379
180104A00016	1/4/2018	2.56	1/4/2023	1/4/2018	101.09811	100.7465502	100.3974361	100.0507402	99.70643749	99.3645032	99.02491296	98.68764269	98.35266868
160307A00029	3/7/2016	3.21	3/7/2031	3/7/2016	128.67474	119.2864626	110.6734129	102.767047	95.5052285	88.83159867	82.69501186	77.04902833	71.85145882
081028A00036	10/30/2008	4.22	10/30/2023		105.0435	103.8436965	102.6713198	101.5254841	100.4053007	99.30991407	98.23850676	97.19030094	96.16455135
180404A00037	4/6/2018	2.51	4/6/2028	10/6/2022	118.27246	112.1473359	106.9497587	102.8538636	100.4183481	99.87803884	99.77487507	99.67596068	99.57725253

	Parallel-Shift Sensitivity Analysis												
8/31/2022					Price								
REFERENCE	DATE	Rate	DATE	Call/Put	-400	-300	-200	-100	Base	100	200	300	400
180406A00015	4/10/2018	2.61	4/10/2028	4/10/2023	118.82654	112.6713456	107.4088768	103.1738678	100.331558	98.92557332	98.23257729	97.65250871	97.0817187
180925A00059	9/25/2018	3.01	9/25/2028	9/25/2023	122.63004	115.8555159	109.9589886	105.0059007	101.195032	98.7213616	97.28722726	96.27115629	95.32301222
190522A00029	5/22/2019	2.41	5/22/2024	5/22/2023	104.60048	102.802263	101.2505377	100.0034421	99.08607797	98.35304347	97.66495593	96.98848414	96.32137911
190523A00048	5/23/2019	2.32	5/23/2024	5/23/2023	104.45834	102.663383	101.126061	99.90517666	99.00904738	98.28138971	97.5918304	96.91325076	96.24409372
190613A00024	6/13/2019	2.18	6/13/2024	6/13/2023	104.39602	102.5465794	100.975061	99.72824913	98.79455102	98.0177402	97.27835976	96.55132322	95.83512827
190725A00018	7/25/2019	1.78	7/25/2024	10/25/2022	104.11568	102.1523739	100.7159608	100.0117427	99.81226197	99.66121008	99.5106526	99.36053512	99.21087778
191008A00020	10/8/2019	1.58	10/8/2024	10/11/2022	104.25335	102.1061247	100.6163062	99.98387515	99.83905592	99.72632353	99.61396006	99.501791	99.38988782
191121A00031	11/21/2019	1.54	11/21/2024	11/21/2022	104.68308	102.3913846	100.7558308	99.93736515	99.64952168	99.42477816	99.20155314	98.97928211	98.7580174
191209A00045	12/9/2019	1.56	12/9/2024	12/9/2022	104.86968	102.5163291	100.8236168	99.9120186	99.5442748	99.26996227	98.99908869	98.72958461	98.46155941
191211A00013	12/11/2019	1.57	12/11/2024	12/12/2022	104.87801	102.5258199	100.824772	99.90552945	99.52982002	99.24746619	98.96865954	98.69132845	98.41556498
200131A00023	1/31/2020	1.56	1/31/2025	1/31/2023	104.86618	102.4135202	100.6536837	99.65913736	99.15782389	98.74399461	98.33580178	97.93096856	97.52945463
200207A00008	2/7/2020	1.35	2/7/2025	2/7/2023	104.77764	102.3061917	100.56744	99.58262753	99.0619042	98.62893758	98.20260126	97.77991159	97.36082048
200221A00041	2/21/2020	1.53	2/21/2025	2/21/2023	104.93517	102.4248795	100.6181122	99.56147562	98.9929241	98.52360256	98.06224659	97.60519801	97.15239026
200227A00025	2/27/2020	1.09	2/27/2025	2/27/2023	104.25004	101.8216893	100.1859415	99.32150432	98.79673759	98.3146238	97.83777223	97.36552649	96.89782112
200303A00035	3/3/2020	0.81	3/3/2025	3/3/2023	103.68924	101.3428738	99.88538585	99.1292474	98.61370012	98.12233782	97.63608197	97.15456214	96.67774661