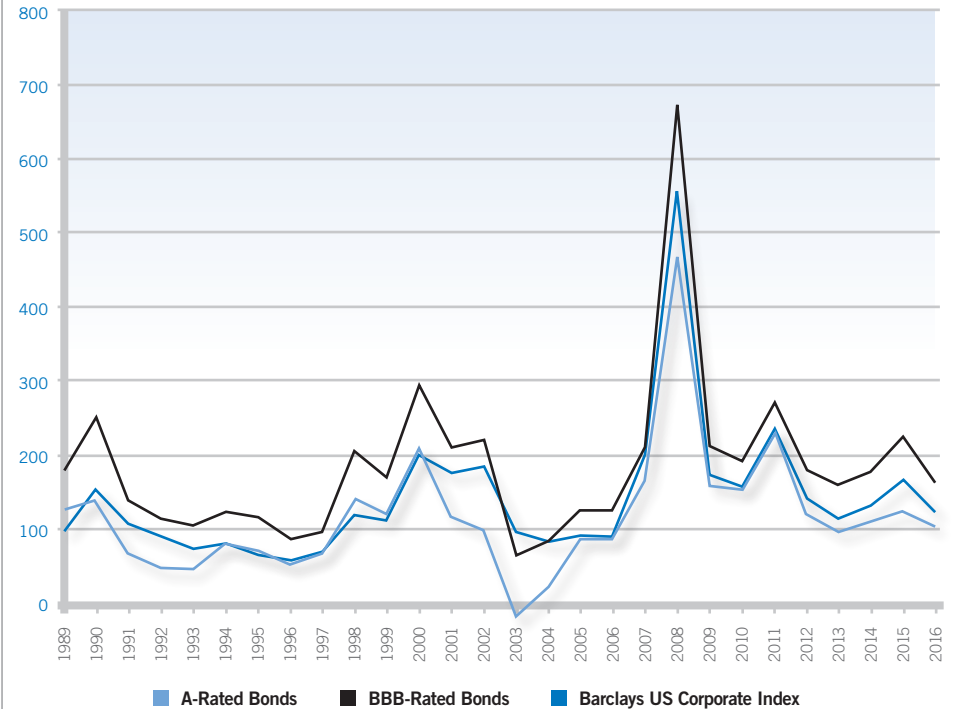


## Historical Interest Rates & Credit Spreads

10 Yr U.S. Treasury Bond		A-Rated Bonds		BBB-Rated Bonds		BbgBc US Corporate Index	
Month - Year	Yield to Maturity	Yield	Spread	Yield	Spread	Yield	Spread
31-Dec-89	7.92	9.16	124	9.71	179	8.89	97
31-Dec-90	8.07	9.46	139	10.56	249	9.58	151
31-Dec-91	6.07	6.74	67	7.45	138	7.14	107
31-Dec-92	6.69	7.16	47	7.81	112	7.57	88
31-Dec-93	5.79	6.26	47	6.83	104	6.52	73
31-Dec-94	7.83	8.61	78	9.05	122	8.61	78
31-Dec-95	5.58	6.27	69	6.73	115	6.23	65
31-Dec-96	6.42	6.93	51	7.27	85	6.98	56
31-Dec-97	5.85	6.51	66	6.79	94	6.52	67
31-Dec-98	4.66	6.04	138	6.70	204	5.84	118
31-Dec-99	6.44	7.65	121	8.12	168	7.55	111
31-Dec-00	5.12	7.21	209	8.06	294	7.11	199
31-Dec-01	5.04	6.20	116	7.14	210	6.78	174
31-Dec-02	3.83	4.79	96	6.04	221	5.67	184
31-Dec-03	4.32	4.15	-17	4.95	63	5.27	95
31-Dec-04	4.22	4.43	21	5.05	83	5.03	81
31-Dec-05	4.39	5.25	86	5.63	124	5.29	90
31-Dec-06	4.70	5.56	86	5.94	124	5.58	88
31-Dec-07	4.03	5.69	166	6.13	210	6.01	198
31-Dec-08	2.25	6.92	467	8.98	673	7.80	555
31-Dec-09	3.84	5.40	156	5.96	212	5.56	172
31-Dec-10	3.29	4.80	151	5.20	191	4.85	156
31-Dec-11	1.68	3.97	229	4.39	271	4.02	234
31-Dec-12	1.76	2.95	119	3.56	180	3.17	141
31-Dec-13	3.03	3.98	95	4.61	158	4.17	114
31-Dec-14	2.17	3.26	109	3.95	178	3.48	131
31-Dec-15	2.27	3.49	122	4.51	224	3.92	165
31-Jan-16	1.92	3.35	143	4.53	261	3.85	193
29-Feb-16	1.74	3.24	150	4.38	264	3.71	197
31-Mar-16	1.77	3.03	126	3.96	219	3.40	163
30-Apr-16	1.83	2.97	114	3.80	197	3.29	146
31-May-16	1.85	3.01	116	3.85	200	3.34	149
30-Jun-16	1.47	2.71	124	3.52	205	3.03	156
30-Jul-16	1.45	2.60	115	3.37	192	2.90	145
31-Aug-16	1.58	2.66	108	3.36	178	2.93	135
30-Sep-16	1.60	2.72	112	3.38	178	2.98	138
31-Oct-16	1.83	2.91	108	3.54	171	3.15	132
30-Nov-16	2.38	3.43	105	4.07	169	3.67	129
31-Dec-16	2.45	3.46	101	4.05	160	3.68	123
31-Jan-17	2.45	3.45	100	3.91	146	3.66	121
28-Feb-17	2.39	3.34	95	3.88	149	3.54	115
31-Mar-17	2.39	3.36	97	3.90	151	3.57	118
30-Apr-17	2.28	3.23	95	3.77	149	3.44	116
31-May-17	2.20	3.12	92	3.66	146	3.33	113
30-Jun-17	2.31	3.19	88	3.72	141	3.40	109
31-Jul-17	2.30	3.12	82	3.64	134	3.32	102
31-Aug-17	2.12	3.00	88	3.54	142	3.22	110
30-Sep-17	2.33	3.13	80	3.64	131	3.34	101
31-Oct-17	2.38	3.12	74	3.63	125	3.33	95
30-Nov-17	2.41	3.17	76	3.69	128	3.38	97

Source: Barclays Capital 12/01/17. For Financial Professional Use

## Credit Spreads to Treasuries - Years ended December 31



Averages	A-Rated Bonds	BBB-Rated Bonds	US Corporate Index
Period ended November 30, 2017			
2 years	1.05	1.73	1.32
Period ended December 31, 2016			
5 years	1.09	1.80	1.35
10 years	1.64	2.35	1.89
20 years	1.32	2.02	1.60

## Key Observations

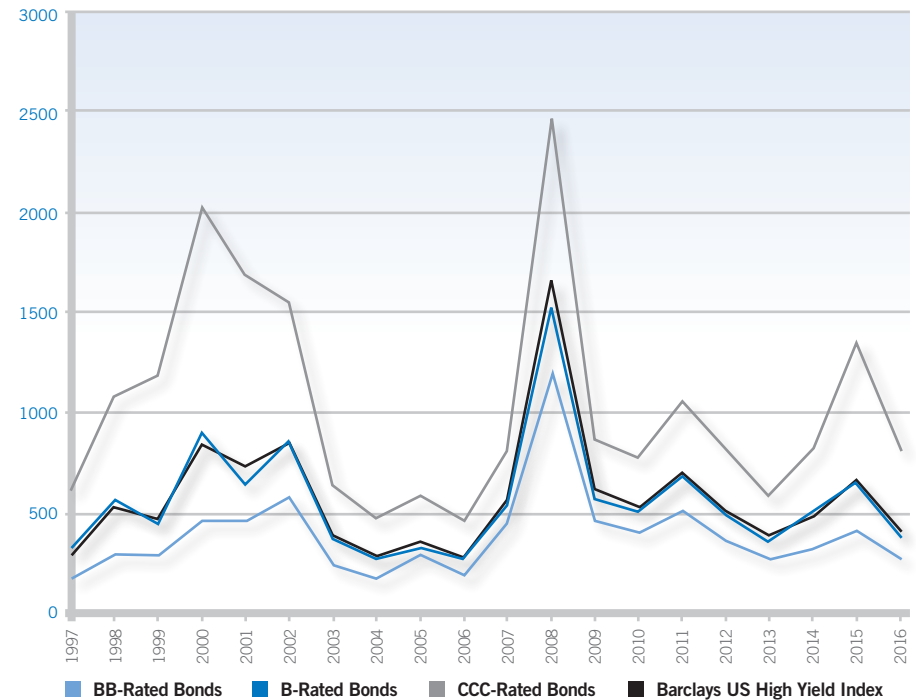
For the month of November 2017, the yield on the 10-year US Treasury ended at 2.41%, 3 basis points higher from where it began. The Bloomberg Barclays US Corporate Index widened by 2 basis points to 0.97% over Treasuries. The A Rated Corporate Credit Spread increased by 2 basis points to 0.76%. The BBB Rated Corporate Credit Spreads widened by 3 basis points to 1.28%.

## Historical Interest Rates & Credit Spreads

Month - Year	10 Yr U.S. Treasury Bond	BB-Rated Bonds		B-Rated Bonds		CCC-Rated Bonds		BbgBc US High Yield Index	
	Yield to Maturity	Yield	Spread	Yield	Spread	Yield	Spread	Yield	Spread
31-Dec-97	5.85	7.53	168	9.11	326	12.02	617	8.73	288
31-Dec-98	4.66	7.60	294	10.25	559	15.48	1082	9.93	527
31-Dec-99	6.44	9.28	284	10.92	448	18.30	1186	11.11	467
31-Dec-00	5.12	9.77	465	14.12	900	25.38	2026	13.60	848
31-Dec-01	5.04	9.53	449	11.46	642	21.96	1692	12.32	728
31-Dec-02	3.83	9.65	582	12.42	859	19.35	1552	12.34	851
31-Dec-03	4.32	6.71	239	8.03	371	10.72	640	8.25	393
31-Dec-04	4.22	6.01	179	6.89	267	8.97	475	7.09	287
31-Dec-05	4.39	7.31	292	7.65	326	10.27	588	7.95	356
31-Dec-06	4.70	6.53	183	7.39	269	9.28	458	7.44	274
31-Dec-07	4.03	8.53	450	9.39	536	12.13	810	9.72	569
31-Dec-08	2.25	14.36	1211	17.45	1520	26.91	2466	18.87	1662
31-Dec-09	3.84	8.37	453	9.51	567	12.52	868	10.00	616
31-Dec-10	3.29	7.28	399	8.35	506	11.04	775	8.55	526
31-Dec-11	1.68	6.80	512	8.50	682	12.24	1056	8.67	699
31-Dec-12	1.76	5.35	359	6.62	486	9.88	812	6.87	511
31-Dec-13	3.03	5.72	269	6.67	364	8.94	591	6.85	382
31-Dec-14	2.17	5.41	324	7.19	502	10.37	820	7.00	483
31-Dec-15	2.27	6.44	417	8.81	654	15.78	1,351	8.87	660
31-Jan-16	1.92	6.77	485	9.17	725	16.68	1,476	9.26	734
29-Feb-16	1.74	6.42	468	8.74	700	16.52	1,478	9.00	726
31-Mar-16	1.77	5.95	418	7.99	622	14.84	1,307	8.33	656
30-Apr-16	1.83	5.54	371	7.23	540	13.14	1,131	7.60	577
31-May-16	1.85	5.48	363	7.32	547	12.53	1,068	7.51	566
30-Jun-16	1.47	5.41	394	7.23	576	12.66	1,119	7.41	594
31-Jul-16	1.45	4.95	350	6.61	516	12.02	1,057	6.85	540
31-Aug-16	1.58	4.70	312	6.25	467	11.26	968	6.48	490
30-Sep-16	1.60	4.77	317	6.27	467	10.93	933	6.40	480
31-Oct-16	1.83	4.94	311	6.48	465	11.15	932	6.50	467
30-Nov-16	2.38	5.30	292	6.62	424	11.36	898	6.93	455
31-Dec-16	2.45	5.15	270	6.27	382	10.52	807	6.54	409
31-Jan-17	2.45	5.07	262	6.09	364	9.81	736	6.33	388
28-Feb-17	2.39	4.88	249	5.85	346	9.08	669	6.02	363
31-Mar-17	2.39	4.91	252	6.14	375	9.31	692	6.22	383
30-Apr-17	2.28	4.65	237	5.89	361	9.19	691	5.99	371
31-May-17	2.20	4.57	237	5.71	351	8.82	662	5.83	363
30-Jun-17	2.31	4.58	227	5.92	361	9.11	680	5.95	364
31-Jul-17	2.30	4.47	217	5.77	347	8.79	649	5.82	352
31-Aug-17	2.12	4.44	232	5.82	370	9.11	699	5.90	378
30-Sep-17	2.33	4.39	206	5.73	340	8.80	647	5.80	347
31-Oct-17	2.38	4.40	202	5.66	328	8.75	637	5.76	338
30-Nov-17	2.41	4.43	202	5.89	348	8.59	618	5.85	344

Source: Barclays Capital 12/01/17. For Financial Professional Use

## Credit Spreads to Treasuries - Years ended December 31



Averages	BB	B	CCC	BbgBc US HY Credit Index
Period ended November 30, 2017				
2 years	3.04	4.57	9.13	4.73
Period ended December 31, 2016				
5 years	3.28	4.78	8.76	4.89
10 years	4.66	6.20	10.36	6.52
15 years	4.12	5.58	9.85	5.88

## Key Observations

For the month of November 2017, the yield on the 10-year US Treasury ended at 2.41%, 3 basis points higher from where it began. The Bloomberg Barclays US High Yield Index widened by 6 basis points to 3.44% over Treasuries. The BB Rated Corporate Credit Spread remained the same at 2.02%. The B Rated Corporate Credit Spreads widened by 20 basis points to 3.48%. The CCC Rated Corporate Credit Spread decreased by 19 basis points to 6.18%.