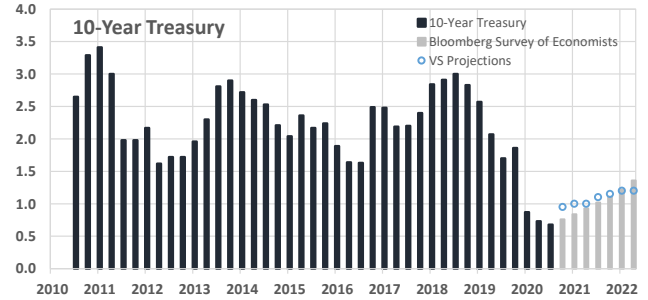
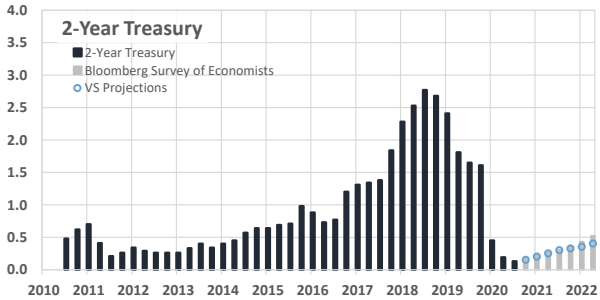
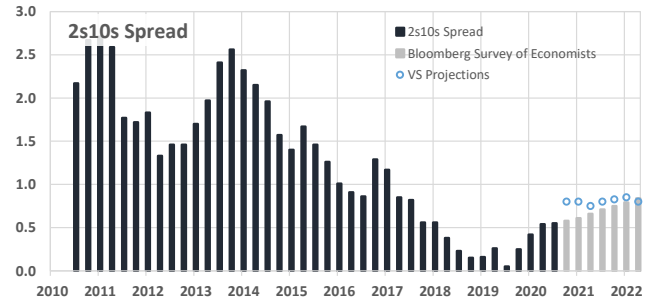
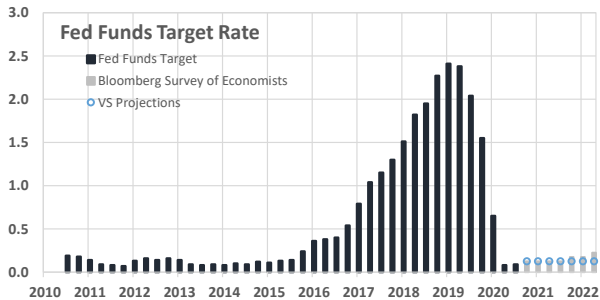
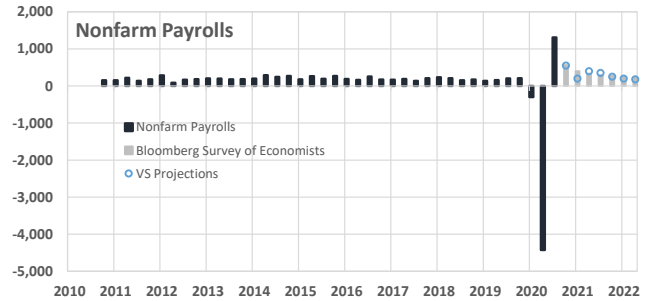
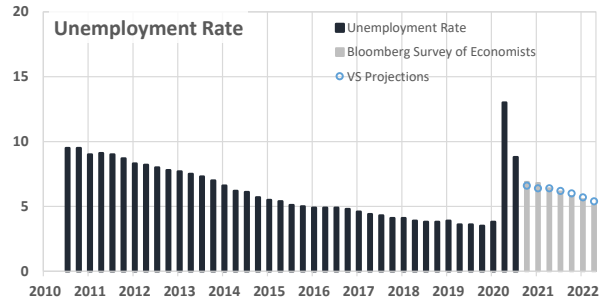
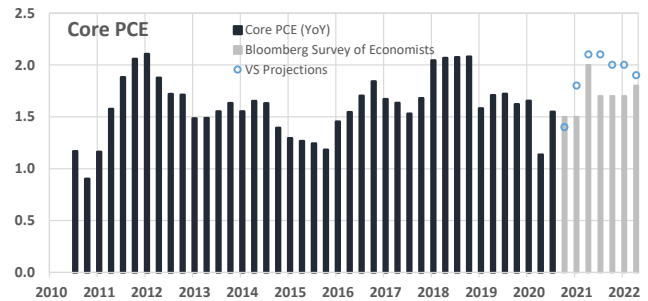
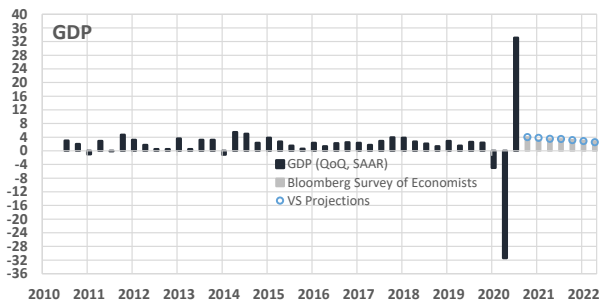


Vining Sparks Economic and Interest Rate Projections

November 2020

	Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
GDP (QoQ, SAAR)	4.0	3.8	3.5	3.4	3.1	2.8	-2.5	3.4
Headline CPI (YoY)	1.5	1.8	2.3	2.2	1.9	2.0	1.0	2.2
Core PCE (YoY)	1.4	1.8	2.1	2.1	2.0	2.0	1.2	2.1
Unemployment Rate	6.6	6.4	6.4	6.2	6.0	5.7	6.6	6.0
Nonfarm Payrolls (Monthly)	550	200	400	350	250	200	-610	300

	Q420	Q121	Q221	Q321	Q421	Q122	Q222	Q322
Fed Funds Target	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
2-Year Treasury Yield	0.15	0.20	0.25	0.30	0.33	0.35	0.40	0.43
10-Year Treasury Yield	0.95	1.00	1.00	1.10	1.15	1.20	1.20	1.20
30-Year Treasury Yield	1.73	1.73	1.70	1.83	1.90	1.96	1.93	1.91
Prime Rate	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.25
30-Year Mortgage Rate	2.95	2.90	2.80	2.90	2.95	3.00	3.00	3.00



Sources: ¹ Bloomberg Survey of Economists, ² Economists' Real-Time Tracking Updates, Vining Sparks

Bloomberg Survey of Economists

November Survey

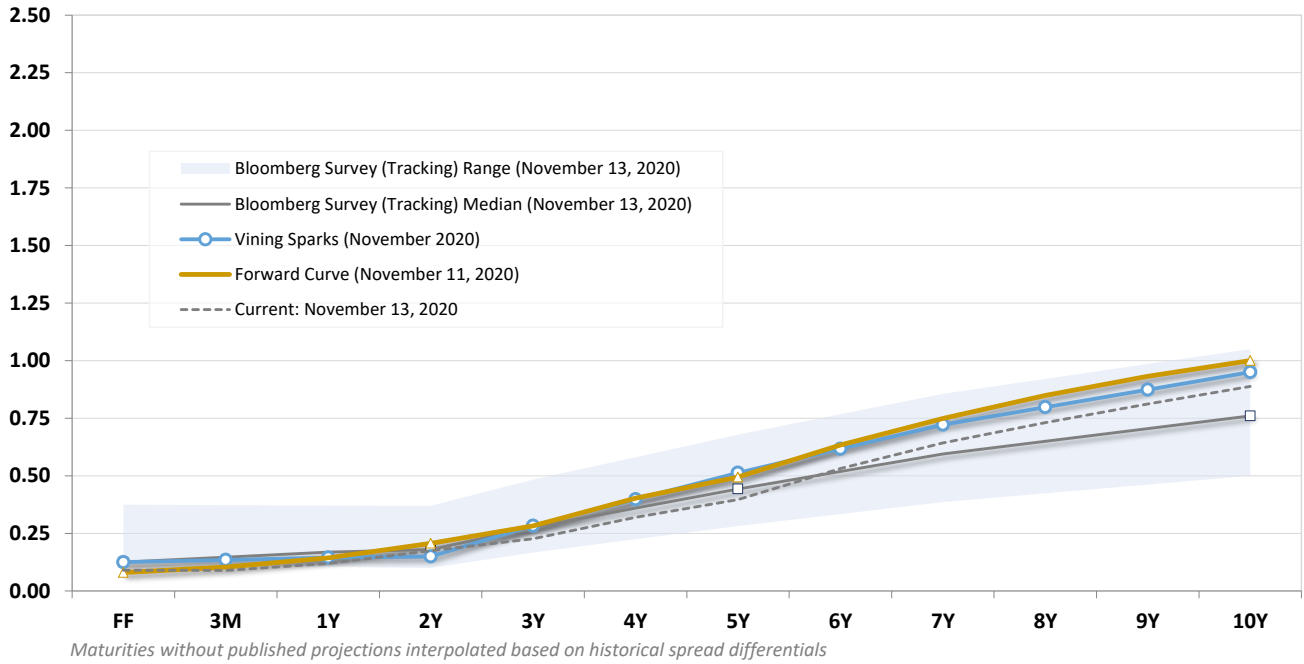
GDP		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
Vining Sparks Projections	11/13/2020	4.0	3.8	3.5	3.4	3.1	2.8	-2.5	3.4
November Survey	11/13/2020	4.0	3.1	3.3	3.2	3.2	3.0	-3.6	3.8
October Survey	10/9/2020	4.0	3.7	3.6	3.2	3.2	2.6	-4.0	3.7
Personal Consumption		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
November Survey	11/13/2020	4.2	3.0	3.4	3.3	3.2	2.9	-3.8	4.3
October Survey	10/9/2020	3.7	3.1	3.6	3.0	3.0	2.6	-4.2	4.1
Private Investment		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
November Survey	11/13/2020	8.1	4.5	4.4	4.4	4.7	4.3	-6.3	6.9
October Survey	10/9/2020	10.5	7.4	6.0	5.2	4.9	5.0	-8.2	6.5
Government Expenditures		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
November Survey	11/13/2020	-0.5	0.9	1.0	1.1	1.2	0.5	1.3	0.3
October Survey	10/9/2020	0.2	0.3	0.6	0.8	0.9	0.5	2.0	0.7
Headline CPI		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
Vining Sparks Projections	11/13/2020	1.5	1.8	2.3	2.2	1.9	2.0	1.0	2.2
November Survey	11/13/2020	1.2	1.5	2.5	1.9	1.9	2.0	1.2	1.9
October Survey	10/9/2020	1.2	1.5	2.6	2.0	2.0	2.0	1.2	1.9
Core PCE		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
Vining Sparks Projections	11/13/2020	1.4	1.8	2.1	2.1	2.0	2.0	1.2	2.1
November Survey	11/13/2020	1.5	1.6	2.1	1.7	1.7	1.7	1.4	1.7
October Survey	10/9/2020	1.5	1.6	2.1	1.6	1.7	1.7	1.4	1.7
Unemployment Rate		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
Vining Sparks Projections	11/13/2020	6.6	6.4	6.4	6.2	6.0	5.7	6.6	6.0
November Survey	11/13/2020	6.8	6.7	6.4	6.1	5.7	5.4	8.1	6.3
October Survey	10/9/2020	7.6	7.2	6.8	6.5	6.1	5.8	8.3	6.7
Nonfarm Payroll (Monthly)		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
Vining Sparks Projections	11/13/2020	550	200	400	350	250	200	-610	300
November Survey	11/13/2020	555	400	344	289	270	247	-718	340
October Survey	10/9/2020	604	400	333	288	270	249	-710	314
New Home Sales		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
November Survey	11/13/2020	906	852	828	808	846	838	827	868
October Survey	10/9/2020	835	798	823	799	821	832	796	811
Existing Home Sales		Q420	Q121	Q221	Q321	Q421	Q122	2020	2021
November Survey	11/13/2020	5,900	5,700	5,700	5,700	5,700	5,600	5,500	5,700
October Survey	10/9/2020	5,600	5,500	5,600	5,600	5,500	5,600	5,300	5,600
Fed Funds Target ¹		Q420	Q121	Q221	Q321	Q421	Q122	Q222	Q322
Vining Sparks Projections	11/13/2020	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
November Survey	11/13/2020	0.13	0.13	0.13	0.13	0.18	0.18	0.23	0.23
October Survey	10/9/2020	0.13	0.13	0.13	0.13	0.18	0.18	0.23	0.23
2-Year Treasury ¹		Q420	Q121	Q221	Q321	Q421	Q122	Q222	Q322
Vining Sparks Projections	11/13/2020	0.15	0.20	0.25	0.30	0.33	0.35	0.40	0.43
November Survey	11/13/2020	0.18	0.23	0.27	0.31	0.36	0.43	0.52	0.58
October Survey	10/9/2020	0.20	0.25	0.29	0.33	0.38	0.45	0.52	0.58
10-Year Treasury ¹		Q420	Q121	Q221	Q321	Q421	Q122	Q222	Q322
Vining Sparks Projections	11/13/2020	0.95	1.00	1.00	1.10	1.15	1.20	1.20	1.20
November Survey	11/13/2020	0.76	0.84	0.93	1.02	1.11	1.22	1.36	1.46
October Survey	10/9/2020	0.76	0.86	0.96	1.05	1.14	1.26	1.36	1.46

*Sources: Bloomberg Survey of Economists, ¹ Economists' Real-Time Updates, Vining Sparks

Year-End Rate Projections

November 2020

YE2020 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

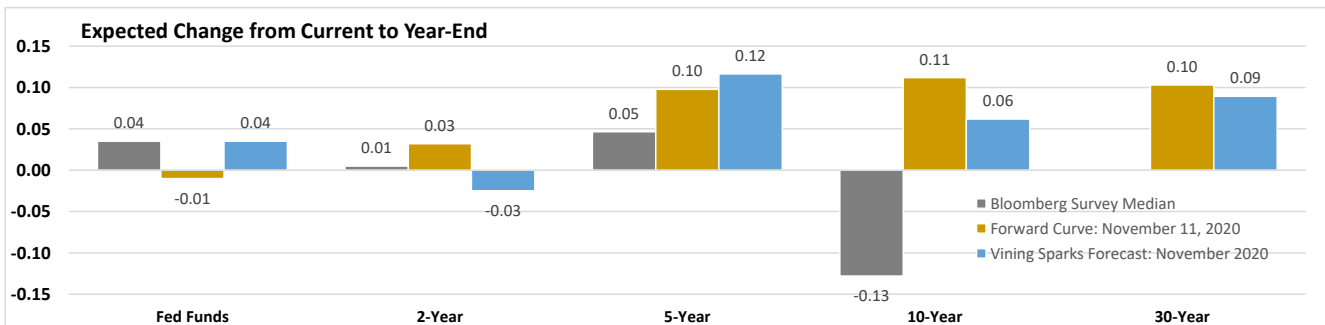
Interest Rate Projections

November 11, 2020

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 13, 2020									
Low Forecast	0.13			0.10		0.28		0.50	
Median Forecast	0.13			0.18		0.44		0.76	
High Forecast	0.38			0.37		0.68		1.05	
Forward Curve: November 11, 2020	0.08	0.10	0.14	0.21	0.28	0.49	0.75	1.00	1.74
Vining Sparks Forecast: November 2020	0.13	0.14	0.15	0.15	0.28	0.51	0.72	0.95	1.73
Current: November 13, 2020	0.09	0.09	0.12	0.18	0.23	0.40	0.64	0.89	1.64

Projected Δ by Year-End

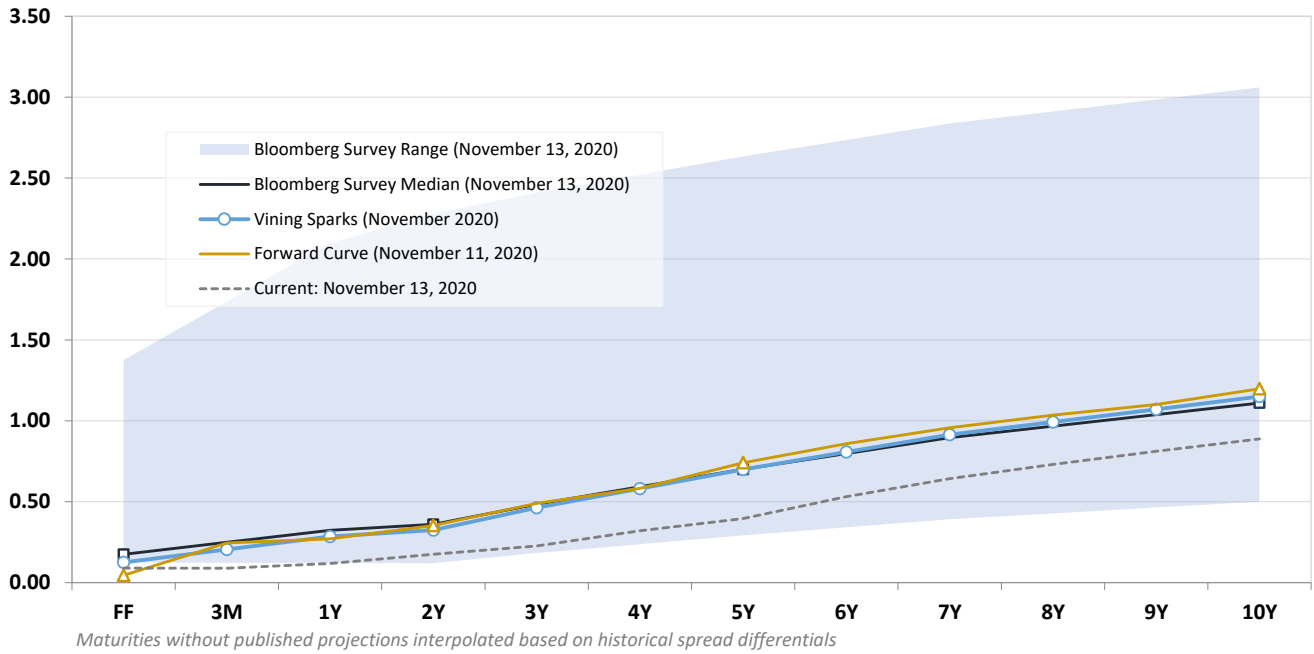
	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 13, 2020									
Low Forecast	0.04			-0.08		-0.12		-0.39	
Median Forecast	0.04			0.01		0.05		-0.13	
High Forecast	0.29			0.20		0.28		0.16	
Forward Curve: November 11, 2020	-0.01	0.01	0.02	0.03	0.06	0.10	0.11	0.11	0.10
Vining Sparks Forecast: November 2020	0.04	0.05	0.03	-0.03	0.06	0.12	0.08	0.06	0.09



Year-End Rate Projections

November 2020

YE2021 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

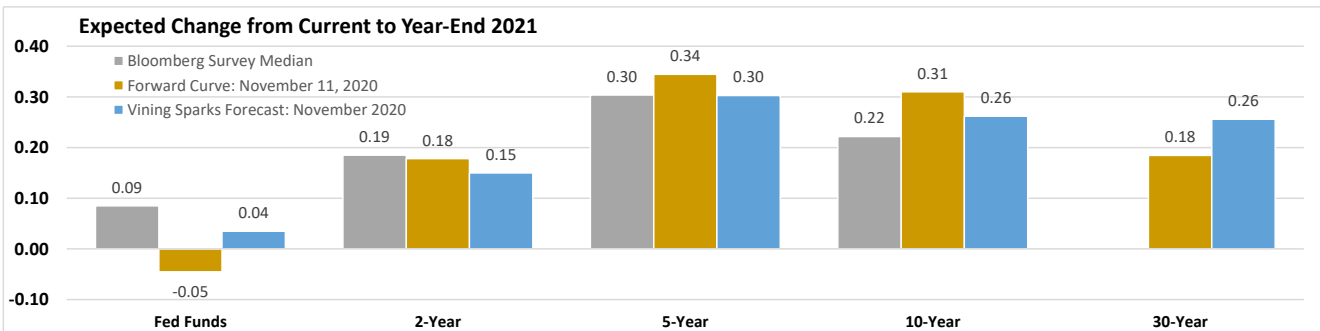
Interest Rate Projections

November 11, 2020

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 13, 2020									
Low Forecast	0.13			0.12		0.29		0.50	
Median Forecast	0.18			0.36		0.70		1.11	
High Forecast	1.38			2.28		2.63		3.06	
Forward Curve: November 11, 2020	0.05	0.24	0.27	0.35	0.49	0.74	0.96	1.20	1.82
Vining Sparks Forecast: November 2020	0.13	0.21	0.29	0.33	0.46	0.70	0.91	1.15	1.90
Current: November 13, 2020	0.09	0.09	0.12	0.18	0.23	0.40	0.64	0.89	1.64

Projected Δ by Year-End

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 13, 2020									
Low Forecast	0.04			-0.06		-0.10		-0.39	
Median Forecast	0.09			0.19		0.30		0.22	
High Forecast	1.29			2.11		2.24		2.17	
Forward Curve: November 11, 2020	-0.05	0.16	0.15	0.18	0.26	0.34	0.31	0.31	0.18
Vining Sparks Forecast: November 2020	0.04	0.12	0.17	0.15	0.24	0.30	0.27	0.26	0.26



Sources: Bloomberg Survey of Economists Real-Time Tracking Index, Vining Sparks

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