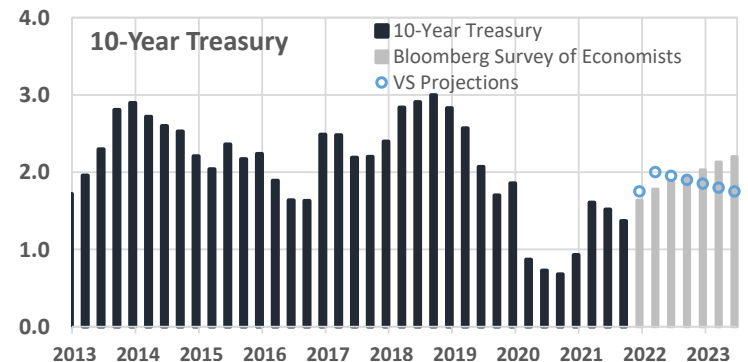
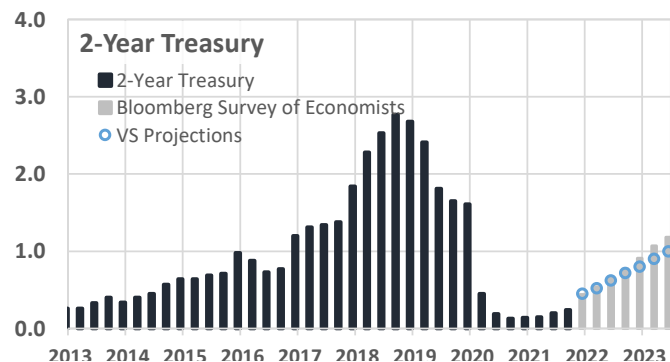
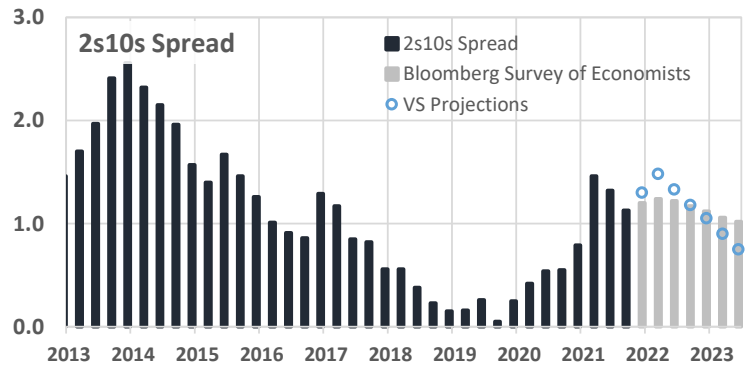
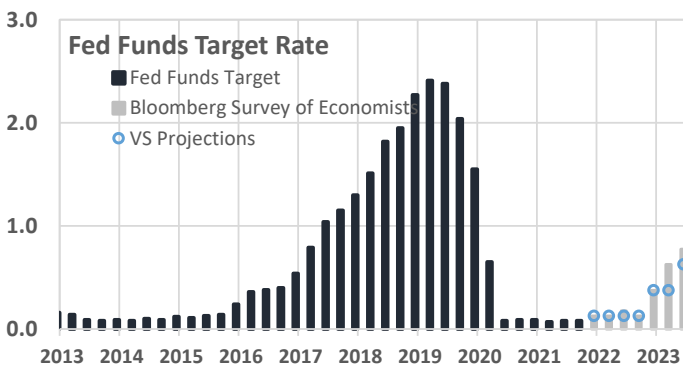
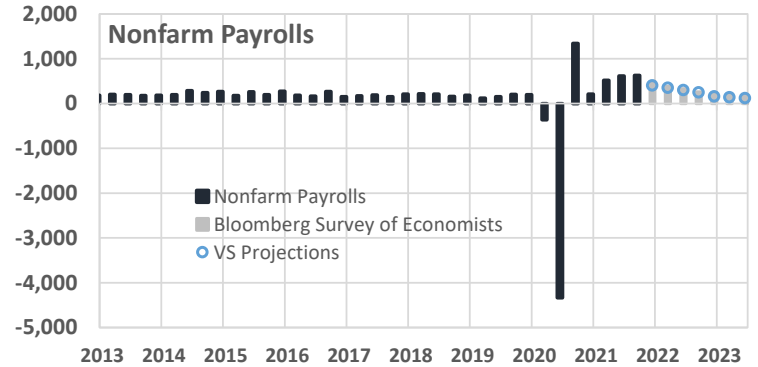
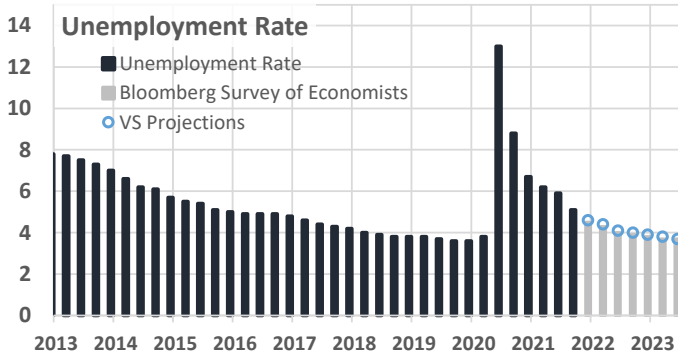
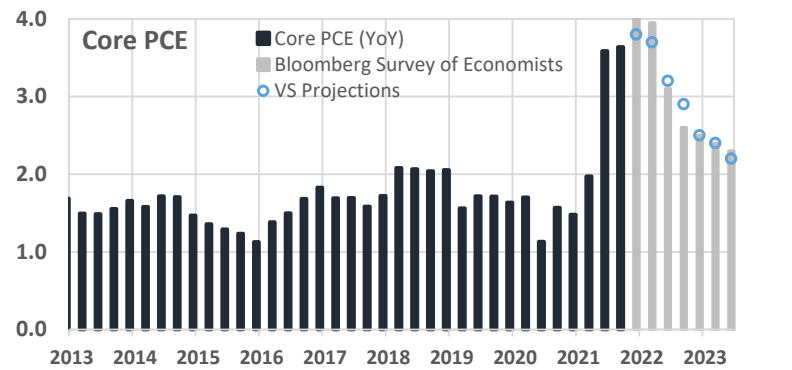
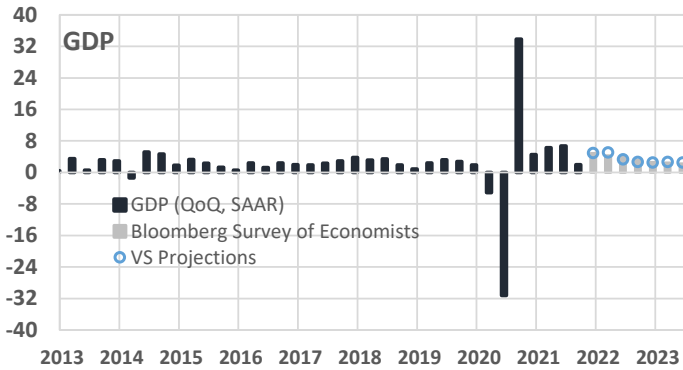


Vining Sparks Economic and Interest Rate Projections

November 2021

	Q421	Q122	Q222	Q322	Q422	Q123	2021	2022
GDP (QoQ, SAAR)	4.9	5.0	3.3	2.6	2.4	2.6	5.7	3.7
Headline CPI (YoY)	5.5	5.0	4.0	3.1	2.9	2.6	4.4	3.5
Core PCE (YoY)	3.8	3.7	3.2	2.9	2.5	2.4	3.2	3.0
Unemployment Rate	4.6	4.4	4.1	4.0	3.9	3.8	5.4	4.2
Nonfarm Payrolls (Monthly)	400	350	300	250	160	140	530	270

	Q421	Q122	Q222	Q322	Q422	Q123	Q223	Q323
Fed Funds Target	0.13	0.13	0.13	0.13	0.38	0.38	0.63	0.63
2-Year Treasury Yield	0.45	0.52	0.62	0.72	0.80	0.90	1.00	1.10
10-Year Treasury Yield	1.75	2.00	1.95	1.90	1.85	1.80	1.75	1.70
30-Year Treasury Yield	2.39	2.70	2.60	2.50	2.40	2.30	2.20	2.10
Prime Rate	3.25	3.25	3.25	3.25	3.50	3.50	3.75	3.75
30-Year Mortgage Rate	3.50	3.80	3.85	3.85	3.85	3.80	3.75	3.70



Bloomberg Survey of Economists

November BBG Survey

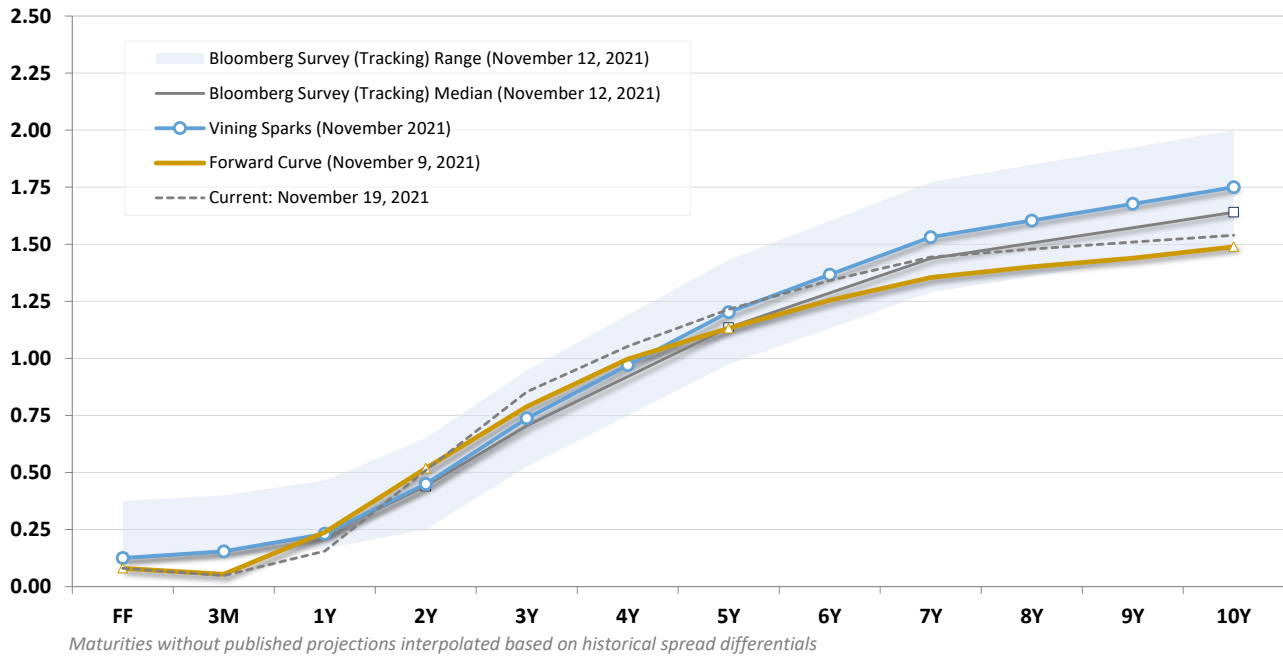
		Q421	Q122	Q222	Q322	Q422	Q123	2021	2022
GDP									
Vining Sparks Projections	11/19/2021	4.9	5.0	3.3	2.6	2.4	2.6	5.7	3.7
November BBG Survey	11/12/2021	4.8	4.3	4.0	3.2	2.6	2.4	5.5	3.9
October BBG Survey	10/15/2021	4.9	4.0	3.8	3.0	2.5	2.4	5.8	4.0
Personal Consumption									
November BBG Survey	11/12/2021	4.0	3.3	3.0	2.7	2.4	2.3	7.9	3.6
October BBG Survey	10/15/2021	4.0	3.3	3.0	2.8	2.4	2.2	7.8	3.7
Private Investment									
November BBG Survey	11/12/2021	7.0	8.7	6.2	5.4	3.9	3.2	7.9	7.3
October BBG Survey	10/15/2021	8.1	7.2	5.3	5.0	3.9	3.5	8.0	7.8
Government Expenditures									
November BBG Survey	11/12/2021	1.3	2.5	2.0	1.8	1.6	1.4	0.7	1.4
October BBG Survey	10/15/2021	1.6	2.0	1.7	1.7	1.5	1.2	0.9	1.5
Headline CPI									
Vining Sparks Projections	11/19/2021	5.5	5.0	4.0	3.1	2.9	2.6	4.4	3.5
November BBG Survey	11/12/2021	5.8	5.5	4.0	3.1	2.6	2.4	4.5	3.6
October BBG Survey	10/15/2021	5.5	5.0	3.5	2.7	2.5	2.4	4.4	3.3
Core PCE									
Vining Sparks Projections	11/19/2021	3.8	3.7	3.2	2.9	2.5	2.4	3.2	3.0
November BBG Survey	11/12/2021	4.0	4.0	3.1	2.6	2.5	2.4	3.2	3.0
October BBG Survey	10/15/2021	4.0	3.8	2.9	2.5	2.3	2.3	3.2	2.8
Unemployment Rate									
Vining Sparks Projections	11/19/2021	4.6	4.4	4.1	4.0	3.9	3.8	5.4	4.2
November BBG Survey	11/12/2021	4.5	4.2	4.0	3.9	3.8	3.7	5.4	4.0
October BBG Survey	10/15/2021	4.7	4.5	4.2	4.0	3.8	3.8	5.5	4.2
Nonfarm Payroll (Monthly)									
Vining Sparks Projections	11/19/2021	400	350	300	250	160	140	530	270
November BBG Survey	11/12/2021	500	387	333	268	249	205	552	321
October BBG Survey	10/15/2021	469	406	349	274	243	216	523	337
New Home Sales									
November BBG Survey	11/12/2021	808	823	836	843	848	851	796	835
October BBG Survey	10/15/2021	786	811	823	831	839	822	790	847
Existing Home Sales									
November BBG Survey	11/12/2021	6,000	6,100	6,100	6,100	6,000	6,000	6,100	6,100
October BBG Survey	10/15/2021	5,900	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Fed Funds Target¹									
Vining Sparks Projections	11/19/2021	0.13	0.13	0.13	0.13	0.38	0.38	0.63	0.63
November BBG Survey	11/12/2021	0.13	0.13	0.18	0.23	0.38	0.63	0.78	0.93
October BBG Survey	10/15/2021	0.13	0.13	0.13	0.18	0.28	0.43	0.58	0.78
2-Year Treasury¹									
Vining Sparks Projections	11/19/2021	0.45	0.52	0.62	0.72	0.80	0.90	1.00	1.10
November BBG Survey	11/12/2021	0.44	0.54	0.65	0.77	0.91	1.07	1.18	1.32
October BBG Survey	10/15/2021	0.38	0.47	0.56	0.67	0.81	0.98	1.12	1.29
10-Year Treasury¹									
Vining Sparks Projections	11/19/2021	1.75	2.00	1.95	1.90	1.85	1.80	1.75	1.70
November BBG Survey	11/12/2021	1.64	1.78	1.87	1.94	2.03	2.13	2.20	2.30
October BBG Survey	10/15/2021	1.68	1.80	1.90	1.98	2.05	2.19	2.26	2.38

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

Year-End Rate Projections

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YE2021 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

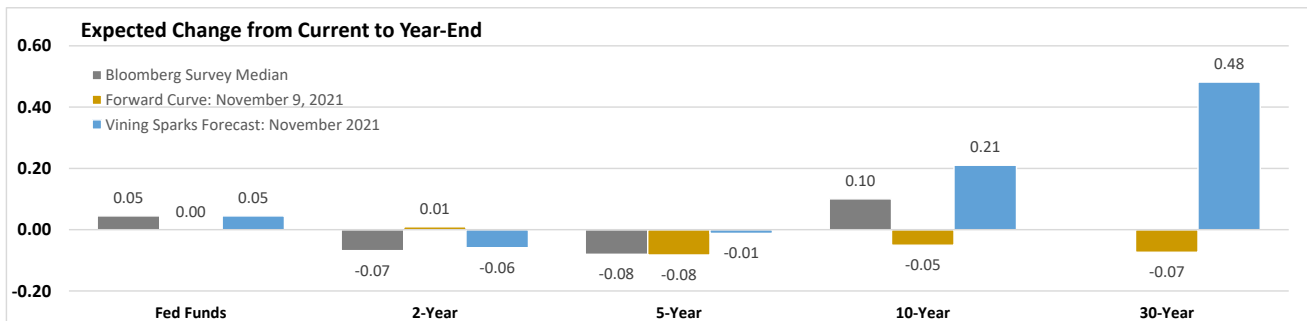
Interest Rate Projections

November 9, 2021

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 12, 2021									
Low Forecast	0.13			0.25		0.97		1.50	
Median Forecast	0.13			0.44		1.13		1.64	
High Forecast	0.38			0.65		1.43		2.00	
Forward Curve: November 9, 2021	0.08	0.05	0.24	0.52	0.79	1.13	1.35	1.49	1.83
Vining Sparks Forecast: November 2021	0.13	0.15	0.23	0.45	0.74	1.20	1.53	1.75	2.39
Current: November 19, 2021	0.08	0.05	0.16	0.51	0.85	1.21	1.44	1.54	1.91

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 12, 2021									
Low Forecast	0.05			-0.26		-0.24		-0.04	
Median Forecast	0.05			-0.07		-0.08		0.10	
High Forecast	0.30			0.14		0.22		0.46	
Forward Curve: November 9, 2021	0.00	0.01	0.08	0.01	-0.07	-0.08	-0.09	-0.05	-0.07
Vining Sparks Forecast: November 2021	0.05	0.11	0.08	-0.06	-0.12	-0.01	0.09	0.21	0.48

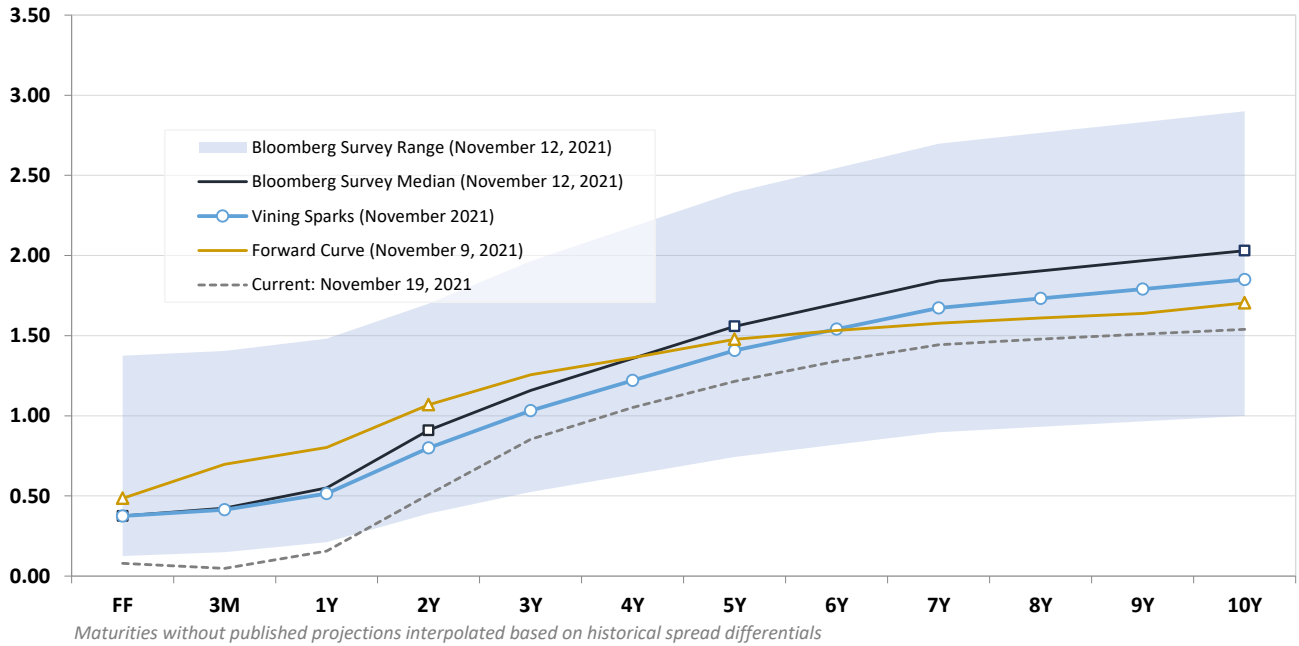


Sources: Bloomberg Survey of Economists Real-Time Tracking Index, Vining Sparks

Year-End Rate Projections

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YE2022 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

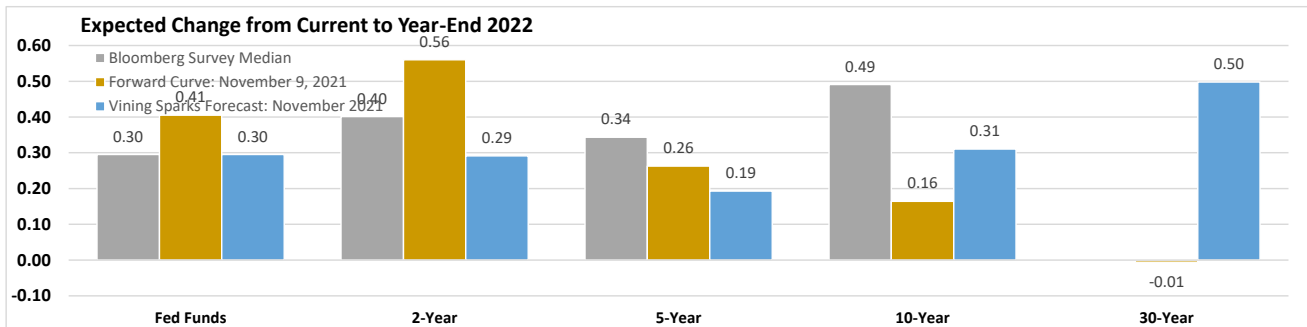
Interest Rate Projections

November 9, 2021

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
Bloomberg Survey - Tracking: November 12, 2021									
Low Forecast	0.13			0.39		0.74		1.00	
Median Forecast	0.38			0.91		1.56		2.03	
High Forecast	1.38			1.70		2.39		2.90	
Forward Curve: November 9, 2021	0.49	0.70	0.80	1.07	1.26	1.48	1.58	1.70	1.90
Vining Sparks Forecast: November 2021	0.38	0.41	0.51	0.80	1.03	1.41	1.67	1.85	2.40
Current: November 19, 2021	0.08	0.05	0.16	0.51	0.85	1.21	1.44	1.54	1.91

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 12, 2021									
Low Forecast	0.05			-0.12		-0.47		-0.54	
Median Forecast	0.30			0.40		0.34		0.49	
High Forecast	1.30			1.19		1.18		1.36	
Forward Curve: November 9, 2021	0.41	0.65	0.65	0.56	0.40	0.26	0.13	0.16	-0.01
Vining Sparks Forecast: November 2021	0.30	0.37	0.36	0.29	0.18	0.19	0.23	0.31	0.50



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

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