

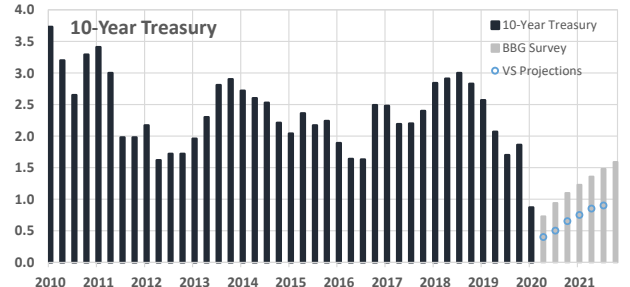
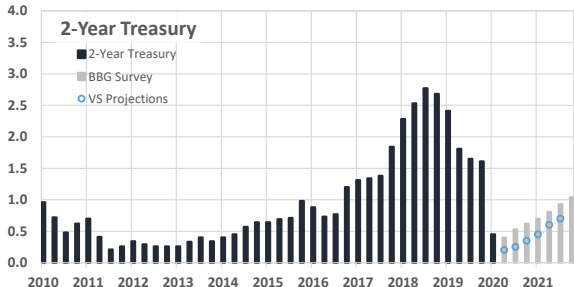
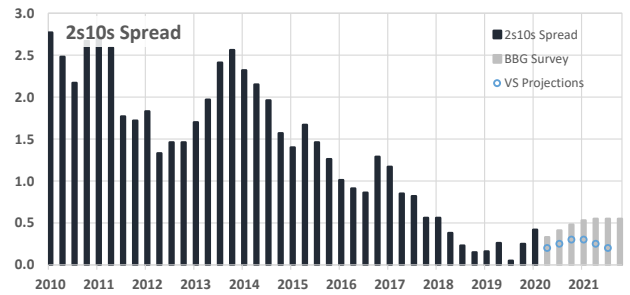
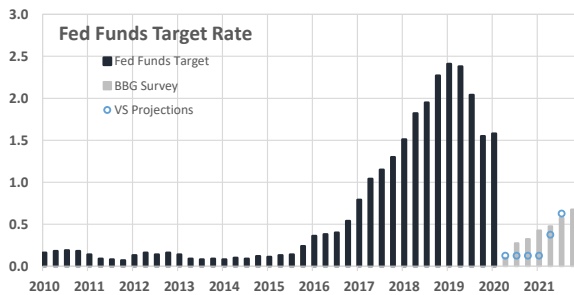
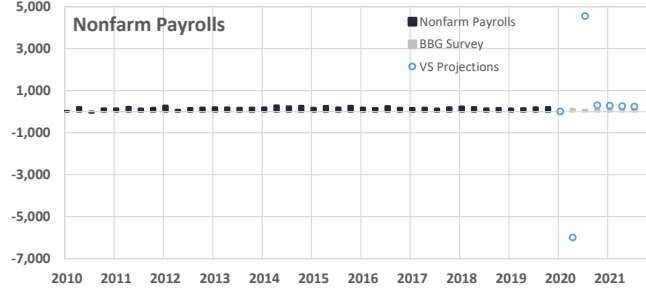
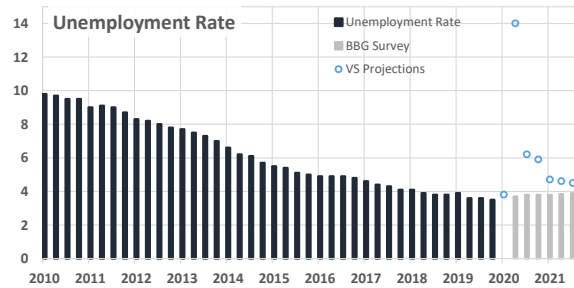
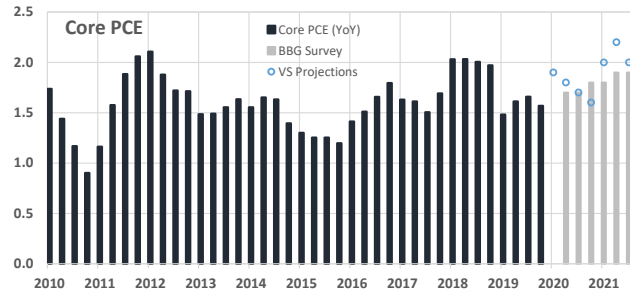
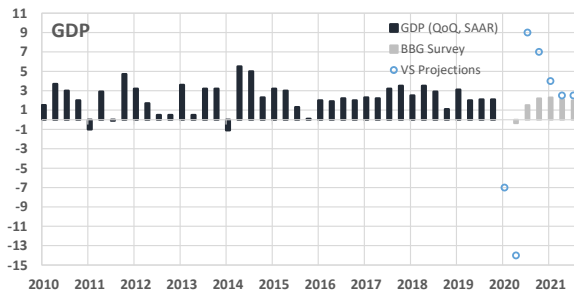
Vining Sparks Economic and Interest Rate Projections

April 2020

	Q220	Q320	Q420	Q121	Q221	Q321	2020	2021
<b>GDP (QoQ, SAAR)</b>	-14.0	9.0	7.0	4.0	2.5	2.5	-5.0	3.0
<b>Headline CPI (YoY)</b>	1.6	1.4	1.7	2.0	2.3	2.2	1.6	2.1
<b>Core PCE (YoY)</b>	1.8	1.7	1.6	2.0	2.2	2.0	1.6	2.0
<b>Unemployment Rate</b>	14.0	6.2	5.9	4.7	4.6	4.5	5.9	4.5
<b>Nonfarm Payrolls (Monthly)</b>	-6000	4550	300	280	260	240	-287	240

	Q220	Q320	Q420	Q121	Q221	Q321	Q421	Q122
<b>Fed Funds Target</b>	0.13	0.13	0.13	0.13	0.38	0.63	0.63	0.63
<b>2-Year Treasury Yield</b>	0.20	0.25	0.35	0.45	0.60	0.70	0.75	0.80
<b>10-Year Treasury Yield</b>	0.40	0.50	0.65	0.75	0.85	0.90	0.95	1.10
<b>30-Year Treasury Yield</b>	0.88	0.97	1.10	1.15	1.22	1.23	1.28	1.50
<b>Prime Rate</b>	3.25	3.25	3.25	3.25	3.50	3.75	3.75	3.75
<b>30-Year Mortgage Rate</b>	2.75	2.60	2.65	2.65	2.65	2.70	2.75	2.90

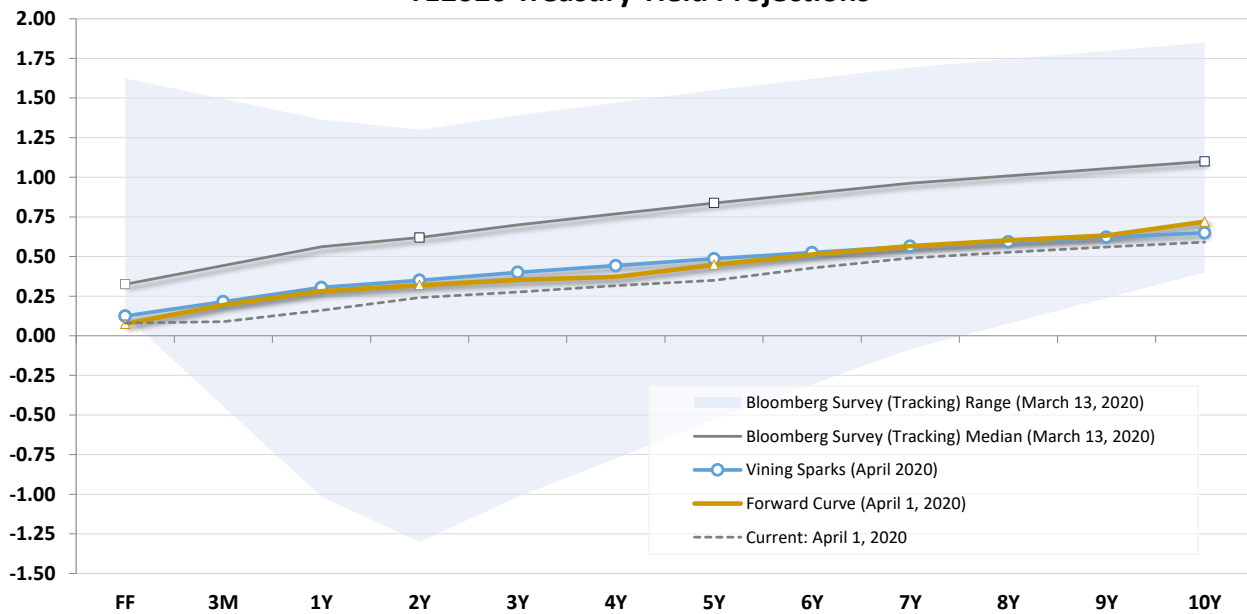


Sources: <sup>1</sup> Bloomberg Survey of Economists, <sup>2</sup> Economists' Real-Time Tracking Updates, Vining Sparks

Year-End Rate Projections

April 2020

YE2020 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

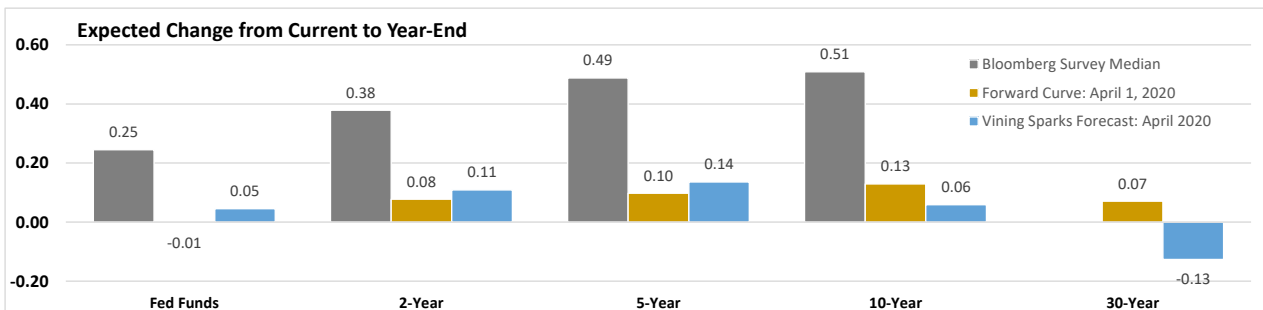
Interest Rate Projections

April 1, 2020

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: March 13, 2020</b>									
Low Forecast	0.13			-1.30		-0.53		0.40	
Median Forecast	0.33			0.62		0.84		1.10	
High Forecast	1.63			1.30		1.55		1.85	
Forward Curve: April 1, 2020	0.08	0.20	0.28	0.32	0.35	0.45	0.57	0.72	1.30
Vining Sparks Forecast: April 2020	0.13	0.22	0.31	0.35	0.40	0.49	0.56	0.65	1.10
Current: April 1, 2020	0.08	0.09	0.16	0.24	0.28	0.35	0.49	0.59	1.22

Projected Δ by Year-End

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: March 13, 2020</b>									
Low Forecast	0.05			-1.54		-0.88		-0.19	
Median Forecast	0.25			0.38		0.49		0.51	
High Forecast	1.55			1.06		1.20		1.26	
Forward Curve: April 1, 2020	-0.01	0.11	0.12	0.08	0.08	0.10	0.07	0.13	0.07
Vining Sparks Forecast: April 2020	0.05	0.13	0.15	0.11	0.12	0.14	0.07	0.06	-0.13

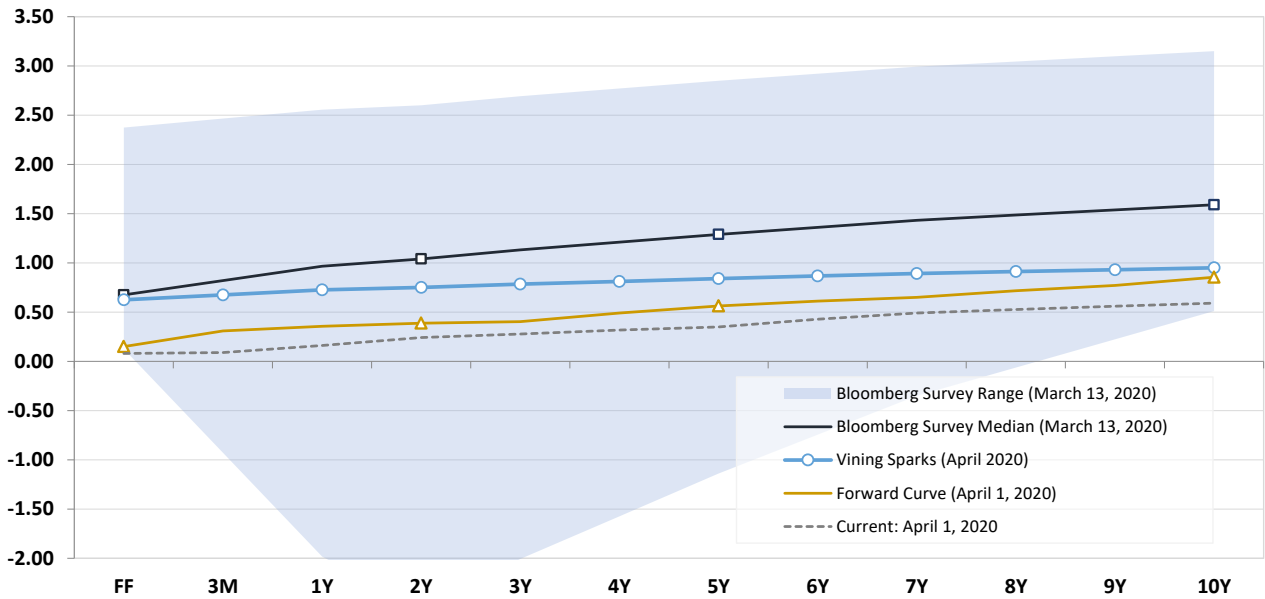


Sources: Bloomberg Survey of Economists Real-Time Tracking Index, Vining Sparks

# Year-End Rate Projections

April 2020

## YE2021 Treasury Yield Projections



Maturities without published projections interpolated based on historical spread differentials

Bloomberg Survey Tracking Index and Vining Projections

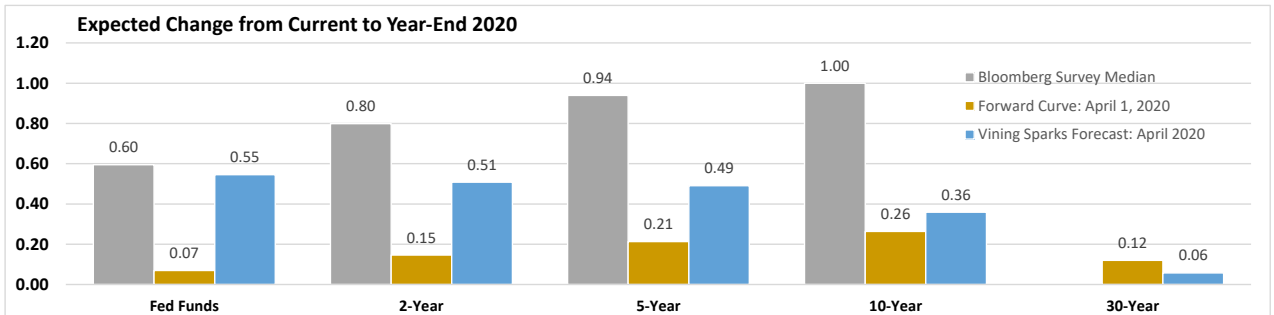
### Interest Rate Projections

April 1, 2020

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: March 13, 2020</b>									
Low Forecast	0.13			-2.51		-1.14		0.51	
Median Forecast	0.68			1.04		1.29		1.59	
High Forecast	2.38			2.60		2.85		3.15	
<b>Forward Curve: April 1, 2020</b>	<b>0.15</b>	<b>0.31</b>	<b>0.36</b>	<b>0.39</b>	<b>0.40</b>	<b>0.56</b>	<b>0.65</b>	<b>0.85</b>	<b>1.35</b>
<b>Vining Sparks Forecast: April 2020</b>	<b>0.63</b>	<b>0.68</b>	<b>0.73</b>	<b>0.75</b>	<b>0.78</b>	<b>0.84</b>	<b>0.89</b>	<b>0.95</b>	<b>1.28</b>
<b>Current: April 1, 2020</b>	<b>0.08</b>	<b>0.09</b>	<b>0.16</b>	<b>0.24</b>	<b>0.28</b>	<b>0.35</b>	<b>0.49</b>	<b>0.59</b>	<b>1.22</b>

### Projected Δ by Year-End

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: March 13, 2020</b>									
Low Forecast	0.05			-2.75		-1.49		-0.08	
Median Forecast	0.60			0.80		0.94		1.00	
High Forecast	2.30			2.36		2.50		2.56	
<b>Forward Curve: April 1, 2020</b>	<b>0.07</b>	<b>0.22</b>	<b>0.20</b>	<b>0.15</b>	<b>0.13</b>	<b>0.21</b>	<b>0.16</b>	<b>0.26</b>	<b>0.12</b>
<b>Vining Sparks Forecast: April 2020</b>	<b>0.55</b>	<b>0.59</b>	<b>0.57</b>	<b>0.51</b>	<b>0.51</b>	<b>0.49</b>	<b>0.40</b>	<b>0.36</b>	<b>0.06</b>



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

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