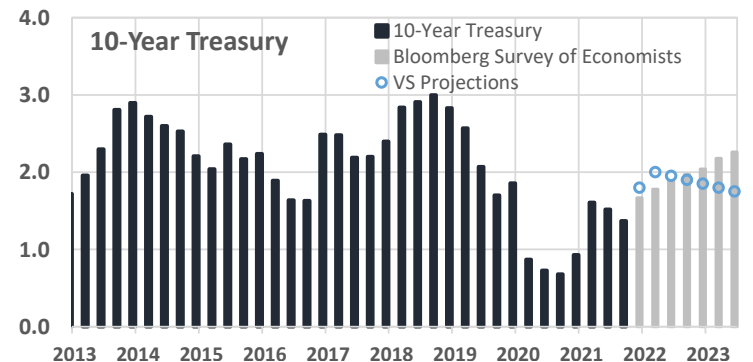
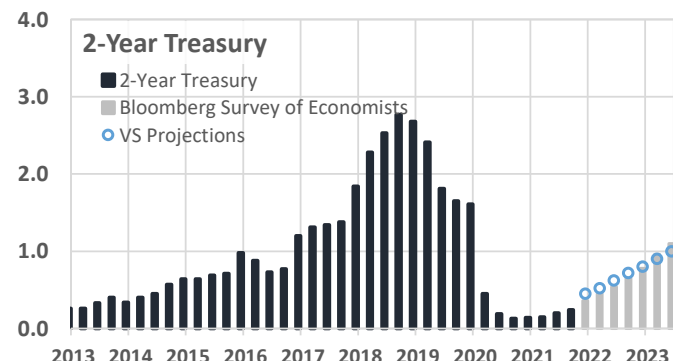
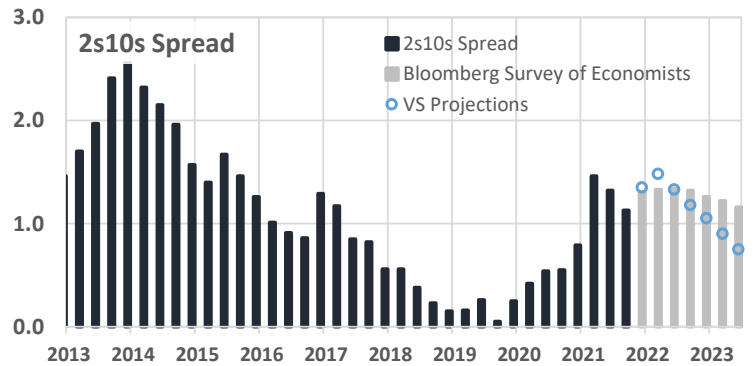
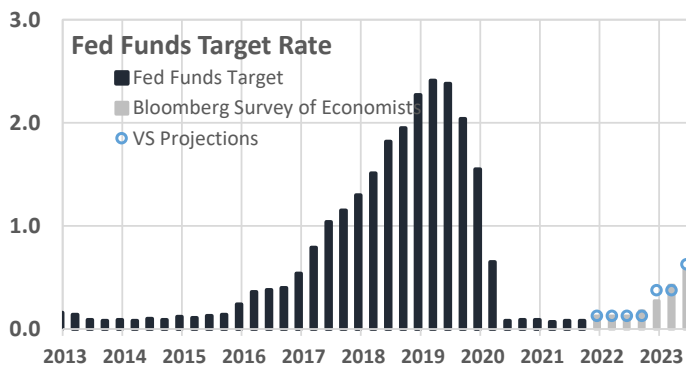
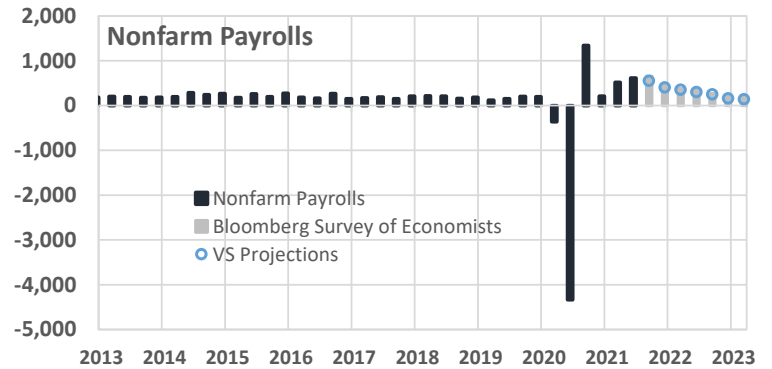
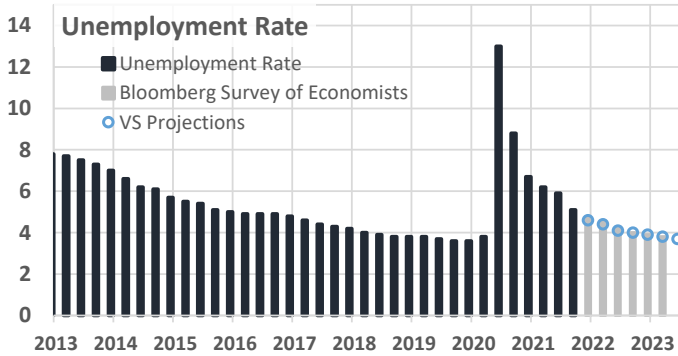
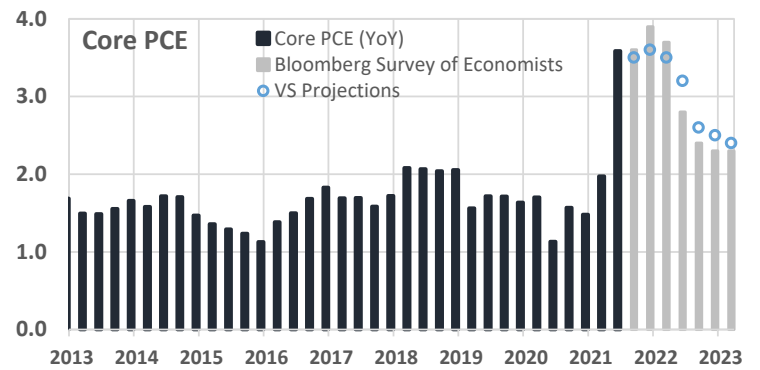
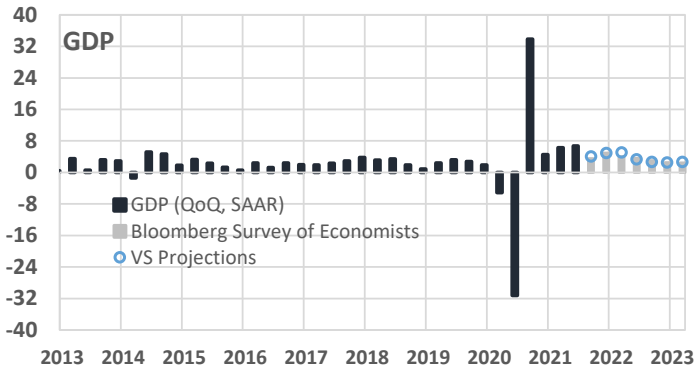


## Vining Sparks Economic and Interest Rate Projections

October 2021

	Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>GDP (QoQ, SAAR)</b>	4.0	4.9	5.0	3.3	2.6	2.4	5.7	3.7
<b>Headline CPI (YoY)</b>		4.8	4.5	4.0	3.1	2.9	4.4	3.5
<b>Core PCE (YoY)</b>	3.5	3.6	3.5	3.2	2.6	2.5	3.1	2.8
<b>Unemployment Rate</b>		4.6	4.4	4.1	4.0	3.9	5.4	4.4
<b>Nonfarm Payrolls (Monthly)</b>		400	350	300	250	160	530	270

	Q321	Q421	Q122	Q222	Q322	Q422	Q123	Q223
<b>Fed Funds Target</b>		0.13	0.13	0.13	0.13	0.38	0.38	0.63
<b>2-Year Treasury Yield</b>		0.45	0.52	0.62	0.72	0.80	0.90	1.00
<b>10-Year Treasury Yield</b>		1.80	2.00	1.95	1.90	1.85	1.80	1.75
<b>30-Year Treasury Yield</b>		2.45	2.70	2.60	2.50	2.40	2.30	2.20
<b>Prime Rate</b>		3.25	3.25	3.25	3.25	3.50	3.50	3.75
<b>30-Year Mortgage Rate</b>		3.55	3.80	3.85	3.85	3.85	3.80	3.75



## Bloomberg Survey of Economists

October BBG Survey

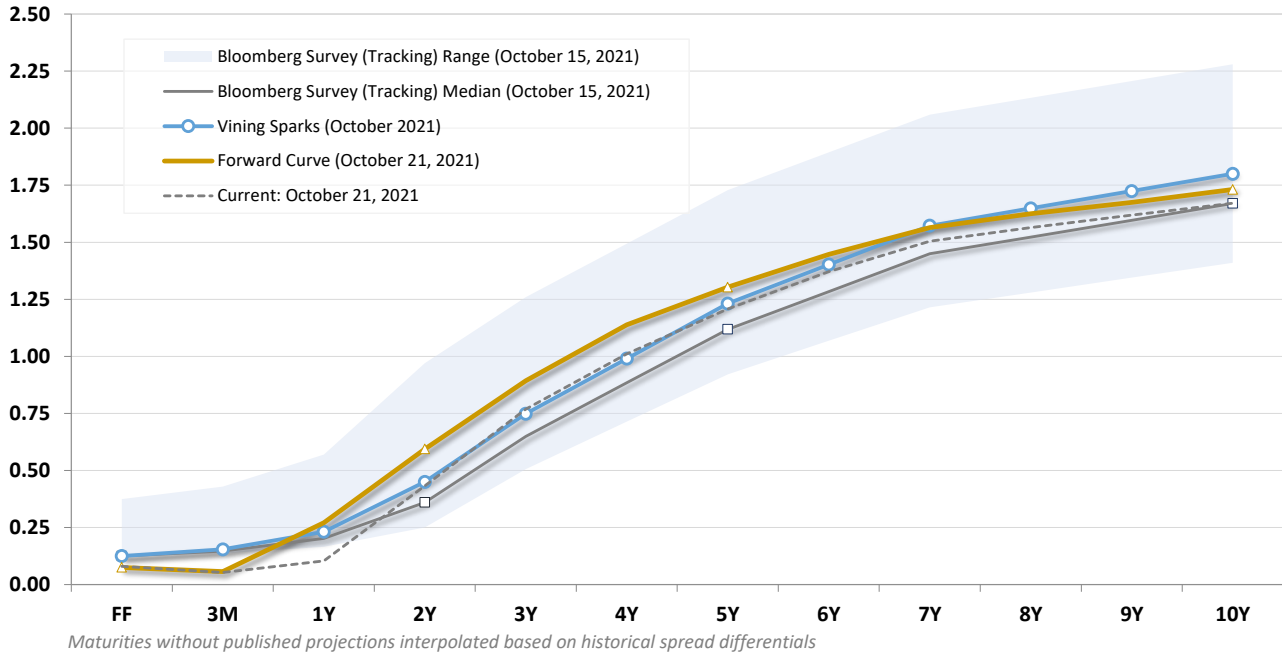
GDP		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>	<b>4.0</b>	<b>4.9</b>	<b>5.0</b>	<b>3.3</b>	<b>2.6</b>	<b>2.4</b>	<b>5.7</b>	<b>3.7</b>
October BBG Survey	10/15/2021	3.5	4.9	4.0	3.8	3.0	2.5	5.8	4.0
September BBG Survey	9/10/2021	5.0	5.3	4.1	3.3	2.8	2.4	5.9	4.2
Personal Consumption		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
October BBG Survey	10/15/2021	0.9	4.0	3.3	3.0	2.8	2.4	7.8	3.7
September BBG Survey	9/10/2021	2.1	4.2	3.5	3.0	2.5	2.4	7.9	3.7
Private Investment		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
October BBG Survey	10/15/2021	8.6	8.1	7.2	5.3	5.0	3.9	8.0	7.8
September BBG Survey	9/10/2021	10.5	10.2	7.2	5.2	4.7	3.4	8.7	7.6
Government Expenditures		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
October BBG Survey	10/15/2021	2.0	1.6	2.0	1.7	1.7	1.5	0.9	1.5
September BBG Survey	9/10/2021	2.1	2.0	2.5	1.8	1.7	1.5	1.0	1.7
Headline CPI		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>		<b>4.8</b>	<b>4.5</b>	<b>4.0</b>	<b>3.1</b>	<b>2.9</b>	<b>4.4</b>	<b>3.5</b>
October BBG Survey	10/15/2021		5.5	5.0	3.5	2.7	2.5	4.4	3.3
September BBG Survey	9/10/2021	5.2	5.1	4.6	3.0	2.3	2.3	4.3	3.0
Core PCE		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>	<b>3.5</b>	<b>3.6</b>	<b>3.5</b>	<b>3.2</b>	<b>2.6</b>	<b>2.5</b>	<b>3.1</b>	<b>2.8</b>
October BBG Survey	10/15/2021	3.6	4.0	3.8	2.9	2.5	2.3	3.2	2.8
September BBG Survey	9/10/2021	3.5	3.7	3.5	2.5	2.1	2.1	3.1	2.6
Unemployment Rate		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>		<b>4.6</b>	<b>4.4</b>	<b>4.1</b>	<b>4.0</b>	<b>3.9</b>	<b>5.4</b>	<b>4.4</b>
October BBG Survey	10/15/2021		4.7	4.5	4.2	4.0	3.8	5.5	4.2
September BBG Survey	9/10/2021	5.2	4.9	4.6	4.3	4.1	4.0	5.5	4.3
Nonfarm Payroll (Monthly)		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>		<b>400</b>	<b>350</b>	<b>300</b>	<b>250</b>	<b>160</b>	<b>530</b>	<b>270</b>
October BBG Survey	10/15/2021		469	406	349	274	243	523	337
September BBG Survey	9/10/2021	600	500	393	350	264	232	540	311
New Home Sales		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
October BBG Survey	10/15/2021	743	786	811	823	831	839	790	847
September BBG Survey	9/10/2021	740	789	808	813	816	822	791	828
Existing Home Sales		Q321	Q421	Q122	Q222	Q322	Q422	2021	2022
October BBG Survey	10/15/2021	5,900	5,900	6,000	6,000	6,000	6,000	6,000	6,000
September BBG Survey	9/10/2021	5,900	5,900	5,900	5,900	5,800	5,800	6,000	5,900
Fed Funds Target <sup>1</sup>		Q321	Q421	Q122	Q222	Q322	Q422	Q123	Q223
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>	<b>0.38</b>	<b>0.38</b>	<b>0.63</b>
October BBG Survey	10/15/2021	0.13	0.13	0.13	0.13	0.18	0.28	0.43	0.58
September BBG Survey	9/10/2021	0.13	0.13	0.13	0.13	0.18	0.23	0.33	0.43
2-Year Treasury <sup>1</sup>		Q321	Q421	Q122	Q222	Q322	Q422	Q123	Q223
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>	<b>0.28</b>	<b>0.45</b>	<b>0.52</b>	<b>0.62</b>	<b>0.72</b>	<b>0.80</b>	<b>0.90</b>	<b>1.00</b>
October BBG Survey	10/15/2021	0.26	0.36	0.45	0.54	0.65	0.78	0.96	1.10
September BBG Survey	9/10/2021	0.26	0.30	0.38	0.49	0.58	0.68	0.81	0.93
10-Year Treasury <sup>1</sup>		Q321	Q421	Q122	Q222	Q322	Q422	Q123	Q223
<b>Vining Sparks Projections</b>	<b>10/21/2021</b>	<b>1.49</b>	<b>1.80</b>	<b>2.00</b>	<b>1.95</b>	<b>1.90</b>	<b>1.85</b>	<b>1.80</b>	<b>1.75</b>
October BBG Survey	10/15/2021	1.45	1.67	1.78	1.88	1.97	2.04	2.18	2.26
September BBG Survey	9/10/2021	1.45	1.59	1.69	1.82	1.89	1.99	2.06	2.12

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

Year-End Rate Projections

#

YE2021 Treasury Yield Projections



Maturities without published projections interpolated based on historical spread differentials

Bloomberg Survey Tracking Index and Vining Projections

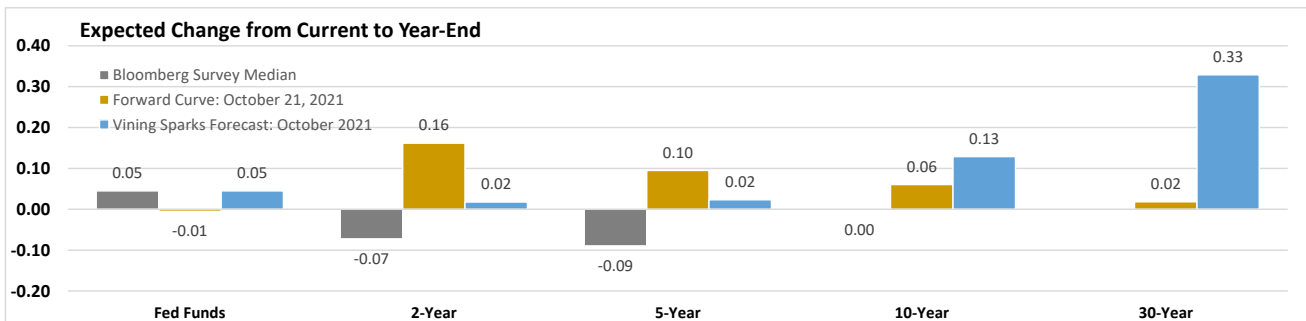
Interest Rate Projections

October 21, 2021

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: October 15, 2021</b>									
Low Forecast	0.13			0.25		0.92		1.41	
Median Forecast	<b>0.13</b>			<b>0.36</b>		<b>1.12</b>		<b>1.67</b>	
High Forecast	0.38			0.97		1.73		2.28	
<b>Forward Curve: October 21, 2021</b>	<b>0.08</b>	<b>0.06</b>	<b>0.27</b>	<b>0.59</b>	<b>0.89</b>	<b>1.30</b>	<b>1.56</b>	<b>1.73</b>	<b>2.14</b>
<b>Vining Sparks Forecast: October 2021</b>	<b>0.13</b>	<b>0.15</b>	<b>0.23</b>	<b>0.45</b>	<b>0.75</b>	<b>1.23</b>	<b>1.57</b>	<b>1.80</b>	<b>2.45</b>
<b>Current: October 21, 2021</b>	<b>0.08</b>	<b>0.05</b>	<b>0.10</b>	<b>0.43</b>	<b>0.77</b>	<b>1.21</b>	<b>1.50</b>	<b>1.67</b>	<b>2.13</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: October 15, 2021</b>									
Low Forecast	0.05			-0.18		-0.29		-0.26	
Median Forecast	0.05			-0.07		-0.09		0.00	
High Forecast	0.30			0.54		0.52		0.61	
<b>Forward Curve: October 21, 2021</b>	<b>-0.01</b>	<b>0.00</b>	<b>0.17</b>	<b>0.16</b>	<b>0.12</b>	<b>0.10</b>	<b>0.06</b>	<b>0.06</b>	<b>0.02</b>
<b>Vining Sparks Forecast: October 2021</b>	<b>0.05</b>	<b>0.10</b>	<b>0.13</b>	<b>0.02</b>	<b>-0.02</b>	<b>0.02</b>	<b>0.07</b>	<b>0.13</b>	<b>0.33</b>

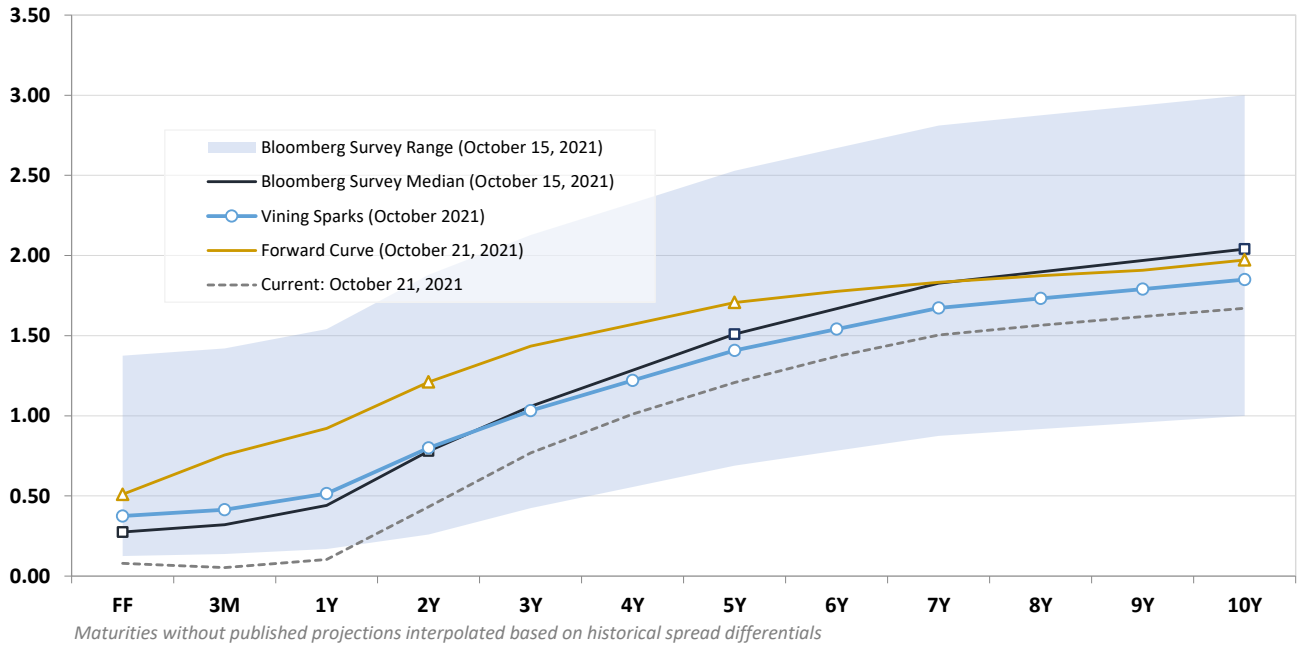


Sources: Bloomberg Survey of Economists Real-Time Tracking Index, Vining Sparks

Year-End Rate Projections

#

YE2022 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

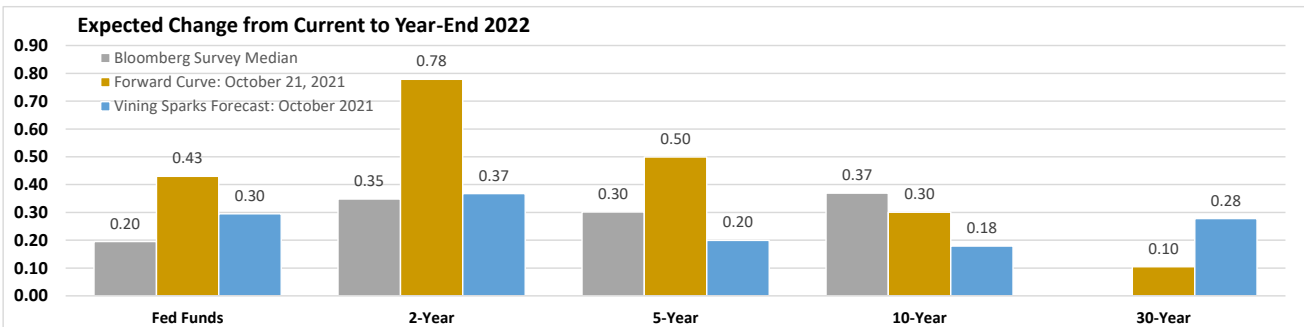
Interest Rate Projections

October 21, 2021

	Fed Funds	3M T-Bill	1-Year	2-Year	3-Year	5-Year	7-Year	10-Year	30-Year
<b>Bloomberg Survey - Tracking: October 15, 2021</b>									
Low Forecast	0.13			0.26		0.69		1.00	
Median Forecast	<b>0.28</b>			<b>0.78</b>		<b>1.51</b>		<b>2.04</b>	
High Forecast	1.38			1.88		2.53		3.00	
<b>Forward Curve: October 21, 2021</b>	<b>0.51</b>	<b>0.76</b>	<b>0.92</b>	<b>1.21</b>	<b>1.44</b>	<b>1.71</b>	<b>1.83</b>	<b>1.97</b>	<b>2.23</b>
<b>Vining Sparks Forecast: October 2021</b>	<b>0.38</b>	<b>0.41</b>	<b>0.51</b>	<b>0.80</b>	<b>1.03</b>	<b>1.41</b>	<b>1.67</b>	<b>1.85</b>	<b>2.40</b>
<b>Current: October 21, 2021</b>	<b>0.08</b>	<b>0.05</b>	<b>0.10</b>	<b>0.43</b>	<b>0.77</b>	<b>1.21</b>	<b>1.50</b>	<b>1.67</b>	<b>2.13</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: October 15, 2021</b>									
Low Forecast	0.05			-0.17		-0.52		-0.67	
Median Forecast	<b>0.20</b>			<b>0.35</b>		<b>0.30</b>		<b>0.37</b>	
High Forecast	1.30			1.45		1.32		1.33	
<b>Forward Curve: October 21, 2021</b>	<b>0.43</b>	<b>0.70</b>	<b>0.82</b>	<b>0.78</b>	<b>0.67</b>	<b>0.50</b>	<b>0.33</b>	<b>0.30</b>	<b>0.10</b>
<b>Vining Sparks Forecast: October 2021</b>	<b>0.30</b>	<b>0.36</b>	<b>0.41</b>	<b>0.37</b>	<b>0.26</b>	<b>0.20</b>	<b>0.17</b>	<b>0.18</b>	<b>0.28</b>



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

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