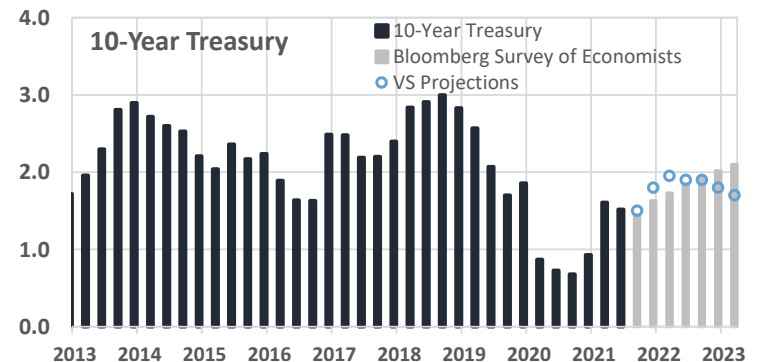
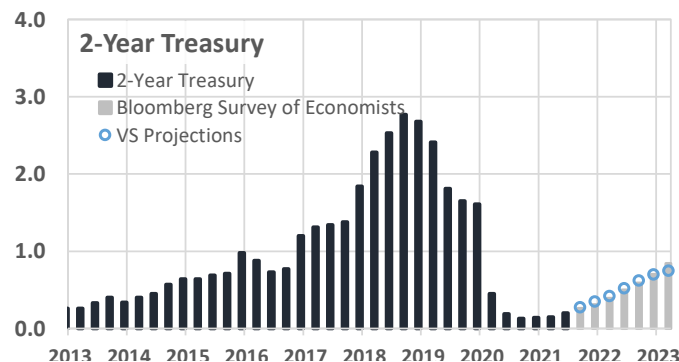
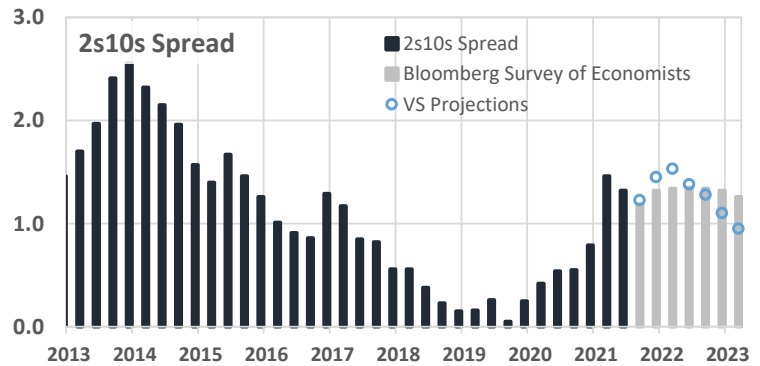
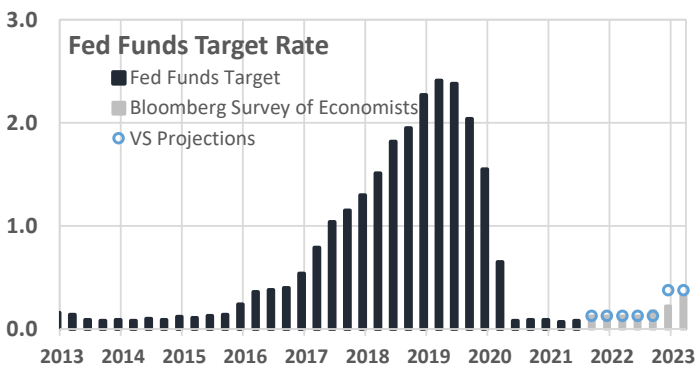
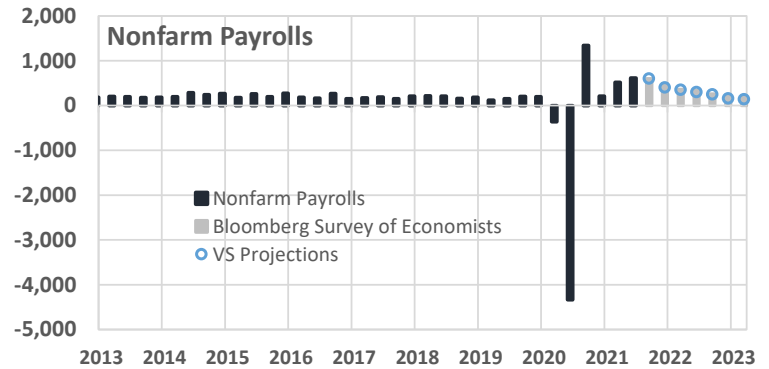
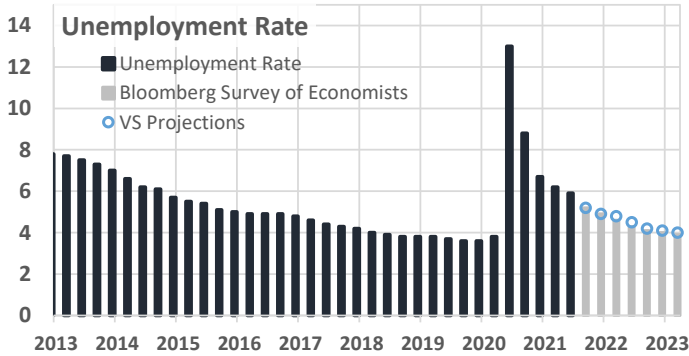
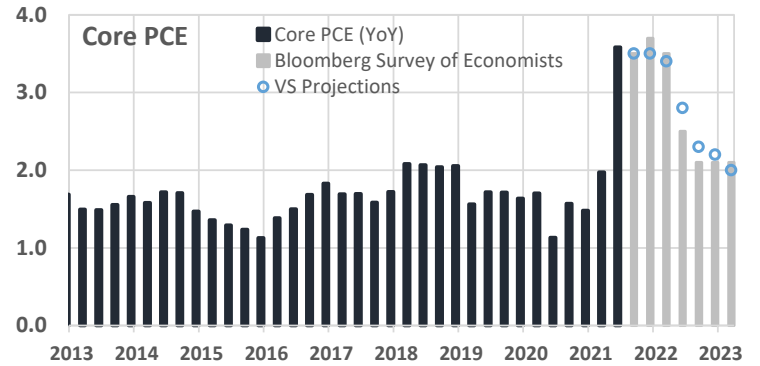
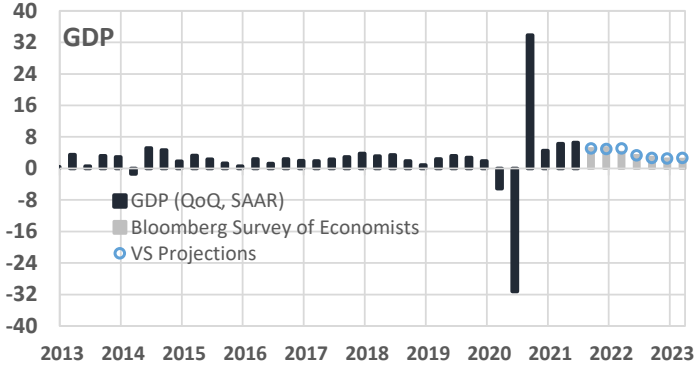


## Vining Sparks Economic and Interest Rate Projections

September 2021

|                                   | Q321 | Q421 | Q122 | Q222 | Q322 | Q422 | 2021 | 2022 |
|-----------------------------------|------|------|------|------|------|------|------|------|
| <b>GDP (QoQ, SAAR)</b>            | 5.0  | 4.9  | 5.0  | 3.3  | 2.6  | 2.4  | 5.9  | 3.7  |
| <b>Headline CPI (YoY)</b>         | 4.8  | 4.6  | 4.0  | 3.0  | 2.6  | 2.5  | 4.5  | 2.8  |
| <b>Core PCE (YoY)</b>             | 3.5  | 3.5  | 3.4  | 2.8  | 2.3  | 2.2  | 3.0  | 2.5  |
| <b>Unemployment Rate</b>          | 5.2  | 4.9  | 4.8  | 4.5  | 4.2  | 4.1  | 5.4  | 4.4  |
| <b>Nonfarm Payrolls (Monthly)</b> | 600  | 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 | 0.13 | 0.38 | 0.38 | 0.63 |
| <b>2-Year Treasury Yield</b>  | 0.28 | 0.35 | 0.42 | 0.52 | 0.62 | 0.70 | 0.75 | 0.80 |
| <b>10-Year Treasury Yield</b> | 1.50 | 1.80 | 1.95 | 1.90 | 1.90 | 1.80 | 1.70 | 1.60 |
| <b>30-Year Treasury Yield</b> | 2.07 | 2.44 | 2.61 | 2.51 | 2.48 | 2.33 | 2.19 | 2.04 |
| <b>Prime Rate</b>             | 3.25 | 3.25 | 3.25 | 3.25 | 3.25 | 3.50 | 3.50 | 3.75 |
| <b>30-Year Mortgage Rate</b>  | 3.20 | 3.55 | 3.75 | 3.80 | 3.85 | 3.80 | 3.70 | 3.60 |



# Bloomberg Survey of Economists

September BBG Survey

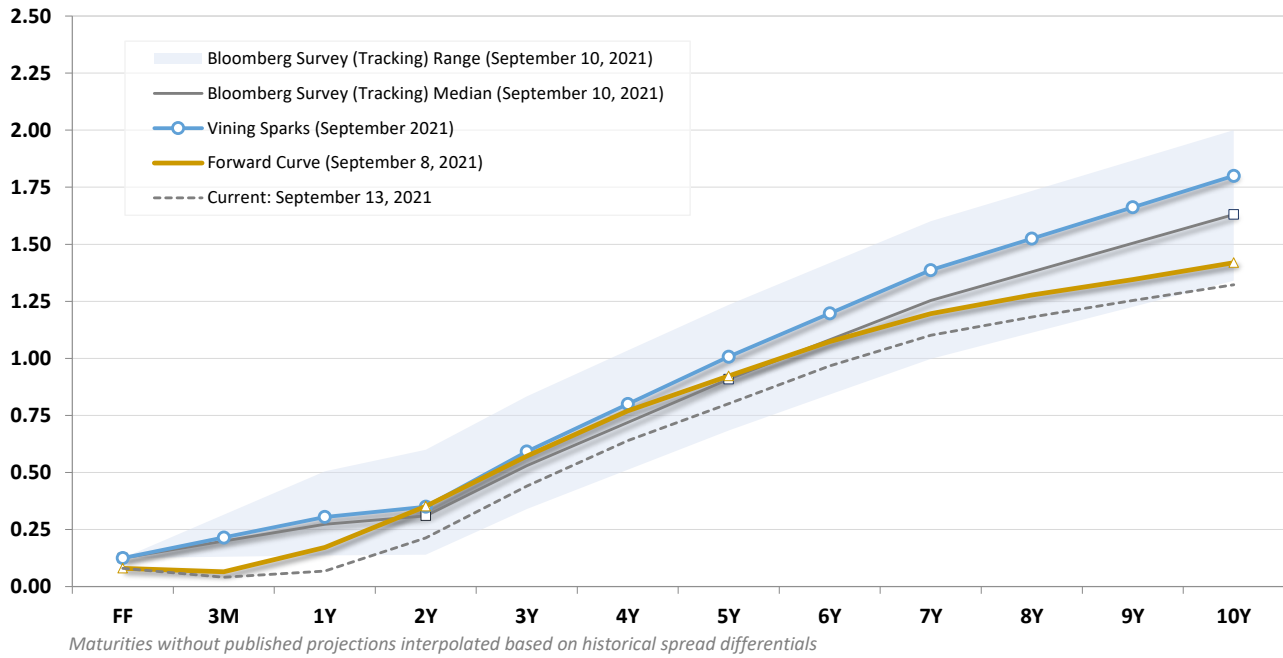
| GDP                              |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
|----------------------------------|------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>5.0</b>  | <b>4.9</b>  | <b>5.0</b>  | <b>3.3</b>  | <b>2.6</b>  | <b>2.4</b>  | <b>5.9</b>  | <b>3.7</b>  |
| September BBG Survey             | 9/10/2021        | 5.0         | 5.3         | 4.1         | 3.3         | 2.8         | 2.4         | 5.9         | 4.2         |
| August BBG Survey                | 8/13/2021        | 6.8         | 5.6         | 3.7         | 3.0         | 2.6         | 2.3         | 6.2         | 4.3         |
| Personal Consumption             |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| September BBG Survey             | 9/10/2021        | 2.1         | 4.2         | 3.5         | 3.0         | 2.5         | 2.4         | 7.9         | 3.7         |
| August BBG Survey                | 8/13/2021        | 4.5         | 4.3         | 3.3         | 2.8         | 2.5         | 2.4         | 8.2         | 3.8         |
| Private Investment               |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| September BBG Survey             | 9/10/2021        | 10.5        | 10.2        | 7.2         | 5.2         | 4.7         | 3.4         | 8.7         | 7.6         |
| August BBG Survey                | 8/13/2021        | 15.7        | 9.0         | 5.9         | 4.4         | 4.2         | 3.3         | 8.8         | 7.3         |
| Government Expenditures          |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| September BBG Survey             | 9/10/2021        | 2.1         | 2.0         | 2.5         | 1.8         | 1.7         | 1.5         | 1.0         | 1.7         |
| August BBG Survey                | 8/13/2021        | 2.0         | 2.0         | 1.8         | 1.7         | 1.4         | 1.5         | 1.1         | 1.5         |
| Headline CPI                     |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>4.8</b>  | <b>4.6</b>  | <b>4.0</b>  | <b>3.0</b>  | <b>2.6</b>  | <b>2.5</b>  | <b>4.5</b>  | <b>2.8</b>  |
| September BBG Survey             | 9/10/2021        | 5.2         | 5.1         | 4.6         | 3.0         | 2.3         | 2.3         | 4.3         | 3.0         |
| August BBG Survey                | 8/13/2021        | 5.1         | 4.9         | 4.4         | 2.9         | 2.3         | 2.2         | 4.2         | 2.9         |
| Core PCE                         |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>3.5</b>  | <b>3.5</b>  | <b>3.4</b>  | <b>2.8</b>  | <b>2.3</b>  | <b>2.2</b>  | <b>3.0</b>  | <b>2.5</b>  |
| September BBG Survey             | 9/10/2021        | 3.5         | 3.7         | 3.5         | 2.5         | 2.1         | 2.1         | 3.1         | 2.6         |
| August BBG Survey                | 8/13/2021        | 3.5         | 3.6         | 3.3         | 2.4         | 2.1         | 2.1         | 3.0         | 2.5         |
| Unemployment Rate                |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>5.2</b>  | <b>4.9</b>  | <b>4.8</b>  | <b>4.5</b>  | <b>4.2</b>  | <b>4.1</b>  | <b>5.4</b>  | <b>4.4</b>  |
| September BBG Survey             | 9/10/2021        | 5.2         | 4.9         | 4.6         | 4.3         | 4.1         | 4.0         | 5.5         | 4.3         |
| August BBG Survey                | 8/13/2021        | 5.2         | 4.8         | 4.5         | 4.2         | 4.1         | 3.9         | 5.5         | 4.2         |
| Nonfarm Payroll (Monthly)        |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>600</b>  | <b>400</b>  | <b>350</b>  | <b>300</b>  | <b>250</b>  | <b>160</b>  | <b>530</b>  | <b>270</b>  |
| September BBG Survey             | 9/10/2021        | 600         | 500         | 393         | 350         | 264         | 232         | 540         | 311         |
| August BBG Survey                | 8/13/2021        | 750         | 506         | 400         | 300         | 250         | 200         | 585         | 300         |
| New Home Sales                   |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| September BBG Survey             | 9/10/2021        | 740         | 789         | 808         | 813         | 816         | 822         | 791         | 828         |
| August BBG Survey                | 8/13/2021        | 750         | 800         | 819         | 805         | 811         | 820         | 801         | 821         |
| Existing Home Sales              |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | 2021        | 2022        |
| September BBG Survey             | 9/10/2021        | 5,900       | 5,900       | 5,900       | 5,900       | 5,800       | 5,800       | 6,000       | 5,900       |
| August BBG Survey                | 8/13/2021        | 5,900       | 6,000       | 6,000       | 5,900       | 5,900       | 6,000       | 6,000       | 6,000       |
| Fed Funds Target <sup>1</sup>    |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | Q123        | Q223        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</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> |
| September BBG Survey             | 9/10/2021        | 0.13        | 0.13        | 0.13        | 0.13        | 0.18        | 0.23        | 0.33        | 0.43        |
| August BBG Survey                | 8/13/2021        | 0.13        | 0.13        | 0.13        | 0.13        | 0.18        | 0.23        | 0.28        | 0.38        |
| 2-Year Treasury <sup>1</sup>     |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | Q123        | Q223        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>0.28</b> | <b>0.35</b> | <b>0.42</b> | <b>0.52</b> | <b>0.62</b> | <b>0.70</b> | <b>0.75</b> | <b>0.80</b> |
| September BBG Survey             | 9/10/2021        | 0.26        | 0.31        | 0.39        | 0.50        | 0.59        | 0.70        | 0.84        | 0.96        |
| August BBG Survey                | 8/13/2021        | 0.25        | 0.29        | 0.36        | 0.46        | 0.55        | 0.65        | 0.71        | 0.85        |
| 10-Year Treasury <sup>1</sup>    |                  | Q321        | Q421        | Q122        | Q222        | Q322        | Q422        | Q123        | Q223        |
| <b>Vining Sparks Projections</b> | <b>9/15/2021</b> | <b>1.50</b> | <b>1.80</b> | <b>1.95</b> | <b>1.90</b> | <b>1.90</b> | <b>1.80</b> | <b>1.70</b> | <b>1.60</b> |
| September BBG Survey             | 9/10/2021        | 1.45        | 1.63        | 1.73        | 1.85        | 1.93        | 2.02        | 2.10        | 2.17        |
| August BBG Survey                | 8/13/2021        | 1.47        | 1.64        | 1.74        | 1.83        | 1.87        | 2.01        | 2.06        | 2.17        |

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

Year-End Rate Projections

September 2021

YE2021 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

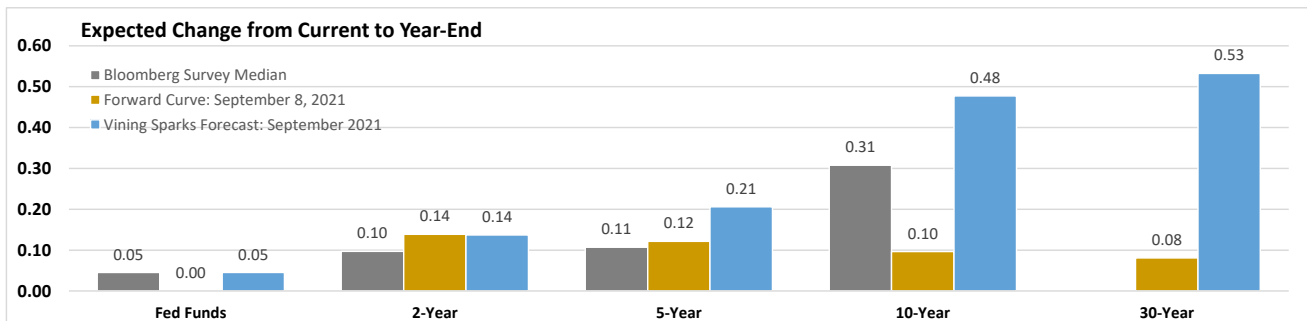
Interest Rate Projections

September 8, 2021

|  | Fed Funds   | 3M T-Bill   | 1-Year      | 2-Year      | 3-Year      | 5-Year      | 7-Year      | 10-Year     | 30-Year     |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Bloomberg Survey - Tracking: September 10, 2021</b> |             |             |             |             |             |             |             |             |             |
| Low Forecast   | 0.13        |             |             | 0.14        |             | 0.68        |             | 1.34        |             |
| Median Forecast  | <b>0.13</b> |             |             | <b>0.31</b> |             | <b>0.91</b> |             | <b>1.63</b> |             |
| High Forecast  | 0.13        |             |             | 0.60        |             | 1.24        |             | 2.00        |             |
| <b>Forward Curve: September 8, 2021</b>                | <b>0.08</b> | <b>0.06</b> | <b>0.17</b> | <b>0.35</b> | <b>0.57</b> | <b>0.92</b> | <b>1.20</b> | <b>1.42</b> | <b>1.98</b> |
| <b>Vining Sparks Forecast: September 2021</b>          | <b>0.13</b> | <b>0.22</b> | <b>0.31</b> | <b>0.35</b> | <b>0.59</b> | <b>1.01</b> | <b>1.39</b> | <b>1.80</b> | <b>2.44</b> |
| <b>Current: September 13, 2021</b>                     | <b>0.08</b> | <b>0.04</b> | <b>0.07</b> | <b>0.21</b> | <b>0.44</b> | <b>0.80</b> | <b>1.10</b> | <b>1.32</b> | <b>1.90</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: September 10, 2021</b> |             |             |             |             |             |             |             |             |             |
| Low Forecast   | 0.05        |             |             | -0.07       |             | -0.12       |             | 0.02        |             |
| Median Forecast  | 0.05        |             |             | 0.10        |             | 0.11        |             | 0.31        |             |
| High Forecast  | 0.05        |             |             | 0.39        |             | 0.43        |             | 0.68        |             |
| <b>Forward Curve: September 8, 2021</b>                | <b>0.00</b> | <b>0.02</b> | <b>0.10</b> | <b>0.14</b> | <b>0.13</b> | <b>0.12</b> | <b>0.09</b> | <b>0.10</b> | <b>0.08</b> |
| <b>Vining Sparks Forecast: September 2021</b>          | <b>0.05</b> | <b>0.17</b> | <b>0.24</b> | <b>0.14</b> | <b>0.15</b> | <b>0.21</b> | <b>0.29</b> | <b>0.48</b> | <b>0.53</b> |

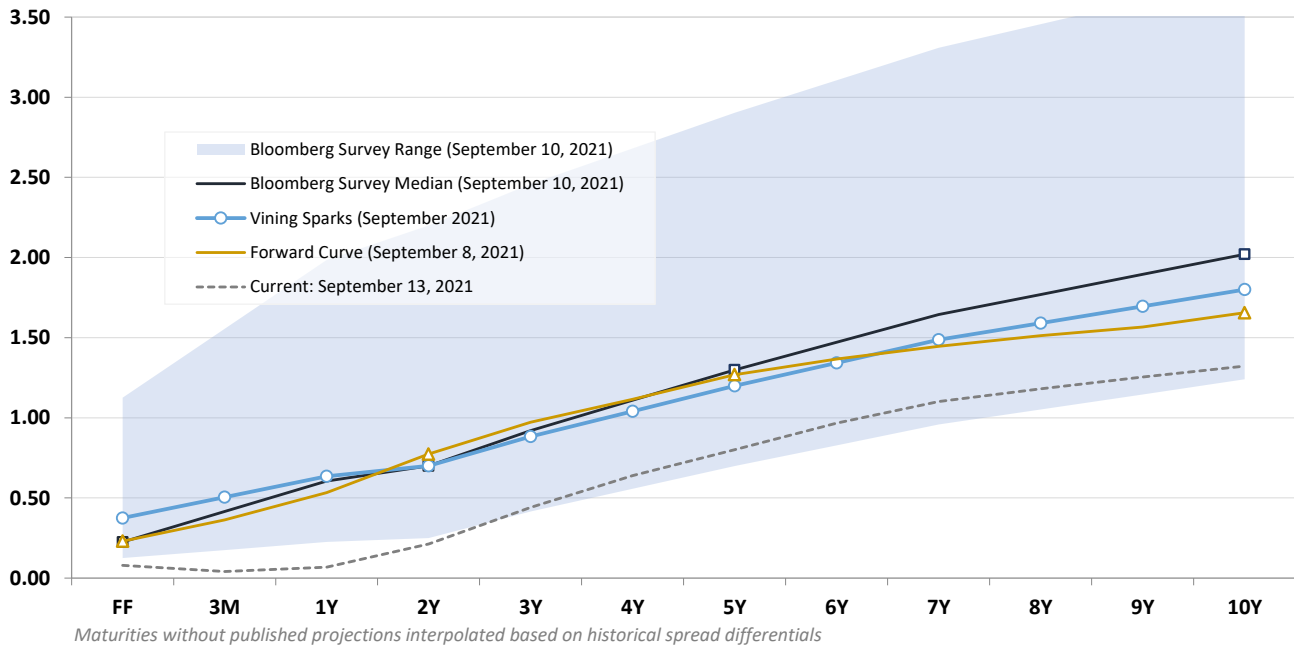


Sources: Bloomberg Survey of Economists Real-Time Tracking Index, Vining Sparks

# Year-End Rate Projections

September 2021

## YE2022 Treasury Yield Projections



Bloomberg Survey Tracking Index and Vining Projections

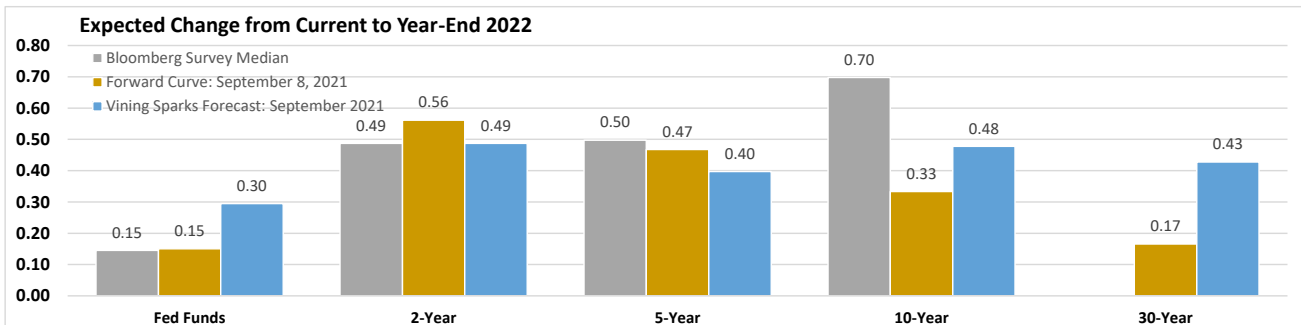
### Interest Rate Projections

September 8, 2021

|  | Fed Funds   | 3M T-Bill   | 1-Year      | 2-Year      | 3-Year      | 5-Year      | 7-Year      | 10-Year     | 30-Year     |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Bloomberg Survey - Tracking: September 10, 2021</b> |             |             |             |             |             |             |             |             |             |
| Low Forecast   | 0.13        |             |             | 0.25        |             | 0.70        |             | 1.24        |             |
| Median Forecast  | <b>0.23</b> |             |             | <b>0.70</b> |             | <b>1.30</b> |             | <b>2.02</b> |             |
| High Forecast  | 1.13        |             |             | 2.20        |             | 2.90        |             | 3.75        |             |
| <b>Forward Curve: September 8, 2021</b>                | <b>0.23</b> | <b>0.36</b> | <b>0.53</b> | <b>0.77</b> | <b>0.97</b> | <b>1.27</b> | <b>1.45</b> | <b>1.66</b> | <b>2.07</b> |
| <b>Vining Sparks Forecast: September 2021</b>          | <b>0.38</b> | <b>0.51</b> | <b>0.64</b> | <b>0.70</b> | <b>0.88</b> | <b>1.20</b> | <b>1.49</b> | <b>1.80</b> | <b>2.33</b> |
| <b>Current: September 13, 2021</b>                     | <b>0.08</b> | <b>0.04</b> | <b>0.07</b> | <b>0.21</b> | <b>0.44</b> | <b>0.80</b> | <b>1.10</b> | <b>1.32</b> | <b>1.90</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: September 10, 2021</b> |             |             |             |             |             |             |             |             |             |
| Low Forecast   | 0.05        |             |             | 0.04        |             | -0.10       |             | -0.08       |             |
| Median Forecast  | <b>0.15</b> |             |             | <b>0.49</b> |             | <b>0.50</b> |             | <b>0.70</b> |             |
| High Forecast  | 1.05        |             |             | 1.99        |             | 2.10        |             | 2.43        |             |
| <b>Forward Curve: September 8, 2021</b>                | <b>0.15</b> | <b>0.32</b> | <b>0.47</b> | <b>0.56</b> | <b>0.53</b> | <b>0.47</b> | <b>0.34</b> | <b>0.33</b> | <b>0.17</b> |
| <b>Vining Sparks Forecast: September 2021</b>          | <b>0.30</b> | <b>0.46</b> | <b>0.57</b> | <b>0.49</b> | <b>0.44</b> | <b>0.40</b> | <b>0.38</b> | <b>0.48</b> | <b>0.43</b> |



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

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