



# GDP Growth

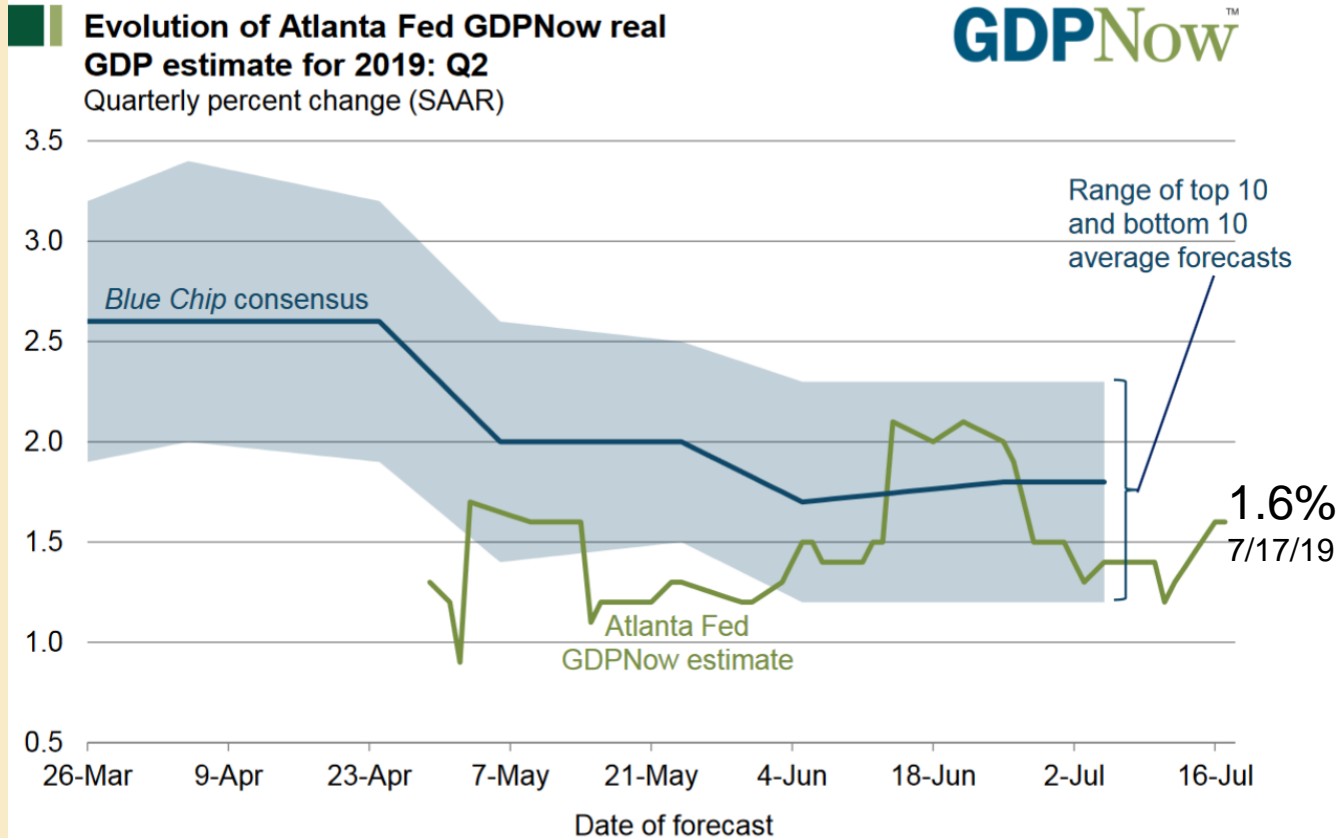
**Contribution to 3.1%  
growth 1Q19\***

**Contribution to 2.2%  
growth 4Q18**

<b>Consumer</b>	<b>0.62</b>	<b>1.66</b>
<b>Investment</b>	<b>1.08</b>	<b>0.66</b>
<b>Government</b>	<b>0.42</b>	<b>-0.07</b>
<b>Export - Import</b>	<b>0.96</b>	<b>-0.08</b>

Source: U.S. Department of Commerce Bureau of Economic Analysis

\* Third Estimate



Sources: *Blue Chip Economic Indicators* and *Blue Chip Financial Forecasts*

Note: The top (bottom) 10 average forecast is an average of the highest (lowest) 10 forecasts in the *Blue Chip* survey.

# Fed Funds Implied Probabilities

United States Instrument Futures: Fed Funds - Effective Fed Effective Rate 2.41

1) Overview 2) Future Implied Probability 3) Add/Remove Rates

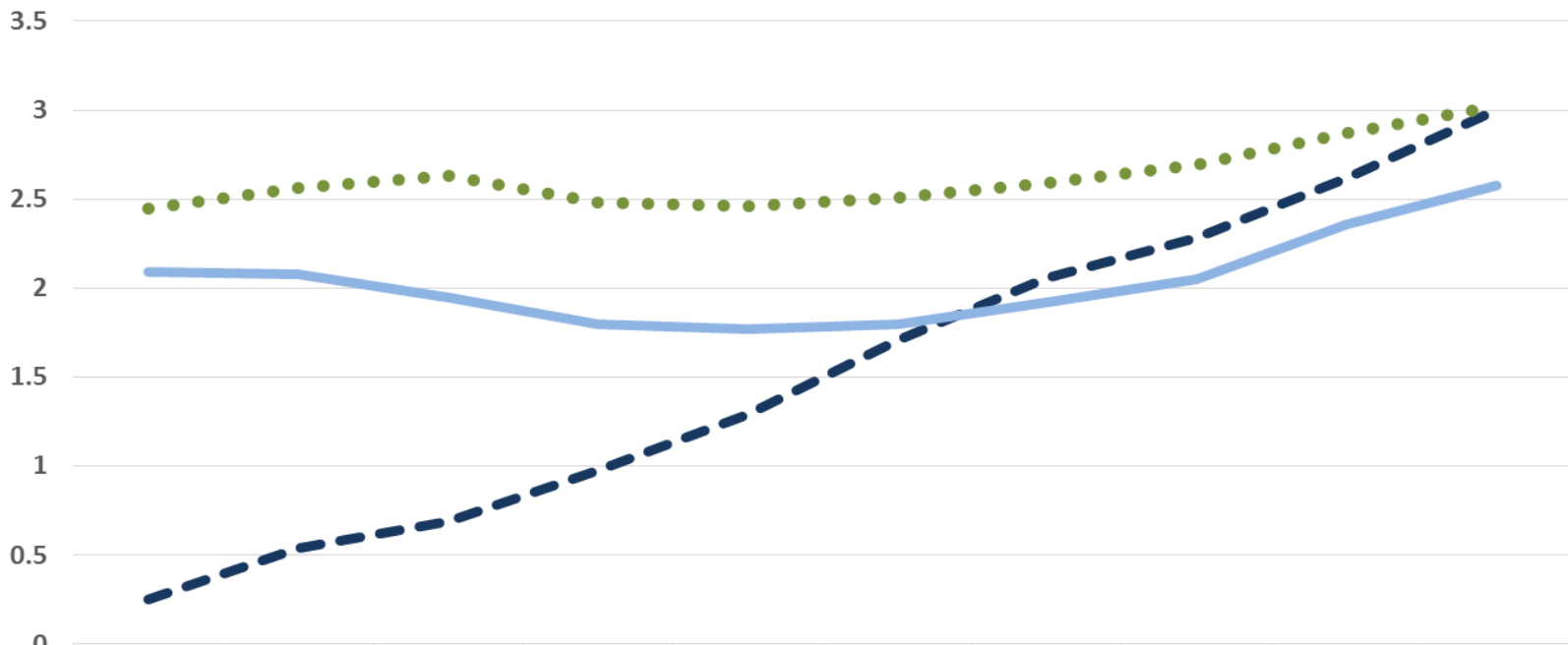
Current Implied Probabilities

Dates Meeting Calculation Calculated 07/22/2019 Based on rate 2.25-2.50

Meeting	Hike Prob	Cut Prob	1-1.25	1.25-1.5	1.5-1.75	1.75-2	2-2.25	Fwd Rate
07/31/2019	0.0%	100.0%	0.0%	0.0%	0.0%	18.5%	81.5%	2.10
09/18/2019	0.0%	100.0%	0.0%	0.0%	14.0%	66.2%	19.8%	1.91
10/30/2019	0.0%	100.0%	0.0%	7.0%	40.3%	42.9%	9.8%	1.79
12/11/2019	0.0%	100.0%	3.1%	21.5%	41.4%	28.4%	5.5%	1.68
01/29/2020	0.0%	100.0%	9.0%	28.0%	37.2%	21.0%	3.8%	1.60
03/18/2020	0.0%	100.0%	13.9%	30.3%	33.1%	16.6%	2.8%	1.53
04/29/2020	0.0%	100.0%	16.6%	30.8%	30.4%	14.3%	2.3%	1.49
06/10/2020	0.0%	100.0%	19.7%	30.7%	26.8%	11.7%	1.8%	1.44
07/29/2020	0.0%	100.0%	21.2%	30.2%	24.7%	10.3%	1.6%	1.40

Source: Bloomberg Finance LP.

# US Treasury Curve



	3 mo	6 mo	1 yr	2 yr	3 yr	5 yr	7 yr	10 yr	20 yr	30 yr
12/15/2015	0.25	0.54	0.69	0.98	1.29	1.71	2.06	2.28	2.62	3
12/31/2018	2.45	2.56	2.63	2.48	2.46	2.51	2.59	2.69	2.87	3.02
7/22/2019	2.09	2.08	1.95	1.8	1.77	1.8	1.92	2.05	2.36	2.58

