

RECESSION BAROMETER

February 21, 2020

Spotlight on : Yield Curve Ratios – USA

Recession Watch

eResearch monitors four yield curve metrics to assess the possibility of the United States going into an Economic Recession. All four of those metrics weakened in the last two weeks. However, none of the various yield curve ratios right now are signalling an Economic Recession is a possibility. But, if Covid-19 spreads globally, it is likely that many countries will slip into recessionary territory, including the United States.

Interest Rates: Various Maturities

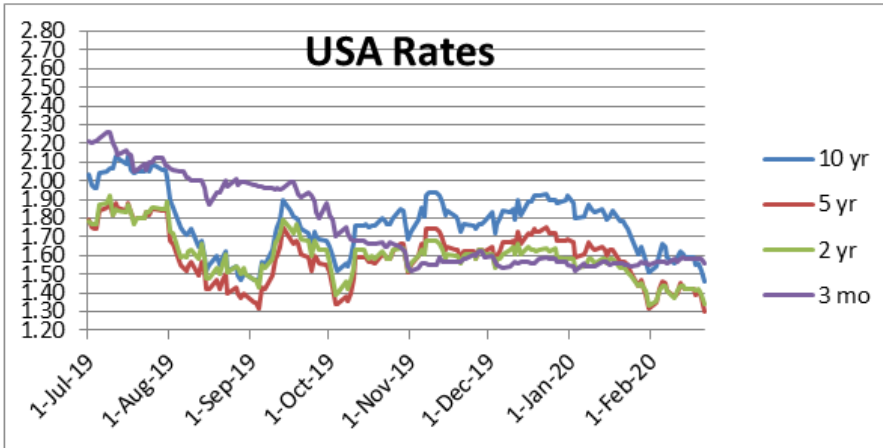
After having shown fairly good stability since February 1, Interest Rates declined in the United States last week, except for the 1-month maturity. The table below is for the first three weeks of February, and shows interest rates for various maturities from 30-years at the long-end down to 1-month at the short-end.

<u>Date</u>	<u>30-Year</u>	<u>20-Year</u>	<u>10-Year</u>	<u>5-Year</u>	<u>2-Year</u>	<u>1-Year</u>	<u>6-Months</u>	<u>3-Months</u>	<u>1-Month</u>
3-Feb-20	2.01	1.84	1.54	1.35	1.36	1.46	1.56	1.57	1.56
4-Feb-20	2.08	1.91	1.61	1.42	1.41	1.48	1.57	1.57	1.55
5-Feb-20	2.14	1.97	1.66	1.46	1.44	1.49	1.57	1.57	1.55
6-Feb-20	2.11	1.94	1.65	1.45	1.44	1.51	1.58	1.57	1.59
7-Feb-20	2.05	1.89	1.59	1.41	1.41	1.49	1.57	1.56	1.57
10-Feb-20	2.03	1.87	1.56	1.38	1.37	1.45	1.58	1.58	1.58
11-Feb-20	2.05	1.89	1.59	1.40	1.41	1.48	1.55	1.57	1.57
12-Feb-20	2.09	1.93	1.62	1.45	1.44	1.49	1.56	1.58	1.57
13-Feb-20	2.07	1.91	1.61	1.43	1.44	1.48	1.56	1.59	1.59
14-Feb-20	2.04	1.89	1.59	1.42	1.42	1.49	1.56	1.58	1.60
17-Feb-20	2.04	1.89	1.59	1.42	1.42	1.49	1.56	1.58	1.60
18-Feb-20	2.00	1.85	1.55	1.39	1.41	1.47	1.56	1.58	1.61
19-Feb-20	2.01	1.86	1.56	1.41	1.42	1.47	1.56	1.58	1.61
20-Feb-20	1.97	1.81	1.52	1.37	1.39	1.46	1.55	1.58	1.61
21-Feb-20	1.90	1.75	1.46	1.30	1.34	1.43	1.53	1.56	1.60
Change	-0.11	-0.09	-0.08	-0.05	-0.02	-0.03	-0.03	-0.01	0.04
% Change	-5.5%	-4.9%	-5.2%	-3.7%	-1.5%	-2.1%	-1.9%	-0.6%	2.6%

Source: U.S. Department of the Treasury; Compiled by: eResearch

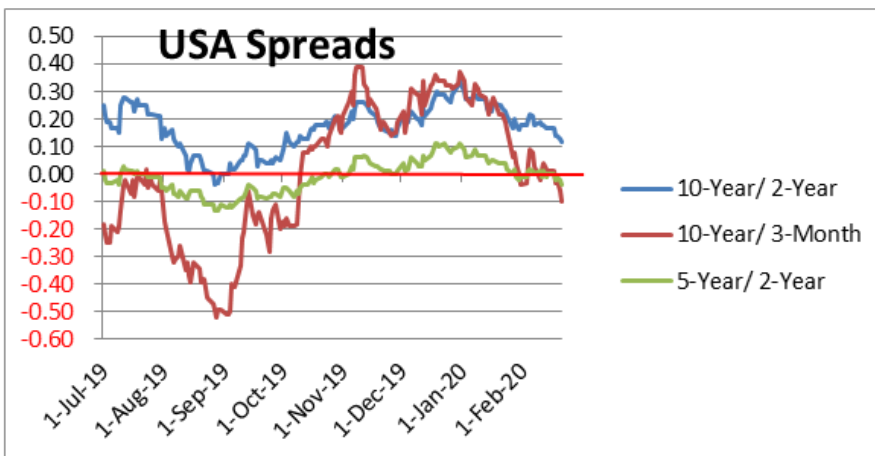
The following chart shows the trend in interest rates in the USA since July 1 for four key maturities: 10-years, 5-years, 2-years, and 3-months. The trend for all of the maturities has been quite narrowly range-bound since the beginning of October, until the last few weeks when it started to decline again.

July 1, 2019 - February 21, 2020



The next chart shows the Spread for 3 key maturity combinations of those same maturities.

July 1, 2019 - February 21, 2020

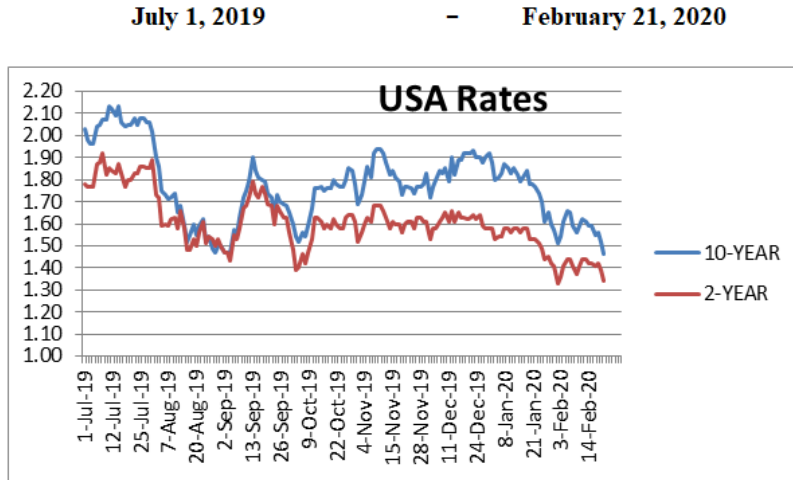


Observations: The reason eResearch has not put the USA on a recession Count-Down is because the 10-year/2-year (Blue line) yield curve ratio remains above the Inversion level. The 10-year /3-month (Rust line) and the 5-year/2-year (Green line) yield curve ratios were inverted from the beginning of July until October-November and both have gone into Inversion again in the last few weeks.

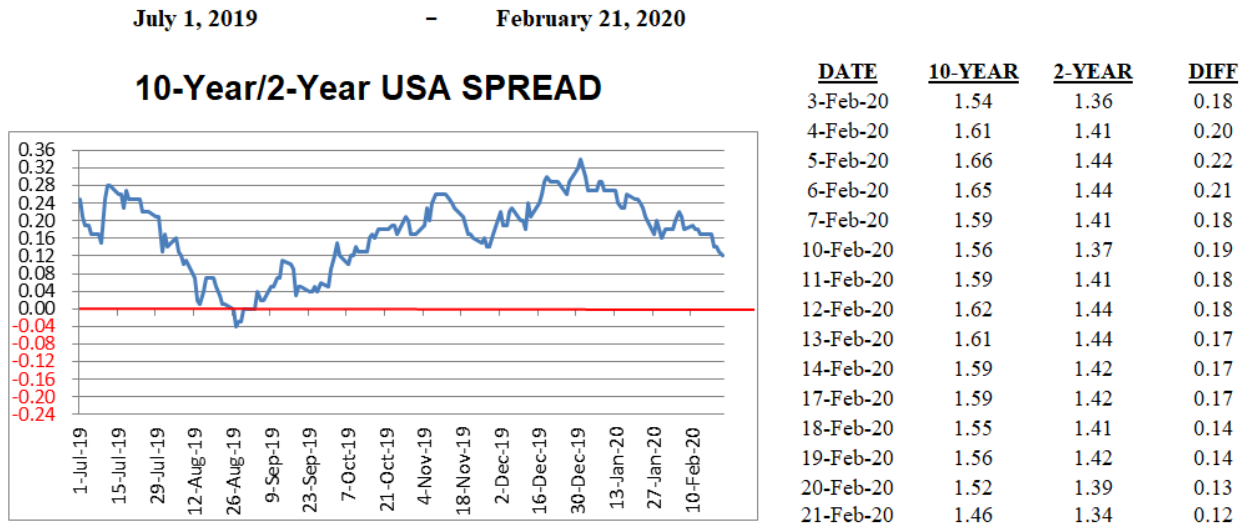
Let us look at these three metrics more closely.

1. 10-Year/2-Year Yield Curve Ratio

Here is a look at 10-year and 2-year interest rates since July 1, 2019.



Observations: Until the beginning of August, there was a notable gap between the two maturities. Then, they moved more closely together until the beginning of October. At that point, the gap widened considerably. After moving sideways for a while, both maturities are now declining and the gap has narrowed. This shows up better in the Spread chart that follows.



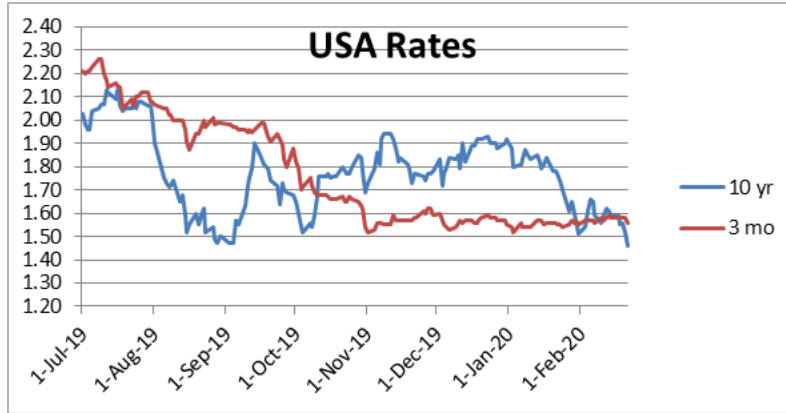
Observations: The chart shows the 10-year/2-year spread since July 1, 2019. The table to the right of the chart shows the interest rates for the two maturities as well as the Spread (denoted as “DIFF”) for the last three weeks. The Spread has essentially declined since February 5, and ended this past week at 0.12x. Although down from 0.30x at the end of December, it is still well above the Inversionary level of 0.00x.

2. 10-Year/3-Month Yield Curve Ratio

The next chart shows the interest rates for 10 years and for 3 months.

July 1, 2019 - February 21, 2020

USA Rates: 10-Year/3-Month



Observations: The 10-year/3-month yield curve ratio inverted in mid-May (not shown) and remained inverted until the end of the first week of October. It remained out of Inversion until this month, and became increasingly inverted this past week. Again, the Spread chart that follows shows this more clearly.

Here is the Spread chart for the two maturities since July 1, 2019 and the Spread table for the last three weeks.

July 1, 2019 - February 21, 2020

USA SPREAD: 10-Year/3-Month



DATE	10-YEAR	3-MONTH	DIFF
3-Feb-20	1.54	1.57	-0.03
4-Feb-20	1.61	1.57	0.04
5-Feb-20	1.66	1.57	0.09
6-Feb-20	1.65	1.57	0.08
7-Feb-20	1.59	1.56	0.03
10-Feb-20	1.56	1.58	-0.02
11-Feb-20	1.59	1.57	0.02
12-Feb-20	1.62	1.58	0.04
13-Feb-20	1.61	1.59	0.02
14-Feb-20	1.59	1.58	0.01
17-Feb-20	1.59	1.58	0.01
18-Feb-20	1.55	1.58	-0.03
19-Feb-20	1.56	1.58	-0.02
20-Feb-20	1.52	1.58	-0.06
21-Feb-20	1.46	1.56	-0.10

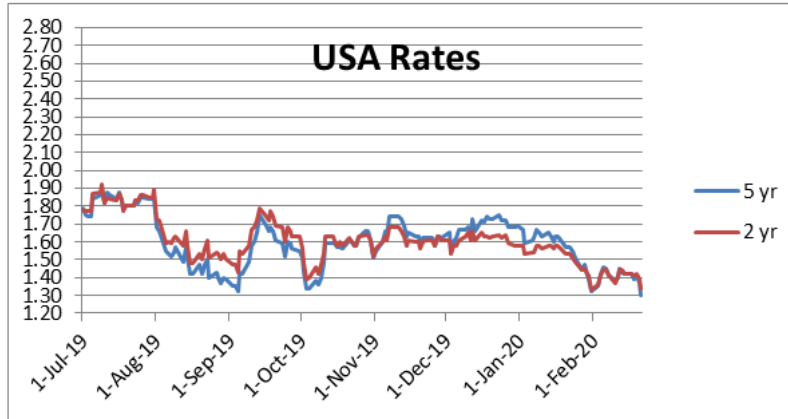
Observations: The Inversion reached $-0.52x$ around the beginning of September but exited Inversion in mid-October. The Spread has fallen consistently since the beginning of 2020 and is back in Inversion territory again at the current $-0.10x$.

3. 5-Year/2-Year Yield Curve Ratio

Our third and last metric is the 5-year/2-year yield curve ratio.

July 1, 2019 - February 21, 2020

USA Rates: 5-Year/2-Year



Observations: Since July 1, 2019, the two maturities have pretty much moved in lock-step, except for the last two weeks of August and the last three weeks of December. Even then, the gap did not widen much. The two maturities are very much back in lock-step again.

Here is the Spread chart and the Spread table for the two maturities.

July 1, 2019 - February 21, 2020

USA SPREAD: 5-Year/2-Year



<u>DATE</u>	<u>5-YEAR</u>	<u>2-YEAR</u>	<u>DIFF</u>
3-Feb-20	1.35	1.36	-0.01
4-Feb-20	1.42	1.41	0.01
5-Feb-20	1.46	1.44	0.02
6-Feb-20	1.45	1.44	0.01
7-Feb-20	1.41	1.41	0.00
10-Feb-20	1.38	1.37	0.01
11-Feb-20	1.40	1.41	-0.01
12-Feb-20	1.45	1.44	0.01
13-Feb-20	1.43	1.44	-0.01
14-Feb-20	1.42	1.42	0.00
17-Feb-20	1.42	1.42	0.00
18-Feb-20	1.39	1.41	-0.02
19-Feb-20	1.41	1.42	-0.01
20-Feb-20	1.37	1.39	-0.02
21-Feb-20	1.30	1.34	-0.04

Observations: The 5-year/2-year yield curve ratio has been above and below the Inversion line a few times. After going to a high of 0.11x at the end of December 2019, the ratio has fallen, once again, into Inversion territory and is presently at -0.04x.

RECESSION BAROMETER: USA

Our Recession Barometer for the United States reflects the average of three different yield spreads. These are:

- 10-Year/2-Year Spread
- Equal-Weight Average of Three Spreads: 20-Year/10-Year; 10-Year/3Month; and 5-Year/2-Year
- Equal-Weight Average of Twelve Spreads: 30-year/20-year, 30-year/10-year, 20-year/10-year, 20-year/5-year, 10-year/2-year, 10-year/3-month, 5-year/2-year, 5-year/3-month, 2-year/1-year, 2-year/3-month, 1-year/6-month, and 1-year/3-month.

The Spreads from these three metrics are then averaged to derive the Combined Reading for the Recession Barometer.

The table below shows how these metrics have evolved since the beginning of September 2019.

Date	10Year/2Year U.S. Spread		3 U.S. Spreads		12 U.S. Spreads		Combined Spreads	
	Spread	Reading	Spread	Reading	Spread	Reading	Spread	Reading
6-Sep-19	0.02	9.5 X	-0.08	10.0 X	-0.06	10.0 X	-0.04	10.0 X
13-Sep-19	0.11	8.0 X	0.06	8.5 X	0.05	9.0 X	0.07	8.5 X
20-Sep-19	0.05	9.0 X	0.00	9.5 X	0.02	9.5 X	0.02	9.5 X
27-Sep-19	0.06	8.5 X	0.03	9.0 X	0.04	9.0 X	0.04	9.0 X
4-Oct-19	0.12	8.0 X	0.02	9.5 X	0.02	9.5 X	0.05	9.0 X
11-Oct-19	0.13	7.5 X	0.11	8.0 X	0.11	8.0 X	0.12	8.0 X
18-Oct-19	0.18	7.0 X	0.13	7.5 X	0.12	8.0 X	0.14	7.5 X
25-Oct-19	0.17	7.0 X	0.14	7.5 X	0.13	7.5 X	0.15	7.5 X
1-Nov-19	0.17	7.0 X	0.17	7.0 X	0.16	7.5 X	0.16	7.5 X
8-Nov-19	0.26	6.0 X	0.26	6.0 X	0.22	6.5 X	0.25	6.5 X
15-Nov-19	0.23	6.5 X	0.21	6.5 X	0.18	7.0 X	0.20	7.0 X
22-Nov-19	0.16	7.5 X	0.17	7.0 X	0.15	7.5 X	0.16	7.5 X
29-Nov-19	0.17	7.0 X	0.10	8.0 X	0.14	7.5 X	0.14	7.5 X
6-Dec-19	0.23	6.5 X	0.22	6.5 X	0.19	7.0 X	0.21	6.5 X
13-Dec-19	0.21	6.5 X	0.19	7.0 X	0.17	7.0 X	0.19	7.0 X
20-Dec-19	0.29	6.0 X	0.24	6.5 X	0.19	7.0 X	0.24	6.5 X
27-Dec-19	0.29	6.0 X	0.23	6.5 X	0.18	7.0 X	0.23	6.5 X
3-Jan-20	0.27	6.0 X	0.21	6.5 X	0.18	7.0 X	0.22	6.5 X
10-Jan-20	0.27	6.0 X	0.22	6.5 X	0.18	7.0 X	0.22	6.5 X
17-Jan-20	0.26	6.0 X	0.21	6.5 X	0.18	7.0 X	0.22	6.5 X
24-Jan-20	0.21	6.5 X	0.16	7.5 X	0.14	7.5 X	0.17	7.0 X
31-Jan-20	0.18	7.0 X	0.09	8.0 X	0.07	8.5 X	0.11	8.0 X
7-Feb-20	0.18	7.0 X	0.11	8.0 X	0.09	8.0 X	0.13	7.5 X
14-Feb-20	0.17	7.0 X	0.10	8.0 X	0.08	8.5 X	0.12	8.0 X
21-Feb-20	0.12	8.0 X	0.05	9.0 X	0.04	9.0 X	0.07	8.5 X

CURRENT RECESSION BAROMETER READING, Week Ending February 21:

8.5x.

COMMENT: *The Combined Spread has fallen in the last two weeks to 0.07 currently so that the Combined Reading has risen these past two weeks and now sits at 8.5x. In the same time-frame, the U.S. 10/2 Spread declined to 0.12, giving a Reading of 8.0x. The equi-weight 3 selective Spreads and the equi-weight 12 selective Spreads both halved this past week and have equal Readings of 9.0x. The 10Y/2Y has not been in Inversion recently, but the other three metrics have.*

U.S. Recession Forecast

The following chart shows when a recession could occur for various post-inversion dates. For inversion, we are monitoring three yield spread ratios: (1) a widely-followed two-maturity metric; (2) an equal-weighted average of three spread readings; and (3) an equal-weighted average of twelve spread readings. We weight these three ratios equally in a Combined Spread.

Our criterion for declaring Inversion is that: (1) using the Combined Spread, the Recession Barometer reading must be 10; and (2) two of the three Series must be inverted and one of these must be the 10-Year/2-Year Yield Curve.

Historically, after Inversion, an Economic Recession has occurred between 15 and 20 months later. The following table shows when a recession could occur for various time-frames once an Inversion happens. The traditional 15-months/20-months periods are shown in **Red** in the table.

Forecasting the Commencement of a Recession

If an inversion occurs during the current quarter ... then a recession will begin at stated date projections.

Current Quarter	Inversion +12 Months	Inversion +15 Months	Inversion +20 Months	Inversion +24 Months	Inversion +30 Months	Inversion +40 Months
Q1/2020	Q1/2021	Q2/2021	Q4/2021	Q1/2022	Q3/2022	Q3/2023

Source: eResearch

CONCLUSION: We are mindful that a substantial number of Spreads at the short-end are inverted. However, the overall Recession Barometer Reading is 8.5x, albeit rising, and the Spreads for all three Series are still positive. So, there is no consensus of Inversion. Thus, for the moment, there is no empirical evidence to support a call for an Economic Recession in the USA in the near future.

Caveat: The coronavirus, known as Covid-19, if it turns into a global pandemic, will certainly impact global economies significantly, and most likely cause an Economic Recession in many countries of the world. It is unlikely that the United States would escape this scenario.

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