

RECESSION BAROMETER

March 24, 2020

Spotlight on : Yield Curve Ratios – USA

The world has changed. Specifically, the interest rate world has changed.

The following two tables mark a sharp contrast in how the various interest rate yield maturities relate to each other.

The first table is for the period June 1, 2019 to October 31, 2019, or 5 months.

| Date | OBFR | 1 mo | 2 mo | 3 mo | 6 mo | 1 yr | 2 yr | 3 yr | 5 yr | 7 yr | 10 yr | 20 yr | 30 yr |
|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 31-May-19 | 2.38 | 2.35 | 2.38 | 2.35 | 2.35 | 2.21 | 1.95 | 1.90 | 1.93 | 2.03 | 2.14 | 2.39 | 2.58 |
| 14-Jun-19 | 2.35 | 2.23 | 2.21 | 2.20 | 2.18 | 2.00 | 1.84 | 1.79 | 1.85 | 1.96 | 2.09 | 2.38 | 2.59 |
| 21-Jun-19 | 2.37 | 2.16 | 2.16 | 2.11 | 2.05 | 1.95 | 1.77 | 1.74 | 1.80 | 1.93 | 2.07 | 2.37 | 2.59 |
| 28-Jun-19 | 2.38 | 2.18 | 2.15 | 2.12 | 2.09 | 1.92 | 1.75 | 1.71 | 1.76 | 1.87 | 2.00 | 2.31 | 2.52 |
| 5-Jul-19 | 2.40 | 2.26 | 2.22 | 2.23 | 2.14 | 1.98 | 1.87 | 1.82 | 1.84 | 1.93 | 2.04 | 2.34 | 2.54 |
| 12-Jul-19 | 2.37 | 2.16 | 2.18 | 2.14 | 2.07 | 1.96 | 1.84 | 1.81 | 1.86 | 1.98 | 2.12 | 2.42 | 2.64 |
| 19-Jul-19 | 2.40 | 2.11 | 2.16 | 2.06 | 2.03 | 1.94 | 1.80 | 1.77 | 1.80 | 1.91 | 2.05 | 2.35 | 2.57 |
| 26-Jul-19 | 2.37 | 2.13 | 2.15 | 2.12 | 2.10 | 2.00 | 1.86 | 1.83 | 1.85 | 1.95 | 2.08 | 2.38 | 2.59 |
| 2-Aug-19 | 2.10 | 2.11 | 2.12 | 2.06 | 2.02 | 1.85 | 1.72 | 1.67 | 1.66 | 1.75 | 1.86 | 2.16 | 2.39 |
| 9-Aug-19 | 2.10 | 2.05 | 2.06 | 2.00 | 1.95 | 1.78 | 1.63 | 1.58 | 1.57 | 1.65 | 1.74 | 2.03 | 2.26 |
| 16-Aug-19 | 2.11 | 2.05 | 1.95 | 1.87 | 1.85 | 1.71 | 1.48 | 1.44 | 1.42 | 1.49 | 1.55 | 1.82 | 2.01 |
| 23-Aug-19 | 2.10 | 2.07 | 2.02 | 1.97 | 1.87 | 1.73 | 1.51 | 1.43 | 1.40 | 1.46 | 1.52 | 1.82 | 2.02 |
| 30-Aug-19 | 2.11 | 2.10 | 2.04 | 1.99 | 1.89 | 1.76 | 1.50 | 1.42 | 1.39 | 1.45 | 1.50 | 1.78 | 1.96 |
| 6-Sep-19 | 2.11 | 2.05 | 2.00 | 1.96 | 1.88 | 1.73 | 1.53 | 1.46 | 1.42 | 1.50 | 1.55 | 1.83 | 2.02 |
| 13-Sep-19 | 2.14 | 1.99 | 1.98 | 1.96 | 1.92 | 1.88 | 1.79 | 1.76 | 1.75 | 1.83 | 1.90 | 2.17 | 2.30 |
| 20-Sep-19 | 1.85 | 1.95 | 1.94 | 1.91 | 1.91 | 1.84 | 1.69 | 1.63 | 1.61 | 1.68 | 1.74 | 1.99 | 2.17 |
| 27-Sep-19 | 1.82 | 1.90 | 1.86 | 1.80 | 1.85 | 1.74 | 1.63 | 1.58 | 1.56 | 1.62 | 1.69 | 1.95 | 2.13 |
| 4-Oct-19 | 1.81 | 1.73 | 1.74 | 1.71 | 1.65 | 1.58 | 1.40 | 1.35 | 1.34 | 1.43 | 1.52 | 1.82 | 2.01 |
| 11-Oct-19 | 1.81 | 1.76 | 1.74 | 1.68 | 1.68 | 1.67 | 1.63 | 1.60 | 1.59 | 1.68 | 1.76 | 2.04 | 2.22 |
| 18-Oct-19 | 1.83 | 1.75 | 1.69 | 1.66 | 1.63 | 1.58 | 1.58 | 1.56 | 1.56 | 1.66 | 1.76 | 2.06 | 2.25 |
| 25-Oct-19 | 1.81 | 1.73 | 1.72 | 1.66 | 1.66 | 1.60 | 1.63 | 1.62 | 1.62 | 1.71 | 1.80 | 2.10 | 2.29 |

Source: U.S. Treasury and eResearch

Observations: OBFR is the Overnight Bank Funding Rate, the shortest maturity possible. In theory, this rate should be the lowest of any interest rate maturity. The Red numbers indicate that this is not the case. They represent all the maturities that have their yield being less than the OBFR.

For four weeks, August 16 to September 6, not one maturity was less than the OBFR. Investors were willing to pay more for an overnight loan than they were for a one month loan all the way up to a 30-year loan! Unbelievable!

The next table is for the period from March 1, 2020 until March 20, 2020.

| Date | OBFR | 1 mo | 2 mo | 3 mo | 6 mo | 1 yr | 2 yr | 3 yr | 5 yr | 7 yr | 10 yr | 20 yr | 30 yr |
|-----------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 2-Mar-20 | 1.58 | 1.41 | 1.27 | 1.13 | 0.95 | 0.89 | 0.84 | 0.85 | 0.88 | 1.01 | 1.10 | 1.46 | 1.66 |
| 3-Mar-20 | 1.58 | 1.11 | 1.05 | 0.95 | 0.83 | 0.73 | 0.71 | 0.72 | 0.77 | 0.91 | 1.02 | 1.44 | 1.64 |
| 4-Mar-20 | 1.08 | 1.00 | 0.87 | 0.72 | 0.68 | 0.59 | 0.67 | 0.68 | 0.75 | 0.90 | 1.02 | 1.45 | 1.67 |
| 5-Mar-20 | 1.08 | 0.92 | 0.83 | 0.62 | 0.53 | 0.48 | 0.59 | 0.61 | 0.67 | 0.81 | 0.92 | 1.34 | 1.56 |
| 6-Mar-20 | 1.08 | 0.79 | 0.64 | 0.45 | 0.41 | 0.39 | 0.49 | 0.53 | 0.58 | 0.69 | 0.74 | 1.09 | 1.25 |
| 9-Mar-20 | 1.08 | 0.57 | 0.52 | 0.33 | 0.27 | 0.31 | 0.38 | 0.40 | 0.46 | 0.56 | 0.54 | 0.87 | 0.99 |
| 10-Mar-20 | 1.09 | 0.57 | 0.55 | 0.44 | 0.43 | 0.43 | 0.50 | 0.58 | 0.63 | 0.73 | 0.76 | 1.16 | 1.28 |
| 11-Mar-20 | 1.09 | 0.42 | 0.42 | 0.42 | 0.40 | 0.40 | 0.50 | 0.58 | 0.66 | 0.78 | 0.82 | 1.13 | 1.30 |
| 12-Mar-20 | 1.10 | 0.41 | 0.33 | 0.33 | 0.37 | 0.39 | 0.50 | 0.58 | 0.66 | 0.82 | 0.88 | 1.27 | 1.49 |
| 13-Mar-20 | 1.10 | 0.33 | 0.30 | 0.28 | 0.38 | 0.38 | 0.49 | 0.58 | 0.70 | 0.89 | 0.94 | 1.31 | 1.56 |
| 16-Mar-20 | 0.15 | 0.25 | 0.25 | 0.24 | 0.29 | 0.29 | 0.36 | 0.43 | 0.49 | 0.67 | 0.73 | 1.10 | 1.34 |
| 17-Mar-20 | 0.20 | 0.12 | 0.18 | 0.19 | 0.24 | 0.30 | 0.47 | 0.54 | 0.66 | 0.91 | 1.02 | 1.45 | 1.63 |
| 18-Mar-20 | 0.20 | 0.04 | 0.03 | 0.02 | 0.08 | 0.21 | 0.54 | 0.66 | 0.79 | 1.08 | 1.18 | 1.60 | 1.77 |
| 19-Mar-20 | 0.12 | 0.04 | 0.04 | 0.04 | 0.06 | 0.20 | 0.44 | 0.53 | 0.66 | 1.00 | 1.12 | 1.56 | 1.78 |
| 20-Mar-20 | 0.15 | 0.04 | 0.05 | 0.05 | 0.05 | 0.15 | 0.37 | 0.41 | 0.52 | 0.82 | 0.92 | 1.35 | 1.55 |

Source: U.S. Treasury and eResearch

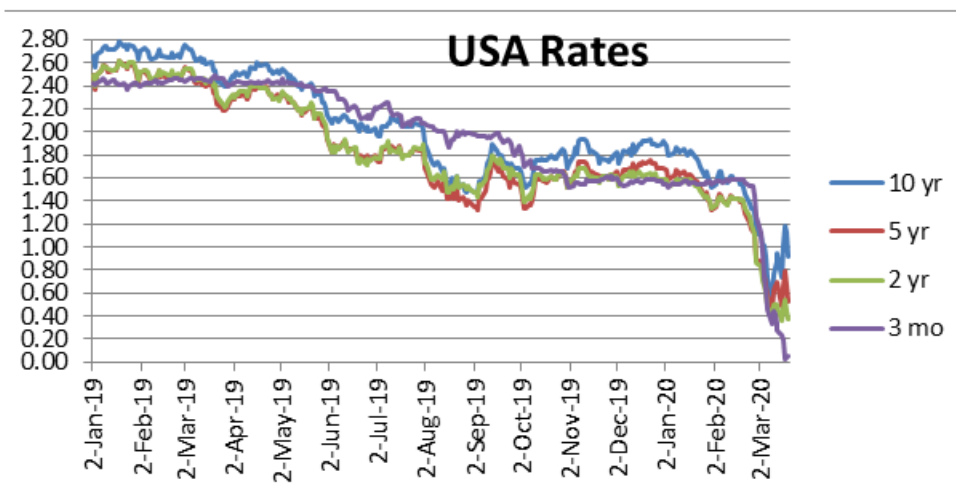
Observations: From almost all maturities having yields less than the OBFR at the beginning of the month, by March 20, there were only four, and they were the shortest maturities available. Also, the yields were very volatile, as these are very “volatile” times! Goes without saying, but said nevertheless.

There are even more surprises in store.

Next, we look at our favourite interest rate yield curve comparisons. First, we will start with 10-Year/3-Month, then 5-Year/2-Year, and finish with 10-Year/2-Year.

First, we provide two charts as an “overview”. The first chart shows the interest rates for 10-year, 5-year, 2-year and 3-month maturities since January 2, 2019.

January 2, 2019 to March 20, 2020

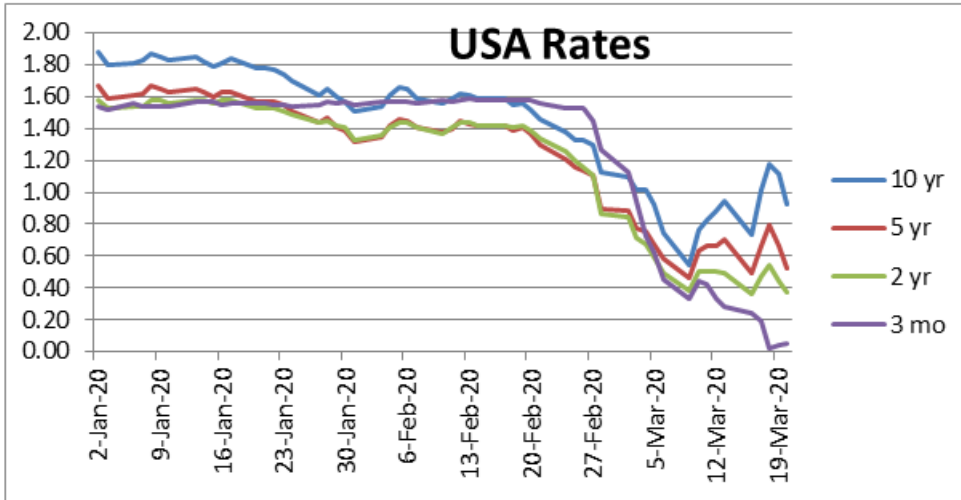


Source: eResearch

Observations: The four maturities generally tracked each other over the entire 15 months, even “falling off the cliff” together in mid-February ... until the last two weeks. That is a bit of a hodge-podge at the end, so on to the next chart for clarification.

The second chart shows the interest rates for the same maturities since January 2, 2020.

January 2, 2020 to March 20, 2020



Source: eResearch

Observations: The four interest rate vectors moved together until market chaos ensued on March 10. The 3-month maturity continued to move lower but the longer-dated maturities moved higher, and the longer the maturity, the higher it moved. This is what is to be expected and a phenomenon that has not occurred “according to Hoyle” for some time.

Let us look at relative maturity comparisons, those for (1) 10-year/3-month, (2) 5-year/2-year, and (3) 10-year/2-year. We will assess from the beginning of the current year, 2020. Some interesting observations are concluded.

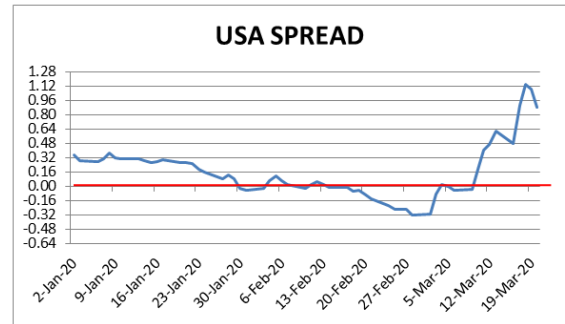
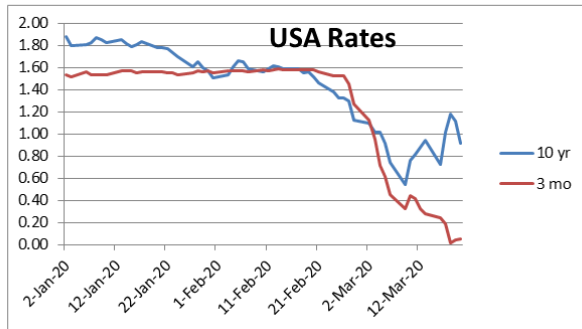
1. 10-Year/3-Month

January 2, 2020 to March 20, 2020

January 2, 2020 to March 20, 2020

10-Year/3-Month

10-Year/3-Month



Observations: The chart on the left shows the interest rates for 10-year and 3-month yields. They moved closely together, including the down-trend, until about March 6, and then they diverged. The chart on the right shows the Spread between the 10-year and the 3-month yields. This has widened considerably, and it left Inversion about March 9. That is, the widening is away from Inversion, which is represented by the Blue line being below the horizontal Red line.

COMMENT: *The 10-year/3-month metric is no longer showing any signs of inverting any time soon.*

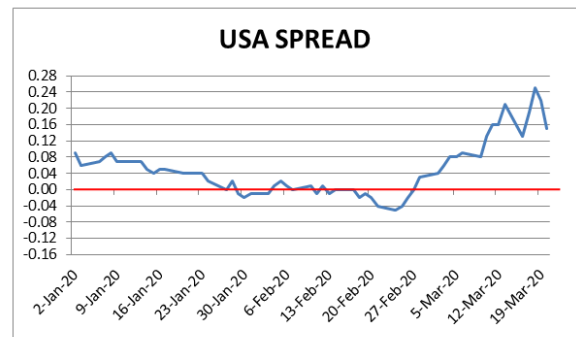
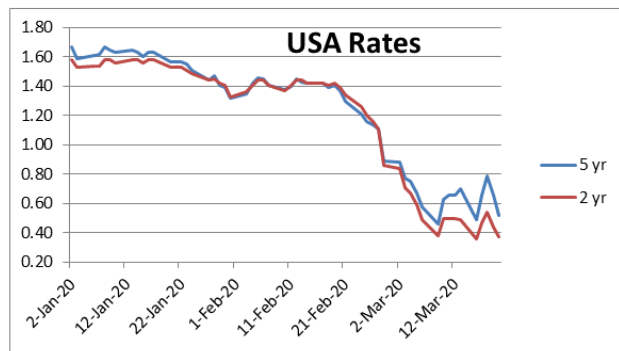
2. 5-Year/2-Year

January 2, 2020 to March 20, 2020

January 2, 2020 to March 20, 2020

5-Year/2-Year

5-Year/2-Year



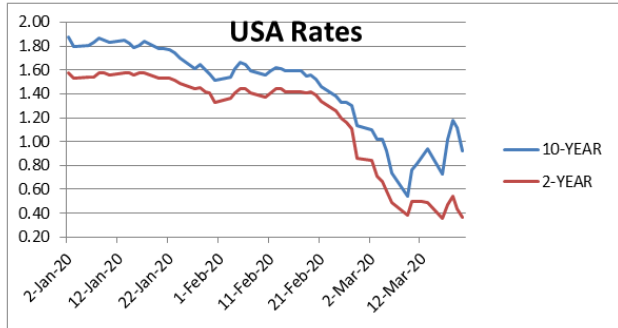
Observations: The chart on the left shows the interest rates for 5-year and 2-year yields. They moved almost in lock-step, including the down-trend, again until about March 6, and then they separated, although they followed the same pattern. The chart on the right shows the Spread between the 5-year and 2-year yields. The spread left Inversion at the end of February, a little before 10y/3m did.

COMMENT: *The 5-year/2-year metric is no longer flirting with Inversion.*

3. 10-Year/2-Year

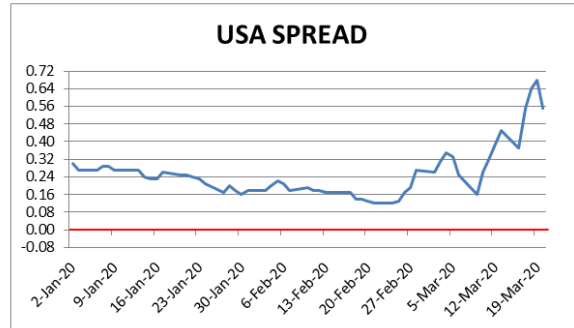
January 2, 2020 to March 20, 2020

10-Year/2-Year



January 2, 2020 to March 20, 2020

10-Year/2-Year



Observations: The chart on the left shows the interest rates for 10-year and 2-year yields. The 10-year was always above the 2-year, but they moved closely together, again until about March 6, and then they separated. The chart on the right shows the Spread between the 10-year and 2-year yields. This Spread was always above the red horizontal line below which denotes Inversion. The Spread has widened substantially away from Inversion tendencies.

COMMENT: We consider the 10Y/2Y metric to be the most important of our recession-watch indicators. The fact that the Spread has moved considerably away from an Inversion reading is perplexing given all the dire warnings recently about the United States going into a recession shortly because of the impact of the COVID-19 crisis. See our detailed commentary below.

<continued>

RECESSION BAROMETER: USA

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

1. 10-Year/2-Year Spread
2. Equal-Weight Average of Three Spreads: 20-Year/10-Year; 10-Year/3Month; and 5-Year/2-Year
3. 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 January 2020.

| <u>Date</u> | <u>10Year/2Year U.S. Spread</u> | | <u>3 U.S. Spreads</u> | | <u>12 U.S. Spreads</u> | | <u>Combined Spreads</u> | |
|-------------|---------------------------------|----------------|-----------------------|----------------|------------------------|----------------|-------------------------|----------------|
| | <u>Spread</u> | <u>Reading</u> | <u>Spread</u> | <u>Reading</u> | <u>Spread</u> | <u>Reading</u> | <u>Spread</u> | <u>Reading</u> |
| 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 |
| 28-Feb-20 | 0.27 | 6.0 X | 0.07 | 8.5 X | 0.04 | 9.0 X | 0.13 | 7.5 X |
| 6-Mar-20 | 0.25 | 6.5 X | 0.24 | 6.5 X | 0.20 | 7.0 X | 0.23 | 6.5 X |
| 13-Mar-20 | 0.45 | 4.5 X | 0.41 | 4.5 X | 0.33 | 5.5 X | 0.40 | 5.0 X |
| 20-Mar-20 | 0.55 | 3.5 X | 0.48 | 4.0 X | 0.41 | 4.5 X | 0.48 | 4.0 X |

Source: eResearch

CURRENT RECESSION BAROMETER READING, Week Ending March 20:

4.0x.

COMMENT: *In the last two weeks, all four of the readings have moved substantially lower and away from Inversion, which is indicated by a reading of 10.0x. The 10y/2y reading is now 3.5x; the combined three Spread readings is 4.0x, and the 12 Spread readings is 4.5x. The Combined Spread is now 4.0x. Given the expectation of a phenomenal global economic slow-down stemming from the world-wide disruption being caused by the COVID-19 crisis, and manifest in expectations for a negative GDP growth rate in Q1/2020 and a substantial negative GDP growth rate in Q2/2020 and further negativity likely in Q3/2020, and thus triggering the definition of an Economic Recession, one would expect the Spreads to narrow, not widen and, in fact, turn negative and, therefore, herald a forth-coming Economic Recession. What is happening? The script is not being followed!*

U.S. Recession Forecast

In previous Recession Barometer reports, we have always included the following text and chart:

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

The above table is now “out the window”. Inversion is no longer the issue.

If the Economic pundits are correct, there will be negative GDP growth in Q1/2020. Goldman, Sachs is predicting negative GDP growth in Q2/2020 to the tune of -24%! That would mark two consecutive quarters of negative GDP growth and, therefore, would meet the definition of an Economic Recession. The recession would start in Q3/2020.

If, somehow, Q1/2020 is not negative, but Q3/2020 is negative, then the Economic Recession would begin in Q4/2020.

COMMENT: *Either way, an Economic Recession in the United States is foretold for this year. This is a major reason why the U.S. stock market has taken such a hammering lately. The stock market typically looks six months ahead. If Q2/2020 marks the low point in negative GDP growth such that Q3/2020 is not as bad, i.e., the economic recovery has begun, then the stock market would be expected to begin its own long road to recovery. However, once the market finds a base, it may very well “tread water” until that picture becomes clearer.*

Bob Weir, CFA: Contributing Analyst

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