

RECESSION BAROMETER

June 14, 2019

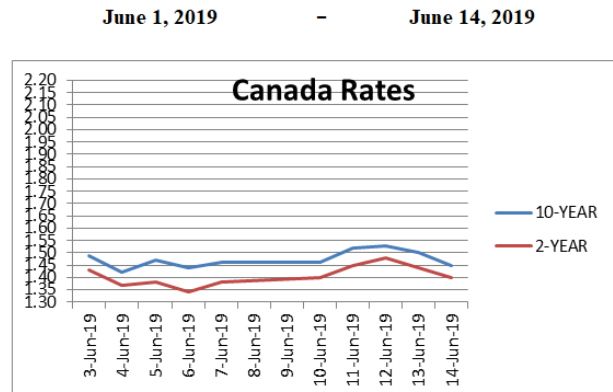
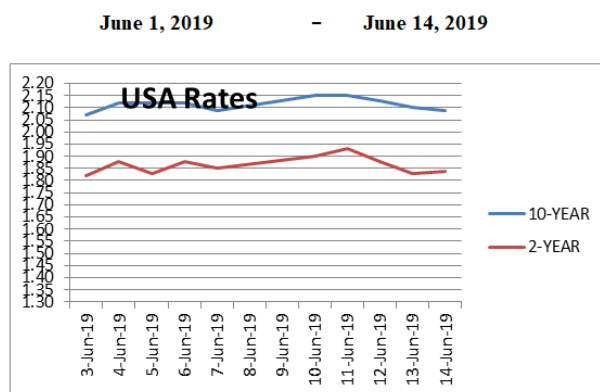
Spotlight on : Interest Rates & Yield Spreads

INTEREST RATES

This week we are going short-term. The table below shows the trend in interest rates in the United States and Canada since the beginning of June 2019, for 10-year and 2-year maturities.

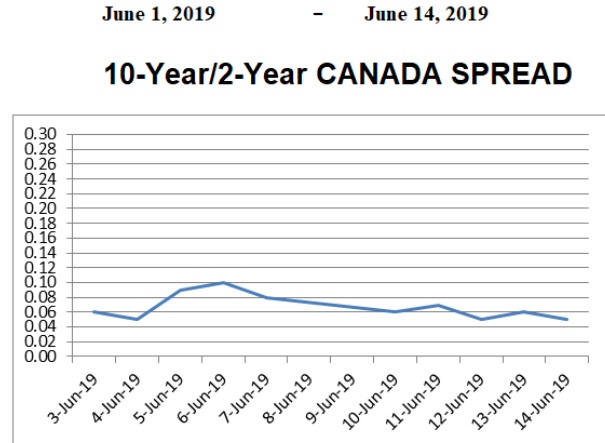
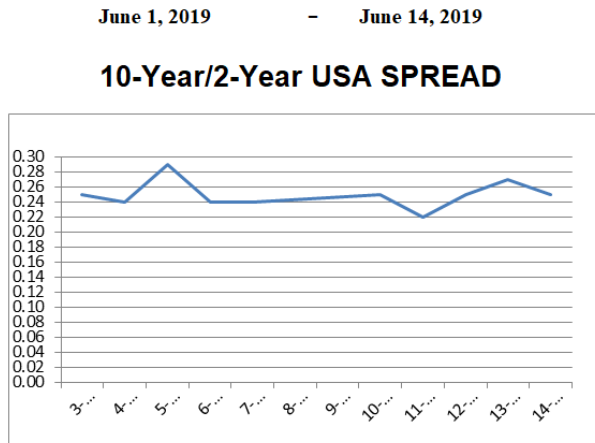
<u>DATE</u>	<u>USA</u>			<u>DATE</u>	<u>CANADA</u>		
	<u>10-YEAR</u>	<u>2-YEAR</u>	<u>DIFF</u>		<u>10-YEAR</u>	<u>2-YEAR</u>	<u>DIFF</u>
3-Jun-19	2.07	1.82	0.25	3-Jun-19	1.49	1.43	0.06
4-Jun-19	2.12	1.88	0.24	4-Jun-19	1.42	1.37	0.05
5-Jun-19	2.12	1.83	0.29	5-Jun-19	1.47	1.38	0.09
6-Jun-19	2.12	1.88	0.24	6-Jun-19	1.44	1.34	0.10
7-Jun-19	2.09	1.85	0.24	7-Jun-19	1.46	1.38	0.08
10-Jun-19	2.15	1.90	0.25	10-Jun-19	1.46	1.40	0.06
11-Jun-19	2.15	1.93	0.22	11-Jun-19	1.52	1.45	0.07
12-Jun-19	2.13	1.88	0.25	12-Jun-19	1.53	1.48	0.05
13-Jun-19	2.10	1.83	0.27	13-Jun-19	1.50	1.44	0.06
14-Jun-19	2.09	1.84	0.25	14-Jun-19	1.45	1.40	0.05

Let us look at the above in chart form:



Observation: The two charts (on the previous page) have the same scale, ranging between 1.30% and 2.20%. The U.S. rates are at the top of its chart while the Canadian rates are at the bottom of its chart. The “DIFF” in the table is the Spread between the two rate maturities, 10-year and 2-year. The Spread is much higher in the USA than it is in Canada.

Let us have a look at the charts for these Spreads in the same short time-span.



Observation: The table on the previous page shows that the Spread in the USA over the last two weeks has ranged between 0.22x and 0.29x. The Canadian numbers are between 0.05x and 0.10x.

COMMENT: As Readers of the Recession Barometer will know, we monitor a significant number of interest rates and yield curves over various maturities. Our stance on Inversion and, therefore, the (probable) subsequent Economic Recession, is predicated on our Recession Barometer reflecting the collective Inversions for our yield curve universe. Indeed, some of the yield curves are currently inverted. However, we need a consensus of Inversions before we initiate our Count-Down to an Economic Recession. Further discussion on this issue lies ahead.

ANALYZING VARIOUS YIELD SPREADS

There are a myriad of different yield spreads that can be calculated. With so many iterations possible, which one(s) is(are) the most relevant? It is too easy to choose one iteration, eg., 10-year/6-month or 10-year/3-month (both currently “inverted”) and declare “Inversion!”, while both the 10-year/5-year and the 10-year/2-year yield spreads do not currently show inversion.

Our yield-spread watch includes a total of **24** yield spread ratios, ranging all the way from 30-year/20-year to 1-year/1-month.

More than half of the spread ratios, 13 in total (also 13 the previous week), are in an inverted state and all are at the short-end of the curve.

Q: What is the market saying? What does this tell us?

A: It could suggest that the market is expecting that there will be a rate cut or cuts by the Fed, which would send short-end rates lower. It might also suggest that the short-end is waiting for the longer-end to “catch up” and “join it” in inversion.

COMMENT: If we were to choose only one yield spread to measure “Inversion”, it would be the 10-year/2-year ratio. However, we monitor two different series of Spreads. The First Spread Series is a weighted average of 3 Spreads: 10-year/2-year (70%), 10-year/3-month (20%), and 5-year/2-year (10%). The Second Spread Series is an equal-weight average of 12 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.

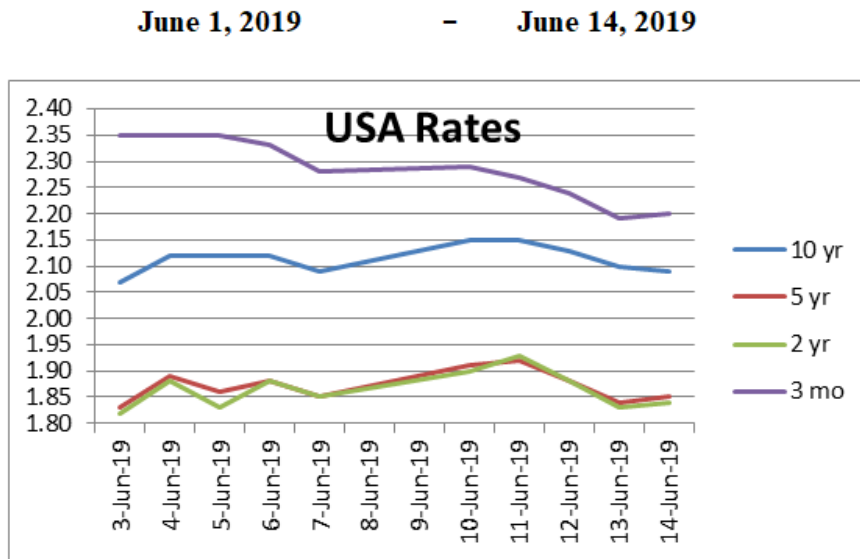
First Spread Series: Weighted Average Of Three Spreads

Our First Spread Series highlights three yield Spreads to measure “Inversion” and the possibility of a subsequent Economic Recession.

These three yield spreads feature U.S. Treasuries for: (1) 10-year/2-year; (2) 10-year/3 month; and (3) 5-year/2-year.

Let us have a look at the Spreads for each of these three yield ratios.

The chart below shows all four rates since June 1, 2019.



Observation: In a normal market, the 10-year would be the highest rate, then the 5-year, and followed by the 2-year, and the 3-month. The most surprising aspect of the above chart is that the 3-month rate is at the top of the chart and, therefore, has the highest rate of all of the maturities. A widely-watched Inversion is the 10-year rate (blue) and the 3-month rate (purple). The 5-year rate (rust) has been trending almost equally with the 2-year rate (green) (with both also below the 3-month).

Set out on the following page are the current Spreads for the three yield curves (10Y/2Y; 10Y/3M; and 5Y/2Y):

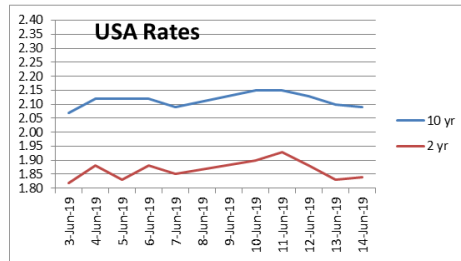
June 1, 2019 - June 14, 2019

10-Year/2-Year

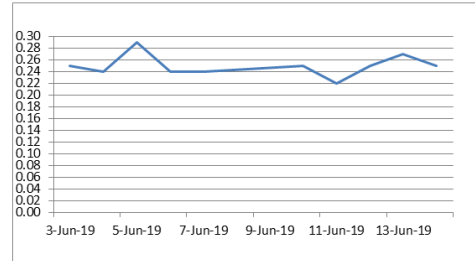
Current Spread
USA = 0.25 x

Reading
6.5

June 1, 2019 - June 14, 2019



10-Year/2-Year USA SPREAD



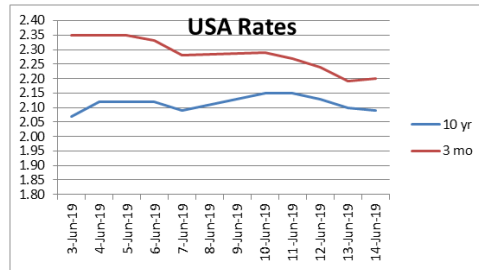
10-Year/3-Month

Current Spread
USA = -0.11 x

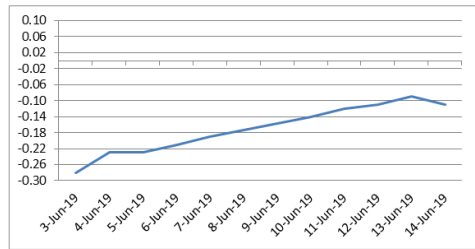
Reading
10

June 1, 2019 - June 14, 2019

June 1, 2019 - June 14, 2019



USA SPREAD: 10-Year/3-Month

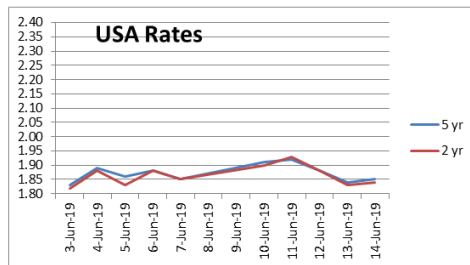


5-Year/2-Year

Current Spread
USA = 0.01 x

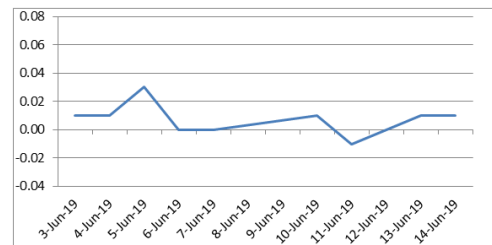
Reading
9.5

June 1, 2019 - June 14, 2019



June 1, 2019 - June 14, 2019

USA SPREAD: 5-Year/2-Year



Second Spread Series: Equal-Weight Average Of Twelve Spreads

As declared in a previous COMMENT above, we have chosen an equal-weight average of 12 spreads to monitor Inversion. Here are the ratios for all 12 of these spreads over the past seven weeks:

	<u>30Y</u>	<u>30Y</u>	<u>20Y</u>	<u>20Y</u>	<u>10Y</u>	<u>10Y</u>	<u>5Y</u>	<u>5Y</u>	<u>2Y</u>	<u>2Y</u>	<u>1Y</u>	<u>1Y</u>
	<u>20Y</u>	<u>10Y</u>	<u>10Y</u>	<u>5Y</u>	<u>2Y</u>	<u>3M</u>	<u>2Y</u>	<u>3M</u>	<u>1Y</u>	<u>3M</u>	<u>6M</u>	<u>3M</u>
May 3, 2019	0.18	0.39	0.21	0.42	0.21	0.11	0.00	-0.10	-0.08	-0.10	-0.05	-0.02
May 10, 2019	0.19	0.42	0.23	0.44	0.21	0.04	0.00	-0.17	-0.10	-0.17	-0.09	-0.07
May 17, 2019	0.19	0.43	0.24	0.46	0.19	0.00	-0.03	-0.22	-0.13	-0.19	-0.09	-0.06
May 24, 2019	0.18	0.43	0.25	0.45	0.16	-0.03	-0.04	-0.23	-0.17	-0.19	-0.06	-0.02
May 31, 2019	0.19	0.44	0.25	0.46	0.19	-0.21	-0.02	-0.42	-0.26	-0.40	-0.14	-0.14
June 7, 2019	0.21	0.48	0.27	0.51	0.24	-0.19	0.00	-0.43	-0.12	-0.43	-0.18	-0.31
June 14, 2019	0.21	0.50	0.29	0.53	0.25	-0.11	0.01	-0.35	-0.16	-0.36	-0.18	-0.20

The table above shows that Inversions occur in 6 of the 12 yield spreads, and the 5Y/2Y almost makes 7.

COMMENT: *Just because an Inversion occurs, it is not automatic that a Recession follows. And, when an Inversion does occur, the average lag time to a Recession is 15 to 20 months. Also, if an Inversion occurs for just one day, is it automatic that the Recession count-down begins at that point? Or, should there be a certain number of days of a continuous Inversion to give confirmation? Also, which yield spreads do you choose?*

COMMENT: *We still put a lot of emphasis on the 10-year/2-year Spread and it is nowhere near an Inversion. The 10-year/2-year Spread is the major part of our First Spread Series above. The above table shows the stark reality between the 10Y/2Y and the 10Y/3M. Anomaly!*

The increasing Inversions across the spectrum seem bad enough, but the following table should cause even more angst.

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
1-Mar-19	2.40	2.44	2.46	2.44	2.52	2.55	2.55	2.54	2.56	2.67	2.76	2.97	3.13
15-Mar-19	2.41	2.46	2.46	2.45	2.52	2.52	2.43	2.39	2.40	2.49	2.59	2.83	3.02
1-Apr-19	2.41	2.42	2.43	2.43	2.46	2.41	2.33	2.29	2.31	2.40	2.49	2.71	2.89
15-Apr-19	2.41	2.42	2.43	2.43	2.46	2.43	2.40	2.36	2.37	2.46	2.55	2.77	2.96
1-May-19	2.44	2.42	2.41	2.43	2.44	2.39	2.31	2.28	2.31	2.41	2.52	2.74	2.92
15-May-19	2.39	2.40	2.41	2.42	2.43	2.30	2.16	2.12	2.15	2.25	2.37	2.63	2.82
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

Note: The green numbers are the Overnight Banking Fund Rates (OBFR).
 Note: The red numbers are those rates that are lower than the OBFR.

COMMENT: *The table above, in the first column, shows in green numbers, the federal overnight banking funds rate. (The overnight bank funding rate (OBFR) is calculated as a volume-weighted median of overnight federal funds transactions, Eurodollar transactions, and domestic deposits.) The red numbers are those rates that are below the overnight rate. This table illustrates the anomaly that exists in the current market. How could federal overnight fund rates be higher than 5-year or 10-year rates? Or any longer-dated rates? These Inversions suggest that a Recession is on its way. Additionally, across the board, every rate but 30Y this week is LOWER than last week.*

RECESSION BAROMETER READING

We have devised a barometer to depict the status of where we believe the economy is in forecasting an economic recession. The barometer runs from 0 to 10 in 0.5 intervals, with 0 being the least worrisome level for recession expectations, and 10 reflecting that an inversion has occurred. Each barometer numeric is associated with a range of yield spreads.

RECESSION BAROMETER

<u>Interest Rate Yield Spread</u>	<u>Barometer Reading</u>
>1.00x	0
0.94x - 1.00x	0.5
0.87x - 0.93x	1
0.79x - 0.86x	1.5
0.71x - 0.78x	2
0.64x - 0.70x	2.5
0.57x - 0.63x	3
0.51x - 0.56x	3.5
0.46x - 0.50x	4
0.41x - 0.45x	4.5
0.36x - 0.40x	5
0.31x - 0.35x	5.5
0.26x - 0.30x	6
0.21x - 0.25x	6.5
0.17x - 0.20x	7
0.13x - 0.16x	7.5
0.09x - 0.12x	8
0.06x - 0.08x	8.5
0.03x - 0.05x	9
0.00x - 0.02x	9.5
<0.00x	10 Inversion!

The above matrix is applied to our yield spread ratios to derive our Barometer Readings.

Here are the readings from the two spread series. As shown, the Spreads for both Series widened last week. The recession reading for the First Spread Series stayed constant, at 7.5x, while the reading for the Second Spread Series dropped to 9.0x. Still no consensus Inversion readings.

<u>Date</u>	<u>Weighted 3 U.S. Spreads</u>		<u>Unweighted 12 U.S. Spreads</u>	
	<u>Spread</u>	<u>Reading</u>	<u>Spread</u>	<u>Reading</u>
May 3, 2019	0.17	7.0x	0.10	8.0x
May 10, 2019	0.16	7.5x	0.08	8.5x
May 17, 2019	0.13	7.5x	0.07	8.5x
May 24, 2019	0.10	8.0x	0.06	8.5x
May 31, 2019	0.09	8.0x	-0.01	10.0x
June 7, 2019	0.13	7.5x	0.00	9.5x
June 14, 2019	0.15	7.5x	0.04	9.0x

<continued>

Recession Forecast

The following chart shows when a recession could occur for various post-inversion dates. For inversion, we are monitoring two yield spread ratios, a weighted and an unweighted measurement. These barometer readings are currently 7.5x and 9.0x.

Our current “guess” is that a recession could occur 15 months post-inversion (shown in **Red** in the table below). This is a “moving target” and will change with each ensuing month. It will also change with changes in global economic conditions.

We are mindful that an increasing number of Spreads are inverting. Already one of our monitors, the Second Spread Series, had a negative Spread two weeks ago. If this continues and/or the First Spread Series edges closer to or reaches Inversion, we will be shortening our expectation of when a Recession could occur in the United States.

Forecasting the Commencement of a Recession

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

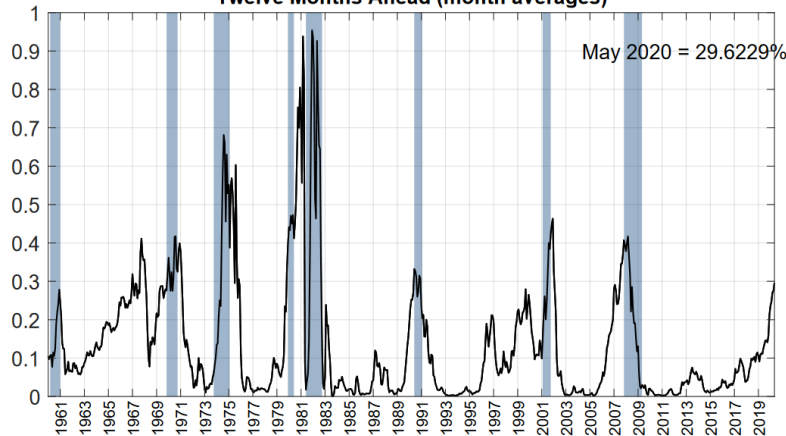
<u>Current Month</u>	<u>Inversion +12 Months</u>	<u>Inversion +15 Months</u>	<u>Inversion +18 Months</u>	<u>Inversion +24 Months</u>	<u>Inversion +30 Months</u>	<u>Inversion +36 Months</u>
June/2019	June/2020	Sept/2020	Dec/2020	June/2021	Dec/2021	May/2022

Source: eResearch

New York Federal Reserve Yield Curve Recession Indicator

The following New York Fed chart, which uses the difference between 10-year and 3-month Treasury rates to calculate the probability of a recession in the United States twelve months ahead, is as of June 4, 2019. It shows the probability of a recession occurring in the next 12 months, that is, by the end of May 2020. The chart shows that probability continues to rise and has reached 29.6%.

Probability of US Recession Predicted by Treasury Spread*
Twelve Months Ahead (month averages)



*Parameters estimated using data from January 1959 to December 2009, recession probabilities predicted using data through May 2019. The parameter estimates are $\alpha = -0.5333$, $\beta = -0.6330$.

Updated 04-Jun-2019

Bob Weir, CFA: Contributing Analyst

***e*RESEARCH DISCLAIMER**

*e*Research is engaged solely in the provision of equity research to the investment community. *e*Research provides published research and analysis to its Subscribers on its website (www.eresearch.ca), and to the general investing public through its extensive electronic distribution network and through newswire agencies.

With regards to distribution of its research material, *e*Research makes all reasonable efforts to provide its publications, via e-mail, simultaneously to all of its Subscribers.

*e*Research does not manage money or trade with the general public, provides full disclosure of all fee arrangements, and adheres to the strict application of its Best Practices Guidelines.