

RECESSION BAROMETER

August 23, 2019

Spotlight on : **Inversion (Canada: Yes; USA: Not Yet)**

SUMMARY

eResearch initiated a Count-Down to a possible Economic Recession in Canada after an ingrained Inversion was tabulated, as of August 8, for our benchmark 10-Year/2-Year yield curve ratio. Given that an Economic Recession historically has occurred 15-20 months after an Inversion has occurred, that means that the possible Economic Recession in Canada could occur between November 2020 and April 2021. We will continue to monitor the yield-curve readings and other mitigating influences to fine tune, if necessary, the date of such possible Economic Recession for Canada.

Q: What we want to know is that, after an Inversion occurs, how long does it typically last? And what happens after the Inversion concludes?

A: Some Inversions last for months, others for mere weeks; there is no consensus. Eventually, the yield curve returns to “normal”, i.e., the longer maturity has a higher yield than the shorter maturity. Even as the yield curve ratio increases, the actual Economic Recession has not yet occurred. We use the standard definition for determining a recession, which is two consecutive quarters of negative GDP growth. Of course, an Economic Recession can occur either before or after that “usual” 15-20 month range.

Q: What happens to the stock market (1) when an Inversion occurs? (2) during the lead-up to a possible recession? and (3) during the Economic Recession?

A: The stock market always is a forward-thinking market. It anticipates well in advance certain scenarios that may, or may not, turn out to be realized, but which it thinks will. Typically, as soon as an Inversion occurs, the market gets “worried” that a recession is lurking, and it begins to decline, quicker at first, then at a more measured decline. As economic indicators turn progressively negative, the stock market factors these bearish factors into account and, eventually, all, or almost all, of these negativities are priced in and the stock market begins to rise, slowly at first. By the time the actual Economic Recession arrives, the yield curve is well above Inversion levels and the stock market is once again on a rising trend.

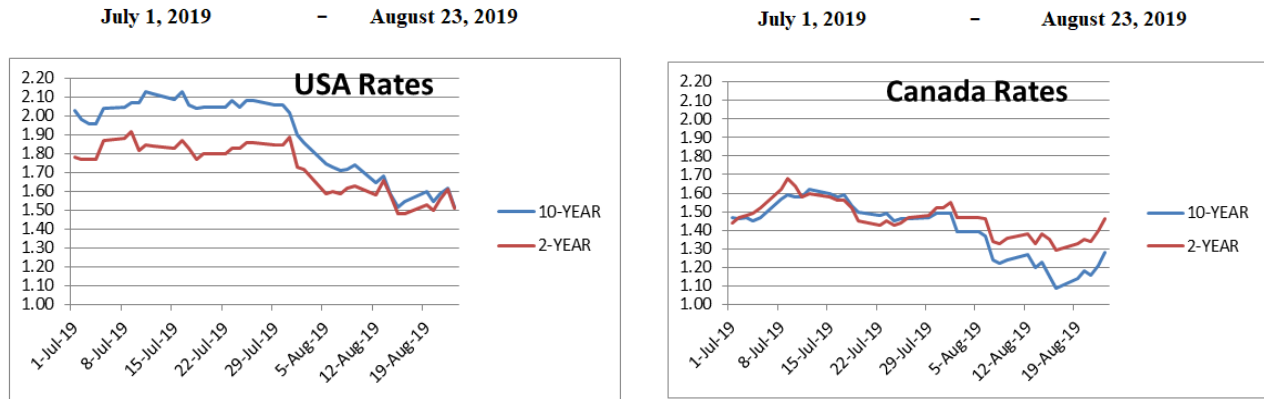
Q: So, where are we now?

A: Using all of the yield curve ratios that we constantly monitor, and factoring these ratios into our internally-developed Recession Barometer, we conclude that the de facto Inversion has just occurred in Canada and it is on the cusp in the United States.

INTEREST RATES: 10-YEAR/2-YEAR

In the charts set out below, using 10-year and 2-year maturities, we show the trend in interest rates in both the USA and Canada since July 1, the beginning of Q3/2019.

Since July 1, 2019



Observation: Over the last two weeks, U.S. interest rates have generally been flat-lining. In Canada, they have been rising. Last Friday, August 23, was an anomaly. With the Powell speech, Trump’s tweets, and China’s tariff retaliation, U.S. interest rates plummeted. Conversely, Canadian rates rose on Friday. The table below shows actual rates for the last two weeks. Following that, on the next page, we look at the Spreads in chart form.

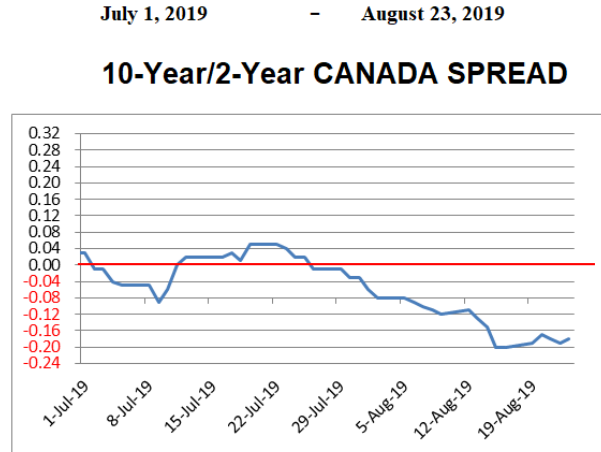
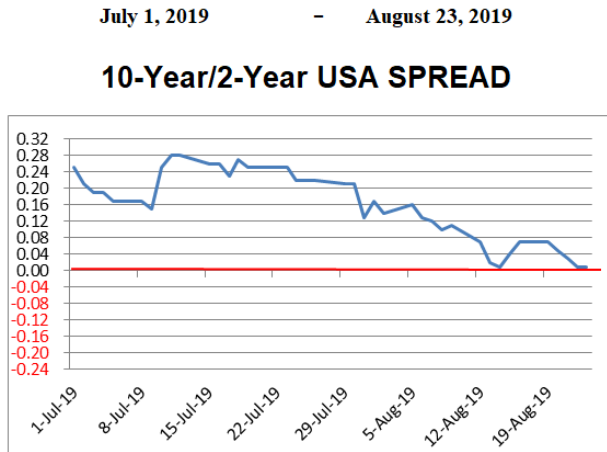
	USA			CANADA			
	<u>10-Year</u>	<u>2-Year</u>	<u>Spread</u>	<u>10-Year</u>	<u>2-Year</u>	<u>Spread</u>	
12-Aug-19	1.65	1.58	0.07	12-Aug-19	1.27	1.38	-0.11
13-Aug-19	1.68	1.66	0.02	13-Aug-19	1.20	1.33	-0.13
14-Aug-19	1.59	1.58	0.01	14-Aug-19	1.23	1.38	-0.15
15-Aug-19	1.52	1.48	0.04	15-Aug-19	1.15	1.35	-0.20
16-Aug-19	1.55	1.48	0.07	16-Aug-19	1.09	1.29	-0.20
19-Aug-19	1.60	1.53	0.07	19-Aug-19	1.14	1.33	-0.19
20-Aug-19	1.55	1.50	0.05	20-Aug-19	1.18	1.35	-0.17
21-Aug-19	1.59	1.56	0.03	21-Aug-19	1.16	1.34	-0.18
22-Aug-19	1.62	1.61	0.01	22-Aug-19	1.21	1.40	-0.19
23-Aug-19	1.52	1.51	0.01	23-Aug-19	1.28	1.46	-0.18

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SPREADS: 10-YEAR/2-YEAR

As shown in the table of interest rates on the previous page, the Spread for 10-Year/2-Year interest rates in the USA are staying stubbornly above 0.00x, with the last two days at 0.01x and despite the sharp drop in actual rates on Friday. Canadian 10/2 rates are firmly inverted.

Since July 1, 2019



eResearch considers the benchmark for assessing Inversion to be the 10-Year/2-Year yield curve ratio. However, other pundits, including Arturo Estrella, prefer the 10-Year/3-Month yield curve ratio.

Estrella is the economist who first discovered the ability of the yield curve to predict economic recessions.

Over the past 50 years, which included 7 recessions, the 10-Year/3-Month Inversions had a perfect track record. So did the 10-Year/2-Year Inversions records.

Given both metrics have had excellent recession predictive powers, it is interesting that, in this cycle, the 10Y/3M ratio has been inverted for quite some time, and the 10Y/2Y has yet to invert (other than intra-day, which it has done three times recently).

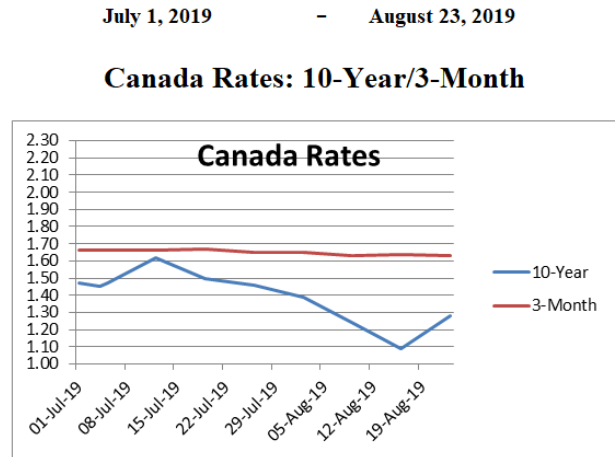
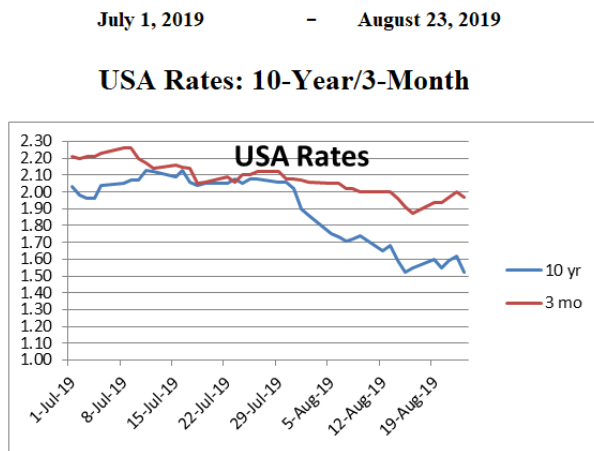
So, let us have a look at the 10-Year/3-Month metrics, starting on the next page.

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INTEREST RATES: 10-YEAR/3-MONTH

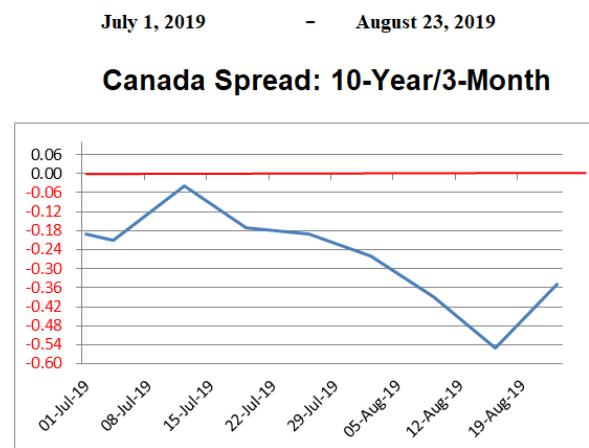
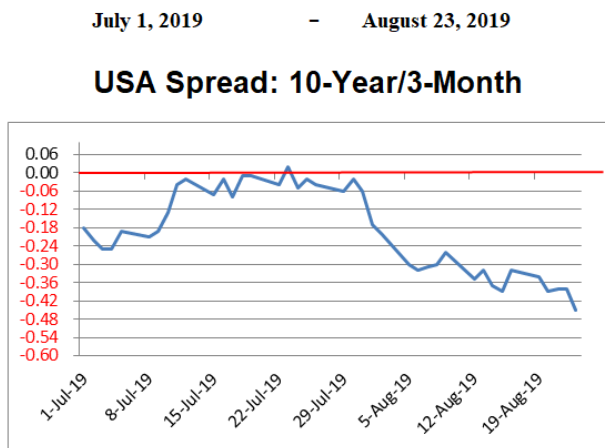
We follow the same format for the 10Y/3M as we did for the 10Y/2Y.

The following charts are the U.S. and Canadian 10-Year/3-Month interest rates.



Observation: The charts utilize the same scale, from 2.30% down to 1.00%. U.S. 3-Month rates have declined from a high of 2.26% to a low of 1.87% two weeks ago, with a close at the end of last week at 1.97%. U.S. 10-Year rates are bumping along the bottom of their range and closed at 1.52%. That gives a Spread of -0.45x. In Canada, 3-Month rates have been fairly flat, in a range of 1.67% to 1.63%. Canada’s 10-Year trend has been generally lower with a sharp increase occurring only on Friday last week. It closed at 1.28%.

SPREADS: 10-YEAR/3-MONTH



Observation: The charts have the same scale. Until very recently, the Spreads in the two countries moved together fairly well, until this past week when the U.S. Spread went down and the Canadian Spread went up.

Enough of this, where are we with our recession watch.

THE eRESEARCH 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 Reading for the Recession Barometer.

The table below shows how these metrics have evolved since the beginning of May 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
May 3, 2019	0.21	6.5 X	0.11	8.0 X	0.10	8.0 X	0.14	7.5X
May 10, 2019	0.21	6.5 X	0.09	8.0 X	0.08	8.5 X	0.13	7.5X
May 17, 2019	0.19	7.0 X	0.07	8.5 X	0.07	8.5 X	0.11	7.5X
May 24, 2019	0.16	7.5 X	0.06	8.5 X	0.06	8.5 X	0.09	8.0X
May 31, 2019	0.19	7.0 X	0.01	9.5 X	-0.01	10.0 X	0.06	8.5X
June 7, 2019	0.24	6.5 X	0.03	9.0 X	0.00	9.5 X	0.09	8.0X
June 14, 2019	0.25	6.5 X	0.06	8.5 X	0.04	9.0 X	0.12	7.5X
June 21, 2019	0.30	6.0 X	0.10	8.0 X	0.07	8.5 X	0.15	7.5X
June 28, 2019	0.25	6.5 X	0.07	8.5 X	0.04	9.0 X	0.12	7.5X
July 5, 2019	0.17	7.0 X	0.03	9.0 X	0.02	9.5 X	0.07	8.5X
July 12, 2019	0.28	6.0 X	0.10	8.0 X	0.07	8.5 X	0.15	7.5X
July 19, 2019	0.25	6.5 X	0.10	8.0 X	0.08	8.5 X	0.14	7.5X
July 26, 2019	0.22	6.5 X	0.08	8.5 X	0.07	8.5 X	0.12	8.0X
August 2, 2019	0.14	7.5 X	0.01	9.5 X	0.02	9.5 X	0.06	8.5X
August 9, 2019	0.11	8.0 X	-0.01	10.0 X	0.00	9.5 X	0.03	9.0X
August 16, 2019	0.07	8.5 X	-0.04	10.0 X	0.03	9.0 X	0.02	9.5X
August 23, 2019	0.01	9.5 X	-0.09	10.0 X	0.06	9.0 X	0.00	9.5X

Observation: The 10/2 Spread is now at the lowest level in the last four months. The “3 Spreads” has been negative , or “inverted”, for the past three weeks. The “12 Spreads” has actually risen off the bottom the past two weeks, mainly because Spreads at the long end, 30-year and 20-year, have not been pressured as much as Spreads in shorter maturities. Overall, the Combined Spread has dropped to the base line, a reading of 0.00x.

COMMENT: Next week, if the 10-year/2-year Spread inverts AND the Combined Spread inverts, then the eResearch criteria for a Count-Down to Economic Recession in the USA will be triggered.

CURRENT U.S. RECESSION BAROMETER READING, Week Ending August 23:

9.5X

This is the second consecutive week of a 9.5x reading. On the cusp!

OTHER CONSIDERATIONS

1. The Unbelievable OBFR Yield

The following table shows how dysfunctional the yield curve scenario is right now. For the past two weeks, the Overnight Bank Funding Rate (OBFR) has had a higher yield than any other maturity, REPEAT: any other maturity. This is ridiculous! (The **Green** numbers are the OBFR; the **Red** numbers comprise those maturities with a lower rate than the OBFR; and the **Black** numbers are at or higher than the OBFR.)

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
22-Mar-19	2.40	2.49	2.48	2.46	2.48	2.45	2.31	2.24	2.24	2.34	2.44	2.69	2.88
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
8-Apr-19	2.41	2.43	2.44	2.43	2.48	2.43	2.36	2.31	2.33	2.42	2.52	2.74	2.93
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
23-Apr-19	2.44	2.43	2.44	2.45	2.46	2.43	2.36	2.34	2.36	2.46	2.57	2.81	2.98
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
8-May-19	2.38	2.42	2.43	2.43	2.45	2.37	2.30	2.26	2.28	2.38	2.49	2.71	2.89
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
22-May-19	2.37	2.36	2.37	2.38	2.41	2.37	2.23	2.17	2.19	2.28	2.39	2.64	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
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

2. U.S. Inversions

We monitor 24 different yield curve ratios. Of these, 15 are inverted.

30Y	30Y	30Y	30Y	20Y	20Y	20Y	10Y	10Y	10Y	10Y	10Y	5Y	5Y	5Y	5Y	5Y	2Y	2Y	2Y	2Y	1Y	1Y	1Y
20Y	10Y	5Y	2Y	10Y	5Y	2Y	5Y	2Y	1Y	6M	3M	2Y	1Y	6M	3M	1M	1Y	6M	3M	1M	6M	3M	1M
0.20	0.50	0.62	0.51	0.30	0.42	0.31	0.12	0.01	-0.21	-0.35	-0.45	-0.11	-0.33	-0.47	-0.57	-0.67	-0.22	-0.36	-0.46	-0.56	-0.14	-0.24	-0.34

All of the metrics are not inverted but so many are and these have been inverted for quite some time. This strongly suggests that an Economic Recession in the USA is coming.

THE eRESEARCH RECESSION BAROMETER (Canada)

In Canada, we have already started our Count-Down to a possible recession. This was based on the 10-year/2-year Government of Canada bonds exhibiting Inversion for ten consecutive business days, which it reached on August 8. (Our alternative criterion is that the 10/2 must be inverted for 20 out of 30 consecutive business days. This has also occurred.)

So, if Canada is now on a count-down, let us define a recession.

DEFINING AN ECONOMIC RECESSION

From Wikipedia:

In the United States, the National Bureau of Economic Research defines an economic recession as: "a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales.

In the United Kingdom, recessions are generally defined as two consecutive quarters of negative economic growth, as measured by the seasonal adjusted quarter-on-quarter figures for real GDP, with the same definition being used for all other member states of the European Union.

From The Canadian Encyclopedia:

In Canada, authorities use the same definition as Europe. A recession occurs when two or more successive quarters (six months) show a drop in real gross domestic product (GDP), i.e., the measure of total economic output in the economy after accounting for inflation.

COMMENT: *At eResearch, we use the Canadian/European definition and define an economic recession as two successive quarters of negative real GDP growth.*

The table on the following page shows GDP percentage growth in Canada since 2010 on a quarter-over-quarter basis. Q2/2019 should be announced fairly soon.

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CANADIAN GDP

The following table shows the GDP growth in Canada with quarter-over-quarter percentage changes.

Canadian Gross Domestic Product (GDP) % Growth

Year	Quarter-over-Quarter				YoY
	Q1	Q2	Q3	Q4	Annual
2010	1.19%	0.52%	0.72%	1.13%	3.1%
2011	0.74	0.19	1.39	0.79	3.1
2012	0.05	0.34	0.14	0.21	1.7
2013	0.89	0.59	0.81	1.05	2.5
2014	0.14	0.93	0.96	0.71	2.9
2015	-0.54	-0.26	0.35	0.07	1.0
2016	0.60	-0.45	1.08	0.58	1.4
2017	1.01	1.08	0.33	0.42	3.0
2018	0.37	0.63	0.52	0.06	1.8
2019	0.10				

Source: OECD, StatsCan

Observation: In 2015, there was an Economic Recession in Canada since there were two consecutive quarters of negative GDP growth. The last two quarters were not particularly robust.

Recession Forecast For Canada

An Inversion between 10-year and 2-year Canadian bonds has now occurred for an extended period, and the Count-Down for an Economic Recession in Canada started on August 8. The following chart shows when a recession could occur, post-inversion.

COMMENT: *Just because an Inversion occurs, it is not automatic that a Recession follows. And, when an Inversion does occur, the average lag time for an Economic Recession is 15 to 20 months.*

Forecasting the Commencement of a Recession in Canada

Using eResearch

criteria, an inversion in Canada occurred on August 8, 2019

Historically, a recession begins 15 to 20 months hence

Inversion Occurred	Inversion +15 Months	Inversion +20 Months
August 8, 2019	November/2020	April/2021

Source: eResearch

Bob Weir, CFA: Contributing Analyst

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