

Which Leading indicators best predict market declines

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From Ycharts

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- YChart Defn of Market Declines
- Indicators
- Findings by Indicator
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- Methodology Drill down on 10 month 3 year indicator
- Comparing CIMI T20 Timer vs. Chart Indicators
- Presentation Summary

Commercial – Why Care

- I've followed Momentum analysis since 2009, based on work published since 1993 (<https://www.bauer.uh.edu/rsusmel/phd/jegadeesh-titman93.pdf>)
- Around 2017, Don Maurer started outperforming published results.
- Why?
 - lookback/hold (j/k)? - No. 11 mo lookback comparable to 1,3,6,12
 - Universe selection - Need FANG, TSLA type stocks
 - **Timing - When to get out.**

Ychart Definition of Market Declines

Year(s) of Major Declines	Peak Date	Trough Date	Trough Max Drawdown
1950	6/12/1950	7/26/1950	-14.02%
1953	1/5/1953	9/14/1953	-14.82%
1956-57	8/3/1956	10/22/1957	-21.48%
1959-60	8/3/1959	10/25/1960	-13.85%
1961-62	12/12/1961	6/26/1962	-27.97%
1966	2/9/1966	10/7/1966	-22.18%
1968-70	11/29/1968	5/26/1970	-36.06%
1973-74	1/11/1973	10/3/1974	-48.20%
1980-82	11/28/1980	8/12/1982	-27.11%
1983-84	10/10/1983	7/24/1984	-14.38%
1987	8/25/1987	12/4/1987	-33.51%
1990	7/16/1990	10/11/1990	-19.92%
1998	7/17/1998	8/31/1998	-19.34%
1999	7/16/1999	10/15/1999	-12.08%
2000-02	3/24/2000	10/9/2002	-49.50%
2007-09	10/9/2007	3/9/2009	-56.78%
2015-16	5/21/2015	2/11/2016	-14.16%
Early 2018	1/26/2018	2/8/2018	-10.16%
Late 2018	9/20/2018	12/24/2018	-19.78%
2020	2/19/2020	3/23/2020	-33.93%
2022	1/3/2022	6/30/2022*	-21.08%

Major Decline
a decline of 10% or greater from the S&P 500's most recent all-time high

Peak Date
date of the S&P 500's newly set all-time high

Trough Date
date of the S&P 500's relative low point following its latest all-time high

Trough Max Drawdown
the S&P 500's max percent drawdown, from Peak Date through Trough Date close

* As of 6/30/2022, a new S&P 500 all-time high was yet to be set.

Seven Indicators 1-3

- S&P 500 Shiller Cyclically Adjusted Price-Earning Ratio (CAPE) =
 - S&P 100's current Price/10 year moving avg of inflation adjusted earnings.
- Tobin's Q =
 - Market Value of all public companies in the US/Total Replacement Cost
- 10 Year-3 Month Yield Spread=
 - 3 Month Yield > 10 Year Yield True => recession

Seven Indicators 4-7

- 10 Year-2 Year Yield Spread
 - 2 Year Yield > 10 Year Yield True => recession
- Negative S&P 500 YoY Earnings Growth =
 - Change in aggregate S&P 500 earnings from one calendar year ago.
- Buffet Indicator
 - US Stocks Combined Market Capitalization/US GDP > 1.2 => Decline
- S&P 500 P/E Ratio
 - Stock Price/Earnings > 29.29 (20% above 24.41)

Findings By Indicator

Summary Table of Key Findings:

Indicator:	Examined Timeframe	Major Declines in Timeframe	% of Major Declines Preceded by Overvaluation Signal	# of Major Declines - Late Signal	Average Time, Signal to S&P 500 Peak
The Buffett Indicator	1971-to-Date	14	50%	-	24.18 Months
	2000-to-Date	7	57%	-	10.82 Months
Tobin's Q	1950-to-Date	21	38%	-	31.62 Months
	2000-to-Date	7	43%	-	10.50 Months
S&P 500 P/E Ratio	1989-to-Date	10	40%	-	21.17 Months
	2000-to-Date	7	29%	1	36.21 Months
S&P 500 CAPE Ratio	1950-to-Date	21	48%	-	33.96 Months
	2000-to-Date	7	43%	-	6.04 Months
10-2 Year Yield Spread	1978-to-Date	13	46%	1	10.57 Months
10 Year-3 Month Yield Spread	1962-to-Date	16	50%	-	12.88 Months
S&P 500 YoY Earnings Growth	1950-to-Date	21	43%	3	17.59 Months

Findings Summary

Key Findings:



Of seven leading indicators studied, none have consistently predicted major market declines dating back to 1950. Even the most consistent indicators provided a warning signal for only about half of major declines.



Yield Spreads, along with the "Buffett Indicator" in more recent years, are historically the most accurate predictors of major declines. Since 2000 the 10-2 Year Yield Spread, 10 Year-3 Month Spread, and "Buffet Indicator" gave warning signals 10.5, 12.9, and 10.8 months, respectively, before a major market decline.



The "Buffett Indicator", 10 Year-3 Month Yield Spread inversions, and the S&P 500 CAPE Ratio are historically the most consistent predictors of major declines.



In recent years, the S&P 500 P/E Ratio has become increasingly less reliable for predicting major market declines. Using its 2000-to-date average to calculate a "critical threshold", it has signaled just 2 of 7 major declines in that time.



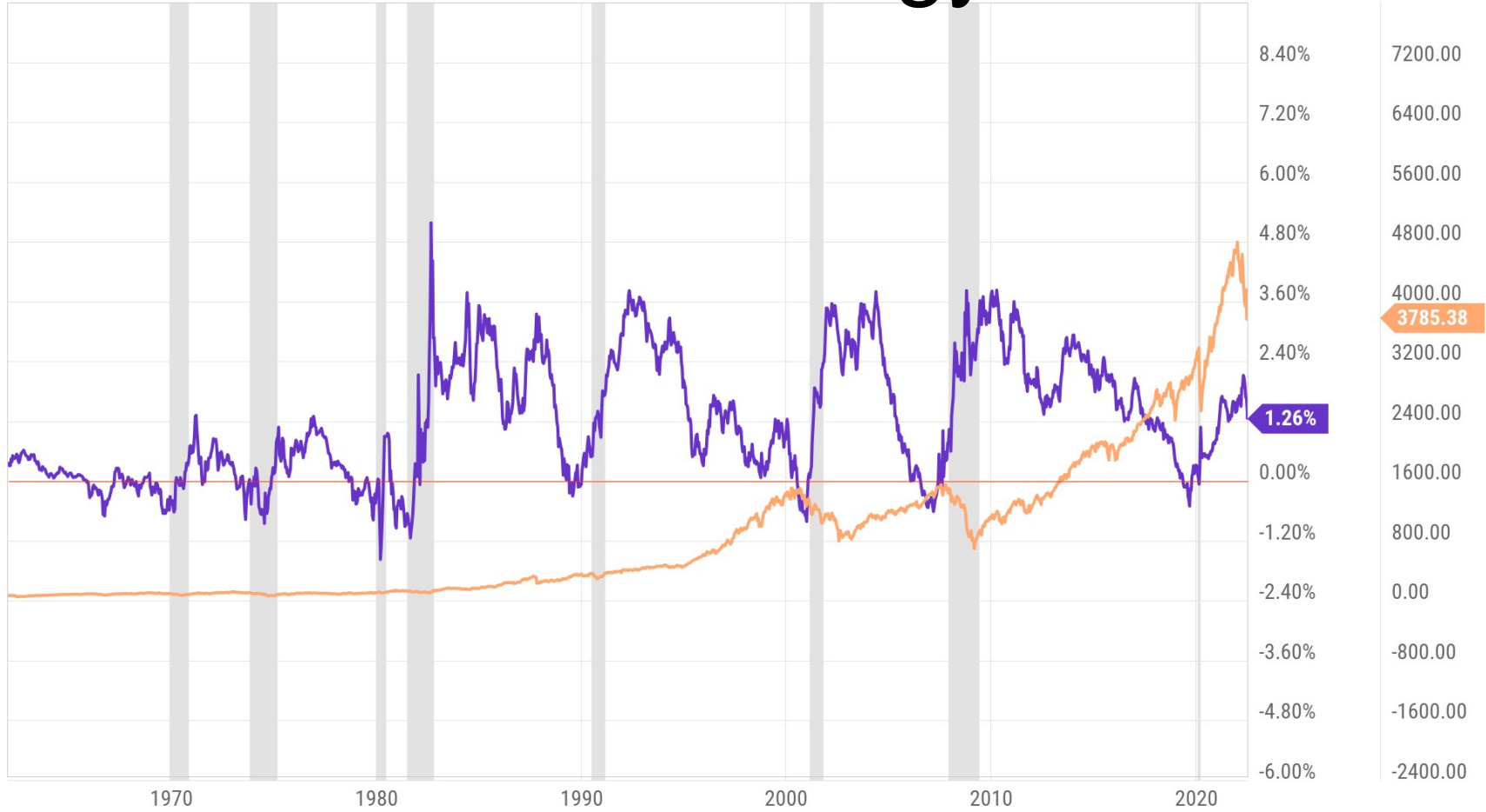
Most indicators have first signaled overvaluation 10 to 30 months prior to the S&P 500's peak and subsequent major decline, on average. This variability may make it difficult to rely on valuation indicators for buy and sell decisions.



Based on its consistency (warning of 8 out of 16 major market declines since 1962), accuracy (preceding those 8 declines by 12.9 months on average), and the simplicity of its warning signal (a negative versus positive value), the 10 Year-3 Month Yield Spread inversion might be considered the standout valuation indicator of the group.

Methodology Drilldown

- 10 Year-3 Month Treasury Yield Spread
- S&P 500 Level



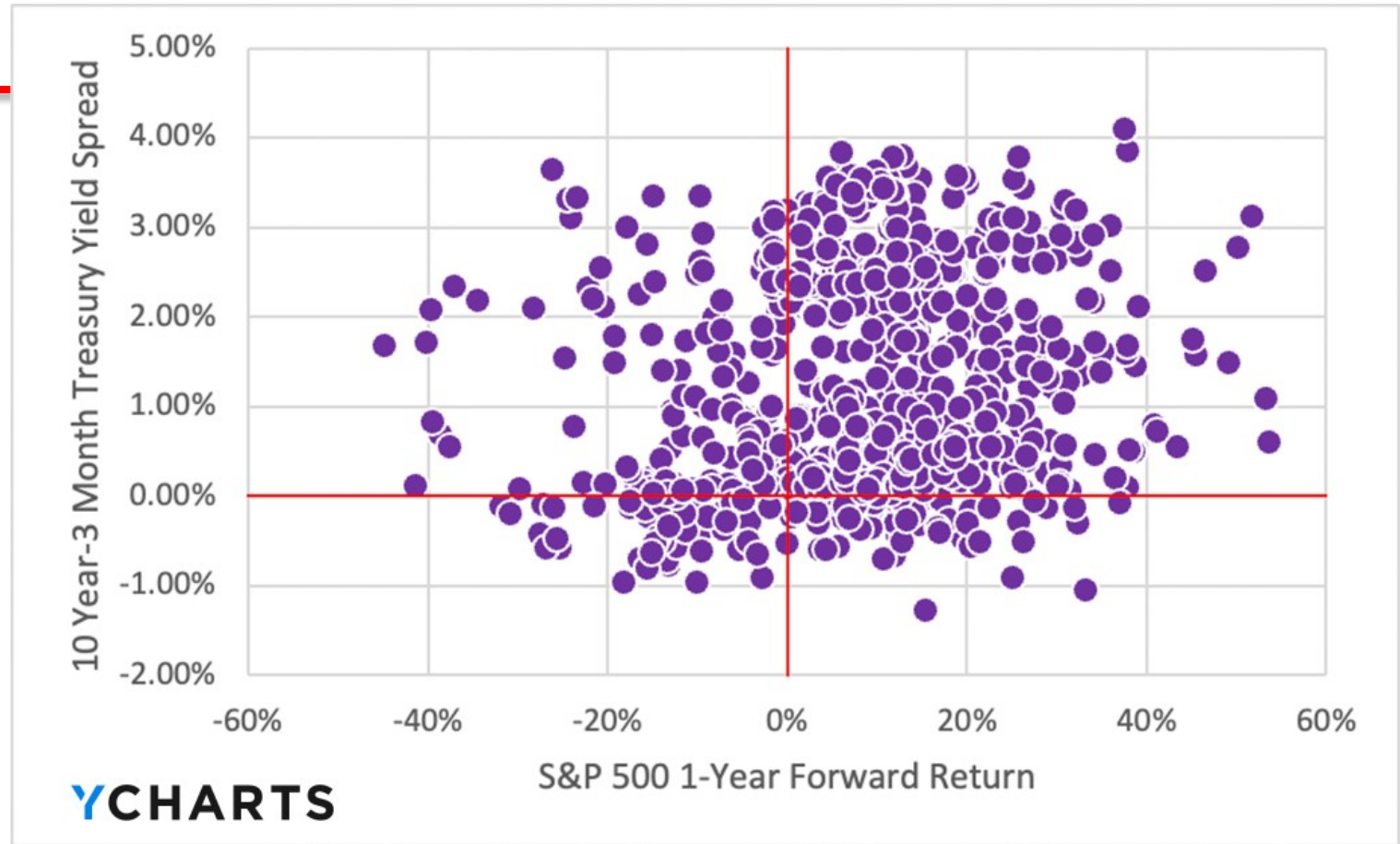
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Date Range: 01/02/1962 - 06/30/2022

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Methodology Drilldown



Methodology Drilldown

How Well Do 10 Year-3 Month Yield Spreads Correlate to Forward S&P 500 Returns?

Because a negative (“inverted”) 10 Year-3 Month Yield Spread is taken as a recession signal and subsequent equity performance tends to suffer, most data points would appear in **Quadrant I** and **Quadrant III** if it were an accurate predictor of S&P 500 declines over a timeframe. Conversely, data points in **Quadrants II & IV** point to less accurate prediction of subsequent returns.

The following scatter plots show the relationship between the 10 Year-3 Month Yield Spread, taken at the end of each calendar month, and forward 1Y, 3Y, and 5Y S&P 500 returns. To determine how well

negative 10 Year-3 Month Spreads correlate to S&P 500 forward returns, one should pay the closest attention to Quadrants III and IV.

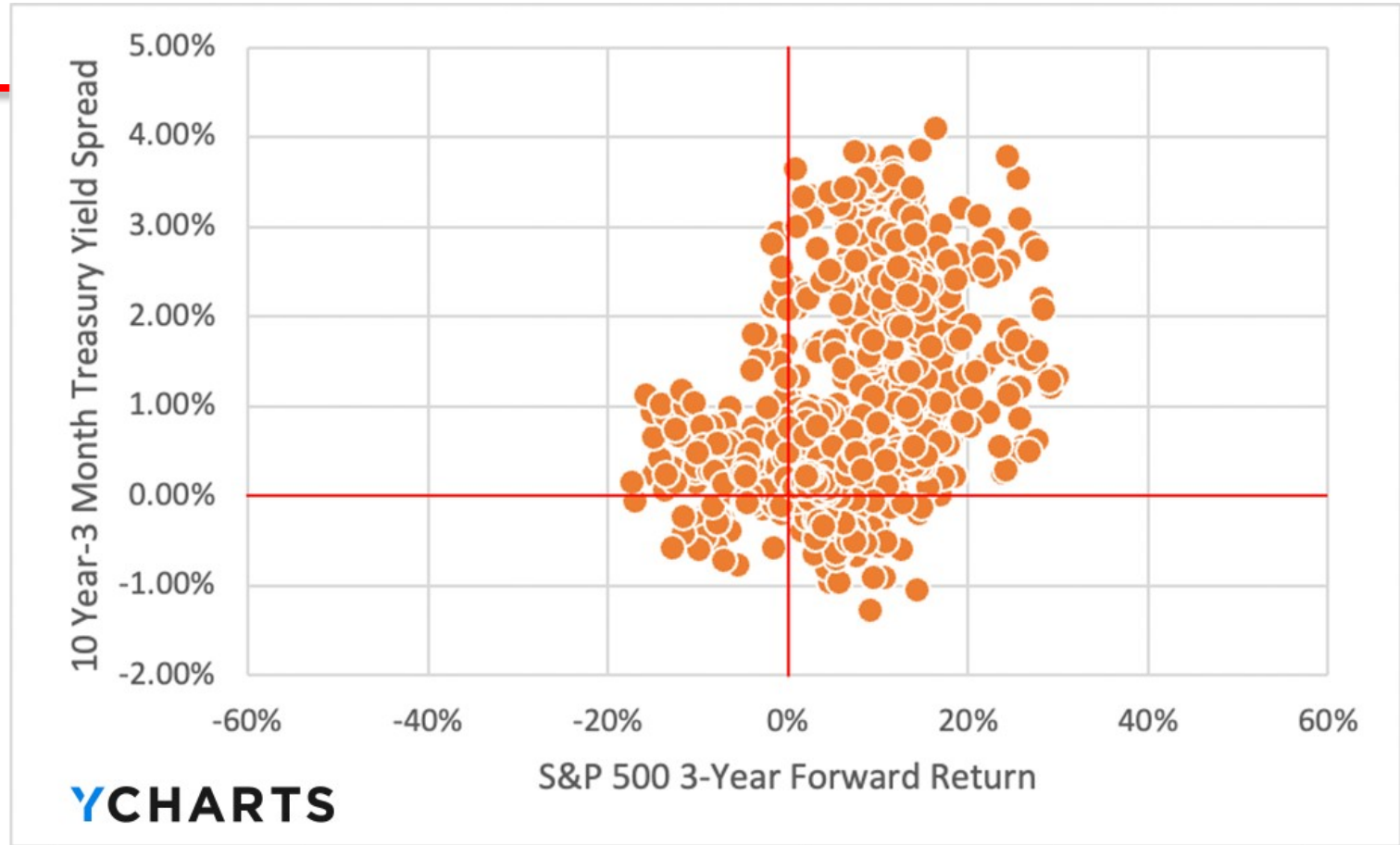
Of all data points in negative yield spread territory, more landed in Quadrant IV than Quadrant III for each of the three forward return periods.

Translation: there were more instances of positive forward 1Y, 3Y, and 5Y returns when the 10 Year-3 Month Spread was negative than the opposite, which detracts from how strongly the indicator is correlated with forward returns.

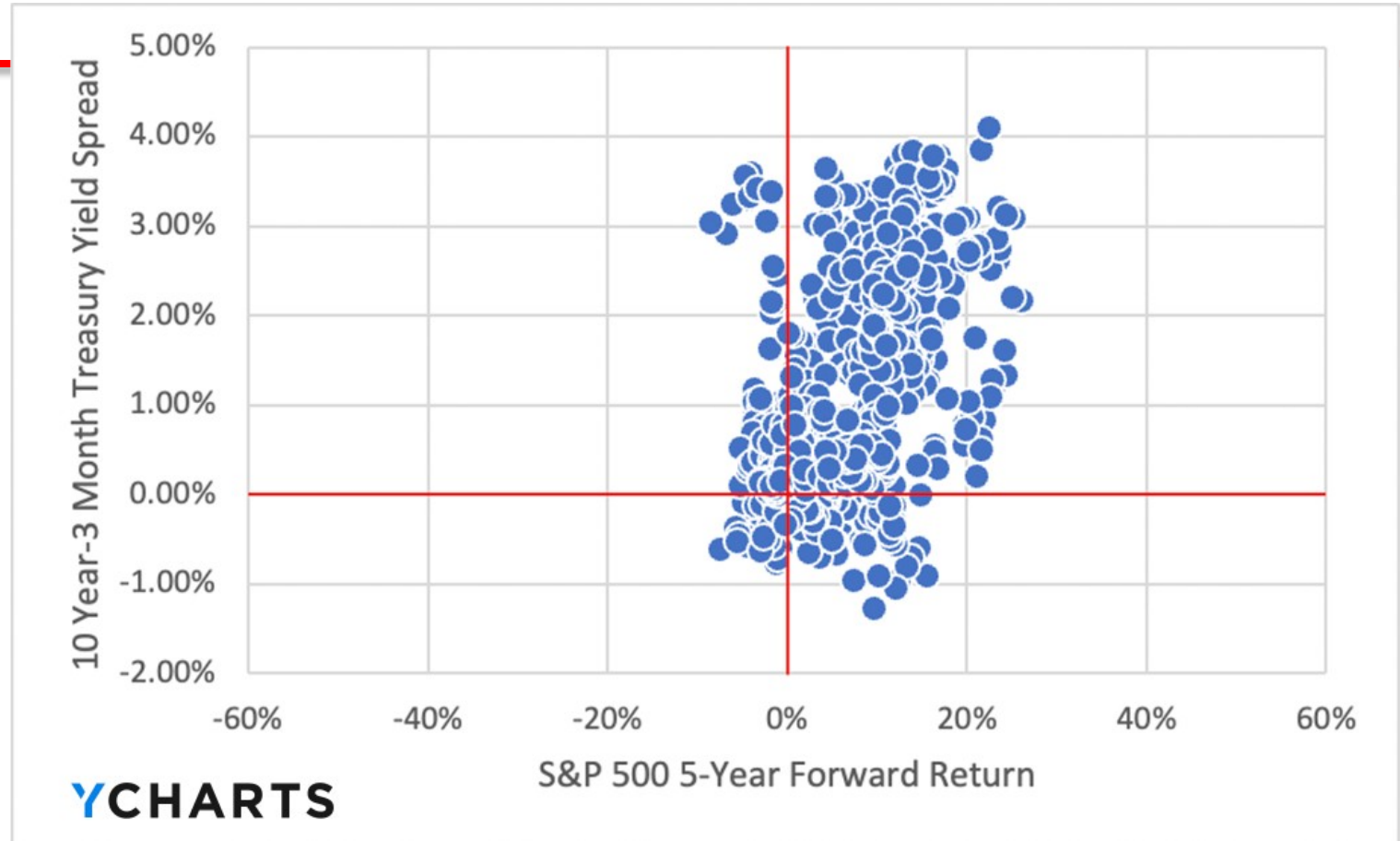
Methodology Drilldown

QUADRANT II	QUADRANT I
Indicator signals: No Recession	Indicator signals: No Recession
Forward S&P Returns: Negative	Forward S&P Returns: Positive
QUADRANT III	QUADRANT IV
Indicator signals: Recession	Indicator signals: Recession
Forward S&P Returns: Negative	Forward S&P Returns: Positive

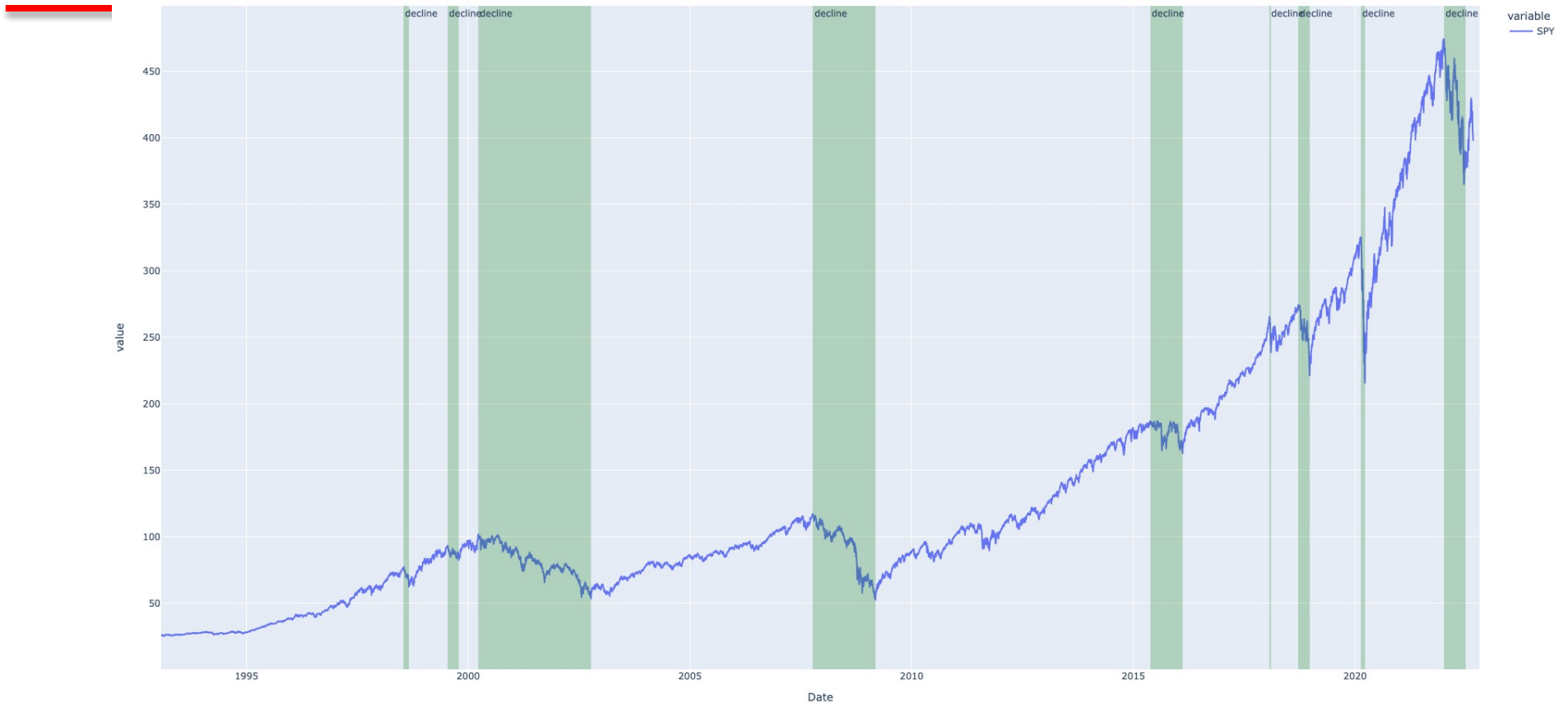
Methodology Drilldown



Methodology Drilldown



Comparing CIMI T20 Timer vs Chart Indicators - Recessions



Comparing CIMI T20 Timer vs Chart Indicators – Recession + 10/3 Indicator

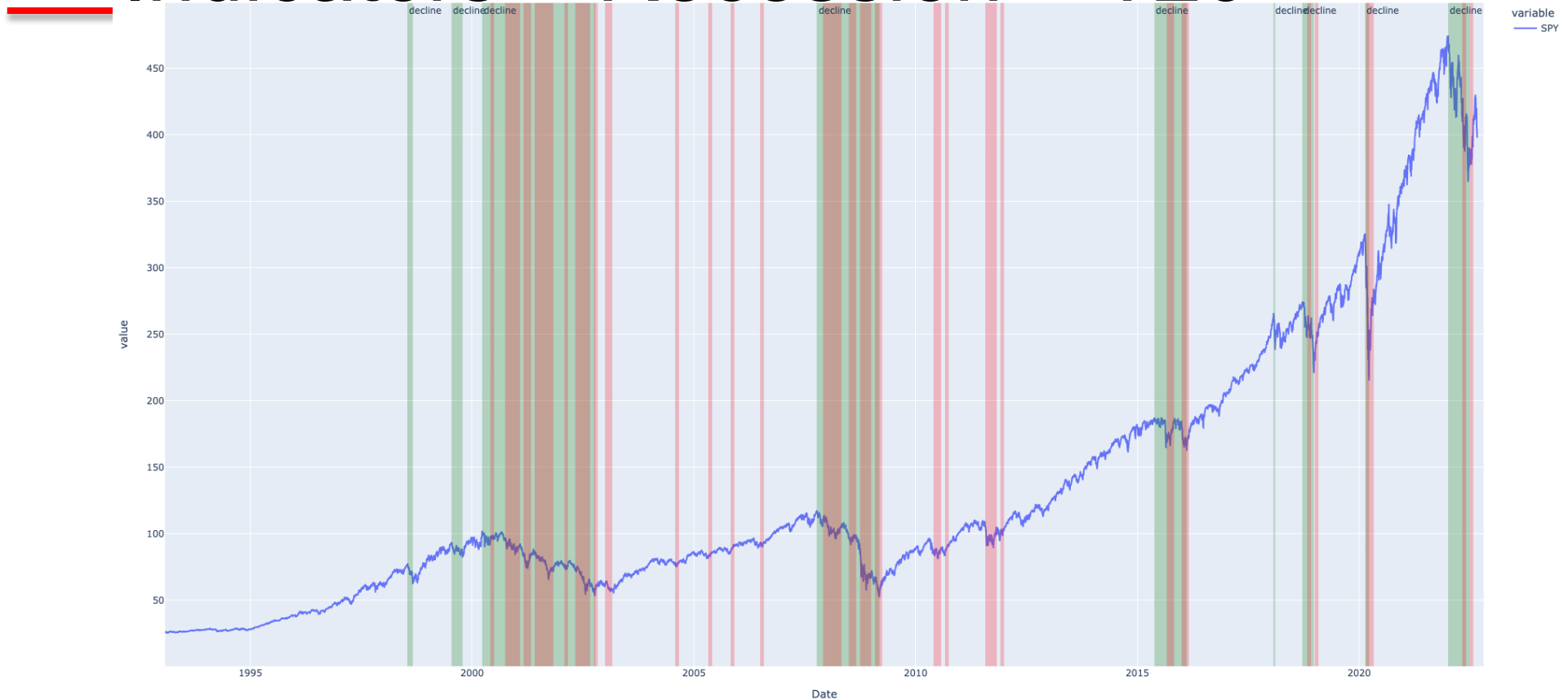


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Comparing CIMI T20 Timer vs Chart Indicators – Recession + T20



Presentation Summary

- Indicators are coarser than Timers
- Todo: Look at Ensemble of indicators (YCharts & Ren)
- If you want YCharts report access, please communicate via Aaii-silicon-valley-computerized-investing@googlegroups.com