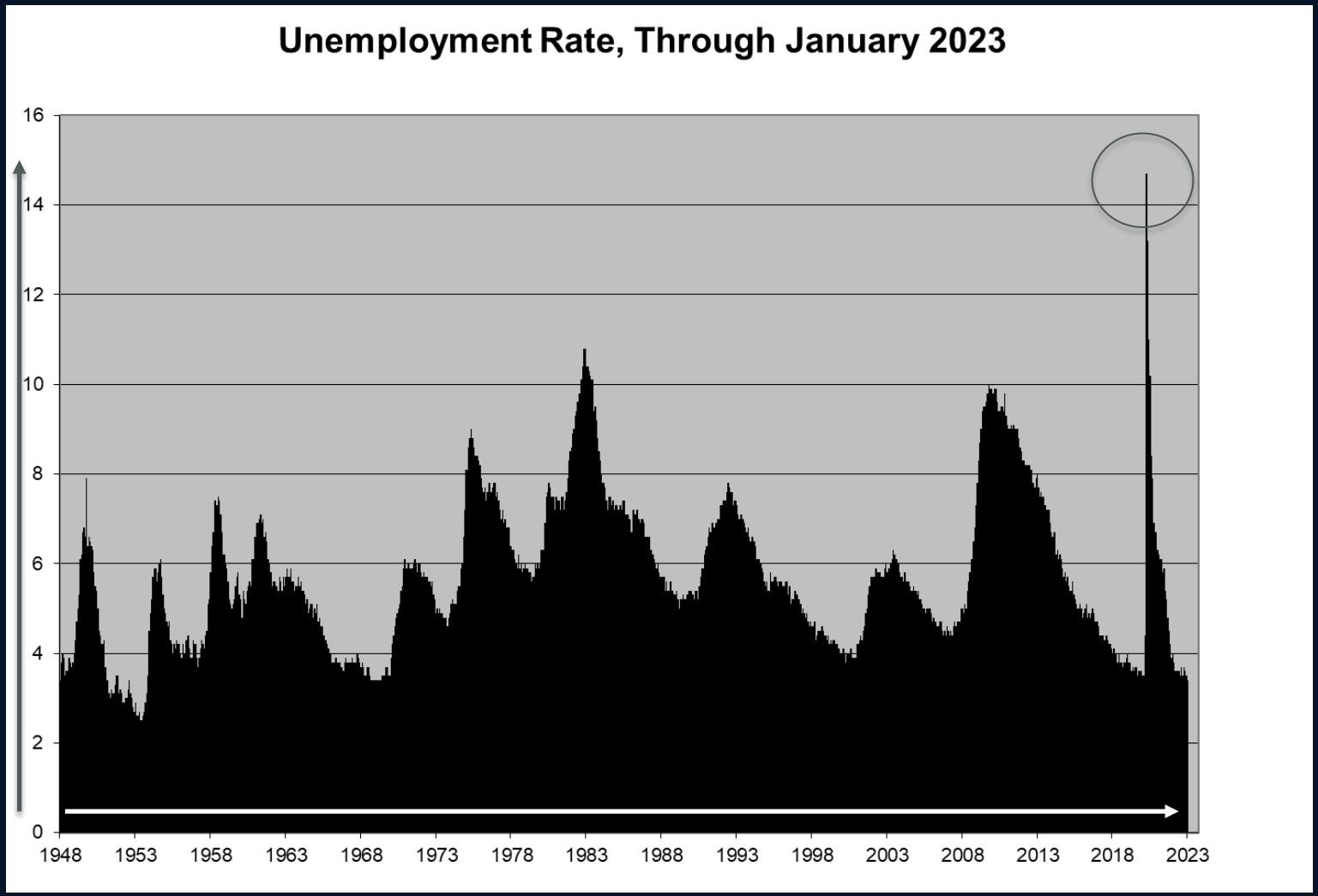


Questions to be answered

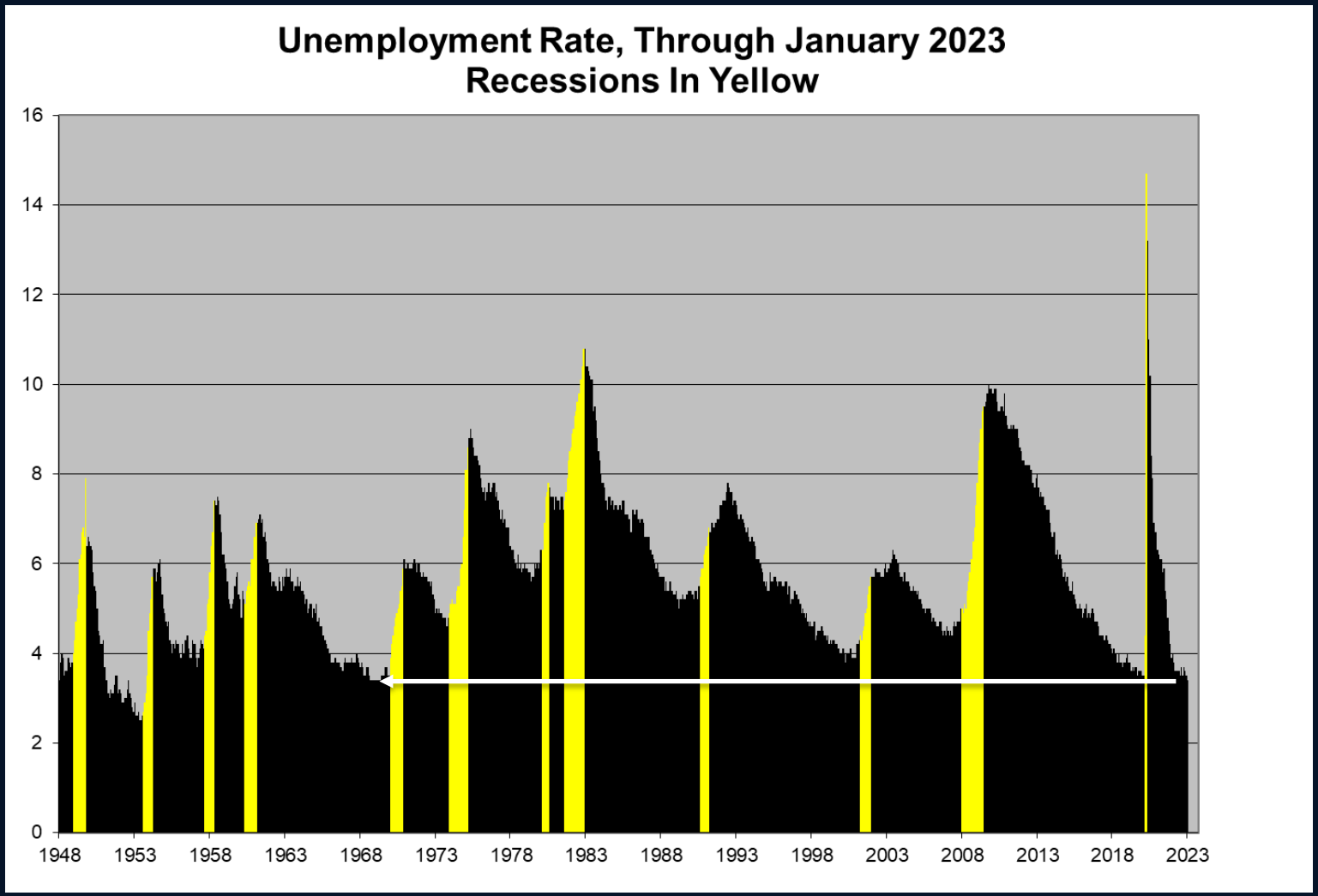
- What's a recession?
- What are some precursors of recessions?
- What are the precursors saying through 2022Q4?



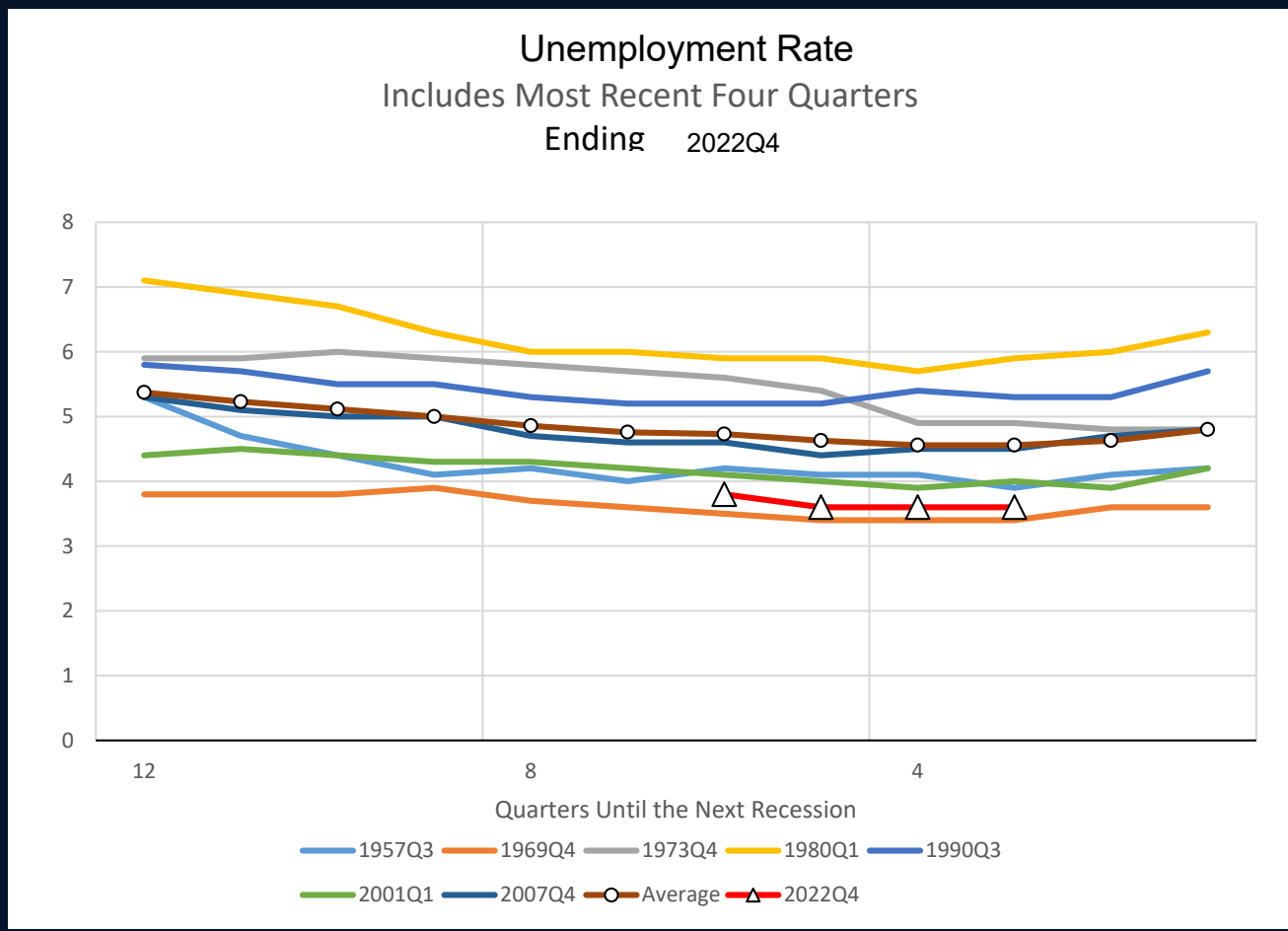
The US Unemployment Rate Jumped to 14.7 percent in April 2020



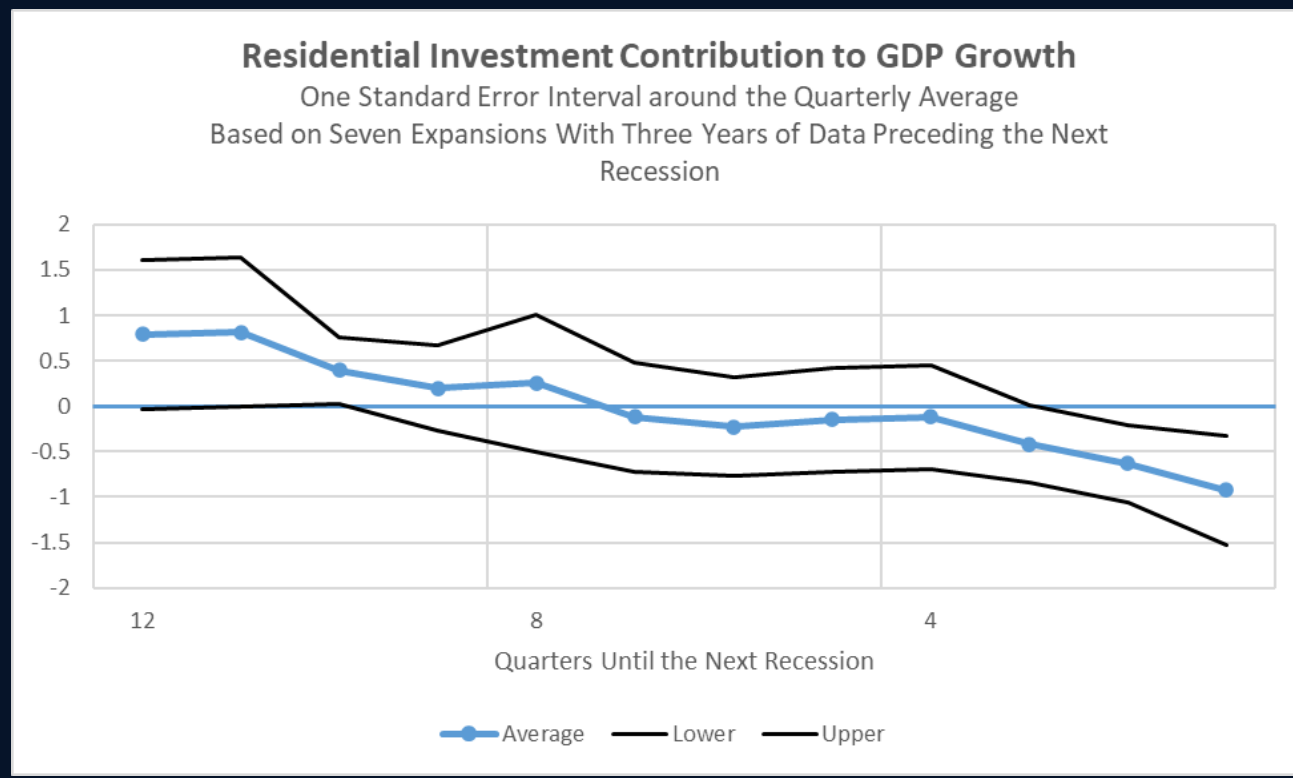
A Recession Is a Market Failure That Cause Unwanted Idleness



Placement of The Most Recent Unemployment Data In the Midst of the Historical Data

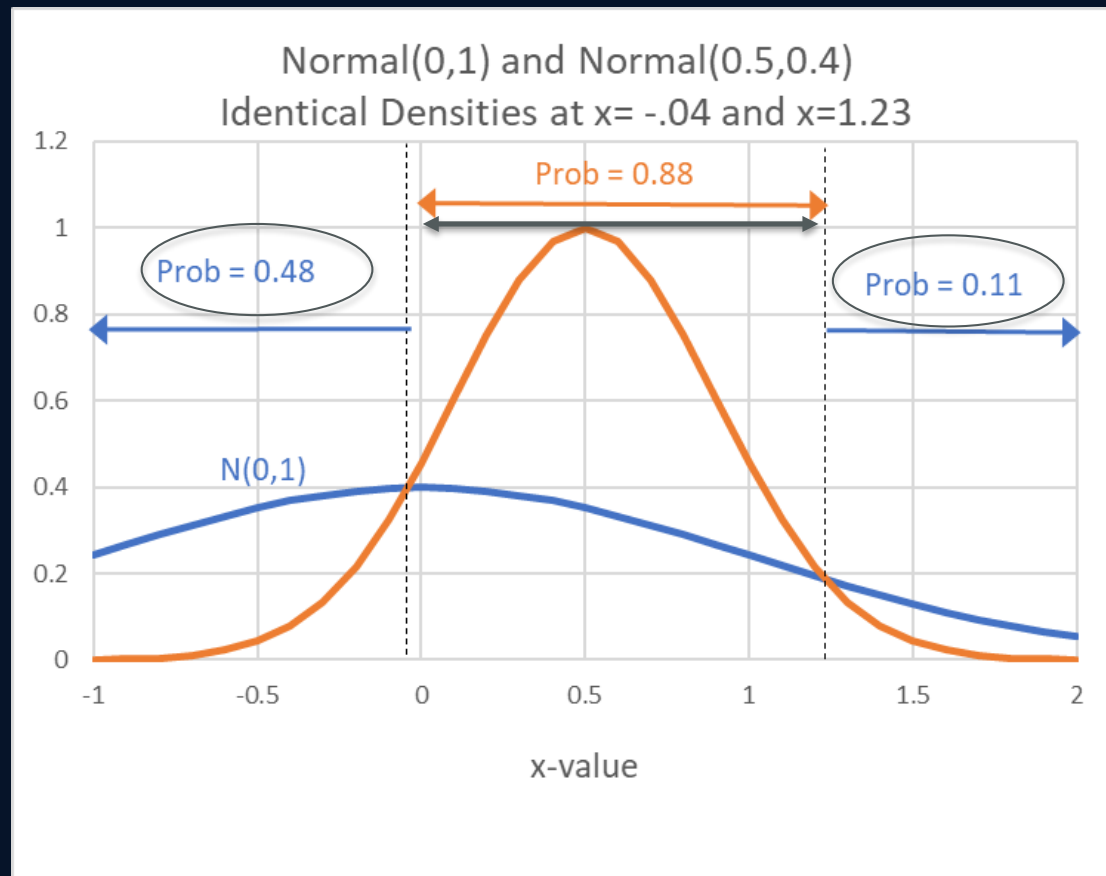


Means and Standard Errors Residential Investment Contribution to GDP Growth



Measures of the Difference Between Two Normal Densities

If there is a 50:50 choice between two normal densities, what is the probability that a single observation will reveal the density from which it was chosen??



Residential Contributions to Economic Growth

Quarter by Quarter Reliability Measures

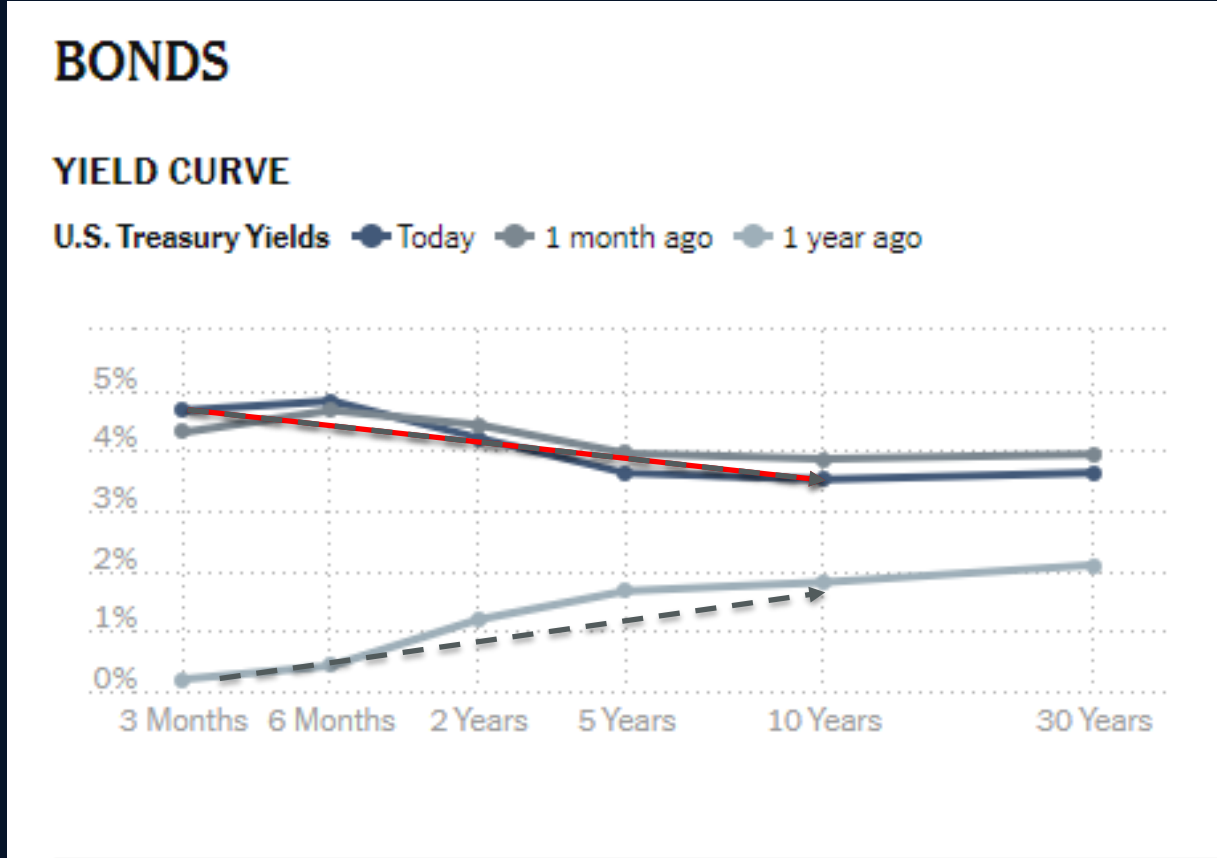
Probabilities of Accurate Choice Between Two Quarters

Probability of accurately distinguishing pairs of quarters before recession

Residential Investment Contribution to GDP Growth

Mean	S.E.	Quarter	12	11	10	9	8	7	6	5	4	3	2	1
0.79	0.83	12		0.51	0.71	0.70	0.63	0.75	0.78	0.76	0.75	0.85	0.88	0.89
0.81	0.82	11	0.51		0.72	0.71	0.64	0.75	0.78	0.76	0.75	0.85	0.88	0.89
0.40	0.37	10	0.71	0.72		0.61	0.67	0.72	0.76	0.73	0.72	0.85	0.90	0.92
0.20	0.47	9	0.70	0.71	0.61		0.61	0.63	0.66	0.63	0.62	0.75	0.82	0.85
0.25	0.76	8	0.63	0.64	0.67	0.61		0.62	0.66	0.63	0.62	0.74	0.79	0.81
-0.12	0.60	7	0.75	0.75	0.72	0.63	0.62		0.54	0.51	0.51	0.63	0.70	0.75
-0.22	0.54	6	0.78	0.78	0.76	0.66	0.66	0.54		0.53	0.54	0.59	0.67	0.73
-0.15	0.57	5	0.76	0.76	0.73	0.63	0.63	0.51	0.53		0.51	0.62	0.69	0.75
-0.12	0.58	4	0.75	0.75	0.72	0.62	0.62	0.51	0.54	0.51		0.63	0.70	0.75
-0.42	0.43	3	0.85	0.85	0.85	0.75	0.74	0.63	0.59	0.62	0.63		0.60	0.70
-0.63	0.43	2	0.88	0.88	0.90	0.82	0.79	0.70	0.67	0.69	0.70	0.60		0.63
-0.93	0.60	1	0.89	0.89	0.92	0.85	0.81	0.75	0.73	0.75	0.75	0.70	0.63	

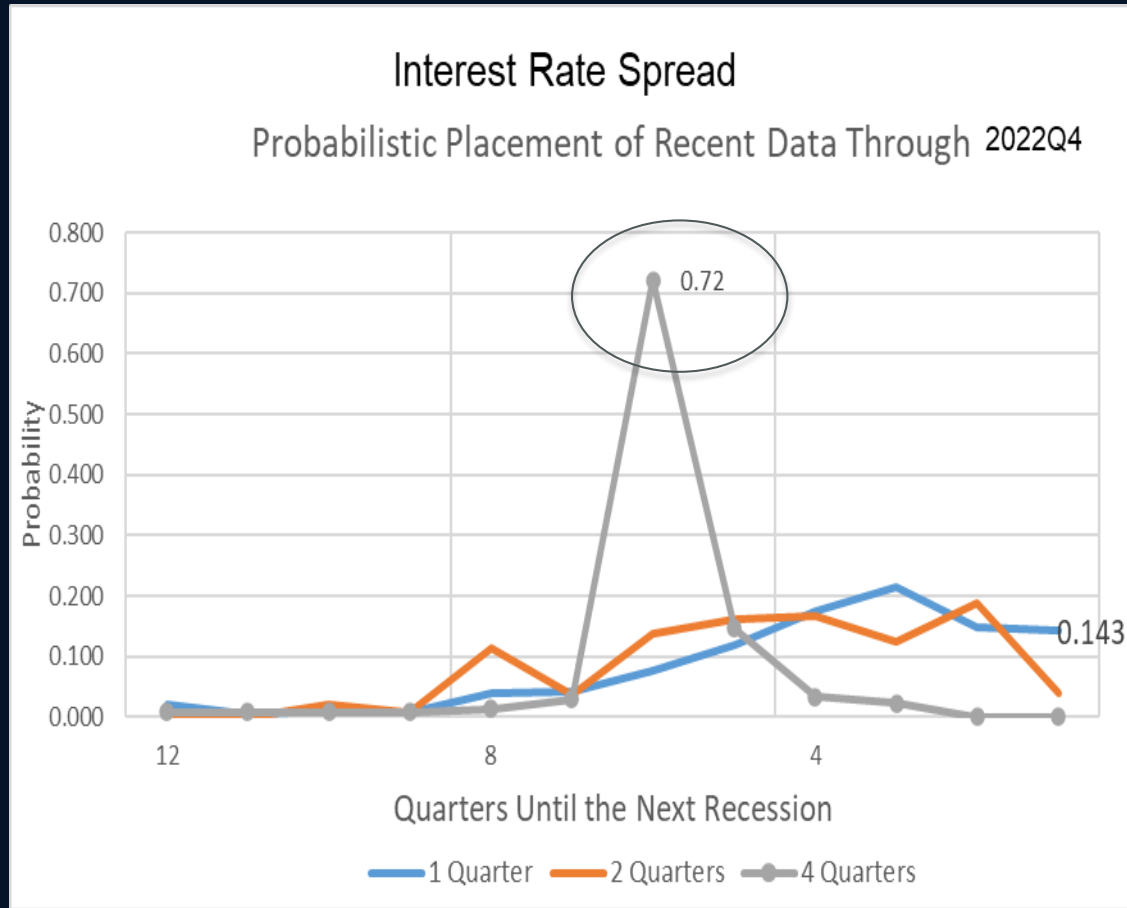
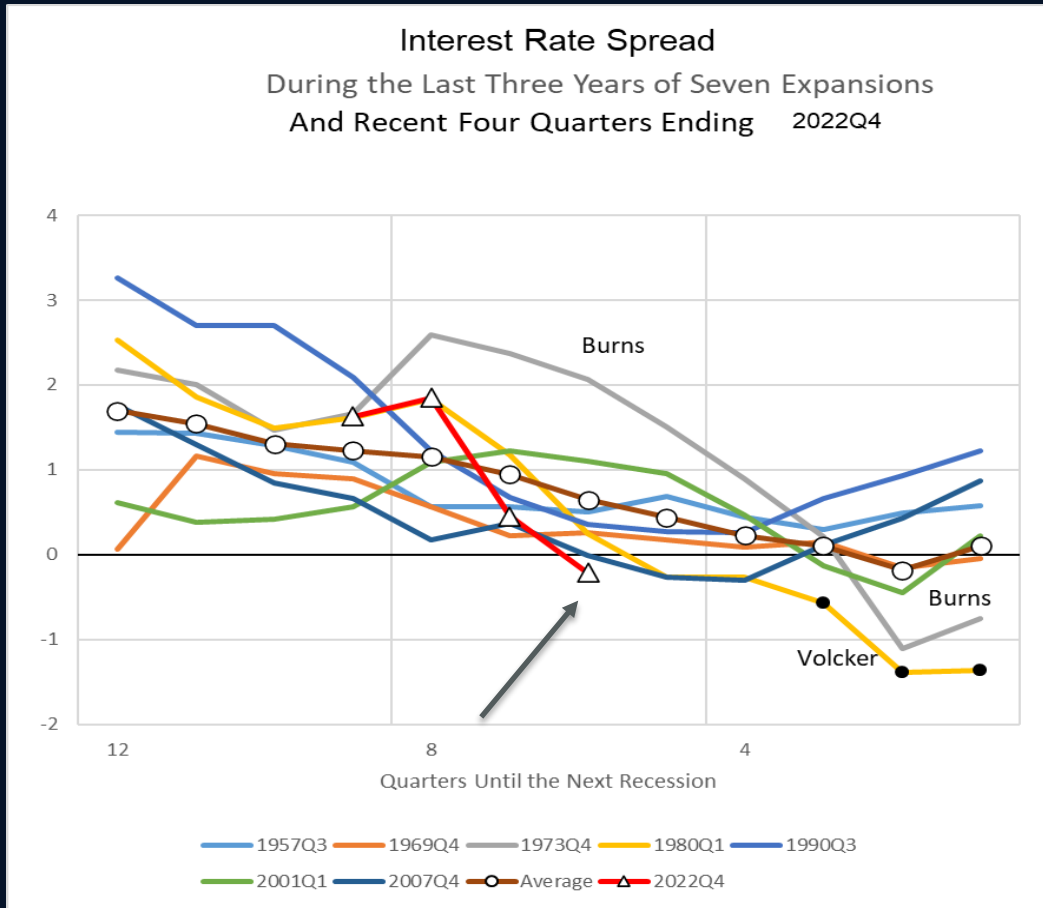
The Yield Curve, January 30, 2023



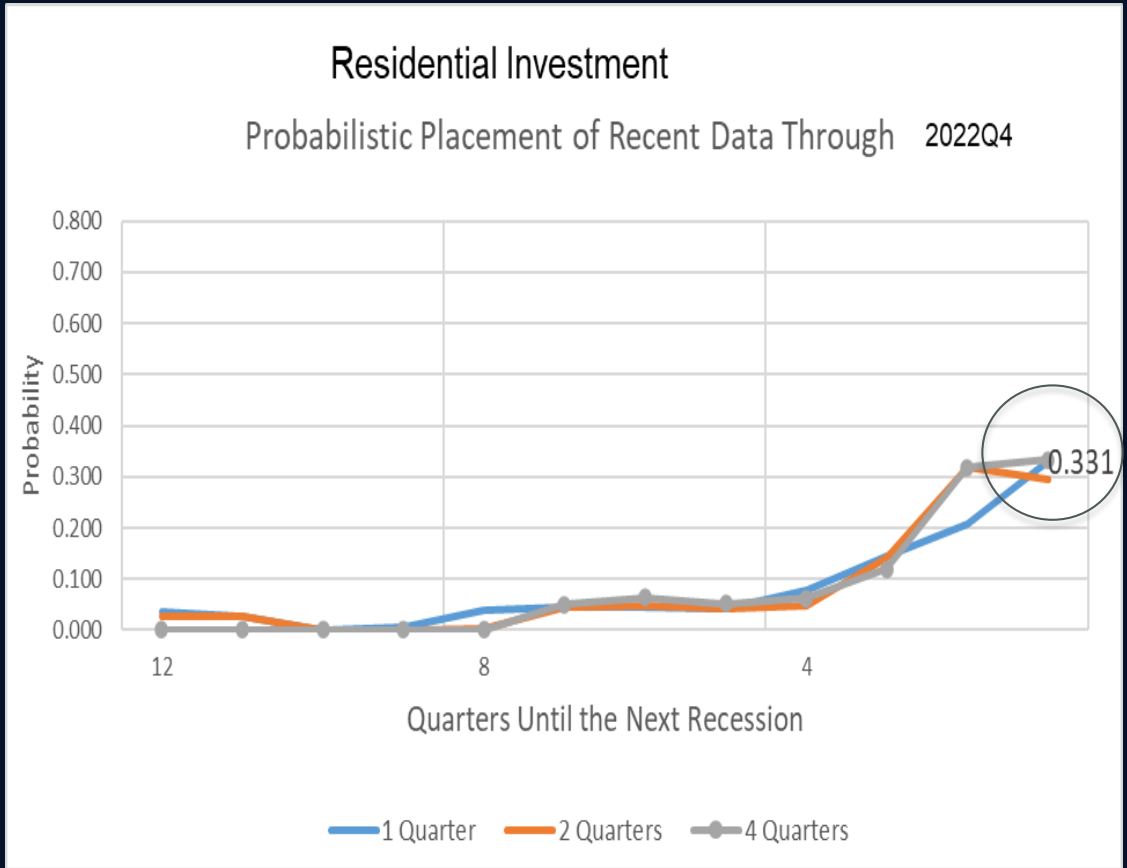
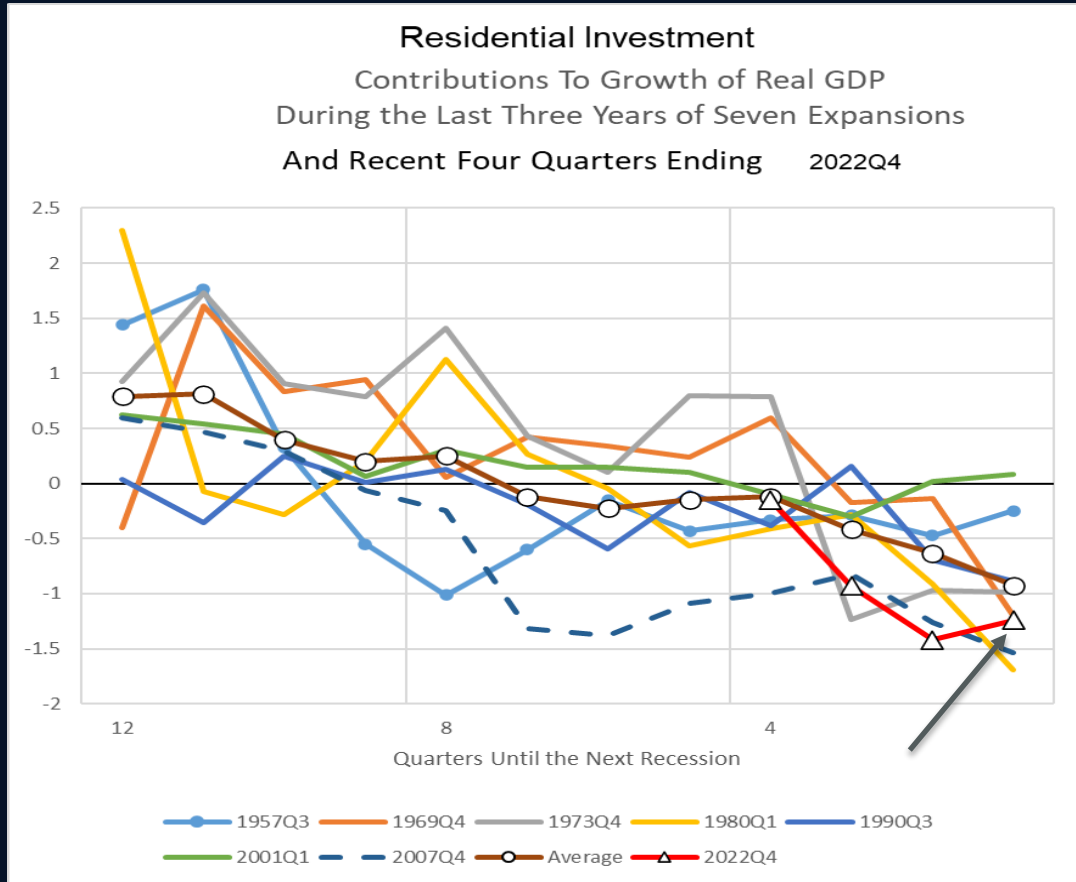
Recession Forecast Reliabilities of 15 Contributions to GDP Growth and the Interest Rate Spread, Unemployment Rate, and Oil Price

	<u>Contribution to Growth</u>	<u>Reliability</u>
1	Interest Rate Spread	0.841
2	Residential Investment	0.824
3	Consumer Durables Goods	0.739
4	Import of Goods	0.704
5	Consumer Nondurable Goods	0.702
6	Business Equipment	0.698
7	Federal Nondefense	0.696
8	Export of Services	0.674
9	Consumer Services	0.670
10	Import of Services	0.669
11	Business Intellectual property	0.659
12	Business Structures	0.655
13	Change in private inventories	0.650
14	National defense	0.645
15	Export of Goods	0.636
16	Unemployment rate	0.618
17	State and local	0.617
18	Oil Price	0.613

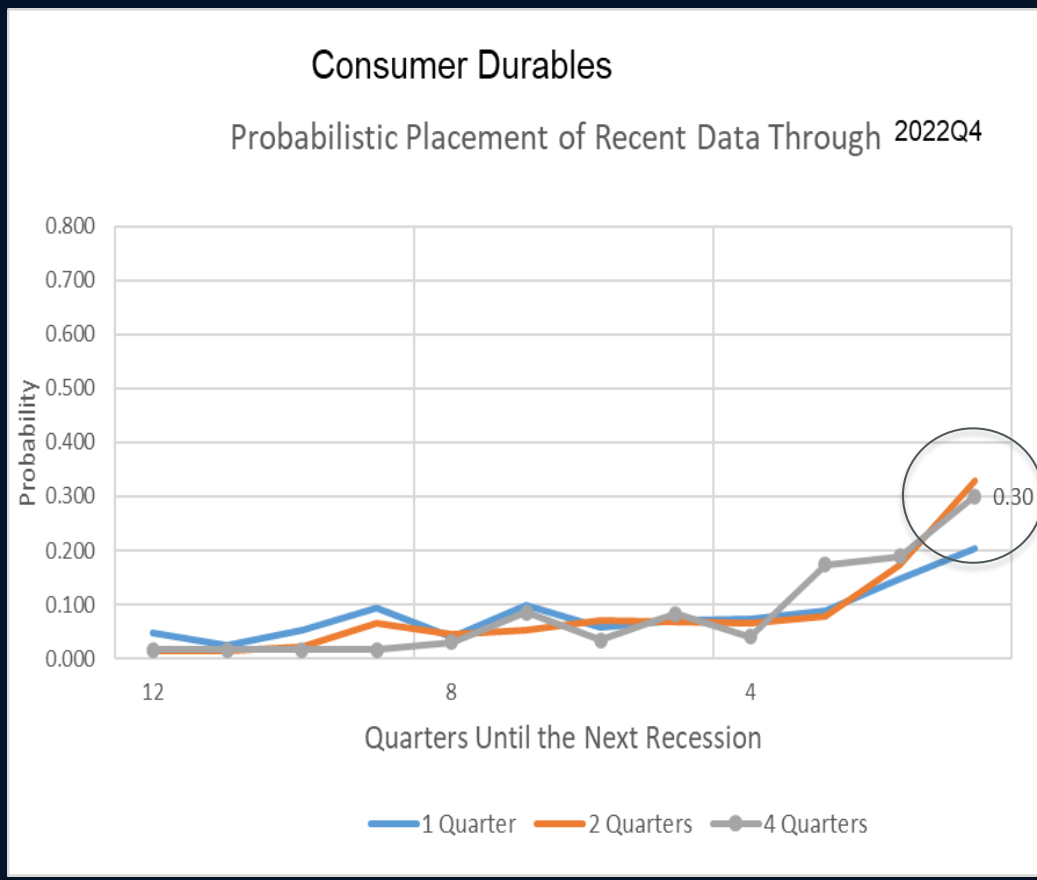
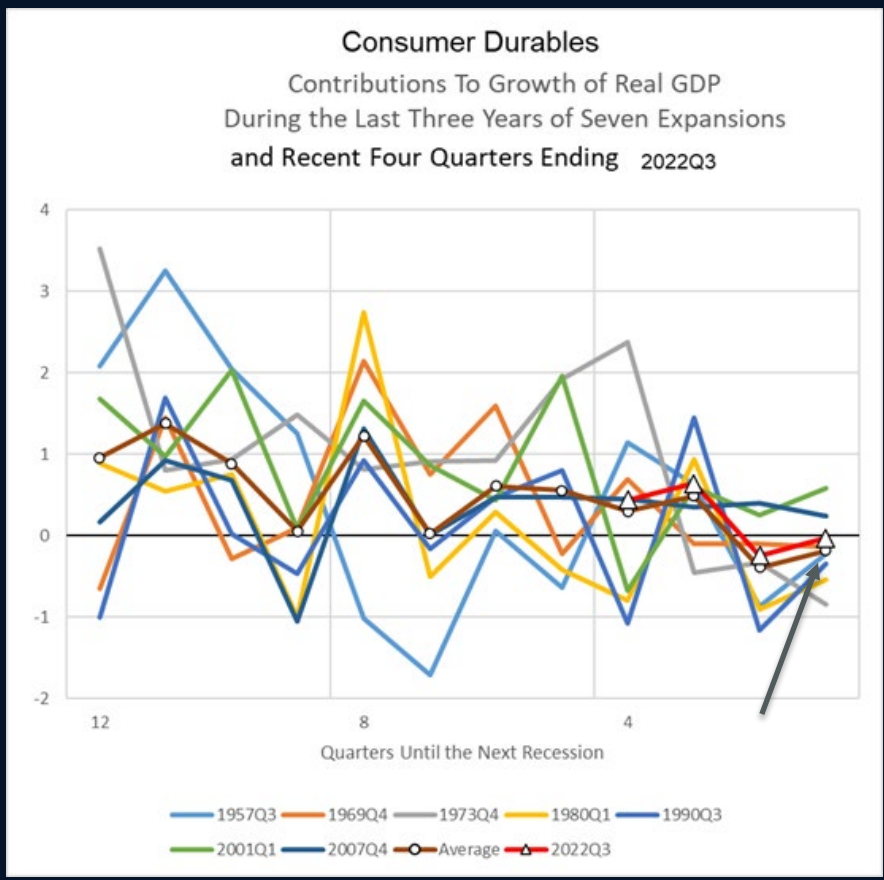
The 2022 Quarterly Interest Rate Spreads are Predicting a Recession 6 Quarters from Now



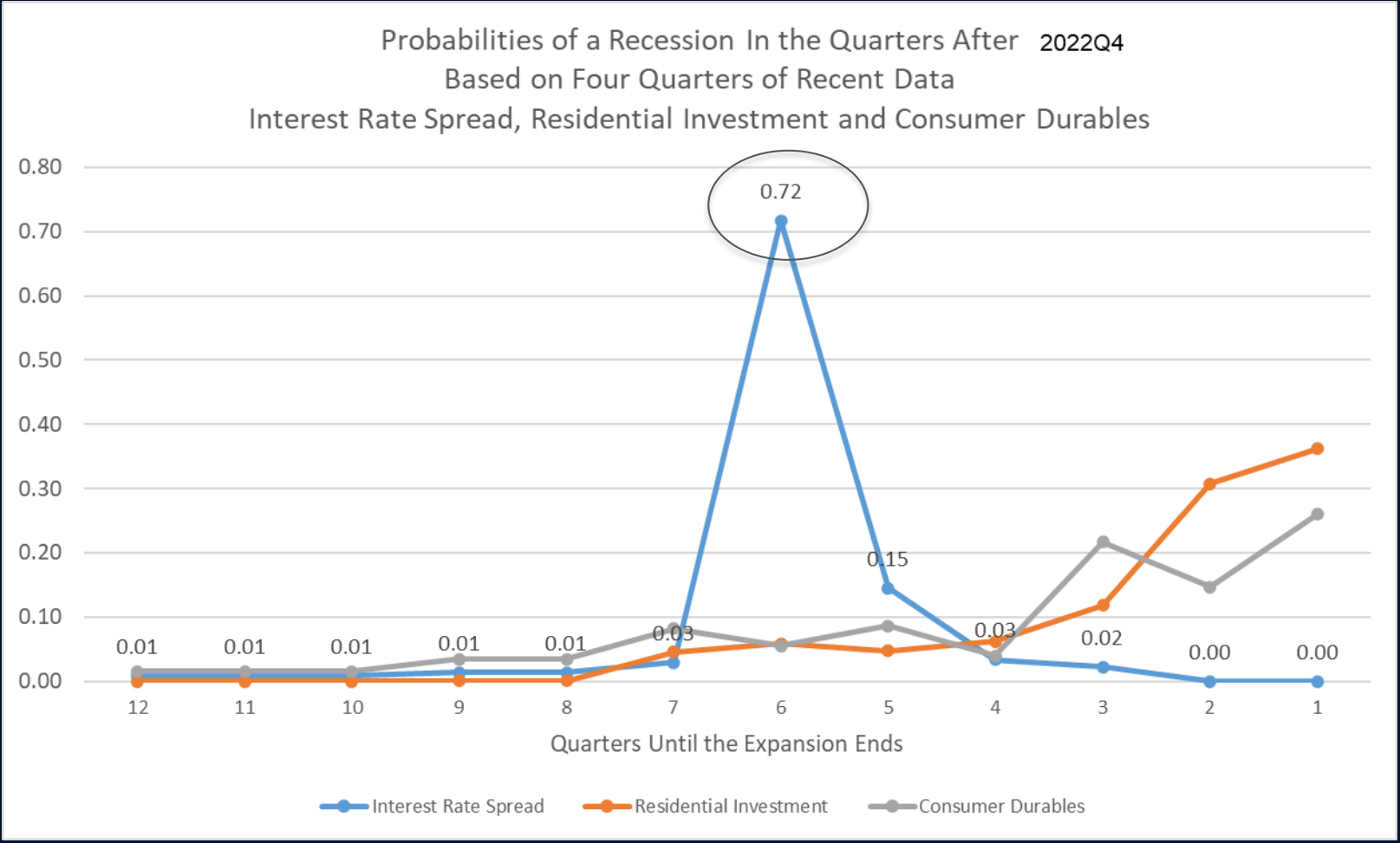
Residential Investment Contribution to GDP Growth Place a 33% probability of a recession in 2023Q4



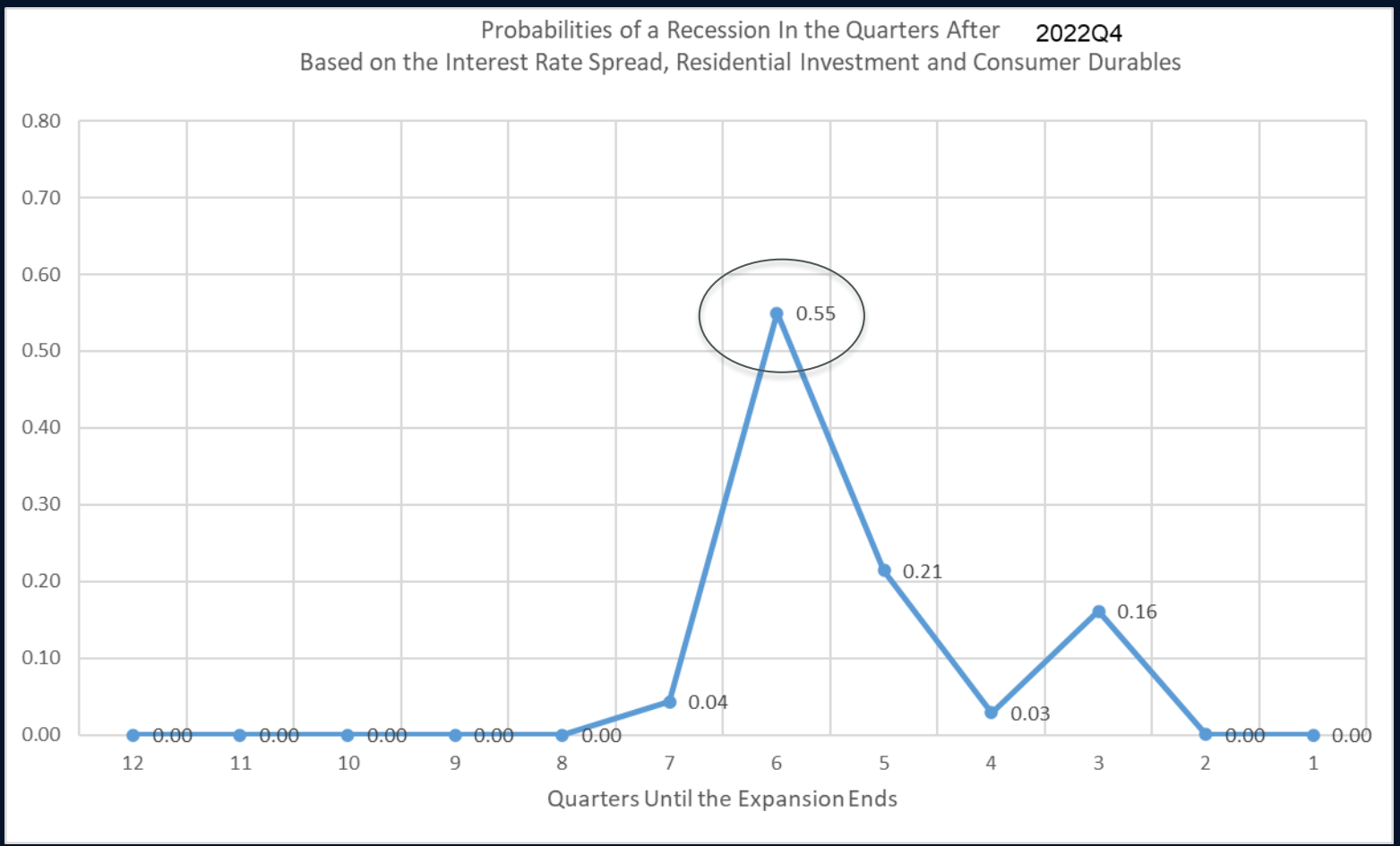
2022 Consumer Durables Quarterly Data say there is 30% chance of a recession in 2023Q1



Recession Probabilities Based on Three Different Variables



The Combined Forecast Is Dominated by the Interest Rate Spread



Take a Breath
Thanks for listening, if you did.



Inflation



Really??

- “One way or another, we’re not going to be going into a period of high inflation for a long period of time, because, of course, we have tools to address that,” Jerome H. Powell, the Fed chair, testified before Congress, July 2021.



What's bad about unexpected inflation?

- Inflation unwinds contracts like bonds that are not tied to inflation. It's good for borrowers and bad for lenders.
- Inflation also unwinds other relatively fixed-price contracts, including wage rates and especially incomes of retirees.
- Inflation causes havoc for shoppers, who cannot tell which supplier is offering the lowest price.
 - Without that knowledge, most will stick with you if you raise the price.
 - Inflation causes buyers ying to find the best deal. That can lower GDP.
 - Internet search can help reduce this problem.

A Demand Story and a Supply Story

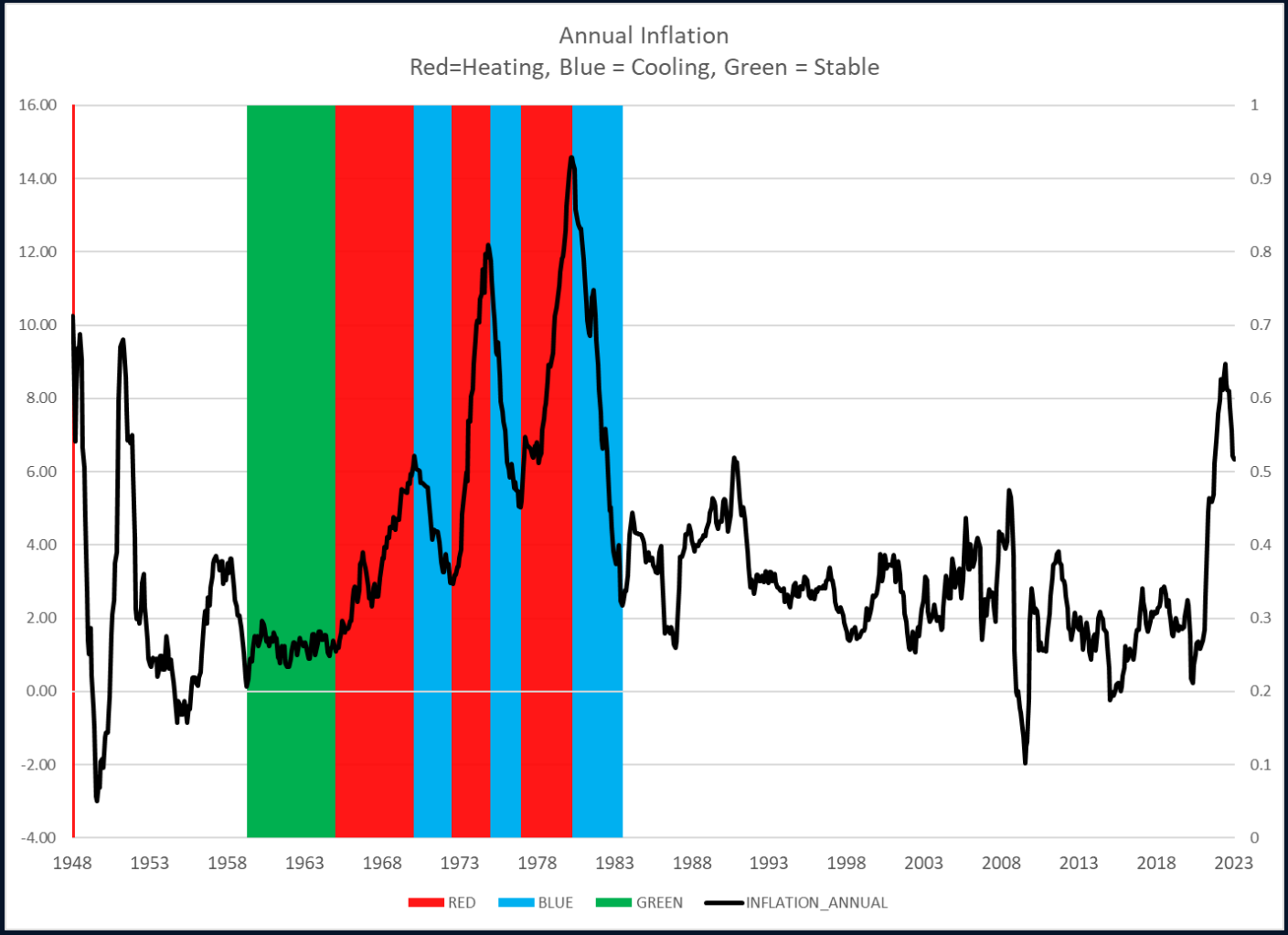
- Demand Pull: Spending untethered by Incomes
 - When you loan your credit card to your “Uncle” and he starts spending like crazy.
- Cost Push: Scarcity of Labor
 - When the labor market tightens at low rates of unemployment wages rise.

Another Story: Inflation Expectation is a Self-Fulfilling Social Disease

- What is the most important reason that businesses do not increase prices?
 - Losing customers to other businesses that do not increase prices
- What alleviates that issue?
 - Confidence that other businesses will increase prices too.
- What makes price increases especially free from demand responses?
 - Shopping for the lowest price is a crazy expensive enterprise in a high-inflation economy.
- What can tame the inflation expectation monster?
 - WIN buttons do not work but recessions do.

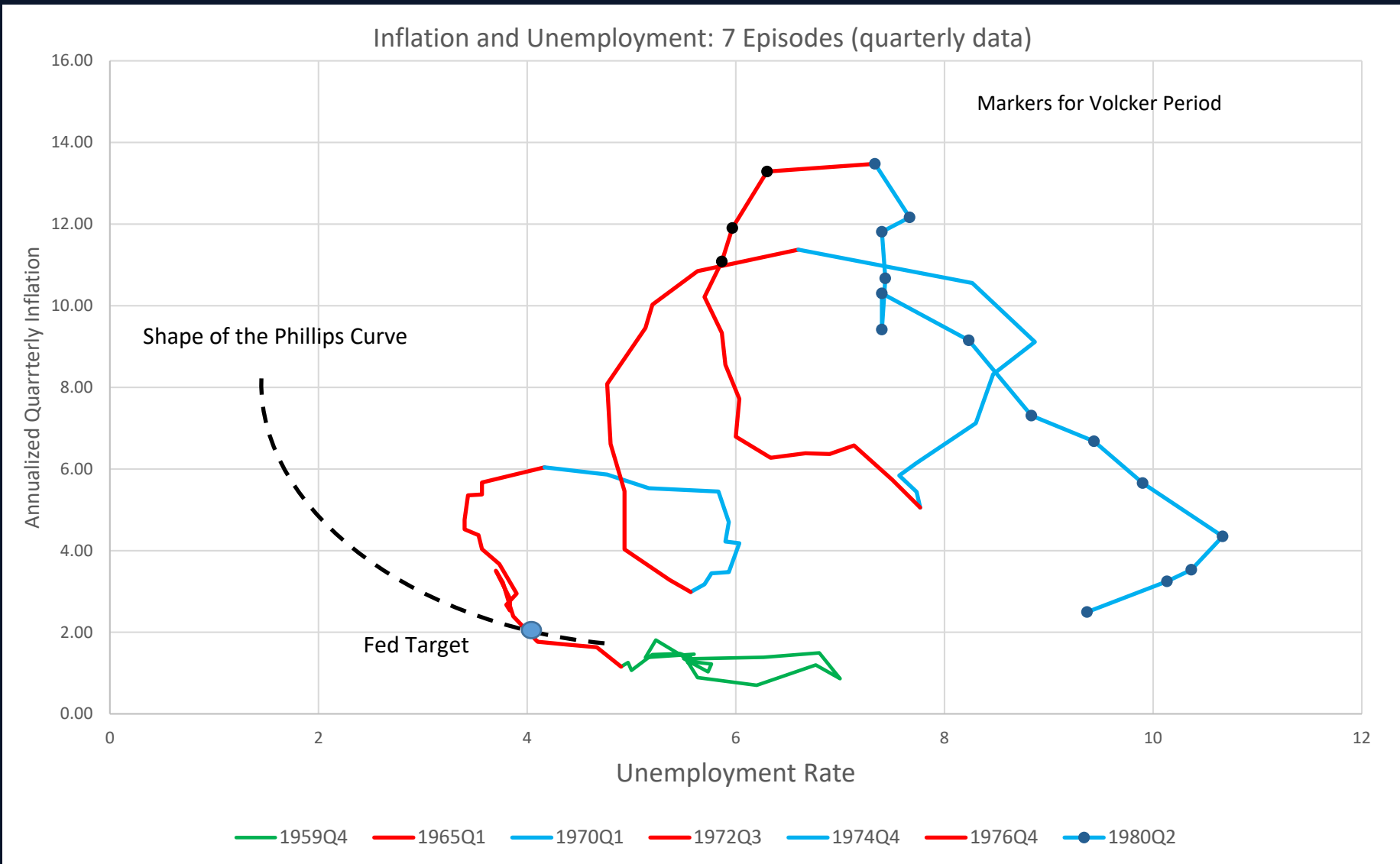


The Last Inflation Spike Was in the 1970s



It takes a spike up in unemployment to stop inflation

Red during rising inflation, Blue during falling inflation



Annualized Inflation Excluding Food and Energy Through Jan 2023

Trending Downward!!



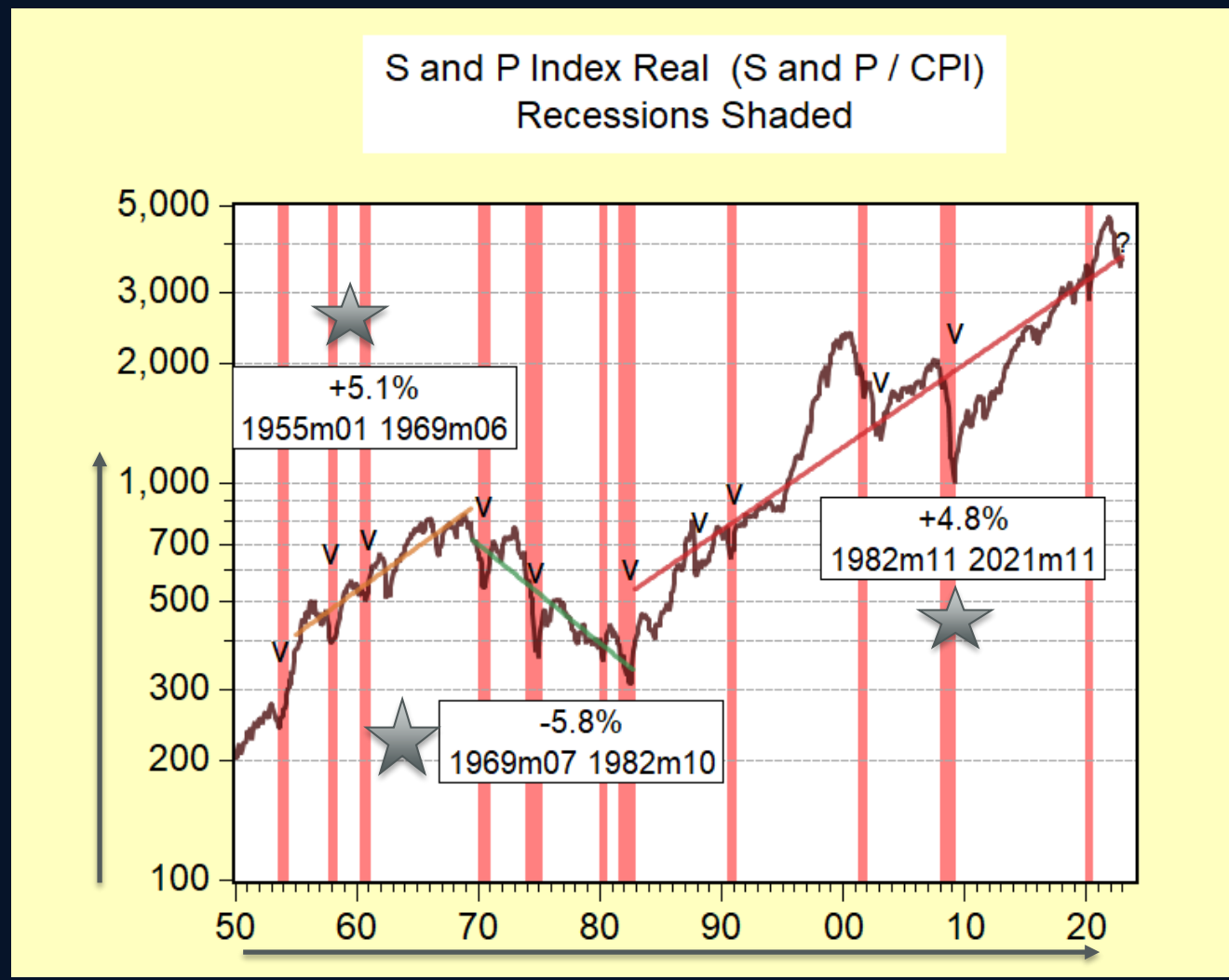
Conclusion: Two Alternatives

- We need a recession to rid the economy of the inflation disease.
- Inflation is different this time
 - It's caused by a covid-19 temporary shut-down of the service sector focusing demand on goods not services, a supply chain problem for manufactured products and a huge fiscal stimulus.
 - It's not a monetary problem.



S and P Recession V's create Investment Opportunities

The Stagflation of the 1970s Is a Reason to Worry



The recession V's create an investment opportunity for you, but the decline in the 1970s is a warning of what might be coming.

Take a Breath
Thanks for listening, if you did.



Placement Probabilities of Most Recent Datda

