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TRIVARIATE RESEARCH

IS THERE AN INVERTED-CURVE PLAYBOOK?

ADAM S. PARKER, Ph.D., FOUNDER
adam@trivariateresearch.com
646-734-7070

COLIN COONEY, HEAD OF SALES
colin@trivariateresearch.com
617-910-7934

JONATHAN GILL, SR. ANALYST
jonathan@trivariateresearch.com
203-461-5110

BRAD ROCHE, SR. SALES CONSULTANT
brad@trivariateresearch.com
516-434-9623

MAXWELL ARNOLD, ANALYST
maxwell@trivariateresearch.com
347-514-1234

JULIE CONDRON, DIR. OF CORPORATE SALES
julie@trivariateresearch.com
617-413-4263

RESEARCH SUMMARY AND CONCLUSIONS

We have been surprised that during recent meetings the subject of the inverted yield curve rarely surfaces. The market sell-off earlier in the year was at least partially the result of a higher probability being assigned to stagflation. The 2-year, 5-year, and 10-year yields have been fully inverted since July 5th (it was April 1st for the 2-year vs. the 10-year) and the market sold off hard in anticipation. **Of the nine inverted-curve cycles in the last half century, SP500 returns this cycle have been the most volatile**, indicative of the differing paths that may unfold, and the challenge to forming an "inverted yield curve playbook" for equity investors.

Of the nine inversion cycles this half-century, in **five of those periods the inversion has lasted more than a year (252 trading days)**, including in the late 1970s, following the TMT crisis, and in 2006. There were three shorter periods, including in 2019 when all yields were quite low across all durations. Returns during periods of inverted yields were mixed, but not as negative as we had expected prior to the analysis. The TMT unwind showed extended negative performance, but others (including 2019) were accompanied by strong markets. This cycle, the market performed quite poorly at the outset as the Fed's hawkish posture and a stubbornly high CPI sparked fear.

Are investors getting increasingly anticipatory? We analyzed the returns for the 12-,10-,8-,6-,4-, and 2-months prior to the curve inversion, as typically the market anticipates a higher risk of recession at the long-end of the curve or a more hawkish Fed at the front end. Markets sold off two-months prior to the inversion in 1990 and 1998, but otherwise rallied before inversion in every other cycle until this one. **The huge market sell-off that started at the beginning of 2022 was certainly unique compared to the other eventual yield-curve-inversion cycles.** Starting valuations were high and the Fed pivot created a dramatic change to the specter of stagflation.

RESEARCH SUMMARY AND CONCLUSIONS

Following the initial inversion, **returns have been mixed for the first six-months in the past**, then typically perform well. A year after the initial inversion, returns were negative only twice of eight prior cycles (following September 1980 and February of 2000). The strong rally so far since mid-June has largely offset the initial post-inversion sell-off, but our judgment is that this is more about positioning and sentiment than any underlying fundamental strength.

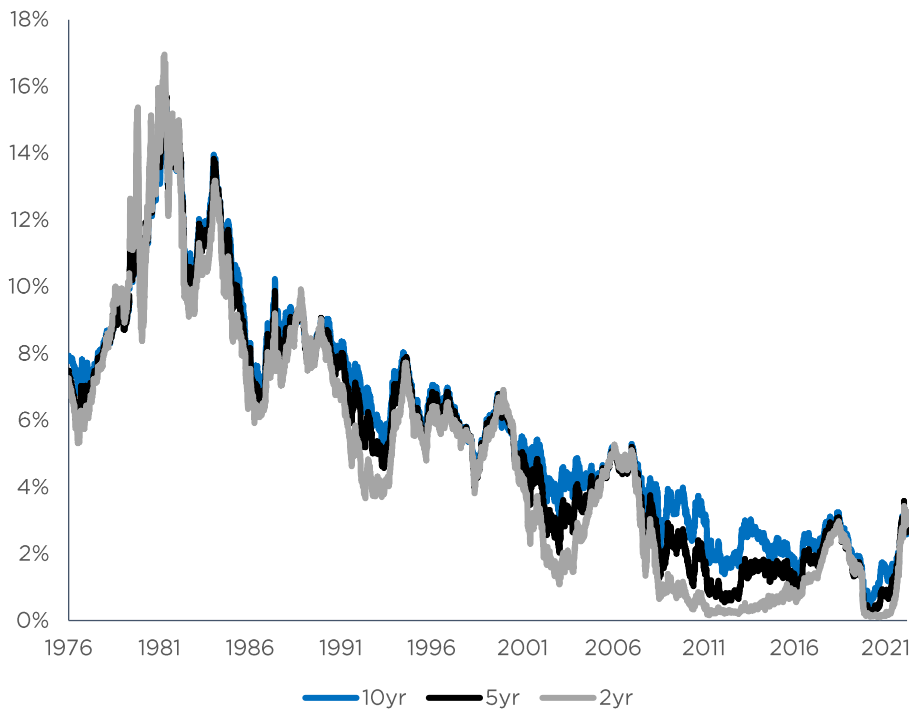
Our belief is that this period of yield-curve inversion could last for a while. We expect the CPI to remain elevated, and do not believe we have seen a major inflection, owing to elevated rents. As such, our judgment is that the Fed is likely to continue to raise rates now, and then ultimately cut rates as they slow the economy materially by 2023. We analyzed the return paths of the market during the previous five lengthy inversion periods in the last half-century.   The 1988 inversion was followed by the best returns, and the post-TMT crisis the worst. It took nearly two years for the 1980 inversion to get to positive returns. **This cycle so far was the most negative out of the gate but has rebounded and has now passed the 1978 cycle at the same point following the initial inversion.**

While the overall market returns have been inconsistent when the yield-curve is inverted, there have been some consistent investable themes. **In the last 25 years when the curve was inverted, growth stocks lag value and high-quality stocks lag junk.** Further, **utilities, energy, healthcare, and consumer staples performed best during yield curve inversions. Technology, consumer discretionary, and the materials sector had the worst performance.** So far this cycle, utilities is the only sector up in absolute terms, and communication services, financials, and materials have underperformed. Every sector is double digits worse this cycle than the average historical cycle. **We offer select value stocks that are in the bottom-half of quality in sectors that typically relatively outperform when the yield curve is inverted on slide 13. If you think disagree and want quality value names, please contact us for the full list.**

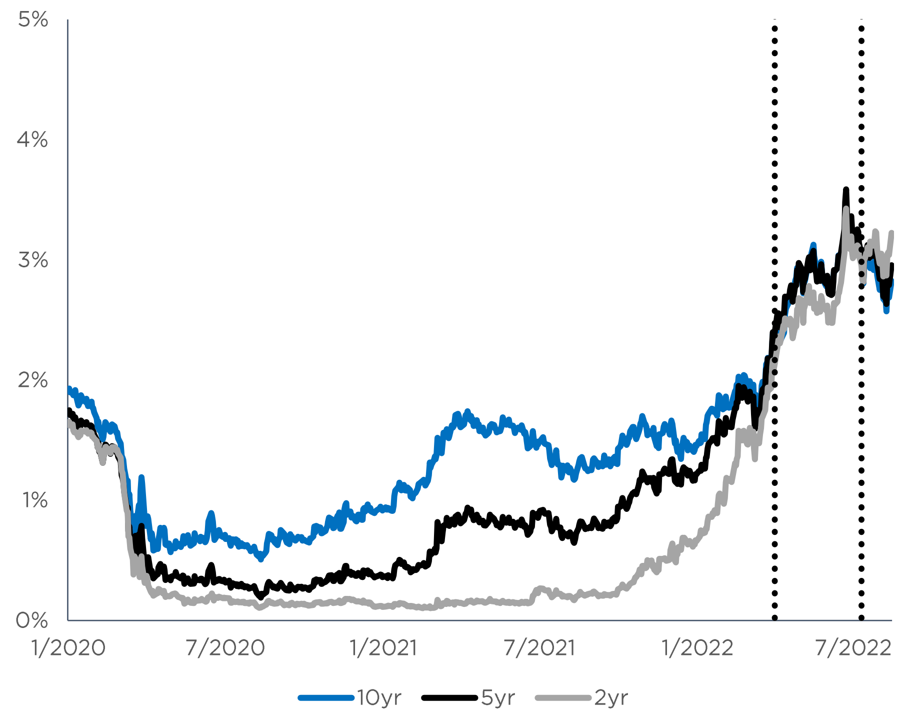
THE YIELD CURVE RECENTLY INVERTED

As the Fed lifted off and has been aggressively hiking this year, the probability of a recession has grown. This has created a relatively unusual environment where the 10-year yield is below the 5-year yield, is below the 2-year yield (left). This initial inversion started on April 1st (right), briefly reversed, but since July 5th, the 2-year yield has been above the 5-year yield and that has been above the 10-year yield (inversion lines shown on right side of exhibit).

2, 5, and 10-Year Yields Over Time
1976 – August 15, 2022



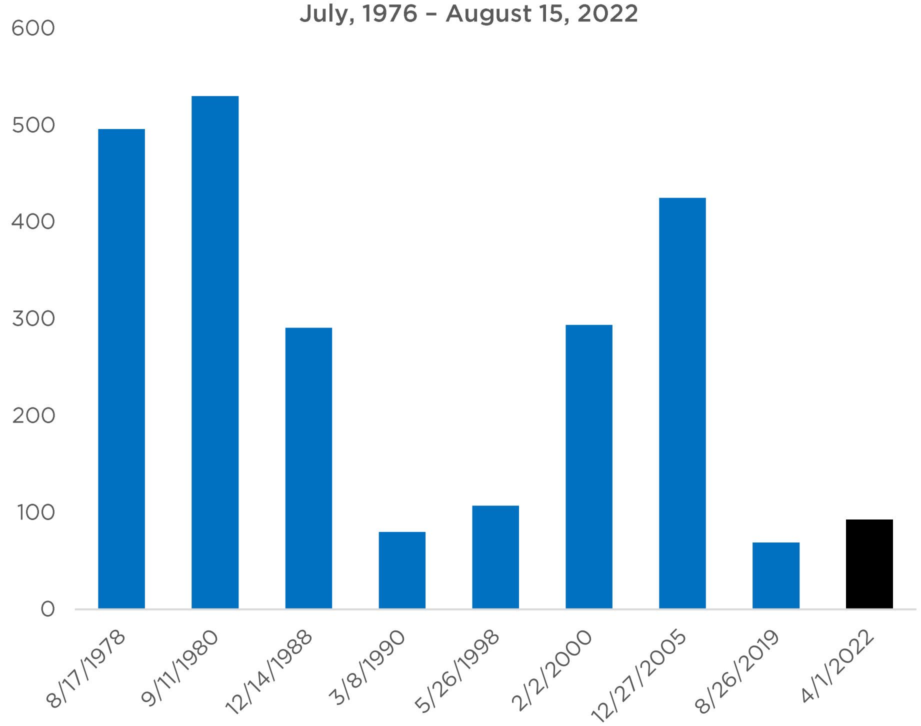
2, 5, and 10-Year Yields Over Time
2010 – August 15, 2022



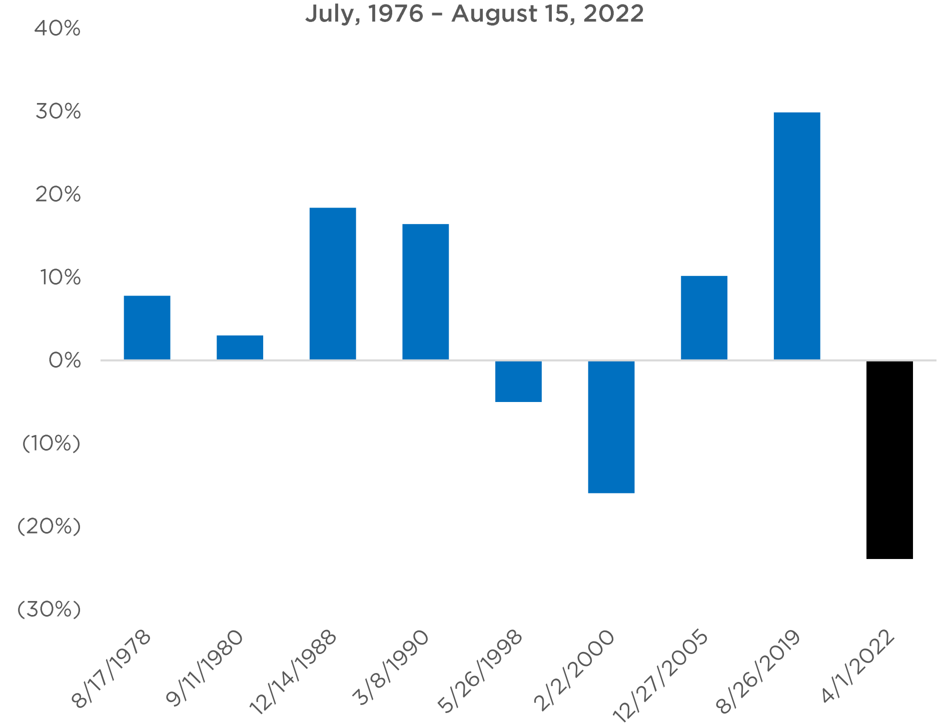
THIS IS THE NINTH INVERSION IN THE LAST HALF CENTURY

This is the ninth time in the last 50-years the curve has inverted (left). Five of those periods the inversion has lasted more than a year (252 trading days), including in the last 1970s, following the TMT crisis, and in 2006. There were three shorter periods, including in 2019 when all yields were quite low across all durations (left). Returns were mixed during periods of yield curve inversion, but not as negative as we expected prior to doing the research. The TMT unwind was the worst period, but others (including 2019) were accompanied by strong markets. This cycle, the market initially performed quite poorly as the Fed's hawkish posture and a stubbornly high CPI sparked fear (right).

Number of Market Days During Each 2yr > 10yr Inversion
End Defined as 63 Days w/o an Inversion
July, 1976 – August 15, 2022

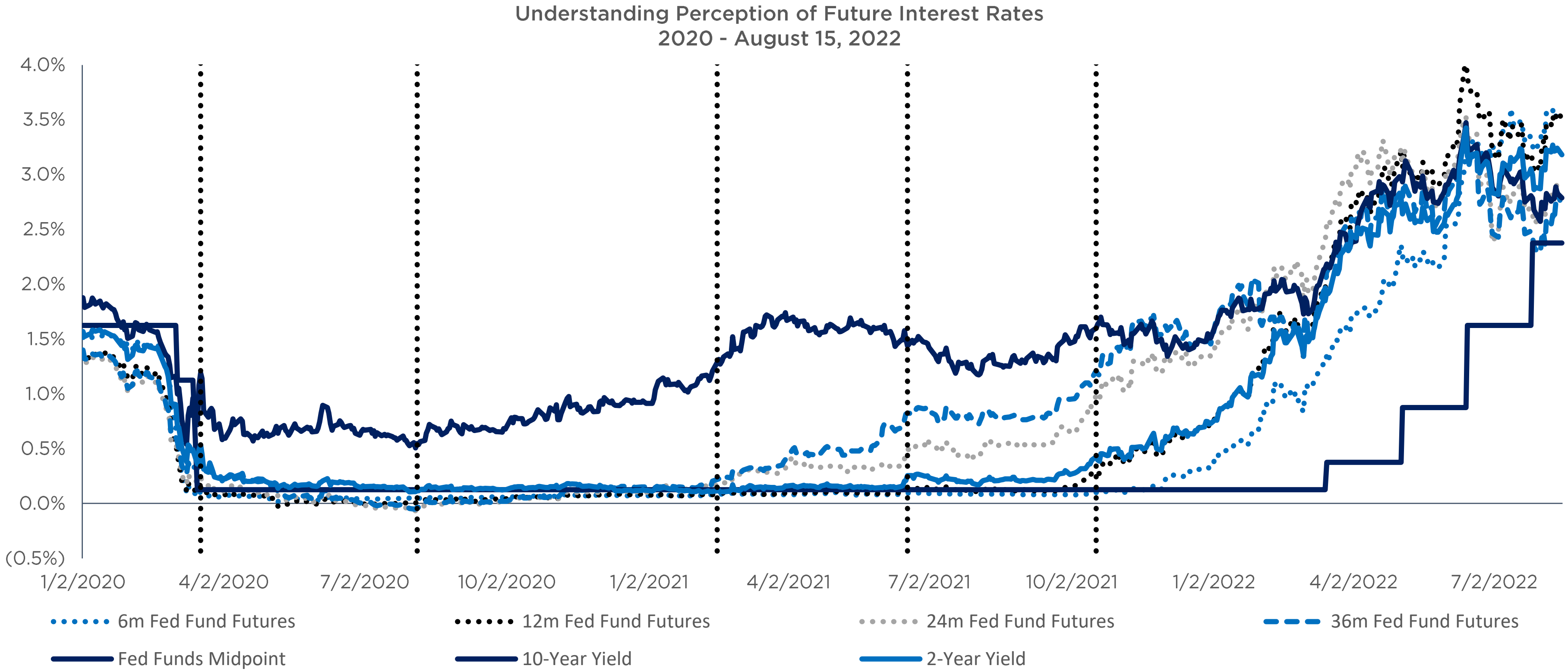


Annualized SPX Return During Each 2yr > 10yr Inversion
End Defined as 63 Days w/o an Inversion
July, 1976 – August 15, 2022



PERCEPTION WAS MORE HAWKISH THAN THE FED, BUT NOW IS NOT

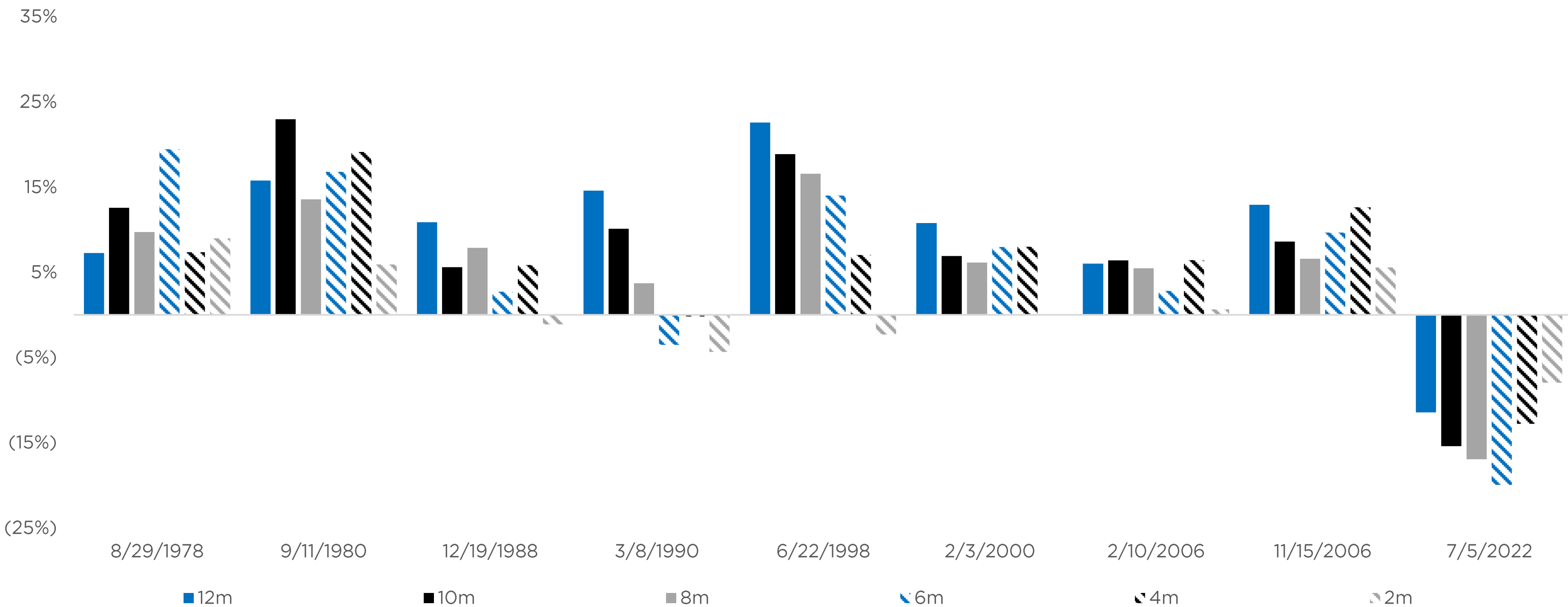
In the fall of 2021, expectations from investors about higher interest rates 6-,12-,24-, and 36-months out began to materially ascend. The perception, as measured by the Fed Fund Futures, was far different than the reality. Investors thought in the fall of 2021 that the Fed Fund rate would be 325 basis points 2-to-3 years later even though the actual Fed Funds middle bound was 0.125%. Fast forward to this summer, and the actual middle band is 2.375% and nearly everyone thinks the Fed will continue to raise rates next month. In the interim, stagflation fears have grown, inflation remains high, and the Fed's action has many thinking the probability of recession is material in the next 12 months. As such, Fed Fund Futures have generally declined 25-75bps depending on the duration at the same time the Fed has continued to raise rates. The chart below shows that for the first time since COVID, the actual Fed Funds rate and the perception about rates, i.e., the Fed Fund Futures, are close to alignment.



THE MARKET HAS NEVER BEEN THIS ANTICIPATORY OF AN INVERSION

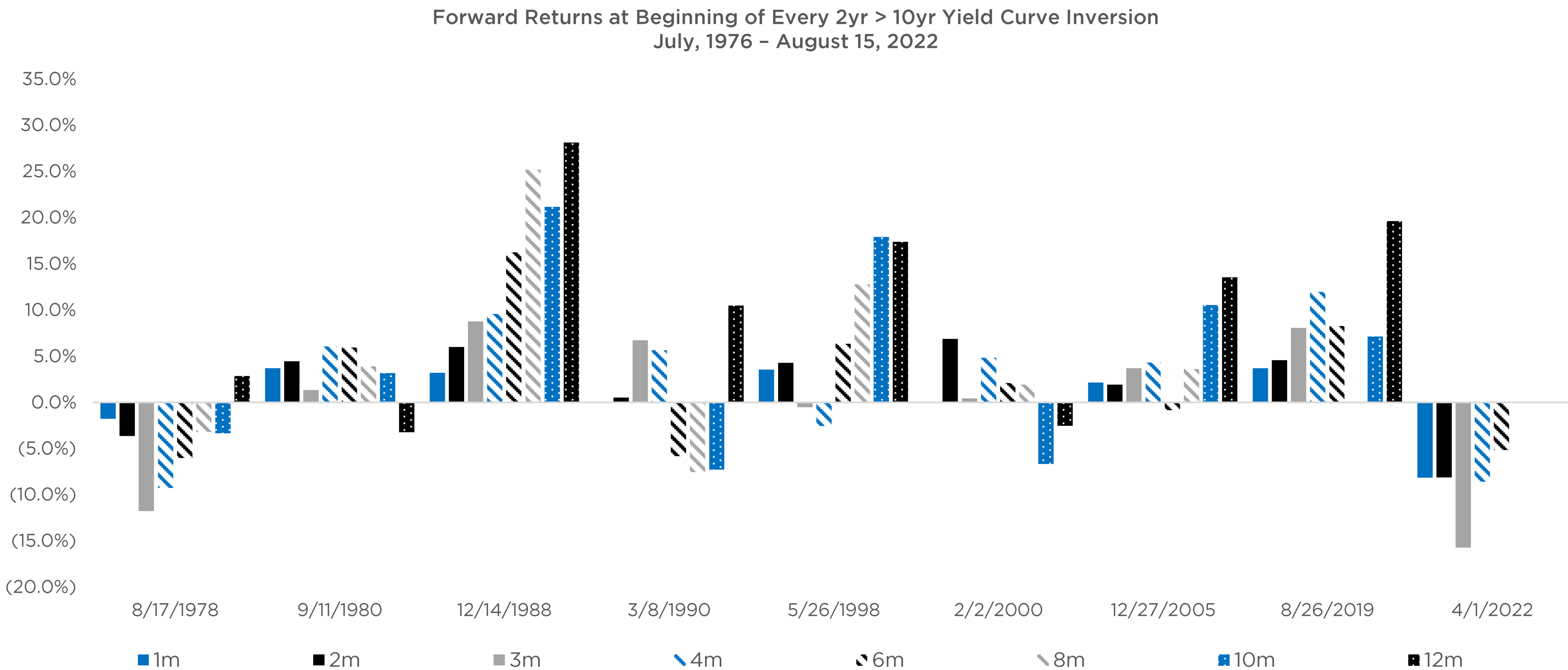
We analyzed the returns for the 12-,10-,8-,6-,4-, and 2-months prior to the curve inversions, as typically the market anticipates a higher risk of recession at the long-end of the curve or a more hawkish Fed at the front end. Markets sold off two months prior to the inversion in 1990 and 1998, but otherwise rallied before inversion in every other cycle until this one. The huge market sell-off that started at the beginning of 2022 was certainly unique compared to the other yield-curve-inversion cycles. Starting valuations were high and the Fed pivot created a dramatic change to the specter of stagflation.

Trailing Returns of Every 2yr > 5yr > 10yr Yield Curve Inversion
July, 1976 – August 15, 2022



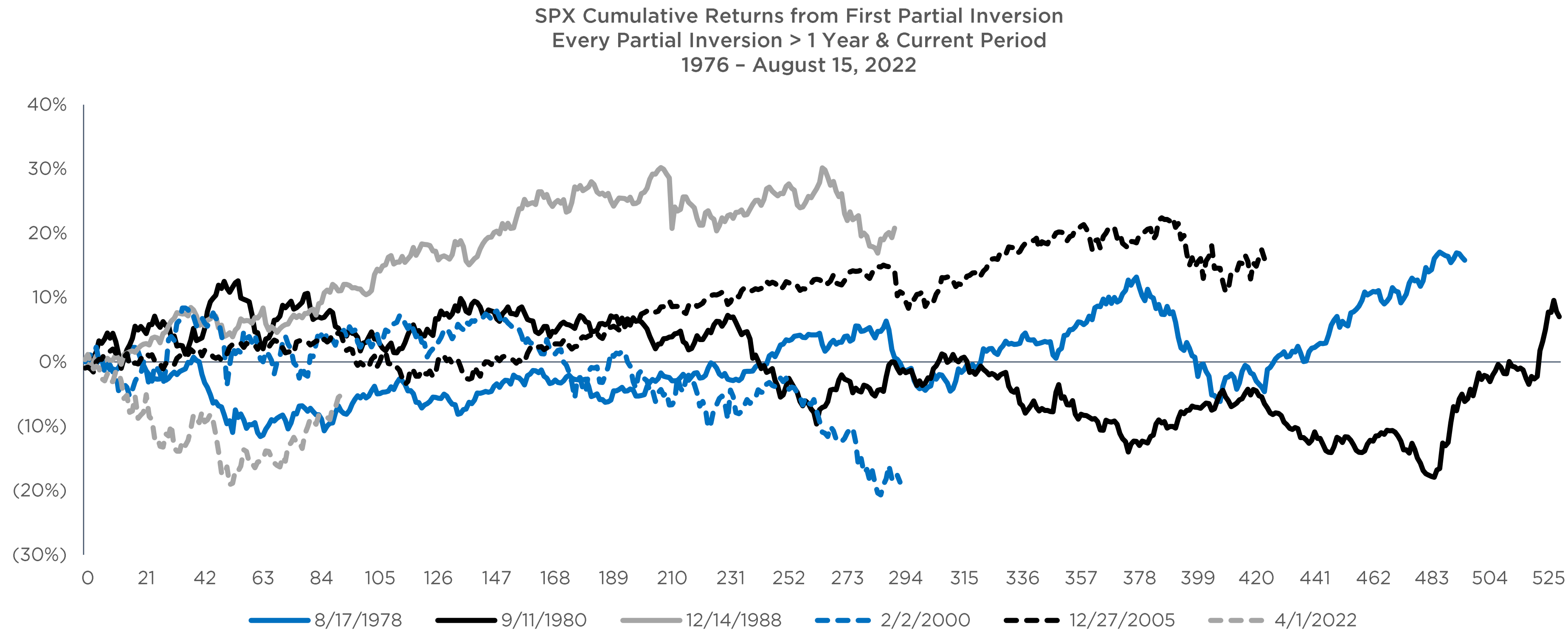
RETURNS FOLLOWING THE INITIAL INVERSION ARE MIXED

Following the initial inversion, returns have been mixed for the first six-months in the past, then typically perform well. Returns were negative 12-months following the initial inversion only following September 1980 and February of 2000. The strong rally so far since mid-June has largely offset the initial post-inversion sell-off, but our judgment is that this is more about positioning and sentiment than any underlying fundamental strength.



PATHS FOR THE FIVE LONG-LASTING INVERSION PERIODS ARE MIXED

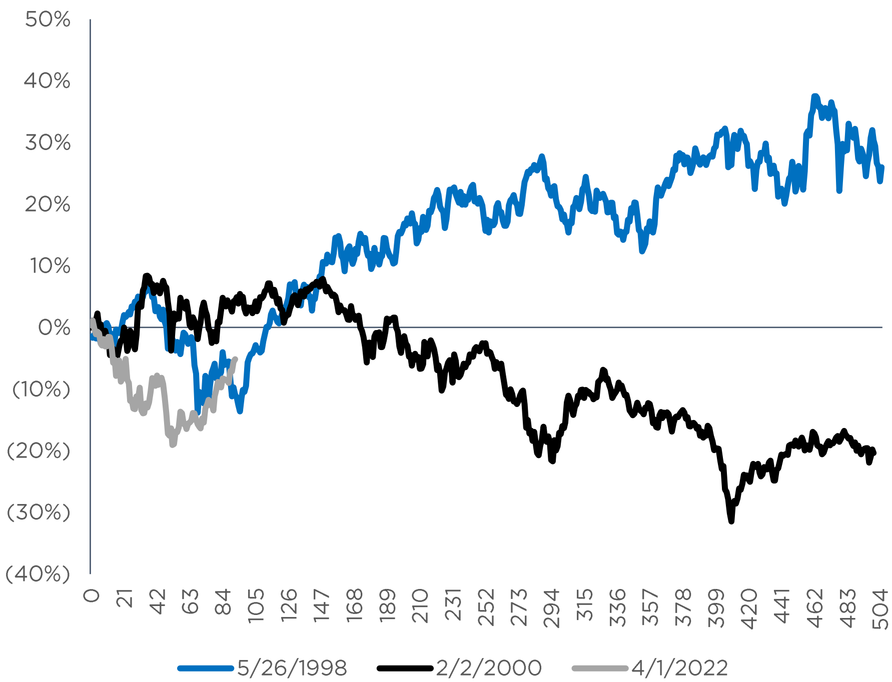
Our belief is that this period of yield-curve inversion could last for awhile. We expect the CPI to remain elevated, and do not believe we have seen a major inflection, owing to elevated rents. Therefore, we expect the Fed to continue to raise rates now, and then ultimately cut rates by 2024 as the economy materially slows. As such, we analyzed the return paths of the market during the previous five lengthy inversion periods in the last half-century. Below we show that the 1988 inversion was followed by the best returns, and the post-TMT crisis the worst. It took nearly two years for the 1980 inversion to get to positive returns. This cycle so far was the most negative out of the gate but has now passed the 1978 path.



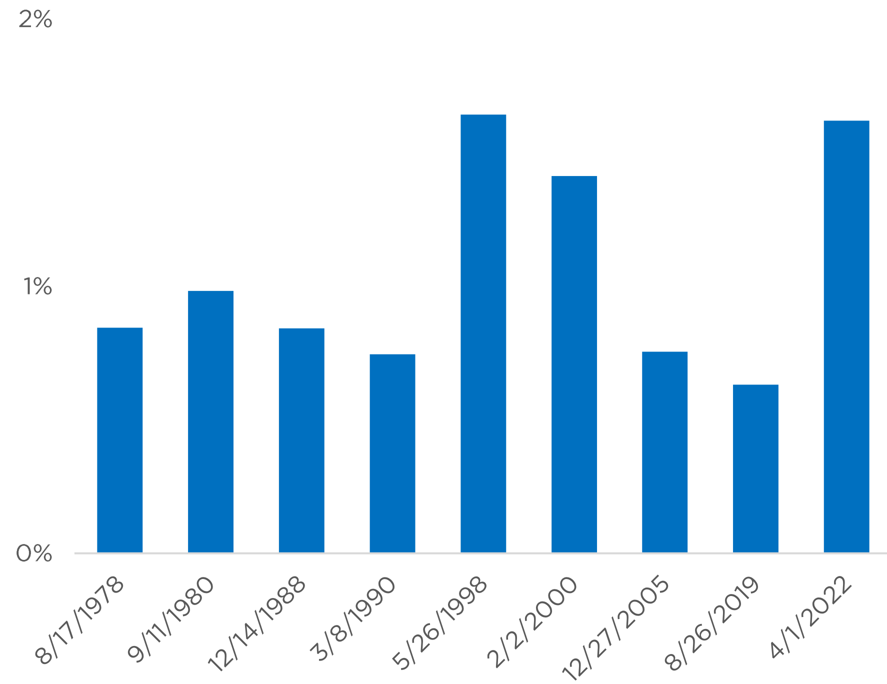
THIS INVERSION PERIOD HAS SEEN HIGH VOLATILITY

Further decomposing this inversion cycle so far, we focused on the three-most volatile post-inversion return periods – as they are potentially the most confusing or debatable investment environments (left). The 1998 cycle was followed by a recovery, but the post TMT one was followed by sustained weakness. Obviously "sample size of two" is not statistically significant, but this highlights how it is really challenging to formulate a relevant playbook. Four months in, return volatility has been highest this time of any of the nine yield-curve inversion cycles (right).

SPX 2-Year Cumulative Returns from First Partial Inversion Periods with High Volatility During the Inversion 1976 – August 15, 2022

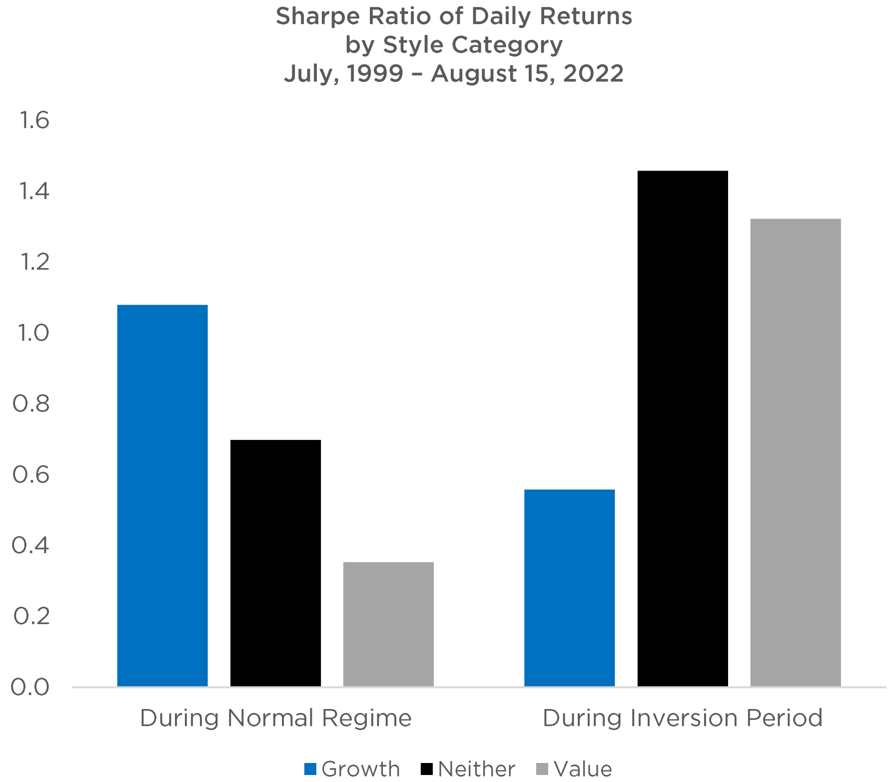


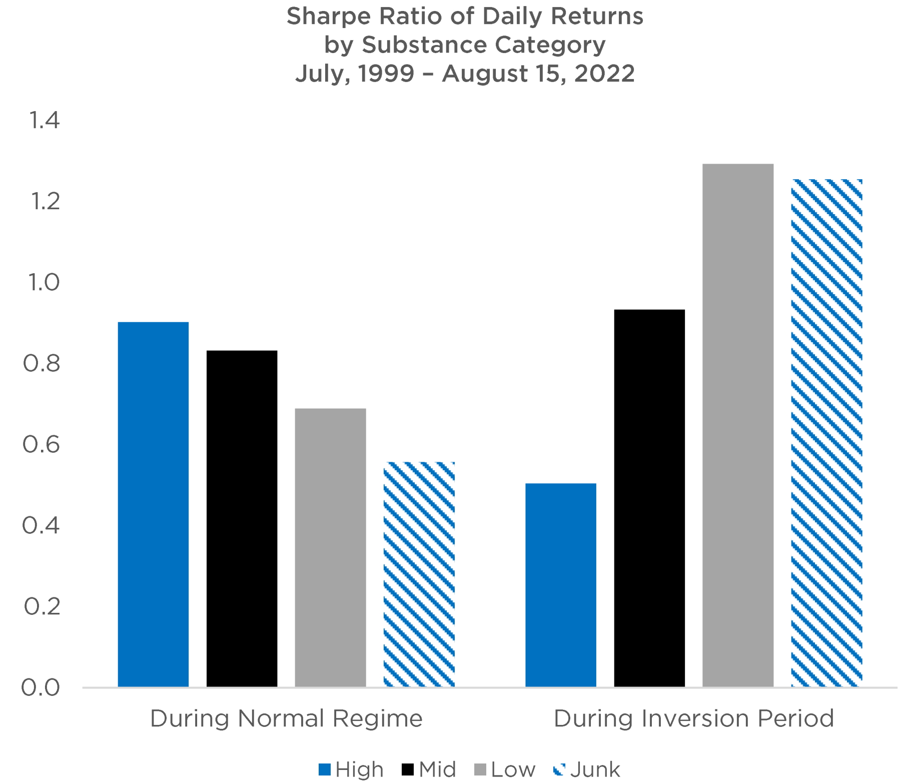
Standard Deviation of Daily Returns Every Partial Inversion Period 1976 – August 15, 2022



GROWTH AND HIGH QUALITY UNDERPERFORMS DURING AN INVERSION

While the overall market returns have been inconsistent when the yield-curve is inverted, there have been a couple of underlying behaviors that have been consistent enough to be investable. Growth stocks tend to lag value during the inverted curve regimes of the last 25 years (left) and high-quality stocks tended to lag junk (right). Many investors have been annoyed that quality growth has not beaten junk growth by much this year, but if the long-end is "right" that a recession is imminent, we think quality-value will be a good bucket to emphasize in the coming quarters, even though low quality / value is what worked in prior inversions.





INVERSION: UTILITIES, HEALTHCARE, AND STAPLES BEST, TECH WORST

We looked at the historical performance of each sector during yield-curve inversion. Utilities, energy, healthcare, and consumer staples performed best, while technology, consumer discretionary, and materials performed worst. So far this cycle, utilities are the only sector up in absolute terms, and communication services, financials, and materials have been the worst. Every sector is double digits worse this cycle than the average historical cycle.

Annualized Sector Performance During Partial Inversion Periods (2yr > 10yr)
September 1, 1989 –to- August 15, 2022

	Historical Performance			Current Inversion Period			
Sector	Mean	Standard Deviation	Sharpe Ratio	Mean	Standard Deviation	Sharpe Ratio	Difference of Mean Return
Utilities	14.6%	17.3%	0.84	1.5%	21.3%	0.07	(13.1%)
Information Technology	(3.7%)	32.8%	(0.11)	(17.9%)	35.0%	(0.51)	(14.2%)
Consumer Staples	11.6%	17.8%	0.65	(4.3%)	20.2%	(0.21)	(15.9%)
Energy	13.7%	23.2%	0.59	(3.8%)	41.0%	(0.09)	(17.6%)
Health Care	14.3%	19.4%	0.74	(9.6%)	21.1%	(0.45)	(23.9%)
Industrials	7.9%	18.9%	0.42	(17.1%)	23.3%	(0.73)	(25.0%)
Consumer Discretionary	(1.5%)	20.5%	(0.07)	(26.8%)	40.5%	(0.66)	(25.3%)
Materials	(1.2%)	22.1%	(0.06)	(35.0%)	25.6%	(1.37)	(33.7%)
Financials	3.5%	23.9%	0.15	(34.6%)	25.2%	(1.37)	(38.1%)
Communication Services	4.9%	22.8%	0.21	(48.6%)	34.3%	(1.42)	(53.5%)

STOCK IDEAS FOR THE INVERTED YIELD CURVE

Select value stocks that are in the bottom-half of quality in sectors that typically relatively outperform when the yield curve is inverted include healthcare and energy. If the historical trend continues this list will likely outperform. On the contrary, if we shift more toward a risk-off stance, quality / value will likely do better than low quality / value. Please contact us for the full list of ideas.

Select Mid/Large Value Stocks with Low or Junk Quality in Favorable Sectors During Inverted Yield Curve
August 15, 2022

Ticker	Company	Sector	Market Cap. (US$ Bil.)
HCA	HCA Healthcare, Inc.	Health Care	62.77
OXY	Occidental Petroleum Corporation	Energy	61.62
MPC	Marathon Petroleum Corporation	Energy	49.95
EXC	Exelon Corporation	Utilities	45.57
KHC	The Kraft Heinz Company	Consumer Staples	45.13
VLO	Valero Energy Corporation	Energy	43.64
WMB	The Williams Companies, Inc.	Energy	41.52
KMI	Kinder Morgan, Inc.	Energy	40.53
LNG	Cheniere Energy, Inc.	Energy	38.01
JCI	Johnson Controls International plc	Industrials	37.50
WBA	Walgreens Boots Alliance, Inc.	Consumer Staples	34.24

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