

Quantitative Investment Decisions

The Safety Net For Your Portfolio

No Inversion Yet, According to St Louis Fed 10 to 2 Year Constant Maturity Rates

Executive Summary:

- Constant Maturity 10- and 2-Year Treasury Rate has not inverted, market rates have
- The 10 to 2 Year Treasury Constant Maturity rate has inverted 12 times since 1978.
- Ten of the 12 inversions occurred around 5 recessions and market corrections.
- Two inversions did not result in a negative impact to Stock Market
- Typically, 42% of the time inversions impact the stock market within 3-months of the event and can last up to 3 years, 33% of time.
- We expect the market to be impacted late 4th quarter into 1q2020, -8.0%
- The model is expecting a short-term impact to S&P 500, 2020 S&P 500 Estimate +12%.

How does a rate inversion impact the stock market? The St. Louis Federal Reserve, FRED, issues a Treasury 10 to 2 Year spread based on constant maturities. Constant maturity rates are determined by the FED based on the yield curve, interpolated daily. Why investors are concerned about an inversion is that 10 of the 12 times that the Constant Maturity rates inverted a recession occurred within 2 years' time, see exhibit 1. The shaded areas below are recession periods. In 2019 the rates have not inverted to date although very close on August 14th and 21st at +1bps.

Exhibit 1 St. Louis Fed 10-year to 2-year Spread



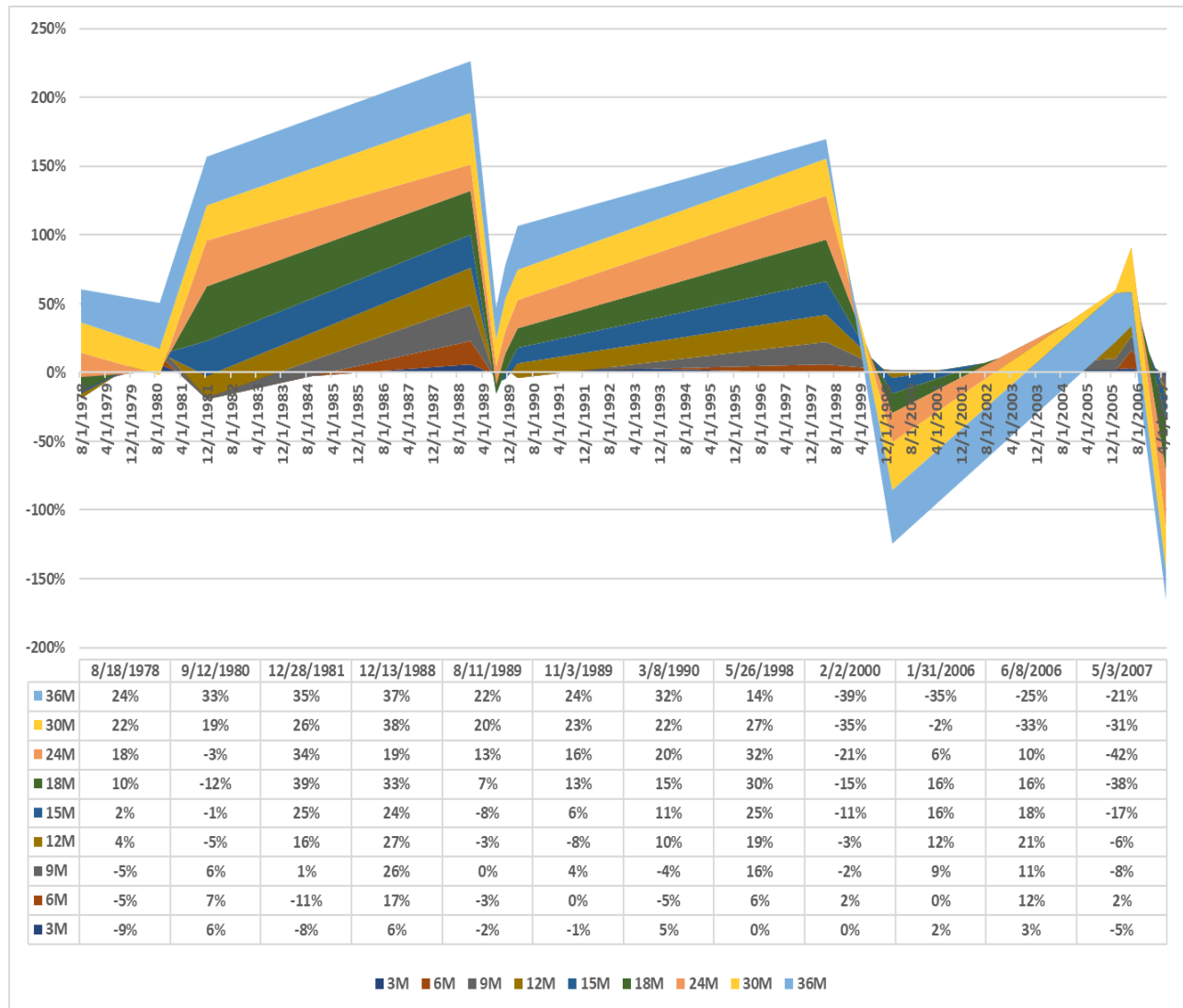
Source: St Louis Federal Reserve, FRED

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Using the FRED data, we noted 27 periods that rates inverted from 1978 to 8/21/2019. However, if we exclude inversions within 30 days of a prior instance than the number of inversions was 12, see exhibit 2 below. Of the 12 inversions, 10 were associated with 5 recessions. Two inversions, 1988 and 1998, did not appear to impact the market over the ensuing 36-month period. The market impact for the 10 periods was between -8.0 and -42.0%. If we exclude the 2001 and 2008-2009 recessions, the market performance during the other three recessions were down at most -12%. This would be considered a typical correction within a bull market.

Exhibit 2 Inversion Performance at 3-Month Increments



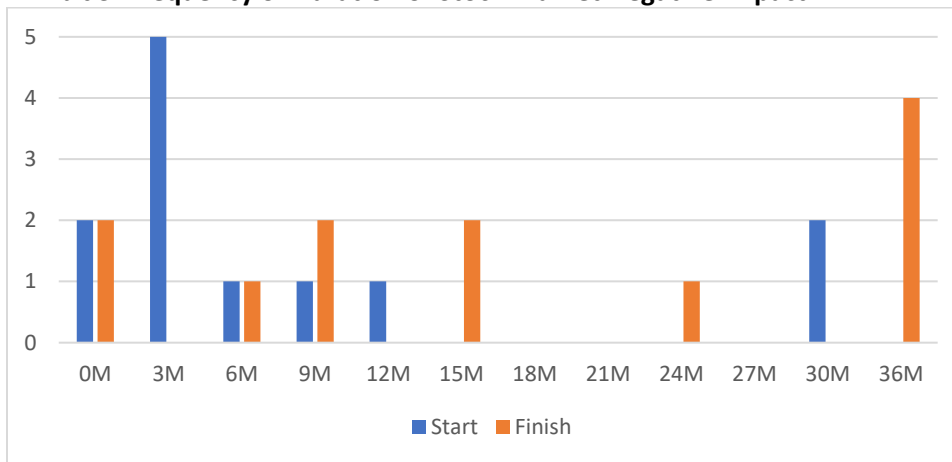
Source: Morningstar

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How does an inversion impact the stock market and how long do the pullbacks last? Forty-two percent of the time (5/12) the market return is negative within 3 months, see exhibit 3 below. Twice or 17% of the time the market return remained positive and 17% of the time the market wasn't impacted for 30 months. Interestingly, the duration of the market impact has no specific period length. Thirty-three percent of the time (4/12) the stock market return was negative for 36 months after the inversion. Seventeen percent of the time the stock market was negative for 0,9 and 15 months after inversion.

Exhibit 3. Frequency of Duration of Stock Market Negative Impact



Source: FRED and Morningstar

How do multiple inversions during a short time period impact the stock market? For 2019, the St. Louis Fed has not indicated a negative 10-2 spread using constant maturities as of August 22nd. The market tends to focus on market rates and not constant maturities. On August 21st the market treasury rate, not constant maturity, inverted for the second time in ten days. Multi-period Constant Maturity inversions in a short time frame, based on 27 historical inversions, does not appear to have any discernible pattern. Twice we had a negligible impact to the market with a 0% to -4% return. Once we had a normal cycle correction of -11% and once we had a substantial loss of -33% related to the implosion of credit market in 2006-2009, see exhibit 4 below. For 2019, using Constant Maturity Rates, the 10 and 2 Year has not inverted.

Exhibit 4. Multiple Inversions in 30 Day Period

| Time Period | # Inversions | Days | Market Impact 1 | MI-1 Return | Market Impact 2 | MI-2 Return |
|-------------|--------------|------|-----------------|-------------|-----------------|-------------|
| 1981 | 3 | 7 | 3 Months | -8% | 6 Months | -11% |
| 1982 | 4 | 30 | 6 Months | -4% | | |
| 1998 | 3 | 30 | 3 Months | 0% | | |
| 8/2006 | 2 | 15 | 30 Months | -33% | 36 Months | -25% |

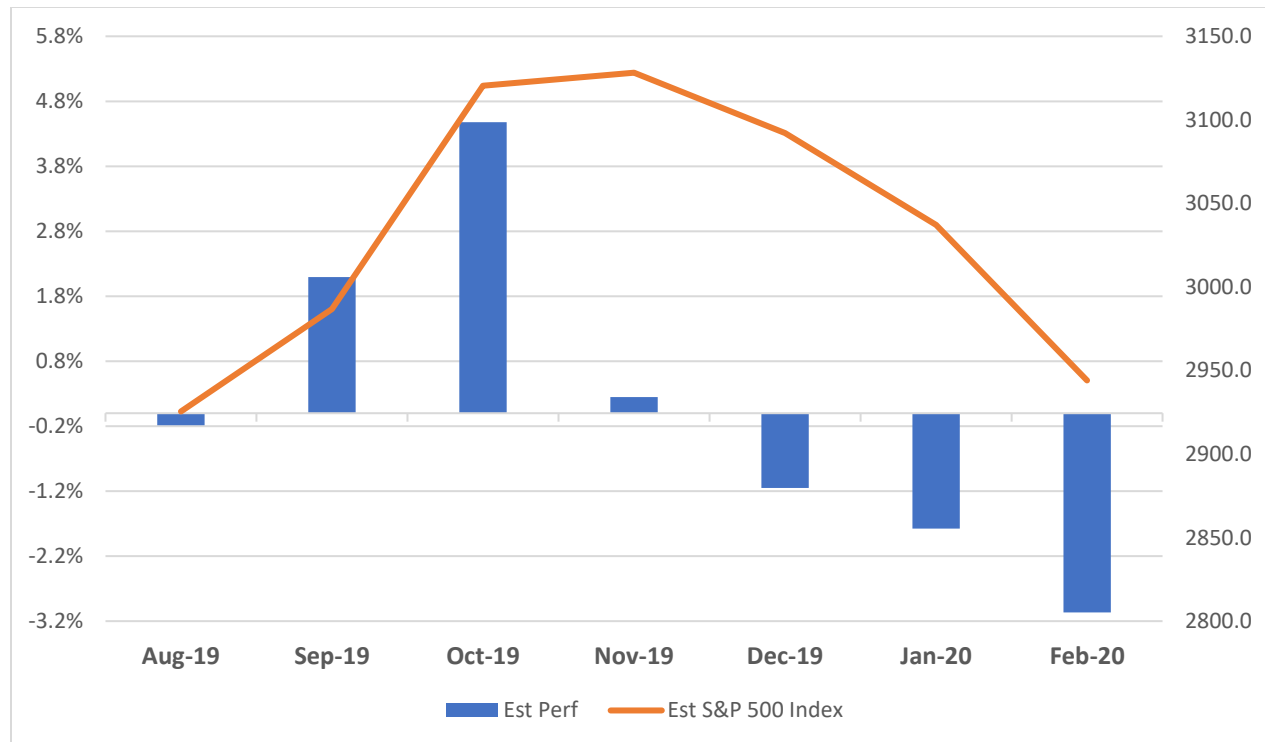
Source: FRED and Morningstar

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Our expectation is that we will start to see a difficult stock market environment starting in November 2019 and continue through February 2020. This is based on the QIDLLC Market Predictor Model. Although the markets return from today to the end of February is expected to be slightly positive, a 7-8% drop from Novembers projected 3185 could be enough to rattle investors. We expect the market pressure to be short lived. For 2020, we expect the S&P 500 return of +12.0%, or a S&P 500 year-end index of 3466.

Exhibit 5 Estimated S&P 500 for next 6 months



Source QIDLLC

Disclosures

Firm Definition

Quantitative Investment Decisions, LLC ("QID" or the "Advisor") is registered investment advisor in the state of Florida organized as a Limited Liability Company ("LLC") under the laws of the State of Delaware, whose principle place of business is in Naples, FL. The entire investment team and critical operations staff became affiliated with QID on January 2, 2015.

QID reviews a total firm AUM report broken out by account on a quarterly basis to ensure that only actual assets managed, or sub-advised, by QID are included. All accounts deemed to be advisory only, hypothetical, or model in nature are excluded from total firm AUM. Total firm assets are all discretionary (whether fee-paying or not) for which QID has investment management responsibility, including assets managed by sub-advisors that QID has authority to select.

Obtaining a Compliant Presentation and the Firm's List of Composite Descriptions

A compliant presentation, including the performance data for the composite, may be obtained by contacting QID at 239.631.8912 or by emailing info@qidllc.com.