

## Strategy & Quantitative Research

# Yield curve inversion: the long short

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### KEY TAKEAWAY

- The yield curve inversion (10Y-3M) in US has been a robust early warning indicator of recessions. Prior to each of the 7 recessions since the 1960s, the 10Y – 3M yield spread has been negative.
- The inversion of the curve observed a few days in March 2019 leads some investors and commentators to fear an imminent end of cycle.
- Nevertheless, the time delay between inversion of the curve and recession was on average quite long (25 months) and very variable from 10 to 46 months (Table 1).
- The S&P500 performance was, in average, strong in the 2 years following the inversion with a limited downside risk whatever the valuation of the equity market (Tables 2 and 3).
- But the 1year/2year performance (i.e. the third year after inversion) is directly linked to the absolute valuation of the equity market as measured by the CAPE ratio (Figure 1).
- Based on this historical evidence, we can expect the continuation of the bull market in 2019 and 2020 but a S&P500 return about -30% for the year 2021.

**Table 1. Time delay (in months) to have a recession after a yield curve inversion**

	Monthly data (end-of-month)	Daily data
Min	8	10
Max	32	47
Average	22	25
Median	16	22

*Sources: NBER, Eikon DS, Computations by the authors.*

**Table 2. S&P500 performance after a yield curve inversion**

	1Y	2Y	1Y1Y	1Y2Y
Min	-10,4%	-3,9%	-7,3%	-38,8%
Max	37,5%	53,3%	15,6%	37,9%
Average	9,4%	14,7%	4,9%	-2,0%
Median	7,4%	7,0%	6,5%	4,4%

Sources: NBER, Eikon DS, S&P500 returns (price index). 1Y1Y is return over 1 year after 1 year. 1Y2Y is return over 1 year after 2 years. Computations by the authors.

**Table 3. Yield curve inversions: delay to recession, equity returns and valuations**

Day of the first YC inversion before a recession	Months to a recession	S&P500 performance after YC inversion				CAPE	Adjusted CAPE
		1Y	2Y	1Y2Y	1Y1Y		
12/01/1966	47	-10,4%	3,6%	4,4%	15,6%	24,06	27,92
09/04/1971	32	7,4%	7,0%	-14,9%	-0,3%	17,92	20,88
04/07/1978	17	7,4%	20,9%	14,2%	12,6%	9,43	11,41
01/09/1980	10	0,3%	-3,9%	37,9%	-4,2%	9,20	11,35
29/05/1989	14	10,3%	17,4%	9,7%	6,5%	16,19	19,63
10/09/1998	30	37,5%	53,3%	-26,4%	11,5%	33,53	37,21
20/02/2006	22	13,1%	4,9%	-38,8%	-7,3%	26,25	28,31

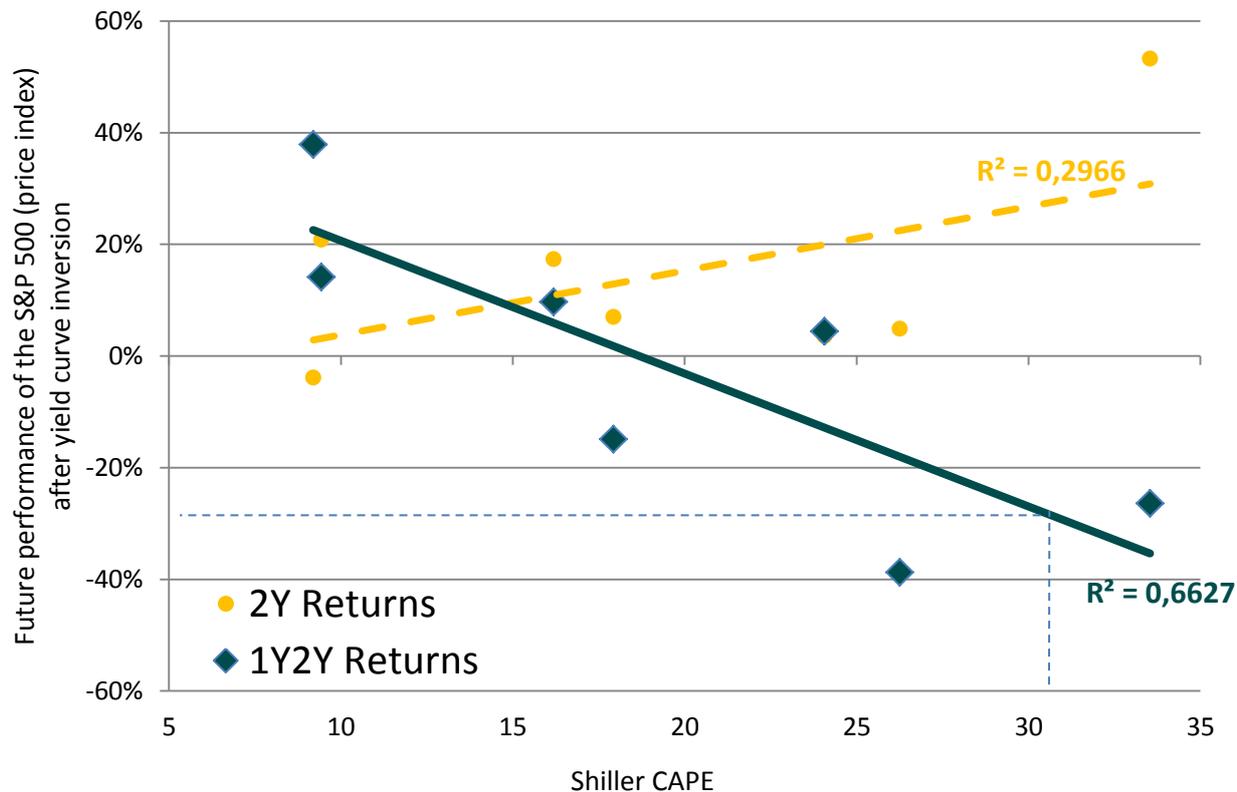
Sources: NBER, Eikon DS, Robert Shiller, S&P500 returns (price index). The CAPE ratio is a valuation measure that uses real earnings per share over a 10-year period to smooth out fluctuations in corporate profits that occur over different periods of a business cycle. The CAPE ratio, using the acronym for cyclically adjusted price-to-earnings ratio, was popularized by Yale University and Nobel Prize professor Robert Shiller. The alternative version of CAPE is adjusted for bias induced by changes in corporate payout policy (i. e. share repurchases rather than dividends have now become a dominant approach in the US for cash distribution to shareholders) following Bunn & Shiller (2014) and Jivraj and Shiller (2017). Computations by the authors.

**Table 4. US business cycle expansions and contractions according to the NBER**

<i>Peak</i>	<i>Trough</i>	<i>Contraction duration: Peak to trough</i>	<i>Expansion duration: Previous trough to this peak</i>
	December 1854		
June 1857	December 1858	18	30
October 1860	June 1861	8	22
April 1865	December 1867	32	46
June 1869	December 1870	18	18
October 1873	March 1879	65	34
March 1882	May 1885	38	36
March 1887	April 1888	13	22
July 1890	May 1891	10	27
January 1893	June 1894	17	20
December 1895	June 1897	18	18
June 1899	December 1900	18	24
September 1902	August 1904	23	21
May 1907	June 1908	13	33
January 1910	January 1912	24	19
January 1913	December 1914	23	12
August 1918	March 1919	7	44
January 1920	July 1921	18	10
May 1923	July 1924	14	22
October 1926	November 1927	13	27
August 1929	March 1933	43	21
May 1937	June 1938	13	50
February 1945	October 1945	8	80
November 1948	October 1949	11	37
July 1953	May 1954	10	45
August 1957	April 1958	8	39
April 1960	February 1961	10	24
December 1969	November 1970	11	106
November 1973	March 1975	16	36
January 1980	July 1980	6	58
July 1981	November 1982	16	12
July 1990	March 1991	8	92
March 2001	November 2001	8	120
December 2007	June 2009	18	73

Sources: NBER. In grey, business cycles for which we have data on the US yield curve (10Y – 3M).

Figure 1. Future S&P500 returns and CAPE following a yield curve inversion (CAPE in March 2019 = 31)



Sources: NBER, Eikon DS, Robert Shiller, S&P500 returns (price index). Note that results remain qualitatively the same using the alternative CAPE. Computations by the authors.

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