# Don’t ignore the U.S. Yield Curve

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- **A very flat yield curve**

Recent changes in monetary policy have pushed the spread between long and short-term rates to very low levels prompting concerns about the imminent inversion of the U.S. yield curve. **Over the last 30 years the inversion of the yield curve preceded the start of a recession by 16 months on average**.

- **Coincident versus leading indicators**

More optimistic market participants argue that the shape of the yield curve is only one of several indicators and that most statistics continue to point to a very strong economy. Indeed, credit spreads, implied volatilities, the relative performance of riskier stocks and earnings growth continue to paint a rosy picture. Still, that doesn’t mean much considering that these are coincident and not leading indicators. **Complacency is out of place, historically the shape of the yield curve anticipated more widely followed economic indicators.**

- **Who is at risk?**

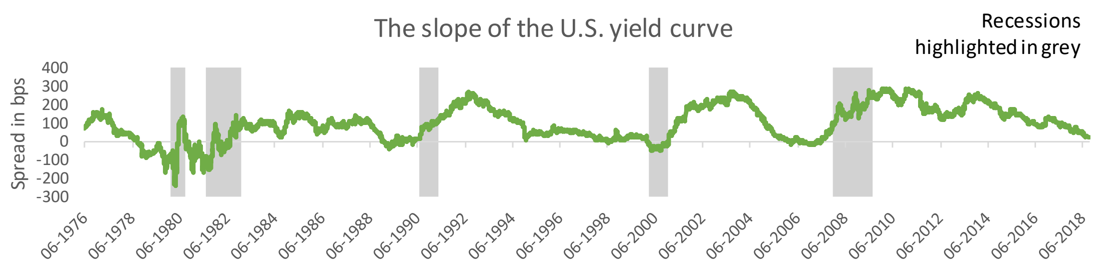
A look at factor returns in the U.S. since the end of 1996 suggests that when the curve was inverted (approximately 10% of the time) investors moved away from higher market beta companies in favor of stocks with lower leverage and stronger quality and profitability. **Growth companies underperformed** contradicting the widely held belief that investors seek growth when the economy starts slowing. **The performance of the Value factors was largely driven by their risk profile** with book to price underperforming and dividend yield outperforming. Momentum disappointed but moderately.

- **What about recessions?**

As expected higher risk (market beta) and lower quality companies (high earnings variability, low liquidity) performed poorly during recessions. This was not the case for Value that performed strongly in particular when the S&P500 started rebounding. The re-rating of distressed stocks just before the end of the recessions inflicted several losses to momentum investors. Growth investors struggled the most.

- **So now what?**

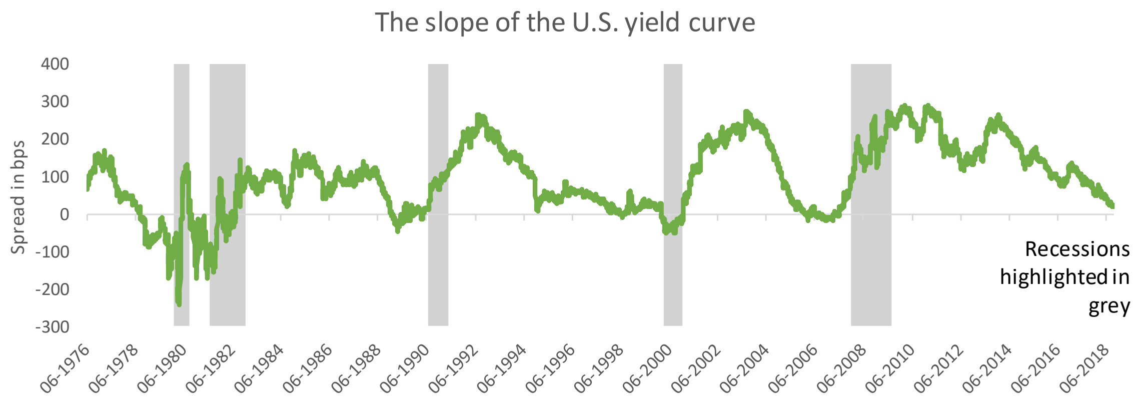
The last two recessions have shown us that it pays to remain well diversified and to allocate to factors in a balanced manner. **Growth investors should be cautious**. Value investors are likely to benefit the most from an economic slowdown provided that they control for quality.




Source: PanAgora Asset management Inc. Bloomberg.

## Introduction

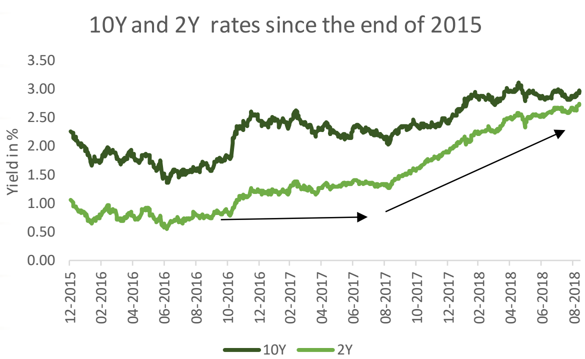
The chart below shows the shape of the U.S. Yield curve as captured by the difference between the 10-year and the 2-year U.S. Treasury yields. The shaded areas correspond to recessions as identified by the NBER.[1]




Source: PanAgora Asset management Inc. Bloomberg.

As can be seen, inverted or extremely flat yield curves have often been followed by recessions. This was the case in the early 1980's and 1990's and more recently in 2001, and 2007.

***Over the last 30 years the inversion of the yield curve preceded the start of a recession by 16 months on average.***



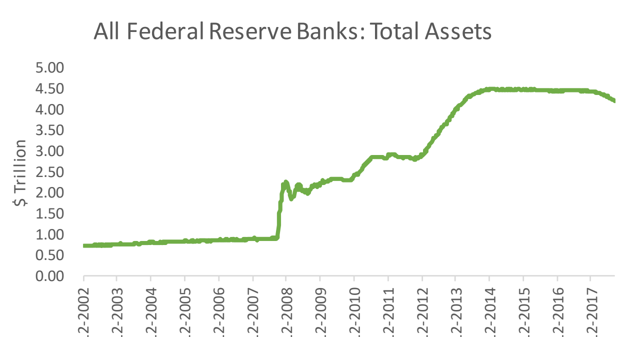

Source: PanAgora Asset management Inc. Bloomberg.

Recent changes in monetary policy have pushed the spread between long and short-term rates to very low levels prompting concerns about the imminent inversion of the curve.

In more details, in the chart to the left we can see that the flattening of the curve accelerated after July 2017 and that it was primarily driven by increases in shorter term rates. The spread reached its lowest level on August 24, 2018 (19 basis points).

The tightening of monetary policy was not confined to increases in short-term interest rates.

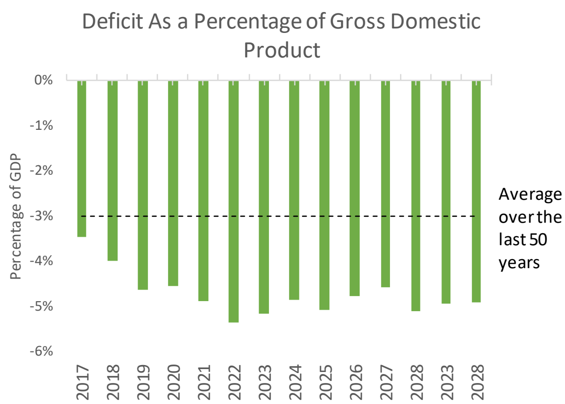
Over the last 6 months the Federal Reserve started reducing the size of its balance sheet (which admittedly remains well above $4 trillion compared to just $850 billion before 2007).




Source: PanAgora Asset management Inc. Federal Reserve Bank of St. Louis.

1 The National Bureau of Economic Research (https://www.nber.org/).

At the Jackson Hole Economic Policy Symposium in late August, Federal Reserve Chairman Jerome Powell clearly signaled his independence from Congress and the Presidency by hinting at further rate increases which could well push the spread between the 10 and 2 years rates into negative territory. Also important, while economic support via fiscal policies remains possible (just a few days ago, on September 10 the House Republicans introduced legislation that would make the 2017 tax cuts for individuals permanent) the likelihood of further material fiscal stimulus is low.

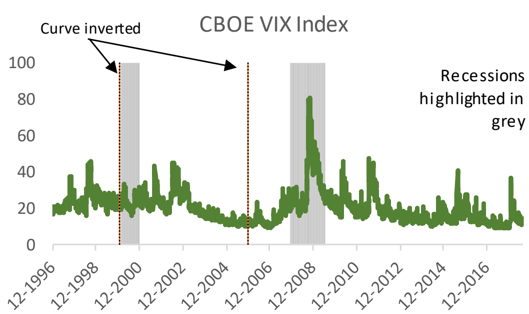


Source: PanAgora Asset management Inc. CBO's April 2018 report.

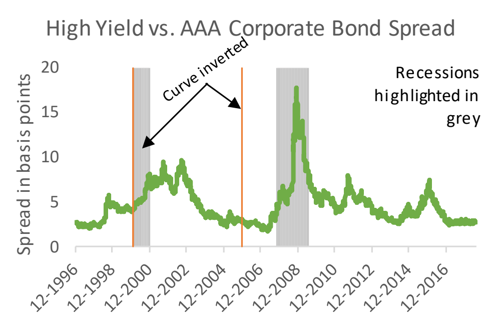
The U.S. fiscal deficit is expected to reach 5.4% of GDP in 2022 and stabilize at 5% thereafter (compared to an average of less than 3% over the last 50 years).[2]

In the absence of new policies, the economic impact of fiscal policy is expected to shift from expansive to restrictive in 2020, precisely when monetary conditions are expected to have become much tighter.

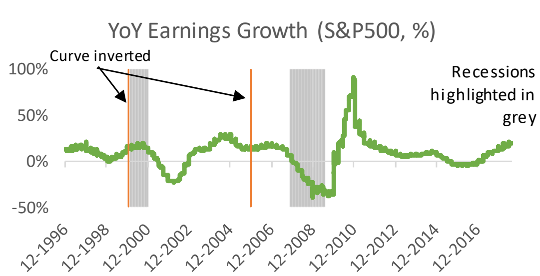
But should investors really be concerned about an inverted curve? After all, more optimistic market participants argue that the shape of the yield curve is only one of several indicators and most statistics continue to point to a very strong economy. Indeed, market indicators such as credit spreads, implied volatilities, the performance of riskier stocks and earnings growth continue to look great. Still that doesn't mean much considering that these are coincident and not leading indicators.[3]



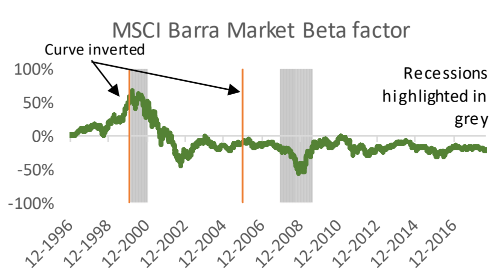
Source: PanAgora Asset management Inc. Bloomberg.



Source: Federal Reserve Bank of St. Louis



Source: PanAgora Asset management Inc. Bloomberg.



Source: PanAgora Asset management Inc. MSCI Barra.

2 Congressional Budget Office (https://www.cbo.gov)

3 The performance of the MSCI Barra Beta factor is computed using equal weighted long-short sector-neutral portfolios (monthly rebalance, S&P500 universe).

As can be seen in the previous charts, earnings growth remained robust before entering recession and the repricing of risk (VIX and corporate bonds credit spreads) started to be apparent only when the economy was well into recession.

In more details, in the table below we show the values of the VIX Index, the corporate bonds spreads and the yearly growth of the S&P500 earnings just before the curve inverted, between the first time the U.S. yield curve inverted and the start of the recession and during the last 2 recessions.

**The average value of the economic indicators**

| | 3 months before inversion | Between first inversion and start of recession | During the recession | Latest | All (1996 onwards) |
|---|---|---|---|---|---|
| VIX | 18.0 | 16.7 | 30.4 | 12.5 | 20.3 |
| Corporate Bond Spread (in bps) | 355 | 358 | 777 | 269 | 470 |
| YoY Earnings Growth (S&P500, %) | 18.7% | 14.8% | -6.8% | 18.8% | 28.6% |

Source: PanAgora Asset Management Inc. , Bloomberg.

**So what should investors make of an inverted curve?**

A look at factor returns in the U.S. since the end of 1996 (the data covers the previous 2 recessions) suggests that when the curve was inverted (approximately 10% of the time) investors slowly moved away from higher market beta companies in favor of companies with lower leverage and stronger quality and profitability scores.[4] Growth companies underperformed when the curve inverted contradicting the widely held belief that investors seek growth when the economy starts slowing.

**The average monthly performance of the MSCI Barra factors in the S&P500 (end of 1996 onwards)**

| | Inverted Yield Curve | All | Difference | Recession | All | Difference |
|---|---|---|---|---|---|---|
| **Beta** | -0.36% | 0.03% | **-0.38%** | -0.83% | 0.03% | **-0.86%** |
| **Book to Price** | -0.15% | 0.21% | **-0.36%** | 0.71% | 0.21% | **0.50%** |
| **Dividend Yield** | 0.24% | 0.05% | **0.19%** | 0.59% | 0.05% | **0.54%** |
| **Earnings Quality** | 0.29% | 0.22% | **0.07%** | 0.95% | 0.22% | **0.73%** |
| **Earnings Variability** | -0.11% | 0.14% | **-0.25%** | -0.41% | 0.14% | **-0.55%** |
| **Earnings Yield** | 0.03% | 0.13% | **-0.11%** | 1.11% | 0.13% | **0.98%** |
| **Growth** | -0.24% | -0.10% | **-0.14%** | -1.00% | -0.10% | **-0.89%** |
| **Investment Quality** | 0.43% | 0.36% | **0.07%** | 0.40% | 0.36% | 0.04% |
| **Low Leverage** | 0.48% | 0.12% | **0.35%** | 0.33% | 0.12% | **0.21%** |
| **Low Liquidity** | -0.04% | 0.07% | **-0.11%** | -0.69% | 0.07% | **-0.76%** |
| **Long Term reversals** | 0.22% | 0.19% | 0.04% | 0.68% | 0.19% | **0.49%** |
| **Momentum** | -0.10% | 0.01% | **-0.11%** | -0.83% | 0.01% | **-0.84%** |
| **Profitability** | 0.36% | 0.18% | **0.18%** | 0.64% | 0.18% | **0.46%** |
| **Residual Volatility** | -0.22% | -0.03% | **-0.19%** | -0.47% | -0.03% | **-0.44%** |
| **Low Size** | -0.66% | -0.44% | **-0.23%** | -1.30% | -0.44% | **-0.86%** |

Source: PanAgora Asset Management Inc. MSCI Barra

4 The performance of the factors are estimated using long-short portfolios in the S&P500 universe (monthly rebalancing, long-short quintiles, sector-neutral).

The performance of the Value factors is interesting. Aggressive (i.e. lower quality) metrics underperformed (high Book to Price stocks are often financially weak) while less cash flow sensitive metrics such as Dividend Yield outperformed.

Momentum metrics also performed less well when the curve was inverted. This is not overly surprising considering that the companies that benefit the most during economic expansions are more likely to pair back some of their gains when the economic cycle shifts.

In the table above we also show the average monthly performance of the factors during the last two recessions.[5] As expected higher risk (market beta) and lower quality companies (high earnings variability, low liquidity) performed very poorly. This was not the case for Value that performed strongly in particular during the last few months of the recession when the S&P500 started rebounding.

The very negative performance of Momentum during recessions was largely driven by its tilt towards defensive names towards the end of the recession (defensive names outperformed during recessions). As the markets recovered (just before the end of the recession and before the economy bottomed) the re-rating of distressed stocks inflicted large losses to Momentum.

***Timing the end of the cycle and the start of the next recession is certainly not easy. A very flat or slightly inverted yield curve is not enough to justify shifting exposures. Still, what the last two recessions have shown us is that it pays to remain well diversified and to allocate to factors in a balanced manner.***

***Investors that benefitted strongly from the outperformance of higher growth companies and the strong concentrations of returns during the last two years should be wary; 10 years into the recovery a tightening Federal Reserve and high projected fiscal deficit could well cause markets to reassess future growth prospects and push the 10-year rate lower.***

***Value investors are likely to benefit the most from an economic slowdown provided that they control for quality.***

5 As defined by the NBER, periods between March to November 2001 and December 2007 to June 2009.

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