



Yield Curve and Predicted GDP Growth, January 2019

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Highlights

	January	December	November
3-month Treasury bill rate (percent)	2.40	2.42	2.40
10-year Treasury bond rate (percent)	2.75	2.89	3.06

	January	December	November
Yield curve slope (basis points)	35	47	66
Prediction for GDP growth (percent)	2.1	2.0	2.0
Probability of recession in 1 year (percent)	26.5	24.0	20.3

Overview of the Latest Yield Curve Figures

The new year has seen the yield curve move lower and flatter as short rates have dropped but not by as much as long rates. The 3-month (constant maturity) Treasury bill rate edged down to 2.40 percent (for the week ending January 25), just below December's 2.42 percent, and even with November's 2.40 percent. The 10-year rate (also constant maturity) also dropped, falling to 2.75 percent, down from December's 2.89 percent, and over a quarter of a point below November's 3.06 percent. The slope fell to 35 basis points, below December's 47 basis points, and well below November's 66 basis points, and a full half percentage point below October's slope of 87 basis points.

Because the government shutdown prevented the Bureau of Economic Analysis from meeting its scheduled release of the first estimate of real GDP for the fourth quarter of 2018, we had to adjust our method for determining the expectations of growth from the yield curve. Rather than delay the release of our estimate, we substituted a Macroeconomic Advisers' estimate for GDP of 2.8 percent.

Using this adjustment, our calculations for expectations of growth ticked up minimally despite the flatter yield curve, as the model incorporated the string of strong GDP growth numbers in recent quarters. Using past values of the spread and GDP growth suggests that real GDP will grow at about a 2.1 percent rate during the next year, just above the estimates of November and December. Although the time horizons do not match exactly, the forecast, like other forecasts, does show moderate growth.

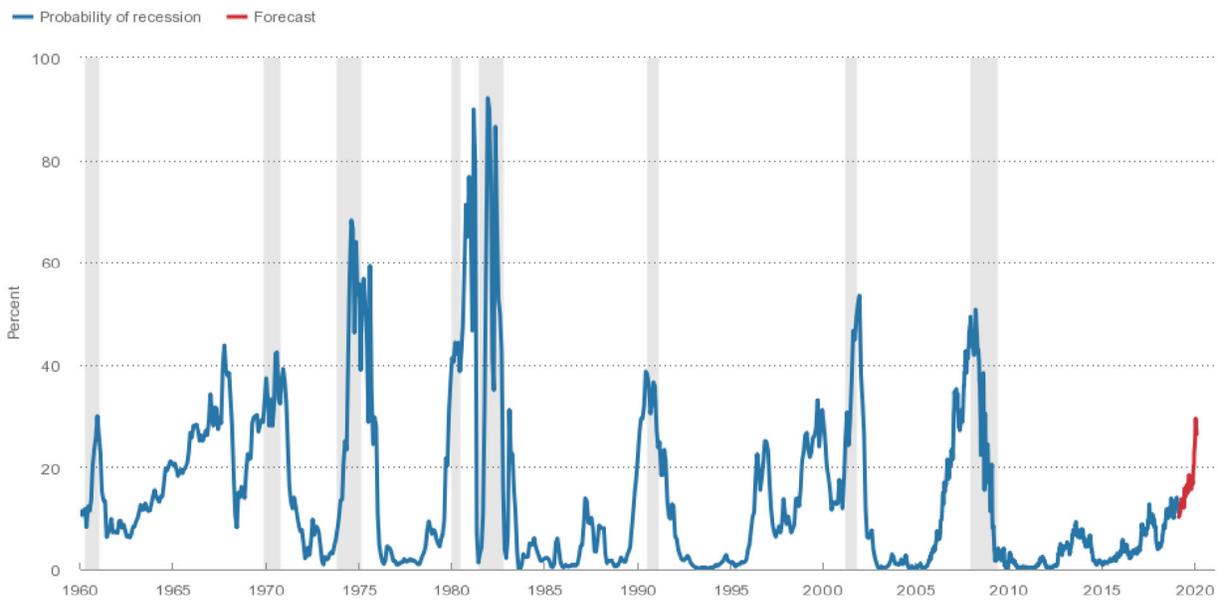
Yield-Curve-Predicted GDP Growth



Source: Bureau of Economic Analysis, Federal Reserve Board, FRB Cleveland, Haver Analytics

While the flatter yield curve did not reduce expectations of growth, it did increase the estimated probability of recession. Using the yield curve to predict whether the economy will be in recession in the future, we estimate the expected chance of the economy being in a recession next January at 26.5 percent, crossing above the one-quarter mark and moving up from December’s estimate of 24.0 percent, November’s estimate of 20.3 percent, and October’s estimate of 16.6 percent. So while the yield curve is optimistic about the recovery continuing, it does show some risk of a recession in the future.

Probability of Recession Calculated from the Yield Curve



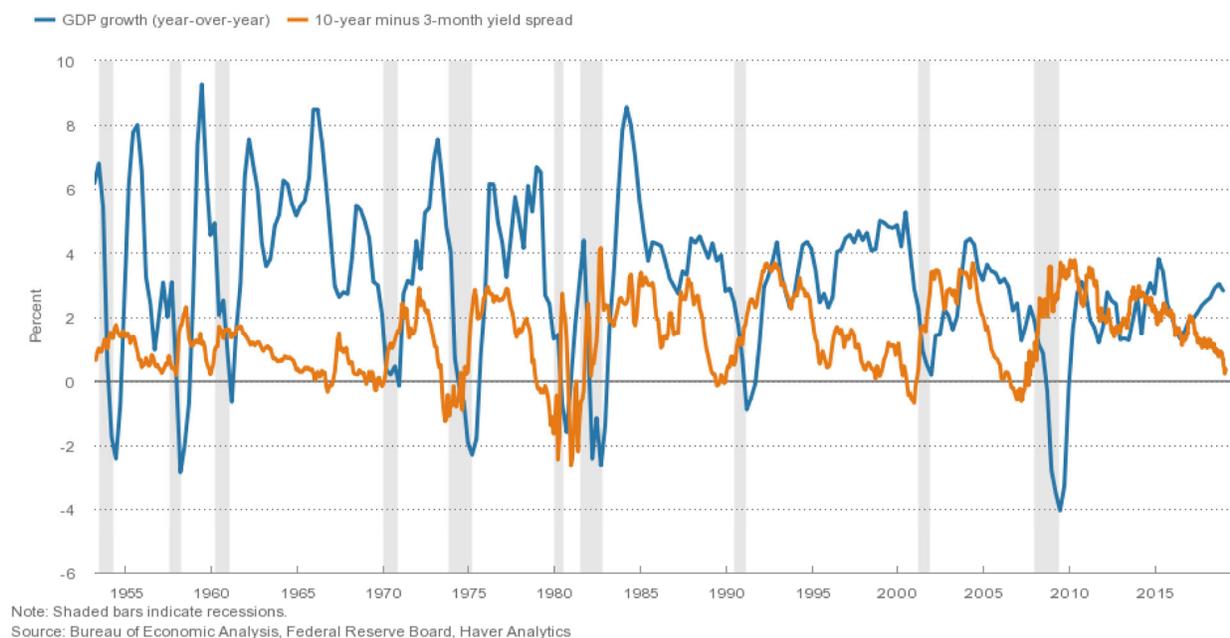
Note: Shaded bars indicate recessions.
 Source: Federal Reserve Board, FRB Cleveland, Haver Analytics

The Yield Curve as a Predictor of Economic Growth

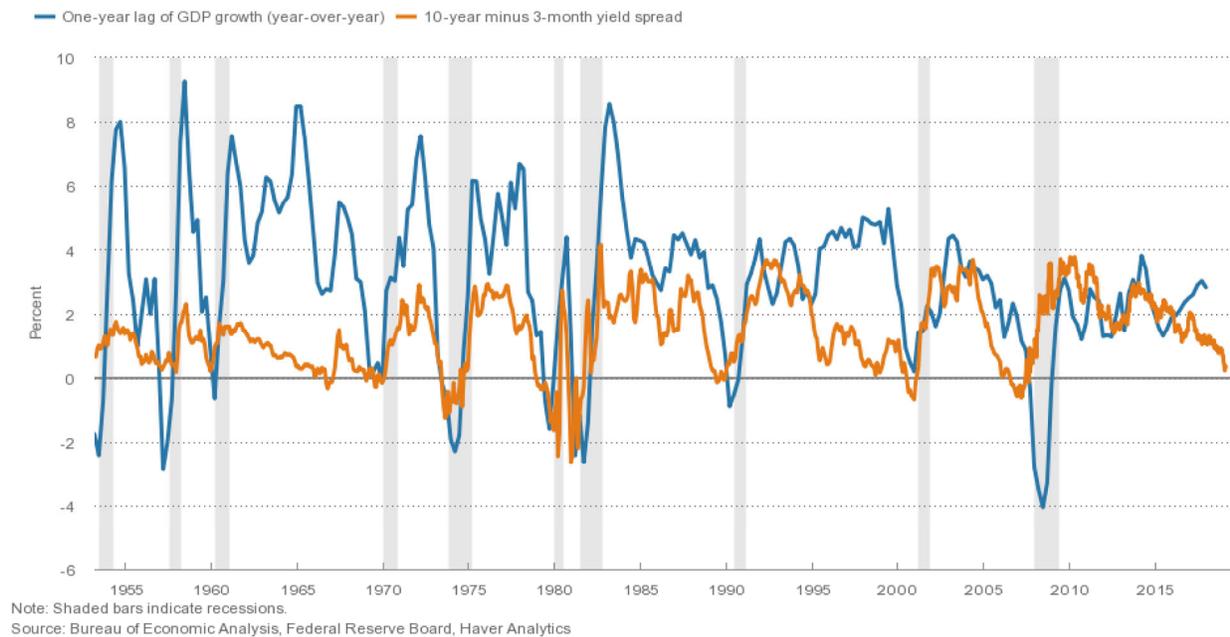
The slope of the yield curve—the difference between the yields on short- and long-term maturity bonds—has achieved some notoriety as a simple forecaster of economic growth. The rule of thumb is that an inverted yield curve (short rates above long rates) indicates a recession in about a year, and yield curve inversions have preceded each of the last seven recessions (as defined by the NBER ➔). One of the recessions predicted by the yield curve was the most recent one. The yield curve inverted in August 2006, a bit more than a year before the current recession started in December 2007. There have been two notable false positives: an inversion in late 1966 and a very flat curve in late 1998.

More generally, a flat curve indicates weak growth and, conversely, a steep curve indicates strong growth. One measure of slope, the spread between ten-year Treasury bonds and three-month Treasury bills, bears out this relation, particularly when real GDP growth is lagged a year to line up growth with the spread that predicts it.

Yield Curve Spread and Real GDP Growth



Yield Curve Spread and Lagged Real GDP Growth



Predicting GDP Growth

We use past values of the yield spread and GDP growth to project what real GDP will be in the future. We typically calculate and post the prediction for real GDP growth one year forward.

Predicting the Probability of Recession

While we can use the yield curve to predict whether future GDP growth will be above or below average, it does not do so well in predicting an actual number, especially in the case of recessions. Alternatively, we can employ features of the yield curve to predict whether or not the economy will be in a recession at a given point in the future. Typically, we calculate and post the probability of recession one year forward.

Of course, it might not be advisable to take these numbers quite so literally, for two reasons. First, this probability is itself subject to error, as is the case with all statistical estimates. Second, other researchers have postulated that the underlying determinants of the yield spread today are materially different from the determinants that generated yield spreads during prior decades. (For a recent example, see "[Recessions Probabilities](#).") Differences could arise from changes in international capital flows and inflation expectations, for example. The bottom line is that yield curves contain important information for business cycle analysis, but, like other indicators, should be interpreted with caution. For more detail on these and other issues related to using the yield curve to predict recessions, see the *Commentary* "[Does the Yield Curve Signal Recession?](#)" Our friends at the Federal Reserve Bank of New York also maintain a website with much useful information on the topic, including their own estimate of recession probabilities ➡ .

Explanation of Revisions

Corrected Data 

Headlines

03.04.19

[Custom Comparison Groups in the Integrated Postsecondary Education Data System](#) ▶

[Peter L. Hinrichs](#)

This Economic Commentary studies the behavior of colleges when they are asked to list a set of comparison group colleges in annual data reporting for the US Department of Education but are given little direction on how to do so. I find that, relative to themselves, colleges tend to list for comparison colleges that are more selective, are larger, and have better resources. One possible interpretation of these findings is that colleges overestimate where they stand relative to others, although an alternative interpretation is that colleges have accurate views but list comparison institutions based on aspirations. [Read More](#) ▶

02.28.19

[What Is Behind the Persistence of the Racial Wealth Gap?](#) ▶

[Dionissi Aliprantis](#) | [Daniel R. Carroll](#)

Most studies of the persistent gap in wealth between whites and blacks have investigated the large gap in income earned by the two groups. Those studies generally concluded that the wealth gap was “too big” to be explained by differences in income. We study the issue using a different approach, capturing the dynamics of wealth accumulation over time. We find that the income gap is the primary driver behind the wealth gap and that it is large enough to explain the persistent difference in wealth accumulation. The key policy implication of our work is that policies designed to speed the closing of the racial wealth gap would do well to focus on closing the racial income gap. [Read More](#) ▶

02.19.19

[Why We All Should Care about Lead](#) ▶

[Trey Johnson](#)

Though the need to remediate lead seems to be a public health issue with a housing-based solution, the impacts of this crisis are far-reaching. Lead poisoning impacts all of us. The more people and organizations see themselves as part of the solution, the more likely we'll find success. [Read More](#) ▶

Upcoming Events

[SEE ALL](#)

05.16.19

[Inflation: Drivers and Dynamics Conference 2019](#)

The economic conference will provide researchers from academia and central banks an opportunity to exchange

new ideas on modeling inflation and inflation expectations and their relationship to the macroeconomy.

06.19.19

Policy Summit 2019: Connecting People & Places to Opportunity

Offering the latest research on and best practices for promoting the economic mobility and resilience of low- and moderate-income individuals, families, and communities.

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