Not Yielding to Recession Risks

Michael Gregory, CFA
Deputy Chief Economist
michael.gregory@bmo.com
416-359-4747

Sal Guatieri
Senior Economist
sal.guatieri@bmo.com
416-359-5295

A previous *Focus Feature* discussed why the next downturn will likely be caused by an overheated economy driving up interest rates, rather than by imbalances in credit or asset markets.[1] Since then (February), inflation has risen further, policy rates have increased another 50 bps, and the yield curve has continued to flatten. Piling on is the potential damage from import tariffs and widening credit spreads.

The good news is that, for now, recession odds remain low, for several reasons. First, fiscal stimulus is barrelling down the pipe and likely to add a good percentage point to growth this year. Second, the fed funds rate is still below inflation; i.e., negative in real terms, even though the neutral real rate (consistent with stable inflation) should be positive with the economy near full employment (*Chart 1*). Simply put, the Fed is still tapping the gas pedal 2½ years after first applying the brakes. Third, record equity values and rising house prices suggest overall financial conditions are supportive. Fourth, the combined effect of imposed tariffs is estimated to slow the economy by just ¼% in the year ahead, which pales in the face of the fiscal boost. Fifth, credit spreads, though widening recently, have merely returned to normal levels (*Chart 2*).

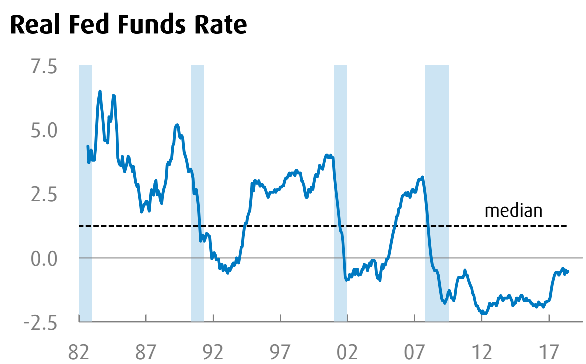
A "probit" equation using data on the yield curve slope (10-year less 3-month Treasury rate), corporate credit spreads, the real trade-weighted dollar, and prices of equities, houses and oil **suggests the odds of a recession in the near future would rise from almost zero to 14% if the yield curve flattened to 50 bps in the next year from the current 85 bps**.[2]

However, this estimate assumes no additional weakness in credit spreads or asset prices, which might **prove optimistic given the growing risk of a damaging trade war**. We estimate the proposed tariffs (namely on autos and almost all of China's goods, including retaliatory actions) could magnify the U.S. economic hit to 1¼%. Increased uncertainty would likely cause equity and real estate prices to weaken, credit spreads and the dollar to rise, and the yield curve to invert. **If the curve inverted by 25 bps, and other variables in the equation worsened by say 5% relative to our base forecast, our model would flag a near-certain chance of recession**.

What is the Yield Curve Really Saying?

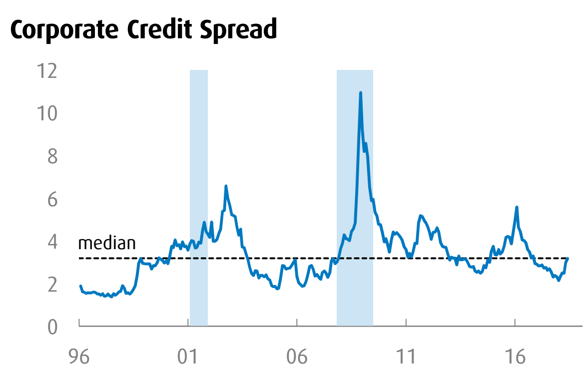
The yield curve has a well-deserved reputation as being a reliable recession predictor. It is included in the Conference Board's Leading Economic Index and is a key driver of our recession probability model. The spread between 10- and 2-year Treasury

Chart 1
Still Easy After All These Years
United States (percent, Federal funds less core CPI rate)



Shading marks periods of U.S. recession
Sources: BMO Economics, Haver Analytics

Chart 2
Not Stressed Out
United States (ppts, 10-year industrial BB+ less Treasury rate)



Shading marks periods of U.S. recession
Sources: BMO Economics, S&P, Haver Analytics

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[1] Focus, February 23, 2018. *What Will End the U.S. Expansion?*

[2] Using the 10s-2s curve in the equation suggests somewhat lower recession odds of 8% after one year. The current 10s-2s spread of just 25 bps is the lowest since 2007, and we see it narrowing to 15 basis points in 2019Q3.

yields (the market's most-followed slope metric) has turned negative before each of the past five recessions (*Chart 3*). On average, the **inversion begins some 18 months before a recession begins** (*Table 1*). There has never been a false negative for the 10s-2s spread (i.e., no inversion but still a recession). And, apart from the briefest and smallest possible inversion (just one month averaging -2 bps in June 1998), there has never been a false positive (an inversion but no recession within two years).

Although 5-for-5 (or 6-for-5 if you're a stickler) is an excellent track record, 2-year notes only started being issued in 1976. As such, most recession probability models include either the 3-month T-bill rate or the fed funds (overnight) rate, given their longer histories.[3] Interestingly, the full yield curve (and presumably 10s-2s had it existed) did not invert ahead of the 1957-58 and 1960-61 recessions (false negatives). And, in addition to 1998, the full curve also inverted in 1966 without an ensuing recession (false positive). With two pairs of false signals recorded, the yield curve's recession-forecasting ability is clearly not fool-proof. But, to its credit, the full **curve has correctly flagged the past seven recessions** since the 1969-70 contraction, and with only one false signal (1998).

Of interest is whether the yield curve's recession-tracking ability has faded over time. Since the Great Recession, the yield curve has become inherently flatter than in past cycles, weakening its recession-signalling power and making it prone to more false positives (inversions without recessions). There are **three key reasons why the curve has become flatter**:

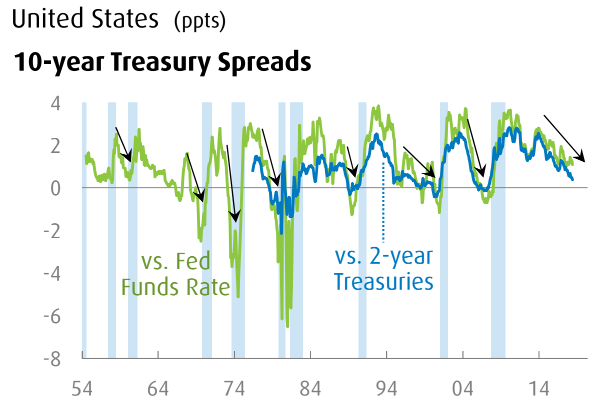
First, the **neutral policy rate has fallen sharply in recent years**, mostly due to demographics (we're getting older and retiring) and productivity (it's gotten slower). When the FOMC first began publishing its longer-run projections for the neutral rate in late 2012, the median was 4.25% (in line with historic norms). But the most recent projection is just 2.88%, a decline of more than 1¼ ppts. Ten-year yields partly reflect the average overnight rate expected in the next decade.

Second, **smaller inflation risk premiums** are embedded in longer-run inflation expectations today. This reflects the Fed's adoption of a formal 2% inflation target in January 2012 and core inflation's subdued trend of the past decade (*Chart 4*).

Third, and most importantly, the **Fed has spent most of the past nine years striving to make the curve flatter**. Through three rounds of quantitative easing (QE) as well as "Operation Twist", it amassed $2.5 trillion of Treasuries with a skew to longer-term

[3] The Federal Reserve Bank of New York publishes a 1-year-ahead recession probability that's modeled using the yield curve (10-year less 3-month) only. It recently pegged the odds at around 12%.

Chart 3
Early Warning Signal



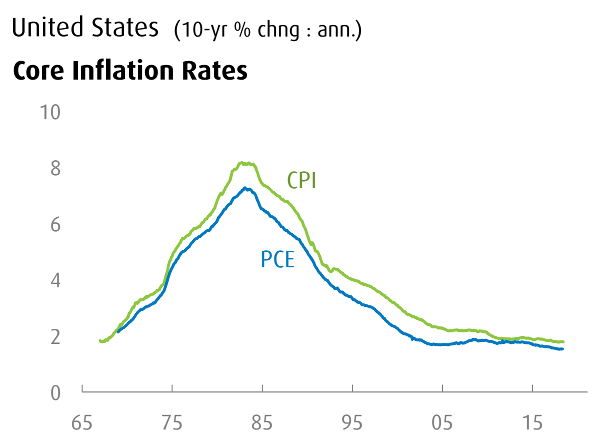
Shading marks periods of U.S. recession
Sources: BMO Economics, Haver Analytics

Table 1
Inversions and Recessions

Recession	10-yr less 2-yr: Curve inversion?	10-yr less 2-yr: Months to recession	10-yr less Fed Funds: Curve inversion?	10-yr less Fed Funds: Months to recession
08/1957-04/1958			No	
04/1960-02/1961			No	
12/1969-11/1970			Yes	22
11/1973-03/1975			Yes	10
01/1980-07-1980	Yes	18	Yes	18
07/1981-11/1982	Yes	12	Yes	11
07/1990-03/1991	Yes	20	Yes	20
03/2001-11/2001	Yes	15	Yes	13
12/2007-06/2009	Yes	24	Yes	19
Average		**17.8**		**16.1**

Sources: BMO Economics, Haver Analytics

Chart 4
Inflation Hasn't Left Station



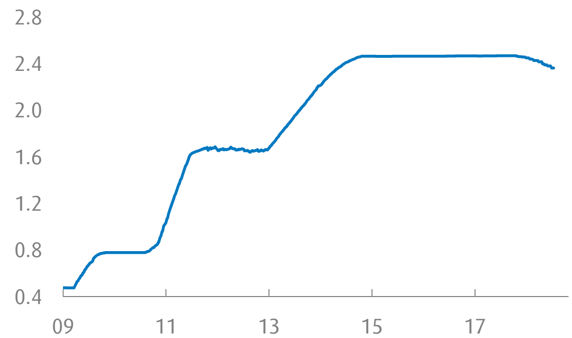
Sources: BMO Economics, Haver Analytics

maturities (*Chart 5*). A recent Fed study estimated that the cumulative effect of these efforts lowered 10-year yields by 105 bps (since the onset of the programs), a result that was in line with many other studies.[4] To put this in perspective, the historic median spread between 10-year yields and the fed funds rate is 122 bps. These efforts also eventually led to negative term premiums[5]. The much-followed New York Fed estimate of the term premium is currently -44 bps for the 10-year tenor.[6] This means that, in the event the market was expecting no change in the fed funds rate for the next decade (hardly a recession scenario), the yield curve would still tend to invert. While the Fed is now paring its Treasury portfolio (by a projected $235 billion this year and over $270 billion next year), the remaining holdings will still be large enough to exert some flattening influence on the curve, augmented by other central banks' continued QE efforts.

Chart 5
Ballooned Balance Sheet

United States ($ trlns)

Fed Holdings of Treasuries



Sources: BMO Economics, Haver Analytics

Bottom Line: Recession risks look contained in the year ahead, but could balloon if a global trade war intensifies. While there is reason to believe the yield curve has lost some of its recession-flagging power, one would be remiss to ignore its often prescient signal should it invert.

[4] Brian Bonis, Jane Ihrig, and Min Wei, *"The Effect of the Federal Reserve's Securities Holdings on Longer-term Interest Rates*", FEDS Notes, April 20, 2017, Board of Governors of the Federal Reserve System https://doi.org/10.17016/2380-7172.1977

[5] A longer-term interest rate can be bisected into the expected average level of shorter-term interest rates and a residual, which is referred to as the "term premium".

[6] Tobias Adrian, Richard Crump, Benjamin Mills, and Emanuel Moench, *"Treasury Term Premia: 1961-Present"*, Liberty Street Economics, May 12, 2014, Federal Reserve Bank of New York. The model was originally developed by Adrian, Crump and Moench. http://libertystreeteconomics.newyorkfed.org/2014/05/treasury-term-premia-1961-present.html