Is There a Message in the Yield Curve?

by E.J. Stevens

The yield curve, relating market yields to the maturity of debt instruments, began to invert at the end of 1988. As yields on shorter-term securities rose above those on longer-term securities, questions arose about the significance of a downward-sloped yield curve.

Does a negatively sloped yield curve prove that monetary policy is tight or that a recession is coming? Does a steeply positively sloped curve indicate that monetary policy is easy or that inflation will accelerate?

The Federal Reserve System could produce recessions and decelerating inflation, or booms and accelerating inflation, by allowing the monetary base to grow too slowly or too rapidly for sustained periods of time. Policy analysts employ a variety of indicators to try to distinguish between "too" slowly and rapidly, between tightness and ease, with fashions in indicators varying over the years and among analysts.

The growth rate of the M1 monetary aggregate was a popular indicator until its relationship to output and prices broke down during the 1980s under the weight of deposit-rate deregulation and a reversal of the postwar upward trend in interest rates. The Federal Reserve's policymaking arm, the Federal Open Market Committee, continues to set annual target ranges for growth rates of the broader monetary aggregates, M2 and M3, to communicate its policy intentions to Congress and the public. Policy analysts also use as indicators the gap between actual and capacity GNP and the gap between actual and full employment.

Each of these is an intermediate indicator between the ultimate results of policy, which are measured by actual trend rates of economic growth and inflation, and day-to-day policy actions, which are measured by changes in the monetary base and the federal funds rate. The yield curve can be considered as another intermediate indicator, blending short-term interest rates that reflect policy actions with longer-term interest rates that reflect investors' expectations of real returns to capital and future inflation rates.

This Economic Commentary examines the indicator value of the yield curve, with the conclusion that its message is no more distinct than those received from other intermediate indicators.

Footnotes

1. The yield curve shown in figure 1 and pictured in many publications is based on data in the Federal Reserve's weekly H.15 release. The three-month, six-month, and one-year maturity yields are composite of actual yields reported by five dealers for the most recent issues. Beyond the one-year maturity, however, the values are estimates of the yields that would have emerged to active trading had issues of the designated maturities actually existed. The values are taken from the Treasury's "continuous yield curve" fitted by "eye" for actively traded issues, which tend to be the most recent issues.

2. (1.092)2/(1.090) = 1.094

3. Other explanations are postulated for a positive yield spread. One is that longer-term instruments must provide a premium to compensate investors for lower liquidity. Another is that the normal slope would be either negative or positive, depending on whether predominant coupon rates tend to be high or low compared to the normal range within which yields are expected to vary.

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The yield curve is an abstraction that should be used with caution. Constant-maturity yields underlying the yield curve in figure 1 are not actual market yields, but rather estimates of market expectations about future real interest rates and about future inflation. Thus, a steep positive slope in the yield curve might reflect perceptions of a very low real rate of interest at the shortest end of the curve because of weakness in the real economy; that, once passed, would bring a resumption of stable growth at a stable inflation rate. Alternatively, the slope might reflect perceptions that the inflation rate would rise steadily into the future. Interpreting the slope of the yield curve would require additional information to be free of this ambiguity.

The Yield Curve as an Indicator A policy indicator registers tightness and ease, but what do those words mean? Ultimately, the unique function of the central bank in the U.S. economy is to determine the trend rate of inflation. This function was once performed by gold, but since the United States abandoned any specific gold parity in 1971, the central bank has been since 1971. Excluding the period 1930 through 1951, when they were prevented by the Great Depression and then by Federal Reserve wartime rate-pegging, inversions have appeared every six years, on average.

The most common example for a normal upward slope is that, in a growing economy in stable equilibrium at a stable trend inflation rate, yields on longer-term debt instruments would be higher than those on shorter-term instruments, even though the series of future short-term rates was expected to be flat. This positive spread would reflect the risk premium required to compensate risk-averse investors for greater uncertainty about more distant events.1

With a longer historical perspective, a negative slope seems less unusual. Prior to the Great Depression, business cycles left their mark on short-term rates, but had relatively less impact on long-term rates—perhaps because the gold standard was a more credible anchor for the trend inflation rate than the central bank has been since the gold standard began to break down. Maintaining convertibility of the dollar into gold at a fixed price meant that the trend inflation rate incorporated in bond yields could not deviate far from zero for any length of time. The yield curve then might have been expected to pivot around a relatively stable long-term yield.

Recent Experience The yield curve became quite flat in December 1988, with the 30-year yield to maturity 10 basis points lower than the 10-year yield. However, this hardly