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Yield Curve - A Key Economic Indicator

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"2-year Treasury yield tops 10-year rate, a 'yield curve' inversion that could signal a recession" - www.cnbc.com - 31st March 2022

"What Is an Inverted Yield Curve—And Does It Mean a Recession Is Coming?" - finance.yahoo.com – 3rd April 2022.

These were the headlines from popular websites about yield curve being inverted, raising alarm about upcoming recession. When we hear about yield curve, many questions come to our mind such as what isyield curve and what does it represent or how can we interpret it. Let us try and understand the yield curve and its dynamics and how can it be considered as economic indicator.

What is Yield?

To know the yield curve, we need to be first familiar with the meaning of Yield on Security or Bond. Yield, in a literal sense, is the annual return on a simple fixed rated bond. The yield on bond may differ from coupon rate if it is bought from secondary market for a price other than issue price. The reason for different price quoted in secondary market is mainly because of different economic conditions. Let's gain more insight by the way of an example: A Bond given below is with 7 years of maturity, issue price Rs. 1000/bond and coupon rate @ 7%.

	Purchase in Primary market*	Purchase at Secondary market at available price	
Period of the Bond	7 Year		
Quoted Price	1000	800	1200
Coupon Rate	10%	10%	10%
Yearly Interest	100	100	100
Yield Current yield = (Annual coupon rate / Purchase price) X100	10.0%	12.5%	8.3%

*Assuming that the bond is hold till maturity

What is yield curve?

The yield curve is a basic graph of yields on debts instruments (i.e., bonds) which very as function of their time left to maturity. Typically, the graph's horizontal or x-axis is a time line of months or years remaining to maturity, with the shortest maturity on the left and progressively longer time periods on the right. The

vertical or y-axis depicts the annualized yield to maturity. It is mainly used to price debts instrument traded in secondary market and also used to set interest rates on many other debts instruments, bank loan and mortgage etc. The shift in shape and slope of the yield curve is considered to be related to investors' expectations about economy and interest rate in the future.

Why should one know about yield curve?

Yield curve is mainly used by fixed Income instrument inventor to see the movement of interest rate or yield on debts instrument of various maturities and help them formulate the investment strategies. It is also very important key indicator for economic predictor. The shape and slopes of the yield curve indicate the different phase of economic conditions such as recovery, growth or recession.

The signification of slope and shape of Yield curve

The yield curve reflects the yield or interest rates paid by Treasury securities for one-month through 30-year maturities. Yield curves are usually upward sloping i.e., the longer the maturity, the higher the yield. The slope of the yield curve can be measured by the difference, or "spread", between the yields on two-year and ten-year U.S. Treasury Notes. A wider spread indicates a steeper slope. There are two common explanations for upward sloping yield curves. First, it may be that the market is anticipating a rise in the risk-free rate. If investors hold off investing now, they may receive a better rate in the future. Therefore, investors who are willing to lock their money need to be compensated for the anticipated rise in rates—thus the higher interest rate on long-term investments. Another explanation is that longer maturities entail greater risks for the investor. The opposite position which is inverted yield curve (short-term interest rates higher than long-term) can also occur. Strongly inverted yield curves have historically preceded economic recessions.

Types of Yield Curves and What They Mean

A fixed income analyst may use the yield curve as a leading economic indicator, however, the shape and slope of yield curve differs in the various economic conditions. We can classify yield curve mainly into four types.

1. Normal Yield Curve

Under ordinary conditions, longer-maturity bonds will offer a higher yield to maturity than shorter-term bonds. It's shape has an upward slope, with longer-maturity debt providing investors with higher interest rates.

For example, imagine that a 2-year bond offers a yield of 0.5%, a five-year bond offers 1.0%, a 10-year offers 1.8%, and a 30-year offers a yield of 2.5%. When these points are connected on a graph, they exhibit a shape of a normal yield curve. It is the most common type of curve and tends to indicate a positive economic outlook.

2. Steep Yield Curve

Just as a normal upward-sloping bond yield curve is associated with periods of economic expansion, a steep yield curve is seen by investors as an even stronger sign of economic growth on the horizon — as future yields rise higher to take possible inflation into account.

Another reason that a steep yield curve might indicate periods of stronger growth is that lenders are willing to make short-term loans for relatively low interest rates, which tends to stimulate economic activity and growth. If we look at the yield curve during late 2008 or early 2009 which had witnessed the yield curve became notably steeper and then a bull market followed that lasted over a decade.

3. Inverted Yield Curve

Bond yield curves aren't always normal or upward-sloping. With an inverted yield curve, for instance, the yields for shorter-term debt are higher than the yields for longer-term debt. A quick look at an inverted yield curve will show it curving downward as bond maturities lengthen, which can be a sign of economic contraction. A peak into the history probably depict that an inverted yield curve has proceeded recessions many times that have occurred. Usually, the curve inverts about two years before a recession hits, so it can be an early warning sign.

The reason is that, historically, an inverted yield curve can reflect significant shifts in the economy or financial markets. The yield curve might invert because investors expect longer-maturity bonds to offer lower rates in the future, for example. One reason for those lower yields is that often during an economic downturn investor will seek out safe investments in the form of longer-duration bonds, which has the effect of bidding down the yields that those bonds offer. Inverted yield curves are uncommon, and sometimes decades will pass between them.

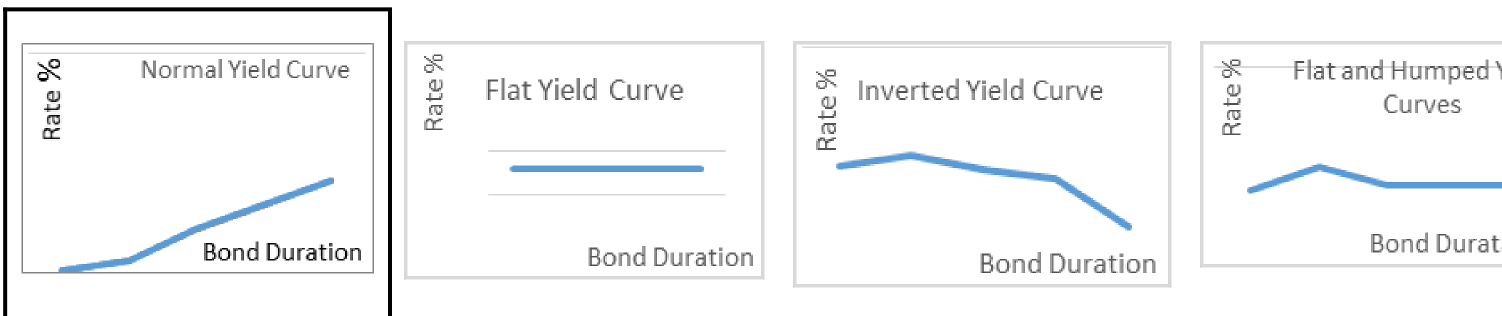
4. Flat and Humped Yield Curves

There are also flat or humped bond yield curves, in which the yields of shorter- and longer-term bonds are very similar. While a flat yield curve is self-explanatory, a humped yield curve is one in which bonds with intermediate maturities may offer slightly higher yields. Those higher yields in the middle give the curve its hump.

Investors see flat or humped yield curves as a sign of a coming shift in the broader economy. They often occur at the end of a period of strong economic growth, as it begins to spur inflation and slow down. But these yield curves don't always portend a downturn.

Sometimes a flat or humped bond yield curve may appear when the markets expect a central bank, such as the Federal Reserve, to increase interest rates. Flat and humped markets can also emerge during periods of extreme uncertainty, when investors and lenders want similar yields regardless of the duration of the debt.

Shape of Yield Curves: -



The relationship between the yield curve and fiscal & monetary policy

Fiscal and monetary policies may reinforce or conflict each other. If the policies reinforce each other, the implications for the economy are clear. In all cases, there is likely implication for the yield curve:

- if both stimulative, the yield curve is steep and economy is likely to grow
- If both are restricted, the yield curve is inverted and economy is likely to contract.
- If monetary is restricted and fiscal is stimulative, the yield curve is flat and implication for the

economy is less clear.

The Conclusion

The yield curve is not just the indicator of interest rate earned on bond but also an economic indicator. It acts an alarm for economic recession if the shape is inverted and recovery if the shape is steep.

Sources:

1. *The guide to key economic indicators (The Economist)*
2. *The financial Times and other sites articles*
3. *Wikipedia*

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