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Research Article

Understanding Yield Curve

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ABSTRACT

The Yield Curve has often been cited as a leading economic indicator to suggest which direction the economy is heading. This white paper explores the significance of the yield curve as a predictor of economic conditions, a tool for monetary policy analysis, and a guide for investment strategies. It discusses various types of Yield Curve and their implications on market expectations, interest rate forecasts, and economic health. Overall, understanding the yield curve is crucial for interpreting market dynamics, making informed financial decisions, and anticipating shifts in economic conditions.

Keywords: Yield curve, Inverted yield curve, Yield curve risk, Recession, US treasury

1. Introduction

A yield curve is an economic indicator that tracks the relationship between long-term and short-term bond yields. The yield curve is one of the economic indicators because it gives insight into investor forecasts about the future direction of the economy and hints at future interest rates. It is a fundamental tool used in economics, finance, and investing to understand expectations about future interest rates, inflation, and economic growth.

The yield curve affects everything like what a bank pays on a certificate of deposit (CDs) or what it costs to get a car loan, mortgage, or a business loan. All these different types of interest rates are taken out of the Yield Curve and Yield Spread is added on top of that to get the required rate. There are enough good reasons to study and keep an eye on the Yield Curve. In this paper we will study why Yield Curve is important to understand the economy, different types of Yield Curve and Yield Curve Risk.

2. Yield Curve and Why it is Important

Investors can trade securities freely between issuance of the bond and maturity. As the market price of securities varies over time with the changes in interest rates, so does their implied yield - their return relative to their price[1]. The curve representing the returns of bonds bearing the same risk, liquidity and tax conditions but with different maturities is called the yield curve[2]. Thus, the relationship between maturity and yields is the yield curve.

Corporate Bonds have a higher risk than the treasury bond instruments, Yield spread is added over the Yield Curve of Treasury Bonds to get the Yield Curve of Corporate Bonds. A yield spread is the difference between yields on differing debt instruments of varying maturities, credit ratings, issuers, or risk levels[3].

Yield curves can be positively inclined, horizontally or negatively inclined. The slope of yield curves can help us predict future short-term interest rates[4].

The yield curve with a positive and steep slope implies that the short-term interest rates are expected to rise.

The yield curve with a positive and non-steep slope imp that short-term interest rates are expected to remain the sam

A horizontal yield curve implies that short-term interest r are expected to drop moderately.

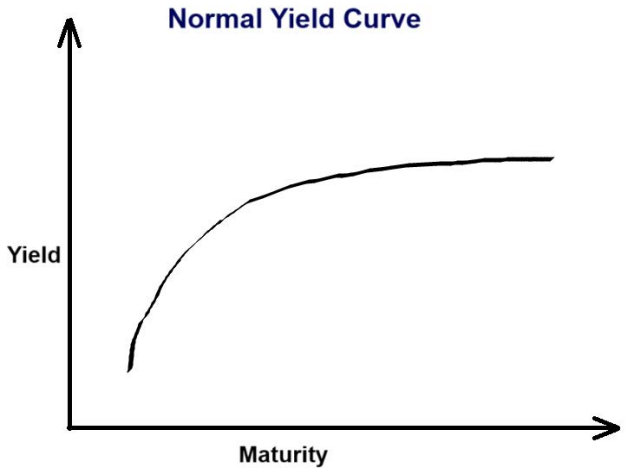
The inverted yield curve with a negative slope implies short-term interest rates are expected to fall sharply.

Yield Curve provides valuable insights into the econo monetary policy expectations, and investor sentiment.

3. Types of Yield Curve

Depending on the shape of the Yield Curve, which observed based on the current economic conditions, interest expectations, and investor sentiment, different types of Y Curves are defined. Few of the common types of Yield Cu are listed below:

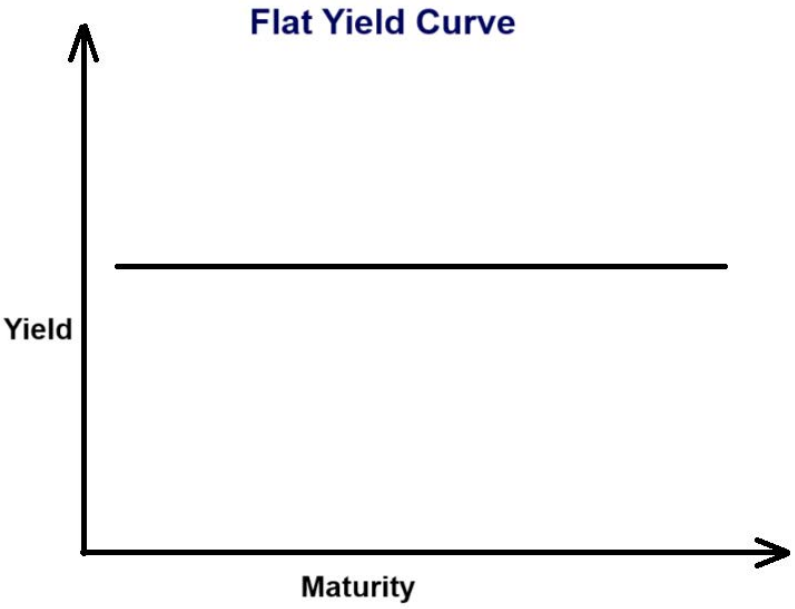
1. Normal Yield Curve: The normal yield curve is a y curve in which short-term debt instruments have a lo yield than long-term debt instruments of the same cr quality. This gives the yield curve an upward slope[5]. Since bonds with longer maturities have a greater level of risk due to changes in interest rates, they generally offer higher yields so they›re more attractive to potential buyers. This is a normal or positive yield curve. A normal or the positive yield curve is when times are good, and the economy is expanding[6].



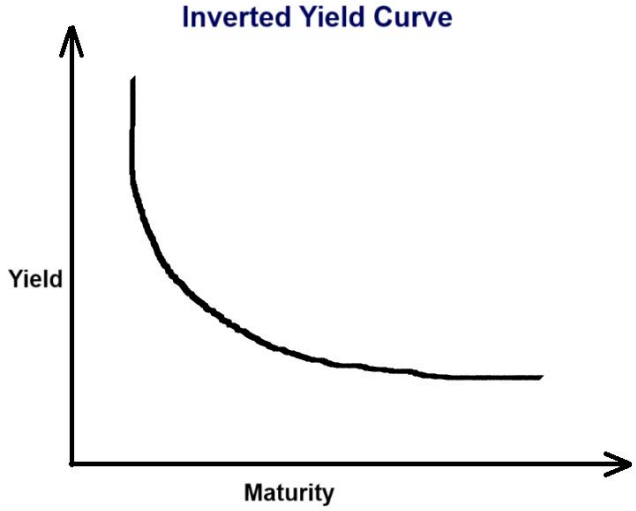
2. Flat Yield Curve: A yield curve is considered flat when the yields on debt instruments of shorter maturities are approximately equal to the yields on debt instruments of longer maturities[7]. This may occur in below scenarios[8]:

Economic Uncertainty: When investors are unsure about the direction of the economy, Shorter-term Bonds may become in less demand, thereby decreasing their Price and increasing Yield of Shorter-Term Bonds. Investors may seek the safety of longer-term bonds, driving up their prices and thereby lowering yields for longer-term bonds. This can flatten the Yield Curve

Expectations of Stable Interest Rates: Central banks may influence the shape of the yield curve through their monetary policy decisions. If market participants believe that central banks are unlikely to change interest rates in the foreseeable future, yields on short-term bonds may not differ much from those on long-term bonds, resulting in flat yield curve.



3. Inverted Yield Curve: Inverted yield curves occur when interest rates for long term debt instruments fall below those of short-term interest rates. This is a strong economic indicator that an economic slowdown or recession is on the horizon[9].

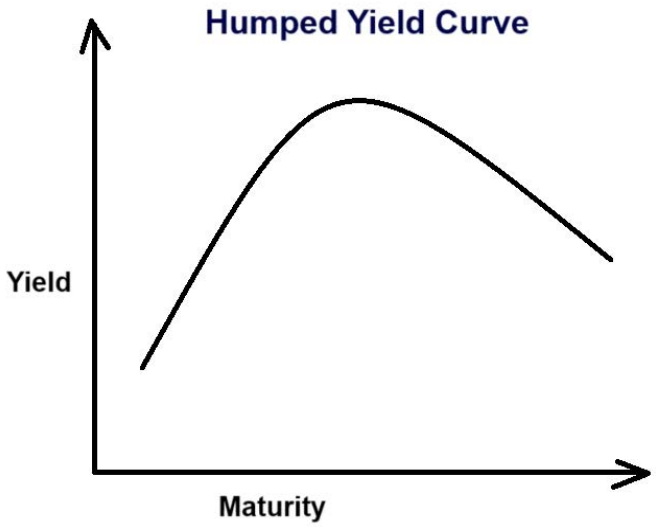


Inverted Yield Curve is also referred to as the negative yield curve[10]. The behavior of this type of Yield curve inversion is almost the opposite of what it is for a normal yield slope. An inverted yield curve suggests that banks will tighten lending interest in future, making it harder to borrow money. That can lead to an economic slowdown[11].

4. Humped Yield Curve: A humped yield curve is a relatively rare type of yield curve that results when the interest rates on medium-term fixed income securities are higher than the rates of both long and short-term instruments. Humped yield curves are also known as bell-shaped curves[12].

If medium-term yields are higher than short-term yields, it may suggest expectations that interest rates could rise in the near term but potentially decrease over the longer term. A humped yield curve often reflects uncertainty or mixed expectations about future economic conditions. A humped yield curve can also signal a potential transition between different yield curve

shapes. For instance, it could evolve into a normal yield curve if economic uncertainties resolve positively or into an inverted yield curve if economic conditions deteriorate.



4. Yield Curve Risk

Interest rates and bond prices have an inverse relationship in which prices decrease when interest rates increase, and vice versa. Therefore, when interest rates change, the yield curve will shift, representing a risk, known as the yield curve risk, to a bond investor[13]. Yield Curve is also known as Interest Rate Risk.

In the below Treasury Yield Curve, which reflects the Yields of US Treasury securities across different maturities; the Shorter-term maturity yield went up in 2022. This happened when the Federal Reserve moved up its benchmark interest rate to control inflation. The Federal Reserve's benchmark interest rate affects short-term rates directly, which is why short-term yield also moved up. However, the 10-year and higher maturity Treasury operates with different mechanics. The 10-year is impacted by long-term growth outlook, global economics and other market forces[14].

Source: Resource Center | U.S. Department of the Treasury

Short-term Treasury Yields going up impact a lot of things. Banks and financial institutions typically adjust their deposit rates based on short-term Treasury yields. Higher yields on these securities could lead to increased returns on savings accounts and other deposit products, benefiting savers. But in the same way this could also mean increased borrowing costs for consumers and businesses that use short-term debt instruments. This includes home loans, business loans, and credit card rates, which are often tied to short-term interest rates.

Short-term Treasury yields serve as benchmarks for other short-term debt instruments in the bond market. An increase in these yields could lead to a repricing of other short-term bonds and securities, influencing their yields and prices. Existing bonds lose value, which can result in capital losses for investors in the short term. The Equity Market is also closely related to changes in the Yield Curve. Equity investors might adjust their portfolios based on expectations of higher borrowing costs and their potential impact on corporate earnings.

5. Conclusion

A yield curve serves as a critical tool for assessing economic conditions, predicting future interest rate movements, guiding investment strategies, and understanding market dynamics. Its shape and movements are closely watched by policymakers, economists, investors, and businesses for the valuable insights it provides into the overall health and direction of the economy.

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