

Inverted Yield Curve Signals Recession and Complicated Investment Behavior

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Abstract

Historically, almost each time not long after the yield of long-term and short-term Treasury Bills is inverted, let's say, one to two years, there would be a phenomenon of financial or economic bubble being from grown up to burst. This article will illustrate fundamentals behind the phenomenon of this Yield Inversion, and also, its connection to the following recession, namely, the different behavior of funds mainly gaining yields by holding bonds for a very long time till their expiration day and those profiting from the price fluctuation by using leverages, and the Fed's interest rate hiking and cutting cycle.

Keywords

Short-term Bonds; Long-term Bonds; Yield; Inverted; Recession.

1. Introduction

The so-called Yield Inversion refers to the phenomenon that the yield of short-term U.S Treasury bonds exceeds the yield of long-term ones. It is absurd if seen from the view of the banking deposit, since it's alike the interest rate for the 10-year fixed-term savings (In China the longest fixed-term is 5-year) is lower than the 2-year's or even the 1-year's. This article will, first of all, use cause-consequence analysis method, to analyze the cause of this yield inversion, and its signal effect to an economic recession; secondly, use comparison analysis method, to analyze the difference between the banking deposit and the investment on Treasury bonds, and why there is no interest rate inversion of the former but exists in the latter.

2. The Inverted Yield Curve Means a Recession

2.1. Historical Statistics

In history, not long after the bond yield rate is inverted, there would be a phenomenon of financial bubble being burst and followed by an economic recession almost each time. For example, after two years of the inversion occurred in 1988, the Japanese bubble was burst; not long after the inversion in 2000, the Internet bubble was burst; last but not least, right after two years of the inversion occurred in 2006, the devastating 2008 Subprime Mortgage Crisis irrupted though this time was basically a financial crisis (developing to the peak the ATM almost running out of cash) rather than an economic one. From these history statistics instead of empirically we can make a conclusion that the inversion of the U.S. bond interest rate is a sign of economic recession or financial crisis. What's more, history shows that the longer the inversion lasts, the deeper the recession would be. However, these phenomena is not a series of accidental events, but stands a solid logic behind their back [1].

2.2. It's Both Impirically and Logically the Inversion Indicates a Recession

Take the seven-day Reverse Repurchase Rate as an example: it is the best risk-free interest rate you can get for lending money over a seven-day period. The premise is that it's completely risk-free. Now, thinking about such a question: if you lend someone money, should the interest rate

be higher for a shorter period or a longer period? Theoretically, the longer the term, the higher the interest rate. The reason is the longer the time, the more uncertainty the lender will face. If you lend someone money for seven days, you will be satisfied with an annualized 2% interest rate; but if you lend someone money for ten years, you might charge an annualized 10%. Therefore, in a healthy market, long-term bonds should have higher interest rates than short-term ones. That's common sense. So, in what situation would long-term bonds have lower interest rates than short-term ones, to the extent when a ten-year bond has a lower rate than a seven-day one? When does this happen?

That is, though most lenders lack confidence in the future, they find the long-term rate still attractive and therefore choose to lock it in for ten years. In other words, they think the short-term high rate is only good for a brief moment, and afterward, rates might even go down. This is what people mean by "Every inversion predicts a recession." The inversion indicates that major market players, especially those in the bond market, are collectively voting with their feet, signaling pessimism toward the future on the economic perspective. What's more, according to William Thomas' Reflexivity Theory (rather than Soros'), the collective action is not only a sign, but the action itself causes damage to the future economy because when the major players feel pessimistic about the future they would stop investing or buying. If their collective bet turns out to be right, then a recession happens.

2.3. The Longer the Inversion, the Deeper the Recession

Short-end yield approximates the market's expectation of rates over the next 6–12 months; Long-end yield approximates the market's pricing of economic fundamentals over the next 5–10 years. Under normal circumstances, long-end yields are higher than short-end yields (upward sloping curve); when short-end yields surpass long-end yields (yield curve inversion), it has historically preceded coming economic recession by 6-18 months[2].

Amazingly, the inversion occurred this time has never been so long, which means the following recession will be a historical devastating one when the inversion is back to normal (the reversion to normal stage is the dangerous period rather than the inversion one during which normally the stock and real estate price would reach historical high). Moreover, the inversion will also force the Federal Reserve to cut the scale of its balance sheet because the rising of imminent bond yields means a coming inflation the Fed has to find some measures to crack down on it like raising the interest rates, usually together with a balance sheet reduction[3].

3. The Inverted Yield Curve Doesn't Take Place on Deposit but Bonds

3.1. Part of Investors Still Buy the Long-term Bonds after the Inversion Occurs

Take a look at the interest rate of the long-term and short-term deposit of the banks. Under normal circumstances, the 1-year fixed-term interest rate must be lower than the 10-year fixed-term interest rate (In China the maximum fixed-term banking deposit is 5-year). If one day the interest rate of the 1-year deposit is higher than the 10-year, then there is definitely no one would save money as the 10-year deposit, but the 1-year. Accordingly, since the yield of government bonds is reversed, then it should be that more people buy bonds of shorter term to enjoy a higher yield and faster taking back of the capital than the long-term ones which will lead to the inversion curve of the yield of government bonds higher and higher. However, the truth is: though smart money like Warren Buffett's, tend to buy bonds of shorter term as a logic man should behave, there are still lots of others choose the longer term instead of the shorter term, and that leads to the result that when the Inverted Yield Curve reaches a certain level, it just stopped to reach higher[4].

3.2. Reasons Behind Part of Investors Still Buy the 10-year Bonds after the Inversion

Then comes with the most perplexed question: why there are so many still buy the 10-year Treasury Bills instead of the 1-year? Here is the answer: unlike the fixed-term banking deposit example normally you could only buy and then hold, the investing on bonds is a much more sophisticated two way trading game, not only involving longing and shorting, but also that people often take back their capital back before expiration day. Buffett holds a lot of short-term bonds, besides the reason of yield inversion, the concern on safety of his stock portfolio is another one. You may bet he must have lost his mind to hold billions of 10-year bonds while holding billions of stocks since in that way when the stocks are in danger, or thousands of Berkshire investors want to draw their investment out within several months, there is no way to save his portfolio. Though bonds are allowed to sell on the secondary market right after bought in, price will drop sharply soon before he sells them all, considering his massive investment scale. If so, not only the initial capital he puts on the bonds will lose a big part, but also he cannot enjoy the whole 10-year yields. Much more seriously, people will think this behavior as a sign of losing trust on the U.S market, bonds and stocks as well. But if holding short-term bonds, all these problems don't exist anymore: he may sell them on the due date to pay back investors, while without causing any chaos[5].

But to most other buyers of the 10-year bonds, they don't have this concern. They could take the initial capital back right after they put their money. But why don't they buy the short-term ones to enjoy the higher yields rate? The crucial factor is: most of this kind of investors are central banks from different countries, China, Japan, or even the Fed itself. Their main goal is to keep the price of the bonds stable, or to keep their foreign reserve safe, rather than to have a huge capital gain! Considering their complicated and long-winded decision making process, massive scale of investment, and more intriguing political and economic reasons like to show an amicable attitude to the U.S in order to open the huge U.S consumption market or guaranteed a safe military and political environment. It's understandable that their normal operation is to buy the 10-year Treasury Bills, rather than to buy the 1-year. As to a few others to choose the long-term bills, like hedge funds, the privilege to enjoy the relatively more stable price with less fluctuation of the long-term bonds, compare with the more volatile short-term ones, probably are their main concern. Since buying the long-term bonds even after the Inversion is a quite complicated investment behavior to which one or two paragraph alone could hardly explained thoroughly, it will be put into more details in the next part[6].

4. Investment Behavior and the Fed Together Cause the Yield Curve

4.1. Different Kinds of Investors Tend to Behave Differently or Even Oppositely

Back to the first place, why there is a Yield Curve? There are many influencing factors. First of all, the U.S. bond market is one of the largest financial markets in the world with strong liquidity, which also means that there are different kinds of funds which should be kept under different categories involved in the U.S. bond transactions. Although that has been discussed earlier, namely, Central Banks from different countries including the Fed, mainly holding long-term Treasury Bills for couple of years or even until it's due; big institutions mainly investing on stocks while holding bonds only as a protection for those stocks, like Buffett's Berkshire; bond hedge funds using leverage means to gain huge profit in a short period, like the LTCM which went broken long time ago; or, thousands of individual investors who favors the bond ETFs or leveraged bond ETFs. as TMF[7].

Also, you should remember that market transactions are two-way instead of one, that is, buying and selling.

4.2. Interest Rate Hiking and Cutting Cycle Decided Mainly by the Fed

If the Federal Reserve enters the interest rate hiking cycle, short-term bond yields will rise significantly. For instance, the yield on U.S. 2-year Treasury bonds has now broken through to 2.16%, which means that the market expects the Federal Reserve to raise interest rates to more than 2% in at least two years. This also means that short-term bond price will rise and fall sharply. But funds holding the long-term bonds that only concern on how much interests they can get do not care about the price of the bond itself rise and fall. Anyway, as long as you hold to the maturity, you can get the principal investment back from the U.S. Treasury Department, without losing a penny, whereas the speculative funds that profit on the price difference will choose to sell U.S. short-term bonds and buy long-term bonds to avoid risks during the Federal Reserve's interest rate hike cycle, which will lead to such a result that the yield of long-term bonds will not rise sharply as the yield of short-term ones[8].

4.3. Destiny of the Long-term Bond If the Yield Is Unprecedentedly Low

Someone might say, it's still not that bad whereas the long term bills could be issued constantly though with an interest rate ridiculously low. However, the reality is: only a few countries can issue long-term bonds at as interest rate as low as 1%!

There's an English saying: "Every cloud has a silver lining." But what's the silver lining here? It's how strong a country's creditworthiness has to be. Among major economies, China, Japan, Germany, the UK and the U.S. still can. Take the last one as an example: though its production ability is well-known down to historically low, even though not enough to produce abundant weaponry to win a war against a middle east country economic scale is not as high as a state of the U.S., its financial market scale, its innovation capability, and its system to attract all kinds of talents to study and work there is still the number one throughout the world. These things shows that overall its creditworthiness is still very strong. There's no risk of a sudden collapse.

5. Conclusion

From this article, it could be finally concluded that the U.S. interest rate inversion is only a by-product of the Federal Reserve's interest rate hike, and the real impact on the economy is the interest rate hike instead of the inversion.

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